

# Low Voltage Controlgear for Railway Applications

Rolling Stock



**ABB**





# Low Voltage Switchgear for Railway Applications

## Rolling Stock

### ABB expertise

For over 50 years, ABB has been involved in a great number of railway projects across the globe, owing to its extensive range of products, complete systems and equipment.

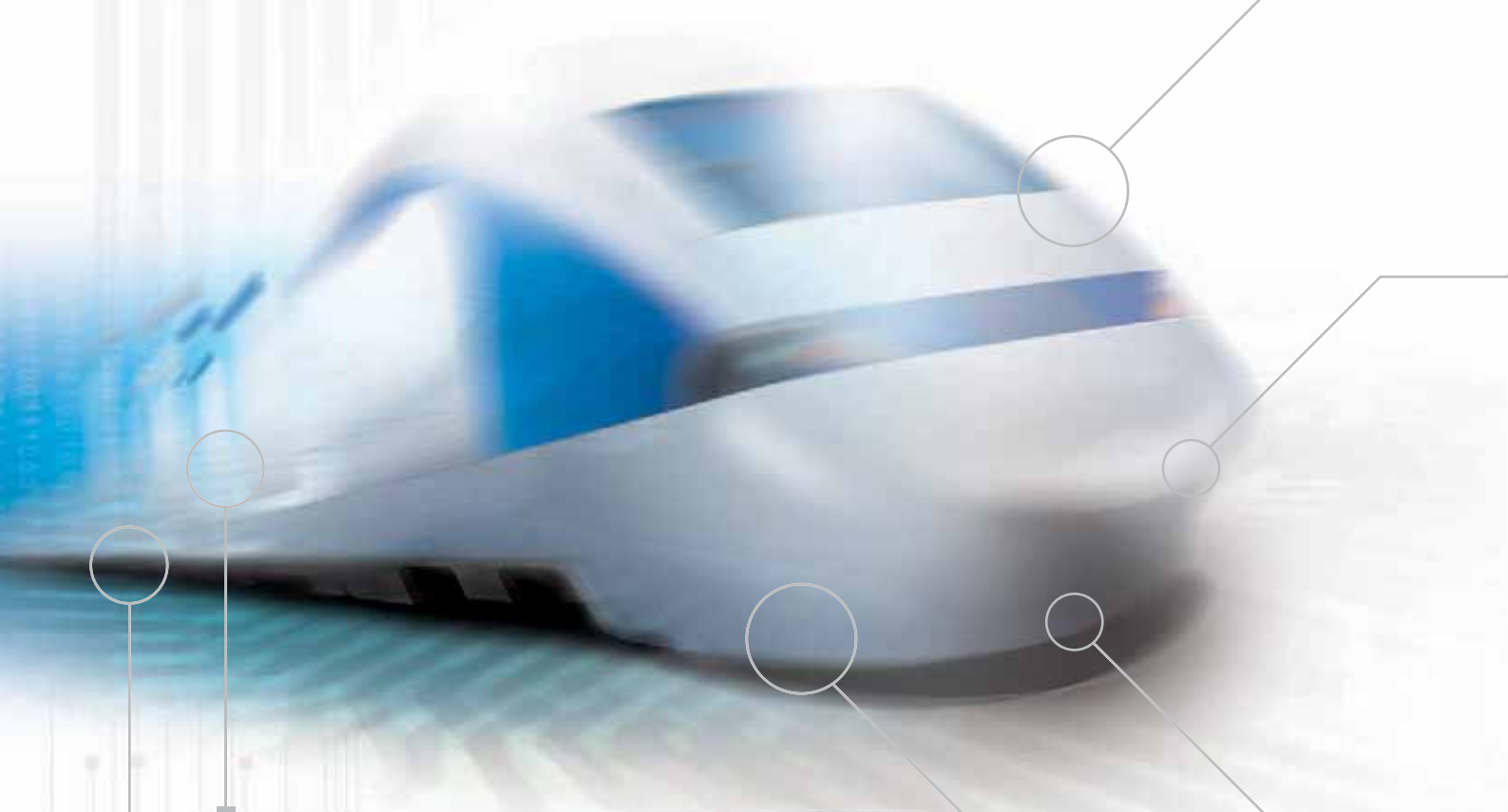
This is why we have dedicated a specific catalogue to our Low Voltage products for the rolling stock market. The catalogue contains the following sections:

- Terminal blocks
- Contactors
- Current and voltage sensors
- Circuit breakers
- Position switches

It features a carefully selected line of products that are perfectly adapted to this sector's stringent requirements.

More comprehensive catalogues covering other industrial applications, and notably stationary railway equipment, are available upon request from our sales network.

# ABB lays down the track for a world that moves!



## LS position switches

An extensive and rugged product range. It ensures simple installation and is adapted to your requirements.



## Current and voltage sensors

High performance products adapting perfectly to your applications in terms of filtering, compactness and price.



## Tmax circuit breakers

Tmax circuit breakers offer compactness and power for traction applications.



## Terminal blocks

We offer the largest range of Entrelec terminal blocks on the market, combining innovation, ruggedness and reliability to meet the most stringent requirements.



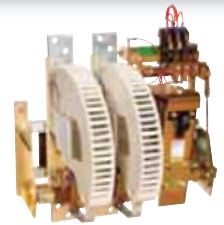
## Contactors

A complete range of contactors and auxiliary contactors employed throughout the world for rolling stock applications and which comply with current French, European and International standards.



## Bar contactors

For controlling up to 1,000 V AC and 1,500 V DC, rugged products with a long service life.



## Circuit Breakers – STOPCIRCUIT

STOPCIRCUIT's expertise meets stringent requirements while offering considerable flexibility for rolling stock applications.



## Circuit Breakers – System pro M compact®

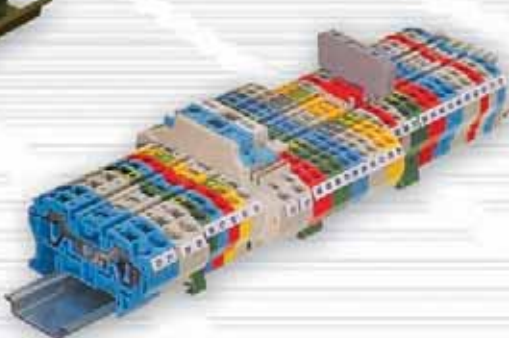
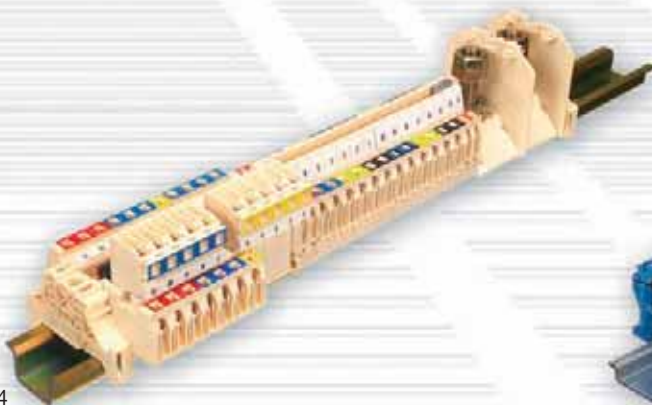
Connection safety is the major strong point of the new System pro M compact® range. Considered the largest circuit breaker range existing in the international market today.



## S800 modular circuit breakers

In addition to its nominal current range from 10 to 125 A and its interchangeable connecting terminals, the S800 offers 2 undeniable advantages: reliability and high performance.















# Low Voltage Controlgear for Railway Applications

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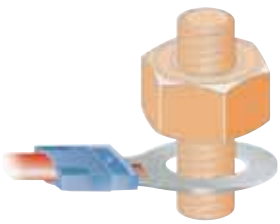
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# Terminal Blocks entrelec® for railway applications

ABB France expert in the railway field (rolling stock and fixed equipment) for more than 30 years, has extensive knowledge in all connection technologies, recognized throughout the world.

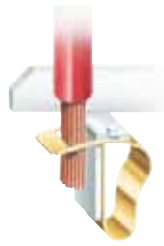
## Terminal blocks entrelec®: the larger choice of connecting systems



Stud



Quick-connect



Spring



ADO System®

### Our terminal blocks perfectly comply with specific requirements of the rolling stock

- Continuous vibrations stress
- Shocks, when the trains are formed
- Corrosive stresses in polluted environment
- Fire and smoke withstand.  
Special care being taken for plastic materials for which specific tests are required.
- Wide variation of temperature:  
Range of - 40°C to + 110°C to cover all climates in the world

Our terminal blocks meet, and even exceed the requirements of IEC 60947-7-1 standard, like the French national standards **NFF (Normes Françaises Ferroviaires)** which are still used as reference for the French national company SNCF (a world leader for the safety and the reliability of the trains and the rail network) and a lot of other countries.

The products described in this catalogue are in accordance with the main standards listed in the opposite page (see "Reference Standards").

Numerous projects using **ABB France** products have been worldwide realized. Some examples:

- Engines: Loco fret (SNCF France), Loco (Iran)
- Metros: Circleline (Singapore), Nanjing (China), Jubilee line (London, UK), MF 2000 (RATP France)
- Commuter trains : Hillside X-Trapolis (Melbourne, Australia), Merval (Valparaiso, Chile)
- Tramways: Citadis (Alstom): Bordeaux, Valenciennes, Paris, Strasbourg (France), Dublin (Ireland), Barcelona (Spain), Rotterdam (Netherlands)  
Train/Tram, Alicante (Spain)
- Intercity trains: TER 2N ng (SNCF France), Coradia X 40 (Sweden), AGC (SNCF France)
- High speed trains: TGV-A, TGV-R, TGV-PSE (SNCF France), Thalys (SNCF/SNCB), TGV Korea, Transmanche train (Eurotunnel)

***This catalogue assembles all information needed to make the best choice for the connection technology in accordance with the application and its environment***



## Reference Standards

### ● Rolling stock

- NF F 61017 :** Terminal blocks and component holder blocks. Connections by mean of quick connect (tabs) or threaded elements (studs).
- NF F 16-101 :** Directive relative to selecting materials in relation to their fire resistance in terms of its behavior in a fire, the opacity of smoke and the toxicity of the gas released.
- NF F 16-102 :** This standard complements NF F 16-101 standard. Its purpose is to specify the application of NF F 16-101 to electrical equipment and especially to individual apparatus.
- NF F 61030 :** Mechanical strength.
- EN 50155 :** Electronic equipment used on rolling stock - Shock and vibration tests.
- EN 61373 :** Electronic equipment - Shock and vibration tests.
- ASTM E 1354 :** Tests of fire, smoke and toxicity of plastic materials (American standard).

### ● Fixed equipment

- NF F 55-251** Devices for connection or disconnection - Screw terminal blocks.

### ● Low voltage controlgear

- IEC 60947-1 :** General rules.
- IEC 60947-7-1 :** Link terminal blocks for copper conductors.
- IEC 60947-7-2 :** Ground terminal blocks for copper conductors.
- UL 1059 :** Terminal blocks. (American standard).
- CSA C22-2 No 158 :** Terminal blocks. (Canadian standard).
- UL 94 V0 :** Tests of flammability of plastic materials. (American standard).

### ● Environment

- IEC 60068-2-1 :** Cold.
- IEC 60068-2-2 :** Dry heat.
- IEC 60068-2-3 :** Damp heat, steady state.
- IEC 60068-2-6 :** Vibrations.
- IEC 60068-2-11 :** Salt mist.
- IEC 60068-2-14 :** Change of temperature.
- IEC 60068-2-27 :** Shocks.
- IEC 60068-2-30 :** Damp heat, cyclic.
- IEC 60068-2-61 :** Tests Z/ABDM (climatic sequences).
- ISO 6988 :** SO<sub>2</sub> test with general condensation of moisture.

### ● Conductors

- NF F 63808 :** Conductors and electrical cables with thin insulation halogen free.
- NF F 63826 :** Conductors and electrical cables with thick insulation halogen free.

**Note:** from 2008 NF F 63808 and NF F 63826 standards will be replaced by EN 50306 standard.

### ● Information for "Fire and Smoke" classification

#### According to NF F standards:

The general directive NF F 16-101 (1988) concern the material selection, in terms of its flammability (mark I) on the one hand, the opacity and toxicity of smoke (mark F) on the other hand.

The standard NF F 16-102 (1992) complete the standard NF F 16-101. It explicit its application for the electrical equipment and products. **The thermoplastic insulation materials of the Terminal Blocks entrelec® are at the severity level 3.** This level concern a products mounted inside a room for passengers or running crew.

#### According to US standards :

The **UL 94** standard (June 1991, rev. 1994) describe the flammability tests of plastic materials, for controlgear and products.

Principle: measuring of the combustion time of a test piece according to its thickness. This classification is divided in 4 parts: HB for the most flammable materials, then V2, V1, then **V0** for the least flammable.

**All terminal blocks in this catalogue has thermoplastic insulation materials classified UL 94 V0.**

The **ASTM E 1354** standard describe the test method of the oxygen consumption, using a calorimeter for determine as a function of heat, the smoke emission rate for materials and products.

**All terminal blocks in this catalogue comply with this standard.**

Their individual surface is below 16 inch<sup>2</sup>, consequently they are not concerned by ASTM E 162 and 662 standards.



# PANORAMA

## Terminal blocks IEC / NF :

These terminal blocks of beige color are compatible with conductors in appliance with international standards IEC, and French Railway Standards (NF F 61017). SNCF and RATP french logos are printed under products that have obtained the using approvals. NF F 61017 is stated for all products complying to this standard (terminal blocks with stud terminals and quick connect tabs).

### IEC 60 947-7 and NF F 61017...

#### FEED THROUGH

#### COMPONENT HOLDER

#### PLUGGABLE

#### FEED THROUGH

#### ADO - ADO IDC TERMINAL BLOCKS



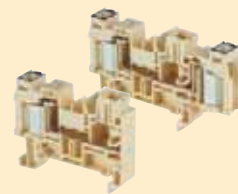
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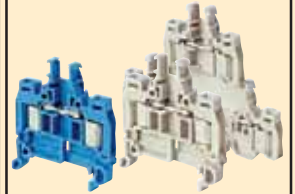
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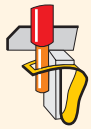


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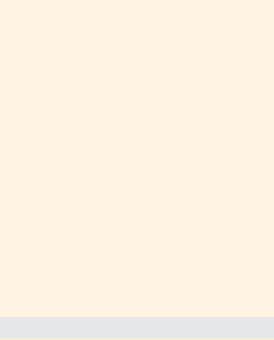
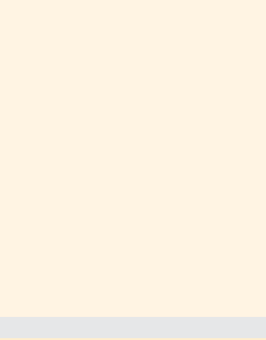
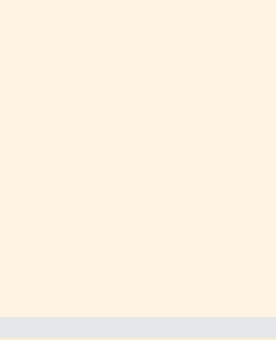


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#### SPRING TERMINAL BLOCKS



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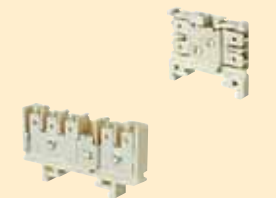


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#### TERMINAL BLOCKS WITH QUICK-CONNECT TABS



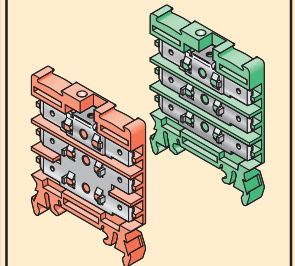
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#### TERMINAL BLOCKS WITH STUD TERMINALS



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#### ACCESSORIES

Mounting rails

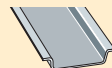
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End stops

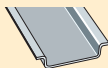
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PR30



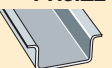
PR3.Z2



PR3.G2



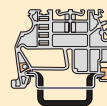
PR4



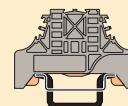
PR5



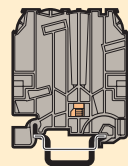
PR1.Z2



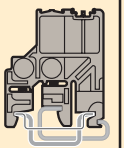
BADL



BAM2



BADH



BAMH

**Terminal blocks IEC :**

Grey color for the standard blocks, they comply exclusively to international standards (IEC 60 947-7...). These products agree on a large number of railway applications.

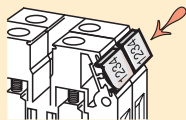
**IEC 60 947-7...**

GROUND	FUSE HOLDER	COMPONENT HOLDER	SWITCH	PLUGGABLE
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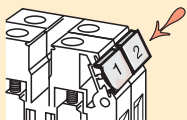
**MARKING**

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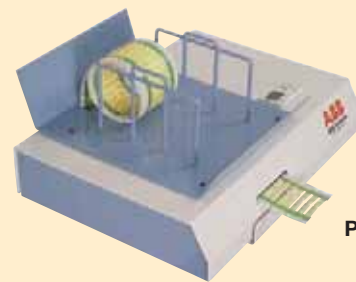
Vertical marking



Horizontal marking



Marking table



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Partial shrink module



A  
2



# Terminal Blocks entrelec® according to NF F 61017 and IEC 60947-7

ADO System® Connections

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**NFF 61017 / IEC 60947-7**





## Selection table of ADO terminal blocks for railway application wires according to NF F 63-808, 63-296, 63-826 and EN 50306 (for other wires, consult us)

A  
3

According to standard:	Wire size (mm <sup>2</sup> )	 D 1,5/5.ADO.NF 1SNA 400 315 R0100	 D 1,5/6.ADO.D2.NF 1SNA 399 916 R2600	 D 2,5/8.ADO.NF 1SNA 399 736 R0100	 D 4/7.ADO.CPE.NF 1SNA 400 241 R1700	 D 2,5/8.ADO.NF1 1SNA 399 749 R2600
NF F 63-808	0,60	●	●			
	0,93	●	●	●		
	1,34	●	●	●		
	1,82		●	●		
	2,61			●		
	4,32				●	
NF F 63-296 NF F 63-826	1,5*					●
EN 50306	0,5	●	●			
	0,75	●	●			
	1	●	●	●		
	1,5	●	●	●		
	2,5			●		
Colour identification		 without tempo	 red	 blue	 yellow	 black

Legend: ● 1 or 2 wires (of the same gage and nature) allowed per jaw (3 wires per jaw: consult us).

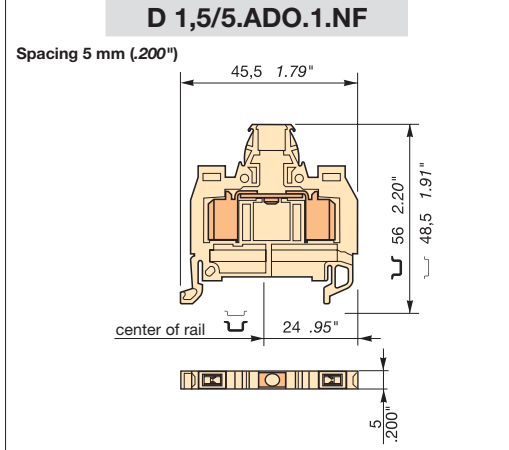
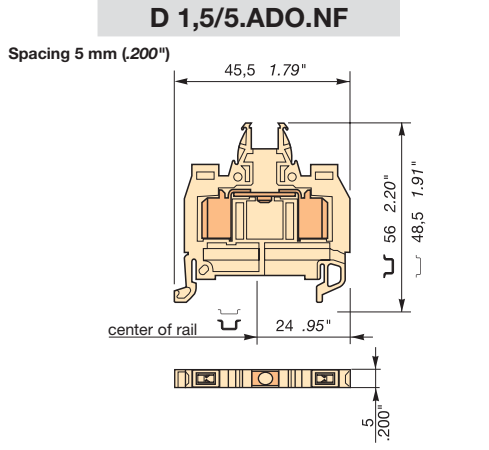
\* Max. insulating sleeve : 4,7 mm



**Railway applications**  
**Terminal blocks**  
**with insulation**  
**displacement**

ADO - ADO

DIN 3



Colour	Type	Part numbers
Beige	D 1,5/5.ADO.NF	1SNA 400 315 R0100

Colour	Type	Part numbers
Beige	D 1,5/5.ADO.1.NF	1SNA 400 316 R0200

**Characteristics**

**Characteristics**

Wire size	
	NF F 63-808
ADO	0,6 - 1,34 mm <sup>2</sup>
1 or 2 wires (same wire size) per ADO jaw	

Wire size	
	NF F 63-808
ADO	0,6 - 1,34 mm <sup>2</sup>
1 or 2 wires (same wire size) per ADO jaw	

IEC	DIN	NF F	61-017
NFE			

IEC	DIN	NF F	61-017
NFE			

Voltage	
Rated	1000 V, 500 V
Pollution degree	3

Voltage	
Rated	1000 V, 500 V
Pollution degree	3

Current	
Rated	17,5 A, 16 A

Current	
Rated	17,5 A, 16 A

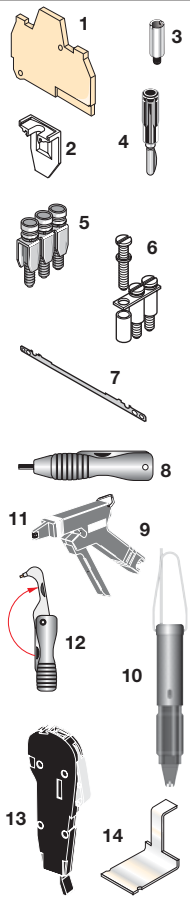
Body weight	Metallic part weight	Total weight	Protection
3,5 g	3,23 g	6,73 g	IP 20
0.008 lb	0.007 lb	0.015 lb	NEMA 1

Body weight	Metallic part weight	Total weight	Protection
3,5 g	3,23 g	6,73 g	IP 20
0.008 lb	0.007 lb	0.015 lb	NEMA 1

**Notes**

D 1,5/5.ADO.1.NF : Terminal block with precut partition.

**Accessories**



Type	Quantity	Colour	P/N
1 End section	1	beige	FEMAD3
2 Circuit separator	1		SCAD5
3 Test socket	1		AL2
4 Test plug	1		AL3
5 Screwless jumper bar	24 A		FC2
6 Jumper bar not assembled	24 A		BJMI 5.2
7 Shield connector	24 A		BJMI 5.3
8 Hand tool kit	24 A		BJMI 5.4
9 Semi-automatic tool	24 A		BJMI 5.5
10 Pneumatic tool kit	24 A		BJMI 5.10
11 Replacement head kit	24 A		BJS5
12 Extraction tool kit	24 A		EV5
13 Test connector			CBM5
14 Distribution bar			CBM8
R See section on markers			OUMAD
Terminal block's marking			OUPAD
			OUTAD
			OUTA
			EXAD2
			CEADO.5
			CEADOE
			BJHS
			RC65 - RC610 - RTM7

Type	Quantity	P/N
FEMAD3	1	th. 3 mm 1SNA 399 802 R0500
SCAD5	1	1SNA 199 551 R2000
AL2	1	DIA. 2 mm 1SNA 163 043 R2100
AL3	1	DIA. 3 mm 1SNA 163 261 R0000
FC2	1	DIA. 2 mm 1SNA 007 865 R2600
BJMI 5.2	1	2 poles 1SNA 176 278 R1600
BJMI 5.3	1	3 poles 1SNA 176 279 R1700
BJMI 5.4	1	4 poles 1SNA 176 280 R0500
BJMI 5.5	1	5 poles 1SNA 176 281 R2200
BJMI 5.10	1	10 poles 1SNA 176 282 R2300
BJS5	1	24 A 1SNA 177 652 R0600
EV5	1	1SNA 168 629 R1600
CBM5	1	th. 0,5 mm 1SNA 178 745 R1400
CBM8	1	th. 0,8 mm 1SNA 178 746 R1500
OUMAD	1	1SNA 179 466 R0600
OUPAD	1	1SNA 178 944 R0400
OUTAD	1	1SNA 205 710 R1100
OUTA	1	1SNA 205 284 R0300
EXAD2	1	1SNA 205 721 R0000
CEADO.5	1	1SNA 399 345 R1100
CEADOE	1	1SNA 399 341 R1500
BJHS	1	1SNA 206 539 R0300
RC65 - RC610 - RTM7		

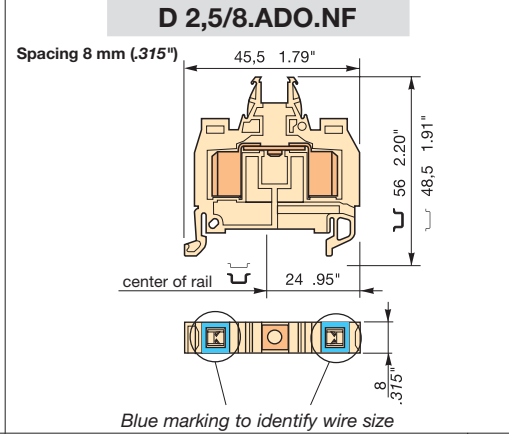
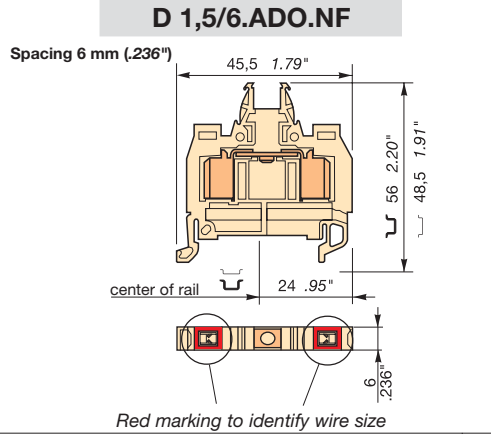
Type	Quantity	P/N
FEMAD3	1	th. 3 mm 1SNA 399 802 R0500
AL2	1	DIA. 2 mm 1SNA 163 043 R2100
AL3	1	DIA. 3 mm 1SNA 163 261 R0000
FC2	1	DIA. 2 mm 1SNA 007 865 R2600
BJMI 5.2 (1)	1	2 poles 1SNA 176 278 R1600
BJMI 5.3 (1)	1	3 poles 1SNA 176 279 R1700
BJMI 5.4 (1)	1	4 poles 1SNA 176 280 R0500
BJMI 5.5 (1)	1	5 poles 1SNA 176 281 R2200
BJMI 5.10 (1)	1	10 poles 1SNA 176 282 R2300
BJS5 (1) 24 A	1	1SNA 177 652 R0600
EV5 (1)	1	1SNA 168 629 R1600
CBM5	1	th. 0,5 mm 1SNA 178 745 R1400
CBM8	1	th. 0,8 mm 1SNA 178 746 R1500
OUMAD	1	1SNA 179 466 R0600
OUPAD	1	1SNA 178 944 R0400
OUTAD	1	1SNA 205 710 R1100
OUTA	1	1SNA 205 284 R0300
EXAD2	1	1SNA 205 721 R0000
CEADO.5	1	1SNA 399 345 R1100
CEADOE	1	1SNA 399 341 R1500
BJHS (1)	1	1SNA 206 539 R0300
RC65 - RC610 - RTM7		

(1) : Mounting of these accessories requires the user to cut out the precut partition of the terminal block.

# Railway applications Terminal blocks with insulation displacement

ADO - ADO

DIN 3



Colour	Type	Part numbers
Beige	<b>D 1,5/6.ADO.NF</b>	1SNA 399 730 R1700
Beige	<b>D 1,5/6.ADO.1.NF*</b>	1SNA 400 281 R0000

Colour	Type	Part numbers
Beige	<b>D 2,5/8.ADO.NF</b>	1SNA 399 736 R0100
Beige	<b>D 2,5/8.ADO.1.NF**</b>	1SNA 400 282 R0100

### Characteristics

### Characteristics

Wire size	NF F 63-808
ADO	0,6 - 1,82 mm <sup>2</sup>
1 or 2 wires (same wire size) per ADO jaw	

Wire size	NF F 63-808
ADO	0,93 - 2,61 mm <sup>2</sup>
1 or 2 wires (same wire size) per ADO jaw	

	IEC NFE DIN	NF F 61-017	UL/CSA
--	-------------	-------------	--------

	IEC NFE DIN	NF F 61-017	UL/CSA
--	-------------	-------------	--------

Voltage			
Rated	1000 V	500 V	600 V
Pollution degree	3		

Voltage			
Rated	1000 V	500 V	600 V
Pollution degree	3		

Current			
Rated	17,5 A	16 A	18 A

Current			
Rated	24 A	16 A	25 A

Body weight	Metallic part weight	Total weight	Protection
3,5 g	3,23 g	6,73 g	IP 20
0.008 lb	0.007 lb	0.015 lb	NEMA 1

Body weight	Metallic part weight	Total weight	Protection
4,63 g	4,53 g	9,16 g	IP 20
0.010 lb	0.009 lb	0.020 lb	NEMA 1

End stop	th. 10 mm	BAM2 V0	V0	1SNA 296 351 R0000
Rail	35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail	35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail	35 x 15 x 1,5	PR5		1SNA 168 700 R2200

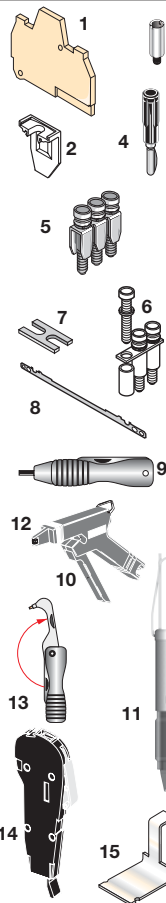
Other end stops, rails and accessories : see section on accessories.

### Notes

\*D 1,5/6.ADO.1.NF : Terminal block with precut partition.

\*\*D 2,5/8.ADO.1.NF : Terminal block with precut partition.

### Accessories



Type	beige	P/N	
1 End section		FEMAD3 th. 3 mm 1SNA 399 802 R0500	
2 Circuit separator		SCAD 1SNA 196 896 R0000	
3 Test socket		AL2 DIA. 2 mm 1SNA 163 043 R2100	
		AL3 DIA. 3 mm 1SNA 163 261 R0000	
4 Test plug		FC2 DIA. 2 mm 1SNA 007 865 R2600	
5 Screwless jumper bar	32 A	BJMI 6.2 2 poles 1SNA 176 663 R0000	
	32 A	BJMI 6.3 3 poles 1SNA 176 664 R0100	
	orange	32 A	BJMI 6.4 4 poles 1SNA 176 665 R0200
		32 A	BJMI 6.5 5 poles 1SNA 176 666 R0300
		32 A	BJMI 6.10 10 poles 1SNA 176 667 R0400
6 Jumper bar not assembled	32 A	BJS6 20 poles 1SNA 174 784 R2000	
	Post + washer + captive screw IP20	EV61 1SNA 206 394 R0200	
7 Connector plate		EL6 1SNA 173 627 R2100	
8 Shield connector		CBM5 th. 0,5 mm 1SNA 178 745 R1400	
		CBM8 th. 0,8 mm 1SNA 178 746 R1500	
9 Hand tool kit		OUMAD 1SNA 179 466 R0600	
10 Semi-automatic tool		OUPAD 1SNA 178 944 R0400	
11 Pneumatic tool kit		OUTAD 1SNA 205 710 R1100	
12 Replacement head kit		OUTA 1SNA 205 284 R0300	
13 Extraction tool kit		EXAD2 1SNA 205 721 R0000	
14 Test connector		CEADO.6 1SNA 399 346 R1200	
		CEADOE 1SNA 399 341 R1500	
15 Distribution bar		BJHS 1SNA 206 539 R0300	
R	See section on markers Terminal block's marking	RC65 - RC610 - RTM7	

Type	P/N
FEMAD3 th. 3 mm	1SNA 399 802 R0500
SCAD	1SNA 196 896 R0000
AL2 DIA. 2 mm	1SNA 163 043 R2100
AL3 DIA. 3 mm	1SNA 163 261 R0000
FC2 DIA. 2 mm	1SNA 007 865 R2600
BJMI 8.2 2 poles	1SNA 176 669 R1600
BJMI 8.3 3 poles	1SNA 176 670 R1300
BJMI 8.4 4 poles	1SNA 176 671 R0000
BJMI 8.5 5 poles	1SNA 176 672 R0100
BJMI 8.10 10 poles	1SNA 176 673 R0200
BJS8 41 A 20 poles	1SNA 174 789 R0500
EV61	1SNA 206 394 R0200
EL6	1SNA 173 627 R2100
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000
CEADO.8	1SNA 399 348 R2400
CEADOE	1SNA 399 341 R1500
BJHS	1SNA 206 539 R0300
RC65 - RC610 - RTM7	

Type	P/N
FEMAD3 th. 3 mm	1SNA 399 802 R0500
SCAD	1SNA 196 896 R0000
AL2 DIA. 2 mm	1SNA 163 043 R2100
AL3 DIA. 3 mm	1SNA 163 261 R0000
AL4 DIA. 4 mm	1SNA 163 240 R1700
FC2 DIA. 2 mm	1SNA 007 865 R2600
FC4 DIA. 4 mm	1SNA 167 860 R0100
BJMI 8.2 2 poles	1SNA 176 669 R1600
BJMI 8.3 3 poles	1SNA 176 670 R1300
BJMI 8.4 4 poles	1SNA 176 671 R0000
BJMI 8.5 5 poles	1SNA 176 672 R0100
BJMI 8.10 10 poles	1SNA 176 673 R0200
BJS8 41 A 20 poles	1SNA 174 789 R0500
EV61	1SNA 206 394 R0200
EL6	1SNA 173 627 R2100
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000
CEADO.8	1SNA 399 348 R2400
CEADOE	1SNA 399 341 R1500
BJHS	1SNA 206 539 R0300
RCAL85 - RC810 - RTM7	

# Railway applications Terminal blocks with insulation displacement

ADO - ADO

DIN 3

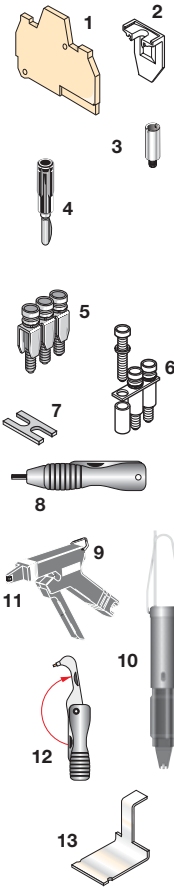


End stop	th. 10 mm	BAM2 V0	V0	1SNA 296 351	R0000
Rail	35 x 7,5 x 1	PR3.Z2		1SNA 174 300	R1700
Rail	35 x 15 x 2,3	PR4		1SNA 168 500	R1200
Rail	35 x 15 x 1,5	PR5		1SNA 168 700	R2200

Other end stops, rails and accessories : see section on accessories.

## Notes

## Accessories

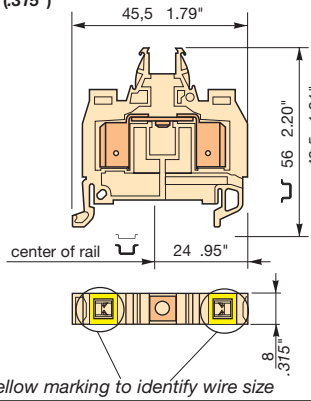


- 1** End section beige
- 2** Circuit separator
- 3** Test socket
- 4** Test plug
- 5** Jumper bar 41 A  
(with IP20 protection) 41 A  
41 A  
41 A  
41 A
- 6** Jumper bar not assembled  
Post + washer + captive screw IP20
- 7** Connector plate
- 8** Hand tool kit
- 9** Semi-automatic tool
- 10** Pneumatic tool kit
- 11** Replacement head kit
- 12** Extraction tool kit
- 13** Distribution bar

R See section on markers  
Terminal block's marking

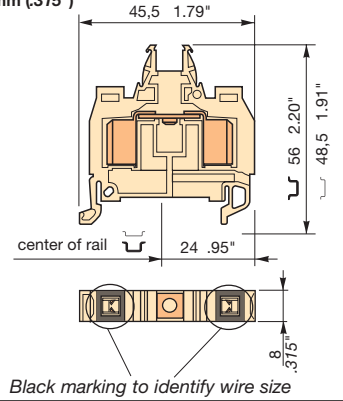
### D 4/8.ADO.NF

Spacing 8 mm (.315")



### D 2,5/8.ADO.NF1

Spacing 8 mm (.315")



SNECF			CE	SNECF			CE
Colour	Type	Part numbers		Colour	Type	Part numbers	
Beige	D 4/8.ADO.NF	1SNA 399 748	R2500	Beige	D 2,5/8.ADO.NF1	1SNA 399 749	R2600

#### Characteristics

Wire size	
ADO	NF F 63-808 4,32 mm <sup>2</sup> 1 or 2 wires per ADO jaw

#### Characteristics

Wire size	
ADO	NF F 63-296 NF F 63-826 1,5 mm <sup>2</sup> 1 or 2 wires per ADO jaw

Voltage		
Rated	1000 V	500 V
Pollution degree	3	

Voltage		
Rated	1000 V	500 V
Pollution degree	3	

Current		
Rated	32 A	16 A

Current		
Rated	24 A	16 A

Body weight	Metallic part weight	Total weight	Protection
4,5 g 0.01 lb	4,5 g 0.01 lb	9 g 0.02 lb	IP 20 NEMA 1

Body weight	Metallic part weight	Total weight	Protection
4,63 g 0.010 lb	4,53 g 0.009 lb	9,16 g 0.020 lb	IP 20 NEMA 1

Type		P/N
FEMAD3	th. 3 mm	1SNA 399 802 R0500
SCAD		1SNA 196 896 R0000
AL2	DIA. 2 mm	1SNA 163 043 R2100
AL3	DIA. 3 mm	1SNA 163 261 R0000
AL4	DIA. 4 mm	1SNA 163 240 R1700
FC2	DIA. 2 mm	1SNA 007 865 R2600
FC4	DIA. 4 mm	1SNA 167 860 R0100
BJMI 8.2	2 poles	1SNA 176 669 R1600
BJMI 8.3	3 poles	1SNA 176 670 R1300
BJMI 8.4	4 poles	1SNA 176 671 R0000
BJMI 8.5	5 poles	1SNA 176 672 R0100
BJMI 8.10	10 poles	1SNA 176 673 R0200
BJS8	41 A	1SNA 174 789 R0500
EV6I		1SNA 206 394 R0200
OUMAD		1SNA 179 466 R0600
OUPAD		1SNA 178 944 R0400
OUTAD		1SNA 205 710 R1100
OUTA		1SNA 205 284 R0300
EXAD2		1SNA 205 721 R0000
BJHS		1SNA 206 539 R0300

Type		P/N
FEMAD3	th. 3 mm	1SNA 399 802 R0500
AL2	DIA. 2 mm	1SNA 163 043 R2100
AL3	DIA. 3 mm	1SNA 163 261 R0000
AL4	DIA. 4 mm	1SNA 163 240 R1700
FC2	DIA. 2 mm	1SNA 007 865 R2600
FC4	DIA. 4 mm	1SNA 167 860 R0100
BJMI 8.2	2 poles	1SNA 176 669 R1600
BJMI 8.3	3 poles	1SNA 176 670 R1300
BJMI 8.4	4 poles	1SNA 176 671 R0000
BJMI 8.5	5 poles	1SNA 176 672 R0100
BJMI 8.10	10 poles	1SNA 176 673 R0200
BJS8	41 A	1SNA 174 789 R0500
EV6I	poles	1SNA 206 394 R0200
EL6	poles	1SNA 173 627 R2100
OUMAD	poles	1SNA 179 466 R0600
OUPAD	poles	1SNA 178 944 R0400
OUTAD	poles	1SNA 205 710 R1100
OUTA		1SNA 205 284 R0300
EXAD2		1SNA 205 721 R0000
BJHS		1SNA 206 539 R0300

RCAL85 - RC810 - RTM7

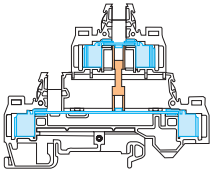
RCAL85 - RC810 - RTM7

**Railway applications**  
**Double deck**  
**terminal block**  
**with insulation**  
**displacement**



ADO - ADO

DIN 3



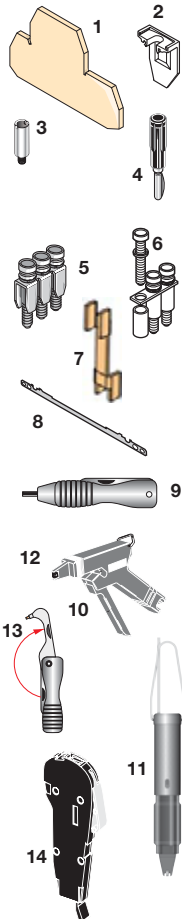
Vertical jumper bar assembly (ITVE marker 8)

End stop	th. 9,1 mm	BAMH V0 V0	1SNA 194 836 R0100
Rail	35 x 7,5 x 1	PR3.Z2	1SNA 174 300 R1700
Rail	35 x 15 x 2,3	PR4	1SNA 168 500 R1200
Rail	35 x 15 x 1,5	PR5	1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

**Notes**

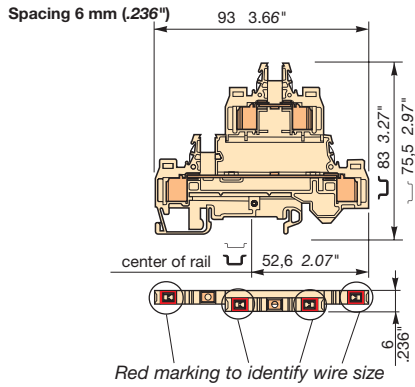
**Accessories**



- 1 End section beige
- 2 Circuit separator
- 3 Test socket
- 4 Test plug
- 5 Jumper bar 32 A (with IP20 protection) 32 A 32 A 32 A 32 A
- 6 Jumper bar not assembled Post + washer + captive screw IP20
- 7 Vertical jumper bar
- 8 Shield connector
- 9 Hand tool kit
- 10 Semi-automatic tool
- 11 Pneumatic tool kit
- 12 Replacement head kit
- 13 Extraction tool kit
- 14 Test connector

R See section on markers Terminal block's marking

**D 1,5/6.D2.ADO.NF**



SNCF



Colour	Type	Part numbers
Beige	D 1,5/6.D2.ADO.NF	1SNA 399 742 R1700

Colour	Type	Part numbers

**Characteristics**

Wire size	NF F 63-808
ADO	0,6 - 1,82 mm <sup>2</sup> 1 or 2 wires (same wire size) per ADO jaw

**Characteristics**

Wire size	NF F 63-808
ADO	

	IEC	NF F	UL/CSA
	NFE DIN	61-017	
<b>Voltage</b>			
Rated	800 V	500 V	
Pollution degree	3		

	IEC	NF F	UL/CSA
	NFE DIN	61-017	
<b>Voltage</b>			
Rated			
Pollution degree			

Current	17,5 A	16 A
Rated		

Current		
Rated		

Body weight	Metallic part weight	Total weight	Protection
8,57 g 0.019 lb	9,35 g 0.021 lb	17,92 g 0.039 lb	IP 20 NEMA 1

Body weight	Metallic part weight	Total weight	Protection

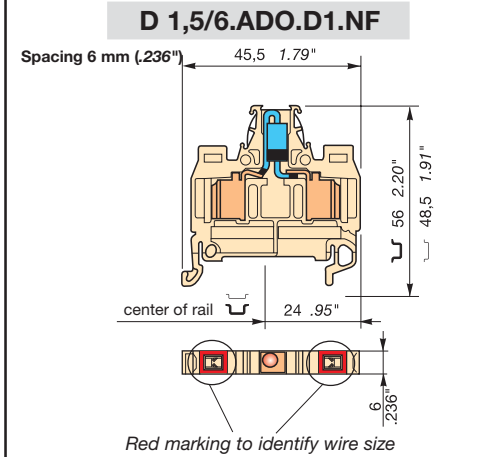
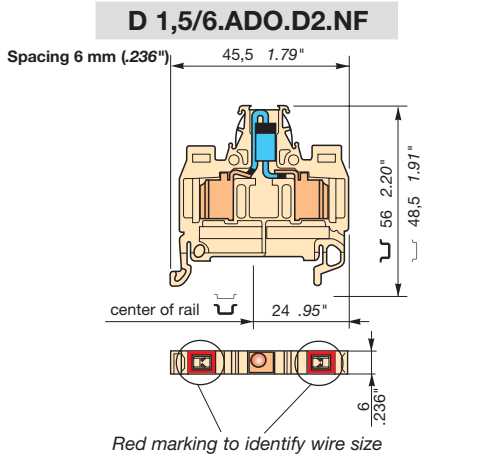
Type	P/N
FED2AD2	th. 5 mm 1SNA 399 803 R0600
SCAD	1SNA 196 896 R0000
AL2 (1)	DIA. 2 mm 1SNA 163 043 R2100
AL3 (1)	DIA. 3 mm 1SNA 163 261 R0000
FC2	DIA. 2 mm 1SNA 007 865 R2600
BJMI 6.2	2 poles 1SNA 176 663 R0000
BJMI 6.3	3 poles 1SNA 176 664 R0100
BJMI 6.4	4 poles 1SNA 176 665 R0200
BJMI 6.5	5 poles 1SNA 176 666 R0300
BJMI 6.10	10 poles 1SNA 176 667 R0400
BJS6 32 A	20 poles 1SNA 174 784 R2000
EV6I	1SNA 206 394 R0200
ITVE	1SNA 179 694 R0300
CBD2S	1SNA 178 408 R1400
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000
CEADO.6	1SNA 399 346 R1200
CEADOE	1SNA 399 341 R1500

RC65 - RC610 - RTM7

**Railway applications**  
**Terminal block**  
**with insulation**  
**displacement**  
**Component holder**  
**ADO - ADO**



DIN 3



<b>SNIEF</b>		<b>CE</b>	<b>SNIEF</b>		<b>CE</b>
Colour	Type	Part numbers		Colour	Type
Beige	<b>D 1,5/6.ADO.D2.NF</b>	1SNA 399 916	R2600	Beige	<b>D 1,5/6.ADO.D1.NF</b>
Block equipped with one 1N5408 diode			Block equipped with one 1N5408 diode		

<b>SNIEF</b>		<b>CE</b>	<b>SNIEF</b>		<b>CE</b>
Colour	Type	Part numbers		Colour	Type
Beige	<b>D 1,5/6.ADO.D1.NF</b>	1SNA 400 291	R0200	Beige	<b>D 1,5/6.ADO.D1.NF</b>
Block equipped with one 1N5408 diode			Block equipped with one 1N5408 diode		

Characteristics			
Wire size			
ADO		NF F 63-808	
		0,6 - 1,82 mm <sup>2</sup>	
1 or 2 wires (same wire size) per ADO jaw			
	IEC	NF F	UL/CSA
	NFE DIN	61-017	

Characteristics			
Wire size			
ADO		NF F 63-808	
		0,6 - 1,82 mm <sup>2</sup>	
1 or 2 wires (same wire size) per ADO jaw			
	IEC	NF F	UL/CSA
	NFE DIN	61-017	

Voltage			
Rated	80 V		
Pollution degree	3		

Voltage			
Rated	80 V		
Pollution degree	3		

Current			
Rated	1 A		

Current			
Rated	1 A		

Body weight	Metallic part weight	Total weight	Protection
4,5 g	2,54 g	7,04 g	IP 20
0.010 lb	0.006 lb	0.015 lb	NEMA 1

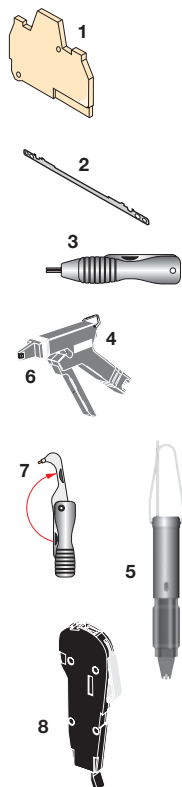
Body weight	Metallic part weight	Total weight	Protection
4,5 g	2,54 g	7,04 g	IP 20
0.010 lb	0.006 lb	0.015 lb	NEMA 1

End stop	th. 10 mm	BAM2 V0	V0	1SNA 296 351	R0000
Rail	35 x 7,5 x 1	PR3.Z2		1SNA 174 300	R1700
Rail	35 x 15 x 2,3	PR4		1SNA 168 500	R1200
Rail	35 x 15 x 1,5	PR5		1SNA 168 700	R2200

Other end stops, rails and accessories : see section on accessories.

**Notes**

**Accessories**



- 1 End section beige
- 2 Shield connector
- 3 Hand tool kit
- 4 Semi-automatic tool
- 5 Pneumatic tool kit
- 6 Replacement head kit
- 7 Extraction tool kit
- 8 Test connector

Type	P/N		
FEMAD3	th. 3 mm	1SNA 399 802	R0500
CBM5	th. 0,5 mm	1SNA 178 745	R1400
CBM8	th. 0,8 mm	1SNA 178 746	R1500
OUMAD		1SNA 179 466	R0600
OUPAD		1SNA 178 944	R0400
OUTAD		1SNA 205 710	R1100
OUTA		1SNA 205 284	R0300
EXAD2		1SNA 205 721	R0000
CEADO.6		1SNA 399 346	R1200
CEADOE		1SNA 399 341	R1500

Type	P/N		
FEMAD3	th. 3 mm	1SNA 399 802	R0500
CBM5	th. 0,5 mm	1SNA 178 745	R1400
CBM8	th. 0,8 mm	1SNA 178 746	R1500
OUMAD		1SNA 179 466	R0600
OUPAD		1SNA 178 944	R0400
OUTAD		1SNA 205 710	R1100
OUTA		1SNA 205 284	R0300
EXAD2		1SNA 205 721	R0000
CEADO.6		1SNA 399 346	R1200
CEADOE		1SNA 399 341	R1500

R See section on markers  
Terminal block's marking

RC65 - RC610

RC65 - RC610

# Railway applications Heavy duty switch terminal blocks



with plug insulation  
displacement

ADO - ADO

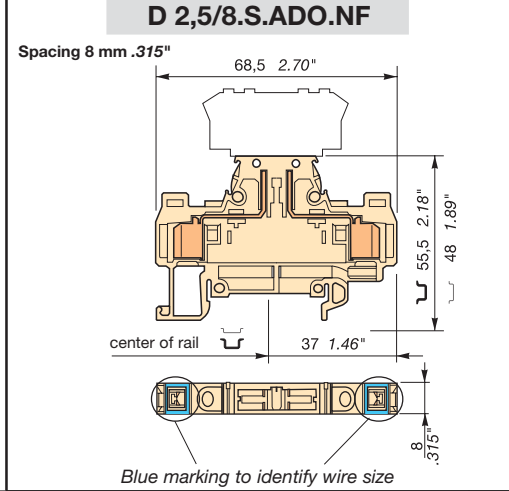
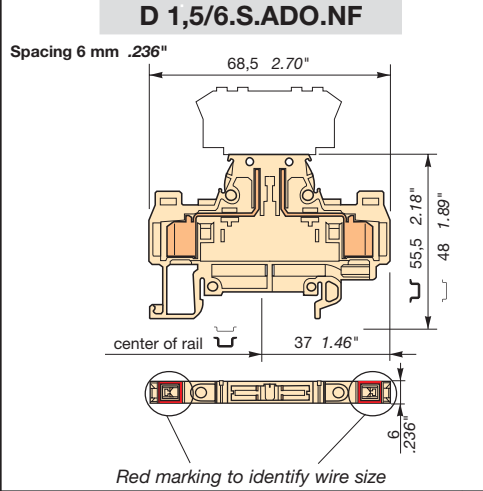
DIN 3



End stop		th. 10 mm	BAM2 V0	V0	1SNA 296 351	R0000
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300	R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500	R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700	R2200

Other end stops, rails and accessories : see section on accessories.

## Notes



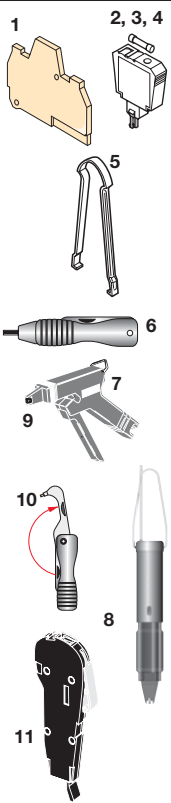
<b>SNCF</b>	<b>CE</b>	<b>SNCF</b>	<b>CE</b>
Colour	Type	Part number	Part numbers
Beige	D 1,5/6.S.ADO.NF	1SNA 400 083 R2500	1SNA 399 752 R1100

Colour	Type	Part numbers
Beige	D 2,5/8.S.ADO.NF	1SNA 399 752 R1100

Characteristics			
Wire size			
NF F 63-808			
ADO	0,6 - 1,82 mm <sup>2</sup>		
1 or 2 wires (same wire size) per ADO jaw			
IEC		NF F	UL/CSA
NFE	DIN	61-017	
Voltage			
Rated	500 V		
Pollution degree	3		
Current			
Rated	10 A		
Body weight	Metallic part weight	Total weight	Protection
6,48 g	4,76 g	11,25 g	IP 20
0.014 lb	0.010 lb	0.025 lb	NEMA 1

Characteristics			
Wire size			
NF F 63-808			
ADO	0,93 - 2,61 mm <sup>2</sup>		
1 or 2 wires (same wire size) per ADO jaw			
IEC		NF F	UL/CSA
NFE	DIN	61-017	
Voltage			
Rated	500 V		
Pollution degree	3		
Current			
Rated	15 A		
Body weight	Metallic part weight	Total weight	Protection
6,48 g	4,76 g	11,25 g	IP 20
0.014 lb	0.010 lb	0.025 lb	NEMA 1

## Accessories

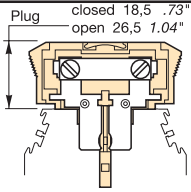
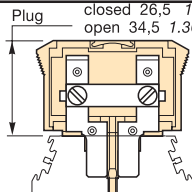


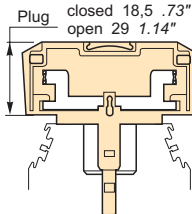
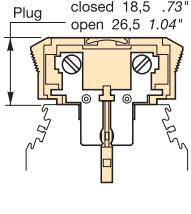
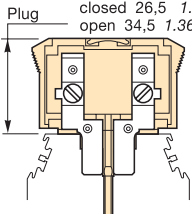
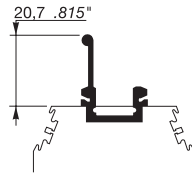
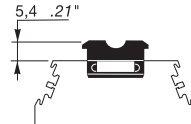


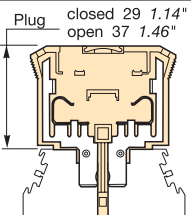
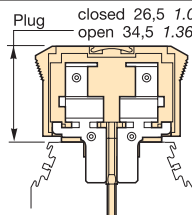


1	End section	beige
2, 3, 4	Short circuit plug	
3	Component holder plug	
4	Fuse holder plug for fuses 5x20 or 5x25	
5	Plug extractor	
6	Screwless jumper bar	17,5 A
		17,5 A
		17,5 A
		17,5 A
7	Hand tool kit	
8	Semi-automatic tool	
9	Pneumatic tool kit	
10	Replacement head kit	
11	Extraction tool kit	
12	Test connector	
R	See section on markers Terminal block's marking	

Type	P/N	
FEDAD5	th. 2 mm	1SNA 399 804 R0700
BNC62	th. 6 mm	1SNA 196 853 R1400
BNSV62	th. 6 mm	1SNA 196 854 R1500
BNSV62-1	th. 6 mm	1SNA 400 142 R0400
BNF652	th. 6 mm	1SNA 116 998 R1500
EXBN2		1SNA 171 018 R2000
OUMAD		1SNA 179 466 R0600
OUPAD		1SNA 178 944 R0400
OUTAD		1SNA 205 710 R1100
OUTA		1SNA 205 284 R0300
EXAD2		1SNA 205 721 R0000
CEADO.6		1SNA 399 346 R1200
CEADOE		1SNA 399 341 R1500
RC65 - RC610		

Type	P/N	
FEDAD5	th. 2 mm	1SNA 399 804 R0700
BNCT82	th. 8 mm	1SNA 196 926 R0500
BNSV82	th. 8 mm	1SNA 196 927 R0600
BNF52	th. 8 mm	1SNA 196 924 R0300
EXBN2		1SNA 171 018 R2000
OUMAD		1SNA 179 466 R0600
OUPAD		1SNA 178 944 R0400
OUTAD		1SNA 205 710 R1100
OUTA		1SNA 205 284 R0300
EXAD2		1SNA 205 721 R0000
CEADO.8		1SNA 399 348 R2400
CEADOE		1SNA 399 341 R1500
RCAL85 - RC810		

## Selection guide for different types of plugs

Types of plugs		Types of fuses	D 1/5.S.ADO	D 1/5.SFAT2.ADO	D 1,5/6.S.ADO	D 2,5/8.S.ADO	
Switching function	Short-circuit plug				 <p>Plug closed 18,5 .73" open 26,5 1.04"</p> <p><b>BNC62</b> 1SNA 196 853 R1400 without test</p>	 <p>Plug closed 26,5 1.04" open 34,5 1.36"</p> <p><b>BNCT82</b> 1SNA 196 926 R0500 with test</p>	
		Soldered fuses  type <b>FUBS</b> - 0,5 to 5 A - 250 V  Flat fuses  type <b>FUPLV</b> - 1 to 5 A - 250 V	 <p>Plug closed 18,5 .73" open 29 1.14"</p> <p><b>BNS.D5</b> 1SNA 295 381 R2600</p>	 <p>Plug closed 18,5 .73" open 26,5 1.04"</p> <p><b>BNSV62</b> 1SNA 196 854 R1500</p>	 <p>Plug closed 26,5 1.04" open 34,5 1.36"</p> <p><b>BNSV82</b> 1SNA 196 927 R0600</p>		
Fuse protection function	Fuse holder plug	Automotive miniature fuses (2) type <b>FUAUTO</b> 2 A to 3 A - 32 V maxi		 <p>20,7 .815"</p> <p><b>BFSAUTO</b> 1SNA 299 877 R0300 V0 black</p>		 <p>5,4 .21"</p> <p><b>BFAUTO</b> 1SNA 299 486 R2400 V0 black</p>	
		Fuses 5 x 20  type <b>FU520</b> - 0,5 to 5 A - 250 V  Fuses 5 x 25  type <b>FU525</b> - 1,6 to 6,3 A - 250 V			 <p>Plug closed 29 1.14" open 37 1.46"</p> <p><b>BNF652</b> 1SNA 196 998 R1600 <b>BNF652D (3)</b> 1SNA 196 999 R1700 <b>BNF652D1(4)</b> 1SNA 196 966 R1500 <b>BNF652L (5)</b> 1SNA 196 967 R1600</p>	 <p>Plug closed 26,5 1.04" open 34,5 1.36"</p> <p><b>BNF52</b> 1SNA 196 924 R0300</p>	

## Types of fuses

### Soldered fuses

<b>FUBS</b>	0,5 A	1SNA 174 893 R1600
<b>FUBS</b>	1 A	1SNA 174 894 R1700
<b>FUBS</b>	2 A	1SNA 174 895 R1000
<b>FUBS</b>	3 A	1SNA 174 896 R1100
<b>FUBS</b>	5 A	1SNA 174 897 R1200

### Flat fuses

<b>FUPLV</b>	1 A	1SNA 008 096 R2000
<b>FUPLV</b>	2 A	1SNA 008 097 R2100
<b>FUPLV</b>	5 A	1SNA 008 098 R0200

### Fuses 5 x 20 mm

<b>FU520</b>	0,5 A	1SNA 008 288 R1500
<b>FU520</b>	1 A	1SNA 008 290 R1300
<b>FU520</b>	2 A	1SNA 008 291 R0000
<b>FU520</b>	3.15 A	1SNA 008 289 R1600
<b>FU520</b>	5 A	1SNA 008 292 R0100

### Automotive miniature fuses

<b>FUAUTO</b>	2 A	1SNA 179 879 R1400
<b>FUAUTO</b>	3 A	1SNA 179 880 R0200

### Fuses 5 x 25 mm

<b>FU525</b>	1.6 A	1SNA 167 546 R2200
<b>FU525</b>	2 A	1SNA 167 547 R2300
<b>FU525</b>	2.5 A	1SNA 167 548 R0400
<b>FU525</b>	4 A	1SNA 167 549 R0500
<b>FU525</b>	6.3 A	1SNA 167 550 R0200

Nota : (1) Compatible with electronic components max.diameter or thickness for components :

- plug BNSV62 : 4 mm/.157" max.
- plug BNSV82 : 6 mm/.236" max.

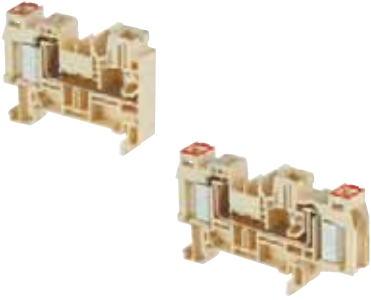
(2) For all fuses, the dissipated load should remain under 0,8 W. (3) with led 24 V AC/DC. (4) with led 48 V AC/DC. (5) avec neon lamp 110-230 V AC/DC.

**Railway applications**  
**Terminal blocks**  
**Insulation displacement**  
**Pluggable**



**Feed-through** 1 ADO - 1 plug  
 2 ADO - 1 plug

DIN 3



End stop		th. 10 mm	BAM2 V0	V0	1SNA 296 351 R0000
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

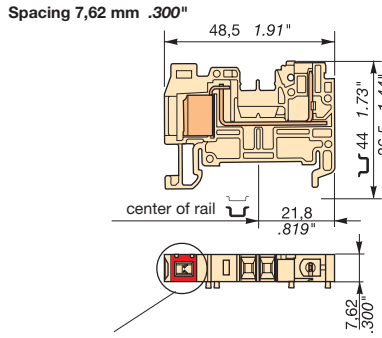
**Notes**

\*: Caution, maximum current of "terminal block and plug" set is limited by the device with the lowest current rating.

**Accessories**

	1 End section	beige(1) grey(1)
	2 Jumper bar	
	3 Isolation kit for jumper bar	
	4 Locking lever	
	5 Coding peg kit	
	6 Hand tool kit	
	7 Semi-automatic tool	
	8 Pneumatic tool kit	
	9 Replacement head kit	
	10 Extraction tool kit	
	11 Test connector	
	R See section on markers	marking method

**D 1,5/7.ADO-CPE.NF**



Red marking to identify wire size.

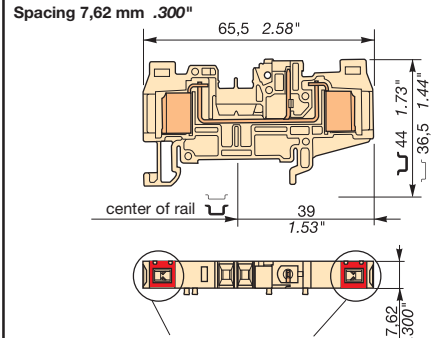
SNEF		CE	SNEF		CE
Colour	Type	Part number	Colour	Type	Part number
Beige		D 1,5/7.ADO-CPE.NF 1SNA 400 153 R0700	Beige		D 1,5/7.2ADO-CPE.NF 1SNA 400 154 R0000
<b>Mating female plugs :</b>					
L 266 200 15	L 267 200 15	L 276 200 15	L 277 200 15	L 266 200 15	L 267 200 15

**Characteristics**

Wire size			
	NF F 63-808		
ADO	0,6 - 1,82 mm <sup>2</sup>		
1 or 2 wires (same wire size) per ADO jaw			
	IEC	NF F	UL/CSA
	NFE DIN	61-017	

Voltage			
Rated	500 V	500 V	300 V
Pollution degree			
	3		
Current			
Rated	16 A*	16 A*	15 A*
Wire size			
Rated			
		Total weight	Protection
		8,3 g	IP 20
		0.018 lb	NEMA 1

**D 1,5/7.2ADO-CPE.NF**



Red marking to identify wire size.

SNEF		CE	SNEF		CE
Colour	Type	Part number	Colour	Type	Part number
Beige		D 1,5/7.2ADO-CPE.NF 1SNA 400 154 R0000	Beige		D 1,5/7.2ADO-CPE.NF 1SNA 400 154 R0000
<b>Mating female plugs :</b>					
L 266 200 15	L 267 200 15	L 276 200 15	L 277 200 15	L 266 200 15	L 267 200 15

**Characteristics**

Wire size			
	NF F 63-808		
ADO	0,6 - 1,82 mm <sup>2</sup>		
1 or 2 wires (same wire size) per ADO jaw			
	IEC	NF F	UL/CSA
	NFE DIN	61-017	

Voltage			
Rated	500 V	500 V	300 V
Pollution degree			
	3		
Current			
Rated	16 A*	16 A*	15 A*
Wire size			
Rated			
		Total weight	Protection
		11,6 g	IP 20
		0.025 lb	NEMA 1

Type	Part numbers	Type	Part numbers
FECPE.ADO	th. 2,9 mm 1SNA 400 019 R0400	FECPE.2ADO	th. 2,9 mm 1SNA 400 018 R0300
FECPE.ADO	th. 2,9 mm 1SNA 291 832 R1600	FECPE.2ADO	th. 2,9 mm 1SNA 291 833 R1700
BJE 762.2	2 poles(1) 1SNA 290 451 R0300	BJE 762.2	2 poles(1) 1SNA 290 451 R0300
BJE 762.5	5 poles(1) 1SNA 290 452 R0400	BJE 762.5	5 poles(1) 1SNA 290 452 R0400
BJE 762.10	10 poles(1) 1SNA 290 453 R0500	BJE 762.10	10 poles(1) 1SNA 290 453 R0500
EIP	1SNA 290 454 R0600	EIP	1SNA 290 454 R0600
VRADO.CPE7 (2)	1SNA 400 063 R0000	VRADO.CPE7 (2)	1SNA 400 063 R0000
COCE	1SNA 199 321 R2100	COCE	1SNA 199 321 R2100
OUMAD	1SNA 179 466 R0600	OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400	OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100	OUTAD	1SNA 205 710 R1100
OUTA	1SNA 205 284 R0300	OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000	EXAD2	1SNA 205 721 R0000
CEADO7	1SNA 399 347 R1300	CEADO7	1SNA 399 347 R1300
Strip marker	RB-12W7 1SNA 290 455 R0700	Strip marker	RB-12W7 1SNA 290 455 R0700

(1) Other colours, other pole numbers : on request.  
 (2) - 1 VRADO.CPE7 2 pole locking lever can safely lock a mating female plug from 2 to 6 poles.  
 - Up to 3 VRADO.CPE7 can be mounted together for single manipulation.

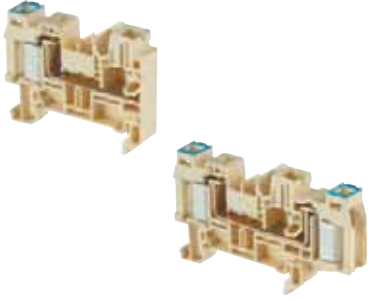


**Railway applications**  
**Terminal blocks**  
**Insulation displacement**  
**Pluggable**



**Feed-through** 1 ADO - 1 pluggable  
 2 ADO - 1 pluggable

DIN 3



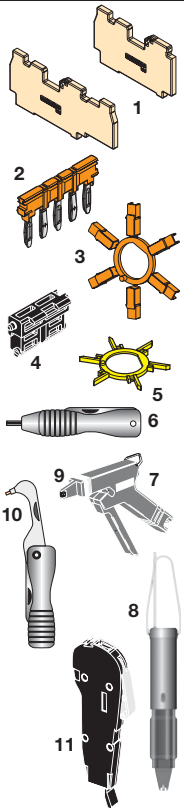
End stop		th. 10 mm	BAM2 V0	V0	1SNA 296 351 R0000
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

**Notes**

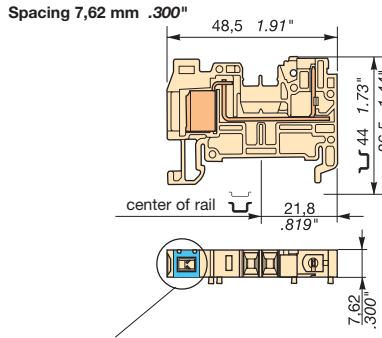
\*: Caution, maximum current of "terminal block and plug" set is limited by the device with the lowest current rating.

**Accessories**



1	End section	beige(1) grey(1)
2	Jumper bar	
3	6 isolation kit for jumper bar	
4	Locking lever	
5	6 coding peg kit	
6	Hand tool kit	
7	Semi-automatic tool	
8	Pneumatic tool kit	
9	Replacement head kit	
10	Extraction tool kit	
11	Test connector	
R	See section on markers	marking method

**D 2,5/7.ADO-CPE.NF**



Blue marking to identify wire size.

**SNIEF** **SNIEF**

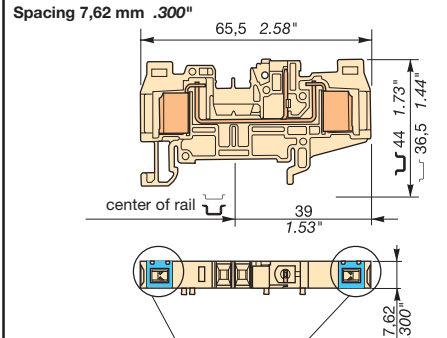
Colour	Type	Part number
Beige	<b>D 2,5/7.ADO-CPE.NF</b>	1SNA 400 061 R0600
<b>Mating female plugs :</b>		
	L 267 200 15	L 276 200 15
	L 267 200 15	L 277 200 15

**Characteristics**

Wire size	NF F 63-808
ADO	0,93 - 2,61 mm <sup>2</sup>
1 or 2 wires (same wire size) per ADO jaw	
	IEC NFE DIN NF F 61-017 UL/CSA

Voltage			
Rated	500 V	500 V	300 V
Pollution degree 3			
Current			
Rated	24 A*	16 A*	15 A*
Wire size			
Rated			
		Total weight	Protection
		8,3 g	IP 20
		0.018 lb	NEMA 1

**D 2,5/7.2ADO-CPE.NF**



Blue marking to identify wire size.

**SNIEF** **SNIEF**

Colour	Type	Part number
Beige	<b>D 2,5/7.2ADO-CPE.NF</b>	1SNA 400 062 R0700
<b>Mating female plugs :</b>		
	L 267 200 15	L 276 200 15
	L 267 200 15	L 277 200 15

**Characteristics**

Wire size	NF F 63-808
ADO	0,93 - 2,61 mm <sup>2</sup>
1 or 2 wires (same wire size) per ADO jaw	
	IEC NFE DIN NF F 61-017 UL/CSA

Voltage			
Rated	500 V	500 V	300 V
Pollution degree 3			
Current			
Rated	24 A*	16 A*	15 A*
Wire size			
Rated			
		Total weight	Protection
		11,6 g	IP 20
		0.025 lb	NEMA 1

**Type Part numbers**

FECPE.ADO	th. 2,9 mm	1SNA 400 019 R0400
FECPE.ADO	th. 2,9 mm	1SNA 291 832 R1600
BJE 762.2	2 poles(1)	1SNA 290 451 R0300
BJE 762.5	5 poles(1)	1SNA 290 452 R0400
BJE 762.10	10 poles(1)	1SNA 290 453 R0500
EIP		1SNA 290 454 R0600
VRADO.CPE7 (2)		1SNA 400 063 R0000
COCE		1SNA 199 321 R2100
OUMAD		1SNA 179 466 R0600
OUPAD		1SNA 178 944 R0400
OUTAD		1SNA 205 710 R1100
OUTA		1SNA 205 284 R0300
EXAD2		1SNA 205 721 R0000
CEAD07		1SNA 399 347 R1300
Strip marker	RB-12W7	1SNA 290 455 R0700

**Type Part numbers**

FECPE.2ADO	th. 2,9 mm	1SNA 400 018 R0300
FECPE.2ADO	th. 2,9 mm	1SNA 291 833 R1700
BJE 762.2	2 poles(1)	1SNA 290 451 R0300
BJE 762.5	5 poles(1)	1SNA 290 452 R0400
BJE 762.10	10 poles(1)	1SNA 290 453 R0500
EIP		1SNA 290 454 R0600
VRADO.CPE7 (2)		1SNA 400 063 R0000
COCE		1SNA 199 321 R2100
OUMAD		1SNA 179 466 R0600
OUPAD		1SNA 178 944 R0400
OUTAD		1SNA 205 710 R1100
OUTA		1SNA 205 284 R0300
EXAD2		1SNA 205 721 R0000
CEAD07		1SNA 399 347 R1300
Strip marker	RB-12W7	1SNA 290 455 R0700

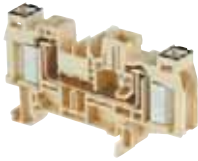
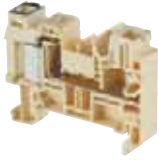
(1) Other colours, other pole numbers : on request.  
 (2) - 1 VRADO.CPE7 2 pole locking lever can safely lock a mating female plug from 2 to 6 poles.  
 - Up to 3 VRADO.CPE7 can be mounted together for single manipulation.

**Railway applications**  
**Terminal blocks**  
**Insulation displacement**  
**Pluggable**



Feed-through 1 ADO - 1 pluggable  
 2 ADO - 1 pluggable

DIN 3



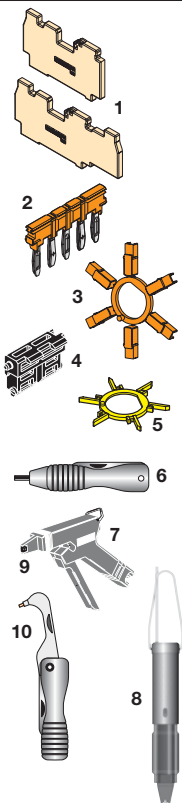
End stop		th. 9,1 mm	BAM V0	V0	1SNA 199 306 R0300
End stop		th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

**Notes**

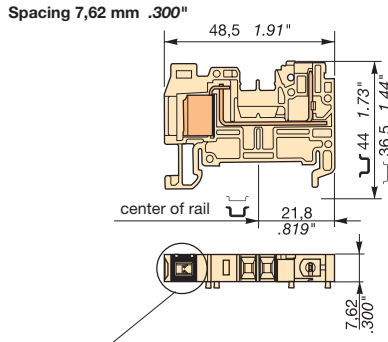
\* : Caution, maximum current of "terminal block and plug" set is limited by the device with the lowest current rating.

**Accessories**



1	End section	beige(1) grey(1)
2	Jumper bar	
3	6 isolation kit for jumper bar	
4	Locking lever	
5	6 coding peg kit	
6	Hand tool kit	
7	Semi-automatic tool	
8	Pneumatic tool kit	
9	Replacement head kit	
10	Extraction tool kit	
R	See section on markers	marking method

**D 2,5/7.ADO-CPE.NF1**

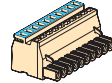


Black marking to identify wire size.

**SNCF** **CE** **SNCF**

Colour	Type	Part number
Beige	D 2,5/7.ADO-CPE.NF1	1SNA 400 156 R0200

Mating female plug :



1SSA 277 200 R1500

**Characteristics**

Wire size	NF F 63-296	NF F 63-826
ADO	1,5 mm <sup>2</sup>	
	2 wires per ADO jaw	

	IEC	NF F	UL/CSA
	NFE DIN	61-017	

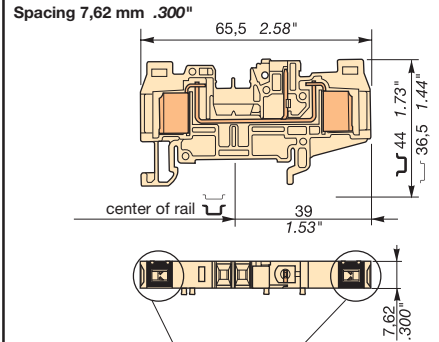
Voltage	Rated	500 V	500 V
Pollution degree		3	

Current	Rated	24 A*	16 A*
---------	-------	-------	-------

Wire size	Rated
-----------	-------

	Total weight	Protection
	8,3 g	IP 20
	0.018 lb	NEMA 1

**D 2,5/7.2ADO-CPE.NF1**

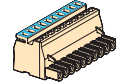


Black marking to identify wire size.

**SNCF** **CE** **SNCF**

Colour	Type	Part number
Beige	D 2,5/7.2ADO-CPE.NF1	1SNA 400 157 R0300

Mating female plug :



1SSA 277 200 R1500

**Characteristics**

Wire size	NF F 63-296	NF F 63-826
ADO	1,5 mm <sup>2</sup>	
	2 wires per ADO jaw	

	IEC	NF F	UL/CSA
	NFE DIN	61-017	

Voltage	Rated	500 V	500 V
Pollution degree		3	

Current	Rated	24 A*	16 A*
---------	-------	-------	-------

Wire size	Rated
-----------	-------

	Total weight	Protection
	11,6 g	IP 20
	0.025 lb	NEMA 1

**Type** **Part numbers**

FECPE.ADO	th. 2,9 mm	1SNA 400 019 R0400
FECPE.ADO	th. 2,9 mm	1SNA 291 832 R1600
BJE 762.2	2 poles(1)	1SNA 290 451 R0300
BJE 762.5	5 poles(1)	1SNA 290 452 R0400
BJE 762.10	10 poles(1)	1SNA 290 453 R0500
EIP		1SNA 290 454 R0600
VRADO.CPE7 (2)		1SNA 400 063 R0000
COCE		1SNA 199 321 R2100
OUMAD		1SNA 179 466 R0600
OUPAD		1SNA 178 944 R0400
OUTAD		1SNA 205 710 R1100
OUTA		1SNA 205 284 R0300
EXAD2		1SNA 205 721 R0000

**Type** **Part numbers**

FECPE.2ADO	th. 2,9 mm	1SNA 400 018 R0300
FECPE.2ADO	th. 2,9 mm	1SNA 291 833 R1700
BJE 762.2	2 poles(1)	1SNA 290 451 R0300
BJE 762.5	5 poles(1)	1SNA 290 452 R0400
BJE 762.10	10 poles(1)	1SNA 290 453 R0500
EIP		1SNA 290 454 R0600
VRADO.CPE7 (2)		1SNA 400 063 R0000
COCE		1SNA 199 321 R2100
OUMAD		1SNA 179 466 R0600
OUPAD		1SNA 178 944 R0400
OUTAD		1SNA 205 710 R1100
OUTA		1SNA 205 284 R0300
EXAD2		1SNA 205 721 R0000

Strip marker RB-12W7 1SNA 290 455 R0700

Strip marker RB-12W7 1SNA 290 455 R0700

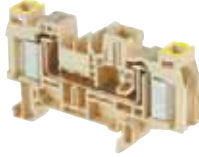
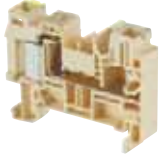
(1) Other colours, other pole numbers : on request.  
 (2) - 1 VRADO.CPE7 2 pole locking lever can safely lock a mating female plug from 2 to 6 poles.  
 - Up to 3 VRADO.CPE7 can be mounted together for single manipulation.

**Railway applications**  
**Terminal blocks**  
**Insulation displacement**  
**Pluggable**



Feed-through 1 ADO - 1 pluggable  
 2 ADO - 1 pluggable

DIN 3



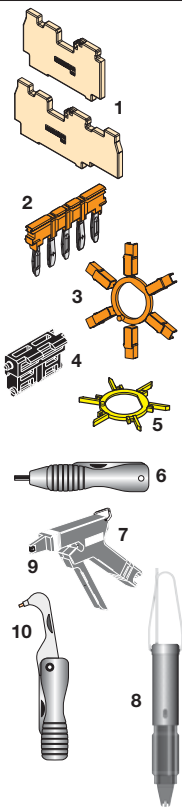
End stop		th. 10 mm	BAM2 V0	V0	1SNA 296 351 R0000
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

**Notes**

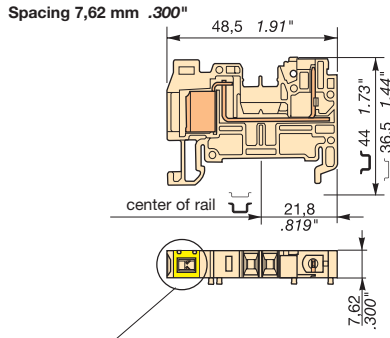
\* : Caution, maximum current of "terminal block and plug" set is limited by the device with the lowest current rating.

**Accessories**



1	End section	beige(1) grey(1)
2	Jumper bar	
3	6 isolation kit for jumper bar	
4	Locking lever	
5	6 coding peg kit	
6	Hand tool kit	
7	Semi-automatic tool	
8	Pneumatic tool kit	
9	Replacement head kit	
10	Extraction tool kit	
R	See section on markers	marking method

**D 4/7.ADO-CPE.NF**



Yellow marking to identify wire size.



Colour	Type	Part number
Beige	D 4/7.ADO-CPE.NF	1SNA 400 240 R2200

Mating female plugs :

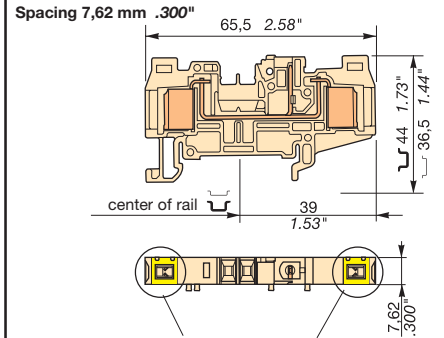
L 266 200 15	L 267 200 15	L 276 200 15	L 277 200 15

**Characteristics**

Wire size	NF F 63-808
ADO	4,32 mm <sup>2</sup>
1 or 2 wires per ADO jaw	
	IEC NFE DIN
	NF F 61-017
	UL/CSA

Voltage			
Rated	500 V	500 V	300 V
Pollution degree			
	3		
Current			
Rated	24 A*	16 A*	18 A*
Wire size			
Rated			
		Total weight	Protection
		8,3 g	IP 20
		0.018 lb	NEMA 1

**D 4/7.2ADO-CPE.NF**



Yellow marking to identify wire size.



Colour	Type	Part number
Beige	D 4/7.2ADO-CPE.NF	1SNA 400 241 R1700

Mating female plugs :

L 266 200 15	L 267 200 15	L 276 200 15	L 277 200 15

**Characteristics**

Wire size	NF F 63-808
ADO	4,32 mm <sup>2</sup>
1 or 2 wires per ADO jaw	
	IEC NFE DIN
	NF F 61-017
	UL/CSA

Voltage			
Rated	500 V	500 V	300 V
Pollution degree			
	3		
Current			
Rated	24 A*	16 A*	18 A*
Wire size			
Rated			
		Total weight	Protection
		11,6 g	IP 20
		0.025 lb	NEMA 1

Type	Part numbers
FECPE.ADO	th. 2,9 mm 1SNA 400 019 R0400
FECPE.ADO	th. 2,9 mm 1SNA 291 832 R1600
BJE 762.2	2 poles(1) 1SNA 290 451 R0300
BJE 762.5	5 poles(1) 1SNA 290 452 R0400
BJE 762.10	10 poles(1) 1SNA 290 453 R0500
EIP	1SNA 290 454 R0600
VRADO.CPE7 (2)	1SNA 400 063 R0000
COCE	1SNA 199 321 R2100
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000
Strip marker	RB-12W7 1SNA 290 455 R0700

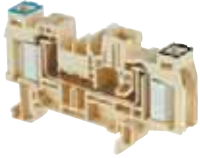
Type	Part numbers
FECPE.2ADO	th. 2,9 mm 1SNA 400 018 R0300
FECPE.2ADO	th. 2,9 mm 1SNA 291 833 R1700
BJE 762.2	2 poles(1) 1SNA 290 451 R0300
BJE 762.5	5 poles(1) 1SNA 290 452 R0400
BJE 762.10	10 poles(1) 1SNA 290 453 R0500
EIP	1SNA 290 454 R0600
VRADO.CPE7 (2)	1SNA 400 063 R0000
COCE	1SNA 199 321 R2100
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000
Strip marker	RB-12W7 1SNA 290 455 R0700

(1) Other colours, other pole numbers : on request.  
 (2) - 1 VRADO.CPE7 2 pole locking lever can safely lock a mating female plug from 2 to 6 poles.  
 - Up to 3 VRADO.CPE7 can be mounted together for single manipulation.

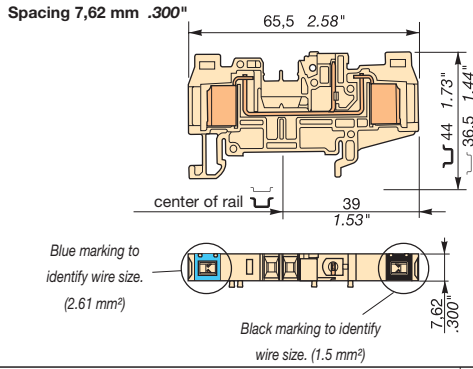
**Railway applications**  
**Terminal blocks**  
**Insulation displacement**  
**Pluggable**



Feed-through 2 ADO - 1 pluggable  
 DIN 3



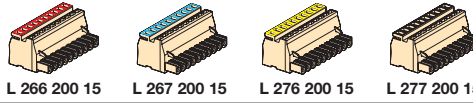
**D 2,5/7.2ADO.H-CPE.NF**



**SNECF** **CE**

Colour	Type	Part number
Beige	D 2,5/7.2ADO.H-CPE.NF	1SNA 400 267 R1100

**Mating female plugs :**



**Characteristics**

Wire size	NF F 63-808	NF F 63-296 NF F 63-826
	ADO 0,93 - 2,61 mm <sup>2</sup>	1,5 mm <sup>2</sup>
1 or 2 wires (same wire size) per ADO jaw		
	<b>IEC</b>	<b>NF F 61-017</b>
		<b>UL/CSA</b>

Voltage			
Rated	500 V	500 V	
Pollution degree	3		
Current			
Rated	16 A*	16 A*	
		Total weight	Protection
		11,6 g	IP 20
		0.025 lb	NEMA 1

End stop	th. 10 mm	<b>BAM2 V0</b>	V0	1SNA 296 351 R0000
Rail	35 x 7,5 x 1	<b>PR3.Z2</b>		1SNA 174 300 R1700
Rail	35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail	35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

**Notes**

\* : Caution, maximum current of "terminal block and plug" set is limited by the device with the lowest current rating.

**Accessories**

	1 End section	beige(1) grey(1)
	2 Jumper bar	
	3 6 isolation plug kit for jumper bar	
	4 Locking lever	
	5 Hand tool kit	
	6 Semi-automatic tool	
	7 Pneumatic tool kit	
	8 Replacement head kit	
	9 Extraction tool kit	
	10 6 coding peg kit	
	R See section on markers	marking method

Type	Part numbers
FECPE.2ADO th. 2,9 mm	1SNA 400 018 R0300
FECPE.2ADO th. 2,9 mm	1SNA 291 833 R1700
BJE 762.2 2 poles(1)	1SNA 290 451 R0300
BJE 762.5 5 poles(1)	1SNA 290 452 R0400
BJE 762.10 10 poles(1)	1SNA 290 453 R0500
EIP	1SNA 290 454 R0600
VRADO.CPE7	1SNA 400 063 R0000
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000
COCE	1SNA 199 321 R2100
Strip marker RB-12W7	1SNA 290 455 R0700

(1) Other colours, other pole numbers : on request

**Railway applications**  
**Female plugs**  
**Insulation displacement**



\* : Caution, maximum current of the device set is limited by the device with the lowest current rating.

**Characteristics**

<b>Wire size</b>	<b>NF F 63-808</b>		
ADO	0,6 - 1,82 mm <sup>2</sup>		
1 or 2 wires (same wire size) per ADO jaw			

<b>Rated voltage</b>	<b>IEC</b>	<b>NF F 61-017</b>	<b>UL/CSA</b>
~	500	500	300
=	500	500	300

<b>Rated current</b>	<b>A</b>	17,5*	16*	15*
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<b>Rated wire size</b>	1,82 mm <sup>2</sup>	1,82 mm <sup>2</sup>	16 AWG
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**Other characteristics**

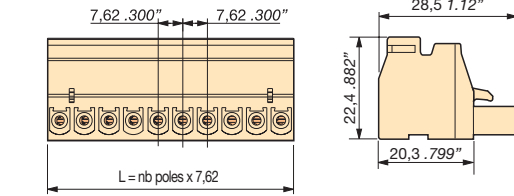
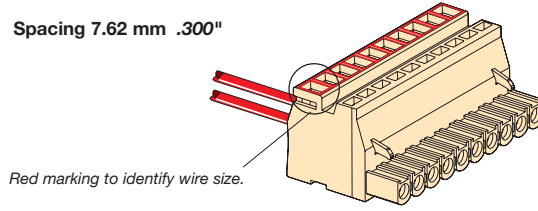
Weight per point, standard			
Body weight	Metal part weight	Total weight	Protection
1,6 g 0.003 lb	1,6 g 0.003 lb	3,2 g 0.006 lb	IP 20 NEMA 1

Max. working temperature :	100 °C
Insulation resistance :	> 100 MΩ
Pollution degree :	3

**L 266 200 15**

Female plugs

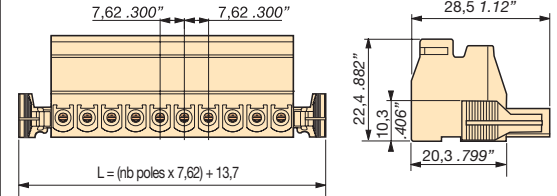
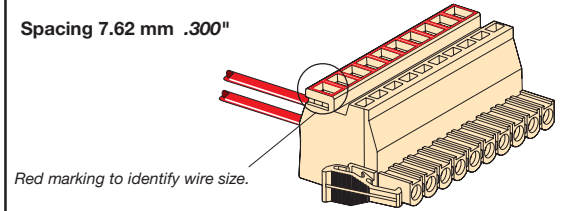
Spacing 7.62 mm .300"



**L 266 200 25**

Female plugs with brackets

Spacing 7.62 mm .300"



**Part number**

<b>Spacing 7.62 mm</b>	Beige color	
<b>N. Poles</b>	<b>2 to 24 poles</b>	
2	1SSS 266 202 R8800	15.24
3	1SSS 266 203 R8800	22.86
4	1SSS 266 204 R8800	30.48
5	1SSS 266 205 R8800	38.10
6	1SSS 266 206 R8800	45.72
8	1SSS 266 208 R8800	60.96
10	1SSS 266 210 R8800	76.20

**Consult us for pole numbers :  
 7, 9 and more than 10**

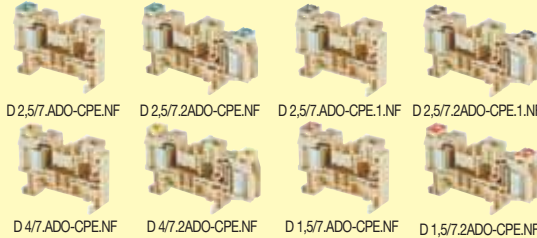
**Part number**

<b>Spacing 7.62 mm</b>	Beige color
<b>N. Poles</b>	<b>2 to 24 poles</b>

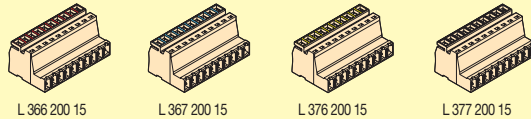
**Consult us**

**Compatible products :**

Insulation displacement pluggable terminal blocks

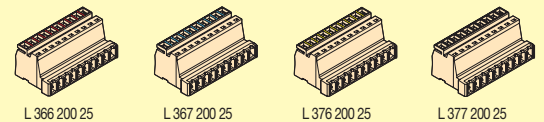


Insulation displacement male plugs

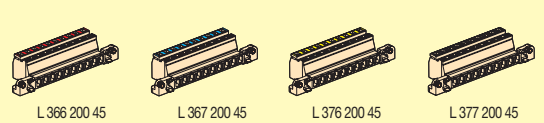


**Compatible products :**

Insulation displacement male plugs with brackets



Insulation displacement male plugs with flanges and inserts



**Accessories**

1	Coding accessory	
2	Cable clamp plug beige, 3 to 7 poles	
3	Cable clamp plug beige, 8 to 16 poles	
4	Manual tool	
5	Semi-automatic tool	
6	Pneumatic tool	
7	DIN 3 foot	black
8	DIN 2 foot	black
9	Strip marking	

Type	Part number
COCF	1SNA 199 320 R0400
PT1 7,62 mm	1SSS 299 253 R2800
PT2 7,62 mm	1SSS 299 254 R2800
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
	1SSS 299 190 R2200
	1SSS 299 191 R2200
RB-12 W7	1SNA 290 455 R0700

Type	Part number
COCF	1SNA 199 320 R0400
PT1 7,62 mm	1SSS 299 253 R2800
PT2 7,62 mm	1SSS 299 254 R2800
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
	1SSS 299 190 R2200
	1SSS 299 191 R2200
RB-12 W7	1SNA 290 455 R0700

**Railway applications**  
**Female plugs**  
**Insulation displacement**

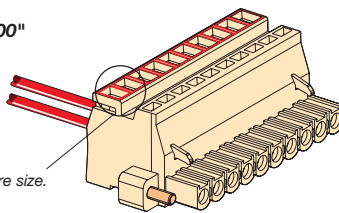


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3

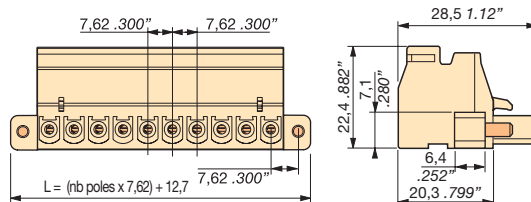
**L 266 200 35**

Female plugs with flanges and M2.5 screw  
 (axis center 7.62)

Spacing 7.62 mm .300"



Red marking to identify wire size.



Part number

Part number

Spacing 7.62 mm Beige color  
 N. Poles 2 to 24 poles

**Consult us**

\* : Caution, maximum current of the device set is limited by the device with the lowest current rating.

**Characteristics**

Wire size	
ADO	NF F 63-808 0,6 - 1,82 mm <sup>2</sup> 1 or 2 wires (same wire size) per ADO jaw

Rated voltage			
	IEC	NF F 61-017	UL/CSA
~	500	500	300
=	500	500	300

Rated current			
A	17,5*	16*	15*

Rated wire size		
	1,82 mm <sup>2</sup>	1,82 mm <sup>2</sup> 14 AWG

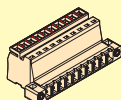
**Other characteristics**

Weight per point, standard			
Body weight	Metal part weight	Total weight	Protection
1,6 g 0.003 lb	1,6 g 0.003 lb	3,2 g 0.006 lb	IP 20 NEMA 1

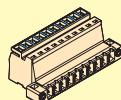
Max. working temperature : 100 °C  
 Insulation resistance : > 100 MΩ  
 Pollution degree : 3

**Compatible products :**

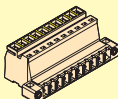
Insulation displacement male plugs with flanges and inserts



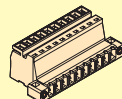
L 366 200 35



L 367 200 35



L 376 200 35



L 377 200 35



**Accessories**

1	Coding accessory	
2	Cable clamp plug beige, 3 to 7 poles	
3	Cable clamp plug beige, 8 to 16 poles	
4	Manual tool	
5	Semi-automatic tool	
6	Pneumatic tool	
7	DIN 3 foot	black
8	DIN 2 foot	black
9	Strip marking	

Type	Part number	Type	Part number
COCF	1SNA 199 320 R0400		
PT1 7,62 mm	1SSS 299 253 R2800		
PT2 7,62 mm	1SSS 299 254 R2800		
OUMAD	1SNA 179 466 R0600		
OUPAD	1SNA 178 944 R0400		
OUTAD	1SNA 205 710 R1100		
	1SSS 299 190 R2200		
	1SSS 299 191 R2200		
RB-12 W7	1SNA 290 455 R0700		

**Railway applications**  
**Female plugs**  
**Insulation displacement**



\* : Caution, maximum current of the device set is limited by the device with the lowest current rating.

**Characteristics**

<b>Wire size</b>	<b>NF F 63-808</b>		
ADO	0,93 - 2,61 mm <sup>2</sup>		
	1 or 2 wires (same wire size) per ADO jaw		

<b>Rated voltage</b>	<b>IEC</b>	<b>NF F 61-017</b>	<b>UL/CSA</b>
V ~	500	500	300
V =	500	500	300

<b>Rated current</b>	<b>A</b>	24*	16*	15*
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<b>Rated wire size (NF F 63-808)</b>	2,61 mm <sup>2</sup>	2,61 mm <sup>2</sup>	14 AWG
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**Other characteristics**

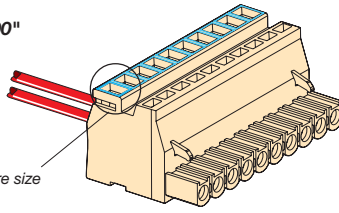
Weight per point, standard			
Body weight	Metal part weight	Total weight	Protection
1,6 g	1,6 g	3,2 g	IP 20
0.003 lb	0.003 lb	0.006 lb	NEMA 1

Max. working temperature :	100 °C
Insulation resistance :	> 100 MΩ
Pollution degree :	3

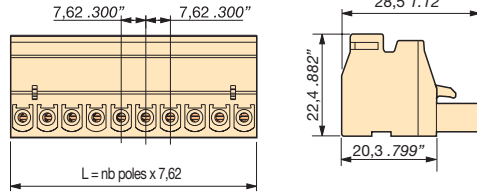
**L 267 200 15**

Female plugs

Spacing 7.62 mm .300"



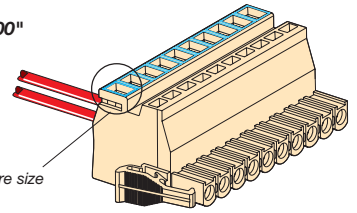
Blue marking to identify wire size range 0,93-2,61 mm<sup>2</sup>



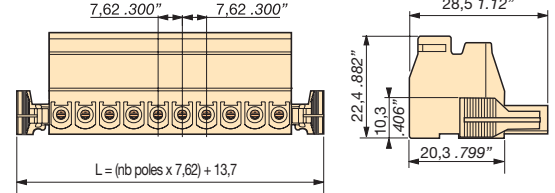
**L 267 200 25**

Female plugs with brackets

Spacing 7.62 mm .300"



Blue marking to identify wire size range 0,93-2,61 mm<sup>2</sup>



**Part number**

<b>Spacing 7.62 mm</b>	Beige color
<b>N. Poles</b>	<b>2 to 24 poles</b>
2	1SSS <b>267 202 R8800</b> 15.24
3	1SSS <b>267 203 R8800</b> 22.86
4	1SSS <b>267 204 R8800</b> 30.48
5	1SSS <b>267 205 R8800</b> 38.10
6	1SSS <b>267 206 R8800</b> 45.72
8	1SSS <b>267 208 R8800</b> 60.96
10	1SSS <b>267 210 R8800</b> 76.20

**Consult us for pole numbers : 7, 9 and more than 10**

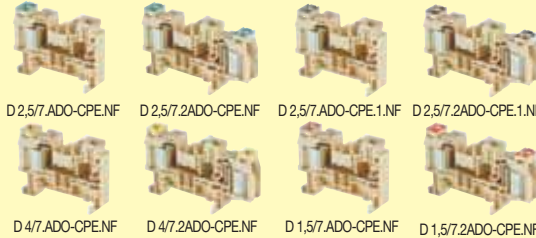
**Part number**

<b>Spacing 7.62 mm</b>	Beige color
<b>N. Poles</b>	<b>2 to 24 poles</b>

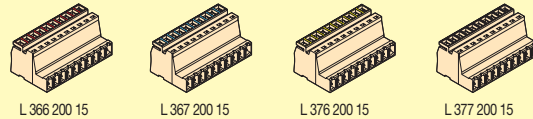
**Consult us**

**Compatible products :**

Insulation displacement pluggable terminal blocks

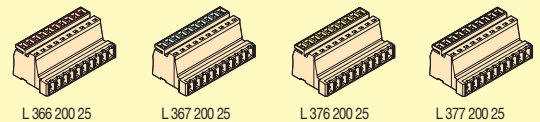


Insulation displacement male plugs

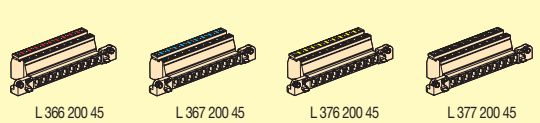


**Compatible products :**

Insulation displacement male plugs with brackets



Insulation displacement male plugs with flanges and inserts



**Accessories**

1	Coding accessory	
2	Cable clamp plug beige, 3 to 7 poles	
3	Cable clamp plug beige, 8 to 16 poles	
4	Manual tool	
5	Semi-automatic tool	
6	Pneumatic tool	
7	DIN 3 foot (1)	black
8	DIN 2 foot (1)	black
9	Strip marking	

Type	Part number
COCF	1SNA <b>199 320 R0400</b>
PT1 7,62 mm	1SSS <b>299 253 R2800</b>
PT2 7,62 mm	1SSS <b>299 254 R2800</b>
OUMAD	1SNA <b>179 466 R0600</b>
OUPAD	1SNA <b>178 944 R0400</b>
OUTAD	1SNA <b>205 710 R1100</b>
	1SSS <b>299 190 R2200</b>
	1SSS <b>299 191 R2200</b>
RB-12 W7	1SNA <b>290 455 R0700</b>

Type	Part number
COCF	1SNA <b>199 320 R0400</b>
PT1 7,62 mm	1SSS <b>299 253 R2800</b>
PT2 7,62 mm	1SSS <b>299 254 R2800</b>
OUMAD	1SNA <b>179 466 R0600</b>
OUPAD	1SNA <b>178 944 R0400</b>
OUTAD	1SNA <b>205 710 R1100</b>
	1SSS <b>299 190 R2200</b>
	1SSS <b>299 191 R2200</b>
RB-12 W7	1SNA <b>290 455 R0700</b>

(1) Accessories for mounting of male and female plugs on DIN 3 or DIN 2 rail.

**Railway applications**  
**Female plugs**  
**Insulation displacement**

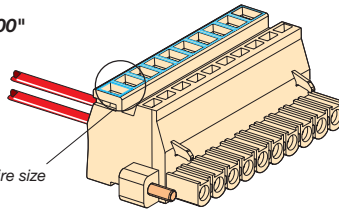


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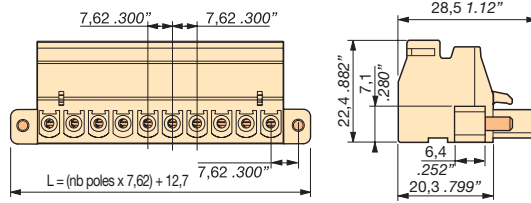
**L 267 200 35**

**Female plugs with flanges and M2.5 screw**  
**(axis center 7.62)**

Spacing 7.62 mm .300"



Blue marking to identify wire size  
 range 0,93-2,61 mm<sup>2</sup>



**Part number**

**Part number**

Spacing 7.62 mm Beige color  
 N. Poles 2 to 24 poles

**Consult us**

\* : Caution, maximum current of the device set is limited by the device with the lowest current rating.

**Characteristics**

Wire size	
ADO	NF F 63-808 0,93 - 2,61 mm <sup>2</sup>
1 or 2 wires (same wire size) per ADO jaw	

Rated voltage			
	IEC	NF F 61-017	
~	500	500	300
=	500	500	300

Rated current			
A	24*	16*	15*

Rated wire size (NF F 63-808)			
	2,61 mm <sup>2</sup>	2,61 mm <sup>2</sup>	14 AWG

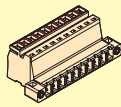
**Other characteristics**

Weight per point, standard			
Body weight	Metal part weight	Total weight	Protection
1,6 g 0.003 lb	1,6 g 0.003 lb	3,2 g 0.006 lb	IP 20 NEMA 1

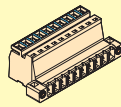
Max. working temperature :	100 °C
Insulation resistance :	> 100 MΩ
Pollution degree :	3

**Compatible products :**

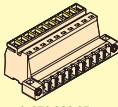
Insulation displacement male plugs with flanges and inserts



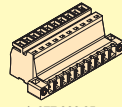
L 366 200 35



L 367 200 35



L 376 200 35



L 377 200 35



**Accessories**

1	Coding accessory	
2	Cable clamp plug beige, 3 to 7 poles	
3	Cable clamp plug beige, 8 to 16 poles	
4	Manual tool	
5	Semi-automatic tool	
6	Pneumatic tool	
7	DIN 3 foot (1)	black
8	DIN 2 foot (1)	black
9	Strip marking	

Type	Part number	Type	Part number
COCF	1SNA 199 320 R0400		
PT1 7,62 mm	1SSS 299 253 R2800		
PT2 7,62 mm	1SSS 299 254 R2800		
OUMAD	1SNA 179 466 R0600		
OUPAD	1SNA 178 944 R0400		
OUTAD	1SNA 205 710 R1100		
	1SSS 299 190 R2200		
	1SSS 299 191 R2200		
RB-12 W7	1SNA 290 455 R0700		

(1) Accessories for mounting of male and female plugs on DIN 3 or DIN 2 rail.



**Railway applications**  
**Female plugs**  
**Insulation displacement**



\*: Caution, maximum current of the device set is limited by the device with the lowest current rating.

**Characteristics**

<b>Wire size</b>	
	NF F 63-296    NF F 63-826
ADO	1,5 mm <sup>2</sup>
	1 or 2 wires per ADO jaw

<b>Rated voltage</b>			
	IEC	NF F 61-017	UL/CSA
V	~	500	500
	=	500	500

<b>Rated current</b>	
A	24*    16*

<b>Rated wire size</b>	
	1,5 mm <sup>2</sup> 1,5 mm <sup>2</sup>

**Other characteristics**

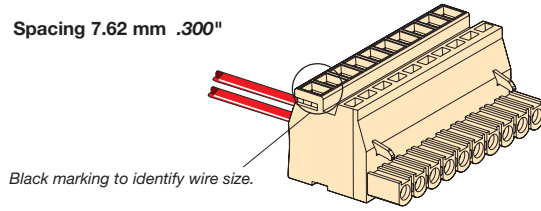
Weight per point, standard			
Body weight	Metal part weight	Total weight	Protection
1,6 g	1,6 g	3,2 g	IP 20
0.003 lb	0.003 lb	0.006 lb	NEMA 1

Max. working temperature : 100 °C  
 Insulation resistance : > 100 MΩ  
 Pollution degree : 3

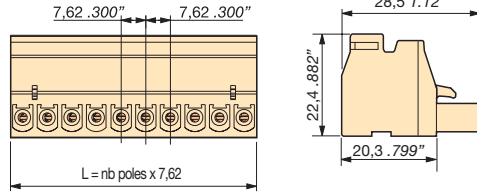
**L 277 200 15**

Female plugs

Spacing 7.62 mm .300"



Black marking to identify wire size.

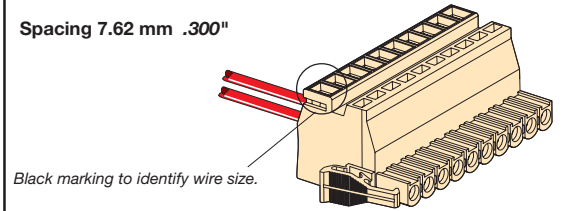


L = nb poles x 7,62

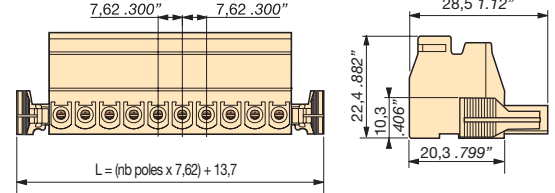
**L 277 200 25**

Female plugs with brackets

Spacing 7.62 mm .300"



Black marking to identify wire size.



L = (nb poles x 7,62) + 13,7

**Part number**

<b>Spacing 7.62 mm</b>		Beige color
<b>N. Poles</b> 2 to 24 poles		
2	1SSS 277 202 R8800	15.24
3	1SSS 277 203 R8800	22.86
5	1SSS 277 205 R8800	38.10
6	1SSS 277 206 R8800	45.72

Consult us for pole numbers :  
 4 and more than 6

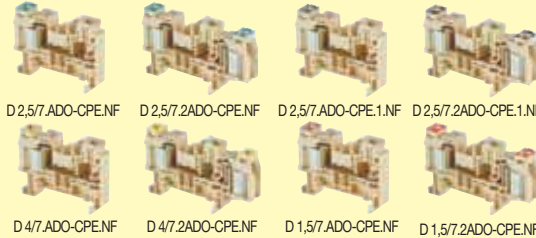
**Part number**

<b>Spacing 7.62 mm</b>		Beige color
<b>N. Poles</b> 2 to 24 poles		

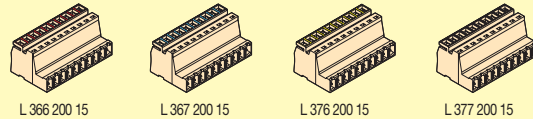
Consult us

**Compatible products :**

Insulation displacement pluggable terminal blocks

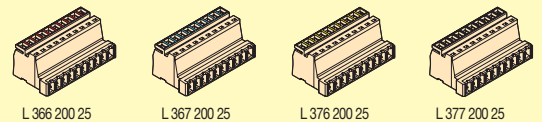


Insulation displacement male plugs

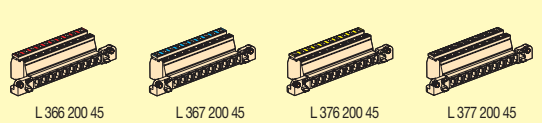


**Compatible products :**

Insulation displacement male plugs with brackets



Insulation displacement male plugs with flanges and inserts



**Accessories**

1	Coding accessory	
2	Cable clamp plug    beige, 3 to 7 poles	
3	Cable clamp plug    beige, 8 to 16 poles	
4	Manual tool	
5	Semi-automatic tool	
6	Pneumatic tool	
7	DIN 3 foot	black
8	DIN 2 foot	black
9	Strip marking	

Type	Part number
COCF	1SNA 199 320 R0400
PT1    7,62 mm	1SSS 299 253 R2800
PT2    7,62 mm	1SSS 299 254 R2800
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
	1SSS 299 190 R2200
	1SSS 299 191 R2200
RB-12 W7	1SNA 290 455 R0700

Type	Part number
COCF	1SNA 199 320 R0400
PT1    7,62 mm	1SSS 299 253 R2800
PT2    7,62 mm	1SSS 299 254 R2800
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
	1SSS 299 190 R2200
	1SSS 299 191 R2200
RB-12 W7	1SNA 290 455 R0700

# Railway applications Female plugs Insulation displacement

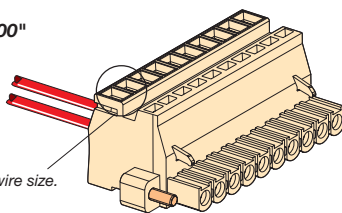


A  
3

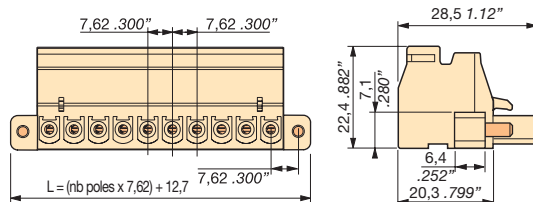
## L 277 200 35

Female plugs with flanges and M2.5 screw  
(axis center 7.62)

Spacing 7.62 mm .300"



Black marking to identify wire size.



Part number

Part number

Spacing 7.62 mm Beige color  
N. Poles 2 to 24 poles

Consult us

\* : Caution, maximum current of the device set is limited by the device with the lowest current rating.

### Characteristics

#### Wire size

	NF F 63 296	NF F 63 826
ADO	1,5 mm <sup>2</sup>	
	1 or 2 wires per ADO jaw	

#### Rated voltage

	IEC	NF F 61-017	UL/CSA
~	500	500	
=	500	500	

#### Rated current

A	24*	16*	
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#### Rated wire size

	1,5 mm <sup>2</sup>	1,5 mm <sup>2</sup>
--	---------------------	---------------------

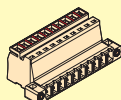
### Other characteristics

Weight per point, standard			
Body weight	Metal part weight	Total weight	Protection
1,6 g 0.003 lb	1,6 g 0.003 lb	3,2 g 0.006 lb	IP 20 NEMA 1

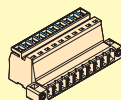
Max. working temperature :	100 °C
Insulation resistance :	> 100 MΩ
Pollution degree :	3

#### Compatible products :

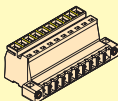
Insulation displacement male plugs with flanges and inserts



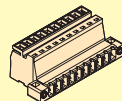
L 366 200 35



L 367 200 35



L 376 200 35



L 377 200 35



### Accessories

	Type	Part number
1 Coding accessory	COCF	1SNA 199 320 R0400
2 Cable clamp plug beige, 3 to 7 poles	PT1 7,62 mm	1SSS 299 253 R2800
3 Cable clamp plug beige, 8 to 16 poles	PT2 7,62 mm	1SSS 299 254 R2800
4 Manual tool	OUMAD	1SNA 179 466 R0600
5 Semi-automatic tool	OUPAD	1SNA 178 944 R0400
6 Pneumatic tool	OUTAD	1SNA 205 710 R1100
7 DIN 3 foot black		1SSS 299 190 R2200
8 DIN 2 foot black		1SSS 299 191 R2200
9 Strip marking	RB-12 W7	1SNA 290 455 R0700

### Accessories

Type	Part number

**Railway applications**  
**Female plugs**  
**Insulation displacement**



\* : Caution, maximum current of the device set is limited by the device with the lowest current rating.

**Characteristics**

<b>Wire size</b>	
ADO	NF F 63-808 4,32 mm <sup>2</sup> 1 or 2 wires per ADO jaw

<b>Rated voltage</b>			
	IEC	NF F 61-017	UL/CSA
V ~	500	500	300
V =	500	500	300

<b>Rated current</b>			
A	24*	16*	18*

<b>Rated wire size</b>			
	4,32 mm <sup>2</sup>	4,32 mm <sup>2</sup>	12 AWG

**Other characteristics**

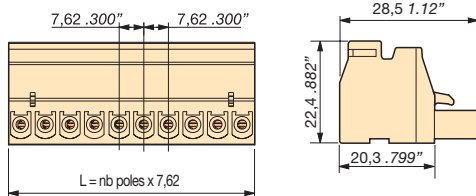
Weight per point, standard			
Body weight	Metal part weight	Total weight	Protection
1,6 g 0.003 lb	1,6 g 0.003 lb	3,2 g 0.006 lb	IP 20 NEMA 1
Max. working temperature :			100 °C
Insulation resistance :			≥ 1100 MΩ
Pollution degree :			3

**L 276 200 15**

Female plugs

Spacing 7.62 mm .300"

Yellow marking to identify wire size.

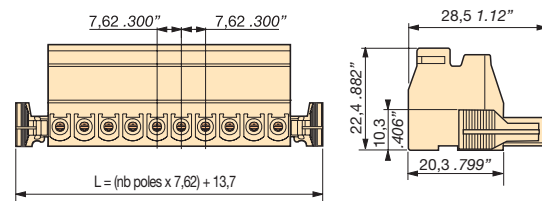


**L 276 200 25**

Female plugs with brackets

Spacing 7.62 mm .300"

Yellow marking to identify wire size.



**Part number**

<b>Spacing 7.62 mm</b>		Beige color
<b>N. Poles</b>		2 to 24 poles
2	1SSS 276 202 R8800	15.24
3	1SSS 276 203 R8800	22.86
4	1SSS 276 204 R8800	30.48

Consult us for pole numbers above 4

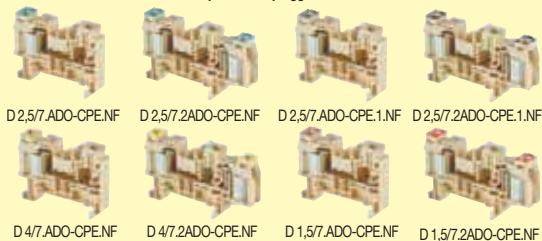
**Part number**

<b>Spacing 7.62 mm</b>		Beige color
<b>N. Poles</b>		2 to 24 poles

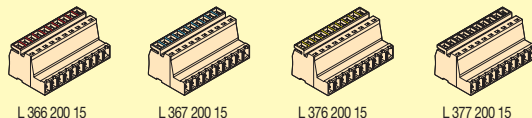
Consult us

**Compatible products :**

Insulation displacement pluggable terminal blocks

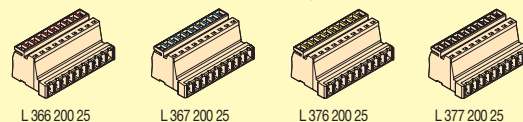


Insulation displacement male plugs

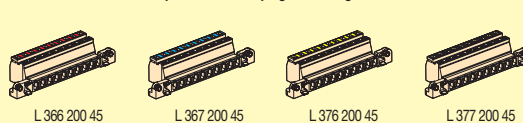


**Compatible products :**

Insulation displacement male plugs with brackets



Insulation displacement male plugs with flanges and inserts



**Accessories**

1	Coding accessory	
2	Cable clamp plug beige, 3 to 7 poles	
3	Cable clamp plug beige, 8 to 16 poles	
4	Manual tool	
5	Semi-automatic tool	
6	Pneumatic tool	
7	DIN 3 foot	black
8	DIN 2 foot	black
9	Strip marking	

		<b>SNEF</b>	<b>CE</b>	<b>SNEF</b>	<b>CE</b>
<b>Type</b>	<b>Part number</b>	<b>Type</b>	<b>Part number</b>	<b>Type</b>	<b>Part number</b>
COCF	1SNA 199 320 R0400	COCF	1SNA 199 320 R0400	COCF	1SNA 199 320 R0400
PT1 7,62 mm	1SSS 299 253 R2800	PT1 7,62 mm	1SSS 299 253 R2800	PT1 7,62 mm	1SSS 299 253 R2800
PT2 7,62 mm	1SSS 299 254 R2800	PT2 7,62 mm	1SSS 299 254 R2800	PT2 7,62 mm	1SSS 299 254 R2800
OUMAD	1SNA 179 466 R0600	OUMAD	1SNA 179 466 R0600	OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400	OUPAD	1SNA 178 944 R0400	OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100	OUTAD	1SNA 205 710 R1100	OUTAD	1SNA 205 710 R1100
	1SSS 299 190 R2200		1SSS 299 190 R2200		1SSS 299 190 R2200
	1SSS 299 191 R2200		1SSS 299 191 R2200		1SSS 299 191 R2200
RB-12 W7	1SNA 290 455 R0700	RB-12 W7	1SNA 290 455 R0700	RB-12 W7	1SNA 290 455 R0700

**Railway applications**  
**Female plugs**  
**Insulation displacement**

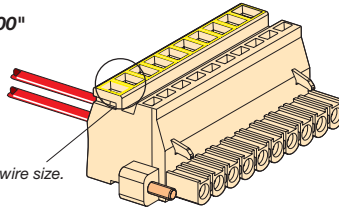


A  
3

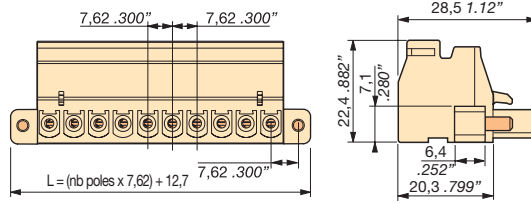
**L 276 200 35**

**Female plugs with flanges and M2.5 screw (axis center 7.62)**

Spacing 7.62 mm .300"



Yellow marking to identify wire size.



**Part number**

**Part number**

Spacing 7.62 mm Beige color  
 N. Poles 2 to 24 poles

**Consult us**

\* : Caution, maximum current of the device set is limited by the device with the lowest current rating.

**Characteristics**

**Wire size**

	NF F 63-808		
ADO	4,32 mm <sup>2</sup>		
1 or 2 wires per ADO jaw			

**Rated voltage**

	IEC	NF F 61-017	UL/CSA
V ~	500	500	300
V =	500	500	300

**Rated current**

A	24*	16*	18*
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**Rated wire size**

	4,32 mm <sup>2</sup>	4,32 mm <sup>2</sup>	16 AWG
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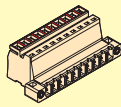
**Other characteristics**

Weight per point, standard			
Body weight	Metal part weight	Total weight	Protection
1,6 g 0.003 lb	1,6 g 0.003 lb	3,2 g 0.006 lb	IP 20 NEMA 1

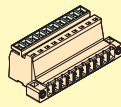
Max. working temperature : 100 °C  
 Insulation resistance : > 100 MΩ  
 Pollution degree : 3

**Compatible products :**

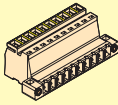
Insulation displacement male plugs with flanges and inserts



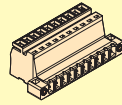
L 366 200 35



L 367 200 35



L 376 200 35



L 377 200 35



**Accessories**

1	Coding accessory	
2	Cable clamp plug beige, 3 to 7 poles	
3	Cable clamp plug beige, 8 to 16 poles	
4	Manual tool	
5	Semi-automatic tool	
6	Pneumatic tool	
7	DIN 3 foot	black
8	DIN 2 foot	black
9	Strip marking	

**Type**

**Part number**

COCF		1SNA 199 320 R0400
PT1	7,62 mm	1SSS 299 253 R2800
PT2	7,62 mm	1SSS 299 254 R2800
OUMAD		1SNA 179 466 R0600
OUPAD		1SNA 178 944 R0400
OUTAD		1SNA 205 710 R1100
		1SSS 299 190 R2200
		1SSS 299 191 R2200
RB-12 W7		1SNA 290 455 R0700

**Type**

**Part number**


**Railway applications**  
**Male plugs**  
**Insulation displacement**

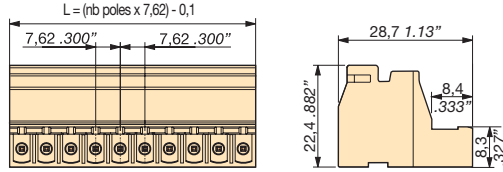


**L 366 200 15**

Male plugs

Spacing 7.62 mm .300"

Red marking to identify wire size.

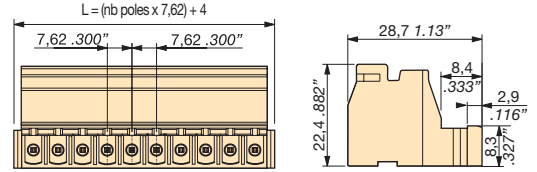


**L 366 200 25**

Male plugs with brackets

Spacing 7.62 mm .300"

Red marking to identify wire size.



**Part number**

Spacing 7.62 mm Beige color

N. Poles 2 to 24 poles

2	1SSS 366 202 R8800	15.14
3	1SSS 366 203 R8800	22.76
4	1SSS 366 204 R8800	30.38
5	1SSS 366 205 R8800	38.00
6	1SSS 366 206 R8800	45.62
8	1SSS 366 208 R8800	60.86
10	1SSS 366 210 R8800	76.10

**Consult us for pole numbers :  
 7, 9 and more than 10**

**Part number**

Spacing 7.62 mm Beige color

N. Poles 2 to 24 poles

**Consult us**

**Characteristics**

**Wire size**

NF F 63-808

0,6 - 1,82 mm<sup>2</sup>

1 or 2 wires (same wire size) per ADO jaw

**Rated voltage**

	IEC	NF F 61-017	UL/CSA
~	500	500	300
=	500	500	300

**Rated current**

A	16*	16*	15*

**Rated wire size**

	1,82 mm <sup>2</sup>	1,82 mm <sup>2</sup>	16 AWG

**Other characteristics**

Weight per point, standard

Body weight	Metal part weight	Total weight	Protection
1,6 g 0.003 lb	1,6 g 0.003 lb	3,2 g 0.006 lb	IP 20 NEMA 1

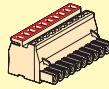
Max. working temperature : 100 °C

Insulation resistance : > 100 MΩ

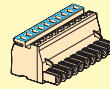
Pollution degree : 3

**Compatible products :**

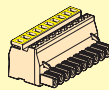
Insulation displacement female plugs



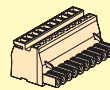
L 266 200 15



L 267 200 15



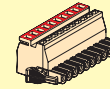
L 276 200 15



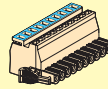
L 277 200 15

**Compatible products :**

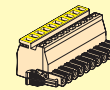
Insulation displacement female plugs with brackets



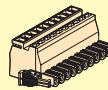
L 266 200 25



L 267 200 25



L 276 200 25



L 277 200 25



**Accessories**

1	Cable clamp plug beige, 3 to 7 poles
2	Cable clamp plug beige, 8 to 16 poles
3	Manual tool
4	Semi-automatic tool
5	Pneumatic tool
6	DIN 3 foot black
7	DIN 2 foot black
8	Strip marking

**Type**

**Part number**

PT1	7,62 mm	1SSS 299 253 R2800
PT2	7,62 mm	1SSS 299 254 R2800
OUMAD		1SNA 179 466 R0600
OUPAD		1SNA 178 944 R0400
OUTAD		1SNA 205 710 R1100
		1SSS 299 190 R2200
		1SSS 299 191 R2200
RB-12 W7		1SNA 290 455 R0700

**Type**

**Part number**

PT1	7,62 mm	1SSS 299 253 R2800
PT2	7,62 mm	1SSS 299 254 R2800
OUMAD		1SNA 179 466 R0600
OUPAD		1SNA 178 944 R0400
OUTAD		1SNA 205 710 R1100
		1SSS 299 190 R2200
		1SSS 299 191 R2200
RB-12 W7		1SNA 290 455 R0700

**Railway applications**  
**Male plugs**  
**Insulation displacement**



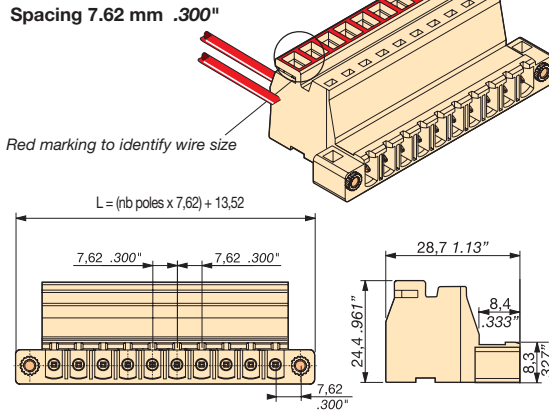
A  
3

\* : Caution, maximum current of the device set is limited by the device with the lowest current rating.

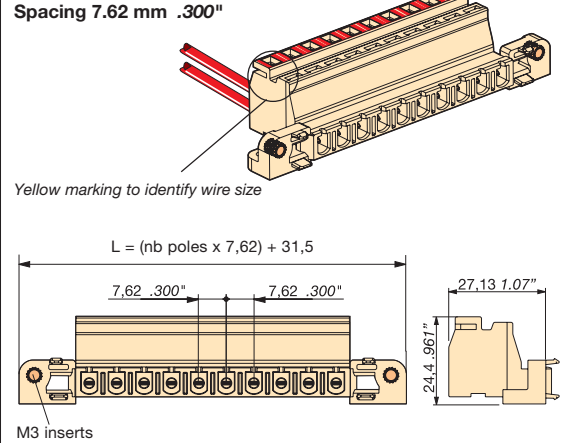
**Characteristics**

<b>Wire size</b>	NF F 63-808		
ADO	0,6 - 1,82 mm <sup>2</sup>		
	1 or 2 wires (same wire size) per ADO jaw		
<b>Rated voltage</b>			
	IEC	NF F 61-017	UL/CSA
<b>V</b>	~	500	500
	=	500	300
<b>Rated current</b>			
<b>A</b>	16*	16*	15*
<b>Rated wire size</b>			
	1,82 mm <sup>2</sup>	1,82 mm <sup>2</sup>	16 AWG
<b>Other characteristics</b>			
	Weight per point, standard		
	Body weight	Metal part weight	Total weight
	1,6 g	1,6 g	3,2 g
	0.003 lb	0.003 lb	0.006 lb
			Protection
			IP 20
			NEMA 1
	Max. working temperature :		100 °C
	Insulation resistance :		≥ 100 MΩ
	Pollution degree :		3

**L 366 200 35**  
**Male plugs with flanges and inserts**



**L 366 200 45**  
**Male plugs with flanges and inserts**



<b>Part number</b>	
Spacing 7.62 mm	Beige color
N. Poles	2 to 24 poles
<b>Consult us</b>	

<b>Part number</b>	
Spacing 7.62 mm	Beige color
N. Poles	2 to 24 poles
<b>Consult us</b>	

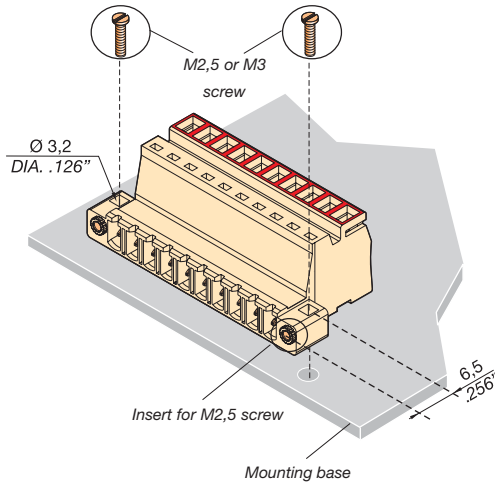
**Compatible products :**

Insulation displacement female plugs with flanges and M2.5 screw

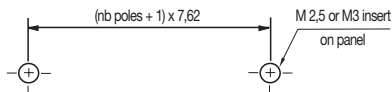
Insulation displacement female plugs with brackets

for panel feed-through mounting, with locking mechanism

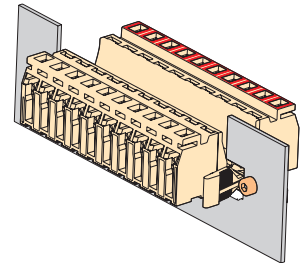
**Base mounting**



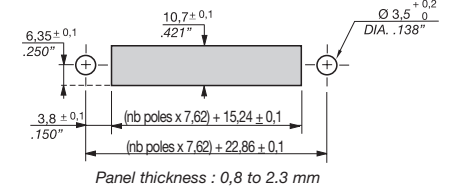
**Drilling for base mounting**



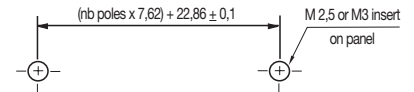
**Panel feed-through mounting or base mounting**



**Drilling for panel feed-through mounting**



**Drilling for base mounting**



**Accessories**

1	Cable clamp plug beige, 3 to 7 poles
2	Cable clamp plug beige, 8 to 16 poles
3	Manual tool
4	Semi-automatic tool
5	Pneumatic tool
6	Strip marking

Type	Part number
PT1 7,62 mm	1SSA 299 253 R2800
PT2 7,62 mm	1SSA 299 254 R2800
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
RB-12W7	1SNA 290 455 R0700

Type	Part number
PT1 7,62 mm	1SSA 299 253 R2800
PT2 7,62 mm	1SSA 299 254 R2800
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
RB-12W7	1SNA 290 455 R0700

**Railway applications**  
**Male plugs**  
**Insulation displacement**



\*: Caution, maximum current of the device set is limited by the device with the lowest current rating.

**Characteristics**

<b>Wire size</b>	NF F 63-808		
ADO	0,93 - 2,61 mm <sup>2</sup>		
	1 or 2 wires (same wire size) per ADO jaw		

<b>Rated voltage</b>	IEC	NF F 61-017	UL/CSA
~	500	500	300
=	500	500	300

<b>Rated current</b>	A	22*	16*	15*
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<b>Rated wire size (NF F 63-808)</b>	2,61 mm <sup>2</sup>	2,61 mm <sup>2</sup>	14 AWG
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**Other characteristics**

Weight per point, standard			
Body weight	Metal part weight	Total weight	Protection
1,6 g	1,6 g	3,2 g	IP 20
0.003 lb	0.003 lb	0.006 lb	NEMA 1
Max. working temperature :			100 °C
Insulation resistance :			> 100 MΩ
Pollution degree :			3



**Accessories**

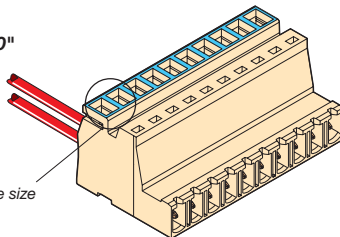
1	Cable clamp plug	beige, 3 to 7 poles
2	Cable clamp plug	beige, 8 to 16 poles
3	Manual tool	
4	Semi-automatic tool	
5	Pneumatic tool	
6	DIN 3 foot (1)	black
7	DIN 2 foot (1)	black
8	Strip marking	

(1) Accessories for mounting of male and female plugs on DIN 3 or DIN 2 rail.

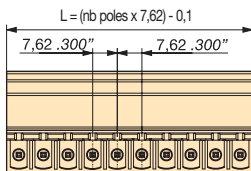
**L 367 200 15**

Male plugs

Spacing 7.62 mm .300"



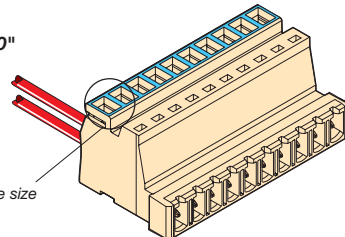
Blue marking to identify wire size range 0,93-2,61 mm<sup>2</sup>



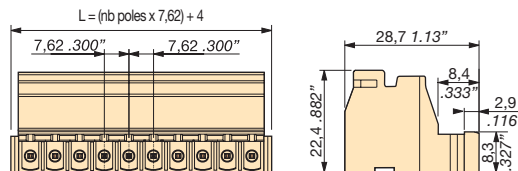
**L 367 200 25**

Male plugs with brackets

Spacing 7.62 mm .300"



Blue marking to identify wire size range 0,93-2,61 mm<sup>2</sup>



**Part number**

<b>Spacing 7.62 mm</b>	Beige color	
<b>N. Poles</b>	<b>2 to 24 poles</b>	
2	1SSS <b>367 202 R8800</b>	15.14
3	1SSS <b>367 203 R8800</b>	22.76
4	1SSS <b>367 204 R8800</b>	30.38
5	1SSS <b>367 205 R8800</b>	38.00
6	1SSS <b>367 206 R8800</b>	45.62
8	1SSS <b>367 208 R8800</b>	60.86
10	1SSS <b>367 210 R8800</b>	76.10

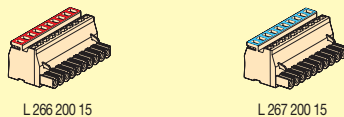
**Consult us for pole numbers : 7, 9 and more than 10**

**Part number**

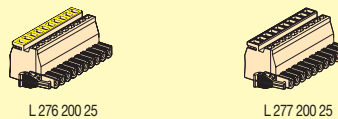
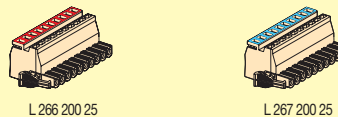
<b>Spacing 7.62 mm</b>	Beige color
<b>N. Poles</b>	<b>2 to 24 poles</b>

**Consult us**

**Compatible products :**  
 Insulation displacement female plugs



**Compatible products :**  
 Insulation displacement female plugs with brackets



Type	Part number	Type	Part number
PT1	7,62 mm 1SSS <b>299 253 R2800</b>	PT1	7,62 mm 1SSS <b>299 253 R2800</b>
PT2	7,62 mm 1SSS <b>299 254 R2800</b>	PT2	7,62 mm 1SSS <b>299 254 R2800</b>
OUMAD	1SNA <b>179 466 R0600</b>	OUMAD	1SNA <b>179 466 R0600</b>
OUPAD	1SNA <b>178 944 R0400</b>	OUPAD	1SNA <b>178 944 R0400</b>
OUTAD	1SNA <b>205 710 R1100</b>	OUTAD	1SNA <b>205 710 R1100</b>
	1SSS <b>299 190 R2200</b>		1SSS <b>299 190 R2200</b>
	1SSS <b>299 191 R2200</b>		1SSS <b>299 191 R2200</b>
RB-12 W7	1SNA <b>290 455 R0700</b>	RB-12 W7	1SNA <b>290 455 R0700</b>

(1) Accessories for mounting of male and female plugs on DIN 3 or DIN 2 rail.

# Railway applications Male plugs Insulation displacement



A  
3

\* : Caution, maximum current of the device set is limited by the device with the lowest current rating.

## Characteristics

<b>Wire size</b>	NF F 63-808
ADO	0,93 - 2,61 mm <sup>2</sup>
1 or 2 wires (same wire size) per ADO jaw	

<b>Rated voltage</b>	IEC	NF F 61-017	UL/CSA
~	500	500	300
=	500	500	300

<b>Rated current</b>	22*	16*	15*
<b>A</b>			

<b>Rated wire size (NF F 63-808)</b>	2,61 mm <sup>2</sup>	2,61 mm <sup>2</sup>	14 AWG
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## Other characteristics

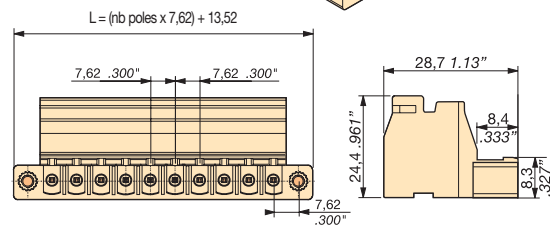
Weight per point, standard			
Body weight	Metal part weight	Total weight	Protection
1,6 g 0.003 lb	1,6 g 0.003 lb	3,2 g 0.006 lb	IP 20 NEMA 1

Max. working temperature :	100 °C
Insulation resistance :	≥ 100 MΩ
Pollution degree :	3

## L 367 200 35 Male plugs with flanges and inserts

Spacing 7.62 mm .300"

Blue marking to identify wire size range 0,93-2,61 mm<sup>2</sup>

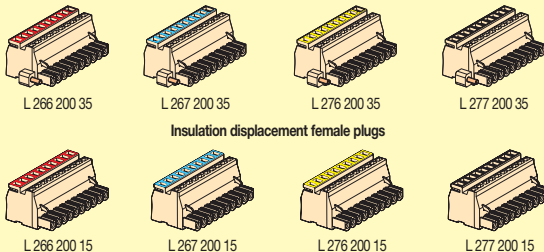


### Part number

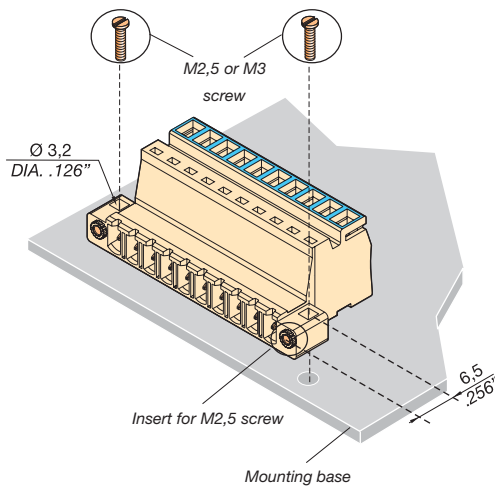
Spacing 7.62 mm Beige color  
N. Poles 2 to 24 poles  
Consult us

### Compatible products :

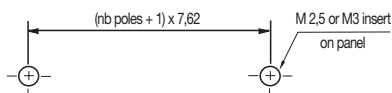
Insulation displacement female plugs with flanges and M2.5 screw



## Base mounting



## Drilling for base mounting



## Accessories

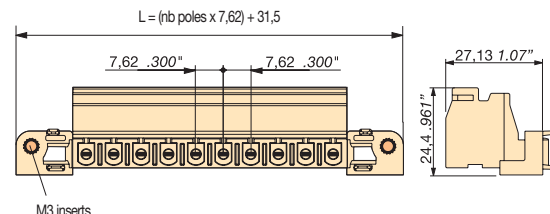
- Cable clamp plug beige, 3 to 7 poles
- Cable clamp plug beige, 8 to 16 poles
- Manual tool
- Semi-automatic tool
- Pneumatic tool
- Strip marking

Type	Part number
PT1 7,62 mm	1SSA 299 253 R2800
PT2 7,62 mm	1SSA 299 254 R2800
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
RB-12W7	1SNA 290 455 R0700

## L 367 200 45 Male plugs with flanges and inserts

Spacing 7.62 mm .300"

Blue marking to identify wire size

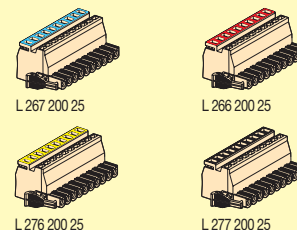


### Part number

Spacing 7.62 mm Beige color  
N. Poles 2 to 24 poles  
Consult us

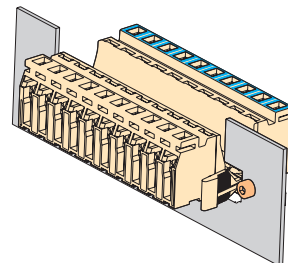
### Compatible products :

Insulation displacement female plugs with brackets

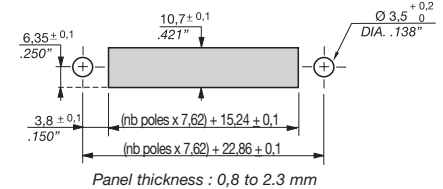


for panel feed-through mounting, with locking mechanism

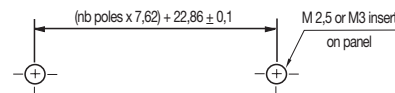
## Panel feed-through mounting or base mounting



## Drilling for panel feed-through mounting



## Drilling for base mounting





**Railway applications**  
**Male plugs**  
**Insulation displacement**



\* : Caution, maximum current of the device set is limited by the device with the lowest current rating.

**Characteristics**

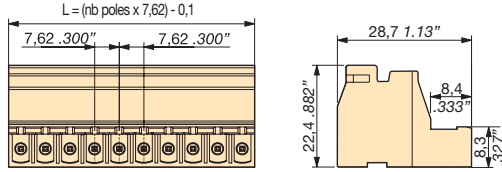
<b>Wire size</b>			
ADO	NF F 63 296 1,5 mm <sup>2</sup> NF F 63 826		
1 or 2 wires per ADO jaw			
<b>Rated voltage</b>			
~	IEC 500 NF F 61-017 500 UL/CSA		
=	500 500		
<b>Rated current assigned for use at 20°C</b>			
A	22* 16*		
<b>Rated wire size</b>			
	1,5 mm <sup>2</sup> 1,5 mm <sup>2</sup>		
<b>Other characteristics</b>			
Weight per point, standard			
Body weight	Metal part weight	Total weight	Protection
1,6 g 0.003 lb	1,6 g 0.003 lb	3,2 g 0.006 lb	IP 20 NEMA 1
Max. working temperature :			100 °C
Insulation resistance :			> 100 MΩ
Pollution degree :			3

**L 377 200 15**

Male plugs

Spacing 7.62 mm .300"

Black marking to identify wire size.

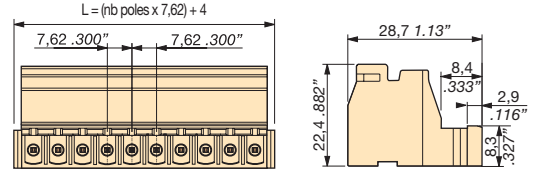


**L 377 200 25**

Male plugs with brackets

Spacing 7.62 mm .300"

Black marking to identify wire size.



**Part number**

<b>Spacing 7.62 mm</b> Beige color		
<b>N. Poles</b>	<b>2 to 24 poles</b>	
2	1SSS <b>377 202</b> R8800	15.14
3	1SSS <b>377 203</b> R8800	22.76
5	1SSS <b>377 205</b> R8800	38.00
6	1SSS <b>377 206</b> R8800	45.62

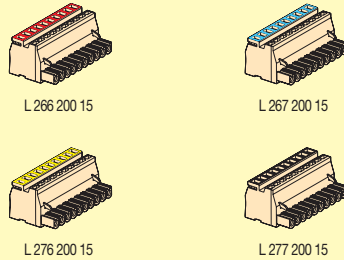
**Consult us for pole numbers :  
4 and more than 6**

**Part number**

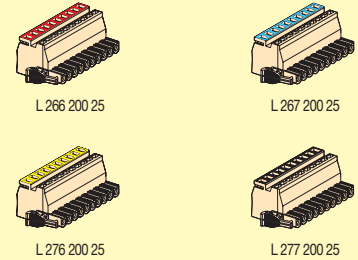
<b>Spacing 7.62 mm</b> Beige color	
<b>N. Poles</b>	<b>2 to 24 poles</b>

**Consult us**

**Compatible products :**  
Insulation displacement female plugs



**Compatible products :**  
Insulation displacement female plugs with brackets



**Accessories**

	Type	Part number	Type	Part number
1 Cable clamp plug beige, 3 to 7 poles	PT1 7,62 mm	1SSS <b>299 253</b> R2800	PT1 7,62 mm	1SSS <b>299 253</b> R2800
2 Cable clamp plug beige, 8 to 16 poles	PT2 7,62 mm	1SSS <b>299 254</b> R2800	PT2 7,62 mm	1SSS <b>299 254</b> R2800
3 Manual tool	OUMAD	1SNA <b>179 466</b> R0600	OUMAD	1SNA <b>179 466</b> R0600
4 Semi-automatic tool	OUPAD	1SNA <b>178 944</b> R0400	OUPAD	1SNA <b>178 944</b> R0400
5 Pneumatic tool	OUTAD	1SNA <b>205 710</b> R1100	OUTAD	1SNA <b>205 710</b> R1100
6 DIN 3 foot black		1SSS <b>299 190</b> R2200		1SSS <b>299 190</b> R2200
7 DIN 2 foot black		1SSS <b>299 191</b> R2200		1SSS <b>299 191</b> R2200
8 Strip marking	RB-12 W7	1SNA <b>290 455</b> R0700	RB-12 W7	1SNA <b>290 455</b> R0700

**Railway applications**  
**Male plugs**  
**Insulation displacement**



A  
3

\* : Caution, maximum current of the device set is limited by the device with the lowest current rating.

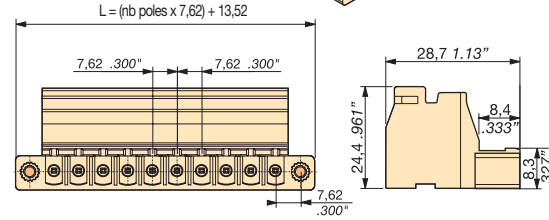
**Characteristics**

<b>Wire size</b>			
ADO	NF F 63-296 1,5 mm <sup>2</sup> NF F 63-826 1 or 2 wires per ADO jaw		
<b>Rated voltage</b>			
	IEC NF F 61-017 UL/CSA		
V ~	500 500		
V =	500 500		
<b>Rated current assigned for use at 20°C</b>			
A	22* 16*		
<b>Rated wire size</b>			
	1,5 mm <sup>2</sup> 1,5 mm <sup>2</sup>		
<b>Other characteristics</b>			
Weight per point, standard			
Body weight	Metal part weight	Total weight	Protection
1,6 g 0.003 lb	1,6 g 0.003 lb	3,2 g 0.006 lb	IP 20 NEMA 1
Max. working temperature :			100 °C
Insulation resistance :			≥ 100 MΩ
Pollution degree :			3

**L 377 200 35**  
**Male plugs with flanges and inserts**

Spacing 7.62 mm .300"

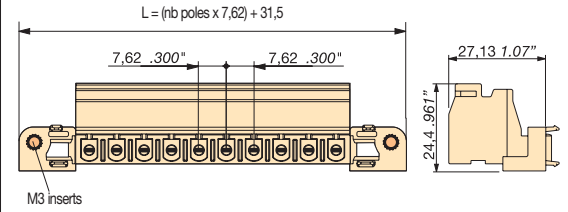
Black marking to identify wire size



**L 377 200 45**  
**Male plugs with flanges and inserts**

Spacing 7.62 mm .300"

Yellow marking to identify wire size

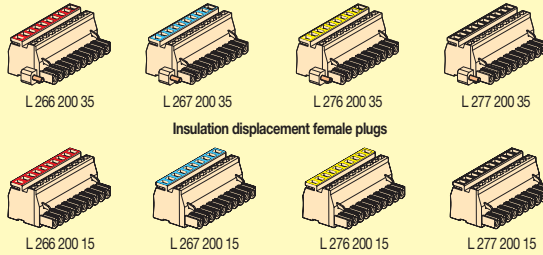


**Part number**

Spacing 7.62 mm Beige color  
 N. Poles 2 to 24 poles  
 Consult us

**Compatible products :**

Insulation displacement female plugs with flanges and M2.5 screw

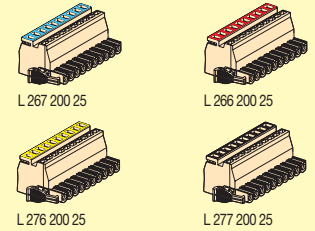


**Part number**

Spacing 7.62 mm Beige color  
 N. Poles 2 to 24 poles  
 Consult us

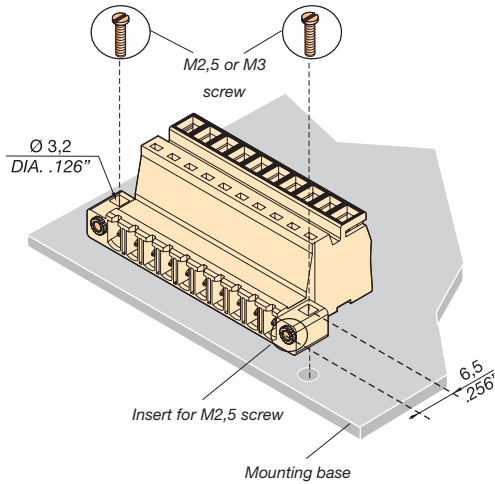
**Compatible products :**

Insulation displacement female plugs with brackets

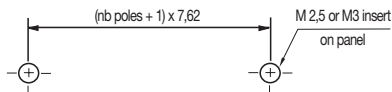


for panel feed-through mounting, with locking mechanism

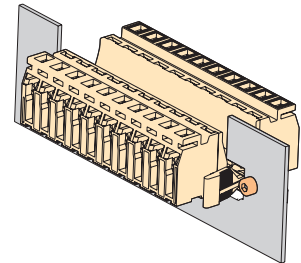
**Base mounting**



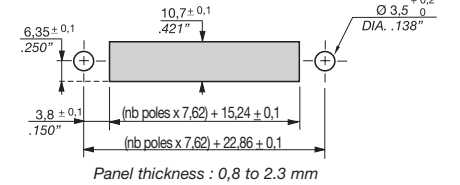
**Drilling for base mounting**



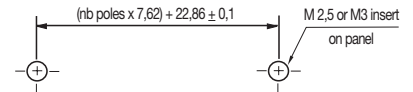
**Panel feed-through mounting or base mounting**



**Drilling for panel feed-through mounting**



**Drilling for base mounting**



**Accessories**

1	Cable clamp plug beige, 3 to 7 poles
2	Cable clamp plug beige, 8 to 16 poles
3	Manual tool
4	Semi-automatic tool
5	Pneumatic tool
6	Strip marking

Type	Part number
PT1 7,62 mm	1SSA 299 253 R2800
PT2 7,62 mm	1SSA 299 254 R2800
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
RB-12W7	1SNA 290 455 R0700

Type	Part number
PT1 7,62 mm	1SSA 299 253 R2800
PT2 7,62 mm	1SSA 299 254 R2800
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
RB-12W7	1SNA 290 455 R0700

**Railway applications**  
**Male plugs**  
**Insulation displacement**



\* : Caution, maximum current of the device set is limited by the device with the lowest current rating.

**Characteristics**

<b>Wire size</b>	
ADO	NF F 63-808 4,32 mm <sup>2</sup> 1 or 2 wires per ADO jaw

<b>Voltage</b>		
V	IEC	NF F 61-017
	~	500
=	500	500

<b>Current assigned for use at 20°C</b>	
A	22*      16*

<b>Rated wire size</b>	
	4,32 mm <sup>2</sup>

**Other characteristics**

Weight per point, standard			
Body weight	Metal part weight	Total weight	Protection
1,6 g 0.003 lb	1,6 g 0.003 lb	3,2 g 0.006 lb	IP 20 NEMA 1
Max. working temperature :			100 °C
Insulation resistance :			> 100 MΩ
Pollution degree :			3



**Accessories**

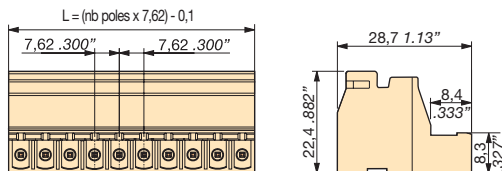
1	Cable clamp plug	black, 3 poles
2	Cable clamp plug	black, 8 poles
3	Manual tool	
4	Semi-automatic tool	
5	Pneumatic tool	
6	DIN 3 foot	black
7	DIN 2 foot	black
8	Strip marking	

**L 376 200 15**

Male plugs

Spacing 7.62 mm .300"

Yellow marking to identify wire size.

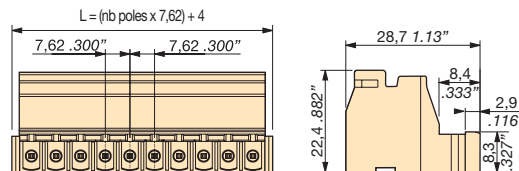


**L 376 200 25**

Male plugs with brackets

Spacing 7.62 mm .300"

Yellow marking to identify wire size.



**Part number**

<b>Spacing 7.62 mm</b>		Beige color
<b>N. Poles</b>		2 to 24 poles
2	1SSS 376 202 R8800	15.14
3	1SSS 376 203 R8800	22.76
4	1SSS 376 204 R8800	30.38

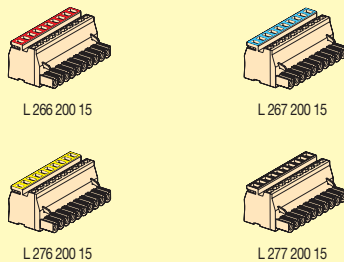
Consult us for pole numbers above 4

**Part number**

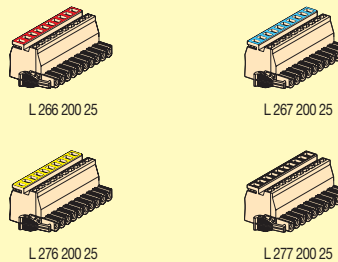
<b>Spacing 7.62 mm</b>		Beige color
<b>N. Poles</b>		2 to 24 poles

Consult us

**Compatible products :**  
 Insulation displacement female plugs



**Compatible products :**  
 Insulation displacement female plugs with brackets



**Type**

PT1	7,62 mm
PT2	7,62 mm
OUMAD	
OUPAD	
OUTAD	
RB-12 W7	

**Part number**

1SSS 299 253 R2200
1SSS 299 254 R2200
1SNA 179 466 R0600
1SNA 178 944 R0400
1SNA 205 710 R1100
1SSS 299 190 R2200
1SSS 299 191 R2200
1SNA 290 455 R0700

**Type**

PT1	7,62 mm
PT2	7,62 mm
OUMAD	
OUPAD	
OUTAD	
RB-12 W7	

**Part number**

1SSS 299 253 R2200
1SSS 299 254 R2200
1SNA 179 466 R0600
1SNA 178 944 R0400
1SNA 205 710 R1100
1SSS 299 190 R2200
1SSS 299 191 R2200
1SNA 290 455 R0700

# Railway applications Male plugs Insulation displacement



A  
3

\*: Caution, maximum current of the device set is limited by the device with the lowest current rating.

## Characteristics

<b>Wire size</b>	NF F 63-808		
ADO	4,32 mm <sup>2</sup>		
	1 or 2 wires per ADO jaw		

<b>Rated voltage</b>			
	IEC	NF F 61-017	UL/CSA
V	~	500	500
	=	500	300

<b>Rated current assigned for use at 20°C</b>			
A	22*	16*	18*

<b>Rated wire size</b>			
	4,32 mm <sup>2</sup>	4,32 mm <sup>2</sup>	12 AWG

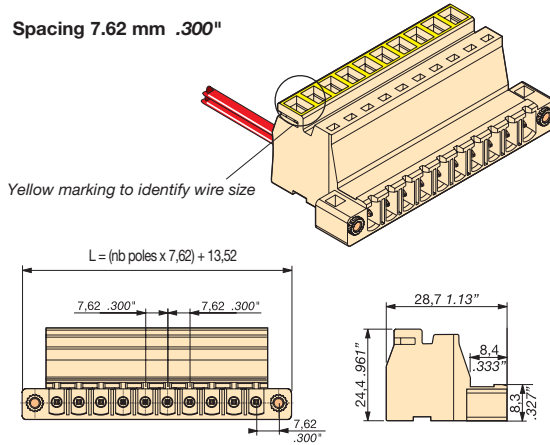
## Other characteristics

Weight per point, standard			
Body weight	Metal part weight	Total weight	Protection
1,6 g 0.003 lb	1,6 g 0.003 lb	3,2 g 0.006 lb	IP 20 NEMA 1

Max. working temperature :	100 °C
Insulation resistance :	≥ 100 MΩ
Pollution degree :	3

## L 376 200 35 Male plugs with flanges and inserts

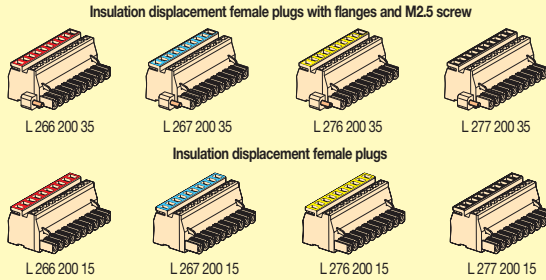
Spacing 7.62 mm .300"



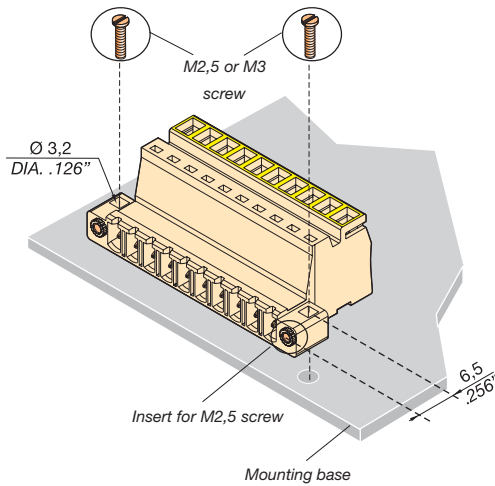
### Part number

Spacing 7.62 mm Beige color  
N. Poles 2 to 24 poles  
Consult us

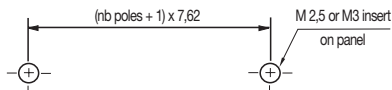
### Compatible products :



## Base mounting



## Drilling for base mounting



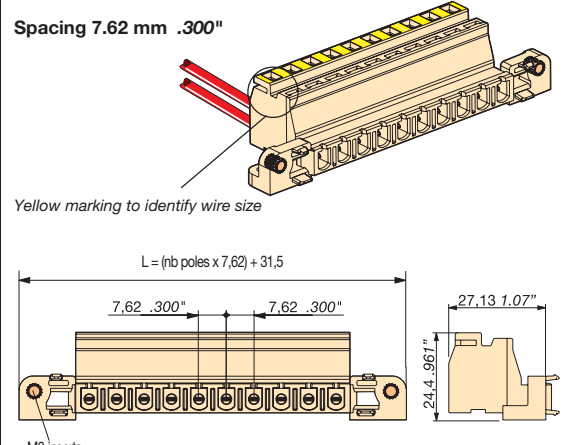
## Accessories

1	Cable clamp plug beige, 3 to 7 poles
2	Cable clamp plug beige, 8 to 16 poles
3	Manual tool
4	Semi-automatic tool
5	Pneumatic tool
6	Strip marking

Type	Part number
PT1 7,62 mm	1SSA 299 253 R2800
PT2 7,62 mm	1SSA 299 254 R2800
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
RB-12W7	1SNA 290 455 R0700

## L 376 200 45 Male plugs with flanges and inserts

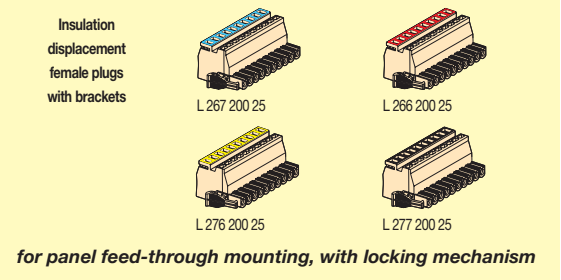
Spacing 7.62 mm .300"



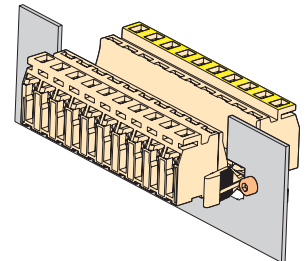
### Part number

Spacing 7.62 mm Beige color  
N. Poles 2 to 24 poles  
Consult us

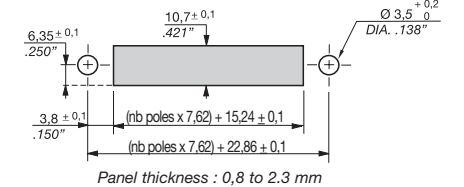
### Compatible products :



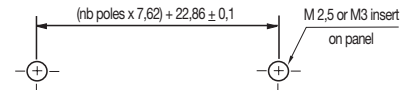
## Panel feed-through mounting or base mounting



## Drilling for panel feed-through mounting

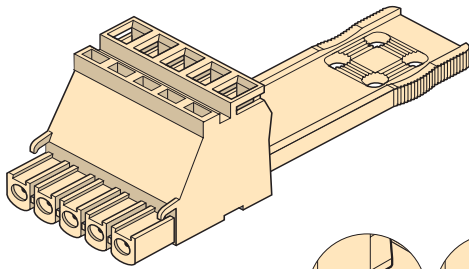


## Drilling for base mounting

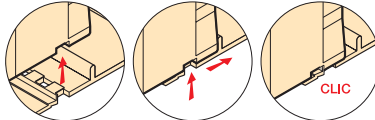
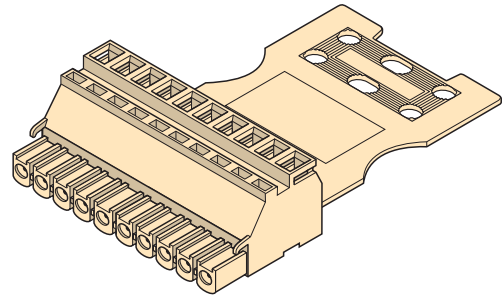


## Mounting of cable clamp plugs on ADO System® plugs spacing 7.62 mm

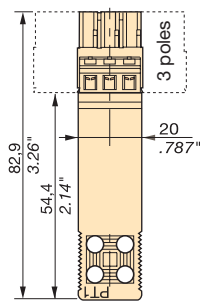
Version with PT1 cable clamp



Version with PT2 cable clamp

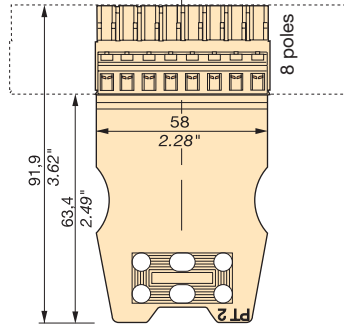


PT1 cable clamp  
can be used on  
products from  
3 to 7 poles



P/N : 1SSA 299 253 R2800

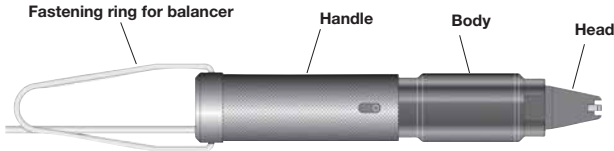
PT2 cable clamp  
can be used on  
products from  
8 to 16 poles



P/N : 1SSA 299 254 R2800

## TOOLS PRESENTATION

### PNEUMATIC TOOL KIT



OUTAD 1SNA 205 710 R1100

This kit includes extraction tool EXAD2.

Extraction ferrule

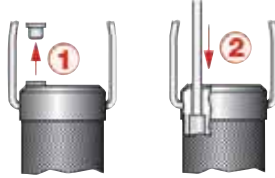


EXAD2 1SNA 205 721 R0000

### Pneumatic tool installation

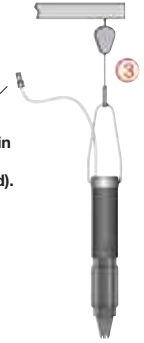
#### Technical information

- Energy : lubricated compressed air.
- Air pressure : 6 ±0.5 bars.
- Lubrication BY F.R.L. (Filter, Regulator, Lubricator) (1 oil drop every 20 operations)
- Compressed-air supply : standard pipe DIA. 4 mm.
- Connection of the pipe to the tool by quick release coupling (integrated into the tool).
- Min. nb of operations : 1 000 000
- Dimensions : Lg : 215 mm x DIA. 37 mm.
- Weight : 575 g.



- 1 Remove the protective plug from the compressed air inlet.
- 2 Insert the clean cut pipe without special preparation into the dedicated hole and push in fully.
- 3 Hang the toll on a balancer.

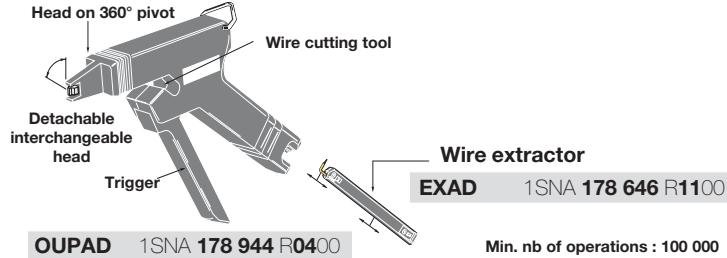
Quick release coupling in accordance with your installation (not provided).



For more information, contact your ABB local agent.

Warranty of the tool : 1 year in standard use (except disassembling of the tool's body by customer).

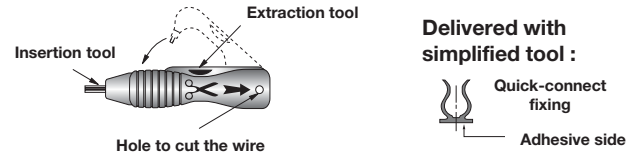
### SEMI-AUTOMATIC TOOL



OUPAD 1SNA 178 944 R0400

Min. nb of operations : 100 000

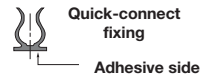
### SIMPLIFIED TOOL



OUMAD 1SNA 179 466 R0600

Min. nb of operations : 500

Delivered with simplified tool :



## INSTRUCTION FOR USE

Allows connection of two wires of the same gage and type (solid or stranded) one by one.

### A - Connection of the first wire

#### Pneumatic tool :

- 1 Introduce the wire.
- 2 Apply the tool head to the upper opening without forcing its self-alignment device (the tool must be at right angle with the block).
- 3 Operate the handle directly in line with the tool to release a connect cycle.

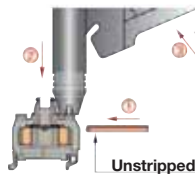
**Safety :**  
This tool must be operated only when positioned on the terminal block.



Unstripped wire

#### Semi-automatic tool :

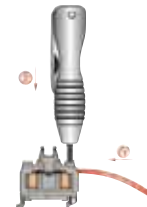
- 1 Introduce the wire.
- 2 Apply the tool head to the upper opening without forcing its self-alignment device (the tool must be at right angle with the block).
- 3 Press the trigger all the way.
- 4 Release the trigger to disengage the tool.



Unstripped wire

#### Simplified tool :

- 1 Introduce the wire.
- 2 Place the tool into the upper opening, push the wire home.

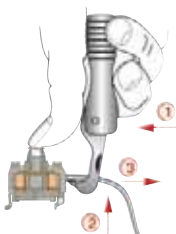


### B - Connection of the second wire : same as for the first wire.

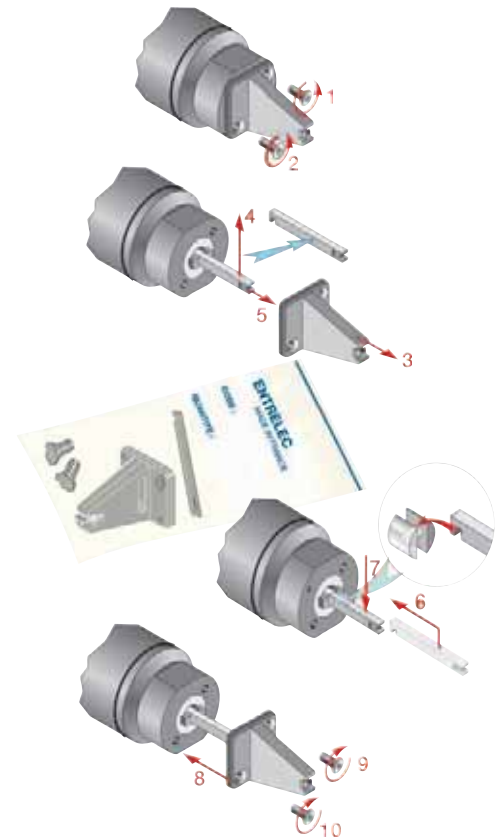
### C - Extraction of wires

- 1 Place the hook of the extractor under the wire into the slot of the terminal block.
- 2 Slide the wires outside while securing firmly the block.
- 3 Remove the first wire. Repeat operations 1 2 3 above for a second wire.

**NOTE :** Wire must be cut clean before reconnecting it to the terminal block.



## REPLACEMENT OF THE HEAD



Replacement head kit

OUTA 1SNA 205 284 R0300



# Terminal Blocks entrelec® according to NF F 61017 and IEC 60947-7

Quick-connect

## Contents

Quick-connect Terminal Blocks with Longitudinal Tabs, without Cover .....	46
Quick-connect Terminal Blocks with Longitudinal Tabs, with Cover .....	49
Quick-connect Terminal Blocks with Fuse Holder .....	50
Quick-connect Terminal Blocks - Component Holder .....	51
Quick-connect Terminal Blocks with Removable Component Holder .....	53



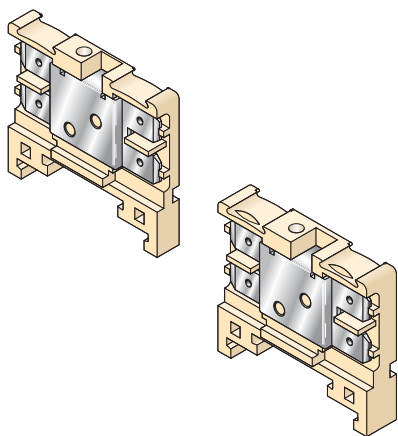
**NFF 61017 / IEC 60947-7**



# Terminal block with longitudinal quick connect tabs

Assembled without cover

DIN 3 - reinforced rail type 2

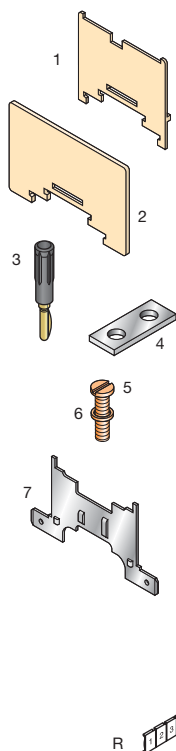


End stop		th. 10 mm	BAM2	V0	1SNA 296 351 R0000
End stop		th. 10,7 mm	BAH24		1SNA 168 355 R1300
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200
Rail		21,8 x 8,2 x 1,5	PRH2R		1SNA 163 350 R1500

Other end stops, rails and accessories : see section on accessories.

## Notes

## Accessories

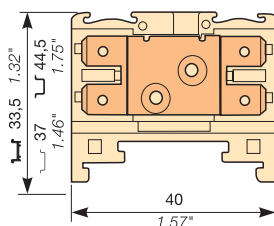


- 1 End section
- 2 Circuit separator
- 3 Test plug
- 4 Jumper bar
- 5 Screw for BJH
- 6 Washer for VSJ
- 7 Shield connector

**R** See section on markers marking method

### HD 2,5/6.2G.2G.1

Spacing 6 mm (or 7 mm with end section)



1 terminal block with 4 tabs for 6,3 x 0,8 mm (.248" x .031") quick connect with possible testing and transverse connection.



Color	Type	Part numbers
Beige V0	HD 2,5/6.2G.2G.1	1SNA 160 487 R2500
NF F 61017	BB 0006-2G2G	1SNA 160 487 R2500
NF F 61017	BB 0007-2G2G	1SNA 160 487 R2500 + FEH3

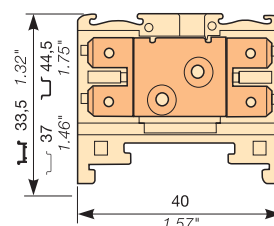
### Characteristics

Wire size	NFC			DIN			NF F		
							61-017		
Quick-connect	6,3 x 0,8 mm (serie 250) - 2,5 mm <sup>2</sup> max.								

Rated voltage			
V AC	250 Cat. C	125 Gr. C	250
V DC	250 Cat. C	150 Gr. C	250
Pollution degree			
Rated current			
Rated	20/25 A	26 A	20 A
Wire size			
Rated	2,5 mm <sup>2</sup>	2,5 mm <sup>2</sup>	2,5 mm <sup>2</sup>
Weight			Protection
7 g			IP 20
0,25 oz			NEMA 1

### HD 6/8.2G.2G.1

Spacing 8 mm (or 9 mm with end section)



1 terminal block with 4 tabs for 6,3 x 0,8 mm (.248" x .031") quick connect with possible testing and transverse connection.



Color	Type	Part numbers
Beige V0	HD 6/8.2G.2G.1	1SNA 160 606 R1400
NF F 61017	BB 0008-2G2G	1SNA 160 606 R1400
NF F 61017	BB 0009-2G2G	1SNA 160 606 R1400 + FEH3

### Characteristics

Wire size	NFC			DIN			NF F		
							61-017		
Quick-connect	6,3 x 0,8 mm (serie 250) - 6 mm <sup>2</sup> max.								

Rated voltage			
V AC	250	250 Gr. C (2)	250
V DC	250	300 Gr. C (2)	250
Pollution degree			
Rated current			
Rated	20/25 A	26 A	20
Wire size			
Rated	6 mm <sup>2</sup>	6 mm <sup>2</sup>	6 mm <sup>2</sup>
Weight			Protection
8 g			IP 20
0,28 oz			NEMA 1

Type		Part numbers
FEH3	th. 1 mm	1SNA 198 352 R0700
SCH3	th. 1,6 mm	1SNA 198 692 R2500
FC2	DIA. 2 mm	1SNA 007 865 R2600
BJH6 (1)	spacing 6 mm	
	2 poles	1SNA 168 481 R2300
	3 poles	1SNA 168 482 R2400
	4 poles	1SNA 168 483 R2500
	5 poles	1SNA 168 484 R2600
BJH7 (1)	spacing 7 mm	
	2 poles	1SNA 168 486 R2000
	3 poles	1SNA 168 487 R2100
	4 poles	1SNA 168 488 R0200
VSJ6		1SNA 167 735 R2700
	RDJ6	1SNA 173 241 R0600
	EBHD	th. 1,6 mm

Type		Part numbers
FEH3	th. 1 mm	1SNA 198 352 R0700
SCH3	th. 1,6 mm	1SNA 198 692 R2500
FC2	DIA. 2 mm	1SNA 007 865 R2600
BJH8 (1)	spacing 8 mm	
	2 poles	1SNA 168 456 R0100
	3 poles	1SNA 168 457 R0200
	4 poles	1SNA 168 458 R1300
	5 poles	1SNA 168 459 R1400
BJH9 (1)	spacing 9 mm	
	2 poles	1SNA 168 460 R1100
	3 poles	1SNA 168 461 R0600
	4 poles	1SNA 168 462 R0700
VSJ6		1SNA 167 735 R2700
	RDJ6	1SNA 173 241 R0600
	EBHD	th. 1,6 mm


RC 610 RC 610 RC 810

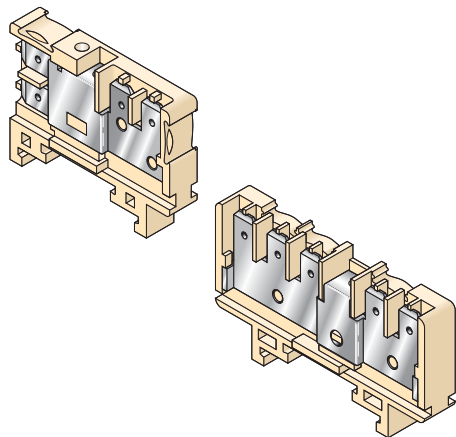
(1) Use of these accessories requires the cut out of the block body (precut).  
 (2) Values given for 8 mm spacing. Values for 9 mm spacing : DIN Gr C : 380 V~ 450 V~, NFC Cat.C : 400 V~ 250 V~









# Terminal block with vertical and longitudinal quick connect tabs

Assembled without cover

 **DIN 3 - reinforced rail type 2**

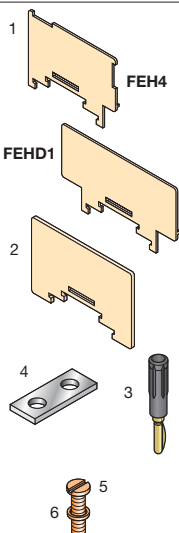


End stop		th. 10 mm	<b>BAM2</b>	V0	1SNA 296 351 R0000
End stop		th. 10,7 mm	<b>BAH24</b>		1SNA 168 355 R1300
Rail		35 x 7,5 x 1	<b>PR3.Z2</b>		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200
Rail		21,8 x 8,2 x 1,5	<b>PRH2R</b>		1SNA 163 350 R1500

Other end stops, rails and accessories : see section on accessories.

## Notes

## Accessories

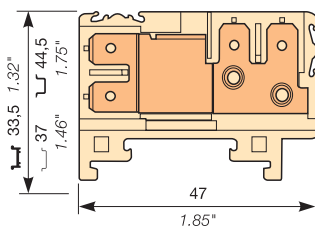


- End section
- Circuit separator
- Test plug
- Jumper bar
- Screw for **BJS**
- Washer for **VSJ6**

**R** See section on markers marking method


### HD 6/8.2G.2G.2

Spacing 8 mm (.315") or 9 mm (.354") with end section



1 terminal block with 4 tabs for 6.3 x 0.8 mm (.248" x .031") quick connect with possible testing and transverse connection.



Color	Type	Part numbers
Beige	 <b>HD 6/8.2G.2G.2</b>	1SNA 160 619 R1000
NF F 61017	<b>BB 0008-2G2G</b>	1SNA 160 619 R1000
NF F 61017	<b>BB 0009-2G2G</b>	1SNA 160 619 R1000 + FEH4

### Characteristics

Wire size	DIN-VDE	NF F 61017	NFC-UTE
	Quick-connect	6,3 x 0,8 mm (series 250) - 6 mm <sup>2</sup> max.	

### Rated voltage

V AC	380 Gr. C	380	400 Cat. C
V DC	450 Gr. C	380	250 Cat. C

### Rated current

Rated	26	20	20/25
-------	----	----	-------

### Wire size

Rated	6 mm <sup>2</sup>	6 mm <sup>2</sup>
Weight	9 g	0,32 oz
Protection	IP 20 raccordé NEMA 1 connected	

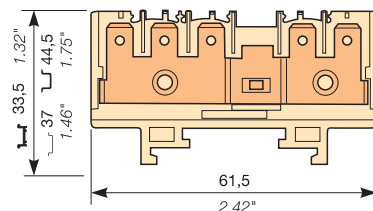
Type	Part numbers
FEH4	th. 1 mm 1SNA 193 878 R2200
SCH3	th. 1,6 mm 1SNA 198 692 R2500
FC2	DIA. 2 mm 1SNA 007 865 R2600
BJH8 (1) spacing 8 mm	2 poles 1SNA 168 456 R0100
	3 poles 1SNA 168 457 R0200
	4 poles 1SNA 168 458 R1300
	5 poles 1SNA 168 459 R1400
	10 poles 1SNA 168 356 R1400
	BJH9 (1) spacing 9 mm
3 poles 1SNA 168 461 R0600	
4 poles 1SNA 168 462 R0700	
5 poles 1SNA 168 463 R0000	
10 poles 1SNA 168 357 R1500	
VSJ6 1SNA 167 735 R2700	
RDJ6 1SNA 173 241 R0600	

RC 610 RC 810

(1) Use of these accessories requires the cut out of the block body (precut).


### HD 6/9.5G

Spacing 9 mm (.354")



1 circuit. 1 terminal block with 5 tabs for 6.3 x 0.8 mm (.248" x .031") quick connect with possible testing and transverse connection.



Color	Type	Part numbers
Beige	 <b>HD 6/9.5G</b>	1SNA 160 621 R0200
NF F 61017	<b>BC 0009-3G2G</b>	1SNA 160 621 R0200

### Characteristics

Wire size	DIN-VDE	NF F 61017	NFC-UTE
	Quick-connect	6,3 x 0,8 mm (series 250) - 6 mm <sup>2</sup> max.	

### Rated voltage

V AC	380 Gr. C	380	400 Cat. C
V DC	450 Gr. C	380	250 Cat. C

### Rated current

Rated	26	20	20/25
-------	----	----	-------

### Wire size

Rated	6 mm <sup>2</sup>	6 mm <sup>2</sup>
Weight	13 g	0,46 oz
Protection	IP 20 raccordé NEMA 1 connected	

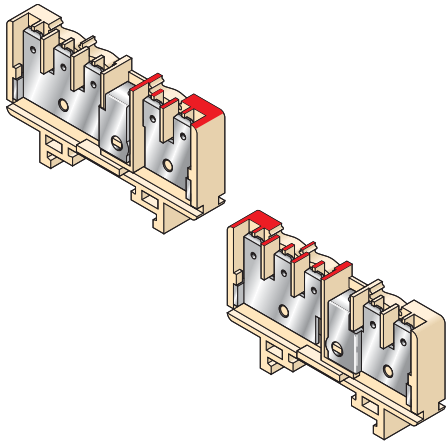
Type	Part numbers
FEHD1	th. 1 mm 1SNA 199 400 R0600
FC2	DIA. 2 mm 1SNA 007 865 R2600
BJH9 (1) spacing 9 mm	2 poles 1SNA 168 460 R1100
	3 poles 1SNA 168 461 R0600
	4 poles 1SNA 168 462 R0700
	5 poles 1SNA 168 463 R0000
	10 poles 1SNA 168 357 R1500
	VSJ6 1SNA 167 735 R2700
RDJ6 1SNA 173 241 R0600	







RC510 only

## Terminal block with vertical quick connect tabs

### Assembled without cover

 **DIN 3 - reinforced rail type 2**

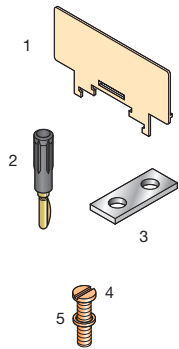


End stop		th. 10 mm	<b>BAM2</b>	V0	1SNA 296 351 R0000
End stop		th. 10,7 mm	<b>BAH24</b>		1SNA 168 355 R1300
Rail		35 x 7,5 x 1	<b>PR3.Z2</b>		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200
Rail		21,8 x 8,2 x 1,5	<b>PRH2R</b>		1SNA 163 350 R1500

Other end stops, rails and accessories : see section on accessories.

### Notes

### Accessories

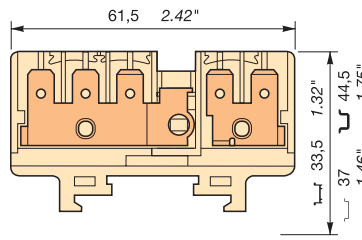


- 1 End section
- 2 Test plug
- 3 Jumper bar
- 4 Screw for **BJS**
- 5 Washer for **VSJ6**

**R** See section on markers marking method


### HD 6/9.3G.2G

Spacing 9 mm (.354")



2 circuits. 1 terminal block with 3 tabs for 6.3 x 0.8 mm (.248" x .031") quick connect with possible testing and transverse connection. 1 terminal block with 2 tabs for 6.3 x 0.8 mm (.248" x .031") quick connect, marked in red.



Color	Type	Part numbers
Beige 	<b>HD 6/9.3G.2G</b>	1SNA 160 563 R0000
NF F 61017	<b>BK 0009-3Ge/2G</b>	

### Characteristics

Wire size	DIN-VDE	NF F 61017	NFC-UTE
	Quick-connect	6,3 x 0,8 mm (series 250) - 6 mm <sup>2</sup> max.	

### Rated voltage

V AC	380 Gr. C	380	400 Cat. C
V DC	450 Gr. C	380	250 Cat. C
Pollution degre			

### Rated current

Rated	26	20	20/25
-------	----	----	-------

### Wire size

Rated	6 mm <sup>2</sup>	6 mm <sup>2</sup>
Weight	13 g	0,46 oz
Protection	IP 20 raccordé	NEMA 1 connected

### Type

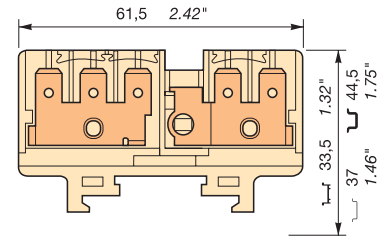
Type	Part numbers
FEHD1 th. 1 mm	1SNA 199 400 R0600
FC2 DIA. 2 mm	1SNA 007 865 R2600
BJH9 (1) spacing 9 mm	2 poles 1SNA 168 460 R1100
	3 poles 1SNA 168 461 R0600
	4 poles 1SNA 168 462 R0700
	5 poles 1SNA 168 463 R0000
	10 poles 1SNA 168 357 R1500
	VSJ6 1SNA 167 735 R2700
RDJ6 1SNA 173 241 R0600	

RC510 only

(1) Use of these accessories requires the cut out of the block body (precut).


### HD 6/9.2G.3G

Spacing 9 mm (.354")



2 circuits. 1 terminal block with 3 tabs for 6.3 x 0.8 mm (.248" x .031") quick connect, marked in red. 1 terminal block with 2 tabs for 6.3 x 0.8 mm (.248" x .031") quick connect, with possible testing and transverse connection.



Color	Type	Part numbers
Beige 	<b>HD 6/9.2G.3G</b>	1SNA 160 564 R0100
NF F 61017	<b>BK 0009-3G/2Ge</b>	

### Characteristics

Wire size	DIN-VDE	NF F 61017	NFC-UTE
	Quick-connect	6,3 x 0,8 mm (series 250) - 6 mm <sup>2</sup> max.	

### Rated voltage

V AC	380 Gr. C	380	400 Cat. C
V DC	450 Gr. C	380	250 Cat. C
Pollution degre			

### Rated current

Rated	26	20	20/25
-------	----	----	-------

### Wire size

Rated	6 mm <sup>2</sup>	6 mm <sup>2</sup>
Weight	13 g	0,46 oz
Protection	IP 20 raccordé	NEMA 1 connected

### Type

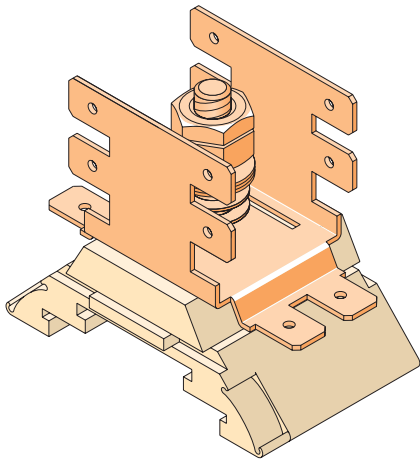
Type	Part numbers
FEHD1 th. 1 mm	1SNA 199 400 R0600
FC2 DIA. 2 mm	1SNA 007 865 R2600
BJH9 (1) spacing 9 mm	2 poles 1SNA 168 460 R1100
	3 poles 1SNA 168 461 R0600
	4 poles 1SNA 168 462 R0700
	5 poles 1SNA 168 463 R0000
	10 poles 1SNA 168 357 R1500
	VSJ6 1SNA 167 735 R2700
RDJ6 1SNA 173 241 R0600	

RC510 only

# Terminal block with 1 stud terminal and quick connect tabs

Assembled with cover

DIN 3 - reinforced rail type 2



End stop		th. 10 mm	<b>BAM2</b>	V0	1SNA 296 351 R0000
End stop		th. 8,2 mm	<b>BAH22</b>		1SNA 164 655 R0400
Rail		21,8 x 8,2 x 1,5	<b>PRH2R</b>		1SNA 163 350 R1500

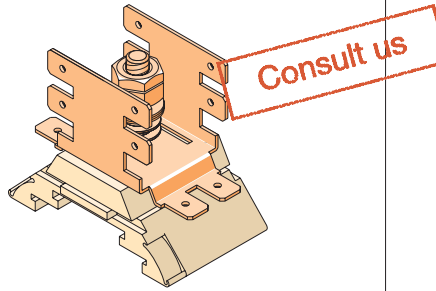
Other end stops, rails and accessories : see section on accessories.

## Notes

Equipment (as per NF F 61017) :  
 self locking nut  
 + spring washer  
 + washer

## HD 6/30.F12G

Spacing 31,2 mm (1.23") (spacing 30 mm (1.18") + separator 1.2 mm (.04"))



190 A main circuit - 1 stud terminal M6 x 19,5 mm (.768") without clamp. Branch by 12 tabs for quick disconnect 6,3 x 0,8 mm (.248" x .031").



Color	Type	Part numbers	Color	Type	Part numbers
-------	------	--------------	-------	------	--------------

Beige **HD 6/30.F12G** 1SNA 295 015 R1200

NF F 61017 **BF 31,2-1F12G** 1SNA 295 015 R1200+SCH8

### Characteristics

Wire size	DIN-VDE	NF F 61017	NFC-UTE
	Quick-connect	6,3 x 0,8 mm (series 250) - 2,5 mm <sup>2</sup> max.	

### Characteristics

Wire size	DIN-VDE	NF F 61017	NFC-UTE
	Quick-connect		

### Rated voltage

	750 Gr. C	380 Gr. C	750 Cat. C
V AC			
V DC	900 Gr. C	500 Gr. C	750 Cat. C

### Rated voltage

V AC			
V DC			

### Rated current

Rated	190/26 A	155 A	190/25 A

### Rated current

Rated			

### Wire size

Rated			
		Recommended torque	
		5,3 Nm	

### Wire size

Rated			
		Recommended torque	

## Accessories

- End section
- Intermediate section
- Double section (height 40/50,5mm)
- Circuit separator
- Clear cover  
Cover
- Transverse marking for cover
- Terminal board label holder on FEH
- Label for PEFH (29 x 5 mm)

Type	Part numbers	Type	Part numbers
------	--------------	------	--------------

FJH501	th. 1.5 mm	1SNA 199 411 R1400	
FJH501	th. 1.5 mm	1SNA 199 411 R1400	
FJDHD		1SNA 295 426 R1300	
SCH8	th. 1.2 mm	1SNA 199 412 R1500	
CPM		1SNA 187 312 R1400	
CPM		1SNA 197 312 R1600	
RTC		1SNA 163 156 R2700	
PEFH		1SNA 163 497 R1600	
RPED		1SNA 163 518 R2200	

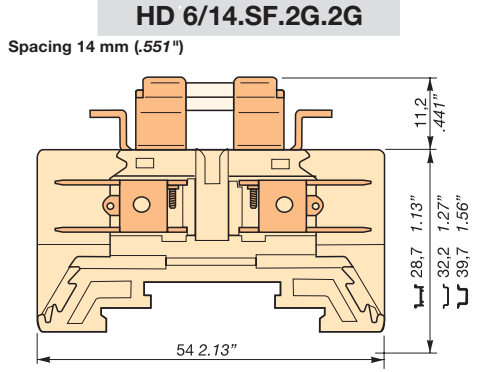
R See section on markers marking method

REH3

## Fuse holder with tabs


(outside supply scope)

 DIN 3 - reinforced rail type 2



Block for fuses 5 x 20 mm (.197" x .787") 6,3 A max.  
Connection by 2 tabs for quick disconnects 6,3 x 0,8 mm (.248" x .031") on each side.

**SNECF RATP**







Color	Type	Part numbers	Color	Type	Part numbers
Beige	 HD 6/14.SF.2G.2G	1SNA 162 315 R2500			

### Characteristics

Wire size	DIN-VDE	NF F 61017	NFC-UTE
	Quick-connect	6,3 x 0,8 mm (series 250) - 2,5 mm <sup>2</sup> max.	

### Characteristics

Wire size	DIN-VDE	NF F 61017	NFC-UTE

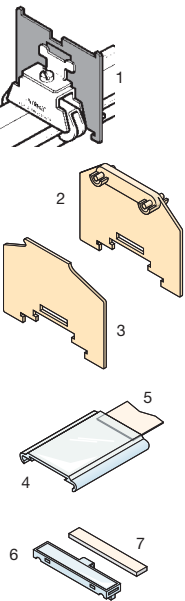
End stop		th. 10 mm	BAM2	V0	1SNA 296 351 R0000
End stop		th. 10,7 mm	BAH24		1SNA 168 355 R1300
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200
Rail		21,8 x 8,2 x 1,5	PRH2R		1SNA 163 350 R1500

Other end stops, rails and accessories : see section on accessories.

### Notes

Rated voltage				Rated voltage			
V AC	500 Gr. C	380	500 Cat. C	V AC			
V DC	600 Gr. C	500	500 Cat. C	V DC			
Pollution degree				Pollution degree			
Rated current				Rated current			
Rated	26 A	12 A	20/25 A	Rated			
Wire size				Wire size			
Rated	6 mm <sup>2</sup>		6 mm <sup>2</sup>	Rated			
Weight				Weight			
17 g							
0.60 oz							

### Accessories




- 1 End section
- 2 Intermediate section
- 3 Circuit separator
- 4 Clear cover  
Cover V0 beige
- 5 Transverse marking for cover
- 6 Terminal board level holder on FEH
- 7 Label for PEFH (29 x 5 mm)







Type	Part numbers		Type	Part numbers	
FEH9	th. 1,6 mm	1SNA 198 549 R0500			
FJH501	th. 1,5 mm	1SNA 199 411 R1400			
SCH8	th. 1,2 mm	1SNA 199 412 R1500			
CPM		1SNA 187 312 R1400			
CPM V0		1SNA 197 312 R1600			
RTC		1SNA 163 156 R2700			
PEFH		1SNA 163 497 R1600			
RPED		1SNA 163 518 R2200			

**R** See section on markers marking method

RC610 REH3

# Component holders with tabs

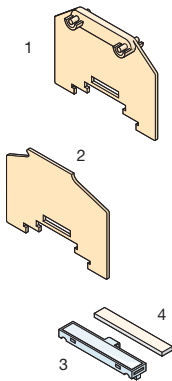
 **DIN 3 - reinforced rail type 2**

End stop		th. 10 mm	<b>BAM2</b>	V0	1SNA 296 351 R0000
End stop		th. 10,7 mm	<b>BAH24</b>		1SNA 168 355 R1300
Rail		35 x 7,5 x 1	<b>PR3.Z2</b>		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200
Rail		21,8 x 8,2 x 1,5	<b>PRH2R</b>		1SNA 163 350 R1500

Other end stops, rails and accessories : see section on accessories.

## Notes

## Accessories

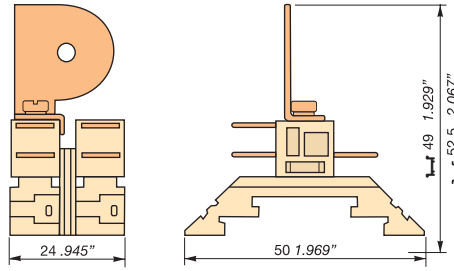


<b>1</b>	End section	FJHD40	th. 1,5 mm	1SNA 295 424 R1100
<b>2</b>	Circuit separator	SCHD2	th. 1,2 mm	1SNA 295 429 R2600
<b>3</b>	Terminal board label holder on <b>FEH</b>	PEFH		1SNA 163 497 R1600
<b>4</b>	Label for <b>PEFH</b> (29 x 5 mm)	RPED		1SNA 163 518 R2200

**R** See section on markers marking method


## HD 6/24.DH

Spacing 25,2 mm (1.01") (spacing 24 mm (.945") + separator 1.2 mm (.047"))



Block for screw and solder diodes type SKNa4 or SKN5. Connection by 6 tabs for quick disconnects 6,3 x 0,8 mm (.248" x .031").



Color	Type	Part numbers
Beige	 <b>HD 6/24.DH</b>	1SNA 399 964 R0600
NF F 61017 <b>BG25,2-2G2G</b> 1SNA 399 964 R0600+SCHD2		

### Characteristics

Wire size	DIN-VDE	NF F 61017	NFC-UTE
	Quick-connect	6,3 x 0,8 mm (series 250) - 2,5 mm <sup>2</sup> max.	

### Rated voltage

V AC	250 Gr. C	250	400 Cat. C
V DC	250 Gr. C	250	250 Cat. C

Pollution degre

### Rated current

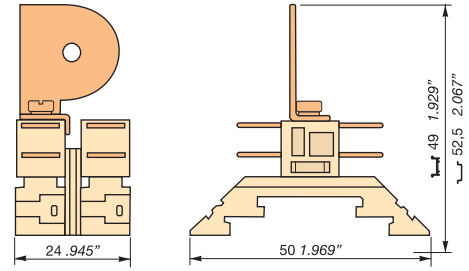
Rated	26 A	16 A	20/25 A
-------	------	------	---------

### Wire size

Rated	6 mm <sup>2</sup>	6 mm <sup>2</sup>
Weight		
20 g		
0.71 oz		

## HD 6/24.DH

Spacing 25,2 mm (1.01") (spacing 24 mm (.945") + separator 1.2 mm (.047"))



Block for screw and solder diodes type SKNa4 or SKN5. Connection by 8 tabs for quick disconnects 6,3 x 0,8 mm (.248" x .031").



Color	Type	Part numbers
Beige	 <b>HD 6/24.DH</b>	1SNA 399 963 R0500

### Characteristics

Wire size	DIN-VDE	NF F 61017	NFC-UTE
	Quick-connect	6,3 x 0,8 mm (series 250) - 2,5 mm <sup>2</sup> max.	

### Rated voltage

V AC	250 Gr. C	250	400 Cat. C
V DC	250 Gr. C	250	250 Cat. C

Pollution degre

### Rated current

Rated	26 A	16 A	20/25 A
-------	------	------	---------


### Wire size

Rated	6 mm <sup>2</sup>	6 mm <sup>2</sup>
Weight		
20 g		
0.71 oz		

Type	Part numbers
FJHD40	th. 1,5 mm 1SNA 295 424 R1100
SCHD2	th. 1,2 mm 1SNA 295 429 R2600
PEFH	1SNA 163 497 R1600
RPED	1SNA 163 518 R2200

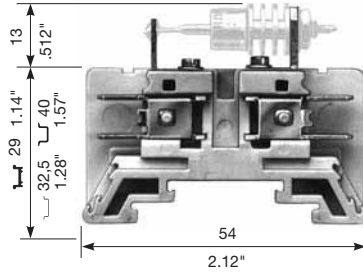
REH3

### Component holder with tabs (outside supply scope)

 DIN 3 - reinforced rail type 2

#### HD 6/14.DH

Spacing 14 mm (.551")



Block for screw and solder diodes type SKN2,5 or SKNa2. Connection by 2 tabs for quick disconnects 6,3 x 0,8 mm (.248" x .031") on each side.









Color	Type	Part numbers
Beige	HD 6/14.DH	1SNA 162 971 R2700
	NF F 61017 BG 0014-2G2G	

#### Characteristics

Wire size	DIN-VDE	NF F 61017	NFC-UTE
	Quick-connect	6,3 x 0,8 mm (series 250) - 2,5 mm <sup>2</sup> max.	

Rated voltage			
V AC	500 Gr. C	380	500 Cat. C
V DC	600 Gr. C	500	500 Cat. C
Rated current			
Rated	26 A	12 A	20/25 A
Wire size			
Rated	6 mm <sup>2</sup>	6 mm <sup>2</sup>	6 mm <sup>2</sup>
Weight			
17 g 0.60 oz			

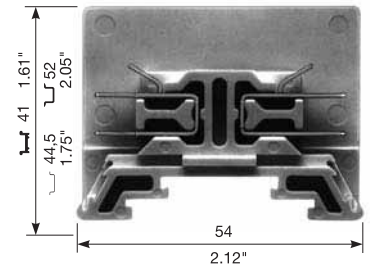
End stop		th. 10 mm	BAM2	V0	1SNA 296 351 R0000
End stop		th. 10,7 mm	BAH24		1SNA 168 355 R1300
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200
Rail		21,8 x 8,2 x 1,5	PRH2R		1SNA 163 350 R1500

Other end stops, rails and accessories : see section on accessories.

### Notes

#### HD 6/14.DG

Spacing 14 mm (.551")



Block for soldered diodes or resistors. Connection by 2 tabs for quick disconnects 6,3 x 0,8 mm (.248" x .031") on each side.



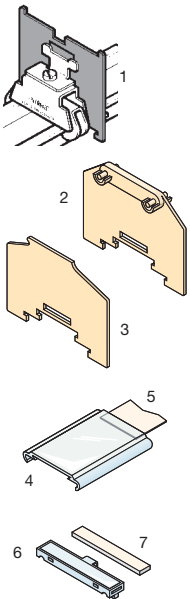
Color	Type	Part numbers
Beige	HD 6/14.DG	1SNA 162 309 R1000
	NF F 61017 BG 0014-2G2G	

#### Characteristics

Wire size	DIN-VDE	NF F 61017	NFC-UTE
	Quick-connect	6,3 x 0,8 mm (series 250) - 2,5 mm <sup>2</sup> max.	

Rated voltage			
V AC	500 Gr. C	380	500 Cat. C
V DC	600 Gr. C	500	500 Cat. C
Rated current			
Rated	26 A	12 A	20/25 A
Wire size			
Rated	6 mm <sup>2</sup>	6 mm <sup>2</sup>	6 mm <sup>2</sup>
Weight			

### Accessories



- 1 End section
- 2 Intermediate section
- 3 Circuit separator
- 4 Clear cover
- 5 Transverse marking for cover
- 6 Terminal board level holder on FEH
- 7 Label for PEFH (29 x 5 mm)

R See section on markers marking method

#### Type Part numbers

FEH9	th. 1,6 mm	1SNA 198 549 R0500
FJH501	th. 1,5 mm	1SNA 199 411 R1400
SCH8	th. 1,2 mm	1SNA 199 412 R1500
CPM		1SNA 187 312 R1400
CPM		1SNA 197 312 R1600
RTC		1SNA 163 156 R2700

RC610 REH3

#### Type Part numbers







FEH8	th. 1,5 mm	1SNA 198 729 R0100
FJH501	th. 1,5 mm	1SNA 199 411 R1400
SCH8	th. 1,2 mm	1SNA 199 412 R1500
CPM		1SNA 187 312 R1400
CPM		1SNA 197 312 R1600
RTC		1SNA 163 156 R2700
PEFH		1SNA 163 497 R1600
RPED		1SNA 163 518 R2200

RC610 REH3

## Removable component holder with tabs (outside supply scope)

 **DIN 3 - reinforced rail type 2**

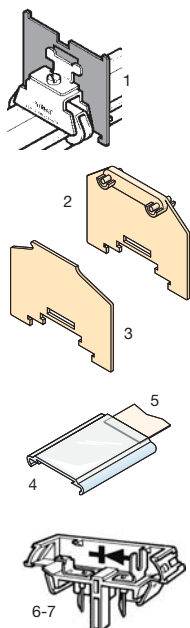


End stop		th. 10 mm	<b>BAM2</b>	V0	1SNA 296 351 R0000
End stop		th. 10,7 mm	<b>BAH24</b>		1SNA 168 355 R1300
Rail		35 x 7,5 x 1	<b>PR3.Z2</b>		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200
Rail		21,8 x 8,2 x 1,5	<b>PRH2R</b>		1SNA 163 350 R1500

Other end stops, rails and accessories : see section on accessories.

### Notes

### Accessories

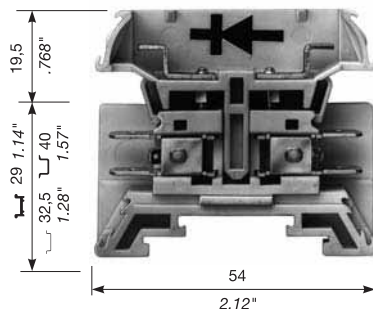


- 1 End section
- 2 Intermediate section
- 3 Circuit separator
- 4 Clear cover Cover
- 5 Transverse marking for cover
- 6 Plug for diode screw and solder tag
- 7 Plug with solder tag

**R** See section on markers marking method

### HD 6/14.SDH.1

Spacing 14 mm (.551")



Connection interruptible by plugs. For screw and solder diodes. Connection by 2 tabs for quick disconnects 6,3 x 0,8 mm (.248" x .031") on each side.

**SNEF RATP**  
NF F 61017 NF F 61017

Color	Type	Part numbers
Beige (with plug)	<input type="checkbox"/> <b>HD 6/14.SDH.1</b>	1SNA 162 988 R2100
NF F 61017	<input type="checkbox"/> <b>BH 0014-2G2G</b>	

### Characteristics

Wire size	DIN-VDE	NF F 61017	NFC-UTE
	Quick-connect	6,3 x 0,8 mm (series 250) - 6 mm <sup>2</sup> max.	

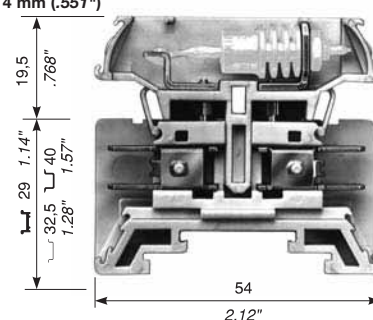
Rated voltage			
V AC	500 Gr. C	380	500 Cat. C
V DC	600 Gr. C	500	500 Cat. C
Pollution degre			
Pollution degre			
Rated current			
Rated	26 A	16 A	20/25 A
Wire size			
Rated	6 mm <sup>2</sup>		6 mm <sup>2</sup>
Weight			
30 g			
1.06 oz			

Type	Part numbers
FEH9	th. 1,6 mm 1SNA 198 549 R0500
FJH501	th. 1,5 mm 1SNA 199 411 R1400
SCH8	th. 1,2 mm 1SNA 199 412 R1500
CPM	1SNA 187 312 R1400
CPM	1SNA 197 312 R1600
RTC	1SNA 163 156 R2700
BNHD.VS	1SNA 168 621 R0600
BNHD.S	1SNA 168 957 R0700
RC610	REH3

### HD 6/14.SDH

### HD 6/14.SDH.2

Spacing 14 mm (.551")



Connection interruptible by plugs. For screw and solder diodes type SKN2,5 or SKNa2. Connection by 2 tabs for quick disconnects 6,3 x 0,8 mm (.248" x .031") on each side.

**SNEF RATP**  
NF F 61017 NF F 61017

Color	Type	Part numbers
Beige (with plug)	<input type="checkbox"/> <b>HD 6/14.SDH</b>	1SNA 162 972 R2000
NF F 61017	<input type="checkbox"/> <b>BH 0014-2G2G</b>	
Beige (without plug)	<input type="checkbox"/> <b>HD 6/14.SDH2</b>	1SNA 162 993 R1600

### Characteristics

Wire size	DIN-VDE	NF F 61017	NFC-UTE
	Quick-connect	6,3 x 0,8 mm (series 250) - 6 mm <sup>2</sup> max.	

Rated voltage			
V AC	500 Gr. C	380	500 Cat. C
V DC	600 Gr. C	500	500 Cat. C
Pollution degre			
Pollution degre			
Rated current			
Rated	26 A	16 A	20/25 A
Wire size			
Rated	6 mm <sup>2</sup>		6 mm <sup>2</sup>
Weight			
30 g			
1.06 oz			

Type	Part numbers
FEH9	th. 1,6 mm 1SNA 198 549 R0500
FJH501	th. 1,5 mm 1SNA 199 411 R1400
SCH8	th. 1,2 mm 1SNA 199 412 R1500
CPM	1SNA 187 312 R1400
CPM	1SNA 197 312 R1600
RTC	1SNA 163 156 R2700
BNHD.VS	1SNA 168 621 R0600
BNHD.S	1SNA 168 957 R0700
RC610	REH3

# Notes



Lined writing area consisting of approximately 30 horizontal lines.

A  
4





# Terminal Blocks entrelec® according to NF F 61017 and IEC 60947-7

Stud Connections

## Contents

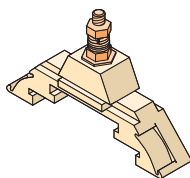
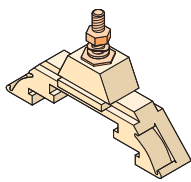
1-stud Terminal Blocks assembled with Cover .....	56
2-stud Terminal Blocks assembled without Cover .....	64
H Terminal Blocks (former range) .....	69



**NFF 61017 / IEC 60947-7**

# Terminal block with 1 stud terminal - Assembled with cover

**DIN 3 - reinforced rail type 2**



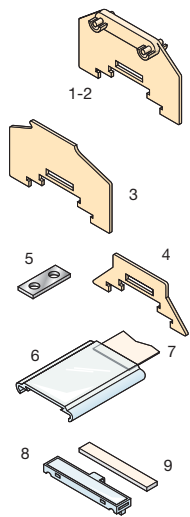
End stop		th. 10 mm	<b>BAM2</b>	V0	1SNA 296 351 R0000
End stop		th. 7,1 mm	<b>BAH21</b>		1SNA 167 489 R2200
Rail		35 x 7,5 x 1	<b>PR3.Z2</b>		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200
Rail		21,8 x 8,2 x 1,5	<b>PRH2R</b>		1SNA 163 350 R1500

Other end stops, rails and accessories : see section on accessories.

## Notes

\* The use of a jumper bar requires to use a spacer instead of a circuit separator.

## Accessories



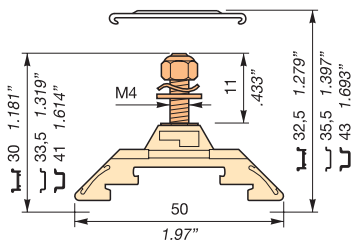
	Type	Colour	P/N
1 End section	beige V0		FJHD32 th. 1,5 mm 1SNA 295 431 R1000
2 Intermediate section	beige V0		FJHD32 th. 1,5 mm 1SNA 295 431 R1000
3 Circuit separator	beige V0		SCHD1 th. 1,2 mm 1SNA 295 428 R2500
4 Spacer	beige V0		INHD th. 1,2 mm 1SNA 295 427 R1400
5 Jumper bar	yellow		BJH105 spacing 10,5 mm 10 poles 1SNA 163 503 R2400
6 Cover	clear		CPM 1SNA 187 312 R1400
6 Cover V0	beige		CPM V0 1SNA 197 312 R1600
7 Marking for clear cover	yellow		RTC 1SNA 163 156 R2700
8 Terminal board label holder on FEH			PEFH 1SNA 163 497 R1600
9 Label for PEFH (29 x 5 mm)			RPED 1SNA 163 518 R2200

**R** See section on markers marking method

RC610 or RC510

## HD4/9.F4

Spacing 10.7 mm (.421")  
(spacing 9.5 mm (.374") + separator\* 1.2 mm (.047"))



1 stud terminal M4 x 11.5 mm (.453") - Equipment: self locking nut + spring washer + washer

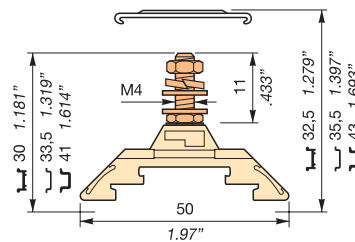
**SNEF RATP**

Colour	Type	Part numbers
Beige V0	<b>HD4/9.F4</b>	1SNA 295 391 R2000

## HD4/9.F4.2

Brass

Spacing 10.7 mm (.421")  
(spacing 9.5 mm (.374") + separator\* 1.2 mm (.047"))



1 stud terminal M4 x 11.5 mm (.453") - Equipment: 1 bottom nut + 2 washers + 1 spring washer + 1 top nut

**SNEF RATP**

Colour	Type	Part numbers
Beige V0 brass	<b>HD4/9.F4.2</b>	1SNA 295 392 R2100
Yellow V0 brass	<b>HD4/9.F4.2</b>	1SNA 205 392 R0700

## Characteristics

### Wire size

	NFC		
Tubular lug (NFC 20130)	1,5 mm <sup>2</sup> to 4 mm <sup>2</sup> (1)		

### Voltage

V AC	500 Cat. C		
V DC	500 Cat. C		
Pollution degree			

### Current

Rated	32 A		
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### Wire size

Rated (Rigid)	4 mm <sup>2</sup>		
Weight		Recommended torque	
6 g		1,2 Nm	
0.21 oz		10.6 lb.in	

## Characteristics

### Wire size

	NFC		
Tubular lug (NFC 20130)	1,5 mm <sup>2</sup> to 4 mm <sup>2</sup> (1)		

### Voltage

V AC	500 Cat. C		
V DC	500 Cat. C		
Pollution degree			

### Current

Rated	32 A		
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### Wire size

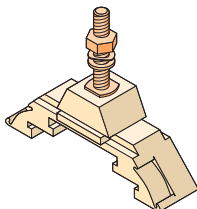
Rated (Rigid)	4 mm <sup>2</sup>		
Weight		Recommended torque	
6 g		1,2 Nm	
0.21 oz		10.6 lb.in	







(1) In order to make compatible the spacing of the block with the size of the lug, it may be needed to insert one or more spacers INHD between blocks.



# Terminal block with 1 stud terminal - Assembled with cover

 **DIN 3 - reinforced rail type 2**



End stop		th. 10 mm	<b>BAM2</b>	V0	1SNA 296 351 R0000
End stop		th. 8,2 mm	<b>BAH22</b>		1SNA 164 655 R0400
Rail		35 x 7,5 x 1	<b>PR3.22</b>		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200
Rail		21,8 x 8,2 x 1,5	<b>PRH2R</b>		1SNA 163 350 R1500

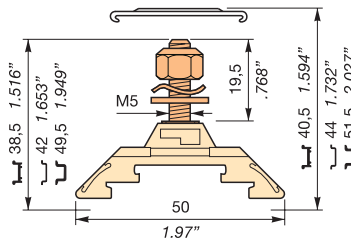
Other end stops, rails and accessories : see section on accessories.

## Notes

\* The use of a jumper bar requires to use a spacer instead of a circuit separator.


## HD10/12.F5.3

Spacing 13.2 mm (.520")  
(spacing 12 mm (.473") + separator\* 1.2 mm (.047"))



1 stud terminal M5 x 19.5 mm (.768") - Equipment (As per NF F 61017): self locking nut + spring washer + washer



Colour	Type	Part numbers
Beige V0	 <b>HD10/12.F5.3</b>	1SNA 295 011 R1600
<b>NF F 61017</b>	<b>BD13.2-1F5</b>	1SNA 295 011 R1600+SCHD2*

## Characteristics

Wire size	NF F 61-017		
	NFC	DIN	NF F 61-017
Tubular lug (NFC 20130)	2,5 mm <sup>2</sup> to 10 mm <sup>2</sup> (1)		
Lug (DIN 46235)		6 mm <sup>2</sup> to 10 mm <sup>2</sup>	

## Voltage

V AC	750 Cat. C	750 V
V DC	750 Cat. C	750 V
Pollution degree		




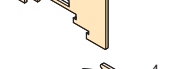




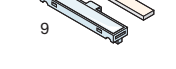


## Current

Rated	57 A	51 A
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## Wire size


Rated (Rigid)	10 mm <sup>2</sup>	
Weight		Recommended torque
11 g		2,5 Nm
0.39 oz		

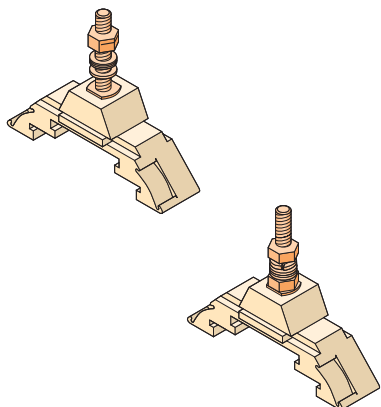
## Accessories







Type	P/N
 1 End section beige V0 yellow V0	FJHD40 th. 1,5 mm 1SNA 295 424 R1100
 2 Intermediate section beige V0 yellow V0	FJHD40 th. 1,5 mm 1SNA 295 424 R1100
 3 Double section beige V0 (height 40/50.5 mm)	FJDHD th. 1,5 mm 1SNA 295 426 R1300
 4 Circuit separator beige V0 yellow V0	SCHD2 th. 1,2 mm 1SNA 295 429 R2600
 5 Spacer beige V0 yellow V0	INHD th. 1,2 mm 1SNA 295 427 R1400
 6 Jumper bar	BJH131 spacing 13,2 mm 10 poles 1SNA 163 468 R0000
 7 Cover Cover V0 clear beige yellow	CPM 1SNA 187 312 R1400 CPM V0 1SNA 197 312 R1600
 8 Marking for clear cover	RTC 1SNA 163 156 R2700
 9 Terminal board label holder on FEH	PEFH 1SNA 163 497 R1600
 10 Label for PEFH (29 x 5 mm)	RPED 1SNA 163 518 R2200
 <b>R</b> See section on markers marking method	RC610 / RC510

(1) In order to make compatible the spacing of the block with the size of the lug, it may be needed to insert one or more spacers INHD between blocks.

# Terminal block with 1 stud terminal - Assembled with cover

 **DIN 3 - reinforced rail type 2**



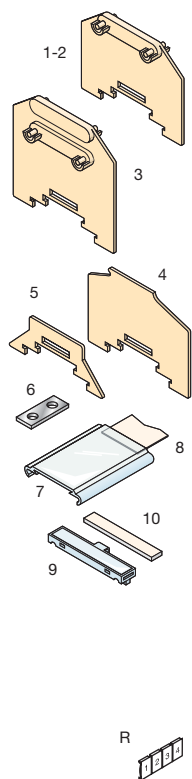
End stop		th. 10 mm	<b>BAM2</b>	V0	1SNA 296 351 R0000
End stop		th. 8,2 mm	<b>BAH22</b>		1SNA 164 655 R0400
Rail		35 x 7,5 x 1	<b>PR3.Z2</b>		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200
Rail		21,8 x 8,2 x 1,5	<b>PRH2R</b>		1SNA 163 350 R1500

Other end stops, rails and accessories : see section on accessories.

## Notes

\* The use of a jumper bar requires to use a spacer instead of a circuit separator.

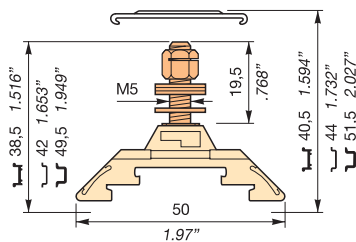
## Accessories



Type	Colour	P/N
1 End section	beige V0 yellow V0	FJHD40 th. 1,5 mm 1SNA 295 424 R1100
2 Intermediate section	beige V0 yellow V0	FJHD40 th. 1,5 mm 1SNA 295 424 R1100
3 Double section (height 40/50.5 mm)	beige V0	FJDHD th. 1,5 mm 1SNA 295 426 R1300
4 Circuit separator	beige V0 yellow V0	SCHD2 th. 1,2 mm 1SNA 295 429 R2600
5 Spacer	beige V0 yellow V0	INHD th. 1,2 mm 1SNA 295 427 R1400
6 Jumper bar		BJH131 spacing 13,2 mm 10 poles 1SNA 163 468 R0000
7 Cover Cover V0	clear beige yellow	CPM 1SNA 187 312 R1400 CPM V0 1SNA 197 312 R1600
8 Marking for clear cover		RTC 1SNA 163 156 R2700
9 Terminal board label holder on FEH		PEFH 1SNA 163 497 R1600
10 Label for PEFH (29 x 5 mm)		RPED 1SNA 163 518 R2200
<b>R</b> See section on markers marking method		RC610 / RC510

## HD10/12.F5

Spacing 13.2 mm (.520")  
(spacing 12 mm (.473") + separator\* 1.2 mm (.047"))



1 stud terminal M5 x 19.5 mm (.768") - Equipment : H 130 self locking nut + TREP 3L washer + washer

**SNEF RATP**

Colour	Type	Part numbers
Beige V0	 <b>HD10/12.F5</b>	1SNA 295 394 R2300

## Characteristics

Wire size	NFC			DIN			NF F 61-017		
	2,5 mm <sup>2</sup> to 10 mm <sup>2</sup> (1)			6 mm <sup>2</sup> to 10 mm <sup>2</sup>					
Tubular lug (NFC 20130)									
Lug (DIN 46235)									

## Voltage

V AC	750 Cat. C	750 V
V DC	750 Cat. C	750 V

## Pollution degree

Pollution degree		
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## Current

Rated	57 A	51 A
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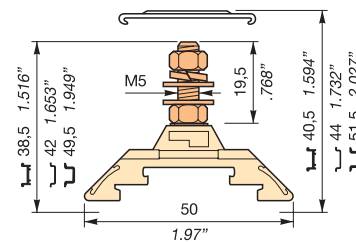
## Wire size

Rated (Rigid)	10 mm <sup>2</sup>	Recommended torque	2,5 Nm
Weight	11 g	0.39 oz	

## HD10/12.F5.1 HD10/12.F5.2




**Steel  
Brass**

Spacing 13.2 mm (.520")  
(spacing 12 mm (.473") + separator\* 1.2 mm (.047"))



1 stud terminal M5 x 19.5 mm (.768") - Equipment: 1 bottom nut + 2 washers + 1 spring washer + 1 top nut

**SNEF RATP**

Colour	Type	Part numbers
Beige V0 Steel	 <b>HD10/12.F5.1</b>	1SNA 295 395 R2400
Beige V0 Brass	 <b>HD10/12.F5.2</b>	1SNA 295 396 R2500
Yellow V0 Brass	 <b>HD10/12.F5.2</b>	1SNA 205 396 R0300

## Characteristics

Wire size	NFC			DIN		
	2,5 mm <sup>2</sup> to 10 mm <sup>2</sup> (1)			6 mm <sup>2</sup> to 10 mm <sup>2</sup>		
Tubular lug (NFC 20130)						
Lug (DIN 46235)						

## Voltage

V AC	750 Cat. C	
V DC	750 Cat. C	

## Pollution degree

Pollution degree		
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## Current

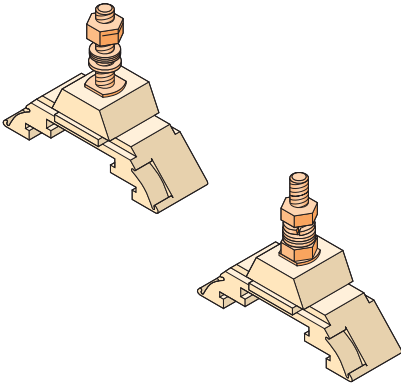
Rated	57 A	
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## Wire size

Rated (Rigid)	10 mm <sup>2</sup>	Recommended torque	2 Nm
Weight	11 g	0.39 oz	

# Terminal block with 1 stud terminal - Assembled with cover

**DIN 3 - reinforced rail type 2**



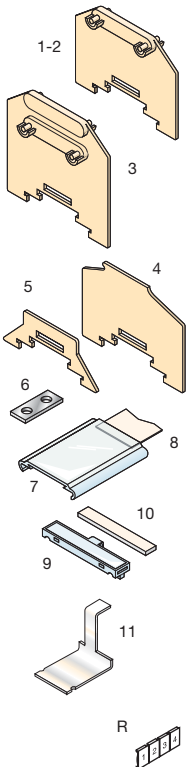
End stop		th. 10 mm	<b>BAM2</b>	V0	1SNA 296 351 R0000
End stop		th. 8,2 mm	<b>BAH22</b>		1SNA 164 655 R0400
Rail		35 x 7,5 x 1	<b>PR3.22</b>		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200
Rail		21,8 x 8,2 x 1,5	<b>PRH2R</b>		1SNA 163 350 R1500

Other end stops, rails and accessories : see section on accessories.

## Notes

\* The use of a jumper bar requires to use a spacer instead of a circuit separator.

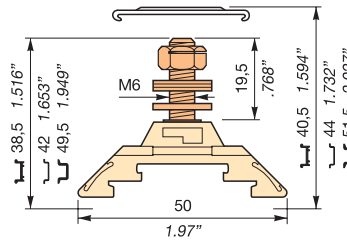
## Accessories



<b>1</b> End section	beige V0
<b>2</b> Intermediate section	beige V0
<b>3</b> Double section (height 40/50.5 mm)	beige V0
<b>4</b> Circuit separator	beige V0
<b>5</b> Spacer	beige V0
<b>6</b> Jumper bar	
<b>7</b> Cover	clear
Cover V0	beige
<b>8</b> Marking for clear cover	
<b>9</b> Terminal board label holder on FEH	
<b>10</b> Label for PEFH (29 x 5 mm)	
<b>11</b> Distribution bar	
<b>R</b> See section on markers marking method	

## HD35/16.F6.19

Spacing 17.2 mm (.678")  
(spacing 16 mm (.630") + separator\* 1.2 mm (.047"))



1 stud terminal M6 x 19.5 mm (.768") - Equipment (As per NF F 61017): H 130 self locking nut + TREP 3L washer + washer



Colour	Type	Part numbers
Beige V0	<b>HD35/16.F6.19</b>	1SNA 295 398 R0700
<b>NF F 61017 BD17,2-1F6</b>		1SNA 295 398 R0700 + SCHD2*

## Characteristics

Wire size	NF F 61-017		
	NFC	DIN	NF F 61-017
Tubular lug (NFC 20130)	4 mm <sup>2</sup> to 35 mm <sup>2</sup> (t)		
Lug (DIN 46235)		6 mm <sup>2</sup> to 25 mm <sup>2</sup>	

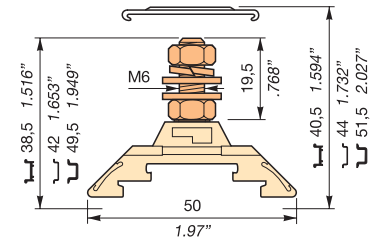
Voltage			
V AC	750 Cat. C		750 V
V DC	750 Cat. C		750 V
Pollution degree			

Current			
Rated	125 A		125 A

Wire size			
Rated (Rigid)	35 mm <sup>2</sup>		
Weight		Recommended torque	
17 g		5,3 Nm	
0.60 oz			

## HD35/16.F6.19.1

Spacing 17.2 mm (.678")  
(spacing 16 mm (.630") + separator\* 1.2 mm (.047"))



1 stud terminal M6 x 19.5 mm (.768") - Equipment: 1 bottom nut + 2 washers + 1 spring washer + 1 top nut



Colour	Type	Part numbers
Beige V0	<b>HD35/16.F6.19.1</b>	1SNA 295 399 R0000

## Characteristics

Wire size	NF F 61-017		
	NFC	DIN	NF F 61-017
Tubular lug (NFC 20130)	4 mm <sup>2</sup> to 35 mm <sup>2</sup> (t)		
Lug (DIN 46235)		6 mm <sup>2</sup> to 25 mm <sup>2</sup>	

Voltage			
V AC	750 Cat. C		750 V
V DC	750 Cat. C		750 V
Pollution degree			

Current			
Rated	125 A		125 A

Wire size			
Rated (Rigid)	35 mm <sup>2</sup>		
Weight		Recommended torque	
17 g		3 Nm	
0.60 oz			

Type	P/N		
FJHD40	th. 1,5 mm	1SNA 295 424 R1100	
FJHD40	th. 1,5 mm	1SNA 295 424 R1100	
FJDHD	th. 1,5 mm	1SNA 295 426 R1300	
SCHD2	th. 1,2 mm	1SNA 295 429 R2600	
INHD	th. 1,2 mm	1SNA 295 427 R1400	
BJH17	spacing 17,2 mm	10 poles	1SNA 163 475 R2700
CPM		1SNA 187 312 R1400	
CPM V0		1SNA 197 312 R1600	
RTC		1SNA 163 156 R2700	
PEFH		1SNA 163 497 R1600	
RPED		1SNA 163 518 R2200	
BJHS		1SNA 206 539 R0300	
RC610 / RC510			

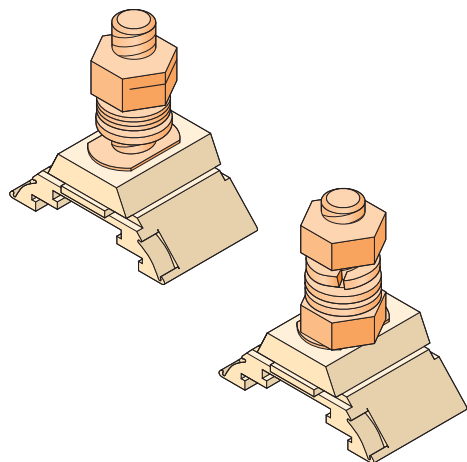
Type	P/N		
FJHD40	th. 1,5 mm	1SNA 295 424 R1100	
FJHD40	th. 1,5 mm	1SNA 295 424 R1100	
FJDHD	th. 1,5 mm	1SNA 295 426 R1300	
SCHD2	th. 1,2 mm	1SNA 295 429 R2600	
INHD	th. 1,2 mm	1SNA 295 427 R1400	
BJH17	spacing 17,2 mm	10 poles	1SNA 163 475 R2700
CPM		1SNA 187 312 R1400	
CPM V0		1SNA 197 312 R1600	
RTC		1SNA 163 156 R2700	
PEFH		1SNA 163 497 R1600	
RPED		1SNA 163 518 R2200	
BJHS		1SNA 206 539 R0300	
RC610 / RC510			

Note : for H 130 self locked nut, after tightening the connections, a protective coat will be required on the threaded stud. (1) In order to make compatible the spacing of the block with the size of the lug, it may be needed to insert one or more spacers INHD between blocks.



### Terminal block with 1 stud terminal - Assembled with cover

DIN 3 - reinforced rail type 2



End stop		th. 10 mm	BAM2	V0	1SNA 296 351 R0000
End stop		th. 8,2 mm	BAH22		1SNA 164 655 R0400
End stop		th. 10,7 mm	BAH24		1SNA 168 355 R1300
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200
Rail		21,8 x 8,2 x 1,5	PRH2R		1SNA 163 350 R1500

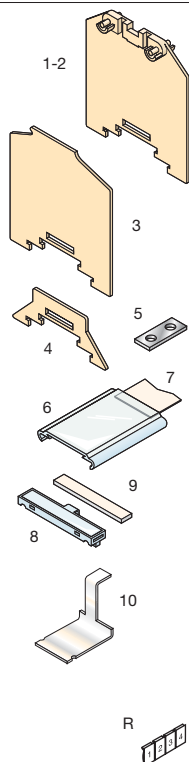
Other end stops, rails and accessories : see section on accessories.

### Notes

Possibility to mounting 150 mm<sup>2</sup> lugs size 30 ± 2 with two INHD spacers.

\* The use of a jumper bar requires to use a spacer instead of a circuit separator.

### Accessories

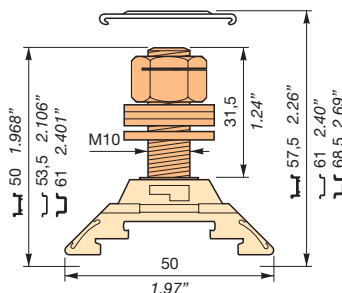


1	End section	beige V0
2	Intermediate section	beige V0
3	Circuit separator	beige V0
4	Spacer	beige V0
5	Jumper bar	beige V0
6	Cover	clear
	Cover V0	beige
7	Marking for clear cover	
8	Terminal board label holder on FEH	
9	Label for PEFH (29 x 5 mm)	
10	Distribution bar	

R See section on markers marking method

### HD120/30.F10.31

Spacing 31.2 mm (1.23")  
(spacing 30 mm (1.18") + separator\* 1.2 mm (.047"))



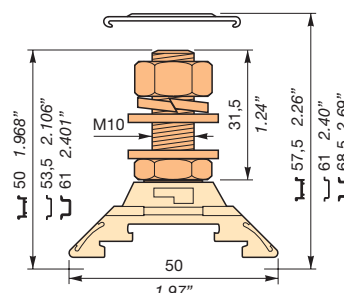
1 stud terminal M10 x 31.5 mm (1.24") - Equipment: H 130 self locking nut + TREP 3L spring washer + washer

**SNEF RATP**

Colour	Type	Part numbers
Beige V0	HD120/30.F10.31	1SNA 295 448 R0100

### HD120/30.F10.31.1

Spacing 31.2 mm (1.23")  
(spacing 30 mm (1.18") + separator\* 1.2 mm (.047"))



1 stud terminal M10 x 31.5 mm (1.24") - Equipment: 1 bottom nut + 2 washers + 1 spring washer + 1 top nut

**SNEF RATP**

Colour	Type	Part numbers
Beige V0	HD120/30.F10.31.1	1SNA 295 403 R2500

### Characteristics

#### Wire size

	NFC	DIN
Tubular lug (NFC 20130)	10 mm <sup>2</sup> to 120 mm <sup>2</sup> (1)	
Lug (DIN 46235)		16 mm <sup>2</sup> to 95 mm <sup>2</sup>

#### Voltage

V AC	750 Cat. C
V DC	750 Cat. C

#### Pollution degree

Pollution degree	
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#### Current

Rated	269 A
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#### Wire size

Rated (Rigid)	120 mm <sup>2</sup>	Recommended torque	30 Nm
Weight	60 g		
	2.12 oz		

### Characteristics

#### Wire size

	NFC	DIN
Tubular lug (NFC 20130)	10 mm <sup>2</sup> to 120 mm <sup>2</sup> (1)	
Lug (DIN 46235)		16 mm <sup>2</sup> to 95 mm <sup>2</sup>

#### Voltage

V AC	750 Cat. C
V DC	750 Cat. C

#### Pollution degree

Pollution degree	
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#### Current

Rated	269 A
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#### Wire size

Rated (Rigid)	120 mm <sup>2</sup>	Recommended torque	10 Nm
Weight	60 g		
	2.12 oz		

Type	P/N
FJH501 th. 1,5 mm	1SNA 199 411 R1400
FJH501 th. 1,5 mm	1SNA 199 411 R1400
SCH8 th. 1,2 mm	1SNA 199 412 R1500
INHD th. 1,2 mm	1SNA 295 427 R1400
BJH311 spacing 31,2 mm 10 poles	1SNA 163 479 R0300
	1SNA 187 312 R1400
CPM V0	1SNA 197 312 R1600
RTC	1SNA 163 156 R2700
PEFH	1SNA 163 497 R1600
RPED	1SNA 163 518 R2200
BJHS	1SNA 206 539 R0300

Type	P/N
FJH501 th. 1,5 mm	1SNA 199 411 R1400
FJH501 th. 1,5 mm	1SNA 199 411 R1400
SCH8 th. 1,2 mm	1SNA 199 412 R1500
INHD th. 1,2 mm	1SNA 295 427 R1400
BJH311 spacing 31,2 mm 10 poles	1SNA 163 479 R0300
	1SNA 187 312 R1400
CPM V0	1SNA 197 312 R1600
RTC	1SNA 163 156 R2700
PEFH	1SNA 163 497 R1600
RPED	1SNA 163 518 R2200
BJHS	1SNA 206 539 R0300


RC610 / RC510

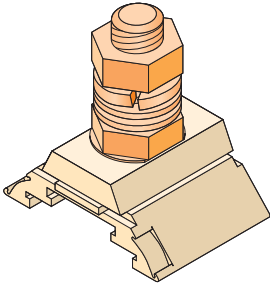
RC610 / RC510

Note : for H 130 self locked nut, after tightening the connections, a protective coat will be required on the threaded stud.  
(1) In order to make compatible the spacing of the block with the size of the lug, it may be needed to insert one or more spacers INHD between blocks.



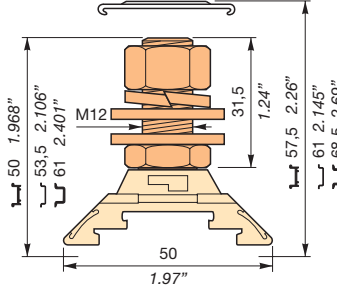
# Terminal block with 1 stud terminal - Assembled with cover

 **DIN 3 - reinforced rail type 2**



## HD185/36.F12.31.1

Spacing 37.2 mm (1.46")  
(spacing 36 mm (1.42") + separator\* 1.2 mm (.047"))



1 stud terminal M12 x 31.5 mm (1.24") - Equipment: 1 bottom nut + 2 washers + 1 spring washer + 1 top nut



Colour	Type	Part numbers
Beige V0	HD185/36.F12.31.1	1SNA 295 405 R2700

Colour	Type	Part numbers
--------	------	--------------

### Characteristics

Wire size	NFC	DIN
	Tubular lug (NFC 20130)	50 mm <sup>2</sup> to 185 mm <sup>2</sup> (1)
Lug (DIN 46235)		25 mm <sup>2</sup> to 150 mm <sup>2</sup>

### Characteristics

Wire size	NFC	DIN
	Lugs	
Bars		

### Voltage

V AC	750 Cat. C
V DC	750 Cat. C

### Voltage

V AC	
V DC	

### Pollution degree

Pollution degree	
------------------	--

### Pollution degree

Pollution degree	
------------------	--

### Current

Rated	353 A
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### Current








Rated	
-------	--

### Wire size

Rated (Rigid)	185 mm <sup>2</sup>
Weight	79 g (2.79 oz)
Recommended torque	14 Nm

### Wire size

Rated	
Recommended torque	

End stop		th. 10 mm	<b>BAM2</b>	V0	1SNA 296 351 R0000
End stop		th. 8,2 mm	<b>BAH22</b>		1SNA 164 655 R0400
End stop		th. 10,7 mm	<b>BAH24</b>		1SNA 168 355 R1300
Rail		35 x 7,5 x 1	<b>PR3.Z2</b>		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200
Rail		21,8 x 8,2 x 1,5	<b>PRH2R</b>		1SNA 163 350 R1500

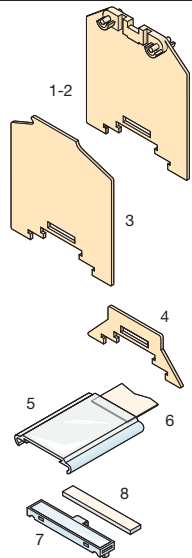
Other end stops, rails and accessories : see section on accessories.

### Notes

Possibility to mounting 240 mm<sup>2</sup> lugs size 37 ± 2 with three INHD spacers.

\* The use of a jumper bar requires to use a spacer instead of a circuit separator.

### Accessories



1	End section	beige V0
2	Intermediate section	beige V0
3	Circuit separator	beige V0
4	Spacer	beige V0
5	Cover	clear
	Cover V0	beige
6	Marking for clear cover	
7	Terminal board label holder on FEH	
8	Label for PEFH (29 x 5 mm)	

### Accessories

Type	P/N
FJH501 th. 1,5 mm	1SNA 199 411 R1400
FJH501 th. 1,5 mm	1SNA 199 411 R1400
SCH8 th. 1,2 mm	1SNA 199 412 R1500
INHD th. 1,2 mm	1SNA 295 427 R1400
CPM	1SNA 187 312 R1400
CPM V0	1SNA 197 312 R1600
RTC	1SNA 163 156 R2700
PEFH	1SNA 163 497 R1600
RPED	1SNA 163 518 R2200

### Accessories

Type	P/N
------	-----

R



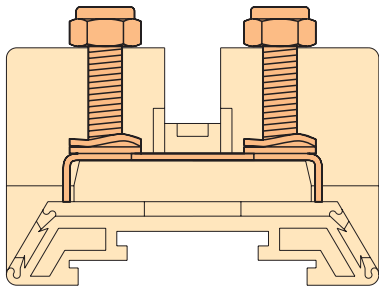
R See section on markers marking method

RC610 / RC510

(1) In order to make compatible the spacing of the block with the size of the lug, it may be needed to insert one or more spacers INHD between blocks.

# Terminal block with 2 stud terminals - Assembled without cover

DIN 3 - reinforced rail type 2



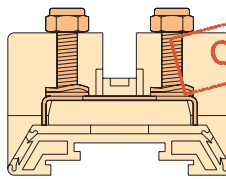
End stop		th. 10 mm	<b>BAM2</b>	VO	1SNA 296 351 R0000
End stop		th. 7,1 mm	<b>BAH21</b>		1SNA 167 489 R2200
Rail		21,8 x 8,2 x 1,5	<b>PRH2R</b>		1SNA 163 350 R1500

Other end stops, rails and accessories : see section on accessories.

### Notes

## HD 6/13.FF4

Spacing 13 mm (.512")



2 stud terminals M4 x15 mm (.531") with interruptor bar and possibility of transverse connection - Equipment (As per NF F 61017) : self locking nut + spring washer + washer.

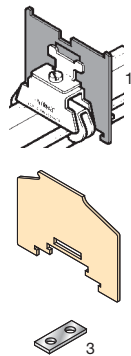


Colour	Type	Part numbers	Colour	Type	Part numbers
Beige V0	<b>HD 6/13.FF4</b>	1SNA 295 014 R1100			
	<b>NF F 61017 BE 0013-FF4</b>	1SNA 295 014 R1100			

Characteristics				Characteristics			
Wire size				Wire size			
	DIN-VDE	NF F 61017	NFC-UTE		DIN-VDE	NF F 61017	NFC-UTE
Lugs	6 mm² max.			Lugs			

Voltage				Voltage			
Current				Current			
Wire size				Wire size			
Recommended torque				Recommended torque			
V AC	380 Gr. C	380	400 Cat. C	V AC			
V DC	450 Gr. C	380	250 Cat. C	V DC			
Pollution degree				Pollution degree			
Rated				Rated			
6 mm²				6 mm²			
1,2 Nm				1,2 Nm			

### Accessories



- 1 End section beige
- 2 Circuit separator
- 3 Jumper bar 10 poles

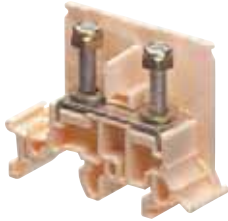
Type	P/N		Type	P/N
FEH8	th. 1.5 mm	1SNA 198 729 R0100		
SCH8	th. 1.2 mm	1SNA 199 412 R1500		
BJH132	spacing 13 mm	1SNA 167 224 R2700		

R See section on markers marking method

REH3

## Terminal blocks with 2 stud terminals

DIN 1 - DIN 3

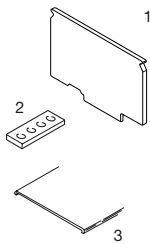


End stop		th. 10 mm	<b>BAM2</b>	V0	1SNA 296 351 R0000
End stop		th. 10 mm	<b>BAR</b>	V0	1SNA 164 519 R2400
Rail		35 x 7,5 x 1	<b>PR3.Z2</b>		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200
Rail		32 x 15 x 1,5	<b>PR1.Z2</b>		1SNA 163 050 R0400

Other end stops, rails and accessories : see section on accessories.

### Notes

### Accessories



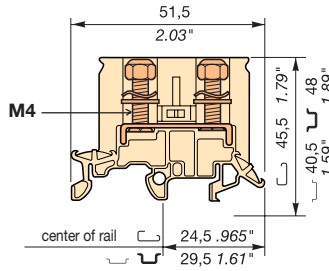
- 1 End section beige
- 2 Jumper bar not assembled 41 A
- 3 Protection cover



R See section on markers marking method

### M 6/13.FF4

Spacing 13 mm (.512")



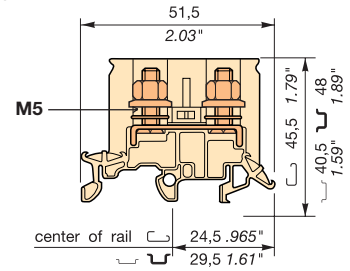
2 stud terminals M4 x 16 mm (.630")  
Equipment: self locking nut + spring washer + washer



Colour	Type	Part numbers
Beige V0 body - 2 studs M4 x 16	<b>M 6/13.FF4</b>	1SNA 400 248 R2600

### M 6/13.FF.3 V0

Spacing 13 mm (.512")



13 mm block for lugs with partition - studs M5 x 16.  
Equipment: H130 self locking nut + TREP3L washer + washer



Colour	Type	Part numbers
Beige V0 body - 2 studs M 5 x 16	<b>M 6/13 FF.3 V0</b>	1SNA 195 629 R2200

### Characteristics

Wire size	IEC		NF F 61017
	NFC	DIN	
Lugs	6 mm <sup>2</sup> max		

### Voltage

Rated	630 V	380 V
Pulse	8 kV	
Pollution degree	3	

### Current

Rated	41 A	51 A
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### Wire size

Rated	6 mm <sup>2</sup>	6 mm <sup>2</sup>
Weight		Recomm. torque
18 g		1,2-2,5 Nm
0.52 oz		10.6-21.8 lb.in

### Characteristics

Wire size	IEC		UL	CSA
	NFC	DIN		
Lugs	2 wires 6 mm <sup>2</sup>			

### Voltage

Rated	630 V		
Pulse	8 kV		
Pollution degree	3		

### Current

Rated	41 A		
-------	------	--	--

### Wire size

Rated	6 mm <sup>2</sup>		
Wire stripping length		Recomm. screwdriver	Recomm. torque
18 g			2-4 Nm
0.52 oz			17.4-35 lb.in

Type	Part numbers
FEM 13F V0 th. 1,0 mm	1SNA 196 977 R1000
BJS 13 (1) 10 poles	1SNA 167 224 R2700
CPE 43	1SNA 280 092 R2500

Type	Part numbers
FEM 13F V0 th. 1,0 mm	1SNA 196 977 R1000
BJS 13 (1) 10 poles	1SNA 167 224 R2700
CPE 43	1SNA 280 092 R2500

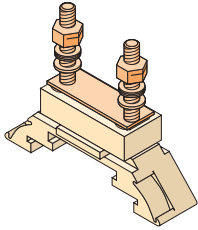
RC 65, RC 610, RC 810, RC 1010

RC 65, RC 610, RC 810, RC 1010

Note : (1) Use of these accessories requires the user to cut out the partition.  
Use the studs for mounting the jumper bar.

## Terminal block with 2 stud terminals - Assembled with cover

↳ ↳ DIN 3 - reinforced rail type 2



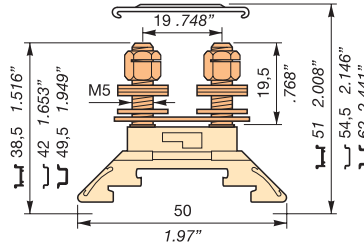
End stop	↳	th. 10 mm	BAM2	V0	1SNA 296 351 R0000
End stop	↳	th. 8,2 mm	BAH22		1SNA 164 655 R0400
Rail	↳	35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail	↳	35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail	↳	35 x 15 x 1,5	PR5		1SNA 168 700 R2200
Rail	↳	21,8 x 8,2 x 1,5	PRH2R		1SNA 163 350 R1500
Other end stops, rails and accessories : see section on accessories.					

### Notes

\* The use of a jumper bar requires to use a spacer instead of a circuit separator.

### HD10/12.FF5

Spacing 13.2 mm (.520")  
(spacing 12 mm (.473") + separator\* 1.2 mm (.047"))



2 stud terminals M5 x 19.5 mm (.768") - Equipment: H 130 self locking nut + TREP 3L washer + washer

**SINEF RATP**

Colour	Type	Part numbers	Colour	Type	Part numbers
Beige V0	HD10/12.FF5	1SNA 295 397 R2600			

### Characteristics

Wire size	NFC		DIN	
Tubular lug (NFC 20130)	2,5 mm <sup>2</sup> to 10 mm <sup>2</sup> (1)			
Lug (DIN 46235)			6 mm <sup>2</sup> to 10 mm <sup>2</sup>	

### Voltage

V AC	750 Cat. C		
V DC	750 Cat. C		
Pollution degree			

### Current

Rated	57 A		
-------	------	--	--

### Wire size

Rated (Rigid)		Recommended torque	
Weight	10 mm <sup>2</sup>		
11 g		2,5 Nm	
0,39 oz			

### Characteristics

Wire size	NFC		DIN	

### Voltage

V AC			
V DC			
Pollution degree			

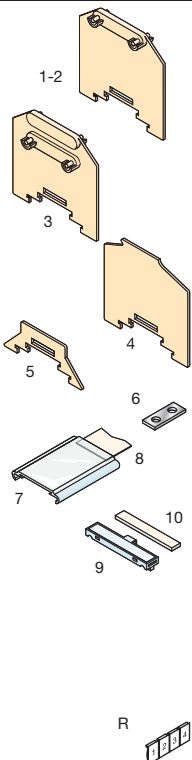
### Current

Rated			
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### Wire size

Rated (Rigid)		Recommended torque	
Weight			

### Accessories



1	End section	beige V0
2	Intermediate section	beige V0
3	Double section (height 40/50.5 mm)	beige V0
4	Circuit separator	beige V0
5	Spacer	beige V0
6	Jumper bar	
7	Cover	clear
	Cover V0	beige
8	Marking for clear cover	
9	Terminal board label holder on FEH	
10	Label for PEFH (29 x 5 mm)	
R	See section on markers marking method	







Type	P/N	Type	P/N
FJHD50	th. 1,5 mm	1SNA 295 425 R1200	
FJHD50	th. 1,5 mm	1SNA 295 425 R1200	
FJDHD	th. 1,5 mm	1SNA 295 426 R1300	
SCHD5	th. 1,2 mm	1SNA 295 430 R2300	
INH (1)	th. 1,2 mm	1SNA 295 427 R1400	
BZH131	spacing 13,2 mm 10 poles	1SNA 163 468 R0000	
CPM		1SNA 187 312 R1400	
CPM V0		1SNA 197 312 R1600	
RTC		1SNA 163 156 R2700	
PEFH		1SNA 163 497 R1600	
RPED		1SNA 163 518 R2200	
RC610 / RC510			

Note : for H 130 self locked nut, after tightening the connections, a protective coat will be required on the threaded stud.  
(1) In order to make compatible the spacing of the block with the size of the lug, it may be needed to insert one or more spacers INHD between blocks.

## Terminal block with 2 stud terminals

Assembled without cover

 **DIN 3 - reinforced rail type 2**

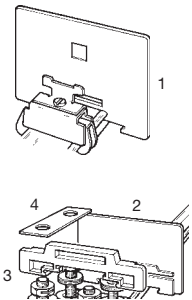
End stop		th. 10 mm	<b>BAM2</b>	V0	1SNA 296 351 R0000
End stop		th. 8,2 mm	<b>BAH22</b>		1SNA 164 655 R0400
Rail		35 x 7,5 x 1	<b>PR3.Z2</b>		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200
Rail		21,8 x 8,2 x 1,5	<b>PRH2R</b>		1SNA 163 350 R1500

Other end stops, rails and accessories : see section on accessories.

### Notes

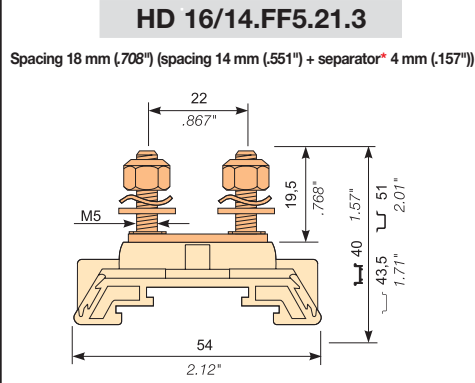
\* The use of a jumper bar requires to use a spacer instead of a circuit separator.

### Accessories



- 1 End section
- 2 Circuit separator
- 3 Spacer (1)
- 4 Jumper bar

**R** See section on markers marking method



2 stud terminals M5 x 19,5 mm (.768") with interruptor bar and possibility of transverse connection - Equipment (As per NF F 61017) : self locking nut + spring washer + washer



Color	Type	Part numbers
Beige V0	<b>HD 16/14.FF5.21.3</b>	1SNA 295 012 R1700
NF F 61017	<b>BE 0018-FF5</b>	1SNA 295 012 R1700 + <b>SCH6*</b>

### Characteristics

Wire size	DIN-VDE	NF F 61017	NFC-UTE
	Lugs	25 mm <sup>2</sup> max.	

### Rated voltage

V AC	500 Gr. C	380/380	500 Cat. C
V DC	600 Gr. C	500/500	500 Cat. C

### Pollution degree

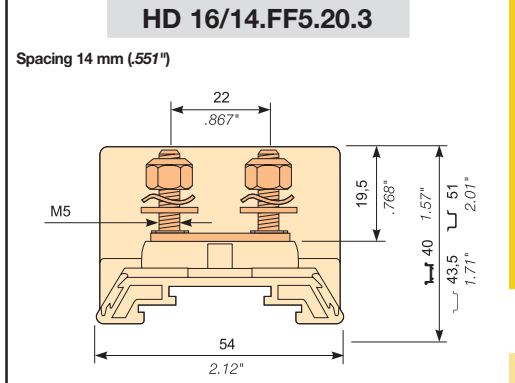
Pollution degree

### Rated current

Rated	65 A	51/71 A	71 A
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### Wire size

Rated	16 mm <sup>2</sup>	Recommended torque	16 mm <sup>2</sup>
Weight		2,5 Nm	
28 g			
0.99 oz			



2 stud terminals M5 x 19,5 mm (.768") with interruptor bar - Equipment (As per NF F 61017) : self locking nut + spring washer + washer



Color	Type	Part numbers
Beige V0	<b>HD 16/14.FF5.20.3</b>	1SNA 295 013 R1000
NF F 61017	<b>BE 0014-FF5</b>	

### Characteristics

Wire size	DIN-VDE	NF F 61017	NFC-UTE
	Lugs	16 mm <sup>2</sup> max.	

### Rated voltage

V AC	500 Gr. C	380	500 Cat. C
V DC	600 Gr. C	500	500 Cat. C

### Pollution degree

Pollution degree

### Rated current

Rated	65 A	51 A	71 A
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### Wire size

Rated	16 mm <sup>2</sup>	Recommended torque	16 mm <sup>2</sup>
Weight		2,5 Nm	
30 g			
1.06 oz			

Type	Part numbers
FEH8 th. 1,5 mm	1SNA 198 729 R0100
SCH6 th. 4 mm	1SNA 199 393 R2200
INH3 th. 4 mm	1SNA 199 394 R2300
BJH14 spacing 14 mm	
2 poles	1SNA 173 438 R2400
3 poles	1SNA 173 439 R2500
4 poles	1SNA 173 441 R2700
5 poles	1SNA 173 449 R0700
10 poles	1SNA 173 451 R2100
BJH18 spacing 18 mm	
2 poles	1SNA 173 452 R2200
3 poles	1SNA 173 453 R2300
4 poles	1SNA 173 454 R2400
5 poles	1SNA 173 460 R0600
10 poles	1SNA 173 461 R2300

Type	Part numbers
FEH8 th.1,5 mm	1SNA 198 729 R0100

RC610 REH3

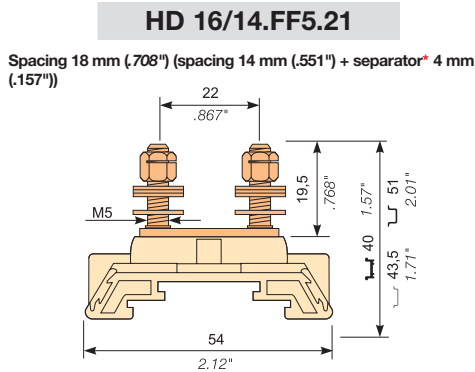
RC610 REH3

(1) Placed between 2 blocks, the spacer permits to obtain the 18 mm (0.708") spacing.

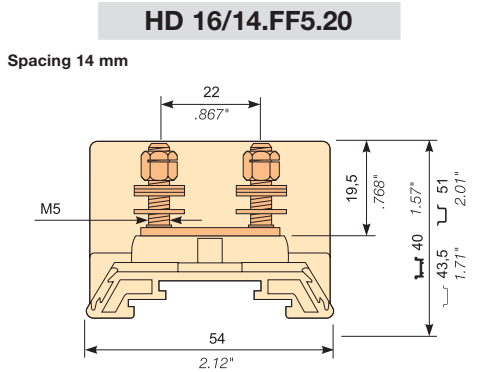
# Terminal block with 2 stud terminals

Assembled without cover

DIN 3 - reinforced rail type 2



2 stud terminals M5 x 19,5 mm (.768") with interruptor bar and possibility of transverse connection - Equipment : self locking nut + spring washer + washer



2 stud terminals M5 x 19,5 mm (.768") with interruptor bar - Equipment : self locking nut + spring washer + washer

**SNECF RATP**

**SNECF RATP**

Color	Type	Part numbers
Beige V0	HD 16/14.FF5.21	1SNA 162 991 R1400

Color	Type	Part numbers
Beige V0	HD 16/14.FF5.20	1SNA 162 979 R0700

### Characteristics

### Characteristics

Wire size	DIN-VDE	NF F 61017	NFC-UTE
	Lugs		

Wire size	DIN-VDE	NF F 61017	NFC-UTE
	Lugs		

Rated voltage			
V AC	500 Gr. C	380/380	500 Cat. C
V DC	600 Gr. C	500/500	500 Cat. C
Pollution degre			

Rated voltage			
V AC	500 Gr. C	380	500 Cat. C
V DC	600 Gr. C	500	500 Cat. C
Pollution degre			

Rated current			
Rated	65 A	51/71 A	71 A

Rated current			
Rated	65 A	51 A	71 A

Wire size			
Rated	16 mm <sup>2</sup>		16 mm <sup>2</sup>
Weight		Recommended torque	
28 g		2,5 Nm	
0.99 oz			

Wire size			
Rated	16 mm <sup>2</sup>		16 mm <sup>2</sup>
Weight		Recommended torque	
30 g		2,5 Nm	
1.06 oz			

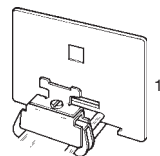
End stop		th. 10 mm	BAM2	V0	1SNA 296 351 R0000
End stop		th. 8,2 mm	BAH22		1SNA 164 655 R0400
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200
Rail		21,8 x 8,2 x 1,5	PRH2R		1SNA 163 350 R1500

Other end stops, rails and accessories : see section on accessories.

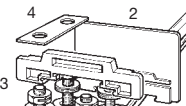
### Notes

\* The use of a jumper bar requires to use a spacer instead of a circuit separator.

### Accessories



- End section
- Circuit separator
- Spacer (1)
- Jumper bar



Type	Part numbers
FEH8 th. 1,5 mm	1SNA 198 729 R0100
SCH6 spacing 18 mm th. 4 mm	1SNA 199 393 R2200
INH3 th. 4 mm	1SNA 199 394 R2300
BJH14 spacing 14 mm	
2 poles	1SNA 173 438 R2400
3 poles	1SNA 173 439 R2500
4 poles	1SNA 173 441 R2700
5 poles	1SNA 173 449 R0700
10 poles	1SNA 173 451 R2100
BJH18 spacing 18 mm	
2 poles	1SNA 173 452 R2200
3 poles	1SNA 173 453 R2300
4 poles	1SNA 173 454 R2400
5 poles	1SNA 173 460 R0600
10 poles	1SNA 173 461 R2300

Type	Part numbers
FEH8 th.1,5 mm	1SNA 198 729 R0100

R See section on markers marking method

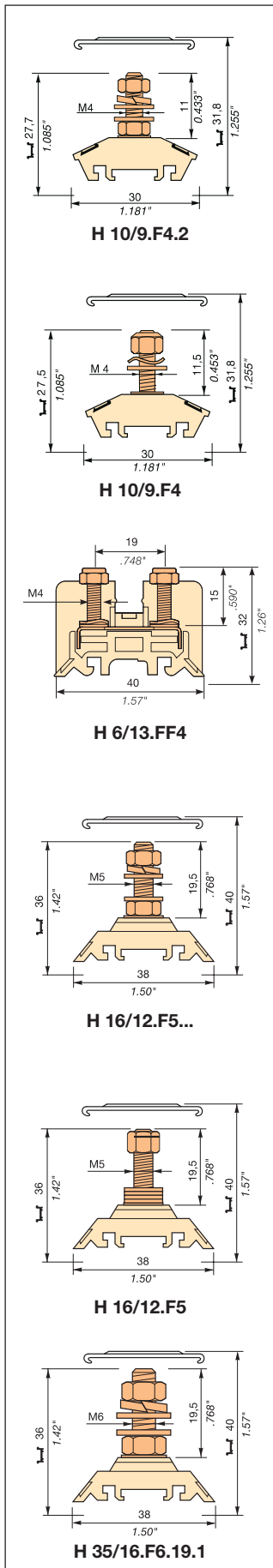
RC610 REH3

RC610 REH3

(1) Placed between 2 blocks, the spacer permits to obtain the 18 mm (0.708") spacing.

# Terminal blocks with stud terminals H range (former range)

Rail according to NFC 93461 standard



## H 10/9.F4.2 - Spacing 10.5 mm (range 9.5 mm + separator 1 mm)

Selection		Type 1	Reinforced rail type 2		
Description		Type	Order P/N	P/N NF F 61017	Packaging Weight kg
Standard block	beige	H 10/9.F4.2	1SNA 199 150 R0200		6 g
brass equipment	yellow	H 10/9.F4.2	1SNA 199 151 R2700		6 g
Circuit separator	beige	SCH1	1SNA 193 251 R2500		
Spacer	beige	INH2	1SNA 193 358 R0000		



## H 10/9.F4 - Spacing 10.5 mm (range 9.5 mm + separator 1 mm)

Selection		Type 1	Reinforced rail type 2		
Description		Type	Order P/N	P/N NF F 61017	Packaging Weight kg
Standard block	beige	H 10/9.F4	1SNA 162 990 R2700		6 g
Circuit separator	beige	SCH1	1SNA 193 251 R2500		
Spacer	beige	INH2	1SNA 193 358 R0000		



## H 6/13.FF4 - Spacing 13 mm

Selection		Reinforced rail type 2			
Description		Type	Order P/N	P/N NF F 61017	Packaging Weight kg
Standard block	beige	H 6/13.FF4	1SNA 162 970 R0200	BE 0013-FF4	13,4 g



## H 16/12.F5... - Spacing 13.2 mm (range 12 mm + separator 1.2 mm)

Selection		Type 1	Reinforced rail type 2		
Description		Type	Order P/N	P/N NF F 61017	Packaging Weight kg
Standard block					
steel equipment	beige	H 16/12.F5.1	1SNA 199 132 R1400		11 g
brass equipment	beige	H 16/12.F5.2	1SNA 199 237 R2500		11 g
brass equipment	yellow	H 16/12.F5.3	1SNA 199 238 R0600		11 g
Circuit separator	beige	SCH2	1SNA 198 650 R1600		
Spacer	beige	INH1	1SNA 193 474 R1500		



## H 16/12.F5 - Spacing 13.2 mm (range 12 mm + separator 1.2 mm)

Selection		Type 1	Reinforced rail type 2		
Description		Type	Order P/N	P/N NF F 61017	Packaging Weight kg
Standard block	beige	H 16/12.F5	1SNA 162 984 R1500		11 g
Circuit separator	beige	SCH2	1SNA 198 650 R1600		
Spacer	beige	INH1	1SNA 193 474 R1500		



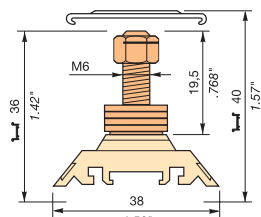
## H 35/16.F6.19.1 - Spacing 17.2 mm (range 16 mm + separator 1.2 mm)

Selection		Type 1	Reinforced rail type 2		
Description		Type	Order P/N	P/N NF F 61017	Packaging Weight kg
Standard block					
steel equipment	beige	H 35/16.F6.19.1	1SNA 199 131 R1300		19 g
Circuit separator	beige	SCH2	1SNA 198 650 R1600		
Spacer	beige	INH1	1SNA 193 474 R1500		

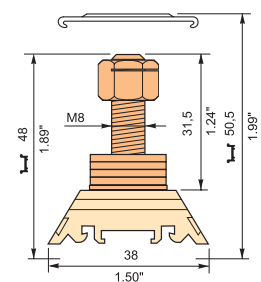


# Terminal blocks with stud terminals H range (former range)

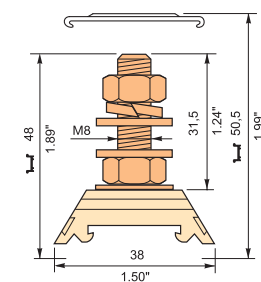
Rail according to NFC 93461 standard



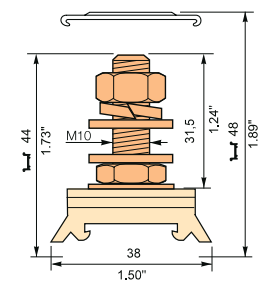
**H 35/16.F6.19**



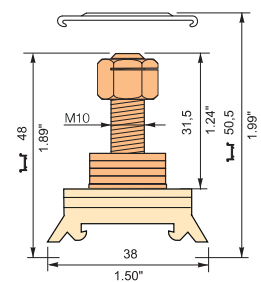
**H 70/22.F8.31**



**H 70/22.F8.31...**



**H 120/30.F10.31.1**



**H 120/30.F10.31**

## H 35/16.F6.19 - Spacing 17.2 mm (range 16 mm + separator 1.2 mm)

**Selection**      **Type 1**      **Reinforced rail type 2**

Description	Type	Order P/N	P/N NF F 61017	Packaging Weight kg
Standard block	beige  H 35/16.F6.19	1SNA 162 933 R1100	BD 17,2-1F6 (1SNA 162 933 R1100 + SCH2*)	19 g
Circuit separator	beige  SCH2	1SNA 198 650 R1600		
Spacer	beige  INH1	1SNA 193 474 R1500		



\* the use of a jumper bar requires to use a spacer instead of a circuit separator.

## H 70/22.F8.31 - Spacing 23.2 mm (range 22 mm + separator 1.2 mm)

**Selection**      **Type 1**      **Reinforced rail type 2**

Description	Type	Order P/N	P/N NF F 61017	Packaging Weight kg
Standard block	beige  H 70/22.F8.31	1SNA 162 975 R2300	BD 23,2-1F8 (1SNA 162 975 R2300 + SCH5*)	37,4 g
Circuit separator	beige  SCH2	1SNA 198 060 R0200		
Spacer	beige  INH1	1SNA 193 474 R1500		



\* the use of a jumper bar requires to use a spacer instead of a circuit separator.

## H 70/22.F8.31... - Spacing 23.2 mm (range 22 mm + separator 1.2 mm)

**Selection**      **Reinforced rail type 2**

Description	Type	Order P/N	P/N NF F 61017	Packaging Weight kg
Standard block				
steel equipment	beige  H 70/22.F8.31.1	1SNA 199 130 R2600		39 g
brass equipment	beige  H 70/22.F8.31.2	1SNA 199 239 R0700		39 g
Circuit separator	beige  SCH2	1SNA 198 060 R0200		
Spacer	beige  INH1	1SNA 193 474 R1500		



## H 120/30.F10.31.1 - Spacing 31.2 mm (range 30 mm + separator 1.2 mm)

**Selection**      **Reinforced rail type 2**

Description	Type	Order P/N	P/N NF F 61017	Packaging Weight kg
Standard block				
steel equipment	beige  H 120/30.F10.31.1	1SNA 199 129 R2100		67 g
Circuit separator	beige  SCH2	1SNA 198 060 R0200		
Spacer	beige  INH1	1SNA 193 474 R1500		



## H 120/30.F10.31 - Spacing 31.2 mm (range 30 mm + separator 1.2 mm)

**Selection**      **Reinforced rail type 2**

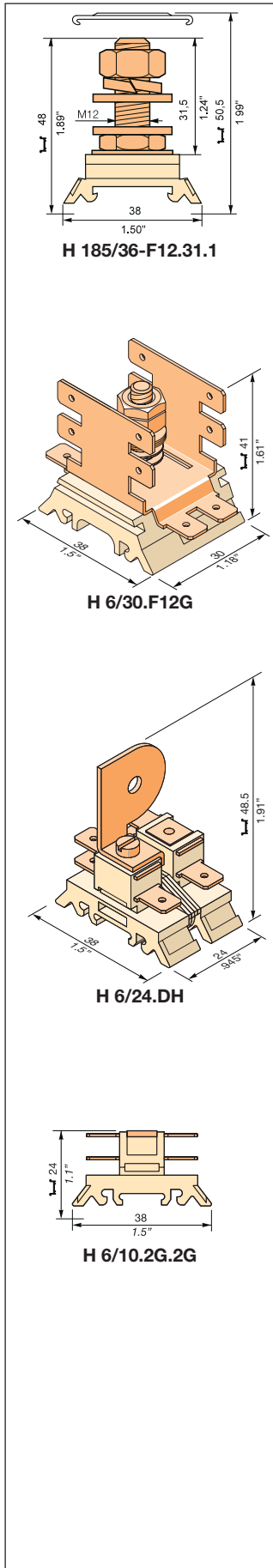
Description	Type	Order P/N	P/N NF F 61017	Packaging Weight kg
Standard block				
steel equipment	beige  H 185/36-F12.31	1SNA 162 996 R1100		60,5 g
Circuit separator	beige  SCH2	1SNA 198 060 R0200		
Spacer	beige  INH1	1SNA 193 474 R1500		





# Terminal blocks with stud terminals H range (former range)

Rail according to NFC 93461 standard



## H 185/36-F12.31.1 - Spacing 37.2 mm (range 36 mm + separator 1.2 mm)

**Selection**           **Reinforced rail type 2**

Description	Type	Order P/N	P/N NF F 61017	Packaging Weight kg
Standard block steel equipment      beige	H 185/36-F12.31.1	1SNA 199 128 R2000		88 g
Circuit separator      beige	SCH2	1SNA 198 060 R0200		
Spacer      beige	INH1	1SNA 193 474 R1500		

**SNEF      RATP**

## H 6/30.F12G - Spacing 31.2 mm (range 30 mm + separator 1.2 mm)

**Selection**           **Reinforced rail type 2**

Description	Type	Order P/N	P/N NF F 61017	Packaging Weight kg
Standard block      beige	H 6/30.F12G	1SNA 162 973 R2100	<b>BF 31,2-1F12G</b> (1SNA 162 973 R2100 + SCH5)	30 g
Circuit separator      beige	SCH5	1SNA 198 060 R0200		

**SNEF      RATP**  
NF F 61017      NF F 61017

## H 6/24.DH - Spacing 25.2 mm (range 24 mm + separator 1.2 mm)

**Selection**           **Type 1**           **Reinforced rail type 2**

Description	Type	Order P/N	P/N NF F 61017	Packaging Weight kg
Standard block      beige	H 6/24.DH	1SNA 162 981 R1200	<b>BG 25,2-2G2G</b> (1SNA 162 981 R1200 + SCH2)	20 g
Circuit separator      beige	SCH2	1SNA 198 650 R1600		

**SNEF      RATP**  
NF F 61017      NF F 61017

## H 6/10.2G.2G - Spacing 10 mm

**Selection**           **Type 1**           **Reinforced rail type 2**

Description	Type	Order P/N	P/N NF F 61017	Packaging Weight kg
Standard block      beige	H 6/10.2G.2G	1SNA 192 856 R1300		6 g
Circuit separator      beige	SCH2	1SNA 198 650 R1600		

**SNEF      RATP**

# Notes



A series of horizontal lines for writing notes.

A  
5



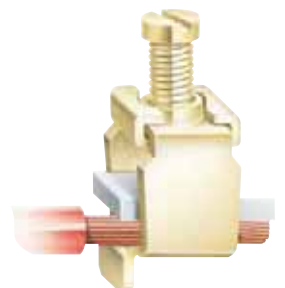
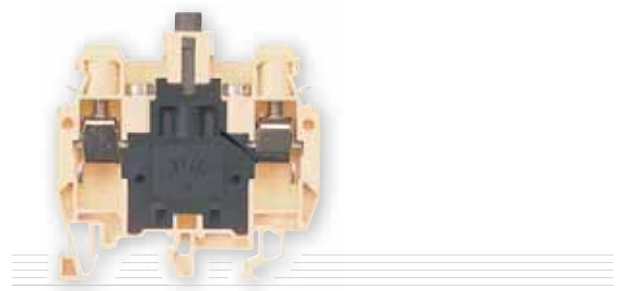
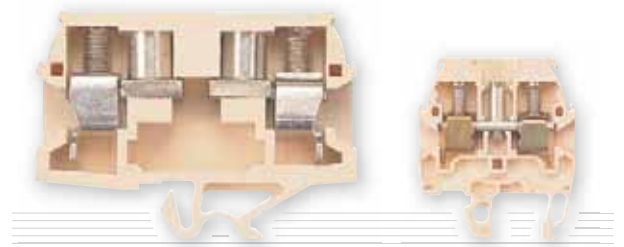
# Terminal Blocks entrelec® for Stationary Railway Applications, according to NF F 55251

## Screwed Terminal Blocks

### Contents

Selection of product used in the French railway applications by SNCF and RATP.

Terminal Blocks .....	74
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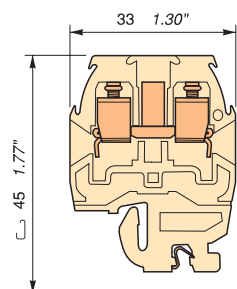


**NF F 55251**

# Terminal blocks

## Screw clamp DIN 1

### E 4/6 - 6 mm<sup>2</sup> blocks - 6 mm .236" spacing




E 4/6

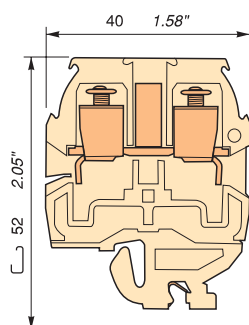
Characteristics		IEC NFC DIN	UL	CSA	NF F 55251
Wire size	Solid	4 mm <sup>2</sup>		4 mm <sup>2</sup>	4 mm <sup>2</sup>
mm <sup>2</sup> / AWG	Stranded	2.5 mm <sup>2</sup>		2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>
Voltage	V AC	500		300	500
Voltage	V DC	600		300	
Current	A	27		20	12
Rated wire size	mm <sup>2</sup> / AWG	2.5 mm <sup>2</sup>		2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>

#### Selection



Description	Type	Order P/N	Packaging Weight kg
Standard block	beige  E 4/6	1SNA 190 468 R0000	ER 6 7 963 1088

### E 6/8 - 6 mm<sup>2</sup> blocks - 8 mm .315" spacing




E 6/8

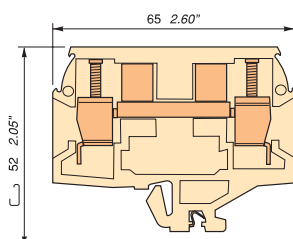
Characteristics		IEC NFC DIN	UL	CSA	NF F 55251
Wire size	Solid	10 mm <sup>2</sup>			10 mm <sup>2</sup>
mm <sup>2</sup> / AWG	Stranded	6 mm <sup>2</sup>			6 mm <sup>2</sup>
Voltage	V AC	500			500
Voltage	V DC	600			
Current	A	47			20
Rated wire size	mm <sup>2</sup> / AWG	6 mm <sup>2</sup>			

#### Selection



Description	Type	Order P/N	Packaging Weight kg
Standard block	beige  E 6/8	1SNA 190 607 R0400	ER 8 7 963 1114

### E 10/16 - 10 mm<sup>2</sup> blocks - 16 mm .630" spacing




E 10/16


Characteristics		IEC NFC DIN	UL	CSA	NF F 55251
Wire size	Solid	16 mm <sup>2</sup>			16 mm <sup>2</sup>
mm <sup>2</sup> / AWG	Stranded	10 mm <sup>2</sup>			10 mm <sup>2</sup>
Voltage	V AC	380			500
Voltage	V DC	440			
Current	A	16			30
Rated wire size	mm <sup>2</sup> / AWG	10 mm <sup>2</sup>			

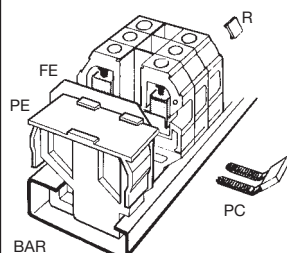
#### Selection



Description	Type	Order P/N	Packaging Weight kg
Standard block	beige  E 10/16	1SNA 191 302 R2700	ER 16 7 963 1110

#### Accessories

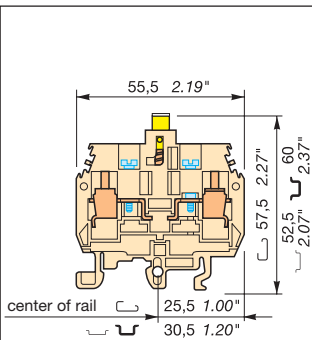
End stop	 DIN 1	BAR	1SNA 164 519 R2400	7 963 1090
Marker holder		PE	1SNA 103 007 R2300	7 966 0875
End section	for E 4/6	FE	1SNA 193 080 R1200	7 963 1089
	for E 6/8	FE	1SNA 193 085 R0300	7 963 1116
	for E 10/16	FE	1SNA 193 449 R2400	7 963 1111
Jumper bar	for E 6/8	PC 8/2	1SNA 116 538 R1700	7 963 1121
	for E 10/16	PC	1SNA 168 497 R2300	
Marking method		RC610, RC810	see marking	



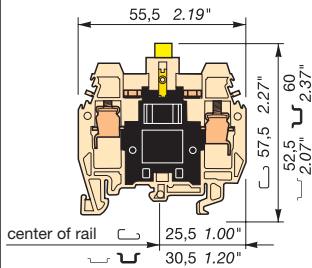
# Switch terminal blocks

Screw clamp  DIN 1-3 and  DIN 1

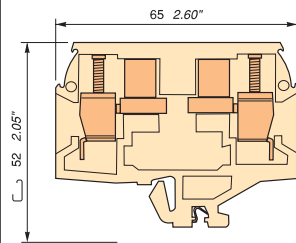
## M 6/8.STP.TR - 6 mm<sup>2</sup> blocks - 8 mm .315" spacing



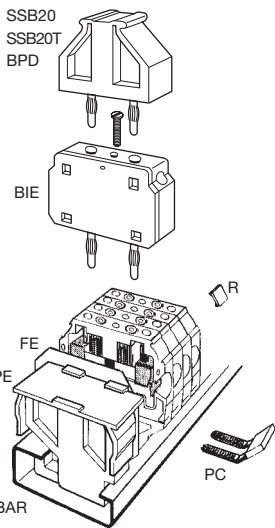
M 6/8.STP.TR



ES 8 CG



E 10/16 S



### Characteristics

		IEC NFC DIN	UL	CSA	NF F 55251
Wire size mm <sup>2</sup> / AWG	Solid	10 mm <sup>2</sup>	10 mm <sup>2</sup>	10 mm <sup>2</sup>	10 mm <sup>2</sup>
	Stranded	6 mm <sup>2</sup>	6 mm <sup>2</sup>	6 mm <sup>2</sup>	6 mm <sup>2</sup>
Voltage	V AC	500	600	300	500
Voltage	V DC	600	600	300	
Current	A	15	40	15	12
Rated wire size	mm <sup>2</sup> / AWG	6 mm <sup>2</sup>	8 AWG	8 AWG	

### Selection



Description	Type	Order P/N	Packaging	Weight kg
Standard block	beige 	M 6/8.STP.TR	1SNA 195 212 R1000	ES 8 7 963 1156



## ES 8 CG - 6 mm<sup>2</sup> blocks - 8 mm .315" spacing

### Characteristics

		IEC NFC DIN	UL	CSA	NF F 55251
Wire size mm <sup>2</sup> / AWG	Solid	10 mm <sup>2</sup>	10 mm <sup>2</sup>	10 mm <sup>2</sup>	10 mm <sup>2</sup>
	Stranded	6 mm <sup>2</sup>	6 mm <sup>2</sup>	6 mm <sup>2</sup>	6 mm <sup>2</sup>
Voltage	V AC	500	600	300	500
Voltage	V DC	600	600	300	
Current	A	32			
Rated wire size	mm <sup>2</sup> / AWG	6 mm <sup>2</sup>	8 AWG	8 AWG	

### Selection



Description	Type	Order P/N	Packaging	Weight kg
Standard block				
Nickelled wire clamp	beige 	ES 8 CG	1SNA 400 015 R2000	ES 8 CG 7 963 1377
Nickelled wire clamp	green 	ES 8 CG	1SNA 400 014 R2700	ES 8 CG 7 963 1383


## E 10/16 S - 10 mm<sup>2</sup> blocks - 16 mm .630" spacing

### Characteristics







		IEC NFC DIN	UL	CSA	NF F 55251
Wire size mm <sup>2</sup> / AWG	Solid	16 mm <sup>2</sup>			16 mm <sup>2</sup>
	Stranded	10 mm <sup>2</sup>			10 mm <sup>2</sup>
Voltage	V AC	380			500
Voltage	V DC	440			
Current	A	16			20
Rated wire size	mm <sup>2</sup> / AWG	10mm <sup>2</sup>			

### Selection

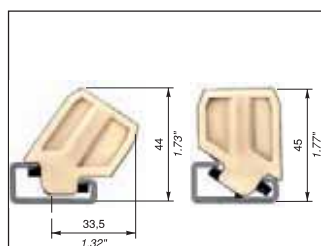


Description	Type	Order P/N	Packaging	Weight kg
Standard block	beige 	E 10/16 S	1SNA 191 296 R1100	ES 16 7 963 1109

### Accessories

End stop	 DIN 1	BAR	1SNA 164 519 R2400	7 963 1090
	for M 6/8.STP.TR and ES 8 CG 	BAM2	1SNA 296 351 R0000	
Marker holder		PE	1SNA 103 007 R2300	7 966 0875
End section	for M 6/8.STP.TR and ES 8 CG	FE	1SNA 193 137 R0300	7 963 1157
	for E 10/16 S	FE	1SNA 193 449 R2400	7 963 1111
Jumper bar	for M 6/8.STP.TR and ES 8 CG	PC 8/2	1SNA 116 538 R1700	7 963 1120
	for E 10/16 S	PC	1SNA 168 497 R2300	7 963 1121
Short circuiting-plug	beige 	BNSTP1	1SNA 196 792 R1700	7 960 1039
	grey 	BNSTP1	1SNA 196 793 R1000	
	red 	BNSTP2	1SNA 196 789 R2400	
	grey 	BNSTP2	1SNA 196 790 R2100	
Guide plug + mounting screw for E 10/16 S		BIE	1SNA 196 915 R0200	
Jumper bar for E 10/16 S		SSB20	1SNA 103 098 R2600	7 960 0428
		SSB20T	1SNA 103 099 R2700	7 960 0429
Block for diode for E 10/16 S		BPD	1SNA 103 107 R2400	7 954 3426
Marking method		RC610, RC810	see marking	

## Accessories

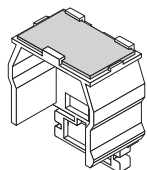


### End stop BAR

Reversible end stop of polyamide with blocking bracket. To be mounted vertically or at 30° angle, on PR1 rail only. Thickness 10 mm.

#### Selection

Description	Type	Order P/N	Sy SNCF	Packaging Weight kg
Reversible end stop	beige V0 <input type="checkbox"/>	BAR 10 mm	1SNA 164 519 R2400	7 963 1090

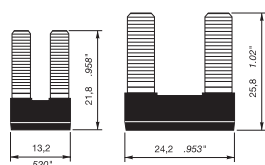


### Marker holder PE

Black marker holder, with marker, to be mounted on PR1 rail only.

#### Selection

Description	Type	Order P/N	Sy SNCF	Packaging Weight kg
Marker holder	PE	1SNA 103 007 R2300	7 966 0875	

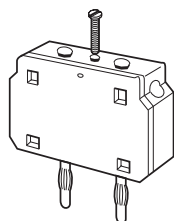


### Comb-type jumper bar PC

Peigne de court-circuitage isolé, se met en place dans le serre-fil, au dessus du conducteur, créant le serrage de la vis.

#### Selection

Description	Type	Order P/N	Sy SNCF	Packaging Weight kg
2 poles jumper bar for ER8 and ES8	PC 8/2	1SNA 116 538 R1700	7 963 1120	
2 poles jumper bar for ER16 and ES16	PC	1SNA 168 497 R2300	7 963 1121	

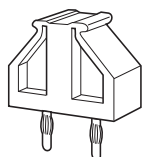


### Bouchon intercalaire BIE

Bouchon intercalaire d'essai pour les blocs de jonction ES16.

#### Selection

Description	Type	Order P/N	Sy SNCF	Packaging Weight kg
Bouchon intercalaire	beige V0 <input type="checkbox"/>	BIE	1SNA 196 915 R0200	7 963 1334



### Barrette de signalisation SS...

Black short-circuiting plug for 16 mm spacing terminal blocks.

#### Selection

Description	Type	Order P/N	Sy SNCF	Packaging Weight kg
Barrette de signalisation	black <input checked="" type="checkbox"/>	SSB20	1SNA 103 098 R2600	7 960 0428
Barrette de signalisation test socket	black <input checked="" type="checkbox"/>	SSB20T	1SNA 103 099 R2700	7 960 0429



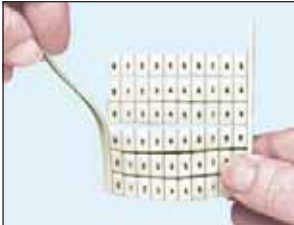
### Short-circuiting plug BNSTP

Short-circuiting plug for 8 and 16 mm spacing terminal blocks.

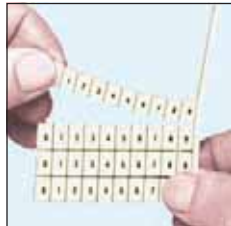
#### Selection

Description	Type	Order P/N	Sy SNCF	Packaging Weight kg
Shunt red V0	red <input checked="" type="checkbox"/>	BNSTP2	1SNA 196 789 R2400	
Shunt grey V0	grey <input type="checkbox"/>	BNSTP2	1SNA 196 790 R2100	
Shunt with test socket dia. 4 mm	beige <input type="checkbox"/>	BNSTP1	1SNA 196 792 R1700	7 960 7039
Shunt with test socket dia. 4 mm	grey <input type="checkbox"/>	BNSTP1	1SNA 196 793 R1000	

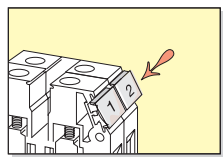
# Marking



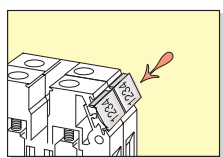
**1**  
Remove one of the side bands of the card.



**2**  
Separate the chosen strip from the rest of the card.



**Horizontal marking**



**Vertical marking**

## RC 610

These markers are supplied in cards of 10 strips of 10 markers, i.e. 100 markers per card.

### Selection

Description	Type	Order P/N	Sy SNCF	Packaging Weight kg
Repère marqué horizontalement pour bloc de jonction ER6				
5 x 1 to 12	1 card	1SNA 103 707 R0500	7 963 1250	

## RC 810

These markers are supplied in cards of 10 strips of 10 markers, i.e. 100 markers per card.

### Selection

Description	Type	Order P/N	Sy SNCF	Packaging Weight kg
Horizontal marking for ER8 / ES8 terminal blocks				
10 x 0 to 12	2 cards	KRC 810 1SNA 168 791 R0100	7 963 1123	
3 x 1 to 30	1 card	KRC 810 1SNA 168 784 R0200	7 963 1124	
3 x 1 to 60	2 cards	KRC 810 1SNA 168 785 R0300	7 963 1125	
3 x 1 to 120	4 cards	KRC 810 1SNA 168 786 R0400 1SNA 168 787 R0500	7 963 1126	
Horizontal marking for ER16 / ES16 terminal blocks				
5 x 1 to 10	1 card	KRC 810 1SNA 176 010 R2100	7 963 1282	
5 x 1 to 20	2 cards	KRC 810 1SNA 176 011 R1600	7 963 1283	
5 x 1 to 90	9 cards	KRC 810 1SNA 174 294 R2500	7 963 1172	
5 x 1 to 60	6 cards	KRC 810 1SNA 174 293 R2400	7 963 1173	
Vertical marking for ER8 / ES8 terminal blocks				
5 x 1 to 12	1 card	KRC 810 1SNA 178 732 R0700	7 963 1327	
3 x 1 to 120	4 cards	KRC 810 1SNA 178 739 R1600	7 963 1328	
3 x 1 to 60	2 cards	KRC 810 1SNA 178 737 R0400	7 963 1329	
3 x 1 to 30	1 card	KRC 810 1SNA 178 738 R1500	7 963 1330	

### Strip markers

This marker is supplied in card of 10 strips

Description	Type	Order P/N	Sy SNCF	Packaging Weight kg
For ER16/ES16 Terminal blocks				
Blank markers	1 card	KRTM16 1SNA 168 791 R0100	7 963 1127	







# Terminal Blocks entrelec® according to IEC 60947-7

## ADO System® Connections

### Contents

ADO Terminal Blocks .....	80
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**IEC 60947-7**



# Terminal blocks Insulation displacement



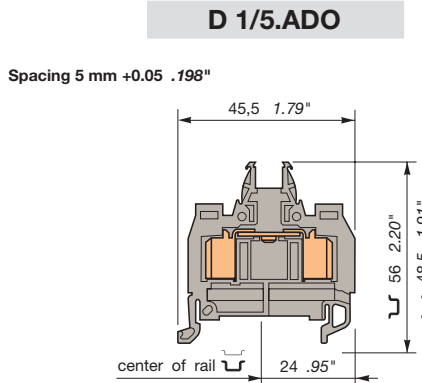
ADO - ADO

DIN 3

ADO wire size  
0.22 - 1 mm<sup>2</sup>  
24 - 18 AWG



A  
7



Standard 5 mm block



Colour	Type	Part number
<i>Standard blocks</i>		
Grey	D 1/5.ADO	1SNA 199 563 R2400
Orange	D 1/5.ADO	1SNA 199 564 R2500
Blue	D 1/5.N.ADO	1SNA 199 565 R2600
Black	D 1/5.ADO	1SNA 199 566 R2700
Red	D 1/5.ADO	1SNA 199 567 R2000
Ivory	D 1/5.ADO	1SNA 199 568 R0100
Yellow	D 1/5.ADO	1SNA 199 569 R0200
Green	D 1/5.ADO	1SNA 199 570 R0700

## Accessories

	Type	Part number
1 End section	grey yellow	FEMAD3 th. 3 mm 1SNA 199 341 R0500 1SNA 199 343 R0700
2 Circuit separator	grey	SCAD5 1SNA 199 551 R2000
3 Test socket		AL2 (1) DIA. 2 mm 1SNA 163 046 R2400
4 Test plug		FC2 DIA. 2 mm 1SNA 007 865 R2600
6 Assembled jumper bar (with IP20 protection)		BJMI5 (1) 24 A 2 poles 1SNA 176 278 R1600 BJMI5 (1) 24 A 3 poles 1SNA 176 279 R1700 BJMI5 (1) 24 A 4 poles 1SNA 176 280 R0500 BJMI5 (1) 24 A 5 poles 1SNA 176 281 R2200 BJMI5 (1) 24 A 10 poles 1SNA 176 282 R2300
7 Jumper bar not assembled Post + screw + washer		BJS5 (1) 24 A 20 poles 1SNA 177 652 R0600 EV5 1SNA 168 629 R1600

Block also available in ATEX (Explosive Atmosphere) approved version

End stop	th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop	th. 10 mm	BAM2	V2	1SNA 206 351 R1600
End stop	th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
Rail	35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail	35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail	35 x 15 x 1,5	PR5		1SNA 168 700 R2200

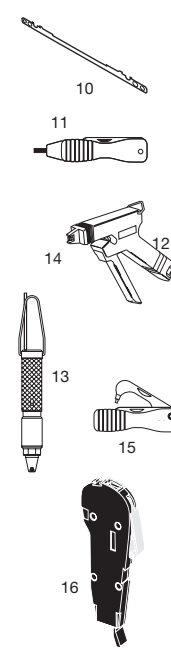
Other end stops, rails and accessories : see section on accessories.

## Characteristics

Wire size		IEC		UL/CSA
		NFC	DIN	
Screw	Rigid			
	Flexible			
ADO	Rigid	0,2-1 mm <sup>2</sup>		24-18 AWG
	Flexible	0,22-1 mm <sup>2</sup>		24-18 AWG
Voltage				
Rated		1000 V		600 V
Impulse withstand		8 kV		
Pollution degree		3		
Current				
Rated		13,5 A		7 A
Wire size				
Rated		1 mm <sup>2</sup>		18 AWG
Wire stripping length (screw)	Recommended (screw)	Weight	Protection	
		5 g	IP 20	
		.18 oz	NEMA 1	

## Notes

Standard block 5 mm spacing. For multiple wires connections, the 2 wires need to be of the same gage and nature (rigid or flexible). Terminal block body material is UL 94 V0.



R See section on markers marking method RC55 RC510 RTM7

(1) SC and 500 V (IEC) rated voltage required with these accessories.

# Terminal blocks Insulation displacement



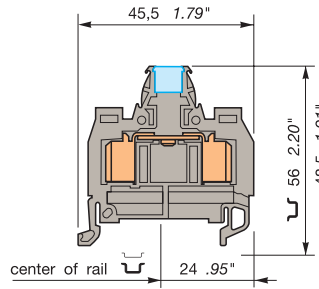
ADO - ADO  
DIN 3

ADO wire size  
0,22 - 1 mm<sup>2</sup>  
24 - 18 AWG



## D 1/5.ADO.1

Spacing 5 mm +0,05 .198"



D 1/5.ADO with partition



Colour Type Part number

Standard blocks

Grey  **D 1/5.ADO.1** 1SNA 199 571 R2400

### Accessories

Type Part number

	1 End section	grey	FEMAD3	th. 3 mm	1SNA 199 341 R0500
		yellow	FEMAD3	th. 3 mm	1SNA 199 343 R0700
	2 Test socket		AL2	DIA. 2 mm	1SNA 163 046 R2400
	3 Test plug		FC2	DIA. 2 mm	1SNA 007 865 R2600
	5 Assembled jumper bar (with IP20 protection)		BJMI5 (2)	24 A 2 poles	1SNA 176 278 R1600
			BJMI5 (2)	24 A 3 poles	1SNA 176 279 R1700
			BJMI5 (2)	24 A 4 poles	1SNA 176 280 R0500
			BJMI5 (2)	24 A 5 poles	1SNA 176 281 R2200
			BJMI5 (2)	24 A 10 poles	1SNA 176 282 R2300
	6 Jumper bar not assembled Post + screw + washer		BJS5 (2)	24 A 20 poles	1SNA 177 652 R0600
			EV5 (2)		1SNA 168 629 R1600
	8 Screwless jumper bar to be inserted into ADO jaw orange IP20		BJADO5.2	13,5 A 2 poles	1SNA 205 955 R0300
			BJADO5.3	13,5 A 3 poles	1SNA 205 956 R0400
			BJADO5.4	13,5 A 4 poles	1SNA 205 957 R0500
			BJADO5.5	13,5 A 5 poles	1SNA 205 958 R1600
			BJADO5.10	13,5 A 10 poles	1SNA 205 963 R0300
			BJADO5.20	13,5 A 20 poles	1SNA 205 973 R0500
	9 Shield connector		CBM5	th. 0,5 mm	1SNA 178 745 R1400
			CBM8	th. 0,8 mm	1SNA 178 746 R1500
	10 Hand tool kit		OUMAD		1SNA 179 466 R0600
			OUPAD		1SNA 178 944 R0400
	11 Semi-automatic tool		OUTAD		1SNA 205 710 R1100
			OUTA		1SNA 205 284 R0300
	12 Pneumatic tool kit		EXAD2		1SNA 205 721 R0000
			CEADO.5		1SNA 399 345 R1100
	13 Replacement head lit		CEADOE		1SNA 399 341 R1500
	14 Extraction tool kit				
	15 Test connector				

End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop		th. 10 mm	BAM2	V2	1SNA 206 351 R1600
End stop		th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

### Characteristics

Wire size		IEC		UL/CSA	
		NFC	DIN		
Screw	Rigid				
	Flexible				
ADO	Rigid	0,2-1 mm <sup>2</sup>		24-18 AWG	
	Flexible	0,22-1 mm <sup>2</sup>		24-18 AWG	
Voltage					
Rated		1000 V		600 V	
Impulse withstand		8 kV			
Pollution degres		3			
Current					
Rated		13,5 A		7 A	
Wire size					
Rated		1 mm <sup>2</sup>		18 AWG	
Wire stripping length (screw)	Recommended (screw)	Weight	Protection		
		5 g	IP 20		
		.18 oz	NEMA 1		

### Notes

Standard block 5 mm spacing. For multiple wires connections, the 2 wires need to be of the same gage and nature (rigid or flexible). Terminal block body material is UL 94 V0.



R See section on markers marking method RC55 RC510 RTM7

(2) Use of these accessories requires the user to cut out the partition.

# Terminal blocks Insulation displacement



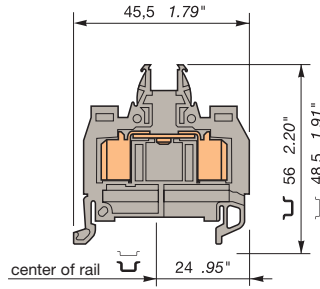
ADO - ADO  
DIN 3

ADO wire size  
0,34 - 1,5 mm<sup>2</sup>  
22 - 16 AWG



## D 1,5/6... ADO

Spacing 5 mm +0,05 .200"



Standard 6 mm block



Colour	Type	Part number
<i>Standard blocks</i>		
Grey	D 1,5/6.ADO	1SNA 199 051 R2600
Orange	D 1,5/6.ADO	1SNA 199 052 R2700
Blue	D 1,5/6.N.ADO	1SNA 199 053 R2000
Black	D 1,5/6.ADO	1SNA 199 083 R1700
Red	D 1,5/6.ADO	1SNA 199 081 R1500
Beige	D 1,5/6.ADO	1SNA 199 082 R1600
Yellow	D 1,5/6.ADO	1SNA 199 080 R2000
Green	D 1,5/6.ADO	1SNA 199 056 R2300

Block also available in ATEX (Explosive Atmosphere) approved version

End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop		th. 10 mm	BAM2	V2	1SNA 206 351 R1600
End stop		th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

## Characteristics

Wire size		IEC	UL	CSA
		NFC	DIN	
Screw	Rigid			
	Flexible			
ADO	Rigid	0,34-1,5 mm <sup>2</sup>	22-16 AWG	22-16 AWG
	Flexible	0,34-1,5 mm <sup>2</sup>	22-16 AWG	22-16 AWG
Voltage				
Rated		1000 V	600 V	600 V
Impulse withstand		8 kV		
Pollution degree		3		
Current				
Rated		17,5 A	18 A	18 A
Wire size				
Rated		1,5 mm <sup>2</sup>	16 AWG	16 AWG
Wire stripping length (screw)	Recommended (screw)		Weight	Protection
			6 g	IP 20
			.21 oz	NEMA 1

## Notes

Standard block 5 mm spacing. For multiple wires connections, the 2 wires need to be of the **same gage and nature** (rigid or flexible). Terminal block body material is UL 94 V0.

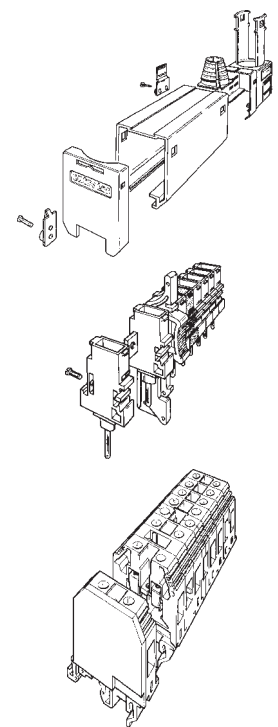
## Accessories

	Type	Part number
	grey yellow	FEMAD3 th. 3 mm FEMAD3 th. 3 mm
		SCAD 1SNA 196 896 R0000
		AL2 (1) DIA. 2 mm 1SNA 163 043 R2100 AL3 (1) DIA. 3 mm 1SNA 163 261 R0000
		FC2 DIA. 2 mm 1SNA 007 865 R2600 FC4 DIA. 4 mm 1SNA 167 860 R0100
		BJM6 (1) 32 A 2 poles 1SNA 176 663 R0000 BJM6 (1) 32 A 3 poles 1SNA 176 664 R0100 BJM6 (1) 32 A 4 poles 1SNA 176 665 R0200 BJM6 (1) 32 A 5 poles 1SNA 176 666 R0300 BJM6 (1) 32 A 10 poles 1SNA 176 667 R0400
		BJS6 (1) 32 A 20 poles 1SNA 174 784 R2000 EV61 1SNA 206 394 R0200
		BJP6 (1) 35 A 1SNA 174 413 R1400
		BJA6 (1)V2 32 A 10 poles 1SNA 116 541 R1200
		BJDP1 (1) (2) 50 A spac. 6 <-> spac.16 1SNA 179 623 R0300 BJDP3 (1) (2) 70 A spac. 6 <-> spac.12 1SNA 179 625 R0500 BJDP4 (1) (2) 50 A sp. 6 <-> sp. 8 or 10 1SNA 174 781 R2500
		EL6 35 A 1SNA 173 627 R2100
		CBM5 th. 0,5 mm 1SNA 178 745 R1400 CBM8 th. 0,8 mm 1SNA 178 746 R1500
		EP6 V2 1SNA 163 427 R1700 VSP6 V2 1SNA 163 433 R1500
		OUMAD 1SNA 179 466 R0600
		OUPAD 1SNA 178 944 R0400
		OUTAD 1SNA 205 710 R1100
		OUTA 1SNA 205 284 R0300
		EXAD2 1SNA 205 721 R0000
		CEADO.6 1SNA 399 346 R1200 CEADOE 1SNA 399 341 R1500
		RC65 RC610 RTM7

(1) SC and 500 V (IEC) rated voltage are required with the use of these accessories.  
(2) Use of these accessories requires the user to cut out the partition.

	<b>D 1,5/6.ADO.1</b>	<b>D 1,5/6.ADO.2</b>	<b>D 1,5/6.ADO.4</b>	<b>D 1,5/6.ADO.C</b>
	Spacing 6 mm +0,05 .238"	Spacing 6 mm +0,05 .238"	Spacing 6 mm +0,05 .238"	Spacing 6 mm +0,05 .238"
	Grey <input type="checkbox"/> 1SNA 199 055 R2200	Grey <input type="checkbox"/> 1SNA 199 057 R2400	Grey <input type="checkbox"/> 1SNA 199 090 R2200	Grey <input type="checkbox"/> 1SNA 199 085 R1100
	<i>D 1,5/6.ADO with partition</i>	<i>D 1,5/6.ADO.1 equipped with DIA. 2 mm test socket for test</i>	<i>D 1,5/6.ADO.1 equipped with DIA. 4 mm test socket for test</i>	<i>D 1,5/6.ADO.1 equipped with DIA.2,5 mm flexible test socket for connector - (2)</i>
Part numbers	Part numbers	Part numbers	Part numbers	Part numbers
	1SNA 199 341 R0500	1SNA 199 341 R0500	1SNA 199 341 R0500	1SNA 199 341 R0500
	1SNA 163 043 R2100 1SNA 163 261 R0000 1SNA 007 865 R2600	1SNA 007 865 R2600	1SNA 167 860 R0100	
	(3) 1SNA 176 663 R0000 (3) 1SNA 176 664 R0100 (3) 1SNA 176 665 R0200 (3) 1SNA 176 666 R0300 (3) 1SNA 176 667 R0400 (3) 1SNA 174 784 R2000 (3) 1SNA 206 394 R0200			
	1SNA 205 974 R0600 1SNA 205 975 R0700 1SNA 205 976 R0000 1SNA 205 977 R0100 1SNA 205 982 R2700 1SNA 205 992 R2100	1SNA 205 974 R0600 1SNA 205 975 R0700 1SNA 205 976 R0000 1SNA 205 977 R0100 1SNA 205 982 R2700 1SNA 205 992 R2100	1SNA 205 974 R0600 1SNA 205 975 R0700 1SNA 205 976 R0000 1SNA 205 977 R0100 1SNA 205 982 R2700 1SNA 205 992 R2100	1SNA 205 974 R0600 1SNA 205 975 R0700 1SNA 205 976 R0000 1SNA 205 977 R0100 1SNA 205 982 R2700 1SNA 205 992 R2100
	(3) 1SNA 174 413 R1400 (3) 1SNA 116 541 R1200 (2)(3) 1SNA 179 623 R0300 (2)(3) 1SNA 179 625 R0500 (2)(3) 1SNA 174 781 R2500 (3) 1SNA 173 627 R2100			
	1SNA 178 745 R1400 1SNA 178 746 R1500 1SNA 163 427 R1700 1SNA 163 433 R1500 1SNA 179 466 R0600 1SNA 178 944 R0400 1SNA 205 710 R1100 1SNA 205 284 R0300 1SNA 205 721 R0000 1SNA 399 346 R1200 1SNA 399 341 R1500	1SNA 178 745 R1400 1SNA 178 746 R1500  1SNA 179 466 R0600 1SNA 178 944 R0400 1SNA 205 710 R1100 1SNA 205 284 R0300 1SNA 205 721 R0000 1SNA 399 346 R1200 1SNA 399 341 R1500	1SNA 178 745 R1400 1SNA 178 746 R1500  1SNA 179 466 R0600 1SNA 178 944 R0400 1SNA 205 710 R1100 1SNA 205 284 R0300 1SNA 205 721 R0000 1SNA 399 346 R1200 1SNA 399 341 R1500	1SNA 178 745 R1400 1SNA 178 746 R1500  1SNA 179 466 R0600 1SNA 178 944 R0400 1SNA 205 710 R1100 1SNA 205 284 R0300 1SNA 205 721 R0000 1SNA 399 346 R1200 1SNA 399 341 R1500
	RC65 RC610 RTM7	RC65 RC610 RTM7	RC65 RC610 RTM7	RC65 RC610 RTM7

**Various applications**



D 1,5/6.ADO.C terminal blocks equipped with DIA. 2,5 mm test socket receive a connector.

**BJDP1** is used for the interconnection with terminal block series "M": spacing 16 mm.

**BJDP3** is used for the interconnection with terminal block series "M": spacing 12 mm.

**BJDP4** is used for the interconnection with terminal block series "D": spacing 8 mm. or terminal block series "M": spacing 8 or 10 mm.

Rated voltage :  
800 V ( IEC )

Rated voltage :  
800 V ( IEC )

(2) See column : "Various applications".  
(3) Use of these accessories requires the user to cut out the partition.

# Terminal blocks Insulation displacement



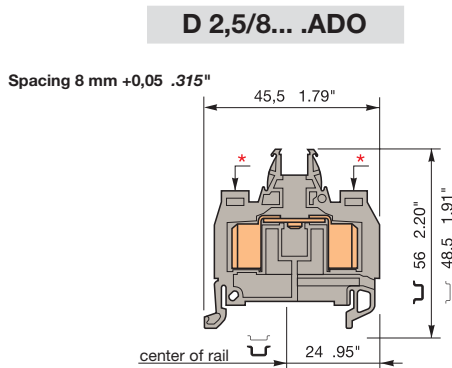
ADO - ADO

DIN 3

ADO wire size

1 - 2,5 mm<sup>2</sup>

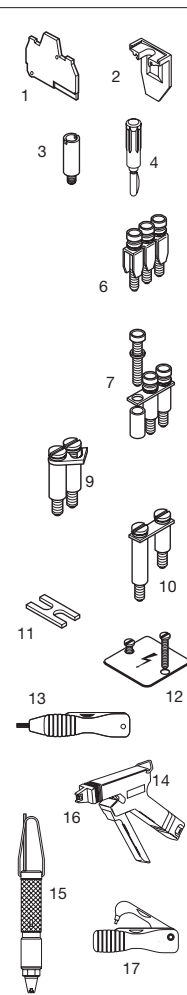
16 - 14 AWG



Standard 8 mm block



## Accessories



- 1 End section grey
- 2 Circuit separator grey
- 3 Test socket
- 4 Test plug
- 6 Assembled jumper bar (with IP20 protection)
- 7 Jumper bar not assembled Post + washer + captive screw IP20
- 9 Pivoting jumper bar
- 10 Universal jumper bar
- 11 Connector plate
- 12 Protecting label
- 13 Hand tool kit
- 14 Semi automatic tool
- 15 Pneumatic tool kit
- 16 Replacement head kit
- 17 Extraction head kit

Colour	Type	Part Number
<i>Standard blocks</i>		
Grey	D 2,5/8.ADO	1SNA 199 059 R0600
Orange	D 2,5/8.ADO	1SNA 199 060 R0300
Blue	D 2,5/8.N.ADO	1SNA 199 061 R2000
Black	D 2,5/8.ADO	1SNA 199 089 R2500
Red	D 2,5/8.ADO	1SNA 199 087 R1300
Ivory	D 2,5/8.ADO	1SNA 199 088 R2400
Yellow	D 2,5/8.ADO	1SNA 199 092 R1000
Green	D 2,5/8.ADO	1SNA 199 148 R0400

Block also available in ATEX (Explosive Atmosphere) approved version

End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop		th. 10 mm	BAM2	V2	1SNA 206 351 R1600
End stop		th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

## Characteristics

### Wire size

Screw		IEC		UL	CSA
		NFC	DIN		
ADO	Rigid	1-2,5 mm <sup>2</sup>	16-14 AWG	16-14 AWG	16-14 AWG
	Flexible	1-2,5 mm <sup>2</sup>	16-14 AWG	16-14 AWG	16-14 AWG

### Voltage

Rated	1000 V	600 V	600 V
Impulse withstand	8 kV		
Pollution degree	3		

### Current

Rated	24 A	25 A	25 A
-------	------	------	------

### Wire size

Rated	2,5 mm <sup>2</sup>	16 AWG	16 AWG
Wire stripping length (screw)	Recommended (screw)	Weight	Protection
		9 g	IP 20
		.32 oz	NEMA 1

## Notes

Standard block 8 mm spacing. For multiple wires connections, the 2 wires need to be of the same gage and nature (rigid or flexible). Terminal block body material is UL 94 V0.

\* Black marking for wire size 1 - 2,5 mm<sup>2</sup> (16 - 14 AWG)



R See section on markers

marking method

RTM7

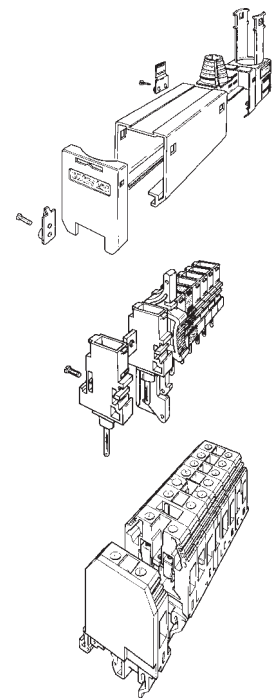
RC810 25

RCAL85

- (1) SC and 500 V (IEC) rated voltage required with these accessories.
- (2) See column : "Various applications".

	<b>D 2,5/8.ADO.1</b>	<b>D 2,5/8.ADO.2</b>	<b>D 2,5/8.ADO.4</b>	<b>D 2,5/8.ADO.C</b>
	Spacing 8 mm +0,05 .315"	Spacing 8 mm +0,05 .315"	Spacing 8 mm +0,05 .315"	Spacing 8 mm +0,05 .315"
	Grey □ 1SNA 199 063 R2200	Grey □ 1SNA 199 160 R0400	Grey □ 1SNA 199 162 R2200	Grey □ 1SNA 199 161 R2100
	<i>D 2,5/8.ADO with partition</i>	<i>D 2,5/8.ADO.1 equipped with DIA. 2 mm test socket for test</i>	<i>D 2,5/8.ADO.1 equipped with DIA. 4 mm test socket for test</i>	<i>D 2,5/8.ADO.1 equipped with DIA. 2,5 mm flexible test socket for connector - (2)</i>
Part numbers	Part numbers	Part numbers	Part numbers	Part numbers
	1SNA 199 341 R0500	1SNA 199 341 R0500	1SNA 199 341 R0500	1SNA 199 341 R0500
	1SNA 163 043 R2100 1SNA 163 262 R0100 1SNA 163 240 R1700			
	V2 1SNA 007 865 R2600 V2 1SNA 167 860 R0100	V2 1SNA 007 865 R2600	V2 1SNA 167 860 R0100	
	V2(3) 1SNA 176 669 R1600 V2(3) 1SNA 176 670 R1300 V2(3) 1SNA 176 671 R0000 V2(3) 1SNA 176 672 R0100 V2(3) 1SNA 176 673 R0200 (3) 1SNA 174 789 R0500 (3) 1SNA 206 394 R0200			
	(3) 1SNA 174 448 R0700 (2)(3) 1SNA 179 623 R0300 (2)(3) 1SNA 179 625 R0500 (2)(3) 1SNA 174 782 R2600 (3) 1SNA 173 627 R2100 V2 1SNA 163 427 R1700 V2 1SNA 163 428 R2000 V2 1SNA 163 433 R1500			
	1SNA 179 466 R0600 1SNA 178 944 R0400 1SNA 205 710 R1100 1SNA 205 284 R0300 1SNA 205 721 R0000 1SNA 399 348 R2400 1SNA 399 341 R1500	1SNA 179 466 R0600 1SNA 178 944 R0400 1SNA 205 710 R1100 1SNA 205 284 R0300 1SNA 205 721 R0000 1SNA 399 348 R2400 1SNA 399 341 R1500	1SNA 179 466 R0600 1SNA 178 944 R0400 1SNA 205 710 R1100 1SNA 205 284 R0300 1SNA 205 721 R0000 1SNA 399 348 R2400 1SNA 399 341 R1500	1SNA 179 466 R0600 1SNA 178 944 R0400 1SNA 205 710 R1100 1SNA 205 284 R0300 1SNA 205 721 R0000 1SNA 399 348 R2400 1SNA 399 341 R1500
	RTM7 RC810 RCAL85	RTM7 RC810 RCAL85	RTM7 RC810 RCAL85	RTM7 RC810 RCAL85

**Various applications**



D 2,5/8.ADO.C terminal blocks equipped with DIA. 2,5 mm test socket receive a connector. See general catalog "connexion".

Rated voltage:  
800 V ( IEC )

Rated voltage:  
800 V ( IEC )

**BJDP1** is used for the interconnection with terminal block series "M": spacing 16 mm.

**BJDP3** is used for the interconnection with terminal block series "M": spacing 12 mm.

**BJDP5** is used for the interconnection with terminal block series "M": spacing 10 mm.

(2) See column : "Various applications".  
(3) Use of these accessories requires the user to cut out the partition.

# Terminal blocks Insulation displacement



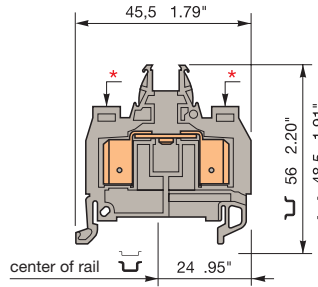
ADO - ADO  
DIN 3

ADO wire size  
4 mm<sup>2</sup>  
12 AWG



## D 4/8.ADO

Spacing 8 mm +0,05 .315"



Standard 8 mm block

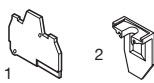


Colour	Type	Part number
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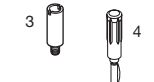
Standard blocks

Grey	<input type="checkbox"/> D 4/8.ADO	1SNA 399 244 R1400
Blue	<input type="checkbox"/> D 4/8.N.ADO	1SNA 399 318 R1600
Orange	<input type="checkbox"/> D 4/8.ADO	1SNA 399 801 R0400

### Accessories



- 1 End section grey
- 2 Circuit separator grey
- 3 Test socket



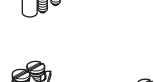
- 4 Test plug



- 6 Assembled jumper bar (with IP20 protection)



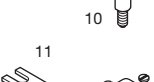
- 7 Jumper bar not assembled  
Post + washer + captive screw IP20



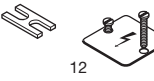
- 9 Pivoting jumper bar
- 10 Universal jumper bar



- 11 Connector plate
- 12 Protection label



- 13 Hand tool kit
- 14 Semi-automatic tool



- 15 Replacement head kit
- 16 Extraction tool kit

### Accessories

Type	Part numbers
FEMAD3	th. 3 mm 1SNA 199 341 R0500
SCAD	1SNA 196 896 R0000
AL2 (1)	DIA. 2 mm 1SNA 163 043 R2100
AL3 (1)	DIA. 3 mm 1SNA 163 262 R0100
AL4 (1)	DIA. 4 mm 1SNA 163 240 R1700
FC2 (3)	DIA. 2 mm 1SNA 007 865 R2600
FC4 (3)	DIA. 4 mm 1SNA 167 860 R0100
BJM8 (1) 41 A 2 poles	1SNA 176 669 R1600
BJM8 (1) 41 A 3 poles	1SNA 176 670 R1300
BJM8 (1) 41 A 4 poles	1SNA 176 671 R0000
BJM8 (1) 41 A 5 poles	1SNA 176 672 R0100
BJM8 (1) 41 A 10 poles	1SNA 176 673 R0200
BJS8 41 A 20 poles	1SNA 174 789 R0500
EV61	1SNA 206 394 R0200
BJP8 (1)(4) 50 A	1SNA 174 448 R0700
BJDP1 (1)(2) 50 A spacing 8->spacing 16	1SNA 179 623 R0300
BJDP3 (1)(2) 70 A spacing 8->spacing 12	1SNA 179 625 R0500
BJDP5 (1)(2) 50 A spacing 8->spacing 10	1SNA 174 782 R2600
EL6 (4) 35 A	1SNA 173 627 R2100
EP6	3 blocks 1SNA 163 427 R1700
EP8	4 blocks 1SNA 163 428 R2000
VSP6	1SNA 163 433 R1500
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000

Block also available in ATEX (Explosive Atmosphere) approved version

End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop		th. 10 mm	BAM2	V2	1SNA 206 351 R1600
End stop		th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

### Characteristics

Wire size		IEC		UL/CSA	
		NFC	DIN		
Screw	Rigid				
	Flexible				
ADO	Rigid	4 mm <sup>2</sup>		12 AWG	
	Flexible	4 mm <sup>2</sup>		12 AWG	
<b>Voltage</b>					
Rated		1000 V		600 V	
Impulse withstand		8 kV			
Pollution degree		3			
<b>Current</b>					
Rated		32 A		25 A	
<b>Wire size</b>					
Rated		4 mm <sup>2</sup>		12 AWG	
Wire stripping length (screw)	Recommended (screw)		Weight	Protection	
			9 g	IP 20	
			.32 oz	NEMA 1	

### Notes

Standard 8 mm block for connection of only one rigid or flexible 4 mm<sup>2</sup> wire.

\* White marking for wire size 4 mm<sup>2</sup> (12 AWG)



R See section on marking method

(2) BJDP1 is used for the interconnection with terminal block series "M" : spacing 16 mm. BJDP3 is used for the interconnection with terminal block series "M" : spacing 12 mm. BJDP5 is used for the interconnection with terminal block series "M" : spacing 10 mm.

RTM7 RC 810 RCAL85

(1) A circuit separator SC and 500 V (IEC) rated voltage are required with these accessories. (3) Forbidden under explosive atmosphere EEX usage. (4) Only certified for "i" security.



# Terminal blocks Insulation displacement



Double deck  
ADO - ADO

DIN 3  
ADO wire size  
0,22 - 1 mm<sup>2</sup>  
24 - 18 AWG



End stop		th. 12 mm	BADH	V2	1SNA 116 900 R2700
End stop		th. 9,1 mm	BAMH	V2	1SNA 114 836 R0000
End stop		th. 9,1 mm	BAMH V0	V0	1SNA 194 836 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

## Characteristics

### Wire size

		IEC		UL	CSA
		NFC	DIN		
Screw	Rigid				
	Flexible				
ADO	Rigid	0,2-1 mm <sup>2</sup>		24-18 AWG	24-18 AWG
	Flexible	0,22-1 mm <sup>2</sup>		24-18 AWG	24-18 AWG

### Voltage

Rated	630 V		
Impulse withstand	8 kV		
Pollution degree	3		

### Current

Rated	13,5 A		
-------	--------	--	--

### Wire size

Rated	1 mm <sup>2</sup>	18 AWG	18 AWG
Wire stripping length (screw)	Recommended (screw)	Weight	Protection
		15 g	IP 20
		.53 oz	NEMA 1

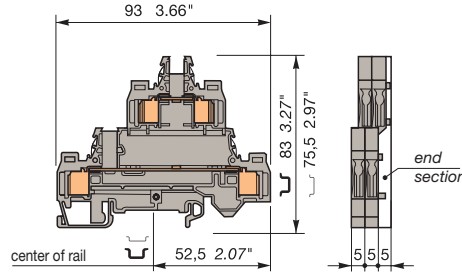
## Notes

For multiple wires connections the wires need to be of the **same gage and nature** (rigid or flexible).  
Terminal block body material UL 94 V0.

Some accessories can decrease the block's voltage rating. Consult us for more information.

## D 1/5.D2.ADO

Spacing 5 mm + 0,05 (.200")



Standard 5 mm block

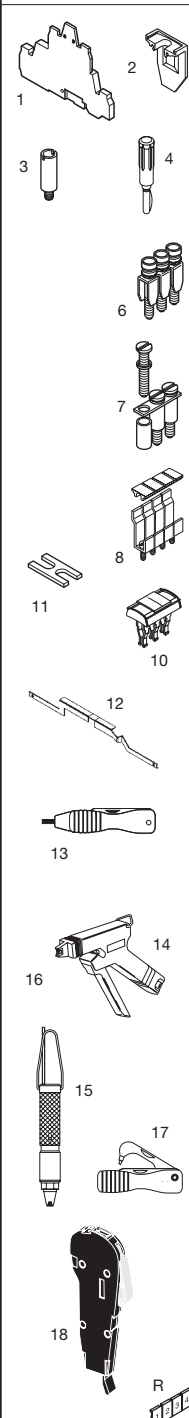
Color	Type	Part numbers
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### Standard blocks

Grey	D 1/5.D2.ADO	1SNA 399 896 R2300
Blue	D 1/5.D2.N.ADO	1SNA 399 897 R2400



## Accessories



- 1 End section grey
- 2 Circuit separator
- 3 Test socket
- 4 Test plug
- 6 Assembled jumper bar (with IP20 protection)
- 7 Jumper bar not assembled Post + screw + washer
- 8 Jumper bar for alternated jumping
- 10 Screwless jumper bar to be inserted into ADO jaw orange IP20
- 11 Connector plate
- 12 Shield connector
- 13 Hand tool kit
- 14 Semi-automatic tool
- 15 Pneumatic tool kit
- 16 Replacement head kit
- 17 Extraction head kit
- 18 Test connector

## Type Part numbers

FED2AD2	V0		1SNA 199 476 R2500
SCAD5	V0		1SNA 199 551 R2000
AL2		DIA. 2 mm	1SNA 163 046 R2400
FC2		DIA. 2 mm	1SNA 007 865 R2600
BJMI5 (1)	24 A	2 poles	1SNA 176 278 R1600
BJMI5 (1)	24 A	3 poles	1SNA 176 279 R1700
BJMI5 (1)	24 A	4 poles	1SNA 176 280 R0500
BJMI5 (1)	24 A	5 poles	1SNA 176 281 R2200
BJMI5 (1)	24 A	10 poles	1SNA 176 282 R2300
BJS5 (1)	24 A	20 poles	1SNA 177 652 R0600
EV5			1SNA 168 629 R1600
BJA5	24 A	10 poles	1SNA 205 021 R2600
BJADO5.2	13,5 A	2 poles	1SNA 205 955 R0300
BJADO5.3	13,5 A	3 poles	1SNA 205 956 R0400
BJADO5.4	13,5 A	4 poles	1SNA 205 957 R0500
BJADO5.5	13,5 A	5 poles	1SNA 205 958 R1600
BJADO5.10	13,5 A	10 poles	1SNA 205 963 R0300
BJADO5.20	13,5 A	20 poles	1SNA 205 973 R0500
EL6			1SNA 173 627 R2100
CBD2S			1SNA 178 408 R1400
OUMAD			1SNA 179 466 R0600
OUPAD			1SNA 178 944 R0400
OUTAD			1SNA 205 710 R1100
OUTA			1SNA 205 284 R0300
EXAD2			1SNA 205 721 R0000
CEADO.5			1SNA 399 345 R1100
CEADOE			1SNA 399 341 R1500

R See section on markers marking method

RC55 RC510 RTM7

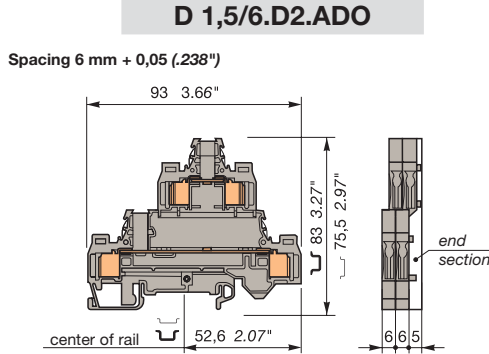
(1) SCAD5 is required with these accessories

# Terminal blocks Insulation displacement



Double deck  
ADO - ADO

DIN 3  
ADO wire size  
0,34 - 1,5 mm<sup>2</sup>  
22 - 16 AWG



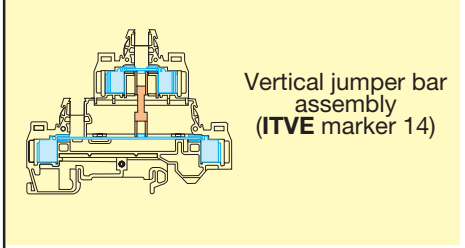
Standard 6 mm block



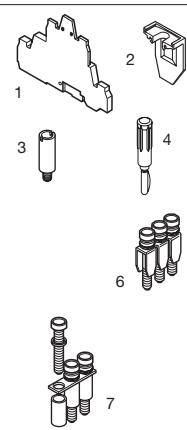
Color	Type	Part numbers
-------	------	--------------

Standard blocks

Grey	<input type="checkbox"/> D 1,5/6.D2.ADO	1SNA 199 480 R2600
Blue	<input type="checkbox"/> D 1,5/6.D2.N.ADO	1SNA 199 482 R1400
Orange	<input type="checkbox"/> D 1,5/6.D2.ADO	1SNA 199 481 R1300



## Accessories



- 1 End section grey
- 2 Circuit separator
- 3 Test socket
- 4 Test plug
- 6 Assembled jumper bar (with IP20 protection)
- 7 Jumper bar not assembled Post + washer + captive screw IP20

## Type Part numbers

FED2AD2 V0	th. 5,0 mm	1SNA 199 476 R2500
SCAD V0		1SNA 196 896 R0000
AL2 (1)	DIA. 2,0 mm	1SNA 163 043 R2100
AL3 (1)	DIA. 3,0 mm	1SNA 163 261 R0000
FC2	DIA. 2,0 mm	1SNA 007 865 R2600
BJM16	32 A 2 poles	1SNA 176 663 R0000
BJM16	32 A 3 poles	1SNA 176 664 R0100
BJM16	32 A 4 poles	1SNA 176 665 R0200
BJM16	32 A 5 poles	1SNA 176 666 R0300
BJM16	32 A 10 poles	1SNA 176 667 R0400
BJS6	32 A 20 poles	1SNA 174 784 R2000
EV6I		1SNA 206 394 R0200

Block also available in ATEX (Explosive Atmosphere) approved version

End stop		th. 12 mm	BADH	V2	1SNA 116 900 R2700
End stop		th. 9,1 mm	BAMH	V2	1SNA 114 836 R0000
End stop		th. 9,1 mm	BAMH V0	V0	1SNA 194 836 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

## Characteristics

### Wire size

		IEC		UL	CSA
		NFC	DIN		
Screw	Rigid				
	Flexible				
ADO	Rigid	0,28-1,5 mm <sup>2</sup>		22-16 AWG	22-16 AWG
	Flexible	0,34-1,5 mm <sup>2</sup>		22-16 AWG	22-16 AWG

### Voltage

Rated	800 V	300 V	300 V
Impulse withstand	6 kV		
Pollution degree	3		

### Current

Rated	17,5 A	18 A	18 A
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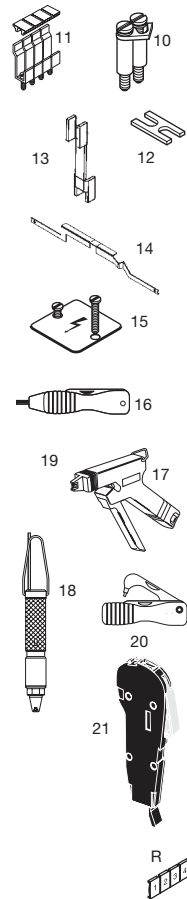
### Wire size

Rated	1,5 mm <sup>2</sup>	16 AWG	16 AWG
Wire stripping length (screw)	Recommended (screw)	Weight	Protection
		18 g	IP 20
		.63 oz	NEMA 1

## Notes

For multiple wires connections the wires need to be of the same gage and nature (rigid or flexible). Terminal block body material UL 94 V0.

Some accessories can decrease the block's voltage rating. Consult us for more information.



- 10 Pivoting jumper bar
- 11 Jumper bar for alterned jumping
- 12 Connector plate
- 13 Vertical jumper bar
- 14 Shield connector
- 15 Protection label Screw for protection label
- 16 Hand tool kit
- 17 Semi-automatic tool
- 18 Pneumatic tool kit
- 19 Replacement head kit
- 20 Extraction head kit
- 21 Test connector

BJP6	35 A		1SNA 174 413 R1400
BJA6	32 A	10 poles	1SNA 116 541 R1200
EL6	35 A		1SNA 173 627 R2100
ITVE			1SNA 179 694 R0300
CBD2S			1SNA 178 408 R1400
EP6		4 blocks	1SNA 163 427 R1700
VSP6			1SNA 163 433 R1500
OUMAD			1SNA 179 466 R0600
OUPAD			1SNA 178 944 R0400
OUTAD			1SNA 205 710 R1100
OUTA			1SNA 205 284 R0300
EXAD2			1SNA 205 721 R0000
CEADO.6			1SNA 399 346 R1200
CEADOE			1SNA 399 341 R1500

R See section on markers marking method

RC65 RC610 RTM7

Notes : (1) A circuit separator SC and 500V (IEC) rated voltage are required with these accessories.

# Terminal blocks Insulation displacement



Double deck  
ADO - ADO

DIN 3

ADO wire size  
0,34 - 1,5 mm<sup>2</sup>  
22 - 16 AWG



End stop		th. 12 mm	BADH	V2	1SNA 116 900 R2700
End stop		th. 9,1 mm	BAMH	V2	1SNA 114 836 R0000
End stop		th. 9,1 mm	BAMH V0	V0	1SNA 194 836 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

## Characteristics

### Wire size

		IEC		UL	CSA
		NFC	DIN		
Screw	Rigid				
	Flexible				
ADO	Rigid	0,28-1,5 mm <sup>2</sup>		22-16 AWG	22-16 AWG
	Flexible	0,34-1,5 mm <sup>2</sup>		22-16 AWG	22-16 AWG

### Voltage

	800 V	300 V	300 V
Rated			
Impulse withstand	6 kV		
Pollution degree	3		

### Current

	17,5 A	18 A	18 A
Rated			

### Wire size

Rated		1,5 mm <sup>2</sup>	16 AWG	16 AWG
Wire stripping length (screw)	Recommended (screw)		Weight	Protection
			18 g	IP 20
			.63 oz	NEMA 1

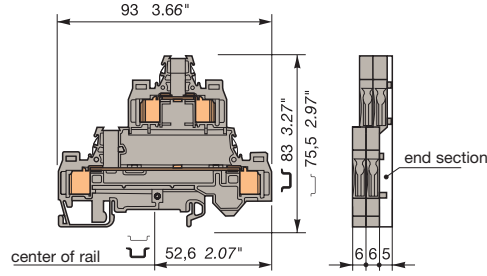
## Notes

For multiple wires connections the wires need to be of the **same gage and nature** (rigid or flexible).  
Terminal block body material UL 94 V0.

Some accessories can decrease the block's voltage rating. Consult us for more information.

## D 1,5/6.D2.ADO.1

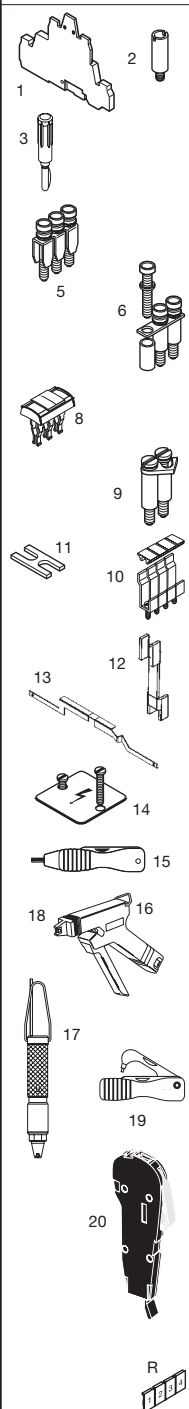
Spacing 6 mm + 0,05 (.238")



D 1,5/6.D2.ADO with partition



## Accessories

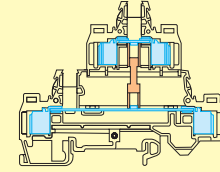


- End section grey
- Test socket
- Test plug
- Assembled jumper bar (with IP20 protection)
- Jumper bar not assembled Post + washer + captive screw IP20
- Screwless jumper bar to be inserted into ADO jaw orange IP20
- Pivoting jumper bar
- Jumper bar for altered jumping
- Connector plate
- Vertical jumper bar
- Shield connector
- Protection label Screw for protection label
- Hand tool kit
- Semi-automatic tool
- Pneumatic tool kit
- Replacement head kit
- Extraction tool kit
- Test connector

## Color Type Part numbers

Standard blocks

Grey  **D 1,5/6.D2.ADO.1** 1SNA 199 494 R1000



Vertical jumper bar assembly (ITVE marker 14)

## Type Part numbers

FED2AD2	V0	th. 5,0 mm	1SNA 199 476 R2500
AL2		DIA. 2,0 mm	1SNA 163 043 R2100
AL3		DIA. 3,0 mm	1SNA 163 261 R0000
FC2		DIA. 2,0 mm	1SNA 007 865 R2600
BJMI6	32 A	2 poles	1SNA 176 663 R0000
BJMI6	32 A	3 poles	1SNA 176 664 R0100
BJMI6	32 A	4 poles	1SNA 176 665 R0200
BJMI6	32 A	5 poles	1SNA 176 666 R0300
BJMI6	32 A	10 poles	1SNA 176 667 R0400
BJS6	32 A	20 poles	1SNA 174 784 R2000
EV6I			1SNA 206 394 R0200
BJADO6.2	17,5 A	2 poles	1SNA 205 974 R0600
BJADO6.3	17,5 A	3 poles	1SNA 205 975 R0700
BJADO6.4	17,5 A	4 poles	1SNA 205 976 R0000
BJADO6.5	17,5 A	5 poles	1SNA 205 977 R0100
BJADO6.10	17,5 A	10 poles	1SNA 205 982 R2700
BJADO6.20	17,5 A	20 poles	1SNA 205 992 R2100
BJP6	35 A		1SNA 174 413 R1400
BJA6	32 A	10 poles	1SNA 116 541 R1200
EL6	35 A		1SNA 173 627 R2100
ITVE			1SNA 179 694 R0300
CBD2S			1SNA 178 408 R1400
EP6		4 blocks	1SNA 163 427 R1700
VSP6			1SNA 163 433 R1500
OUMAD			1SNA 179 466 R0600
OUPAD			1SNA 178 944 R0400
OUTAD			1SNA 205 710 R1100
OUTA			1SNA 205 284 R0300
EXAD2			1SNA 205 721 R0000
CEADO.6			1SNA 399 346 R1200
CEADOE			1SNA 399 341 R1500

R See section on markers marking method

RC65 RC610 RTM7

(1) Use of this accessories requires the user to cut out the partition.

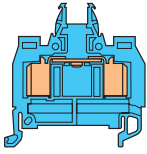
**ADO/ADO terminal blocks for neutral circuits**

ADO/ADO terminal blocks with blue body can be used for neutral connection.

Blue colour permits a good identification.

**D 1/5.N.ADO**

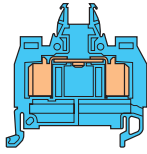
Spacing 5 mm + 0,05 (.198")



Rated wire size 1 mm<sup>2</sup>  
**D 1/5.N.ADO** 1SNA 199 565 R2600  
 Weight 5 g .18 oz

**D 1,5/6.N.ADO**

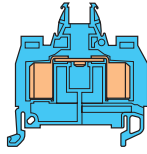
Spacing 6 mm + 0,05 (.238")



Rated wire size 1,5 mm<sup>2</sup>  
**D 1,5/6.N.ADO** 1SNA 199 053 R2000  
 Weight 6 g .21 oz

**D 2,5/8.N.ADO**

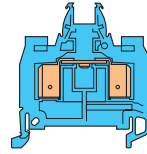
Spacing 8 mm + 0,05 (.315")



Rated wire size 2,5 mm<sup>2</sup>  
**D 2,5/8.N.ADO** 1SNA 199 061 R2000  
 Weight 9 g .32 oz

**D 4/8.N.ADO**

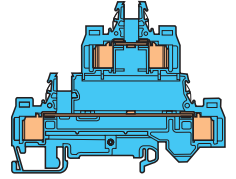
Spacing 8 mm + 0,05 (.315")



Rated wire size 4 mm<sup>2</sup>  
**D 4/8.N.ADO** 1SNA 399 318 R1600  
 Weight 9 g .32 oz

**D 1/5.D2.N.ADO**

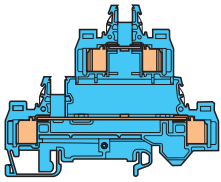
Spacing 5 mm + 0,05 (.200")



Rated wire size 1 mm<sup>2</sup>  
**D 1/5.D2.N.ADO** 1SNA 399 897 R2400  
 Weight 15 g .53 oz

**D 1,5/6.D2.N.ADO**

Spacing 6 mm + 0,05 (.238")



Rated wire size 1,5 mm<sup>2</sup>  
**D 1,5/6.D2.N.ADO** 1SNA 199 482 R1400  
 Weight 18 g .64 oz

**Characteristics and accessories of these blocks are described in standard ADO/ADO block pages.**

**Terminal blocks**  
**Insulation displacement**  
 Ground terminal blocks not electrically connected to the mounting rail

ADO - ADO  
 DIN 3



Characteristics and accessories, see Screw clamp terminal blocks.

\* Black marking for wire size 1 - 2.5 mm<sup>2</sup> (16-14 AWG)

**Characteristics**

Wire size	Rigid	0,2-1 mm <sup>2</sup>
	Flexible	0,22-1 mm <sup>2</sup>
Rated current	120 A / 1 s.	
Rated wire size	1 mm <sup>2</sup>	

**Other characteristics**

Wire strip. length	Recomm. screwdriver	Weight	Protection
		5 g .18 oz	IP 20 NEMA 1

Approvals



**Accessories**

1	End section	yellow
R	See section on marking Marking method	

**Terminal blocks**  
**Insulation displacement**  
 Ground terminal blocks not electrically connected to the mounting rail

ADO - ADO  
 DIN 3



Characteristics and accessories, see Screw clamp terminal blocks.

\* White marking for wire size 4 mm<sup>2</sup> (12 AWG)

**Characteristics**

Wire size	Rigid	4 mm <sup>2</sup>
	Flexible	4 mm <sup>2</sup>
Rated current	480 A / 1 s.	
Rated wire size	4 mm <sup>2</sup>	

**Other characteristics**

Wire strip. length	Recomm. screwdriver	Weight	Protection
		9 g .32 oz	IP 20 NEMA 1

Approvals



**Accessories**

1	End section	yellow
R	See section on marking Marking mode	

D 1/5.PI.ADO		D 1,5/6.PI.ADO		D 2,5/8.PI.ADO	
Spacing 5 mm +0.05 .198" ADO wire size 0.22 -1 mm <sup>2</sup> 24 - 18 AWG		Spacing 6 mm +0.05 .238" ADO wire size 0.34 -1.5 mm <sup>2</sup> 22 - 16 AWG		Spacing 8 mm +0.05 .315" ADO wire size 1 - 2.5 mm <sup>2</sup> 16 - 14 AWG	
Type	P/N	Type	P/N	Type	P/N
Yellow body / Green marking ■ D 1/5.PI.ADO 1SNA 399 184 R2100		Yellow body / Green marking ■ D 1,5/6.PI.ADO 1SNA 199 054 R2100		Yellow body / Green marking ■ D 2,5/8.PI.ADO 1SNA 199 062 R2100	
IEC NFC DIN		IEC NFC DIN		IEC NFC DIN	
UL/CSA		UL		CSA	
Wire size		Wire size		Wire size	
Rated current		Rated current		Rated current	
Rated wire size		Rated wire size		Rated wire size	
Other characteristics		Other characteristics		Other characteristics	
Approvals		Approvals		Approvals	
Accessories		Accessories		Accessories	
1 End section yellow		1 End section yellow		1 End section yellow	
R See section on marking Marking method		R See section on marking Marking method		R See section on marking Marking method	
D 4/8.PI.ADO					
Spacing 8 mm +0.05 .315" ADO wire size 4 mm <sup>2</sup> / 12 AWG 1 wire only					
Type	P/N	Type	P/N	Type	P/N
Yellow body / Green marking ■ D 4/8.PI.ADO 1SNA 399 272 R1000					
IEC NFC DIN		IEC NFC DIN		IEC NFC DIN	
UL/CSA		UL		CSA	
Wire size		Wire size		Wire size	
Rated current		Rated current		Rated current	
Rated wire size		Rated wire size		Rated wire size	
Other characteristics		Other characteristics		Other characteristics	
Approvals		Approvals		Approvals	
Accessories		Accessories		Accessories	
1 End section yellow		1 End section yellow		1 End section yellow	
R See section on marking Marking mode		R See section on marking Marking mode		R See section on marking Marking mode	

**Terminal blocks  
Insulation displacement**  
Ground terminal blocks electrically connected to the mounting rail

ADO - ADO  
DIN 3



Block also available in ATEX (Explosive Atmosphere) approved version

Characteristics and accessories, see Screw clamp terminal blocks.

\* Black marking for wire size 1 - 2.5 mm<sup>2</sup> (16-14 AWG)

**Characteristics**

Wire size	Rigid Flexible	IEC		UL/CSA		IEC		UL		CSA		IEC		UL		CSA	
		NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN
0.2-1 mm <sup>2</sup>				24-18 AWG		0.34-1.5 mm <sup>2</sup>		22-16 AWG		22-16 AWG		1-2.5 mm <sup>2</sup>		16-14 AWG		16-14 AWG	
0.22-1 mm <sup>2</sup>				24-18 AWG		0.34-1.5 mm <sup>2</sup>		22-16 AWG		22-16 AWG		1-2.5 mm <sup>2</sup>		16-14 AWG		16-14 AWG	
120 A / 1 s.						180 A / 1 s.						300 A / 1 s.					
Rated wire size		1 mm <sup>2</sup>		18 AWG		1.5 mm <sup>2</sup>		16 AWG		16 AWG		2.5 mm <sup>2</sup>		14 AWG		14 AWG	
Other characteristics	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	
																	7 g .25 oz

Approvals																
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**Accessories**

Type	P/N				Type	P/N				Type	P/N					
1 End section yellow grey	FEMAD3	V0	th. 3 mm	1SNA 199 343 R0700	FEMAD3	V0	th. 3 mm	1SNA 199 343 R0700	FEMAD3	V0	th. 3 mm	1SNA 199 343 R0700	FEMAD3	V0	th. 3 mm	1SNA 199 341 R0500
R See section on marking Marking method	RC55	RC510	RTM7		RC65	RC610	RTM7		RTM7	RC810	RCAL85					

**Terminal blocks  
Insulation displacement**  
Ground terminal blocks electrically connected to the mounting rail

ADO - ADO  
DIN 3



Block also available in ATEX (Explosive Atmosphere) approved version

Characteristics and accessories, see Screw clamp terminal blocks.

\* White marking for wire size 4 mm<sup>2</sup> (12 AWG)

**Characteristics**

Wire size	Rigid Flexible	IEC		UL/CSA		IEC		UL		CSA		IEC		UL		CSA	
		NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN
4 mm <sup>2</sup>				12 AWG													
480 A / 1 s.																	
Rated wire size		4 mm <sup>2</sup>		12 AWG													
Others characteristics	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	
																	11g .39 oz

Approvals																
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**Accessories**

Type	P/N				Type	P/N				Type	P/N					
1 End section yellow grey	FEMAD3	V0	th. 3 mm	1SNA 199 343 R0700	FEMAD3	V0	th. 3 mm	1SNA 199 341 R0500								
R See section on marking Marking mode	RTM7	RC810	RCAL85													

# Terminal blocks

## Component holder

### ADO - ADO

DIN 3



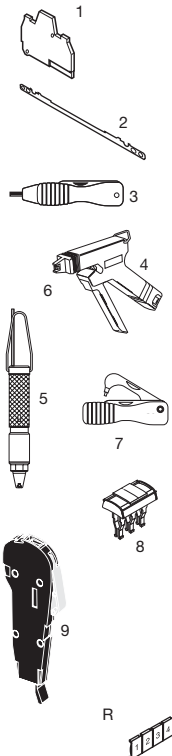
End stop		th.10 mm	BADL	V0	1SNA 399 903 R0200
End stop		th.10 mm	BAM2	V2	1SNA 206 351 R1600
End stop		th.10 mm	BAM2 V0	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

### Notes

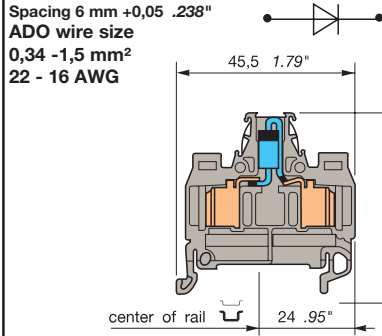
Standard bloc 6 mm. For multiple wire connections, the two wires need to be of the **same gage and nature** (rigid or flexible). Terminal block body material is UL 94 V0.

### Accessories



1	End section	grey
2	Shielding connector	
3	Hand tool kit	
4	Semi automatic tool	
5	Pneumatic tool kit	
6	Replacement head kit	
7	Extraction tool kit	
8	Screwless jumper bar to be inserted into ADO jaw orange IP20	
9	Test connector	
R	See section on markers	
	Marking method	

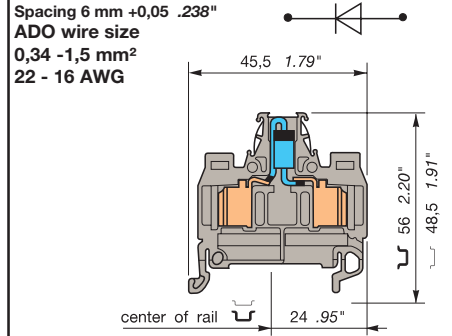
## D 1,5/6.ADO.D1



Block equipped with one 1N5408 diode

Color	Type	Part number
Grey	D 1,5/6.ADO.D1	1SNA 199 248 R1000

## D 1,5/6.ADO.D2



Block equipped with one 1N5408 diode

Color	Type	Part number
Grey	D 1,5/6.ADO.D2	1SNA 199 249 R1100

### Characteristics

Wire size		IEC		UL	CSA
		NFC	DIN		
Screw	Rigid				
	Flexible				
ADO	Rigid	0,34 - 1,5 mm²		22-16 AWG	22-16 AWG
	Flexible	0,34 - 1,5 mm²		22-16 AWG	22-16 AWG

<b>Voltage</b>				
Rated		80 V		
Impulse withstand				
Pollution degree				

<b>Current</b>				
Rated		1 A		

Wire size		1,5 mm²		16 AWG	16 AWG
Rated / Gauge					
Wire strip. length	Recomm. screwdriver	Weight	Protection		
		7 g	IP 20		
		.25 oz	NEMA 1		

### Characteristics

Wire size		IEC		UL	CSA
		NFC	DIN		
Screw	Rigid				
	Flexible				
ADO	Rigid	0,34 - 1,5 mm²		22-16 AWG	22-16 AWG
	Flexible	0,34 - 1,5 mm²		22-16 AWG	22-16 AWG

<b>Voltage</b>				
Rated		80 V		
Impulse withstand				
Pollution degree				

<b>Current</b>				
Rated		1 A		

Wire size		1,5 mm²		16 AWG	16 AWG
Rated/gauge					
Wire strip. length	Recomm. screwdriver	Weight	Protection		
		7 g	IP 20		
		.25 oz	NEMA 1		

Type	Part numbers	
FEMAD3	th. 3,0 mm	1SNA 199 341 R0500
CBM5	th. 0,5 mm	1SNA 178 745 R1400
CBM8	th. 0,8 mm	1SNA 178 746 R1500
OUMAD		1SNA 179 466 R0600
OUPAD		1SNA 178 944 R0400
OUTAD		1SNA 205 710 R1100
OUTA		1SNA 205 284 R0300
EXAD2		1SNA 205 721 R0000
BJADO6.2	17,5 A 2 poles	1SNA 205 974 R0600
BJADO6.3	17,5 A 3 poles	1SNA 205 975 R0700
BJADO6.4	17,5 A 4 poles	1SNA 205 976 R0000
BJADO6.5	17,5 A 5 poles	1SNA 205 977 R0100
BJADO6.10	17,5 A 10 poles	1SNA 205 982 R2700
BJADO6.20	17,5 A 20 poles	1SNA 205 992 R2100
CEADO.6		1SNA 399 346 R1200
CEADOE		1SNA 399 341 R1500
RC610	RC65	

Type	Part numbers	
FEMAD3	th. 3,0 mm	1SNA 199 341 R0500
CBM5	th. 0,5 mm	1SNA 178 745 R1400
CBM8	th. 0,8 mm	1SNA 178 746 R1500
OUMAD		1SNA 179 466 R0600
OUPAD		1SNA 178 944 R0400
OUTAD		1SNA 205 710 R1100
OUTA		1SNA 205 284 R0300
EXAD2		1SNA 205 721 R0000
BJADO6.2	17,5 A 2 poles	1SNA 205 974 R0600
BJADO6.3	17,5 A 3 poles	1SNA 205 975 R0700
BJADO6.4	17,5 A 4 poles	1SNA 205 976 R0000
BJADO6.5	17,5 A 5 poles	1SNA 205 977 R0100
BJADO6.10	17,5 A 10 poles	1SNA 205 982 R2700
BJADO6.20	17,5 A 20 poles	1SNA 205 992 R2100
CEADO.6		1SNA 399 346 R1200
CEADOE		1SNA 399 341 R1500
RC610	RC65	

# Heavy duty switch terminal blocks with blade insulation displacement

ADO - ADO

DIN 3



End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop		th. 10 mm	BAM2	V2	1SNA 206 351 R1600
End stop		th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

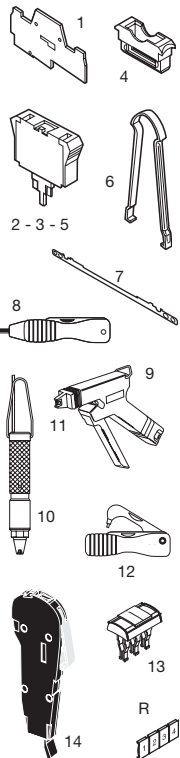
Other end stops, rails and accessories : see section on accessories.

## Notes

Standard block 6 and 8 mm. For two wire connections, the wires need to be of the **same gage and nature** (rigid or flexible). Terminal block body material is UL 94 V0.

\* Black marking for wire size 1-2,5 mm<sup>2</sup> (16-14 AWG)

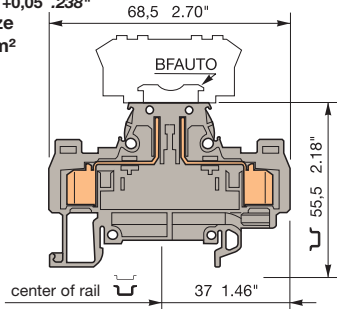
## Accessories



1	End section	grey
2	Short-circuit plug	(2)
3	Fuse-holder plug (for soldered fuse or flat fuse)	(2)
4	Fuse-holder plug (automotive)	(2)
5	Fuse-holder plug (for fuses 5 x 20 or 5 x 25)	(2)
6	Plug extractor	
7	Shielding connector	
8	Hand tool kit	
9	Semi automatic tool	
10	Pneumatic tool	
11	Replacement head kit	
12	Extraction head kit	
13	Screwless jumper bar to be inserted into ADO jaw orange IP20	
14	Test connector	
R	See section on markers	
	Marking method	

### D 1,5/6.S.ADO

Spacing 6 mm +0,05 .238"  
ADO wire size 0,34 - 1,5 mm<sup>2</sup>  
22 - 16 AWG



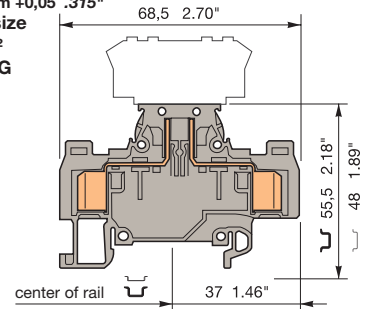
Switch connection block 6 mm by polarized plug, delivered separately.



Colour	Type	Part number
Grey	D 1,5/6.S.ADO	1SNA 199 142 R2600

### D 2,5/8.S.ADO

Spacing 8 mm +0,05 .315"  
ADO wire size 1 - 2,5 mm<sup>2</sup>  
16 - 14 AWG



Switch connection block 8 mm by polarized plug, delivered separately.



Colour	Type	Part number
Grey	D 2,5/8.S.ADO	1SNA 199 164 R2400
Orange	D 2,5/8.S.ADO	1SNA 199 163 R2300

## Characteristics

Wire size	IEC			UL	CSA
	NFC	DIN			
Screw	Rigid				
	Flexible				
ADO	Rigid	0,34-1,5 mm <sup>2</sup>	22-16 AWG	22-16 AWG	
	Flexible	0,34-1,5 mm <sup>2</sup>	22-16 AWG	22-16 AWG	

Voltage			
Rated	500 V (3)	600 V	600 V
Impulse withstand	6 kV		
Pollution degree	3		

Current			
Rated	10 A	8 A	10 A

Wire size			
Rated	1,5 mm <sup>2</sup>	16 AWG	16 AWG
Wire strip. length		10 g	IP 20
		.35 oz	NEMA 1

## Characteristics

Wire size	IEC			UL	CSA
	NFC	DIN			
Screw	Rigid				
	Flexible				
ADO	Rigid	1-2,5 mm <sup>2</sup>	16-14 AWG	16-14 AWG	
	Flexible	1-2,5 mm <sup>2</sup>	16-14 AWG	16-14 AWG	

Voltage			
Rated	500 V (3)	600 V	600 V
Impulse withstand	6 kV		
Pollution degree	3		

Current			
Rated	15 A	15 A	15 A

Section			
Rated	2,5 mm <sup>2</sup>	14 AWG	14 AWG
Wire strip. length		13 g	IP 20
		.46 oz	NEMA 1

## Accessories

Type	Part numbers
FEDAD5 th. 2 mm	1SNA 199 354 R0200
BNC62 th. 6 mm	1SNA 196 853 R1400
BNSV62 th. 6 mm	1SNA 196 854 R1500
BFAUTO V0 black	1SNA 299 486 R2400
BNF652V0 V0 th. 6 mm	1SNA 196 998 R1600
BNF652D(1) V0 th. 6 mm	1SNA 196 999 R1700
BNF652D1(1) V0 th. 6 mm	1SNA 196 966 R1500
BNF652L(1) V0 th. 6 mm	1SNA 196 967 R1600
EXBN2	1SNA 171 018 R2000
CBD2 th. 0,8 mm	1SNA 179 635 R0700
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000
BJADO6.2 17,5 A 2 poles	1SNA 205 974 R0600
BJADO6.3 17,5 A 3 poles	1SNA 205 975 R0700
BJADO6.4 17,5 A 4 poles	1SNA 205 976 R0000
BJADO6.5 17,5 A 5 poles	1SNA 205 977 R0100
BJADO6.10 17,5 A 10 poles	1SNA 205 982 R2700
BJADO6.20 17,5 A 20 poles	1SNA 205 992 R2100
CEADO.6	1SNA 399 346 R1200
CEADOE	1SNA 399 341 R1500

## Accessories

Type	Part numbers
FEDAD5 th. 2 mm	1SNA 199 354 R0200
BNCT82 th. 8 mm	1SNA 196 926 R0500
BNSV82 th. 8 mm	1SNA 196 927 R0600
BNF52 th. 8 mm	1SNA 196 924 R0300
EXBN2	1SNA 171 018 R2000
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000
RCAL85 RC810	

(1) Leakage current with LED 24 V or 48 V : <1,6 mA and with neon lamp 110 or 230 VAC/DC : < 0,5 mA.  
(2) See selection guide for dimensions of plugs and type of fuses to use.  
(3) Terminal block insulating voltage, working voltage according to fuse.

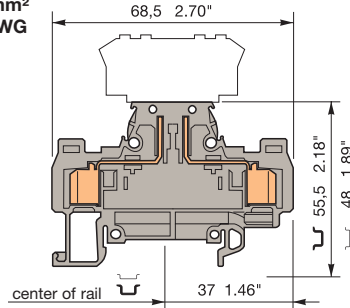


**Insulation displacement**  
**Heavy duty switch terminal blocks with plug**  
**ADO - ADO**  
 ⌋ DIN 3



**D 1/5.S.ADO**

Spacing 5 mm +0,05 .198"  
 ADO wire size  
 0,22 - 1 mm<sup>2</sup>  
 24 - 18 AWG



Colour	Type	Part number
Grey	<input type="checkbox"/> D 1/5.S.ADO	1SNA 399 235 R0300

Colour	Type	Part number
--------	------	-------------

**Characteristics**

Wire size		IEC		UL/CSA
		NFC	DIN	
Screw	Rigid			
	Flexible			
ADO	Rigid	0,2-1 mm <sup>2</sup>		24-18 AWG
	Flexible	0,22-1 mm <sup>2</sup>		24-18 AWG

**Characteristics**

Wire size		IEC		UL/CSA
		NFC	DIN	
Screw	Rigid			
	Flexible			
ADO	Rigid			
	Flexible			

Voltage	
Rated	500 V (3)
Impulse withstand	4 kV
Pollution degree	3

Voltage	
Rated	
Impulse withstand	
Pollution degree	

Current	
Rated	10 A

Current	
Rated	

Wire size			
Rated	1 mm <sup>2</sup>		
Wire strip. length	Recomm. screwdriver	Weight	Protection
		9 g	IP 20
		.32 oz	NEMA 1

Wire size			
Rated			
Wire strip. length	Recomm. screwdriver	Weight	Protection

**Notes**

For two wire connection max., the wires need to be of the same gage and nature (rigid or flexible). Terminal block body material is UL 94 V0.

**Accessories**

	1 End section	grey orange
	2 Fuse-holder plug	
	3 Plug extractor	
	4 Soldered fuses	
	5 Shielding connector	
	6 Hand tool kit	
	7 Semi-automatic tool	
	8 Pneumatic tool kit	
	9 Replacement head kit	
	10 Extraction tool kit	
	11 Screwless jumper bar to be inserted into ADO jaw orange IP20	
	12 Test connector	
	R See section on markers marking method	

Type	Part numbers	
FEDAD5	th. 2 mm	1SNA 199 354 R0200
FEDAD5	th. 2 mm	1SNA 199 355 R0300
BNS.D5	th. 5 mm	1SNA 295 381 R2600
EXBN2		1SNA 171 018 R2000
FUBS	0.5 A	1SNA 174 893 R1600
FUBS	1 A	1SNA 174 894 R1700
FUBS	2 A	1SNA 174 895 R1000
FUBS	3 A	1SNA 174 896 R1100
FUBS	5 A	1SNA 174 897 R1200
CBD2	th. 0,8 mm	1SNA 179 635 R0700
OUMAD		1SNA 179 466 R0600
OUPAD		1SNA 178 944 R0400
OUTAD		1SNA 205 710 R1100
OUTA		1SNA 205 284 R0300
EXAD2		1SNA 205 721 R0000
BJADO5.2	13,5 A 2 poles	1SNA 205 955 R0300
BJADO5.3	13,5 A 3 poles	1SNA 205 956 R0400
BJADO5.4	13,5 A 4 poles	1SNA 205 957 R0500
BJADO5.5	13,5 A 5 poles	1SNA 205 958 R1600
BJADO5.10	13,5 A 10 poles	1SNA 205 963 R0300
BJADO5.20	13,5 A 20 poles	1SNA 205 973 R0500
CEADO.5		1SNA 399 345 R1100
CEADOE		1SNA 399 341 R1500

Type	Part numbers
------	--------------

RC55 RC510

(3) Terminal block insulating voltage. Working voltage according to fuse.

# Insulation displacement

Heavy duty switch terminal blocks with fuse-holder plug for automotive

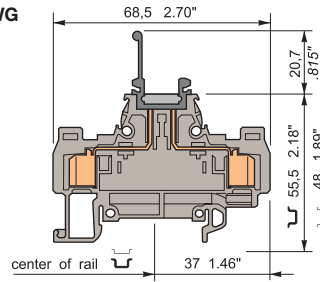
Mini Fuse ADO - ADO

DIN 3



## D 1/5.SFAT2...ADO

Spacing 5 mm +0,05 .198"  
 ADO wire size  
 0,22 - 1 mm<sup>2</sup>  
 24-18 AWG



Colour	Type	Part numbers	Colour	Type	Part numbers
With DIA. 2 mm test on two sides.					
Grey	□ D 1/5.SFAT2.ADO	1SNA 399 242 R1200			
Orange	■ D 1/5.SFAT2.ADO	1SNA 399 241 R1100			
With DIA. 2.3 mm test on two sides.					
Grey	□ D 1/5.SFAT23.ADO	1SNA 399 243 R1300			

Characteristics				Characteristics			
Wire size		IEC		UL/CSA		Wire size	
		NFC	DIN				
Screw	Rigid					Screw	Rigid
	Flexible						Flexible
ADO	Rigid	0,2-1 mm <sup>2</sup>		24-18 AWG		ADO	Rigid
	Flexible	0,22-1 mm <sup>2</sup>		24-18 AWG			Flexible

End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop		th. 10 mm	BAM2	V2	1SNA 206 351 R1600
End stop		th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

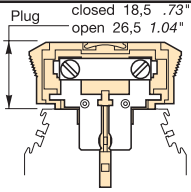
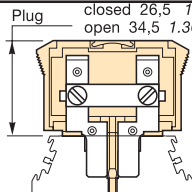


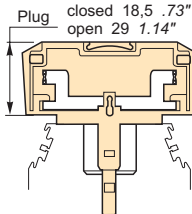
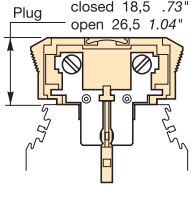
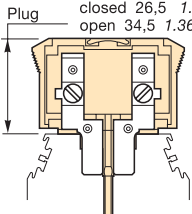
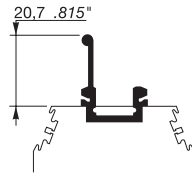
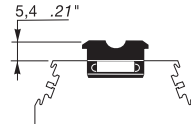


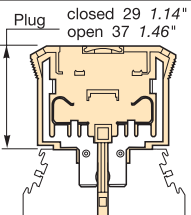
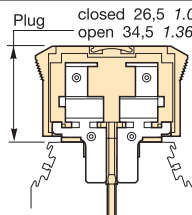
Other end stops, rails and accessories : see section on accessories.

Notes				Voltage			
For two wire connection max., the wires need to be of the same gage and nature (rigid or flexible). Terminal block body material is UL 94 V0.				Rated	500 V (2)	150 V (2)	
				Impulse withstand	6 kV		
				Pollution degree	3		
Current				Rated	10 A	7 A	
Wire size				Rated	1 mm <sup>2</sup>		
Wire strip length	Recomm. screwdriver	Weight	Protection	Wire strip length	Recomm. screwdriver	Weight	Protection
		10 g .35 oz	IP 20 NEMA 1				

Accessories	Type	Part numbers	Type	Part numbers
	1 End section	grey orange	FEDAD5	th. 2 mm 1SNA 199 354 R0200
	2 Test plug		FEDAD5	th. 2 mm 1SNA 199 355 R0300
	3 Fuse-holder plug	black	FC2 (1)	DIA. 2 mm 1SNA 007 865 R2600
	4 Mini Fuse - 32 V max.		BF5AUTO	1SNA 299 877 R0300
	5 Shielding connector		FUAUTO	2 A 1SNA 179 879 R1400
	6 Hand tool kit		FUAUTO	3 A 1SNA 179 880 R0200
	7 Semi-automatic tool kit		CDB2	th. 0,8 mm 1SNA 179 635 R0700
	8 Pneumatic tool kit		OUMAD	1SNA 179 466 R0600
	9 Replacement head kit		OUPAD	1SNA 178 944 R0400
	10 Extraction tool kit		OUTAD	1SNA 205 710 R1100
	11 Screwless jumper bar to be inserted into ADO jaw orange IP20		OUTA	1SNA 205 284 R0300
	12 Test connector		EXAD2	1SNA 205 721 R0000
			BJADO5.2	17,5 A 2 poles 1SNA 205 955 R0300
			BJADO5.3	17,5 A 3 poles 1SNA 205 956 R0400
			BJADO5.4	17,5 A 4 poles 1SNA 205 957 R0500
			BJADO5.5	17,5 A 5 poles 1SNA 205 958 R1600
			BJADO5.10	17,5 A 10 poles 1SNA 205 963 R0300
			BJADO5.20	17,5 A 20 poles 1SNA 205 973 R0500
			CEADO.5	1SNA 399 345 R1100
			CEADOE	1SNA 399 341 R1500

R See section on markers marking method (1) Only for terminal blocks with test DIA. 2 mm. (2) Terminal block insulating voltage. Working voltage according to fuse (32 V max.).

## Selection guide for different types of plugs

Types of plugs		Types of fuses	D 1/5.S.ADO	D 1/5.SFAT2.ADO	D 1,5/6.S.ADO	D 2,5/8.S.ADO	
Switching function	Short-circuit plug				 <p>Plug closed 18,5 .73" open 26,5 1.04"</p> <p><b>BNC62</b> without test 1SNA 196 853 R1400</p>	 <p>Plug closed 26,5 1.04" open 34,5 1.36"</p> <p><b>BNCT82</b> with test 1SNA 196 926 R0500</p>	
		Soldered fuses  type <b>FUBS</b> - 0,5 to 5 A - 250 V Flat fuses  type <b>FUPLV</b> - 1 to 5 A - 250 V	 <p>Plug closed 18,5 .73" open 29 1.14"</p> <p><b>BNS.D5</b> 1SNA 295 381 R2600</p>	 <p>Plug closed 18,5 .73" open 26,5 1.04"</p> <p><b>BNSV62</b> 1SNA 196 854 R1500</p>	 <p>Plug closed 26,5 1.04" open 34,5 1.36"</p> <p><b>BNSV82</b> 1SNA 196 927 R0600</p>		
Fuse protection function	Fuse holder plug	Automotive miniature fuses (2) type <b>FUAUTO</b> 2 A to 3 A - 32 V maxi		 <p>20,7 .815"</p> <p><b>BFSAUTO</b> 1SNA 299 877 R0300 V0 black</p>		 <p>5,4 .21"</p> <p><b>BFAUTO</b> 1SNA 299 486 R2400 V0 black</p>	
		Fuses 5 x 20  type <b>FU520</b> - 0,5 to 5 A - 250 V Fuses 5 x 25  type <b>FU525</b> - 1,6 to 6,3 A - 250 V			 <p>Plug closed 29 1.14" open 37 1.46"</p> <p><b>BNF652</b> 1SNA 196 998 R1600 <b>BNF652D (3)</b> 1SNA 196 999 R1700 <b>BNF652D1(4)</b> 1SNA 196 966 R1500 <b>BNF652L (5)</b> 1SNA 196 967 R1600</p>	 <p>Plug closed 26,5 1.04" open 34,5 1.36"</p> <p><b>BNF52</b> 1SNA 196 924 R0300</p>	

## Types of fuses

### Soldered fuses

<b>FUBS</b>	0,5 A	1SNA 174 893 R1600
<b>FUBS</b>	1 A	1SNA 174 894 R1700
<b>FUBS</b>	2 A	1SNA 174 895 R1000
<b>FUBS</b>	3 A	1SNA 174 896 R1100
<b>FUBS</b>	5 A	1SNA 174 897 R1200

### Flat fuses

<b>FUPLV</b>	1 A	1SNA 008 096 R2000
<b>FUPLV</b>	2 A	1SNA 008 097 R2100
<b>FUPLV</b>	5 A	1SNA 008 098 R0200

### Fuses 5 x 20 mm

<b>FU520</b>	0,5 A	1SNA 008 288 R1500
<b>FU520</b>	1 A	1SNA 008 290 R1300
<b>FU520</b>	2 A	1SNA 008 291 R0000
<b>FU520</b>	3.15 A	1SNA 008 289 R1600
<b>FU520</b>	5 A	1SNA 008 292 R0100

### Automotive miniature fuses

<b>FUAUTO</b>	2 A	1SNA 179 879 R1400
<b>FUAUTO</b>	3 A	1SNA 179 880 R0200

### Fuses 5 x 25 mm

<b>FU525</b>	1.6 A	1SNA 167 546 R2200
<b>FU525</b>	2 A	1SNA 167 547 R2300
<b>FU525</b>	2.5 A	1SNA 167 548 R0400
<b>FU525</b>	4 A	1SNA 167 549 R0500
<b>FU525</b>	6.3 A	1SNA 167 550 R0200

Nota : (1) Compatible with electronic components max.diameter or thickness for components :

- plug BNSV62 : 4 mm/.157" max.  
- plug BNSV82 : 6 mm /.236" max.

(2) For all fuses, the dissipated load should remain under 0,8 W. (3) with led 24 V AC/DC. (4) with led 48 V AC/DC. (5) avec neon lamp 110-230 V AC/DC.

# Terminal blocks Insulation Displacement



Fuse blocks for 5 x 20  
and 5 x 25 fuses

ADO - ADO

DIN 3



End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

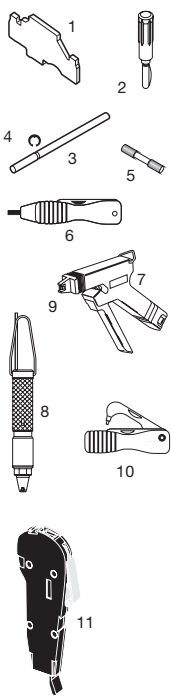
Other end stops, rails and accessories : see section on accessories.

## Notes

Standard blocks 8 mm spacing. For two wires connections, the wires need to be of the **same gage and nature** (solid or stranded). Terminal block body material is UL 94 V0.

On all the blocks a DIA. 2 or 2.3 mm test across the grip can be performed.

## Accessories

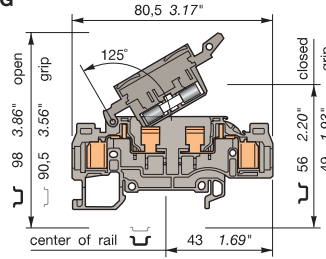


1	End section	gris
2	Test plug	
3	Assembly rod	
4	Assembly ring	
5	5x20 fuses - 250 V	
6	5x25 fuses - 250 V	
7	Hand tool kit	
8	Semi automatic tool	
9	Pneumatic tool kit	
10	Replacement head kit	
11	Extraction head kit	
12	Test connector	

R See section on markers  
Marking method

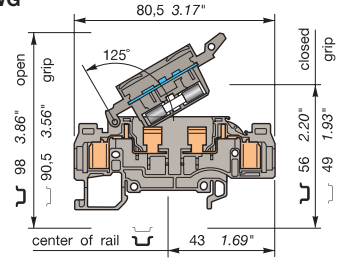
## D 1,5/8.SFT.ADO

Spacing 8 mm +0,05 .315"  
ADO wire size  
0,34 - 1,5 mm<sup>2</sup>  
22 - 16 AWG



## D 1,5/8.SF...T.ADO

Spacing 8 mm +0,05 .315"  
ADO wire size  
0,34 - 1,5 mm<sup>2</sup>  
22 - 16 AWG



Colour	Type	Part numbers
With DIA. 2 or 2.3 mm screw test socket for test		
Grey	D 1,5/8.SFT.ADO	1SNA 199 208 R1100
Orange	D 1,5/8.SFT.ADO	1SNA 199 209 R1200

Characteristics			
Wire size	IEC		
	NFC	DIN	UL
Screw			
ADO	Rigid	0,34-1,5 mm <sup>2</sup>	22-16 AWG
	Flexible	0,34-1,5 mm <sup>2</sup>	22-16 AWG

Voltage			
Rated	630 V (4)	600 V (4)	600 V (4)
Impulse withstand	8 kV		
Pollution degree	3		
Rated	6,3 A	8 A	10 A

Current			
Rated	6,3 A	8 A	10 A

Wire size			
Rated / Gauge	1,5 mm <sup>2</sup>	16 AWG	16 AWG
Wire strip. length	Recomm. screwdriver	Weight	Protection
		15 g	IP 20
		.53 oz	NEMA 1

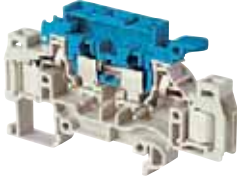
(1) Blown-fuse indicator by 110 V - 230 V neon lamp (leakage current with neon lamp < 0,5 mA (110 V) - < 0,7 mA (230 V)).  
 (2) Blown-fuse indicator by LED 24 V (+24V labeled) (leakage current with LED 24 V or 48 V < 4,5 mA).  
 (3) Blown-fuse indicator by LED 48 V (+48V labeled) (leakage current with LED 24 V or 48 V < 4,5 mA).  
 (4) Terminal block insulating voltage.  
 Working voltage according to fuse.





RC810	RCAL85	RC810	RCAL85
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### Terminal blocks Insulation displacement "Neutral" switch block ADO - ADO



DIN 3



End stop		th. 9 mm	<b>BADL</b>	V0	1 SNA 399 903 R0200
Rail		35 x 7,5 x 1	<b>PR3.Z2</b>		1 SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1 SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1 SNA 168 700 R2200

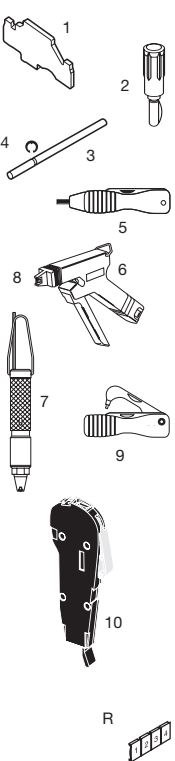
Other end stops, rails and accessories : see section on accessories.

#### Notes

Standard blocks 8 mm spacing. For two wire connections, the wires need to be of the **same gage and nature** (solid or stranded).  
Terminal block body material is UL 94 V0.

On all the blocks a DIA. 2 or 2.3 mm test across the grip can be performed.

#### Accessories

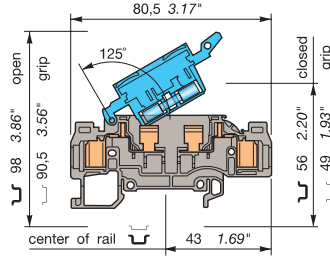


- 1 End stop grey
- 2 Test plug
- 3 Assembly rod
- 4 Assembly ring
- 5 Hand tool kit
- 6 Semi automatic tool
- 7 Pneumatic tool kit
- 8 Replacement head kit
- 9 Extraction head kit
- 10 Test connector

R See section on markers  
Marking method

### D 1,5/8.SNNT.ADO

Spacing 8 mm +0,05 .315"  
ADO wire size  
0,34 - 1,5 mm<sup>2</sup>  
22 - 16 AWG



Colour	Type	Part number
Grey body / Blue grip		
■ D 1,5/8.SNNT.ADO		1 SNA 199 210 R0600

#### Characteristics

Wire size	IEC			UL	CSA
	NFC	DIN			
Screw	Rigid				
	Flexible				
ADO	Rigid	0,34-1,5 mm <sup>2</sup>	22-16 AWG	22-16 AWG	
	Flexible	0,34-1,5 mm <sup>2</sup>	22-16 AWG	22-16 AWG	

Voltage			
Rated	630 V	600 V	600 V
Impulse withstand	8 kV		
Pollution degree	3		

Current			
Rated	10 A	8 A	10 A

Wire size			
Rated	1,5 mm <sup>2</sup>	16 AWG	16 AWG
Wire stripping length (screw)	Recommended screwdriver	Recommended torque (screw)	Protection
			IP 20
			NEMA 1

#### Characteristics

Wire size	IEC			UL	CSA
	NFC	DIN			
Screw	Rigid				
	Flexible				
ADO	Rigid				
	Flexible				

Voltage			
Rated			
Impulse withstand			
Pollution degree			

Current			
NoRatedminale			

Section			
Rated			
Wire stripping length (screw)	Recommended screwdriver	Recommended torque (screw)	Protection

Type	Part numbers	Type	Part numbers
FEDAD7	th. 1,5 mm 1 SNA 199 382 R2700		
FC2 MC	DIA. 2 mm 1 SNA 107 239 R0300		
TGA8	2 poles 1 SNA 168 672 R1100		
TGA8	3 poles 1 SNA 168 673 R1200		
TGA8	4 poles 1 SNA 168 674 R1300		
ANT	1 SNA 168 675 R1400		
OUMAD	1 SNA 179 466 R0600		
OUPAD	1 SNA 178 944 R0400		
OUTAD	1 SNA 205 710 R1100		
OUTA	1 SNA 205 284 R0300		
EXAD2	1 SNA 205 721 R0000		
CEADO.8	1 SNA 399 348 R2400		
CEADOE	1 SNA 399 341 R1500		
RC810	RCAL85		

**Terminal blocks  
Insulation  
Displacement**

**Fuse blocks for  
5x20 and 5x25 fuses**

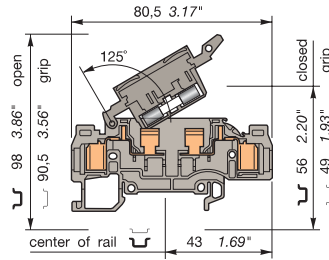
**ADO - ADO**

**DIN 3**



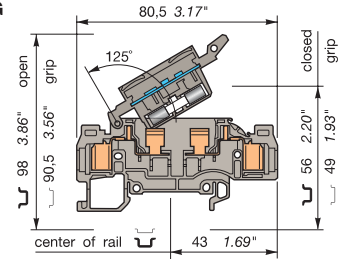
**D 2,5/8.SFT.ADO2**

Spacing 8 mm +0,05 .315"  
ADO wire size  
1 - 2,5 mm<sup>2</sup>  
16 - 14 AWG



**D 2,5/8.SF...T.ADO2**

Spacing 8 mm +0,05 .315"  
ADO wire size  
1 - 2,5 mm<sup>2</sup>  
16 - 14 AWG



Colour	Type	Part numbers
Grey	D 2,5/8.SFT.ADO2	1SNA 199 184 R1100
Orange	D 2,5/8.SFT.ADO2	1SNA 199 185 R1200

Colour	Type	Part numbers
Grey (1)	D 2,5/8.SFLT.ADO2	1SNA 199 187 R1400
Grey (2)	D 2,5/8.SFDT.ADO2	1SNA 199 188 R2500
Grey (3)	D 2,5/8.SFD1T.ADO2	1SNA 199 189 R2600

Wire size		IEC NFC DIN	UL	CSA
Screw	Rigid			
	Flexible			
ADO	Rigid	1-2,5 mm <sup>2</sup>	16-14 AWG	16-14 AWG
	Flexible	1-2,5 mm <sup>2</sup>	16-14 AWG	16-14 AWG

Wire size		IEC NFC DIN	UL	CSA
Screw	Rigid			
	Flexible			
ADO	Rigid	1-2,5 mm <sup>2</sup>	16-14 AWG	16-14 AWG
	Flexible	1-2,5 mm <sup>2</sup>	16-14 AWG	16-14 AWG

Voltage		630 V (4)	600 V (4)	600 V (4)
Rated				
Impulse withstand		8 kV		
Pollution degree		3		

Voltage		500 V (4)	600 V (4)	600 V (4)
Rated				
Impulse withstand		6 kV		
Pollution degree		3		

Current		6,3 A	10 A	10 A
Rated				

Current		6,3 A	10 A	10 A
Rated				

Wire size		2,5 mm <sup>2</sup>	14 AWG	14 AWG
Rated / Gauge				
Wire strip length	Recomm. screwdriver		Weight	Protection
			16 g	IP 20
			.56 oz	NEMA 1

Wire size		2,5 mm <sup>2</sup>	14 AWG	14 AWG
Rated / Gauge				
Wire strip length	Recomm. screwdriver		Weight	Protection
			17 g	IP 20
			.60 oz	NEMA 1

End stop	th. 9 mm	BADL	V0	1SNA 399 903 R0200
Rail	35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail	35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail	35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

**Notes**

Standard bloc 8 mm. For multiple wire connections, the two wires need to be of the same gage and nature (rigid or flexible). Terminal block body material is UL 94 V0.

On all the blocks a DIA. 2 or 2.3 mm test across the grip can be performed.

Black marking for wire size 1 - 2,5 mm<sup>2</sup> (16 - 14 AWG)

**Accessories**

Type	P/N
1 End section grey	FEDAD7 th. 1,5 mm 1SNA 199 382 R2700
2 Test plug	FC2 MC DIA. 2 mm 1SNA 107 239 R0300
3 Assembly rod	TGA8 2 poles 1SNA 168 672 R1100
	TGA8 3 poles 1SNA 168 673 R1200
	TGA8 4 poles 1SNA 168 674 R1300
4 Assembly ring	ANT 1SNA 168 675 R1400
5 5x20 fuses - 250 V	FU520 0,5 A 1SNA 008 288 R1500
	FU520 1 A 1SNA 008 290 R1300
	FU520 2 A 1SNA 008 291 R0000
	FU520 3,15 A 1SNA 008 289 R1600
	FU520 5 A 1SNA 008 292 R0100
5x25 fuses - 250 V	FU525 1,6 A 1SNA 167 546 R2200
	FU525 2 A 1SNA 167 547 R2300
	FU525 2,5 A 1SNA 167 548 R0400
	FU525 4 A 1SNA 167 549 R0500
	FU525 6,3 A 1SNA 167 550 R0200
6 Hand tool kit	OUMAD 1SNA 179 466 R0600
7 Semi automatic tool	OUPAD 1SNA 178 944 R0400
8 Pneumatic tool kit	OUTAD 1SNA 205 710 R1100
9 Replacement head kit	OUTA 1SNA 205 284 R0300
10 Extraction head kit	EXAD2 1SNA 205 721 R0000

Type	P/N
FEDAD7	th. 1,5 mm 1SNA 199 382 R2700
FC2 MC	DIA. 2 mm 1SNA 107 239 R0300
TGA8	2 poles 1SNA 168 672 R1100
TGA8	3 poles 1SNA 168 673 R1200
TGA8	4 poles 1SNA 168 674 R1300
ANT	1SNA 168 675 R1400
FU520	0,5 A 1SNA 008 288 R1500
FU520	1 A 1SNA 008 290 R1300
FU520	2 A 1SNA 008 291 R0000
FU520	3,15 A 1SNA 008 289 R1600
FU520	5 A 1SNA 008 292 R0100
FU525	1,6 A 1SNA 167 546 R2200
FU525	2 A 1SNA 167 547 R2300
FU525	2,5 A 1SNA 167 548 R0400
FU525	4 A 1SNA 167 549 R0500
FU525	6,3 A 1SNA 167 550 R0200
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000

Type	P/N
FEDAD7	th. 1,5 mm 1SNA 199 382 R2700
FC2 MC	DIA. 2 mm 1SNA 107 239 R0300
TGA8	2 poles 1SNA 168 672 R1100
TGA8	3 poles 1SNA 168 673 R1200
TGA8	4 poles 1SNA 168 674 R1300
ANT	1SNA 168 675 R1400
FU520	0,5 A 1SNA 008 288 R1500
FU520	1 A 1SNA 008 290 R1300
FU520	2 A 1SNA 008 291 R0000
FU520	3,15 A 1SNA 008 289 R1600
FU520	5 A 1SNA 008 292 R0100
FU525	1,6 A 1SNA 167 546 R2200
FU525	2 A 1SNA 167 547 R2300
FU525	2,5 A 1SNA 167 548 R0400
FU525	4 A 1SNA 167 549 R0500
FU525	6,3 A 1SNA 167 550 R0200
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000

(1) Blown-fuse indicator by 110 V - 230 V neon lamp (leakage current with neon lamp < 0,5 mA (110 V) - < 0,7 mA (230 V)).  
 (2) Blown-fuse indicator by LED 24 V (+24V labeled) (leakage current with LED 24 V or 48 V < 4,5 mA).  
 (3) Blown-fuse indicator by LED 48 V (+48V labeled) (leakage current with LED 24 V or 48 V < 4,5 mA).  
 (4) Terminal block insulatig voltage.  
 Working voltage according to fuse.



**R** See section on markers  
Marking method

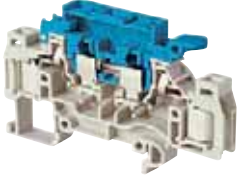
RC810 RCAL85

RC810 RCAL85

**Terminal blocks  
Insulation  
Displacement**  
"Neutral" switch block  
ADO - ADO



DIN 3



End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

**Notes**

Standard bloc 8 mm. For multiple wire connections, the two wires need to be of the **same gage and nature** (rigid or flexible). Terminal block body material is UL 94 V0.

On all the blocks a DIA. 2 or 2.3 mm test across the grip can be performed.

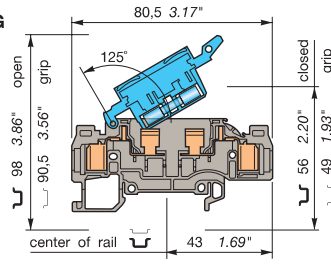
Black marking for wire size 1 - 2,5 mm<sup>2</sup> (16 - 14 AWG)

**Accessories**

	1 End section	gris
	2 Test plug	
	3 Assembly rod	
	4 Assembly ring	
	5 Hand tool kit	
	6 Semi automatic tool	
	7 Pneumatic tool kit	
	8 Replacement head kit	
	9 Extraction head kit	
	R See section on markers Marking method	

**D 2,5/8.SNNT.ADO2**

Spacing 8 mm +0,05 .315"  
ADO wire size  
1 - 2,5 mm<sup>2</sup>  
16 - 14 AWG



Colour	Type	Part numbers	Colour	Type	Part numbers
--------	------	--------------	--------	------	--------------

With DIA 2 or DIA. 2.3 mm screw test socket for test.  
Grey body/ Blue grip  
D 2,5/8.SNNT.ADO2 1SNA 199 186 R1300

**Characteristics**

Wire size	IEC			UL	CSA
	NFC	DIN			
Screw	Rigid				
	Flexible				
ADO	Rigid	1-2,5 mm <sup>2</sup>	16-14 AWG	16-14 AWG	
	Flexible	1-2,5 mm <sup>2</sup>	16-14 AWG	16-14 AWG	

Voltage		630 V	600 V	250 V
Rated				
Impulse withstand		8 kV		
Pollution degree		3		

Current		10 A	10 A	10 A
Rated				

Wire size		2,5 mm <sup>2</sup>	14 AWG	14 AWG
Rated				
Wire stripping length (screw)	Recommended screwdriver	Recommended torque (screw)	Protection	IP 20
				NEMA 1

**Characteristics**

Wire size	IEC			UL	CSA
	NFC	DIN			
Screw	Rigid				
	Flexible				
ADO	Rigid				
	Flexible				

Voltage				
Rated				
Impulse withstand				
Pollution degree				

Current				
Rated				

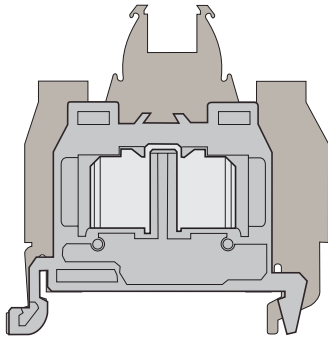
Section				
Rated				
Wire stripping length (screw)	Recommended screwdriver	Recommended torque (screw)	Protection	

Type	Part numbers	Type	Part numbers
------	--------------	------	--------------

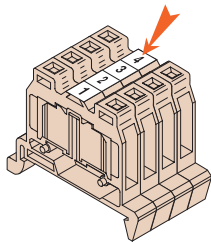
FEDAD7	th. 1,5 mm	1SNA 199 382 R2700
FC2 MC	DIA. 2 mm	1SNA 107 239 R0300
TGA8	2 poles	1SNA 168 672 R1100
TGA8	3 poles	1SNA 168 673 R1200
TGA8	4 poles	1SNA 168 674 R1300
ANT		1SNA 168 675 R1400
OUMAD		1SNA 179 466 R0600
OUPAD		1SNA 178 944 R0400
OUTAD		1SNA 205 710 R1100
OUTA		1SNA 205 284 R0300
EXAD2		1SNA 205 721 R0000
RC810	RCAL85	

# ADO System® MINI BLOCKS

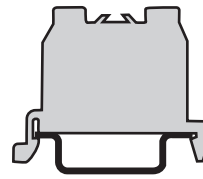
A reduced size range



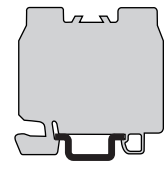
A very legible marking



Numerous mounting options  
DIN Rail

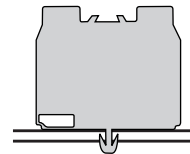


DS=DIN3

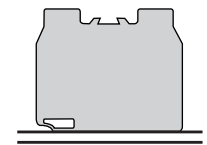


DR=DIN2

Plate



DH = snap-in

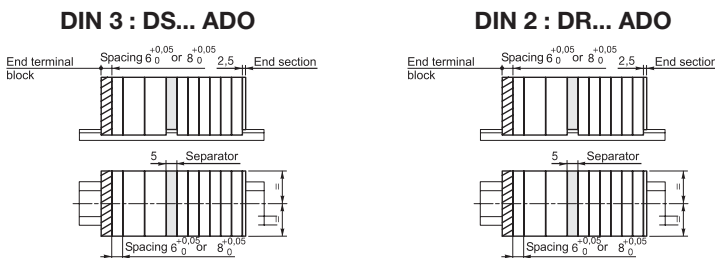


DB = base mount

ADO mini blocks use the same marking technique as standard ENTRELEC terminals, located on the top of the block.

## MINI BLOCKS ASSEMBLY AND ACCESSORIES

### Rail mounted DIN 2 and DIN 3 :



At the end of the terminal blocks assembly :

- **End section :** (same accessory for any type of terminal block assembly)

FEAD1 : V/ADO  
FEAD2 : ADO/ADO

End section to be mounted directly on the open part of the terminal block.

- **End terminal block :**

DRE... ADO (DIN2)  
DSE... ADO (DIN3)

This terminal block has to be mounted at the end of the terminal blocks assembly : it reduces its size, because it suppresses the insulation rib (- 4 mm).

**Nota :** This terminal block cannot be accidentally located anywhere else into the terminal block assembly (without locking holes).

In the terminal blocks assembly :

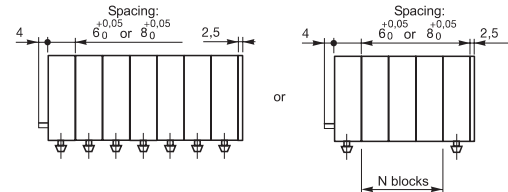
- **Separator :** (same accessory for any type of terminal block assembly)

FEAD5 : V/ADO  
FEAD6 : ADO/ADO

Accessory which snaps on the terminal blocks, separates and makes visible the different parts of the terminal blocks assembly.

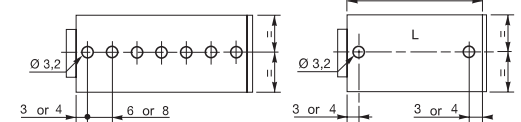
### Panel mounted with snap in mounting foot :

Snap in : DH... ADO



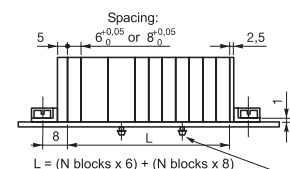
Drilling  
(plate thickness 0.6 mm to 1.2 mm)

N blocks = 3 blocks max. with 6 mm spacing  
2 blocks max. with 8 mm spacing



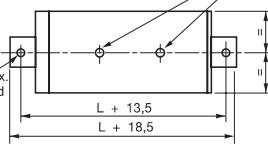
$L = (N \text{ blocks} \times 6) + (N \text{ blocks} \times 8)$

With screw mounting kit : DB... ADO



Drilling  
(plate thickness 0.6 to 1.2 mm)

2 holes Ø 3.2  
for 3 mm screw max.  
with cylindrical head  
(not provided)



Intermediate mounting of DH blocks  
every 2 blocks (spacing 8mm)  
or 3 blocks (spacing 6mm)



# Miniblocks Insulation Displacement

ADO - ADO

DIN 3



Block also available in ATEX (Explosive Atmosphere) approved version

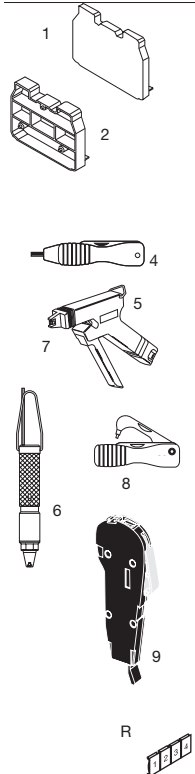
End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

## Notes

Standard blocks 5 and 6 mm. For multiple wires connections, the two wires need to be of the **same gage and nature** (rigid or flexible). Terminal block body material is UL 94 V0.

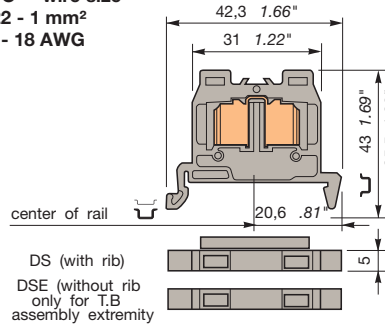
## Accessories



1 End section	grey	FEAD2	V0	th. 2,5 mm	1SNA 199 423 R1000
	orange	FEAD2	V0	th. 2,5 mm	1SNA 199 424 R1100
2 Separator	grey	FEAD6	V0	th. 5,0 mm	1SNA 199 435 R1400
	orange	FEAD6	V0	th. 5,0 mm	1SNA 199 436 R1500
4 Hand tool kit		OUMAD			1SNA 179 466 R0600
5 Semi automatic tool		OUPAD			1SNA 178 944 R0400
6 Pneumatic tool kit		OUTAD			1SNA 205 710 R1100
7 Replacement head kit		OUTA			1SNA 205 284 R0300
8 Extraction tool kit		EXAD2			1SNA 205 721 R0000
9 Test connector		CEADO.5			1SNA 399 345 R1100
		CEADOE			1SNA 399 341 R1500
R See section on markers marking method					

## DS 1/5.ADO

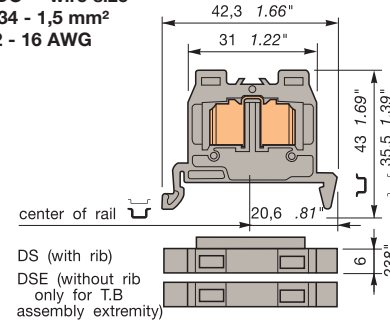
Spacing 5 mm +0,05 .198"  
ADO wire size  
0,22 - 1 mm<sup>2</sup>  
24 - 18 AWG



Color	Type	Part number
Grey	<input type="checkbox"/> DS 1/5.ADO	1SNA 399 496 R2200
Blue	<input type="checkbox"/> DS 1/5.N.ADO	1SNA 399 498 R0400
Orange	<input type="checkbox"/> DS 1/5.ADO	1SNA 399 497 R2300
Grey	<input type="checkbox"/> DSE 1/5.ADO	1SNA 399 500 R1200

## DS 1,5/6.ADO

Spacing 6 mm +0,05 .238"  
ADO wire size  
0,34 - 1,5 mm<sup>2</sup>  
22 - 16 AWG



Color	Type	Part number
Grey	<input type="checkbox"/> DS 1,5/6.ADO	1SNA 299 497 R2700
Blue	<input type="checkbox"/> DS 1,5/6.N.ADO	1SNA 299 499 R0100
Orange	<input type="checkbox"/> DS 1,5/6.ADO	1SNA 299 498 R0000
Grey	<input type="checkbox"/> DSE 1,5/6.ADO	1SNA 299 558 R1300

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid			
Flexible			
ADO	Rigid	0,2-1 mm <sup>2</sup>	24-18 AWG
	Flexible	0,22-1 mm <sup>2</sup>	24-18 AWG

Voltage		
Rated	1000 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

Current		
Rated	13,5 A	10 A

Wire size			
Rated / Gauge	1 mm <sup>2</sup>		18 AWG
Wire strip. length	Recomm. screwdriver	Weight	Protection
		3 g	IP 20
		.10 oz	NEMA 1

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid			
Flexible			
ADO	Rigid	0,28-1,5 mm <sup>2</sup>	22-16 AWG
	Flexible	0,34-1,5 mm <sup>2</sup>	22-16 AWG

Voltage		
Rated	1000 V	600 V
Impulse withstand		
Pollution degree	3	

Current		
Rated	17,5 A	20 A

Wire size			
Rated / Gauge	1,5 mm <sup>2</sup>		16 AWG
Wire strip. length	Recomm. screwdriver	Weight	Protection
		5 g	IP 20
		.18 oz	NEMA 1

Type	Part number			
On top	RC55			

Type	Part number			
On top	RC65			

# Miniblocks Insulation Displacement

ADO - ADO

DIN 3



End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

## Notes

Terminal block body material is UL 94 V0.

DS 2,5/8.ADO block : for multiple wire connections, the two wires need to be of the **same gage and nature** (rigid or flexible).

DS 4/8.ADO3 block : connection of only one rigid or flexible 4 mm<sup>2</sup> wire.

\* Notches to identify 8 mm spacing.

## Accessories

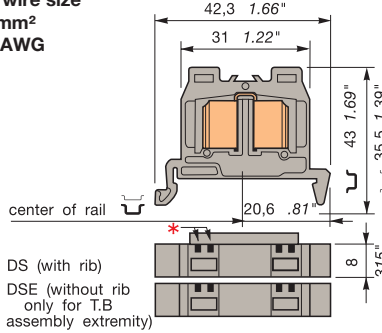
	1 End section	grey	FEAD2	V0	th. 2,5 mm	1SNA 199 423 R1000
		orange	FEAD2	V0	th. 2,5 mm	1SNA 199 424 R1100
	2 Separator	grey	FEAD6	V0	th. 5,0 mm	1SNA 199 435 R1400
		orange	FEAD6	V0	th. 5,0 mm	1SNA 199 436 R1500
	3 Hand tool kit		OUMAD			1SNA 179 466 R0600
	4 Semi automatic tool		OUPAD			1SNA 178 944 R0400
	5 Pneumatic tool kit		OUTAD			1SNA 205 710 R1100
	6 Replacement head kit		OUTA			1SNA 205 284 R0300
	7 Extraction tool kit		EXAD2			1SNA 205 721 R0000

R

See section on markers marking method

## DS 2,5/8.ADO

Spacing 8 mm +0,05 .315"  
ADO wire size  
1 - 2,5 mm<sup>2</sup>  
16 - 14 AWG



Color	Type	Part number
Grey	<input type="checkbox"/> DS 2,5/8.ADO	1SNA 299 501 R0300
Blue	<input type="checkbox"/> DS 2,5/8.N.ADO	1SNA 299 503 R0500
Orange	<input type="checkbox"/> DS 2,5/8.ADO	1SNA 299 502 R0400
Grey	<input type="checkbox"/> DSE 2,5/8.ADO	1SNA 299 559 R1400

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid			
Flexible			
ADO	Rigid	1-2,5 mm <sup>2</sup>	16-14 AWG
	Flexible	1-2,5 mm <sup>2</sup>	16-14 AWG

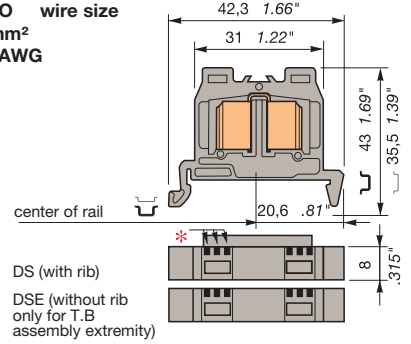
Voltage	
Rated	1000 V
Impulse withstand	
Pollution degree	3

Current	
Rated	24 A

Wire size			
Rated / Gauge	2,5 mm <sup>2</sup>	14 AWG	
Wire strip. length	Recomm. screwdriver	Weight	Protection
		7 g	IP 20
		.25 oz	NEMA 1

## DS 4/8.ADO3

Spacing 8 mm +0,05 .238"  
ADO wire size  
4 mm<sup>2</sup>  
12 AWG



Color	Type	Part number
Grey	<input type="checkbox"/> DS 4/8.ADO3	1SNA 399 411 R2400
Blue	<input type="checkbox"/> DS 4/8.N.ADO3	1SNA 399 413 R2600
Orange	<input type="checkbox"/> DS 4/8.ADO3	1SNA 399 412 R2500
Grey	<input type="checkbox"/> DSE 4/8.ADO3	1SNA 399 415 R2000

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid			
Flexible			
ADO	Rigid	4 mm <sup>2</sup>	12 AWG
	Flexible	4 mm <sup>2</sup>	12 AWG

Voltage	
Rated	1000 V
Impulse withstand	
Pollution degree	3

Current	
Rated	32 A

Wire size			
Rated / Gauge	4 mm <sup>2</sup>	12 AWG	
Wire strip. length	Recomm. screwdriver	Weight	Protection
		7 g	IP 20
		.25 oz	NEMA 1

Type	Part number
FEAD2 V0 th. 2,5 mm	1SNA 199 423 R1000
FEAD2 V0 th. 2,5 mm	1SNA 199 424 R1100
FEAD6 V0 th. 5,0 mm	1SNA 199 435 R1400
FEAD6 V0 th. 5,0 mm	1SNA 199 436 R1500
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000

On top RCAL85

# Miniblocks Insulation Displacement

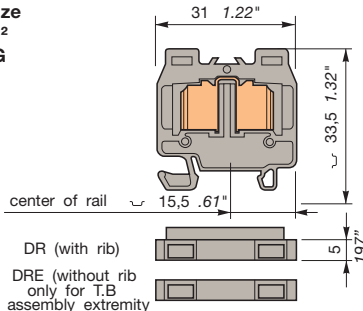
ADO - ADO

DIN 2



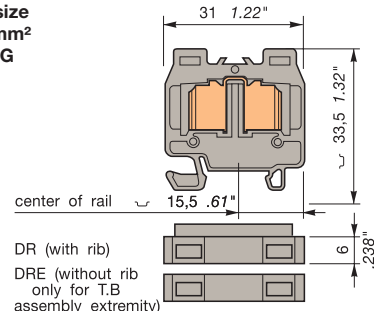
## DR 1/5.ADO

Spacing 5 mm +0,05 (.198")  
ADO wire size  
0,22 - 1 mm<sup>2</sup>  
24 - 18 AWG



## DR 1,5/6.ADO

Spacing 6 mm +0,05 (.238")  
ADO wire size  
0,34 - 1,5 mm<sup>2</sup>  
22 - 16 AWG



Colour	Type	Part numbers
Grey	DR 1/5.ADO	1SNA 399 491 R2500
Blue	DR 1/5.N.ADO	1SNA 399 493 R2700
Orange	DR 1/5.ADO	1SNA 399 492 R2600
Grey	DRE 1/5.ADO	1SNA 399 495 R2100

Colour	Type	Part numbers
Grey	DR 1,5/6.ADO	1SNA 199 283 R2400
Blue	DR 1,5/6.N.ADO	1SNA 199 285 R2600
Orange	DR 1,5/6.ADO	1SNA 199 284 R2500
Grey	DRE 1,5/6.ADO	1SNA 299 554 R0700

Block also available in ATEX (Explosive Atmosphere) approved version

End stop	th. 6,5 mm	BADRL	V0	1SNA 199 420 R2100
Rail	15 x 5 x 1	PR2		1SNA 164 600 R1200

Other end stops, rails and accessories : see section on accessories.

### Observations

Standard blocks 5 and 6 mm. For multiple wires connections, the two wires need to be of the same gage and nature (rigid or flexible). Terminal block body material is UL 94 V0.

### Characteristics

Wire size		IEC		UL/CSA
		NFC	DIN	
Screw	Rigid			
	Flexible			
ADO	Rigid	0,2 - 1 mm <sup>2</sup>		24-18 AWG
	Flexible	0,22 - 1 mm <sup>2</sup>		24-18 AWG

### Characteristics

Wire size		IEC		UL/CSA
		NFC	DIN	
Screw	Rigid			
	Flexible			
ADO	Rigid	0,28 - 1,5 mm <sup>2</sup>		22-16 AWG
	Flexible	0,34 - 1,5 mm <sup>2</sup>		22-16 AWG

Voltage		
Rated	1000 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

Voltage		
Rated	1000 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

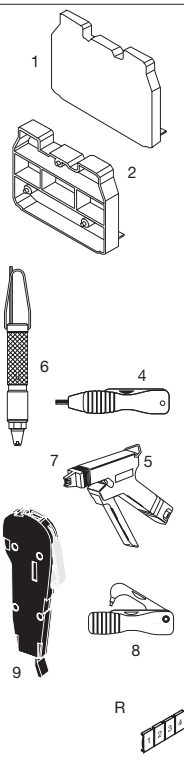
Current			
Rated	13,5 A	10 A	

Wire size			
Rated / Gauge	1 mm <sup>2</sup>	18 AWG	
Wire strip. length	Recomm. screwdriver	Weight	Protection
		3 g	IP 20
		.11 oz	NEMA 1

Current			
Rated	17,5 A	20 A	

Wire size			
Rated / Gauge	1,5 mm <sup>2</sup>	16 AWG	
Wire strip. length	Recomm. screwdriver	Weight	Protection
		3 g	IP 20
		.11 oz	NEMA 1

### Accessories



Type	P/N
1 End section	grey FEAD2 V0 th. 2,5 mm 1SNA 199 423 R1000
	orange FEAD2 V0 th. 2,5 mm 1SNA 199 424 R1100
2 Separator	grey FEAD6 V0 th. 5,0 mm 1SNA 199 435 R1400
	orange FEAD6 V0 th. 5,0 mm 1SNA 199 436 R1500
4 Hand tool kit	OUMAD 1SNA 179 466 R0600
5 Semi automatic kit	OUPAD 1SNA 178 944 R0400
6 Pneumatic tool kit	OUTAD 1SNA 205 710 R1100
7 Replacement head kit	OUTA 1SNA 205 284 R0300
8 Extraction tool kit	EXAD2 1SNA 205 721 R0000
9 Test connector	CEADO.5 1SNA 399 345 R1100
	CEADOE 1SNA 399 341 R1500
R See section on markers marking method	On top RC55

Type	P/N
1 End section	grey FEAD2 V0 th. 2,5 mm 1SNA 199 423 R1000
	orange FEAD2 V0 th. 2,5 mm 1SNA 199 424 R1100
2 Separator	grey FEAD6 V0 th. 5,0 mm 1SNA 199 435 R1400
	orange FEAD6 V0 th. 5,0 mm 1SNA 199 436 R1500
4 Hand tool kit	OUMAD 1SNA 179 466 R0600
5 Semi automatic kit	OUPAD 1SNA 178 944 R0400
6 Pneumatic tool kit	OUTAD 1SNA 205 710 R1100
7 Replacement head kit	OUTA 1SNA 205 284 R0300
8 Extraction tool kit	EXAD2 1SNA 205 721 R0000
9 Test connector	CEADO.6 1SNA 399 346 R1200
	CEADOE 1SNA 399 341 R1500
R See section on markers marking method	On top RC 65

# Miniblocks Insulation Displacement ADO - ADO

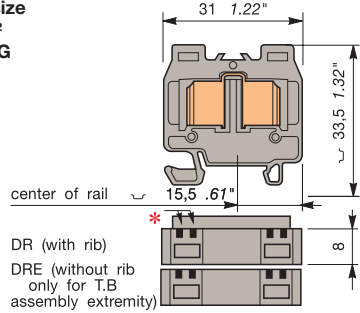


DIN 2



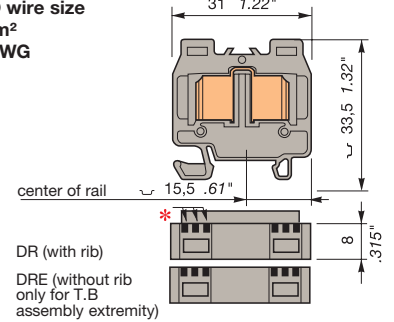
## DR 2,5/8.ADO

Spacing 8 mm +0,05 (.315")  
ADO wire size  
1 - 2,5 mm<sup>2</sup>  
16 - 14 AWG



## DR 4/8.ADO3

Spacing 8 mm +0,05 (.315")  
ADO wire size  
4 mm<sup>2</sup>  
12 AWG



Colour	Type	Part numbers
Grey	<input type="checkbox"/> DR 2,5/8.ADO	1SNA 199 287 R2000
Blue	<input type="checkbox"/> DR 2,5/8.N.ADO	1SNA 199 289 R0200
Orange	<input type="checkbox"/> DR 2,5/8.ADO	1SNA 199 288 R0100
Grey	<input type="checkbox"/> DRE 2,5/8.ADO	1SNA 299 555 R0000

Colour	Type	Part numbers
Grey	<input type="checkbox"/> DR 4/8.ADO3	1SNA 399 406 R0000
Blue	<input type="checkbox"/> DR 4/8.N.ADO3	1SNA 399 408 R12000
Orange	<input type="checkbox"/> DR 4/8.ADO3	1SNA 399 407 R0100
Grey	<input type="checkbox"/> DRE 4/8.ADO3	1SNA 399 410 R0700

### Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Screw Rigid			
Screw Flexible			
ADO Rigid	1-2,5 mm <sup>2</sup>		16-14 AWG
ADO Flexible	1-2,5 mm <sup>2</sup>		16-14 AWG

### Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Screw Rigid			
Screw Flexible			
ADO Rigid	4 mm <sup>2</sup>		12 AWG
ADO Flexible	4 mm <sup>2</sup>		12 AWG

Voltage		
Rated	1000 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

Voltage		
Rated	1000 V	
Impulse withstand		
Pollution degree	3	

Current		
Rated	24 A	25 A

Current		
Rated	32 A	

Wire size			
Rated / Gauge	2,5 mm <sup>2</sup>	14 AWG	
Wire strip. length			
Recomm. screwdriver			
Weight	7 g		
Protection		IP 20	
		NEMA 1	

Wire size			
Rated / Gauge	4 mm <sup>2</sup>	12 AWG	
Wire strip. length			
Recomm. screwdriver			
Weight	7 g		
Protection		IP 20	
		NEMA 1	

End stop	th. 6,5 mm	BADRL	V0	1SNA 199 420 R2100
Rail	15 x 5 x 1	PR2		1SNA 164 600 R1200

Other end stops, rails and accessories : see section on accessories.

### Observations

Terminal block body material is UL 94 V0.

DR 2,5/8.ADO block : for multiple wire connections, the two wires need to be of the **same gage and nature** (rigid or flexible).

DR 4/8.ADO3 block : connection of only one rigid or flexible 4 mm<sup>2</sup> wire.

\* Notches to identify 8 mm spacing.

### Accessories

Type	P/N
1 End section	grey orange
2 Separator	grey orange
3 Hand tool kit	
4 Semi automatic kit	
5 Pneumatic tool kit	
6 Replacement head kit	
7 Extraction tool kit	
R	See section on markers marking method

Type	P/N
FEAD2 V0 th. 2,5 mm	1SNA 199 423 R1000
FEAD2 V0 th. 2,5 mm	1SNA 199 424 R1100
FEAD6 V0 th. 5,0 mm	1SNA 199 435 R1400
FEAD6 V0 th. 5,0 mm	1SNA 199 436 R1500
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000
On top	RCAL85

Type	P/N
FEAD2 V0 th. 2,5 mm	1SNA 199 423 R1000
FEAD2 V0 th. 2,5 mm	1SNA 199 424 R1100
FEAD6 V0 th. 5,0 mm	1SNA 199 435 R1400
FEAD6 V0 th. 5,0 mm	1SNA 199 436 R1500
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000
On top	RCAL85

# Miniblocks Insulation Displacement

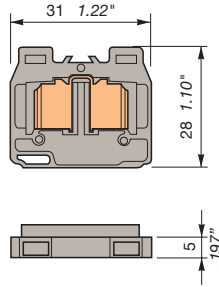
ADO - ADO

Base mount with flanges



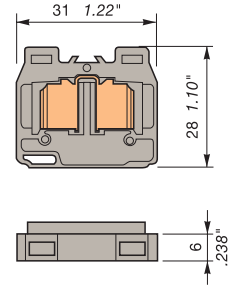
## DB 1/5.ADO

Spacing 5 mm +0,05 .197"  
ADO wire size  
0,22 - 1 mm<sup>2</sup>  
24 - 18 AWG



## DB 1,5/6.ADO

Spacing 6 mm +0,05 .238"  
ADO wire size  
0,34 - 1,5 mm<sup>2</sup>  
22 - 16 AWG



Colour	Type	Part numbers
Grey	DB 1/5.ADO	1SNA 399 501 R0700
Blue	DB 1/5.N.ADO	1SNA 399 503 R0100
Orange	DB 1/5.ADO	1SNA 399 502 R0000

Colour	Type	Part numbers
Grey	DB 1,5/6.ADO	1SNA 299 513 R2600
Blue	DB 1,5/6.N.ADO	1SNA 299 515 R2000
Orange	DB 1,5/6.ADO	1SNA 299 514 R2700

### Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Screw	Rigid		
	Flexible		
ADO	Rigid	0,2-1 mm <sup>2</sup>	24-18 AWG
	Flexible	0,22-1 mm <sup>2</sup>	24-18 AWG

### Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Screw	Rigid		
	Flexible		
ADO	Rigid	0,28-1,5 mm <sup>2</sup>	22-16 AWG
	Flexible	0,34-1,5 mm <sup>2</sup>	22-16 AWG

For drilling patterns see page: assembly and accessories

### Observations

Standard blocks 5 and 6 mm. For multiple wires connections, the two wires need to be of the same gage and nature (rigid or flexible). Terminal block body material is UL 94 V0.

### Voltage

Rated	1000 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

### Voltage

Rated	1000 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

### Current

Rated	13,5 A	10 A
-------	--------	------

### Current

Rated	17,5 A	20 A
-------	--------	------

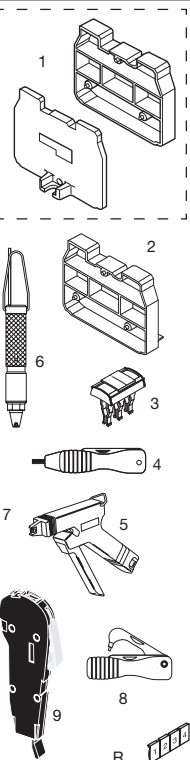
### Wire size

Rated / Gauge	1 mm <sup>2</sup>	18 AWG
Wire strip. length		
Recomm. screwdriver		
Weight	3 g	IP 20
	.11 oz	NEMA 1

### Wire size

Rated / Gauge	1,5 mm <sup>2</sup>	16 AWG
Wire strip. length		
Recomm. screwdriver		
Weight	5 g	IP 20
	.18 oz	NEMA 1

### Accessories



Type	P/N
1 End section (left+ right) grey	FEAD4 V0 1SNA 199 439 R2000
1 End section (left+ right) orange	FEAD4 V0 1SNA 199 440 R0500
2 Separator grey	FEAD6 V0 th. 5,0 mm 1SNA 199 435 R1400
2 Separator orange	FEAD6 V0 th. 5,0 mm 1SNA 199 436 R1500
3 Screwless jumper bar orange IP20	BJADO5.2 17,5 A 2 poles 1SNA 205 955 R0300
	BJADO5.3 17,5 A 3 poles 1SNA 205 956 R0400
	BJADO5.4 17,5 A 4 poles 1SNA 205 957 R0500
	BJADO5.5 17,5 A 5 poles 1SNA 205 958 R1600
	BJADO5.10 17,5 A 10 poles 1SNA 205 963 R0300
	BJADO5.20 17,5 A 20 poles 1SNA 205 973 R0500
4 Hand tool kit	OUMAD 1SNA 179 466 R0600
5 Semi automatic tool	OUPAD 1SNA 178 944 R0400
6 Pneumatic tool kit	OUTAD 1SNA 205 710 R1100
7 Replacement head kit	OUTA 1SNA 205 284 R0300
8 Extraction tool kit	EXAD2 1SNA 205 721 R0000
9 Test connector	CEADO.5 1SNA 399 345 R1100
	CEADOE 1SNA 399 341 R1500

R See section on markers marking method

Type	P/N
FEAD4 V0	1SNA 199 439 R2000
FEAD4 V0	1SNA 199 440 R0500
FEAD6 V0 th. 5,0 mm	1SNA 199 435 R1400
FEAD6 V0 th. 5,0 mm	1SNA 199 436 R1500
BJADO5.2 17,5 A 2 poles	1SNA 205 955 R0300
BJADO5.3 17,5 A 3 poles	1SNA 205 956 R0400
BJADO5.4 17,5 A 4 poles	1SNA 205 957 R0500
BJADO5.5 17,5 A 5 poles	1SNA 205 958 R1600
BJADO5.10 17,5 A 10 poles	1SNA 205 963 R0300
BJADO5.20 17,5 A 20 poles	1SNA 205 973 R0500
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000
CEADO.5	1SNA 399 345 R1100
CEADOE	1SNA 399 341 R1500

Type	P/N
FEAD4 V0	1SNA 199 439 R2000
FEAD4 V0	1SNA 199 440 R0500
FEAD6 V0 th. 5,0 mm	1SNA 199 435 R1400
FEAD6 V0 th. 5,0 mm	1SNA 199 436 R1500
BJADO6.2 17,5 A 2 poles	1SNA 205 974 R0600
BJADO6.3 17,5 A 3 poles	1SNA 205 975 R0700
BJADO6.4 17,5 A 4 poles	1SNA 205 976 R0000
BJADO6.5 17,5 A 5 poles	1SNA 205 977 R0100
BJADO6.10 17,5 A 10 poles	1SNA 205 982 R2700
BJADO6.20 17,5 A 20 poles	1SNA 205 992 R2100
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000
CEADO.6	1SNA 399 346 R1200
CEADOE	1SNA 399 341 R1500

On top RC65

# Miniblocks Insulation Displacement

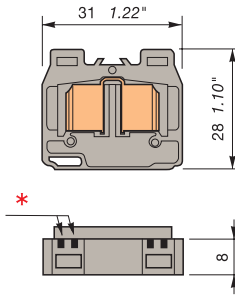
ADO - ADO

Base mount with flanges



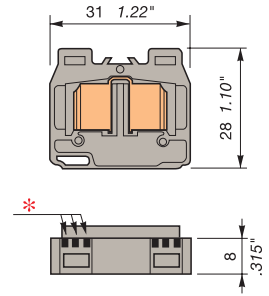
## DB 2,5/8.ADO

Spacing 8 mm +0,05 .315"  
ADO wire size  
1 - 2,5 mm<sup>2</sup>  
16 - 14 AWG



## DB 4/8.ADO3

Spacing 8 mm +0,05 .315"  
ADO wire size  
4 mm<sup>2</sup>  
12 AWG



Colour	Type	Part numbers
Grey	□ <b>DB 2,5/8.ADO</b>	1SNA 299 517 R2200
Blue	□ <b>DB 2,5/8.N.ADO</b>	1SNA 299 519 R0400
Orange	□ <b>DB 2,5/8.ADO</b>	1SNA 299 518 R0300

Colour	Type	Part numbers
Grey	□ <b>DB 4/8.ADO3</b>	1SNA 399 416 R2100
Blue	□ <b>DB 4/8.N.ADO3</b>	1SNA 399 418 R0300
Orange	□ <b>DB 4/8.ADO3</b>	1SNA 399 417 R2200

### Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Screw	Rigid		
	Flexible		
ADO	Rigid	1-2,5 mm <sup>2</sup>	16-14 AWG
	Flexible	1-2,5 mm <sup>2</sup>	16-14 AWG

### Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Screw	Rigid		
	Flexible		
ADO	Rigid	4 mm <sup>2</sup>	12 AWG
	Flexible	4 mm <sup>2</sup>	12 AWG

For drilling patterns see page: assembly and accessories

### Observations

Terminal block body material is UL 94 V0.

DB 2,5/8.ADO block : for multiple wire connections, the two wires need to be of the **same gage and nature** (rigid or flexible).

DB 4/8.ADO3 block : connection of only one rigid or flexible 4 mm<sup>2</sup> wire.

\* Notches to identify 8 mm spacing.

### Voltage

Rated	800 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

### Voltage

Rated	1000 V	
Impulse withstand		
Pollution degree	3	

### Current

Rated	24 A	25 A
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### Current

Rated	32 A	
-------	------	--

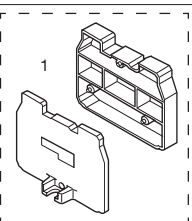
### Wire size

Rated / Gauge	2,5 mm <sup>2</sup>	14 AWG
Wire strip. length		
Recomm. screwdriver		
Weight	7 g	IP 20
Protection	.25 oz	NEMA 1

### Wire size

Rated / Gauge	4 mm <sup>2</sup>	12 AWG
Wire strip. length		
Recomm. screwdriver		
Weight	7 g	IP 20
Protection	.25 oz	NEMA 1

### Accessories



Type	Colour	P/N
1 End section (left+ right)	grey	FEAD4 V0 1SNA 199 439 R2000
	orange	FEAD4 V0 1SNA 199 440 R0500
2 Separator	grey	FEAD6 V0 th. 5,0 mm 1SNA 199 435 R1400
	orange	FEAD6 V0 th. 5,0 mm 1SNA 199 436 R1500
3 Hand tool kit		OUMAD 1SNA 179 466 R0600
4 Semi automatic tool		OUPAD 1SNA 178 944 R0400
5 Pneumatic tool kit		OUTAD 1SNA 205 710 R1100
6 Replacement head kit		OUTA 1SNA 205 284 R0300
7 Extraction tool kit		EXAD2 1SNA 205 721 R0000

Type	P/N
FEAD4 V0	1SNA 199 439 R2000
FEAD4 V0	1SNA 199 440 R0500
FEAD6 V0 th. 5,0 mm	1SNA 199 435 R1400
FEAD6 V0 th. 5,0 mm	1SNA 199 436 R1500
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000

Type	P/N
FEAD4 V0	1SNA 199 439 R2000
FEAD4 V0	1SNA 199 440 R0500
FEAD6 V0 th. 5,0 mm	1SNA 199 435 R1400
FEAD6 V0 th. 5,0 mm	1SNA 199 436 R1500
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000

R See section on markers marking method

On top RCAL85

On top RCAL85

# Miniblocks Insulation Displacement



ADO - ADO

Base mount with snap in mounting foot

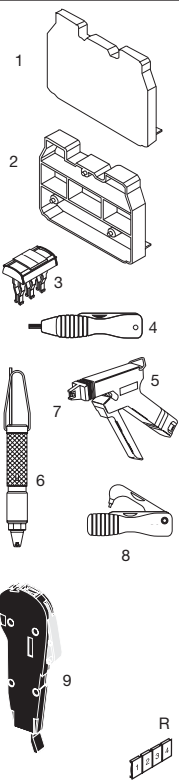


For drilling patterns see page: assembly and accessories

## Observations

Standard blocks 5 and 6 mm. For multiple wires connections, the two wires need to be of the **same gage and nature** (rigid or flexible). Terminal block body material is UL 94 V0.

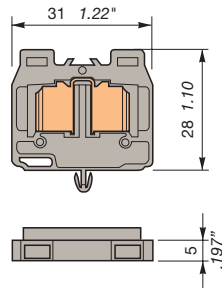
## Accessories



1	End section	gris	FEAD2	V0	th. 2,5 mm	1SNA 199 423	R1000
		orange	FEAD2	V0	th. 2,5 mm	1SNA 199 424	R1100
2	Separator	gris	FEAD6	V0	th. 5,0 mm	1SNA 199 435	R1400
		orange	FEAD6	V0	th. 5,0 mm	1SNA 199 436	R1500
3	Screwless jumper bar to be inserted into ADO jaw orange IP20		BJADO5.2	17,5 A	2 poles	1SNA 205 955	R0300
			BJADO5.3	17,5 A	3 poles	1SNA 205 956	R0400
			BJADO5.4	17,5 A	4 poles	1SNA 205 957	R0500
			BJADO5.5	17,5 A	5 poles	1SNA 205 958	R1600
			BJADO5.10	17,5 A	10 poles	1SNA 205 963	R0300
			BJADO5.20	17,5 A	20 poles	1SNA 205 973	R0500
4	Hand tool kit		OUMAD			1SNA 179 466	R0600
5	Semi automatic tool		OUPAD			1SNA 178 944	R0400
6	Pneumatic tool kit		OUTAD			1SNA 205 710	R1100
7	Replacement head kit		OUTA			1SNA 205 284	R0300
8	Extraction tool kit		EXAD2			1SNA 205 721	R0000
9	Test connector		CEADO.5			1SNA 399 345	R1100
			CEADO.6			1SNA 399 346	R1200
			CEADOE			1SNA 399 341	R1500
R	See section on markers marking method		On top			RC55	

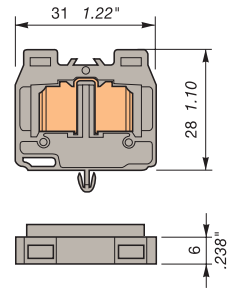
## DH 1/5.ADO

Spacing 5 mm +0,05 (.198")  
ADO wire size  
0,22 - 1 mm<sup>2</sup>  
24 - 18 AWG



## DH 1,5/6.ADO

Spacing 6 mm +0,05 (.238")  
ADO wire size  
0,34 - 1,5 mm<sup>2</sup>  
22 - 16 AWG



Colour	Type	Part numbers
Grey	DH 1/5.ADO	1SNA 399 505 R0300
Blue	DH 1/5.N.ADO	1SNA 399 507 R0500
Orange	DH 1/5.ADO	1SNA 399 506 R0400

Colour	Type	Part numbers
Grey	DH 1,5/6.ADO	1SNA 299 529 R0600
Blue	DH 1,5/6.N.ADO	1SNA 299 531 R2000
Orange	DH 1,5/6.ADO	1SNA 299 530 R0300

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Screw	Rigid		
	Flexible		
ADO	Rigid	0,2-1 mm <sup>2</sup>	24-18 AWG
	Flexible	0,22-1 mm <sup>2</sup>	24-18 AWG

Voltage		
Rated	1000 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

Current			
Rated	13,5 A	10 A	

Wire size			
Rated / Gauge	1 mm <sup>2</sup>	18 AWG	
Wire strip. length	Recomm. screwdriver	Weight	Protection
		3 g	IP 20
		.11 oz	NEMA 1

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Screw	Rigid		
	Flexible		
ADO	Rigid	0,28-1,5 mm <sup>2</sup>	22-16 AWG
	Flexible	0,34-1,5 mm <sup>2</sup>	22-16 AWG

Voltage		
Rated	1000 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

Current			
Rated	17,5 A	20 A	

Wire size			
Rated / Gauge	1,5 mm <sup>2</sup>	16 AWG	
Wire strip. length	Recomm. screwdriver	Weight	Protection
		5 g	IP 20
		.18 oz	NEMA 1

Type	P/N						
FEAD2	V0	th. 2,5 mm	1SNA 199 423	R1000			
FEAD2	V0	th. 2,5 mm	1SNA 199 424	R1100			
FEAD6	V0	th. 5,0 mm	1SNA 199 435	R1400			
FEAD6	V0	th. 5,0 mm	1SNA 199 436	R1500			
BJADO5.2	17,5 A	2 poles	1SNA 205 955	R0300			
BJADO5.3	17,5 A	3 poles	1SNA 205 956	R0400			
BJADO5.4	17,5 A	4 poles	1SNA 205 957	R0500			
BJADO5.5	17,5 A	5 poles	1SNA 205 958	R1600			
BJADO5.10	17,5 A	10 poles	1SNA 205 963	R0300			
BJADO5.20	17,5 A	20 poles	1SNA 205 973	R0500			
OUMAD			1SNA 179 466	R0600			
OUPAD			1SNA 178 944	R0400			
OUTAD			1SNA 205 710	R1100			
OUTA			1SNA 205 284	R0300			
EXAD2			1SNA 205 721	R0000			
CEADO.5			1SNA 399 345	R1100			
CEADO.6			1SNA 399 346	R1200			
CEADOE			1SNA 399 341	R1500			
On top			RC55				

Type	P/N						
FEAD2	V0	th. 2,5 mm	1SNA 199 423	R1000			
FEAD2	V0	th. 2,5 mm	1SNA 199 424	R1100			
FEAD6	V0	th. 5,0 mm	1SNA 199 435	R1400			
FEAD6	V0	th. 5,0 mm	1SNA 199 436	R1500			
BJADO6.2	17,5 A	2 poles	1SNA 205 974	R0600			
BJADO6.3	17,5 A	3 poles	1SNA 205 975	R0700			
BJADO6.4	17,5 A	4 poles	1SNA 205 976	R0000			
BJADO6.5	17,5 A	5 poles	1SNA 205 977	R0100			
BJADO6.10	17,5 A	10 poles	1SNA 205 982	R2700			
BJADO6.20	17,5 A	20 poles	1SNA 205 992	R2100			
OUMAD			1SNA 179 466	R0600			
OUPAD			1SNA 178 944	R0400			
OUTAD			1SNA 205 710	R1100			
OUTA			1SNA 205 284	R0300			
EXAD2			1SNA 205 721	R0000			
CEADO.6			1SNA 399 346	R1200			
CEADOE			1SNA 399 341	R1500			
On top			RC65				

# Miniblocks Insulation Displacement



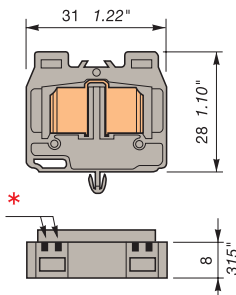
ADO - ADO

Base mount with snap in mounting foot



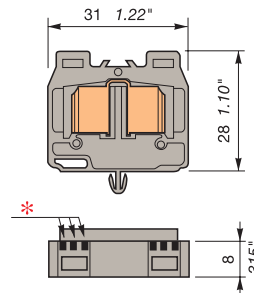
## DH 2,5/8.ADO

Spacing 8 mm +0,05 (.315")  
ADO wire size  
1 - 2,5 mm<sup>2</sup>  
16 - 14 AWG



## DH 4/8.ADO3

Spacing 8 mm +0,05 .315"  
ADO wire size  
4 mm<sup>2</sup>  
12 AWG



Colour	Type	Part numbers
Grey <input type="checkbox"/>	DH 2,5/8.ADO	1SNA 299 533 R2200
Blue <input type="checkbox"/>	DH 2,5/8.N.ADO	1SNA 299 535 R2400
Orange <input type="checkbox"/>	DH 2,5/8.ADO	1SNA 299 534 R2300

Colour	Type	Part numbers
Grey <input type="checkbox"/>	DH 4/8.ADO3	1SNA 399 420 R0100
Blue <input type="checkbox"/>	DH 4/8.N.ADO3	1SNA 399 422 R2700
Orange <input type="checkbox"/>	DH 4/8.ADO3	1SNA 399 421 R2600

### Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Screw	Rigid		
	Flexible		
ADO	Rigid	1-2,5 mm <sup>2</sup>	16-14 AWG
	Flexible	1-2,5 mm <sup>2</sup>	16-14 AWG

### Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Screw	Rigid		
	Flexible		
ADO	Rigid	4 mm <sup>2</sup>	12 AWG
	Flexible	4 mm <sup>2</sup>	12 AWG

For drilling patterns see page: assembly and accessories

### Observations

Terminal block body material is UL 94 V0.

DH 2,5/8.ADO block : for multiple wire connections, the two wires need to be of the **same gage and nature** (rigid or flexible).

DH 4/8.ADO3 block : connection of only one rigid or flexible 4 mm<sup>2</sup> wire.

\* Notches to identify 8 mm spacing.

Voltage		Rated	800 V	600 V
Rated				
Impulse withstand			8 kV	
Pollution degree			3	
Current		Rated	24 A	25 A
Rated				
Wire size		Rated / Gauge	2,5 mm <sup>2</sup>	14 AWG
Wire strip. length	Recomm. screwdriver	Weight	Protection	
		7 g	IP 20	
		.25 oz	NEMA 1	

Voltage		Rated	1000 V	
Rated				
Impulse withstand				
Pollution degree			3	
Current		Rated	32 A	
Rated				
Wire size		Rated / Gauge	4 mm <sup>2</sup>	12 AWG
Wire strip. length	Recomm. screwdriver	Weight	Protection	
		7 g	IP 20	
		.25 oz	NEMA 1	

### Accessories

Type			P/N
1 End section	gris	FEAD2 V0	th. 2,5 mm 1SNA 199 423 R1000
	orange	FEAD2 V0	th. 2,5 mm 1SNA 199 424 R1100
2 Separator	gris	FEAD6 V0	th. 5,0 mm 1SNA 199 435 R1400
	orange	FEAD6 V0	th. 5,0 mm 1SNA 199 436 R1500
3 Hand tool kit	OUMAD		1SNA 179 466 R0600
4 Semi automatic tool	OUPAD		1SNA 178 944 R0400
5 Pneumatic tool kit	OUTAD		1SNA 205 710 R1100
6 Replacement head kit	OUTA		1SNA 205 284 R0300
7 Extraction tool kit	EXAD2		1SNA 205 721 R0000
R	See section on markers marking method		
	On top	RCAL85	

Type			P/N
FEAD2 V0	th. 2,5 mm	1SNA 199 423 R1000	
	th. 2,5 mm	1SNA 199 424 R1100	
FEAD6 V0	th. 5,0 mm	1SNA 199 435 R1400	
	th. 5,0 mm	1SNA 199 436 R1500	
OUMAD	1SNA 179 466 R0600		
OUPAD	1SNA 178 944 R0400		
OUTAD	1SNA 205 710 R1100		
OUTA	1SNA 205 284 R0300		
EXAD2	1SNA 205 721 R0000		
	On top	RCAL85	



**Miniblocks  
Insulation Displacement  
ADO - ADO**  
ground terminal blocks not electrically connected to the mounting rail  
DIN 3



Other accessories of this terminal blocks : see pages of same size standard blocks.  
\* Notches to identify 8 mm spacing.

**Characteristics**

Wire size	Rigid Flexible	NFC IEC DIN		UL/CSA		NFC IEC DIN		UL/CSA		NFC IEC DIN		UL/CSA	
		0,2-1 mm <sup>2</sup>	0,22-1 mm <sup>2</sup>	24-18 AWG	24-18 AWG	0,28-1,5 mm <sup>2</sup>	22-16 AWG	1-2,5 mm <sup>2</sup>	16-14 AWG	0,34-1,5 mm <sup>2</sup>	22-16 AWG	1-2,5 mm <sup>2</sup>	16-14 AWG
<b>Rated current short-circuit</b>		120 A / 1 s.		180 A / 1 s.		300 A / 1 s.		180 A / 1 s.		300 A / 1 s.		300 A / 1 s.	
<b>Rated wire size nominal / gauge</b>		1 mm <sup>2</sup>		18 AWG		1,5 mm <sup>2</sup>		16 AWG		2,5 mm <sup>2</sup>		14 AWG	
<b>Other characteristics</b>		Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection
				3 g .11 oz	IP20 NEMA 1			5 g .18 oz	IP20 NEMA 1			7 g .25 oz	IP20 NEMA 1

<b>Approvals</b>	C UL US		CE		C UL US		CE		C UL US		CE	
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**Accessories**

Type	P/N	Type	P/N	Type	P/N
1 End section grey orange	FEAD2 V0 th. 2,5 mm 1SNA 199 423 R1000 FEAD2 V0 th. 2,5 mm 1SNA 199 424 R1100	FEAD2 V0 th. 2,5 mm 1SNA 199 423 R1000 FEAD2 V0 th. 2,5 mm 1SNA 199 424 R1100	FEAD2 V0 th. 2,5 mm 1SNA 199 423 R1000 FEAD2 V0 th. 2,5 mm 1SNA 199 424 R1100	FEAD2 V0 th. 2,5 mm 1SNA 199 423 R1000 FEAD2 V0 th. 2,5 mm 1SNA 199 424 R1100	FEAD2 V0 th. 2,5 mm 1SNA 199 423 R1000 FEAD2 V0 th. 2,5 mm 1SNA 199 424 R1100
R See section on markers mode	RC55	RC65	RC65	RCAL85	RCAL85

**Miniblocks  
Insulation Displacement  
ADO - ADO**  
ground terminal blocks not electrically connected to the mounting rail  
DIN 3

Other accessories of this terminal blocks : see pages of same size standard blocks.  
\* Notches to identify 8 mm spacing.

**Characteristics**

Wire size	Rigid Flexible	NFC IEC DIN		UL/CSA		NFC IEC DIN		UL/CSA		NFC IEC DIN		UL/CSA	
		4 mm <sup>2</sup>	4 mm <sup>2</sup>	12 AWG	12 AWG								
<b>Rated current short-circuit</b>		480 A / 1 s.		12 AWG									
<b>Rated wire size nominal / gauge</b>		4 mm <sup>2</sup>		12 AWG									
<b>Other characteristics</b>		Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection
				7 g .25 oz	IP20 NEMA 1								

<b>Approvals</b>	C UL US		CE		C UL US		CE		C UL US		CE	
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**Accessories**

Type	P/N	Type	P/N	Type	P/N
1 End section grey orange	FEAD2 V0 th. 2,5 mm 1SNA 199 423 R1000 FEAD2 V0 th. 2,5 mm 1SNA 199 424 R1100				
R See section on markers mode	RCAL85				

# Miniblocks Insulation Displacement ADO - ADO

ground terminal blocks  
electrically connected to the  
mounting rail

DIN 3



Other accessories of this terminal blocks:  
see pages of same size standard blocks.

\* Notches to identify 8mm spacing.

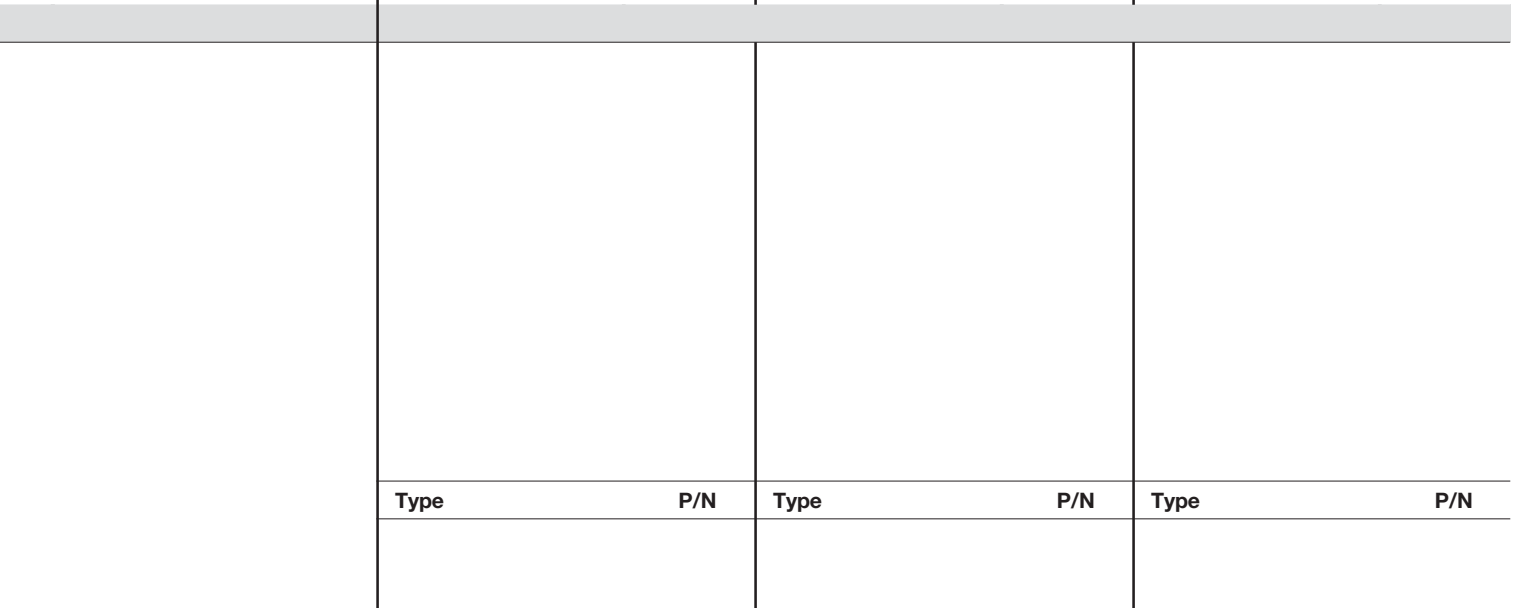
### Characteristics

		IEC		UL/CSA		IEC		UL/CSA		IEC		UL		CSA	
		NFC	DIN			NFC	DIN			NFC	DIN				
<b>Wire size</b>	Rigid Flexible	1-2,5 mm <sup>2</sup>		16-14 AWG		4 mm <sup>2</sup>		12 AWG							
<b>Rated current short-circuit</b>		1-2,5 mm <sup>2</sup>		16-14 AWG		4 mm <sup>2</sup>		12 AWG		480 A/1 s.					
<b>Rated wire size nominal / gauge</b>				300 A / 1 s.		4 mm <sup>2</sup>		12 AWG							
<b>Other characteristics</b>		Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection		
				10 g	IP20			10 g	IP20						
				.35 oz	NEMA 1			.35 oz	NEMA 1						

<b>Approvals</b>	
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### Accessories

		Type	P/N		Type	P/N		Type	P/N	
<b>1</b>	End section grey orange	FEAD2 V0	th. 2,5 mm	1SNA 199 423 R1000	FEAD2 V0	th. 2,5 mm	1SNA 199 423 R1000	FEAD2 V0	th. 2,5 mm	1SNA 199 424 R1100
<b>R</b>	See section on markers mode	On top	RCAL85		On top	RCAL85				



		IEC		UL		CSA		IEC		UL		CSA		IEC		UL		CSA	
		NFC	DIN					NFC	DIN					NFC	DIN				
<b>Wire size</b>	Rigid Flexible																		
<b>Rated current short-circuit</b>																			
<b>Rated wire size nominal / gauge</b>																			
<b>Other characteristics</b>		Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection						

<b>Approvals</b>	
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### Accessories

		Type	P/N		Type	P/N		Type	P/N	

**Miniblocks  
Insulation Displacement  
ADO - ADO**

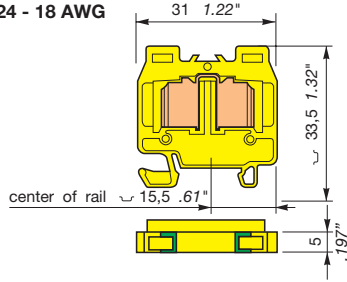
ground terminal blocks not electrically connected to the mounting rail

DIN 2



**DR 1/5.PI.ADO**

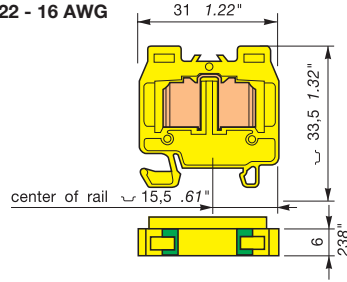
Spacing 5 mm + 0,05 .198"  
ADO wire size  
0,22 - 1 mm<sup>2</sup>  
24 - 18 AWG



Type	Part number
Yellow body / Green marking	
DR 1/5.PI.ADO	1SNA 399 494 R2000

**DR 1,5/6.PI.ADO**

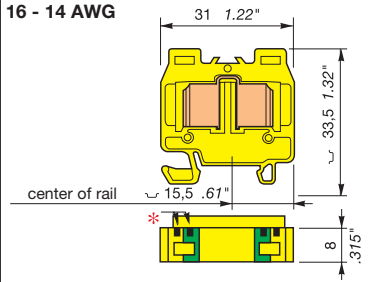
Spacing 6 mm + 0,05 .238"  
ADO wire size  
0,34 - 1,5 mm<sup>2</sup>  
22 - 16 AWG



Type	Part number
Yellow body / Green marking	
DR 1,5/6.PI.ADO	1SNA 199 286 R2700

**DR 2,5/8.PI.ADO**

8 mm +0,05 .315"  
A.D.O. wire size  
1 - 2,5 mm<sup>2</sup>  
16 - 14 AWG



Type	Part number
Yellow body / Green marking	
DR 2,5/8.PI.ADO	1SNA 199 290 R0700

Block also available in ATEX (Explosive Atmosphere) approved version

Other accessories of this terminal blocks: see pages of same size standard blocks.  
\* Notches to identify 8 mm spacing.

Characteristics		IEC		DIN		UL/CSA		IEC		DIN		UL/CSA		IEC		DIN		UL/CSA			
Wire size	ADO Rigid	0,2-1 mm <sup>2</sup>				24-18 AWG		0,28-1,5 mm <sup>2</sup>				22-16 AWG		1-2,5 mm <sup>2</sup>				16-14 AWG			
	ADO Flexible	0,22-1 mm <sup>2</sup>				24-18 AWG		0,34-1,5 mm <sup>2</sup>				22-16 AWG		1-2,5 mm <sup>2</sup>				16-14 AWG			
Rated current short-circuit		120 A / 1s.						180 A / 1s.						300 A / 1s.							
Rated wire size nominal / gauge		1 mm <sup>2</sup>				18 AWG		1,5 mm <sup>2</sup>				16 AWG		2,5 mm <sup>2</sup>				14 AWG			
Other characteristics		Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection				
				3 g	IP 20			5 g	IP 20			7 g	IP 20			.25 oz	NEMA 1				
Approvals																					
Accessories		Type		Part number		Type		Part number		Type		Part number		Type		Part number		Type		Part number	
1	End section	grey	FEAD2 V0	th. 2,5 mm	1SNA 199 423 R1000	FEAD2 V0	th. 2,5 mm	1SNA 199 423 R1000	FEAD2 V0	th. 2,5 mm	1SNA 199 423 R1000	FEAD2 V0	th. 2,5 mm	1SNA 199 423 R1000	FEAD2 V0	th. 2,5 mm	1SNA 199 423 R1000	FEAD2 V0	th. 2,5 mm	1SNA 199 423 R1000	
		orange	FEAD2 V0	th. 2,5 mm	1SNA 199 424 R1100	FEAD2 V0	th. 2,5 mm	1SNA 199 424 R1100	FEAD2 V0	th. 2,5 mm	1SNA 199 424 R1100	FEAD2 V0	th. 2,5 mm	1SNA 199 424 R1100	FEAD2 V0	th. 2,5 mm	1SNA 199 424 R1100	FEAD2 V0	th. 2,5 mm	1SNA 199 424 R1100	
R	See section on markers	mode	On top	RC55		On top	RC65		On top	RCAL85		On top	RCAL85		On top	RCAL85		On top	RCAL85		

**Miniblocks  
Insulation Displacement  
ADO - ADO**

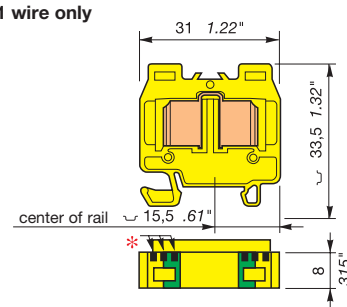
ground terminal blocks not electrically connected to the mounting rail

DIN 2



**DR 4/8.PI.ADO3**

8 mm +0,05 .315"  
ADO wire size  
4 mm<sup>2</sup> / 12 AWG  
1 wire only



Type	Part number
Yellow body / Green marking	
DR 4/8.PI.ADO3	1SNA 399 409 R1300

Other accessories of this terminal blocks: see pages of same size standard blocks.  
\* Notches to identify 8 mm spacing.

Characteristics		IEC		DIN		UL/CSA		IEC		DIN		UL		CSA		IEC		DIN		UL		CSA			
Wire size	ADO Rigid	4 mm <sup>2</sup>				12 AWG																			
	ADO Flexible	4 mm <sup>2</sup>				12 AWG																			
Rated current short-circuit		480 A / 1s.																							
Rated wire size nominal / gauge		4 mm <sup>2</sup>				12 AWG																			
Other characteristics		Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection								
				7 g	IP 20																				
Approvals																									
Accessories		Type		Part number		Type		Part number		Type		Part number		Type		Part number		Type		Part number		Type		Part number	
1	End section	grey	FEAD2 V0	th. 2,5 mm	1SNA 199 423 R1000	FEAD2 V0	th. 2,5 mm	1SNA 199 423 R1000	FEAD2 V0	th. 2,5 mm	1SNA 199 423 R1000	FEAD2 V0	th. 2,5 mm	1SNA 199 423 R1000	FEAD2 V0	th. 2,5 mm	1SNA 199 423 R1000	FEAD2 V0	th. 2,5 mm	1SNA 199 423 R1000	FEAD2 V0	th. 2,5 mm	1SNA 199 423 R1000		
		orange	FEAD2 V0	th. 2,5 mm	1SNA 199 424 R1100	FEAD2 V0	th. 2,5 mm	1SNA 199 424 R1100	FEAD2 V0	th. 2,5 mm	1SNA 199 424 R1100	FEAD2 V0	th. 2,5 mm	1SNA 199 424 R1100	FEAD2 V0	th. 2,5 mm	1SNA 199 424 R1100	FEAD2 V0	th. 2,5 mm	1SNA 199 424 R1100	FEAD2 V0	th. 2,5 mm	1SNA 199 424 R1100		
R	See section on markers	mode	On top	RCAL85		On top	RCAL85		On top	RCAL85		On top	RCAL85		On top	RCAL85		On top	RCAL85		On top	RCAL85			

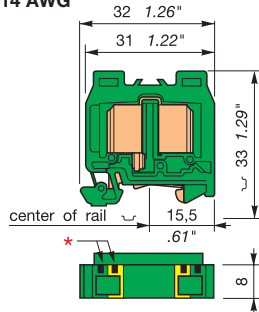
**Miniblocks  
Insulation Displacement  
ADO - ADO**  
ground terminal blocks  
electrically connected to the  
mounting rail

DIN 2



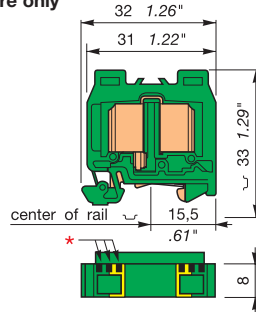
**DR 2,5/8.P.ADO**

Spacing 8 mm +0,05 .315"  
ADO wire size  
1 - 2,5 mm<sup>2</sup>  
16 - 14 AWG



**DR 4/8.P.ADO3**

Spacing 8 mm +0,05 .315"  
ADO wire size  
4 mm<sup>2</sup> / 12 AWG  
1 wire only



Type	Part number	Type	Part number	Type	Part number
Green body / Yellow marking		Green body / Yellow marking			
DR 2,5/8.P.ADO	1SNA 299 633 R0600	DR 4/8.P.ADO3	1SNA 399 442 R0300		

Characteristics		IEC		UL/CSA		IEC		UL/CSA		IEC		UL		CSA	
		NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN	UL	CSA		
Wire size	ADO Rigid	1-2,5 mm <sup>2</sup>		16-14 AWG		4 mm <sup>2</sup>		12 AWG							
	ADO Flexible	1-2,5 mm <sup>2</sup>		16-14 AWG		4 mm <sup>2</sup>		12 AWG							
Rated current short-circuit		300 A / 1s.		480 A / 1s.		480 A / 1s.		12 AWG							
Rated wire size nominal / gauge		2,5 mm <sup>2</sup>		14 AWG		4 mm <sup>2</sup>		12 AWG							
Other characteristics		Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection		
				10 g .35 oz	IP 20 NEMA 1			10 g .35 oz	IP 20 NEMA 1						
Approvals															
Accessories		Type	Part number		Type	Part number		Type	Part number		Type	Part number			
1	End section	grey	FEAD2	V0	th. 2,5 mm	1SNA 199 423 R1000	FEAD2	V0	th. 2,5 mm	1SNA 199 423 R1000					
		orange	FEAD2	V0	th. 2,5 mm	1SNA 199 424 R1100	FEAD2	V0	th. 2,5 mm	1SNA 199 424 R1100					
R	See section on markers	mode	On top	RCAL85		On top	RCAL85								

Type	Part number	Type	Part number	Type	Part number
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Characteristics		IEC		UL		CSA		IEC		UL		CSA			
		NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN		
Wire size	ADO Rigid														
	ADO Flexible														
Rated current short-circuit															
Rated wire size nominal / gauge															
Other characteristics		Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection		
Approvals															
Accessories		Type	Part number		Type	Part number		Type	Part number		Type	Part number			



**Miniblocks  
Insulation Displacement  
ADO - ADO**  
ground terminal blocks not electrically connected to the mounting plate  
Base mount with flanges



Other accessories of this terminal blocks: see pages of same size standard blocks.  
\* Notches to identify 8 mm spacing.

Characteristics		NFC IEC DIN		UL/CSA	
Wire size	ADO Rigid	0,2-1 mm <sup>2</sup>		24-18 AWG	
	ADO Flexible	0,22-1 mm <sup>2</sup>		24-18 AWG	
Rated current short-circuit		120 A / 1 s.			
Rated wire size nominal / gauge		1 mm <sup>2</sup>		18 AWG	
Other characteristics		Wire strip. length	Recomm. screwdriver	Weight	Protection
				3 g	IP 20
				.11 oz	NEMA 1
Approvals		cRU US		GL CE	
Accessories		Type	Part number	Type	Part number
1	End section kit with flanges (left + right)	grey	FEAD4 V0 1SNA 199 439 R2000	grey	FEAD4 V0 1SNA 199 439 R2000
		orange	FEAD4 V0 1SNA 199 440 R0500	orange	FEAD4 V0 1SNA 199 440 R0500
R	See section on markers	mode	RC55	mode	RC65

**DB 1/5.PI.ADO**  
Spacing 5 mm +0,05 (.198")  
ADO wire size  
0,22 - 1 mm<sup>2</sup>  
24 - 18 AWG

Type	Part number
Yellow body / Green marking	
■ DB 1/5.PI.ADO	1SNA 399 504 R0200

**DB 1,5/6.PI.ADO**  
Spacing 6 mm +0,05 (.238")  
ADO wire size  
0,34 - 1,5 mm<sup>2</sup>  
22 - 16 AWG

Type	Part number
Yellow body / Green marking	
■ DB 1,5/6.PI.ADO	1SNA 299 516 R2100

**DB 2,5/8.PI.ADO**  
Spacing 8 mm +0,05 (.315")  
ADO wire size  
1 - 2,5 mm<sup>2</sup>  
16 - 14 AWG

Type	Part number
Yellow body / Green marking	
■ DB 2,5/8.PI.ADO	1SNA 299 520 R0100

**Miniblocks  
Insulation Displacement  
ADO - ADO**  
ground terminal blocks not electrically connected to the mounting plate  
Base mount with flanges



Other accessories of this terminal blocks: see pages of same size standard blocks.  
\* Notches to identify 8 mm spacing.

Characteristics		NFC IEC DIN		UL/CSA	
Wire size	ADO Rigid	4 mm <sup>2</sup>		12 AWG	
	ADO Flexible	4 mm <sup>2</sup>		12 AWG	
Rated current short-circuit		480 A / 1 s.			
Rated wire size nominal / gauge		4 mm <sup>2</sup>		12 AWG	
Other characteristics		Wire strip. length	Recomm. screwdriver	Weight	Protection
				7 g	IP 20
				.25 oz	NEMA 1
Approvals		cRU US		CE	
Accessories		Type	Part number	Type	Part number
1	End section kit with flanges (left + right)	grey	FEAD4 V0 1SNA 199 439 R2000	grey	FEAD4 V0 1SNA 199 439 R2000
		orange	FEAD4 V0 1SNA 199 440 R0500	orange	FEAD4 V0 1SNA 199 440 R0500
R	See section on markers	mode	RCAL85	mode	RCAL85

**DB 4/8.PI.ADO3**  
Spacing 8 mm +0,05 (.315")  
ADO wire size  
4 mm<sup>2</sup> / 12 AWG  
1 wire only

Type	Part number
Yellow body / Green marking	
■ DB 4/8.PI.ADO3	1SNA 399 419 R0400

Characteristics		NFC IEC DIN		UL		CSA	
Wire size	ADO Rigid	4 mm <sup>2</sup>					
	ADO Flexible	4 mm <sup>2</sup>					
Rated current short-circuit		480 A / 1 s.					
Rated wire size nominal / gauge		4 mm <sup>2</sup>					
Other characteristics		Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver
Approvals		cRU US		CE			
Accessories		Type	Part number	Type	Part number	Type	Part number
1	End section kit with flanges (left + right)	grey	FEAD4 V0 1SNA 199 439 R2000	grey	FEAD4 V0 1SNA 199 439 R2000	grey	FEAD4 V0 1SNA 199 439 R2000
		orange	FEAD4 V0 1SNA 199 440 R0500	orange	FEAD4 V0 1SNA 199 440 R0500	orange	FEAD4 V0 1SNA 199 440 R0500
R	See section on markers	mode	RCAL85	mode	RCAL85	mode	RCAL85

Characteristics		NFC IEC DIN		UL		CSA	
Wire size	ADO Rigid	4 mm <sup>2</sup>					
	ADO Flexible	4 mm <sup>2</sup>					
Rated current short-circuit		480 A / 1 s.					
Rated wire size nominal / gauge		4 mm <sup>2</sup>					
Other characteristics		Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver
Approvals		cRU US		CE			
Accessories		Type	Part number	Type	Part number	Type	Part number
1	End section kit with flanges (left + right)	grey	FEAD4 V0 1SNA 199 439 R2000	grey	FEAD4 V0 1SNA 199 439 R2000	grey	FEAD4 V0 1SNA 199 439 R2000
		orange	FEAD4 V0 1SNA 199 440 R0500	orange	FEAD4 V0 1SNA 199 440 R0500	orange	FEAD4 V0 1SNA 199 440 R0500
R	See section on markers	mode	RCAL85	mode	RCAL85	mode	RCAL85

### Miniblocks Insulation Displacement

ADO - ADO  
ground terminal blocks not  
electrically connected to the  
mounting plate

Base mount with snap in  
mounting foot



Other accessories of this terminal blocks:  
see pages of same size standard blocks.

\* Notches to identify 8 mm spacing.

#### Characteristics

Wire size	ADO	Rigid	
		Flexible	
Rated current short-circuit			
Rated wire size nominal / gauge			
Other characteristics			

#### Approvals

#### Accessories

1	End section	grey	
		orange	
R	See section on markers	mode	

### Miniblocks Insulation Displacement

ADO - ADO  
ground terminal blocks not  
electrically connected to the  
mounting plate

Base mount with snap in  
mounting foot



Other accessories of this terminal blocks:  
see pages of same size standard blocks.

\* Notches to identify 8 mm spacing.

#### Characteristics

Wire size	ADO	Rigid	
		Flexible	
Rated current short-circuit			
Rated wire size nominal / gauge			
Other characteristics			

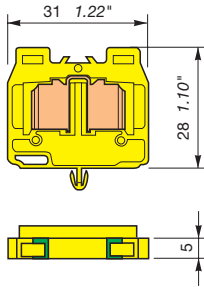
#### Approvals

#### Accessories

1	End section	grey	
		orange	
R	See section on markers	mode	

#### DH 1/5.PI.ADO

Spacing 5 mm +0,05 .198"  
ADO wire size  
0,22 - 1 mm<sup>2</sup>  
24 - 18 AWG

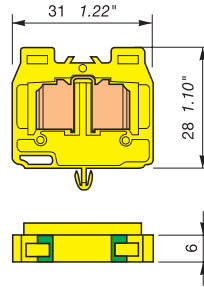


Type Part number

Yellow body / Green marking  
■ DH 1/5.PI.ADO 1SNA 399 508 R1600

#### DH 1,5/6.PI.ADO

Spacing 6 mm +0,05 .238"  
ADO wire size  
0,34 - 1,5 mm<sup>2</sup>  
22 - 16 AWG

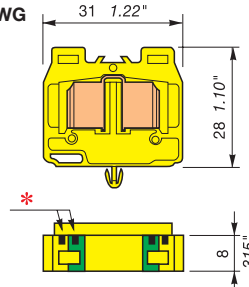


Type Part number

Yellow body / Green marking  
■ DH 1,5/6.PI.ADO 1SNA 299 532 R2100

#### DH 2,5/8.PI.ADO

Spacing 8 mm +0,05 .315"  
ADO wire size  
1 - 2,5 mm<sup>2</sup>  
16 - 14 AWG



Type Part number

Yellow body / Green marking  
■ DH 2,5/8.PI.ADO 1SNA 299 536 R2500

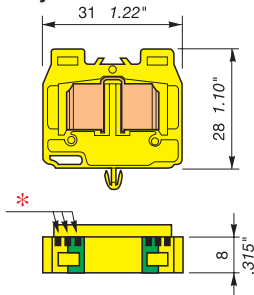
IEC		UL/CSA		IEC		UL/CSA		IEC		UL/CSA	
NFC	DIN			NFC	DIN			NFC	DIN		
Wire size		Wire size		Wire size		Wire size		Wire size		Wire size	
0,2-1 mm <sup>2</sup>		24-18 AWG		0,28-1,5 mm <sup>2</sup>		22-16 AWG		1-2,5 mm <sup>2</sup>		16-14 AWG	
0,22-1 mm <sup>2</sup>		24-18 AWG		0,34-1,5 mm <sup>2</sup>		22-16 AWG		1-2,5 mm <sup>2</sup>		16-14 AWG	
120 A / 1 s.				180 A / 1 s.				300 A / 1 s.			
1 mm <sup>2</sup>		18 AWG		1,5 mm <sup>2</sup>		16 AWG		2,5 mm <sup>2</sup>		14 AWG	
Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection
		3 g	IP 20			5 g	IP 20			7 g	IP 20
		.11 oz	NEMA 1			.18 oz	NEMA 1			.25 oz	NEMA 1



Type	Part number	Type	Part number	Type	Part number
FEAD2 V0 th. 2,5 mm	1SNA 199 423 R1000	FEAD2 V0 th. 2,5 mm	1SNA 199 423 R1000	FEAD2 V0 th. 2,5 mm	1SNA 199 423 R1000
FEAD2 V0 th. 2,5 mm	1SNA 199 424 R1100	FEAD2 V0 th. 2,5 mm	1SNA 199 424 R1100	FEAD2 V0 th. 2,5 mm	1SNA 199 424 R1100
RC55		RC65		RCAL85	

#### DH 4/8.PI.ADO3

Spacing 8 mm +0,05 .315"  
ADO wire size  
4 mm<sup>2</sup> / 12 AWG  
1 wire only



Type Part number

Yellow body / Green marking  
■ DH 4/8.PI.ADO3 1SNA 399 423 R2000

IEC		UL/CSA		IEC		UL		CSA		IEC		UL		CSA	
NFC	DIN			NFC	DIN					NFC	DIN				
Wire size		Wire size		Wire size		Wire size		Wire size		Wire size		Wire size		Wire size	
4 mm <sup>2</sup>		12 AWG		4 mm <sup>2</sup>		12 AWG		4 mm <sup>2</sup>		12 AWG		4 mm <sup>2</sup>		12 AWG	
480 A / 1 s.				480 A / 1 s.				480 A / 1 s.				480 A / 1 s.			
4 mm <sup>2</sup>		12 AWG		4 mm <sup>2</sup>		12 AWG		4 mm <sup>2</sup>		12 AWG		4 mm <sup>2</sup>		12 AWG	
Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection
		7 g	IP 20												
		.25 oz	NEMA 1												



Type	Part number	Type	Part number	Type	Part number
FEAD2 V0 th. 2,5 mm	1SNA 199 423 R1000				
FEAD2 V0 th. 2,5 mm	1SNA 199 424 R1100				
RCAL85					

**Pluggable terminal blocks**  
**Insulation displacement**  
**Female plugs**

Plug shape  
**TILE (omnicontect)**



Body UL94 V0

**Characteristics**

Wire size		
	IEC	UL/CSA
Solid	0.22-1mm <sup>2</sup>	24 -16 AWG
Stranded	0.22-1mm <sup>2</sup>	24 -16 AWG
1 or 2 wires (same wire size) per ADO jaw		
Voltage		
V	~	500 Gr.C 300 V
	=	500 Gr.C 300 V
Current at 20° C		
A	13,5	10
Rated wire size		
	1 mm <sup>2</sup>	16 AWG

**Other characteristics**

Wire stripping length	Recomm. screwdriver	Recomm. torque	Protection
			IP 20 NEMA 1
Max. working temperature :			100 °C
Insulation resistance :			≥ 100 MΩ

**Approvals**



**Accessories**

Type	Part number
1 Manual tool	OUMAD
2 Semi-automatic tool	OUPAD
3 Pneumatic tool	OUTAD
4 6 coding peg kit	COCF
5 Cable clamp plug 3 to 7 poles	PT1
6 Cable clamp plug 8 to 16 poles	PT2

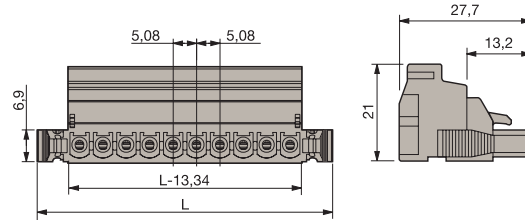
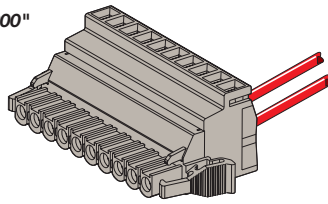
Type	Part number
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
COCF	1SNA 199 320 R0400
PT1	1SSA 299 226 R0100
PT2	1SSA 299 227 R0100

Type	Part number
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
COCF	1SNA 199 320 R0400
PT1	1SSA 299 226 R0100
PT2	1SSA 299 227 R0100

**L 265 200 21**

Wires parallel to connection with brackets

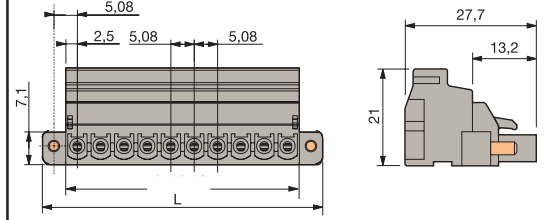
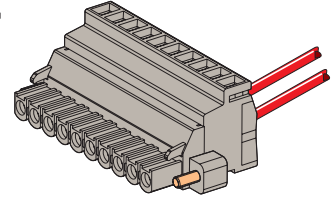
Spacing 5.08 mm .200"



**L 265 200 41**

Wires parallel to connection with flanges and M2.5 screw

Spacing 5.08 mm .200"



**Part number**

Spacing 5.08 mm Grey body		N. Poles	L. mm
2	1SSA 265 202 R2100	23.50	
3	1SSA 265 203 R2100	28.58	
4	1SSA 265 204 R2100	33.66	
5	1SSA 265 205 R2100	38.74	
6	1SSA 265 206 R2100	43.82	
7	1SSA 265 207 R2100	48.90	
8	1SSA 265 208 R2100	53.98	
9	1SSA 265 209 R2100	59.08	
10	1SSA 265 210 R2100	64.14	
11	1SSA 265 211 R2100	69.22	
12	1SSA 265 212 R2100	74.30	
13	1SSA 265 213 R2100	79.38	
14	1SSA 265 214 R2100	84.46	
15	1SSA 265 215 R2100	89.54	
16	1SSA 265 216 R2100	94.62	
17	1SSA 265 217 R2100	99.70	
18	1SSA 265 218 R2100	104.78	
19	1SSA 265 219 R2100	109.86	
20	1SSA 265 220 R2100	114.94	
21	1SSA 265 221 R2100	120.02	
22	1SSA 265 222 R2100	125.10	
23	1SSA 265 223 R2100	130.18	
24	1SSA 265 224 R2100	135.16	

**Part number**

Spacing 5.08 mm Grey		N. Poles	L. mm
2	1SSA 265 202 R4100	20.32	
3	1SSA 265 203 R4100	25.40	
4	1SSA 265 204 R4100	30.48	
5	1SSA 265 205 R4100	35.56	
6	1SSA 265 206 R4100	40.64	
7	1SSA 265 207 R4100	45.72	
8	1SSA 265 208 R4100	50.80	
9	1SSA 265 209 R4100	55.88	
10	1SSA 265 210 R4100	60.96	
11	1SSA 265 211 R4100	66.04	
12	1SSA 265 212 R4100	71.12	
13	1SSA 265 213 R4100	76.20	
14	1SSA 265 214 R4100	81.28	
15	1SSA 265 215 R4100	86.36	
16	1SSA 265 216 R4100	91.44	
17	1SSA 265 217 R4100	96.52	
18	1SSA 265 218 R4100	101.60	
19	1SSA 265 219 R4100	106.68	
20	1SSA 265 220 R4100	111.76	
21	1SSA 265 221 R4100	116.84	
22	1SSA 265 222 R4100	121.92	
23	1SSA 265 223 R4100	127.00	
24	1SSA 265 224 R4100	132.08	

**Pluggable terminal blocks**  
**Insulation displacement**  
**Female plugs**

Plug shape  
**TILE (omnicontect)**



Body UL94 V0

**Characteristics**

Wire size		
	IEC	UL/CSA
Solid	0.22-1mm <sup>2</sup>	24 - 16 AWG
Stranded	0.22-1mm <sup>2</sup>	24 - 16 AWG
1 or 2 wires (same wire size) per ADO jaw		
Voltage		
V	~ 500	300
	= 500	300
Current at 20° C		
A	13,5	10
Rated wire size		
	1 mm <sup>2</sup>	

**Other characteristics**

Wire stripping length	Recomm. screwdriver	Recomm. torque	Protection
			IP 20 NEMA 1
Max. working temperature :			100 °C
Insulation resistance :			≥ 100 MΩ

**Approvals**



**Accessories**

	Type	Part number
1 Manual tool	OUMAD	1SNA 179 466 R0600
2 Semi-automatic tool	OUPAD	1SNA 178 944 R0400
3 Pneumatic tool	OUTAD	1SNA 205 710 R1100
4 6 coding peg kit	COCF	1SNA 199 320 R0400
5 Cable clamp plug 3 to 7 poles	PT1	1SSA 299 226 R0100
6 Cable clamp plug 8 to 16 poles	PT2	1SSA 299 227 R0100

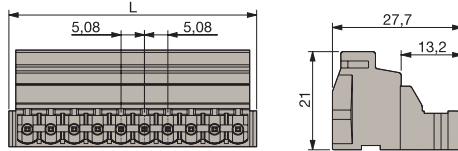
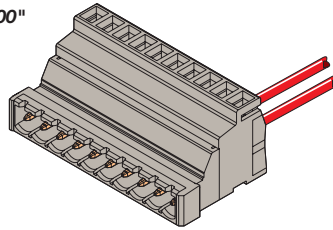
	Type	Part number
	OUMAD	1SNA 179 466 R0600
	OUPAD	1SNA 178 944 R0400
	OUTAD	1SNA 205 710 R1100
	COCF	1SNA 199 320 R0400
	PT1	1SSA 299 226 R0100
	PT2	1SSA 299 227 R0100

	Type	Part number
	OUMAD	1SNA 179 466 R0600
	OUPAD	1SNA 178 944 R0400
	OUTAD	1SNA 205 710 R1100
	COCF	1SNA 199 320 R0400
	PT1	1SSA 299 226 R0100
	PT2	1SSA 299 227 R0100

**L 365 200 21**

Wires parallel to connection with brackets

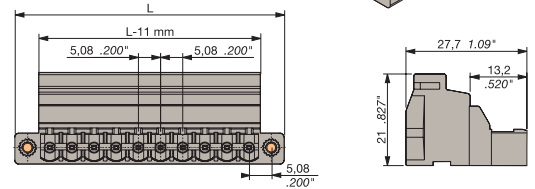
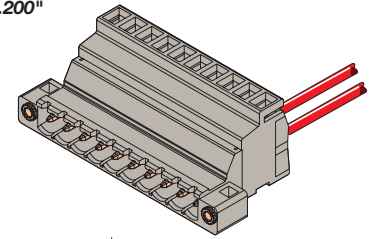
Spacing 5.08 mm .200"



**L 365 200 31**

Plug wires parallel to connection with flanges (axis spacing 5.08 with inserts)

Spacing 5.08 mm .200"



**Part number**

Spacing 5.08 mm Grey body		L. mm
N. Poles		
2	1SSA 365 202 R2100	13.16
3	1SSA 365 203 R2100	18.24
4	1SSA 365 204 R2100	23.32
5	1SSA 365 205 R2100	28.40
6	1SSA 365 206 R2100	33.48
7	1SSA 365 207 R2100	38.56
8	1SSA 365 208 R2100	43.64
9	1SSA 365 209 R2100	48.72
10	1SSA 365 210 R2100	53.80
11	1SSA 365 211 R2100	58.88
12	1SSA 365 212 R2100	63.96
13	1SSA 365 213 R2100	69.04
14	1SSA 365 214 R2100	74.12
15	1SSA 365 215 R2100	79.20
16	1SSA 365 216 R2100	84.28
17	1SSA 365 217 R2100	89.36
18	1SSA 365 218 R2100	94.44
19	1SSA 365 219 R2100	99.52
20	1SSA 365 220 R2100	104.60
21	1SSA 365 221 R2100	109.68
22	1SSA 365 222 R2100	114.76
23	1SSA 365 223 R2100	119.84
24	1SSA 365 224 R2100	124.92

**Part number**

Spacing 5.08 mm Grey body		L. mm
N. Poles		
2	1SSA 365 202 R3100	21.16
3	1SSA 365 203 R3100	26.24
4	1SSA 365 204 R3100	31.32
5	1SSA 365 205 R3100	36.40
6	1SSA 365 206 R3100	41.48
7	1SSA 365 207 R3100	46.56
8	1SSA 365 208 R3100	51.64
9	1SSA 365 209 R3100	56.72
10	1SSA 365 210 R3100	61.80
11	1SSA 365 211 R3100	66.88
12	1SSA 365 212 R3100	71.96
13	1SSA 365 213 R3100	77.04
14	1SSA 365 214 R3100	82.12
15	1SSA 365 215 R3100	87.20
16	1SSA 365 216 R3100	92.28
17	1SSA 365 217 R3100	97.36
18	1SSA 365 218 R3100	102.44
19	1SSA 365 219 R3100	107.52
20	1SSA 365 220 R3100	112.60
21	1SSA 365 221 R3100	117.68
22	1SSA 365 222 R3100	122.76
23	1SSA 365 223 R3100	127.84
24	1SSA 365 224 R3100	132.92



# Pluggable Terminal blocks Insulation displacement



Feed-through 1 ADO - 1 pluggable  
2 ADO - 1 pluggable

DIN 3



End stop		th. 10 mm	BAM2 V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2	1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4	1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5	1SNA 168 700 R2200

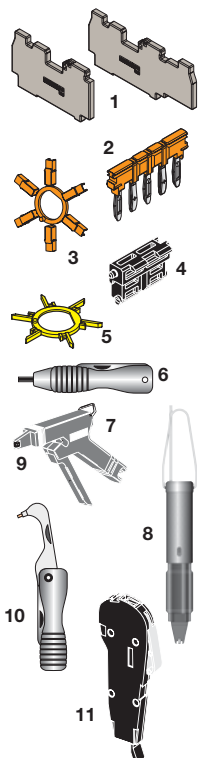
Other end stops, rails and accessories : see section on accessories.

## Notes

Body material is UL 94 V0

\* : Caution, maximum current of "terminal block and plug" set is limited by the device with the lowest current rating.

## Accessories

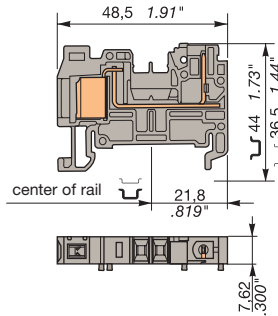


- 1 End section grey beige
- 2 Jumper bar
- 3 6 isolation kit for jumper bar
- 4 Locking lever
- 5 6 coding peg kit
- 6 Hand tool kit
- 7 Semi-automatic tool
- 8 Pneumatic tool kit
- 9 Replacement head kit
- 10 Extraction tool kit
- 11 Test connector

R See section on markers marking method

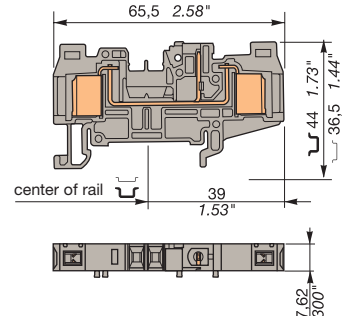
### D 1,5/7.ADO-CPE

Spacing 7,62 mm .300"



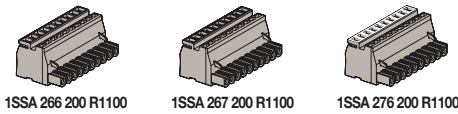
### D 1,5/7.2ADO-CPE

Spacing 7,62 mm .300"



Colour	Type	Part number
Grey	D 1,5/7.ADO-CPE	1SNA 290 486 R2700

Mating female plugs :



## Characteristics

Wire size	Wire size	
	IEC	UL/CSA
ADO	0,34 - 1,5 mm <sup>2</sup>	22-16 AWG
1 or 2 wires (same wire size) per ADO jaw		

Voltage		
Rated	500 V	300 V
Impulse withstand		
Pollution degree	3	

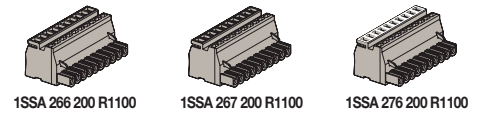
Current		
Rated	16 A*	15 A*

Wire size			
Rated			
1,5 mm <sup>2</sup>		16 AWG	
Body weight	Metallic part weight	Total weight	Protection
4,5 g	3,8 g	8,3 g	IP 20
0.01 lb	0.008 lb	0.018 lb	NEMA 1



Colour	Type	Part number
Grey	D 1,5/7.2ADO-CPE	1SNA 290 487 R2000

Mating female plugs :



## Characteristics

Wire size	Wire size	
	IEC	UL/CSA
ADO	0,34 - 1,5 mm <sup>2</sup>	22-16 AWG
1 or 2 wires (same wire size) per ADO jaw		

Voltage		
Rated	500 V	300 V
Impulse withstand		
Pollution degree	3	

Current		
Rated	16 A*	15 A*

Wire size			
Rated			
1,5 mm <sup>2</sup>		16 AWG	
Body weight	Metallic part weight	Total weight	Protection
5,5 g	6,1 g	11,6 g	IP 20
0.012 lb	0.013 lb	0.025 lb	NEMA 1

Type	Part numbers		
FECPE.ADO (1)	th. 2,9 mm	1SNA 291 832 R1600	
FECPE.ADO (1)	th. 2,9 mm	1SNA 400 019 R0400	
BJE 762.2 (1)	2 poles	1SNA 290 451 R0300	
BJE 762.5 (1)	5 poles	1SNA 290 452 R0400	
BJE 762.10 (1)	10 poles	1SNA 290 453 R0500	
EIP		1SNA 290 454 R0600	
VRADO.CPE7 (2)		1SNA 400 063 R0000	
COCE		1SNA 199 321 R2100	
OUMAD		1SNA 179 466 R0600	
OUPAD		1SNA 178 944 R0400	
OUTAD		1SNA 205 710 R1100	
OUTA		1SNA 205 284 R0300	
EXAD2		1SNA 205 721 R0000	
CEADO7		1SNA 399 347 R1300	

Type	Part numbers		
FECPE.2ADO (1)	th. 2,9 mm	1SNA 291 833 R1700	
FECPE.2ADO (1)	th. 2,9 mm	1SNA 400 018 R0300	
BJE 762.2 (1)	2 poles	1SNA 290 451 R0300	
BJE 762.5 (1)	5 poles	1SNA 290 452 R0400	
BJE 762.10 (1)	10 poles	1SNA 290 453 R0500	
EIP		1SNA 290 454 R0600	
VRADO.CPE7 (2)		1SNA 400 063 R0000	
COCE		1SNA 199 321 R2100	
OUMAD		1SNA 179 466 R0600	
OUPAD		1SNA 178 944 R0400	
OUTAD		1SNA 205 710 R1100	
OUTA		1SNA 205 284 R0300	
EXAD2		1SNA 205 721 R0000	
CEADO7		1SNA 399 347 R1300	

Strip marker RB-12W7 1SNA 290 455 R0700

Strip marker RB-12W7 1SNA 290 455 R0700

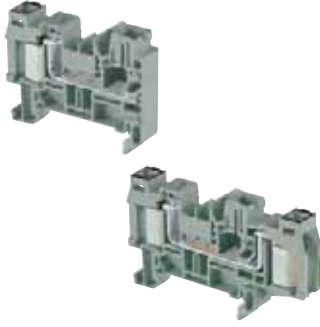
- (1) Other colours, other pole numbers : on request.
- (2) - 1 VRADO.CPE7 2 pole locking lever can safely lock a mating female plug from 2 to 6 poles.
- Up to 3 VRADO.CPE7 can be mounted together for single manipulation.

# Pluggable Terminal blocks Insulation displacement



Feed-through 1 ADO - 1 pluggable  
2 ADO - 1 pluggable

DIN 3



End stop	th. 10 mm	BAM2 V0	1SNA 399 967 R0100
Rail	35 x 7,5 x 1	PR3.Z2	1SNA 174 300 R1700
Rail	35 x 15 x 2,3	PR4	1SNA 168 500 R1200
Rail	35 x 15 x 1,5	PR5	1SNA 168 700 R2200

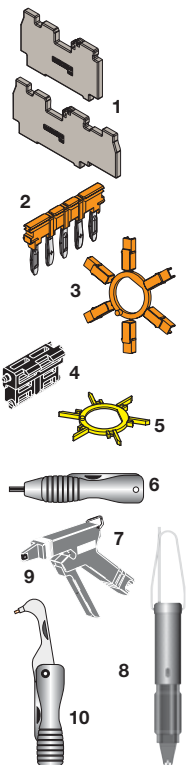
Other end stops, rails and accessories : see section on accessories.

## Notes

Body material is UL 94 V0

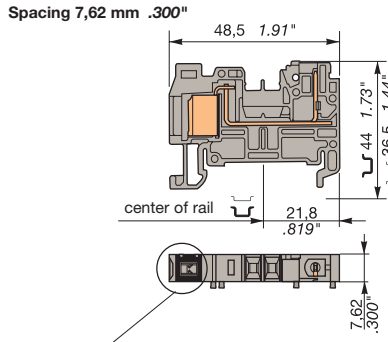
\* : Caution, maximum current of "terminal block and plug" set is limited by the device with the lowest current rating.

## Accessories



1	End section	grey beige
2	Jumper bar	
3	6 isolation kit for jumper bar	
4	Locking lever	
5	6 coding peg kit	
6	Hand tool kit	
7	Semi-automatic tool	
8	Pneumatic tool kit	
9	Replacement head kit	
10	Extraction tool kit	
R	See section on markers	marking method

## D 2,5/7.ADO-CPE

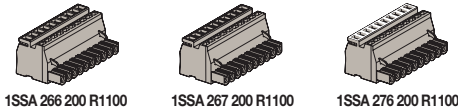


Black marking to identify wire size.



Colour	Type	Part number
Grey	D 2,5/7.ADO-CPE	1SNA 290 483 R2400

Mating female plugs :



## Characteristics

Wire size	Wire size	
	IEC	UL/CSA
ADO	1 - 2,5 mm <sup>2</sup>	16-14 AWG
1 or 2 wires (same wire size) per ADO jaw		

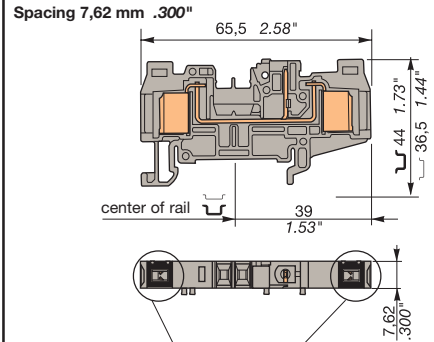
## Voltage

Rated	500 V	300 V
Impulse withstand		
Pollution degree	3	

<b>Current</b>		
Rated	24 A*	15 A*

Wire size	Wire size			
	Body weight	Metallic part weight	Total weight	Protection
Rated	2,5 mm <sup>2</sup>		14 AWG	
	4,5 g	3,8 g	8,3 g	IP 20
	0,01 lb	0,008 lb	0,018 lb	NEMA 1

## D 2,5/7.2ADO-CPE

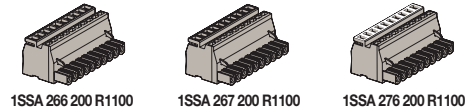


Black marking to identify wire size.



Colour	Type	Part number
Grey	D 2,5/7.2ADO-CPE	1SNA 290 484 R2500

Mating female plugs :



## Characteristics

Wire size	Wire size	
	IEC	UL/CSA
ADO	1 - 2,5 mm <sup>2</sup>	16-14 AWG
1 or 2 wires (same wire size) per ADO jaw		

## Voltage

Rated	500 V	300 V
Impulse withstand		
Pollution degree	3	

<b>Current</b>		
Rated	24 A*	15 A*

Wire size	Wire size			
	Body weight	Metallic part weight	Total weight	Protection
Rated	2,5 mm <sup>2</sup>		14 AWG	
	5,5 g	6,1 g	11,6 g	IP 20
	0,012 lb	0,013 lb	0,025 lb	NEMA 1

## Type

Type	Part numbers
FECPE.ADO (1)	th. 2,9 mm 1SNA 291 832 R1600
FECPE.ADO (1)	th. 2,9 mm 1SNA 400 019 R0400
BJE 762.2 (1)	2 poles 1SNA 290 451 R0300
BJE 762.5 (1)	5 poles 1SNA 290 452 R0400
BJE 762.10 (1)	10 poles 1SNA 290 453 R0500
EIP	1SNA 290 454 R0600
VRADO.CPE7 (2)	1SNA 400 063 R0000
COCE	1SNA 199 321 R2100
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000

## Type

Type	Part numbers
FECPE.2ADO (1)	th. 2,9 mm 1SNA 291 833 R1700
FECPE.2ADO (1)	th. 2,9 mm 1SNA 400 018 R0300
BJE 762.2 (1)	2 poles 1SNA 290 451 R0300
BJE 762.5 (1)	5 poles 1SNA 290 452 R0400
BJE 762.10 (1)	10 poles 1SNA 290 453 R0500
EIP	1SNA 290 454 R0600
VRADO.CPE7 (2)	1SNA 400 063 R0000
COCE	1SNA 199 321 R2100
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
OUTA	1SNA 205 284 R0300
EXAD2	1SNA 205 721 R0000

Strip marker RB-12W7 1SNA 290 455 R0700

Strip marker RB-12W7 1SNA 290 455 R0700

- (1) Other colours, other pole numbers : on request.
- (2) - 1 VRADO.CPE7 2 pole locking lever can safely lock a mating female plug from 2 to 6 poles.
- Up to 3 VRADO.CPE7 can be mounted together for single manipulation.

# Pluggable Terminal blocks Insulation displacement



Feed-through 1 ADO - 1 pluggable  
2 ADO - 1 pluggable

DIN 3



End stop		th. 10 mm	BAM2 V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2	1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4	1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5	1SNA 168 700 R2200

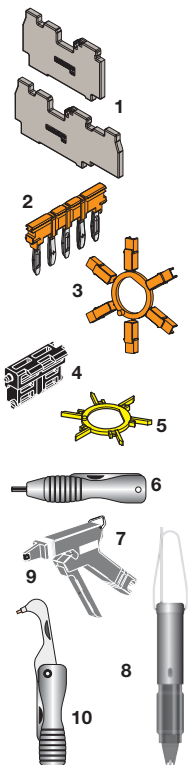
Other end stops, rails and accessories : see section on accessories.

## Notes

Body material is UL 94 V0

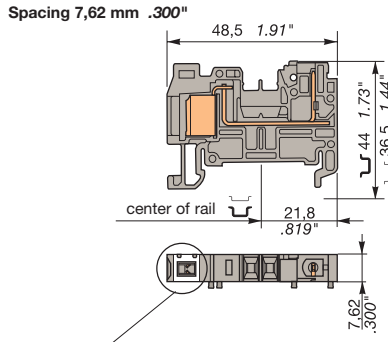
\* : Caution, maximum current of "terminal block and plug" set is limited by the device with the lowest current rating.

## Accessories



1	End section	grey beige
2	Jumper bar	
3	6 isolation kit for jumper bar	
4	Locking lever	
5	6 coding peg kit	
6	Hand tool kit	
7	Semi-automatic tool	
8	Pneumatic tool kit	
9	Replacement head kit	
10	Extraction tool kit	
R	See section on markers	marking method

### D 4/7.ADO-CPE

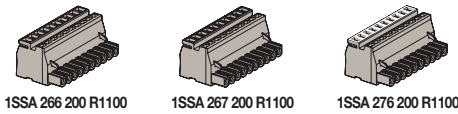


White marking to identify wire size.



Colour	Type	Part number
Grey	D 4/7.ADO-CPE	1SNA 290 481 R2200

Mating female plugs :



### Characteristics

Wire size	Wire size	
	IEC	UL/CSA
ADO	4 mm <sup>2</sup>	12 AWG

1 wire per ADO jaw

### Voltage

Rated	500 V	300 V
Impulse withstand		
Pollution degree	3	

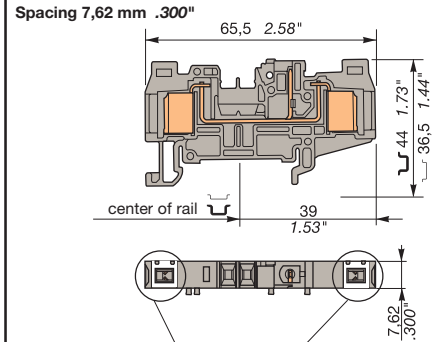
### Current

Rated	24 A*	18 A*
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### Wire size

Rated		4 mm <sup>2</sup>		12 AWG	
Body weight	Metallic part weight	Total weight	Protection	Body weight	Metallic part weight
4,5 g	3,8 g	8,3 g	IP 20	5,5 g	6,1 g
0.01 lb	0.008 lb	0.018 lb	NEMA 1	0.012 lb	0.013 lb

### D 4/7.2ADO-CPE

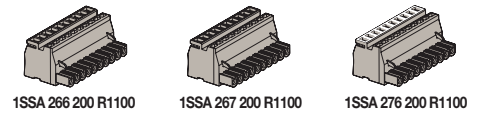


White marking to identify wire size.



Colour	Type	Part number
Grey	D 4/7.2ADO-CPE	1SNA 290 482 R2300

Mating female plugs :



### Characteristics

Wire size	Wire size	
	IEC	UL/CSA
ADO	4 mm <sup>2</sup>	12 AWG

1 wire per ADO jaw

### Voltage

Rated	500 V	300 V
Impulse withstand		
Pollution degree	3	

### Current

Rated	24 A*	18 A*
-------	-------	-------

### Wire size

Rated		4 mm <sup>2</sup>		12 AWG	
Body weight	Metallic part weight	Total weight	Protection	Body weight	Metallic part weight
5,5 g	6,1 g	11,6 g	IP 20	0.012 lb	0.013 lb
0.012 lb	0.013 lb	0.025 lb	NEMA 1		

## Accessories

Type	Part numbers	
FECPE.ADO (1)	th. 2,9 mm	1SNA 291 832 R1600
FECPE.ADO (1)	th. 2,9 mm	1SNA 400 019 R0400
BJE 762.2 (1)	2 poles	1SNA 290 451 R0300
BJE 762.5 (1)	5 poles	1SNA 290 452 R0400
BJE 762.10 (1)	10 poles	1SNA 290 453 R0500
EIP		1SNA 290 454 R0600
VRADO.CPE7 (2)		1SNA 400 063 R0000
COCE		1SNA 199 321 R2100
OUMAD		1SNA 179 466 R0600
OUPAD		1SNA 178 944 R0400
OUTAD		1SNA 205 710 R1100
OUTA		1SNA 205 284 R0300
EXAD2		1SNA 205 721 R0000

## Accessories

Type	Part numbers	
FECPE.2ADO (1)	th. 2,9 mm	1SNA 291 833 R1700
FECPE.2ADO (1)	th. 2,9 mm	1SNA 400 018 R0300
BJE 762.2 (1)	2 poles	1SNA 290 451 R0300
BJE 762.5 (1)	5 poles	1SNA 290 452 R0400
BJE 762.10 (1)	10 poles	1SNA 290 453 R0500
EIP		1SNA 290 454 R0600
VRADO.CPE7 (2)		1SNA 400 063 R0000
COCE		1SNA 199 321 R2100
OUMAD		1SNA 179 466 R0600
OUPAD		1SNA 178 944 R0400
OUTAD		1SNA 205 710 R1100
OUTA		1SNA 205 284 R0300
EXAD2		1SNA 205 721 R0000

Strip marker RB-12W7 1SNA 290 455 R0700 Strip marker RB-12W7 1SNA 290 455 R0700

- (1) Other colours, other pole numbers : on request.
- (2) - 1 VRADO.CPE7 2 pole locking lever can safely lock a mating female plug from 2 to 6 poles.
- Up to 3 VRADO.CPE7 can be mounted together for single manipulation.

**Pluggable terminal blocks**  
**Insulation displacement**  
**Female plugs**



Body UL94 V0  
 \*\*: Caution, maximum current of the device set is limited by the device with the lowest current rating.

**Characteristics**

	Wire size	
	IEC	UL/CSA
Rigid	0,34 - 1,5 mm <sup>2*</sup>	22 - 16 AWG
Flexible	0,34 - 1,5 mm <sup>2*</sup>	22 - 16 AWG

\*1 or 2 wires (same wire size) per ADO jaw

Rated voltage		
V	~	500
	=	500
		300 V

Rated current at 20° C		
A	16**	15**

Rated wire size	
	1,5 mm <sup>2</sup> 16 AWG

**Other characteristics**

Pollution degree	Wire stripping length	Recomm. screwdriver	Recomm. torque	Protection
3				IP 20 NEMA 1

Max. working temperature : 100 °C  
 Insulation resistance : ≥ 100 MΩ

**Approvals**



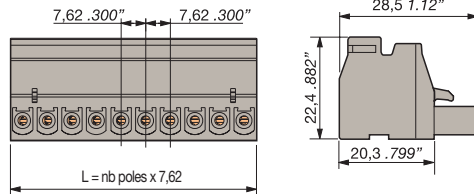
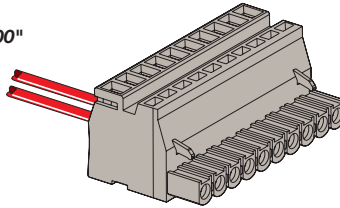
**Accessories**

1	6 coding peg kit	
2	Cable clamp plug	Grey, 3 to 7 poles
3	Cable clamp plug	Grey, 8 to 16 poles
4	Manual tool	
5	Semi-automatic tool	
6	Pneumatic tool	
7	DIN 3 foot (1)	black
8	DIN 2 foot (1)	black
9	Strip marking	

**L 266 200 11**

Female plugs

Spacing 7.62 mm .300"



**Part number**

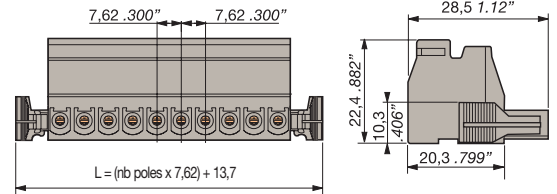
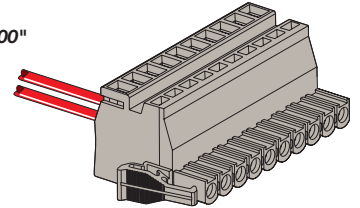
Spacing 7.62 mm	Grey body	N. Poles	2 to 24 poles
2	1SSA 266 202 R1100		15.24
3	1SSA 266 203 R1100		22.86
4	1SSA 266 204 R1100		30.48
5	1SSA 266 205 R1100		38.10
6	1SSA 266 206 R1100		45.72
10	1SSA 266 210 R1100		76.20

Consult us for pole numbers :  
 7, 8, 9 and more than 10

**L 266 200 21**

Female plugs with brackets

Spacing 7.62 mm .300"

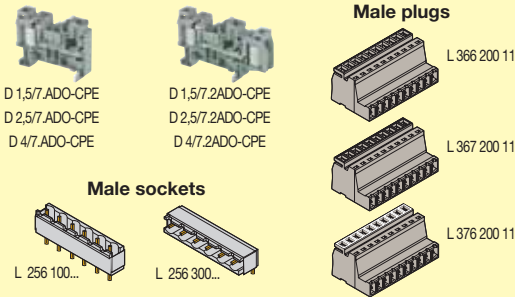


**Part number**

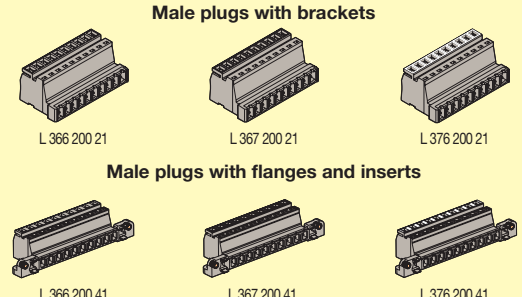
Spacing 7.62 mm	Grey body	N. Poles	2 to 24 poles
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Consult us

**Compatible products :**



**Compatible products :**



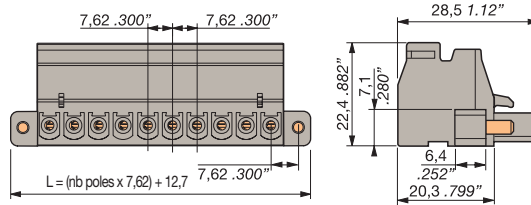
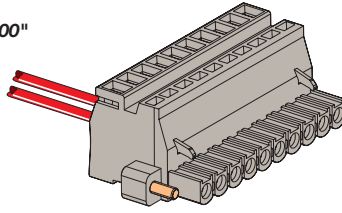
(1) Accessories for mounting of male and female plugs on DIN 3 or DIN 2 rail.

**Pluggable terminal blocks**  
**Insulation displacement**  
**Female plugs**



**L 266 200 31**  
**Female plugs with flanges and screws**

Spacing 7.62 mm .300"



Body UL94 V0  
**\*\* : Caution, maximum current of the device set is limited by the device with the lowest current rating.**

**Characteristics**

Wire size		
	IEC	UL/CSA
Rigid	0,34 - 1,5 mm <sup>2*</sup>	22 - 16 AWG
Flexible	0,34 - 1,5 mm <sup>2*</sup>	22 - 16 AWG

\*1 or 2 wires (same wire size) per ADO jaw

Rated voltage		
V	~	500
	=	500
		300 V

Rated current at 20° C		
A	16**	15**

Rated wire size		
	1,5 mm <sup>2</sup>	16 AWG

**Other characteristics**

Pollution degree	Wire stripping length	Recomm. screwdriver	Recomm. torque	Protection
3				IP 20 NEMA 1

Max. working temperature : 100 °C  
 Insulation resistance : ≥ 100 MΩ

**Approvals**



**Accessories**

1	6 coding peg kit	
2	Cable clamp plug	Grey, 3 to 7 poles
3	Cable clamp plug	Grey, 8 to 16 poles
4	Manual tool	
5	Semi-automatic tool	
6	Pneumatic tool	
7	DIN 3 foot (1)	black
8	DIN 2 foot (1)	black
9	Strip marking	

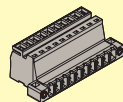
**Part number**  
 Spacing 7.62 mm    Grey body  
 N. Poles                    2 to 24 poles

**Part number**

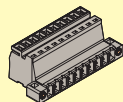
**Consult us**

**Compatible products :**

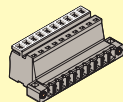
**Male plugs with flanges and inserts**



L 366 200 31



L 367 200 31



L 376 200 31

(1) Accessories for mounting of male and female plugs on DIN 3 or DIN 2 rail.

**Pluggable terminal blocks**  
**Insulation displacement**  
**Female plugs**



Body UL94 V0  
 \*\*: Caution, maximum current of the device set is limited by the device with the lowest current rating.

**Characteristics**

	Wire size	
	IEC	UL/CSA
Rigid	1 - 2,5 mm <sup>2</sup> *	16 - 14 AWG
Flexible	1 - 2,5 mm <sup>2</sup> *	16 - 14 AWG

\*1 or 2 wires (same wire size) per ADO jaw

V	Rated voltage	
	~	=
	500	300
	500	

Rated current at 20° C		
A	24**	15**

Rated wire size	
	2,5 mm <sup>2</sup> 14 AWG

**Other characteristics**

Pollution degree	Wire stripping length	Recomm. screwdriver	Recomm. torque	Protection
3				IP 20 NEMA 1

Max. working temperature : 100 °C  
 Insulation resistance : ≥ 100 MΩ

**Approvals**



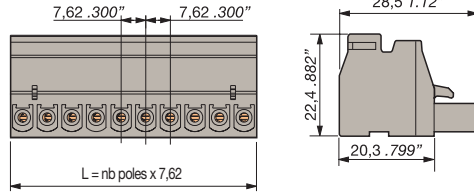
**Accessories**

1	6 coding peg kit	
2	Cable clamp plug	Grey, 3 to 7 poles
3	Cable clamp plug	Grey, 8 to 16 poles
4	Manual tool	
5	Semi-automatic tool	
6	Pneumatic tool	
7	DIN 3 foot (1)	black
8	DIN 2 foot (1)	black
9	Strip marking	

**L 267 200 11**  
**Female plugs**

Spacing 7.62 mm .300"

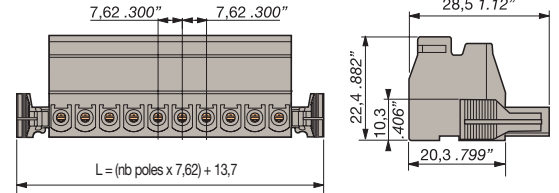
Black marking to identify wire size range 1-2,5 mm<sup>2</sup>



**L 267 200 21**  
**Female plugs with brackets**

Spacing 7.62 mm .300"

Black marking to identify wire size range 1-2,5 mm<sup>2</sup>



Part number		
Spacing 7.62 mm	Grey body	
N. Poles	2 to 24 poles	
2	1SSA 267 202 R1100	15.24
3	1SSA 267 203 R1100	22.86
4	1SSA 267 204 R1100	30.48
5	1SSA 267 205 R1100	38.10
6	1SSA 267 206 R1100	45.72
10	1SSA 267 210 R1100	76.20

Consult us for pole numbers :  
 7, 8, 9 and more than 10

Part number		
Spacing 7.62 mm	Grey body	
N. Poles	2 to 24 poles	

Consult us

**Compatible products :**

<b>Male plugs</b>			<b>Male plugs with brackets</b>		
D 1,5/7 ADO-CPE	D 2,5/7.2 ADO-CPE	L 366 200 11	L 366 200 21	L 367 200 21	L 376 200 21
D 4/7 ADO-CPE	D 4/7.2 ADO-CPE	L 367 200 11			
<b>Male sockets</b>			<b>Male plugs with flanges and inserts</b>		
L 256 100...	L 256 300...	L 376 200 11	L 366 200 41	L 367 200 41	L 376 200 41



Type	Part number	Type	Part number
COCF	1SNA 199 320 R0400	COCF	1SNA 199 320 R0400
PT1 7,62 mm	1SSA 299 253 R0000	PT1 7,62 mm	1SSA 299 253 R0000
PT2 7,62 mm	1SSA 299 254 R0000	PT2 7,62 mm	1SSA 299 254 R0000
OUMAD	1SNA 179 466 R0600	OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400	OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100	OUTAD	1SNA 205 710 R1100
	1SSS 299 190 R2200		1SSS 299 190 R2200
	1SSS 299 191 R2200		1SSS 299 191 R2200
RB-12W7	1SNA 290 455 R0700	RB-12W7	1SNA 290 455 R0700

(1) Accessories for mounting of male and female plugs on DIN 3 or DIN 2 rail.

**Pluggable terminal blocks**  
**Insulation displacement**  
**Female plugs**



Body UL94 V0  
 \*\*: Caution, maximum current of the device set is limited by the device with the lowest current rating.

**Characteristics**

Wire size		
	IEC	UL/CSA
Rigid	1 - 2,5 mm <sup>2</sup> *	16-14 AWG
Flexible	1 - 2,5 mm <sup>2</sup> *	16-14 AWG

\*1 or 2 wires (same wire size) per ADO jaw

Rated voltage		
V	~	=
	500	300
	500	

Rated current at 20° C		
A	24**	15**

Rated wire size	
	2,5 mm <sup>2</sup> 14 AWG

**Other characteristics**

Pollution degree	Wire stripping length	Recomm. screwdriver	Recomm. torque	Protection
3				IP 20 NEMA 1

Max. working temperature : 100 °C  
 Insulation resistance : ≥ 100 MΩ

**Approvals**

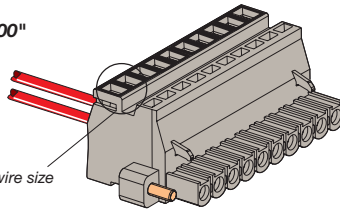


**Accessories**

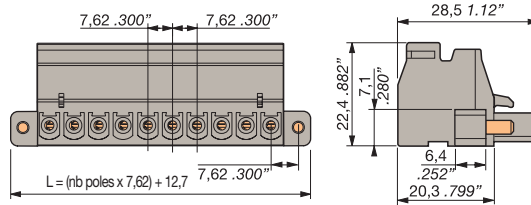
	Type	Part number
1	6 coding peg kit	COCF
2	Cable clamp plug Grey, 3 to 7 poles	PT1 7,62 mm
3	Cable clamp plug Grey, 8 to 16 poles	PT2 7,62 mm
4	Manual tool	OUMAD
5	Semi-automatic tool	OUPAD
6	Pneumatic tool	OUTAD
7	DIN 3 foot (1) black	
8	DIN 2 foot (1) black	
9	Strip marking	RB-12W7

**L 267 200 31**  
**Female plugs with flanges and screws**

Spacing 7.62 mm .300"



Black marking to identify wire size range 1-2,5 mm<sup>2</sup>



**Part number**

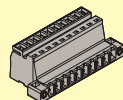
**Part number**

Spacing 7.62 mm Grey body  
 N. Poles 2 to 24 poles

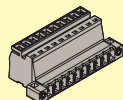
**Consult us**

**Compatible products :**

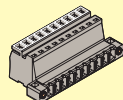
**Male plugs with flanges and inserts**



L 366 200 31



L 367 200 31



L 376 200 31

(1) Accessories for mounting of male and female plugs on DIN 3 or DIN 2 rail.

**Pluggable terminal blocks**  
**Insulation displacement**  
**Female plugs**



Body UL94 V0  
 \*\*: Caution, maximum current of the device set is limited by the device with the lowest current rating.

**Characteristics**

	Wire size	
	IEC	UL/CSA
Rigid	4 mm <sup>2</sup> *	14 - 12 AWG
Flexible	4 mm <sup>2</sup> *	14 - 12 AWG

\*1 wire per ADO jaw

V	Rated voltage	
	~	=
	500	300
	500	

A	Rated current at 20° C	
	24**	18**

Rated wire size	
4 mm <sup>2</sup>	12 AWG

**Other characteristics**

Pollution degree	Wire stripping length	Recomm. screwdriver	Recomm. torque	Protection
3				IP 20 NEMA 1

Max. working temperature : 100 °C  
 Insulation resistance : ≥ 100 MΩ

**Approvals**



**Accessories**

	Type	Part number
1	6 coding peg kit	COCF
2	Cable clamp plug Grey, 3 to 7 poles	PT1 7,62 mm
3	Cable clamp plug Grey, 8 to 16 poles	PT2 7,62 mm
4	Manual tool	OUMAD
5	Semi-automatic tool	OUPAD
6	Pneumatic tool	OUTAD
7	DIN 3 foot (1) black	1SSS 299 190 R2200
8	DIN 2 foot (1) black	1SSS 299 191 R2200
9	Strip marking	RB-12W7

Type	Part number
COCF	1SNA 199 320 R0400
PT1 7,62 mm	1SSA 299 253 R0000
PT2 7,62 mm	1SSA 299 254 R0000
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
	1SSS 299 190 R2200
	1SSS 299 191 R2200
RB-12W7	1SNA 290 455 R0700

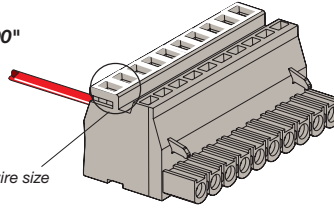
Type	Part number
COCF	1SNA 199 320 R0400
PT1 7,62 mm	1SSA 299 253 R0000
PT2 7,62 mm	1SSA 299 254 R0000
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
	1SSS 299 190 R2200
	1SSS 299 191 R2200
RB-12W7	1SNA 290 455 R0700

(1) Accessories for mounting of male and female plugs on DIN 3 or DIN 2 rail.

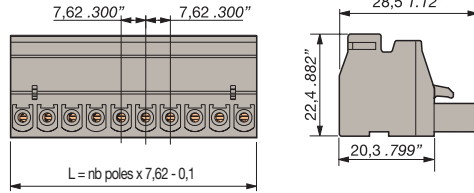
**L 276 200 11**

**Female plugs**

Spacing 7.62 mm .300"



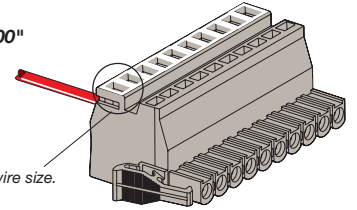
White marking to identify wire size  
 4 mm<sup>2</sup>



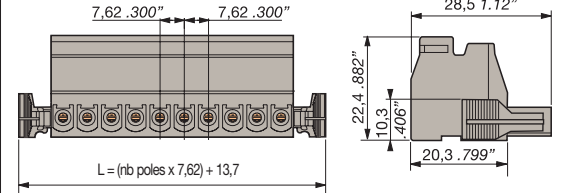
**L 276 200 21**

**Female plugs with brackets**

Spacing 7.62 mm .300"



White marking to identify wire size.



**Part number**

Spacing 7.62 mm	Grey body	N. Poles	2 to 24 poles
2	1SSA 276 202 R1100		15.24
3	1SSA 276 203 R1100		22.86
4	1SSA 276 204 R1100		30.48
5	1SSA 276 205 R1100		38.10
6	1SSA 276 206 R1100		45.72

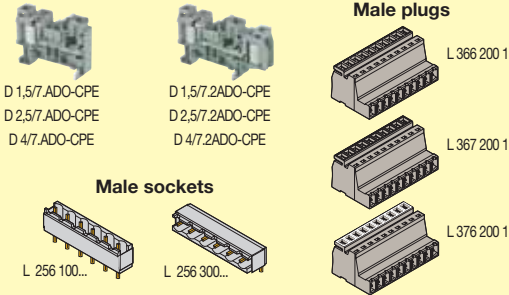
Consult us for pole numbers above 6

**Part number**

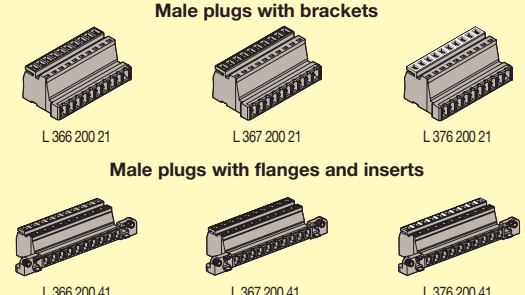
Spacing 7.62 mm	Grey body	N. Poles	2 to 24 poles
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Consult us

**Compatible products :**



**Compatible products :**





**Pluggable terminal blocks**  
**Insulation displacement**  
**Female plugs**



Body UL94 V0  
 \*\*: Caution, maximum current of the device set is limited by the device with the lowest current rating.

**Characteristics**

Wire size		
	IEC	UL/CSA
Rigid	4 mm <sup>2</sup> *	14 - 12 AWG
Flexible	4 mm <sup>2</sup> *	14 - 12 AWG
*1 wire per ADO jaw		
Rated voltage		
V	~ 500	300
	= 500	
Rated current at 20° C		
A	24**	18**
Rated wire size		
	4 mm <sup>2</sup>	12 AWG

**Other characteristics**

Pollution degree	Wire stripping length	Recomm. screwdriver	Recomm. torque	Protection
3				IP 20 NEMA 1
Max. working temperature :				100 °C
Insulation resistance :				≥ 100 MΩ

**Approvals**



**Accessories**

**Type**

**Part number**

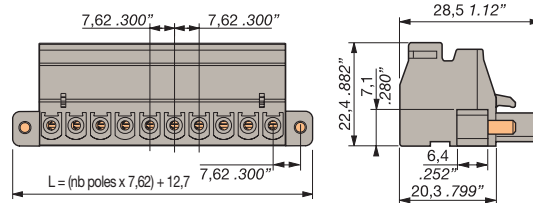
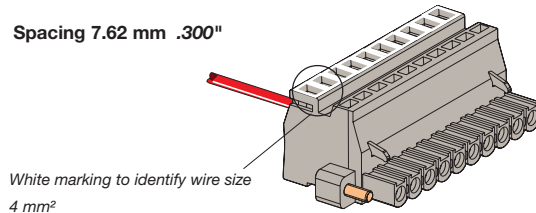
**Type**

**Part number**

1	6 coding peg kit	COCF	1SNA 199 320 R0400		
2	Cable clamp plug Grey, 3 to 7 poles	PT1 7,62 mm	1SSA 299 253 R0000		
3	Cable clamp plug Grey, 8 to 16 poles	PT2 7,62 mm	1SSA 299 254 R0000		
4	Manual tool	OUMAD	1SNA 179 466 R0600		
5	Semi-automatic tool	OUPAD	1SNA 178 944 R0400		
6	Pneumatic tool	OUTAD	1SNA 205 710 R1100		
7	DIN 3 foot (1) black		1SSS 299 190 R2200		
8	DIN 2 foot (1) black		1SSS 299 191 R2200		
9	Strip marking	RB-12W7	1SNA 290 455 R0700		

**L 276 200 31**  
**Female plugs with flanges and screws**

Spacing 7.62 mm .300"



**Part number**

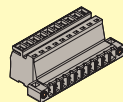
**Part number**

Spacing 7.62 mm Grey body  
 N. Poles 2 to 24 poles

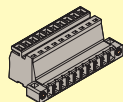
**Consult us**

**Compatible products :**

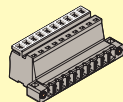
**Male plugs with flanges and inserts**



L 366 200 31



L 367 200 31



L 376 200 31

(1) Accessories for mounting of male and female plugs on DIN 3 or DIN 2 rail.

**Pluggable terminal blocks**  
**Insulation displacement**  
**Male plugs**



Body UL94 V0  
 \*\*: Caution, maximum current of the device set is limited by the device with the lowest current rating.

**Characteristics**

	Wire size	
	IEC	UL/CSA
Rigid	0,34 - 1,5 mm <sup>2</sup>	22 - 16 AWG
Flexible	0,34 - 1,5 mm <sup>2</sup>	22 - 16 AWG

\*1 or 2 wires (same wire size) per ADO jaw

V	Rated voltage	
	~	=
	500	300
	500	

A	Rated current at 20° C	
	16**	15**

Rated wire size	
1,5 mm <sup>2</sup>	16 AWG

**Other characteristics**

Pollution degree	Wire stripping length	Recomm. screwdriver	Recomm. torque	Protection
3				IP 20 NEMA 1

Max. working temperature : 100 °C  
 Insulation resistance : ≥ 100 MΩ

**Approvals**

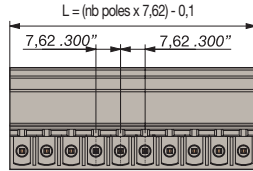
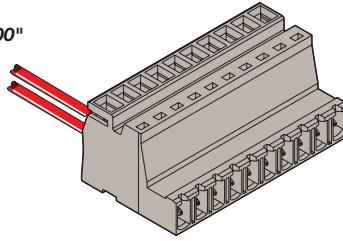


**Accessories**

1	Cable clamp plug	Grey, 3 to 7 poles
2	Cable clamp plug	Grey, 8 to 16 poles
3	Manual tool	
4	Semi-automatic tool	
5	Pneumatic tool	
6	DIN 3 foot (1)	black
7	DIN 2 foot (1)	black
8	Strip marking	

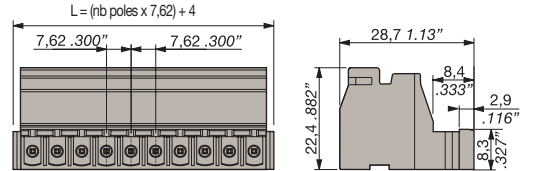
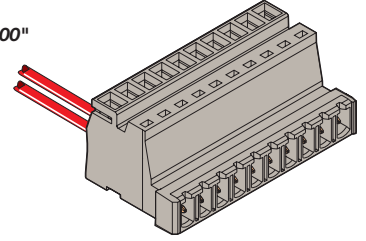
**L 366 200 11**  
**Male plugs**

Spacing 7.62 mm .300"



**L 366 200 21**  
**Male plugs with brackets**

Spacing 7.62 mm .300"



**Part number**

Spacing 7.62 mm	Grey body	
N. Poles	2 to 24 poles	
2	1SSA 366 202 R1100	15.14
3	1SSA 366 203 R1100	22.76
4	1SSA 366 204 R1100	30.38
5	1SSA 366 205 R1100	38.00
6	1SSA 366 206 R1100	45.62
10	1SSA 366 210 R1100	76.10

**Consult us for pole numbers :  
 7, 8, 9 and more than 10**

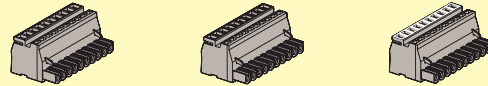
**Part number**

Spacing 7.62 mm	Grey body	
N. Poles	2 to 24 poles	

**Consult us**

**Compatible products :**

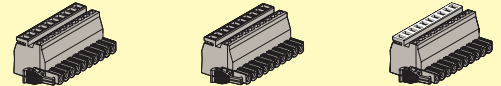
**Female plugs**



*for mounting as extension connector*

**Compatible products :**

**Female plugs with brackets**



*for mounting as extension connector with locking*

Type	Part number
PT1 7,62 mm	1SSA 299 253 R0000
PT2 7,62 mm	1SSA 299 254 R0000
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
	1SSS 299 190 R2200
	1SSS 299 191 R2200
RB-12W7	1SNA 290 455 R0700

Type	Part number
PT1 7,62 mm	1SSA 299 253 R0000
PT2 7,62 mm	1SSA 299 254 R0000
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
	1SSS 299 190 R2200
	1SSS 299 191 R2200
RB-12W7	1SNA 290 455 R0700

(1) Accessories for mounting of male and female plugs on DIN 3 or DIN 2 rail.

**Pluggable terminal blocks**  
**Insulation displacement**  
**Male plugs**



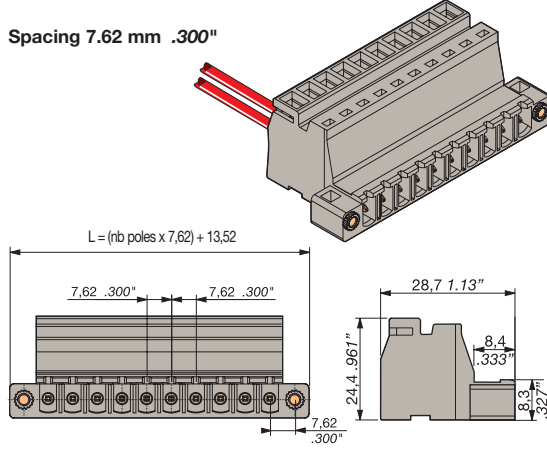
Body UL94 V0  
 \*\*: Caution, maximum current of the device set is limited by the device with the lowest current rating.

**Characteristics**

Wire size		IEC	UL/CSA
Solid		0,34 - 1,5 mm <sup>2*</sup>	22 - 16 AWG
Flexible		0,34 - 1,5 mm <sup>2*</sup>	22 - 16 AWG
*1 or 2 wires (same wire size) per ADO jaw			
Rated voltage			
V	~	500	300
	=	500	
Rated current at 20° C			
A		16**	15**
Rated wire size			
		1,5 mm <sup>2</sup>	16 AWG
Other characteristics			
Pollution degree	Wire stripping length	Recomm. screwdriver	Recomm. torque
3			
			Protection
			IP 20 NEMA 1
Max. working temperature :			100 °C
Insulation resistance :			≥ 100 MΩ

**L 366 200 31**  
**Male plugs with flanges and inserts**

Spacing 7.62 mm .300"



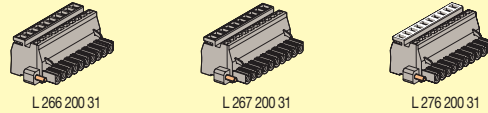
**Part number**

Spacing 7.62 mm Grey body  
 N. Poles 2 to 24 poles

**Consult us**

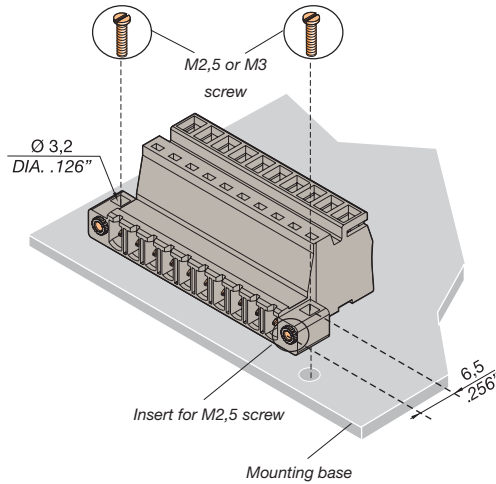
**Compatible products :**

**Female plugs with flanges and inserts**

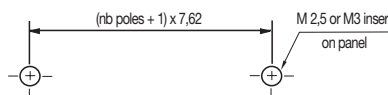


for mounting as extension connector with screw locking or plate mounting with locking

**Base mounting**

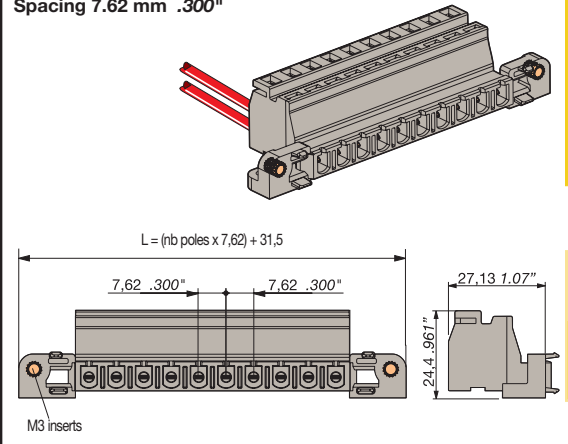


**Drilling for base mounting**



**L 366 200 41**  
**Male plugs with flanges and inserts**

Spacing 7.62 mm .300"



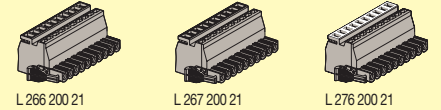
**Part number**

Spacing 7.62 mm Grey body  
 N. Poles 2 to 24 poles

**Consult us**

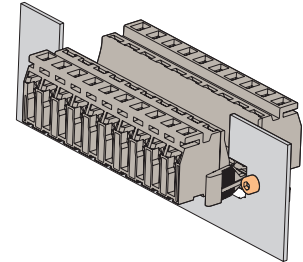
**Compatible products :**

Insulation displacement female plugs with brackets

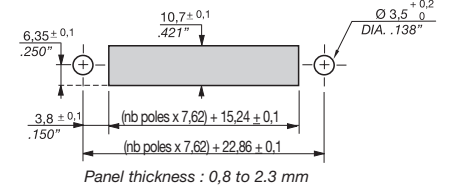


for panel feed-through mounting, with locking mechanism

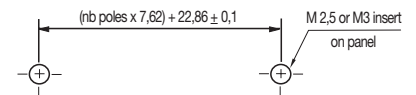
**Panel feed-through mounting or base mounting**



**Drilling for panel feed-through mounting**



**Drilling for base mounting**



**Accessories**

1	Cable clamp plug	Grey, 3 to 7 poles
2	Cable clamp plug	Grey, 8 to 16 poles
3	Manual tool	
4	Semi-automatic tool	
5	Pneumatic tool	
6	Strip marking	

UL US

Type	Part number
PT1 7,62 mm	1SSA 299 253 R0000
PT2 7,62 mm	1SSA 299 254 R0000
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
RB-12W7	1SNA 290 455 R0700

UL US

Type	Part number
PT1 7,62 mm	1SSA 299 253 R0000
PT2 7,62 mm	1SSA 299 254 R0000
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
RB-12W7	1SNA 290 455 R0700

**Pluggable terminal blocks**  
**Insulation displacement**  
**Male plugs**



Body UL94 V0  
 \*\*: Caution, maximum current of the device set is limited by the device with the lowest current rating.

**Characteristics**

	Wire size	
	IEC	UL/CSA
Rigid	1 - 2,5 mm <sup>2</sup> *	16 - 14 AWG
Flexible	1 - 2,5 mm <sup>2</sup> *	16 - 14 AWG

\*1 or 2 wires (same wire size) per ADO jaw

V	Rated voltage	
	~	=
	500	300
	500	

A	Rated current at 20° C	
	~	=
	22**	15**

Rated wire size	
	2,5 mm <sup>2</sup> 14 AWG

**Other characteristics**

Pollution degree	Wire stripping length	Recomm. screwdriver	Recomm. torque	Protection
3				IP 20 NEMA 1

Max. working temperature : 100 °C  
 Insulation resistance : ≥ 100 MΩ

**Approvals**



**Accessories**

1	Cable clamp plug	Grey, 3 to 7 poles
2	Cable clamp plug	Grey, 8 to 16 poles
3	Manual tool	
4	Semi-automatic tool	
5	Pneumatic tool	
6	DIN 3 foot (1)	black
7	DIN 2 foot (1)	black
8	Strip marking	

Type	Part number
PT1 7,62 mm	1SSA 299 253 R0000
PT2 7,62 mm	1SSA 299 254 R0000
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
	1SSS 299 190 R2200
	1SSS 299 191 R2200
RB-12W7	1SNA 290 455 R0700

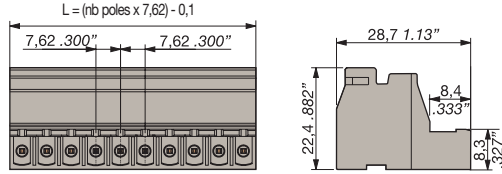
Type	Part number
PT1 7,62 mm	1SSA 299 253 R0000
PT2 7,62 mm	1SSA 299 254 R0000
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
	1SSS 299 190 R2200
	1SSS 299 191 R2200
RB-12W7	1SNA 290 455 R0700

(1) Accessories for mounting of male and female plugs on DIN 3 or DIN 2 rail.

**L 367 200 11**  
**Male plugs**

Spacing 7.62 mm .300"

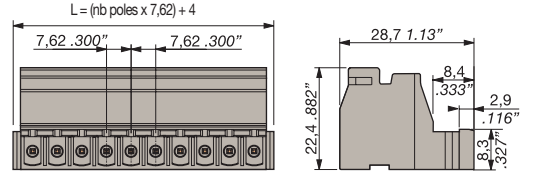
Black marking to identify wire size range 1-2,5 mm<sup>2</sup>



**L 367 200 21**  
**Male plugs with brackets**

Spacing 7.62 mm .300"

Black marking to identify wire size range 1-2,5 mm<sup>2</sup>



**Part number**

Spacing 7.62 mm	Grey body	N. Poles	2 to 24 poles
2	1SSA 367 202 R1100		15.14
3	1SSA 367 203 R1100		22.76
4	1SSA 367 204 R1100		30.38
5	1SSA 367 205 R1100		38.00
6	1SSA 367 206 R1100		45.62
10	1SSA 367 210 R1100		76.10

**Consult us for pole numbers : 7, 8, 9 and more than 10**

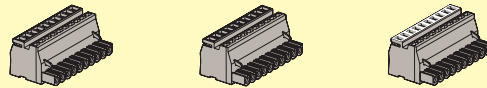
**Part number**

Spacing 7.62 mm	Grey body	N. Poles	2 to 24 poles
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**Consult us**

**Compatible products :**

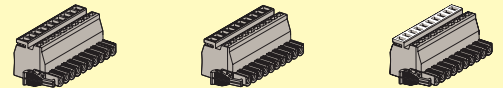
**Female plugs**



for mounting as extension connector

**Compatible products :**

**Female plugs with brackets**



for mounting as extension connector with locking

**Pluggable terminal blocks**  
**Insulation displacement**  
**Male plugs**



Body UL94 V0  
 \*\*: Caution, maximum current of the device set is limited by the device with the lowest current rating.

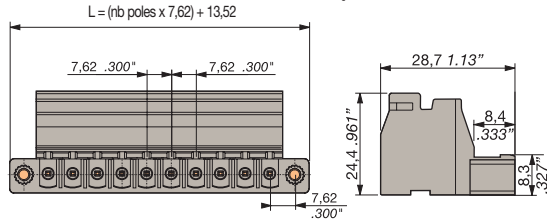
**Characteristics**

Wire size		IEC	UL/CSA
Solid		1 - 2,5 mm <sup>2</sup> *	16 - 14 AWG
Flexible		1 - 2,5 mm <sup>2</sup> *	16 - 14 AWG
*1 or 2 wires (same wire size) per ADO jaw			
Rated voltage			
V	~	500	300
	=	500	
Rated current at 20° C			
A		22**	15**
Rated wire size			
		2,5 mm <sup>2</sup>	14 AWG
Other characteristics			
Pollution degree	Wire stripping length	Recomm. screwdriver	Recomm. torque
3			
Protection			IP 20 NEMA 1
Max. working temperature :			100 °C
Insulation resistance :			≥ 100 MΩ

**L 367 200 31**  
**Male plugs with flanges and inserts**

Spacing 7.62 mm .300"

Black marking to identify wire size range 1-2,5 mm<sup>2</sup>



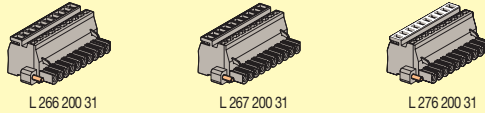
**Part number**

Spacing 7.62 mm Grey body  
 N. Poles 2 to 24 poles

**Consult us**

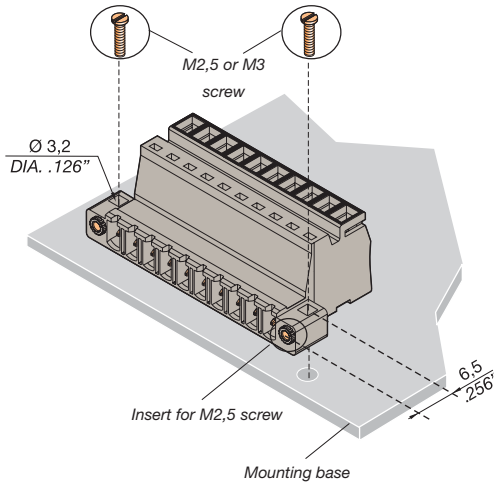
**Compatible products :**

**Female plugs with flanges and inserts**

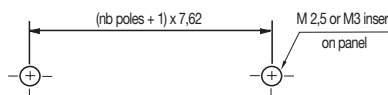


for mounting as extension connector with screw locking or plate mounting with locking

**Base mounting**



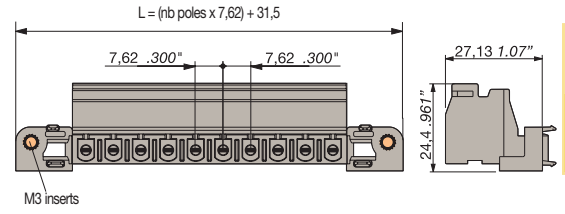
**Drilling for base mounting**



**L 367 200 41**  
**Male plugs with flanges and inserts**

Spacing 7.62 mm .300"

Black marking to identify wire size



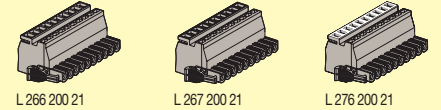
**Part number**

Spacing 7.62 mm Grey body  
 N. Poles 2 to 24 poles

**Consult us**

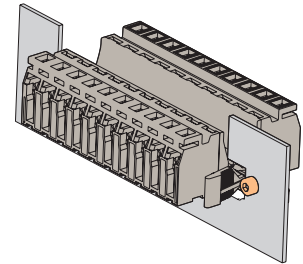
**Compatible products :**

Insulation displacement female plugs with brackets

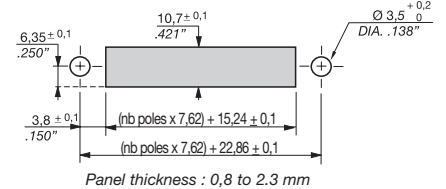


for panel feed-through mounting, with locking mechanism

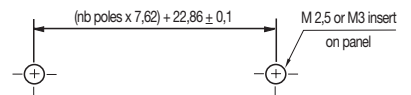
**Panel feed-through mounting or base mounting**



**Drilling for panel feed-through mounting**



**Drilling for base mounting**



**Accessories**

1	Cable clamp plug	Grey, 3 to 7 poles
2	Cable clamp plug	Grey, 8 to 16 poles
3	Manual tool	
4	Semi-automatic tool	
5	Pneumatic tool	
6	Strip marking	

Type	Part number
PT1 7,62 mm	1SSA 299 253 R0000
PT2 7,62 mm	1SSA 299 254 R0000
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
RB-12W7	1SNA 290 455 R0700

Type	Part number
PT1 7,62 mm	1SSA 299 253 R0000
PT2 7,62 mm	1SSA 299 254 R0000
OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100
RB-12W7	1SNA 290 455 R0700

**Pluggable terminal blocks**  
**Insulation displacement**  
**Male plugs**



Body UL94 V0  
**\*\* : Caution, maximum current of the device set is limited by the device with the lowest current rating.**

**Characteristics**

	Wire size	
	IEC	UL/CSA
Rigid	4 mm <sup>2</sup> *	14 - 12 AWG
Flexible	4 mm <sup>2</sup> *	14 - 12 AWG

\*1 wire per ADO jaw

V	Rated voltage	
	~	=
	500	300
	500	

A	Rated current at 20° C	
	~	=
	22**	18**

Rated wire size	
	4 mm <sup>2</sup> 12 AWG

**Other characteristics**

Wire stripping length	Recomm. screwdriver	Recomm. torque	Protection
			IP 20 NEMA 1
Max. working temperature :			100 °C
Insulation resistance :			≥ 100 MΩ

Approvals

**Accessories**

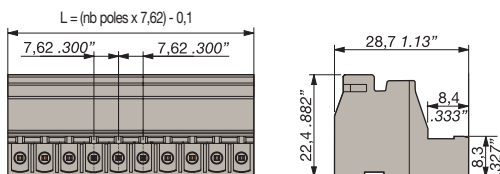
1	Cable clamp plug	Grey, 3 to 7 poles
2	Cable clamp plug	Grey, 8 to 16 poles
3	Manual tool	
4	Semi-automatic tool	
5	Pneumatic tool	
6	DIN 3 foot	black
7	DIN 2 foot	black
8	Strip marking	

**L 376 200 11**

Male plugs

Spacing 7.62 mm .300"

White marking to identify wire size  
4 mm<sup>2</sup>



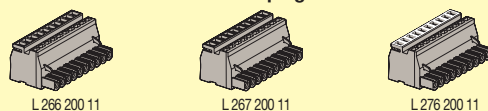
**Part number**

Spacing 7.62 mm	Grey body	N. Poles	2 to 24 poles
2	1SSA 376 202 R1100		15.14
3	1SSA 376 203 R1100		22.76
4	1SSA 376 204 R1100		30.38
5	1SSA 376 205 R1100		38.00
6	1SSA 376 206 R1100		45.62

**Consult us for pole numbers above 6**

**Compatible products :**

Female plugs



for mounting as extension connector

**Compatible products :**

Female plugs with brackets



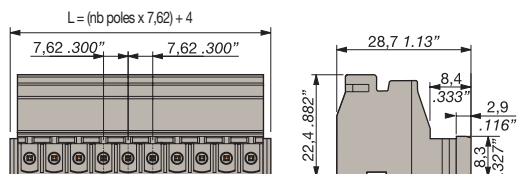
for mounting as extension connector with locking

**L 376 200 21**

Male plugs with brackets

Spacing 7.62 mm .300"

White marking to identify wire size  
4 mm<sup>2</sup>



**Part number**

Spacing 7.62 mm	Grey body	N. Poles	2 to 24 poles
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**Consult us**

Approvals

Type	Part number	Type	Part number
PT1 7,62 mm	1SSA 299 253 R0000	PT1 7,62 mm	1SSA 299 253 R0000
PT2 7,62 mm	1SSA 299 254 R0000	PT2 7,62 mm	1SSA 299 254 R0000
OUMAD	1SNA 179 466 R0600	OUMAD	1SNA 179 466 R0600
OUPAD	1SNA 178 944 R0400	OUPAD	1SNA 178 944 R0400
OUTAD	1SNA 205 710 R1100	OUTAD	1SNA 205 710 R1100
	1SSS 299 190 R2200		1SSS 299 190 R2200
	1SSS 299 191 R2200		1SSS 299 191 R2200
RB-12W7	1SNA 290 455 R0700	RB-12W7	1SNA 290 455 R0700

(1) Accessories for mounting of male and female plugs on DIN 3 or DIN 2 rail.

**Pluggable terminal blocks**  
**Insulation displacement**  
**Male plugs**



Body UL94 V0  
 \*\*: Caution, maximum current of the device set is limited by the device with the lowest current rating.

**Characteristics**

	Wire size	
	IEC	UL/CSA
Solid	4 mm <sup>2</sup> *	14 - 12 AWG
Flexible	4 mm <sup>2</sup> *	14 - 12 AWG

\*1 wire per ADO jaw

V	Rated voltage	
	~	=
	500	300
	500	

A	Rated current at 20° C	
	~	=
	22**	18**

Rated wire size	
4 mm <sup>2</sup>	12 AWG

**Other characteristics**

Pollution degree	Wire stripping length	Recomm. screwdriver	Recomm. Torque	Protection
3				IP 20 NEMA 1

Max. working temperature : 100 °C  
 Insulation resistance : ≥ 100 MΩ

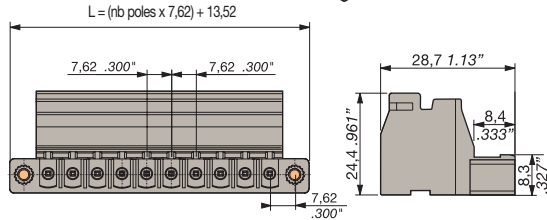
**Accessories**

	Type	Part number
1	Cable clamp plug Grey, 3 to 7 pole	PT1 7,62 mm
2	Cable clamp plug Grey, 8 to 16 pole	PT2 7,62 mm
3	Manual tool	OUMAD
4	Semi-automatic tool	OUPAD
5	Pneumatic tool	OUTAD
6	Strip marking	RB-12W7

**L 376 200 31**  
**Male plugs with flanges and inserts**

Spacing 7.62 mm .300"

White marking to identify wire size  
 4 mm<sup>2</sup>



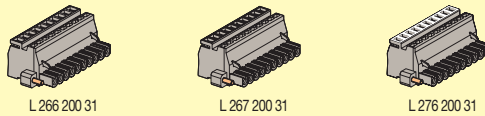
**Part number**

Spacing 7.62 mm Grey body  
 N. Poles 2 to 24 poles

**Consult us**

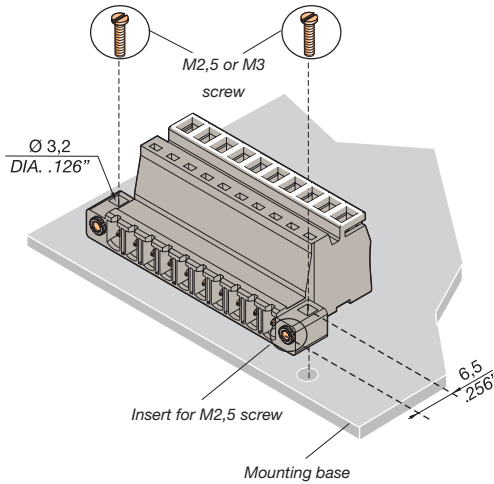
**Compatible products :**

**Female plugs with flanges and inserts**

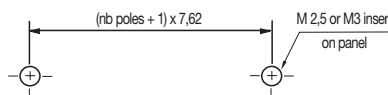


for mounting as extension connector with screw locking or plate mounting with locking

**Base mounting**



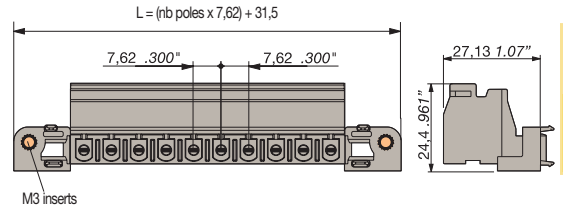
**Drilling for base mounting**



**L 376 200 41**  
**Male plugs with flanges and inserts**

Spacing 7.62 mm .300"

White marking to identify wire size

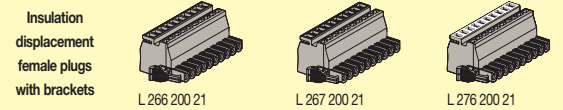


**Part number**

Spacing 7.62 mm Grey body  
 N. Poles 2 to 24 poles

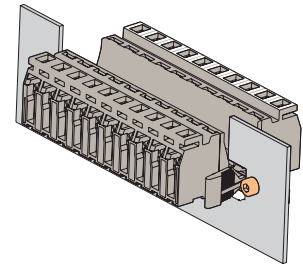
**Consult us**

**Compatible products :**

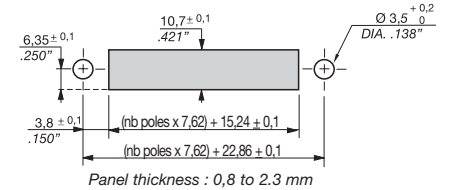


for panel feed-through mounting, with locking mechanism

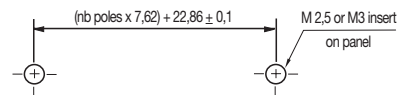
**Panel feed-through mounting or base mounting**



**Drilling for panel feed-through mounting**

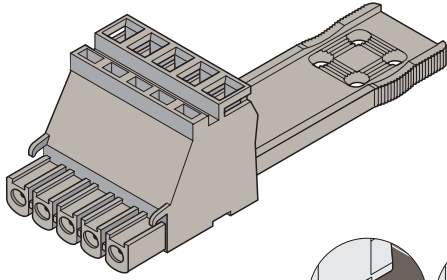


**Drilling for base mounting**

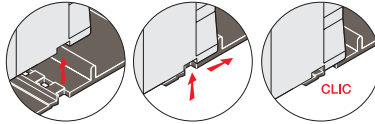
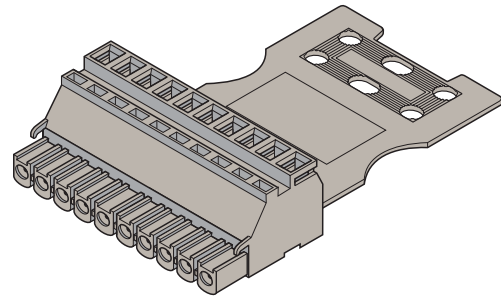


## Mounting of cable clamp plugs on ADO System® plugs spacing 7.62 mm

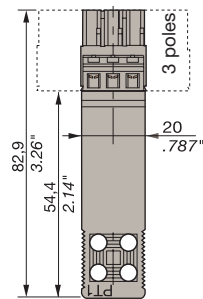
Version with PT1 cable clamp



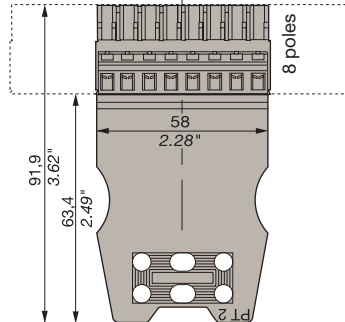
Version with PT2 cable clamp



PT1 cable clamp  
can be used on  
products from  
3 to 7 poles



P/N : 1SSA 299 253 R0000



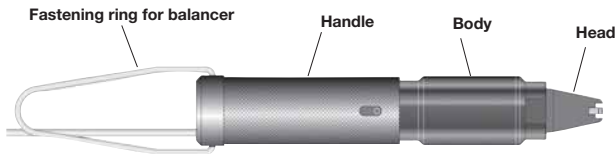
P/N : 1SSA 299 254 R0000

PT2 cable clamp  
can be used on  
products from  
8 to 16 poles



## TOOLS PRESENTATION

### PNEUMATIC TOOL KIT



**OUTAD** 1SNA 205 710 R1100

This kit includes extraction tool EXAD2.

Extraction ferrule

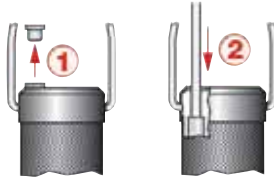


**EXAD2** 1SNA 205 721 R0000

### Pneumatic tool installation

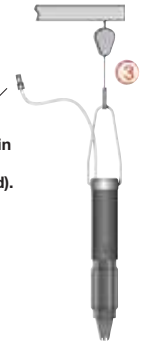
#### Technical information

- Energy : lubricated compressed air.
- Air pressure : 6 ±0.5 bars.
- Lubrication BY F.R.L. (Filter, Regulator, Lubricator) (1 oil drop every 20 operations)
- Compressed-air supply : standard pipe DIA. 4 mm.
- Connection of the pipe to the tool by quick release coupling (integrated into the tool).
- Min. nb of operations : 1 000 000
- Dimensions : Lg : 215 mm x DIA. 37 mm.
- Weight : 575 g.



- ① Remove the protective plug from the compressed air inlet.
- ② Insert the clean cut pipe without special preparation into the dedicated hole and push in fully.
- ③ Hang the toll on a balancer.

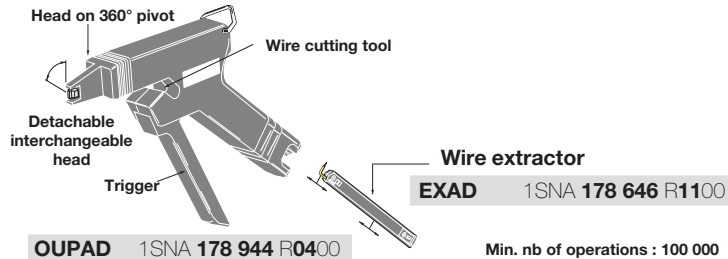
Quick release coupling in accordance with your installation (not provided).



For more information, contact your local agent.

Warranty of the tool : 1 year in standard use (except disassembling of the tool's body by customer).

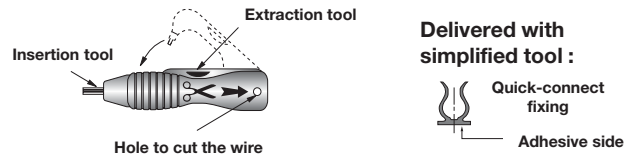
### SEMI-AUTOMATIC TOOL



**OUPAD** 1SNA 178 944 R0400

Min. nb of operations : 100 000

### SIMPLIFIED TOOL



**OUMAD** 1SNA 179 466 R0600

Min. nb of operations : 500

## INSTRUCTION FOR USE

Allows connection of two wires of the same gage and type (solid or stranded) one by one.

### A - Connection of the first wire

#### Pneumatic tool :

- ① Introduce the wire.
- ② Apply the tool head to the upper opening without forcing its self-alignment device (the tool must be at right angle with the block).
- ③ Operate the handle directly in line with the tool to release a connect cycle.



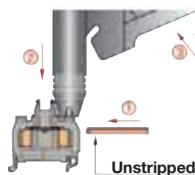
**Safety :**  
This tool must be operated only when positioned on the terminal block.



Unstripped wire

#### Semi-automatic tool :

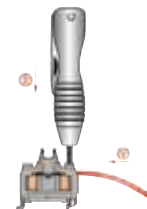
- ① Introduce the wire.
- ② Apply the tool head to the upper opening without forcing its self-alignment device (the tool must be at right angle with the block).
- ③ Press the trigger all the way.
- ④ Release the trigger to disengage the tool.



Unstripped wire

#### Simplified tool :

- ① Introduce the wire.
- ② Place the tool into the upper opening, push the wire home.

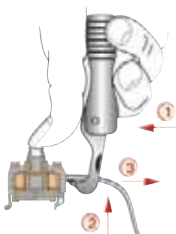


### B - Connection of the second wire : same as for the first wire.

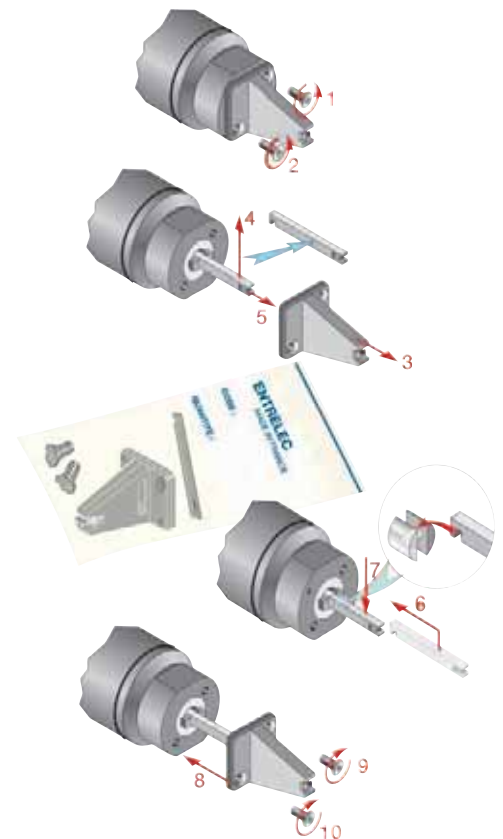
### C - Extraction of wires

- ① Place the hook of the extractor under the wire into the slot of the terminal block.
- ② Slide the wires outside while securing firmly the block.
- ③ Remove the first wire. Repeat operations ① ② ③ above for a second wire.

**NOTE :** Wire must be cut clean before reconnecting it to the terminal block.



## REPLACEMENT OF THE HEAD



Replacement head kit

**OUTA** 1SNA 205 284 R0300

Notes



A  
7

Lined writing area consisting of multiple horizontal lines for notes.

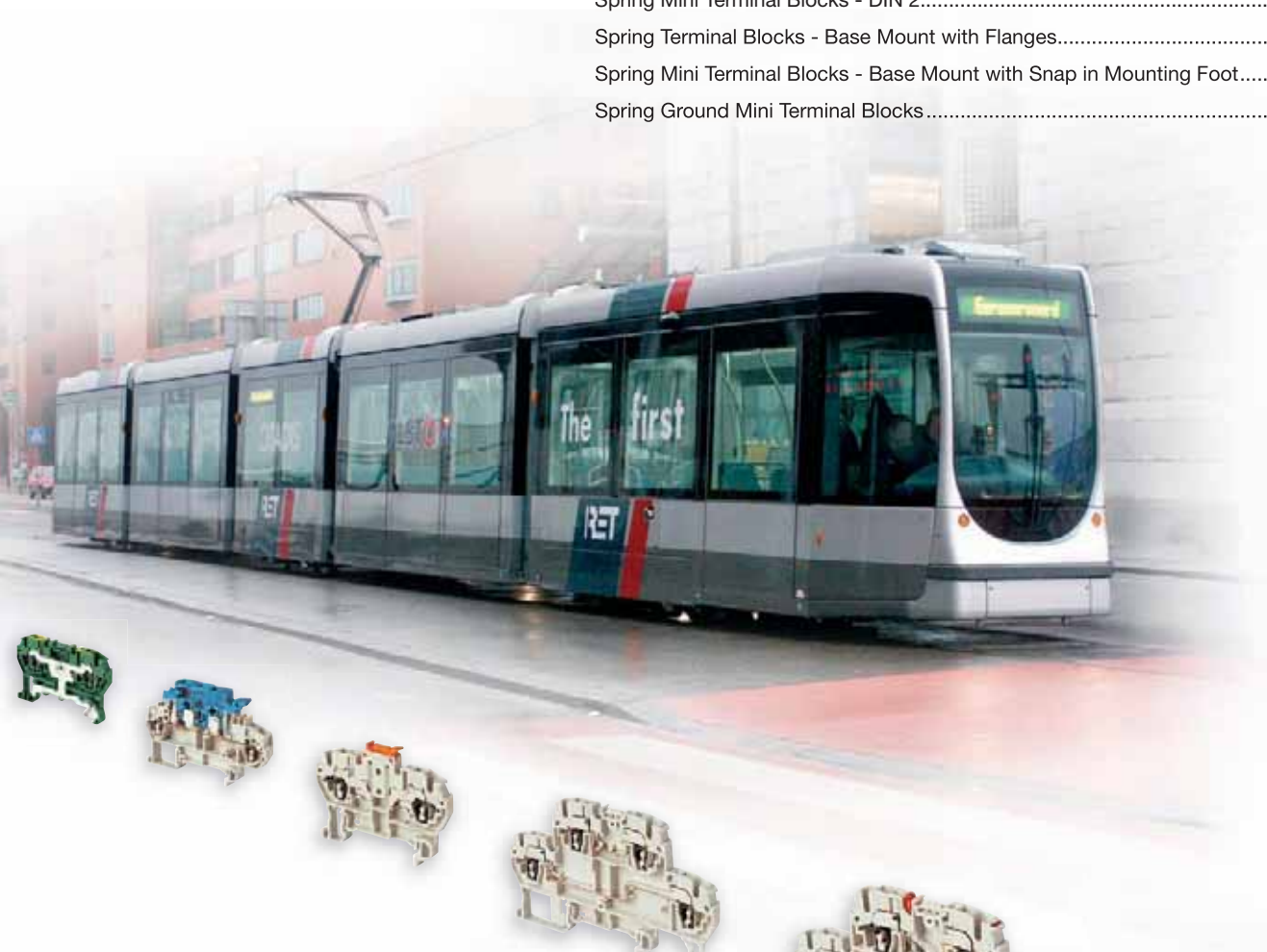


# Terminal Blocks entrelec® according to IEC 60947-7

## Spring Connections

### Sommaire

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Spring Switch Terminal Block.....	160
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Spring Mini Terminal Blocks - DIN 3.....	166
Spring Mini Terminal Blocks - DIN 2.....	167
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Spring Mini Terminal Blocks - Base Mount with Snap in Mounting Foot.....	169
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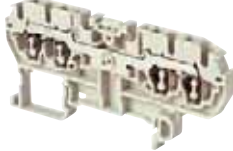
**IEC 60947-7**








# Terminal blocks spring clamp

Standard

 DIN 3



End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop		th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

## Notes

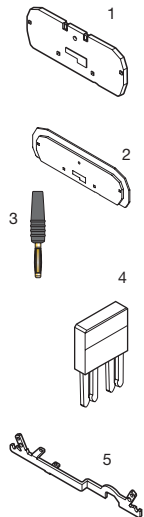
The use of some accessories may decrease the block voltage rating. For more information, consult us.

One wire per spring.

Terminal block body material is UL 94 V0.

\* Entelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Nevertheless, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

## Accessories



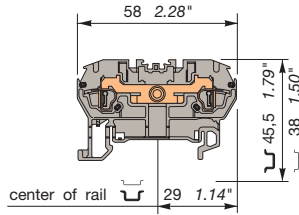
	1	2	3	4	5
End section	grey	orange	black	orange	
Separator	orange	grey			
Test plug	black				
Jumper bar	orange				
Shielding connector					

R

See section on markers marking method

## D 1,5/4.2L

Spacing 4 mm +0,05 .158"



Terminal blocks with 2 springs.



Color	Type	Part number
Grey <input type="checkbox"/>	D 1,5/4.2L	1SNA 290 371 R1200
Orange <input type="checkbox"/>	D 1,5/4.2L	1SNA 290 372 R1300
Blue <input type="checkbox"/>	D 1,5/4.N.2L	1SNA 290 373 R1400

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-2,5 mm <sup>2</sup>		26-16 AWG
	0,12-1,5 mm <sup>2</sup>		26-16 AWG
With isolated ferrule	0,5-1 mm <sup>2</sup>		

Voltage		
Rated	800 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

Current		
Rated	18 A	

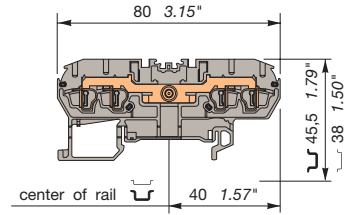
Wire size			
Rated / Gauge	1,5 mm <sup>2</sup> / B1		16 AWG
Wire strip. length	Recomm. screwdriver	Weight	Protection
9,5 mm	2,5 mm	7 g	IP 20
.37"	.10"	.25 oz	NEMA 1

Type	Part number		
FED5.2L	V0	th. 2,5 mm	1SNA 291 061 R2400
FED5.2L	V0	th. 2,5 mm	1SNA 291 062 R2500
SCD5.2L	V0	th. 2,5 mm	1SNA 291 352 R0400
SCD5.2L	V0	th. 2,5 mm	1SNA 291 351 R0300
FC2.MC		DIA. 2 mm	1SNA 107 239 R0300
BJDL4.2	V0	2 poles	1SNA 291 642 R0600
CBDS			1SNA 291 702 R0400

On top: RC 410

## D 1,5/4.4L

Spacing 4 mm +0,05 .158"



Terminal blocks with 4 springs.



Color	Type	Part number
Grey <input type="checkbox"/>	D 1,5/4.4L	1SNA 290 381 R0500
Orange <input type="checkbox"/>	D 1,5/4.4L	1SNA 290 382 R0600
Blue <input type="checkbox"/>	D 1,5/4.N.4L	1SNA 290 383 R0700

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-2,5 mm <sup>2</sup>		26-16 AWG
	0,12-1,5 mm <sup>2</sup>		26-16 AWG
With isolated ferrule	0,5-1 mm <sup>2</sup>		

Voltage		
Rated	800 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

Current		
Rated	18 A	

Wire size			
Rated/gauge	1,5 mm <sup>2</sup> / B1		16 AWG
Wire strip. length	Recomm. screwdriver	Weight	Protection
9,5 mm	2,5 mm	8 g	IP 20
.37"	.10"	.28 oz	NEMA 1

Type	Part number		
FED5.4L	V0	th. 2,5 mm	1SNA 291 041 R2000
FED5.4L	V0	th. 2,5 mm	1SNA 291 042 R2100
SCD5.4L	V0	th. 2,5 mm	1SNA 291 372 R0000
SCD5.4L	V0	th. 2,5 mm	1SNA 291 371 R0700
FC2.MC		DIA. 2 mm	1SNA 107 239 R0300
BJDL4.2	V0	2 poles	1SNA 291 642 R0600

On top: RC 410

# Terminal blocks spring clamp

DIN 3



\* Black marking for differentiation with D 1,5/4.4L terminal block.

End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop		th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

## Notes

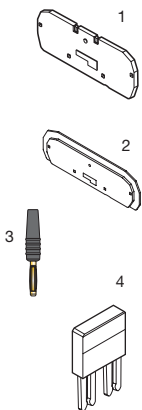
The use of some accessories may decrease the block voltage rating. For more information, consult us.

One wire per spring.

Terminal block body material is UL 94 V0.

\* Entelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Nevertheless, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

## Accessories



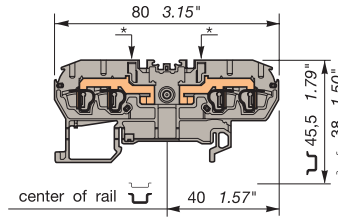
1	End section	grey	FED5.4L	V0	th. 2,5 mm	1SNA 291 041 R2000
		orange	FED5.4L	V0	th. 2,5 mm	1SNA 291 042 R2100
2	Separator	orange	SCD5.4L	V0	th. 2,5 mm	1SNA 291 372 R0000
		grey	SCD5.4L	V0	th. 2,5 mm	1SNA 291 371 R0700
3	Test plug	black	FC2.MC		DIA. 2 mm	1SNA 107 239 R0300
4	Jumper bar	orange	BJDL4.2	V0	2 poles	1SNA 291 642 R0600



R See section on markers marking method

# D 1,5/4.2L.2L

Spacing 4 mm +0,05 .158"



Standard block with 4 springs and 2 independent circuits. Each circuit has a test socket and can be jumpered.



Color	Type	Part number	Color	Type	Part number
Grey		D 1,5/4.2L.2L 1SNA 290 391 R0700			

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-2,5 mm <sup>2</sup>		26-16 AWG
Flexible	0,12-1,5 mm <sup>2</sup>		26-16 AWG
With isolated ferrule	0,5-1 mm <sup>2</sup>		

Voltage		
Rated	800 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

Current		
Rated	18 A	10 A

Wire size			
Rated / Gauge	1,5 mm <sup>2</sup> / B1		16 AWG
Wire strip. length	Recomm. screwdriver	Weight	Protection
9,5 mm	2,5 mm	8 g	IP 20
.37"	.10"	.28 oz	NEMA 1

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid			
Flexible			
With isolated ferrule			

Voltage		
Rated		
Impulse withstand		
Pollution degree		

Current		
Rated		

Wire size			
Rated/gauge			
Wire strip. length	Recomm. screwdriver	Weight	Protection

Type	Part number	Type	Part number
On top	RC 410		

# Terminal blocks spring clamp

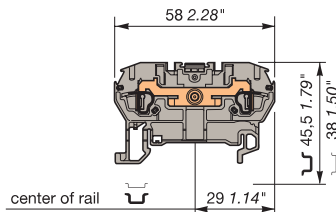
Standard

DIN 3



**D 2,5/5.2L**

Spacing 5 mm +0,05 .198"



Terminal blocks with 2 springs.

Grey 1SNA 290 021 R2700

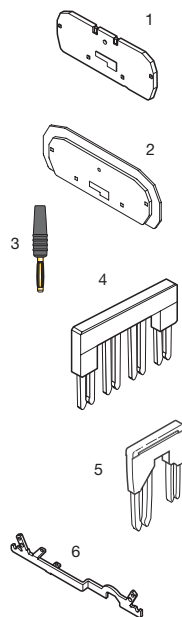
**Color**                      **Type**                      **Part numbers**

Standard blocks

Orange		<b>D 2,5/5.2L</b>	1SNA 290 022 R2000
Blue		<b>D 2,5/5.N.2L</b>	1SNA 290 023 R2100
Red		<b>D 2,5/5.2L</b>	1SNA 290 024 R2200
White		<b>D 2,5/5.2L</b>	1SNA 290 025 R2300
Brown		<b>D 2,5/5.2L</b>	1SNA 290 464 R0000
Black		<b>D 2,5/5.2L</b>	1SNA 290 026 R2400
Yellow		<b>D 2,5/5.2L</b>	1SNA 290 027 R2500
Green		<b>D 2,5/5.2L</b>	1SNA 290 028 R0600
Violet		<b>D 2,5/5.2L</b>	1SNA 290 465 R0100



## Accessories



- | Accessories           | Color  | Type         | Part numbers                   |
|-----------------------|--------|--------------|--------------------------------|
| 1 End section         | grey   | FED5.2L V0   | th. 2,5 mm 1SNA 291 061 R2400  |
|                       | orange | FED5.2L V0   | th. 2,5 mm 1SNA 291 062 R2500  |
| 2 Separator           | grey   | SCD5.2L V0   | th. 2,5 mm 1SNA 291 351 R0300  |
|                       | orange | SCD5.2L V0   | th. 2,5 mm 1SNA 291 352 R0400  |
| 3 Test plug           | black  | FC2.MC       | DIA. 2,0 mm 1SNA 107 239 R0300 |
| 4 Jumper bar          | orange | BJDL5.2 V0   | 2 poles 1SNA 291 102 R2300     |
|                       |        | BJDL5.3 V0   | 3 poles 1SNA 291 103 R2400     |
|                       |        | BJDL5.4 V0   | 4 poles 1SNA 291 104 R2500     |
|                       |        | BJDL5.5 V0   | 5 poles 1SNA 291 105 R2600     |
|                       |        | BJDL5.6 V0   | 6 poles 1SNA 291 106 R2700     |
|                       |        | BJDL5.7 V0   | 7 poles 1SNA 291 107 R2000     |
|                       |        | BJDL5.8 V0   | 8 poles 1SNA 291 108 R0100     |
|                       |        | BJDL5.9 V0   | 9 poles 1SNA 291 109 R0200     |
|                       |        | BJDL5.10 V0  | 10 poles 1SNA 291 110 R2600    |
| 5 Jumper bar          | orange | BJDPL56 (1)  | 1SNA 291 150 R0600             |
|                       |        | BJDPL58 (1)  | 1SNA 291 160 R0000             |
|                       |        | BJDPL510 (1) | 1SNA 291 480 R2200             |
| 6 Shielding connector |        | CBD5.2L      | th. 0,5 mm 1SNA 291 077 R2400  |

Block also available in ATEX (Explosive Atmosphere) approved version

End stop		th. 9 mm	<b>BADL</b>	V0	1SNA 399 903 R0200
End stop		th. 10 mm	<b>BAM2 V0</b>	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	<b>PR3.Z2</b>		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

## Characteristics

### Wire size

	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

### Voltage

Rated	800 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

### Current

Rated	24 A	15 A
-------	------	------

### Wire size

Rated / Gauge		2,5 mm <sup>2</sup> / A2	12 AWG
Wire strip. length	Recomm. screwdriver	Weight	Protection
9,5 mm	3,5 mm	6 g	IP20
.37"	.14"	.21 oz	NEMA 1

## Notes

The use of some accessories may decrease the block's voltage rating. For more information, consult us.

\* Entelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

One wire per spring.  
Terminal block body material is UL 94 V0.



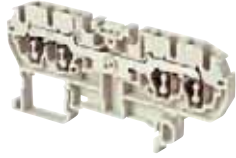
**R** See section on marking marking method

On top: RC 510 or RPC  
On sides: RC 55

(1) End section must be inserted between 2 interconnected blocks.

# Terminal blocks spring clamp

Standard  
DIN 3



Block also available in ATEX (Explosive Atmosphere) approved version

End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop		th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

## Notes

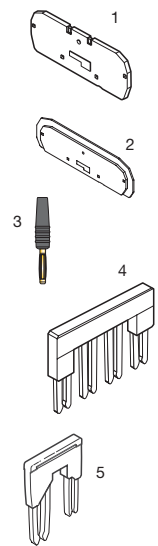
The use of some accessories may decrease the block's voltage rating. For more information, consult us.

One wire per spring.

Terminal block body material is UL 94 V0.

\* Entelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

## Accessories

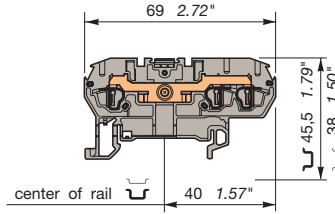


	Type	Part number
1	End section	grey orange
2	Separator	grey orange
3	Test plug	black
4	Jumper bar	orange
	IP 20 - 24 A	
5	Jumper bar	orange
	For blocks of different spacing	
	- Spacing 5 and 6 mm IP 20 - 24 A	
	- Spacing 5 and 8 mm IP 20 - 24 A	
	- Spacing 5 and 10 mm IP 20 - 24 A	

**R** See section on markers marking method

## D 2,5/5.3L

Spacing 5 mm +0,05 .198"



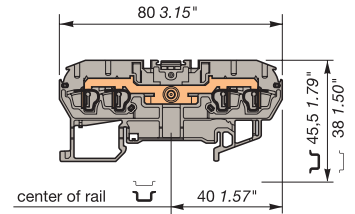
Terminal blocks with 3 springs.



Color	Type	Part number
Grey	D 2,5/5.3L	1SNA 290 031 R2100
Orange	D 2,5/5.3L	1SNA 290 032 R2200
Blue	D 2,5/5.N.3L	1SNA 290 033 R2300
Red	D 2,5/5.3L	1SNA 290 034 R2400
White	D 2,5/5.3L	1SNA 290 035 R2500
Black	D 2,5/5.3L	1SNA 290 036 R2600
Yellow	D 2,5/5.3L	1SNA 290 037 R2700
Green	D 2,5/5.3L	1SNA 290 038 R0000

## D 2,5/5.4L

Spacing 5 mm +0,05 .198"



Terminal blocks with 4 springs.



Color	Type	Part number
Grey	D 2,5/5.4L	1SNA 290 011 R2500
Orange	D 2,5/5.4L	1SNA 290 012 R2600
Blue	D 2,5/5.N.4L	1SNA 290 013 R2700
Red	D 2,5/5.4L	1SNA 290 014 R2000
White	D 2,5/5.4L	1SNA 290 015 R2100
Black	D 2,5/5.4L	1SNA 290 016 R2200
Yellow	D 2,5/5.4L	1SNA 290 017 R2300
Green	D 2,5/5.4L	1SNA 290 018 R0400

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

Voltage		
Rated	800 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

Current		
Rated	24 A	15 A

Wire size			
Rated / Gauge	2,5 mm <sup>2</sup> / A2	12 AWG	
Wire strip. length	Recomm. screwdriver	Weight	Protection
9,5 mm .37"	3,5 mm .14"	8 g .28 oz	IP 20 NEMA 1

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

Voltage		
Rated	800 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

Current		
Rated	24 A	15 A

Wire size			
Rated/gauge	2,5 mm <sup>2</sup> / A2	12 AWG	
Wire strip. length	Recomm. screwdriver	Weight	Protection
9,5 mm .37"	3,5 mm .14"	8 g .28 oz	IP 20 NEMA 1

Type	Part number
FED5.3L V0 th. 2,5 mm	1SNA 291 051 R2200
FED5.3L V0 th. 2,5 mm	1SNA 291 052 R2300
SCD5.3L V0 th. 2,5 mm	1SNA 291 361 R0500
SCD5.3L V0 th. 2,5 mm	1SNA 291 362 R0600
FC2.MC V2 DIA. 2 mm	1SNA 107 239 R0300
BJDL5.2 V0 2 poles	1SNA 291 102 R2300
BJDL5.3 V0 3 poles	1SNA 291 103 R2400
BJDL5.4 V0 4 poles	1SNA 291 104 R2500
BJDL5.5 V0 5 poles	1SNA 291 105 R2600
BJDL5.6 V0 6 poles	1SNA 291 106 R2700
BJDL5.7 V0 7 poles	1SNA 291 107 R2000
BJDL5.8 V0 8 poles	1SNA 291 108 R0100
BJDL5.9 V0 9 poles	1SNA 291 109 R0200
BJDL5.10 V0 10 poles	1SNA 291 110 R2600
BJDPL56 (1)	1SNA 291 150 R0600
BJDPL58 (1)	1SNA 291 160 R0000
BJDPL510 (1)	1SNA 291 480 R2200

Type	Part number
FED5.4L V0 th. 2,5 mm	1SNA 291 041 R2000
FED5.4L V0 th. 2,5 mm	1SNA 291 042 R2100
SCD5.4L V0 th. 2,5 mm	1SNA 291 371 R0700
SCD5.4L V0 th. 2,5 mm	1SNA 291 372 R0000
FC2.MC V2 DIA. 2 mm	1SNA 107 239 R0300
BJDL5.2 V0 2 poles	1SNA 291 102 R2300
BJDL5.3 V0 3 poles	1SNA 291 103 R2400
BJDL5.4 V0 4 poles	1SNA 291 104 R2500
BJDL5.5 V0 5 poles	1SNA 291 105 R2600
BJDL5.6 V0 6 poles	1SNA 291 106 R2700
BJDL5.7 V0 7 poles	1SNA 291 107 R2000
BJDL5.8 V0 8 poles	1SNA 291 108 R0100
BJDL5.9 V0 9 poles	1SNA 291 109 R0200
BJDL5.10 V0 10 poles	1SNA 291 110 R2600
BJDPL56 (1)	1SNA 291 150 R0600
BJDPL58 (1)	1SNA 291 160 R0000
BJDPL510 (1)	1SNA 291 480 R2200

On top: RC 510 or RPC  
On sides: RC 55

On top: RC 510 or RPC  
On sides: RC 55

(1) End section must be inserted between 2 interconnected blocks.

# Terminal blocks spring clamp

DIN 3



Block also available in ATEX (Explosive Atmosphere) approved version

\* Black marking : to differentiate from D 2,5/5.4L terminal block

\*\* Black marking : to differentiate from D 4/6.4L terminal block

End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop		th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

## Notes

The use of some accessories may decrease the block's voltage rating. For more information, consult us.

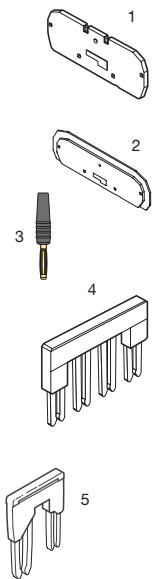
One wire per spring.

Terminal block body material is UL 94 V0.

Possibility to integrate electronic components.

\* Entelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

## Accessories

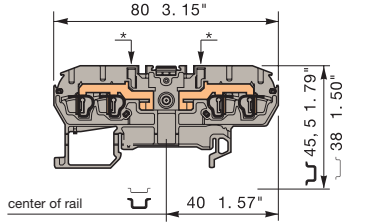


- 1 End section grey
  - 2 Separator orange
  - 3 Test plug black
  - 4 Jumper bar orange
  - 5 Jumper bar orange
- For blocks of different spacing
- Spacing 5 and 6 mm IP 20 - 24 A
  - Spacing 5 and 8 mm IP 20 - 24 A
  - Spacing 5 and 10 mm IP 20 - 24 A
  - Spacing 6 and 8 mm IP 20 - 32 A
  - Spacing 6 and 10 mm IP 20 - 32 A
  - Spacing 6 and 12 mm IP 20 - 41 A

**R** See section on markers marking method

### D 2,5/5.2L.2L

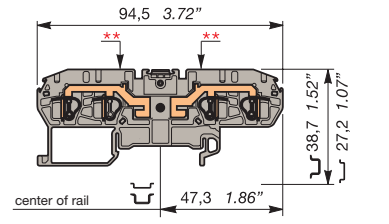
Spacing 5 mm +0,05 .198"



Standard block with 4 springs and 2 independent circuits. Input and output for each circuit on the same side. Each circuit has a test socket and can be jumpered.

### D 4/6.2L.2L

Spacing 6 mm +0,05 .238"



Standard block with 4 springs and 2 independent circuits. Input and output for each circuit on the same side. Each circuit has a test socket and can be jumpered.

Color	Type	Part number
Grey*	D 2,5/5.2L.2L	1SNA 290 001 R0400
Orange*	D 2,5/5.2L.2L	1SNA 290 002 R0500
Blue*	D 2,5/5.N.2L.2L	1SNA 290 003 R0600

\* with black marking on the top of the block

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 mm <sup>2</sup> *		26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

Voltage	
Rated	800 V
Impulse withstand	8 kV
Pollution degree	3

Current	
Rated	24 A

Wire size			
Rated / Gauge	2,5 mm <sup>2</sup> / A2	12 AWG	
Wire strip length	Recomm. screwdriver	Weight	Protection
9,5 mm	3,5 mm	9 g	IP 20
.37"	.14"	.32 oz	NEMA 1

Color	Type	Part number
Grey*	D 4/6.2L.2L	1SNA 290 415 R2700

\*\* with black marking on the top of the block

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,2-6 mm <sup>2</sup>		
Flexible	0,2-4 mm <sup>2</sup>		
With isolated ferrule			

Voltage	
Rated	800 V
Impulse withstand	8 kV
Pollution degree	3

Current	
Rated	32 A

Wire size			
Rated/gauge	4 mm <sup>2</sup> / A4		
Wire strip length	Recomm. screwdriver	Weight	Protection
11 mm	4 mm	14 g	IP 20
.43"	.16"	.49 oz	NEMA 1

Type	Part number	Type	Part number
FED5.4L V0	th. 2,5 mm 1SNA 291 041 R2000	FED6.4L V0	th. 2,5 mm 1SNA 291 696 R2600
FED5.4L V0	th. 2,5 mm 1SNA 291 042 R2100	FED6.4L V0	th. 2,5 mm 1SNA 291 697 R2700
SCD5.4L V0	th. 2,5 mm 1SNA 291 372 R0000		
FC2.MC V2	DIA. 2 mm 1SNA 107 239 R0300	FC2.MC V2	DIA. 2 mm 1SNA 107 239 R0300
BJDL5.2 V0	2 poles 1SNA 291 102 R2300	BJDL6.2 V0	2 poles 1SNA 291 128 R2400
BJDL5.3 V0	3 poles 1SNA 291 103 R2400	BJDL6.3 V0	3 poles 1SNA 291 129 R2500
BJDL5.4 V0	4 poles 1SNA 291 104 R2500	BJDL6.4 V0	4 poles 1SNA 291 194 R1700
BJDL5.5 V0	5 poles 1SNA 291 105 R2600	BJDL6.5 V0	5 poles 1SNA 291 195 R1000
BJDL5.6 V0	6 poles 1SNA 291 106 R2700		
BJDL5.7 V0	7 poles 1SNA 291 107 R2000		
BJDL5.8 V0	8 poles 1SNA 291 108 R0100		
BJDL5.9 V0	9 poles 1SNA 291 109 R0200		
BJDL5.10 V0	10 poles 1SNA 291 110 R2600		
BJDPL5.6 (1)	1SNA 291 150 R0600	BJDPL5.6 (1)	1SNA 291 150 R0600
BJDPL5.8 (1)	1SNA 291 160 R0000		
BJDPL5.10(1)	1SNA 291 480 R2200		
		BJDPL6.8 (1)	1SNA 291 170 R0200
		BJDPL6.10(1)	1SNA 291 482 R1000
		BJDPL6.12(1)	1SNA 399 613 R0600
On top:	RC 510 or RPC	On top:	RC 510 or RPC
On sides:	RC 55	On sides:	RC 55

(1) End section must be inserted between 2 interconnected blocks.









# Terminal blocks spring clamp

Standard

 DIN 3



 Block also available in ATEX (Explosive Atmosphere) approved version

End stop		th. 9 mm	<b>BADL</b>	V0	1SNA 399 903 R0200
End stop		th. 10 mm	<b>BAM2 V0</b>	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	<b>PR3.Z2</b>		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

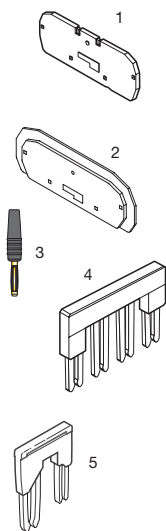
## Notes

The use of some accessories may decrease the block's voltage rating. For more information, consult us.

One wire per spring.

Terminal block body material is UL 94 V0.

## Accessories



<b>1</b> End section	grey	FED5.2L V0	th. 2,5 mm	1SNA 291 061 R2400
	orange	FED5.2L V0	th. 2,5 mm	1SNA 291 062 R2500
<b>2</b> Separator	orange	SCD5.2L V0	th. 2,5 mm	1SNA 291 352 R0400
<b>3</b> Test plug	black	FC2.MC V2	DIA. 2 mm	1SNA 107 239 R0300
<b>4</b> Jumper bar	orange	BJDL6.2 V0	2 poles	1SNA 291 128 R2400
IP 20 - 32 A		BJDL6.3 V0	3 poles	1SNA 291 129 R2500
		BJDL6.4 V0	4 poles	1SNA 291 194 R1700
		BJDL6.5 V0	5 poles	1SNA 291 195 R1000
<b>5</b> Jumper bar	orange	BJDPL56 (1)		1SNA 291 150 R0600
For blocks of different spacing		BJDPL68 (1)		1SNA 291 170 R0200
- Spacing 5 and 6 mm IP 20 - 24 A		BJDPL610 (1)		1SNA 291 482 R1000
- Spacing 5 and 8 mm IP 20 - 24 A		BJDPL6.12(1)		1SNA 399 613 R0600
- Spacing 5 and 10 mm IP 20 - 24 A				
- Spacing 6 and 8 mm IP 20 - 32 A				
- Spacing 6 and 10 mm IP 20 - 32 A				
- Spacing 6 and 12 mm IP 20 - 41 A				

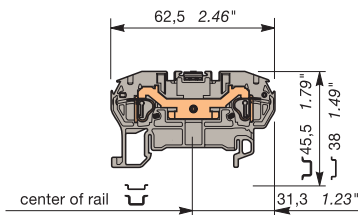
R



**R** See section on markers marking method

## D 4/6.2L

Spacing 6 mm +0,05 .238"



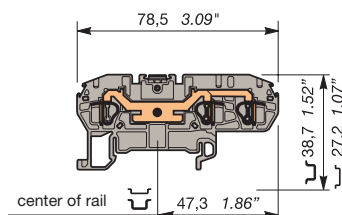
2 springs.



Color	Type	Part number
Grey <input type="checkbox"/>	<b>D 4/6.2L</b>	1SNA 290 061 R0700
Orange <input type="checkbox"/>	<b>D 4/6.2L</b>	1SNA 290 062 R0000
Blue <input type="checkbox"/>	<b>D 4/6.N.2L</b>	1SNA 290 063 R0100
Black <input type="checkbox"/>	<b>D 4/6.2L</b>	1SNA 290 066 R0400
Red <input type="checkbox"/>	<b>D 4/6.2L</b>	1SNA 290 064 R0200
Yellow <input type="checkbox"/>	<b>D 4/6.2L</b>	1SNA 290 067 R0500

## D 4/6.3L

Spacing 6 mm +0,05 .238"



3 springs.



Color	Type	Part number
Grey <input type="checkbox"/>	<b>D 4/6.3L</b>	1SNA 290 405 R0600
Orange <input type="checkbox"/>	<b>D 4/6.3L</b>	1SNA 290 406 R0700
Blue <input type="checkbox"/>	<b>D 4/6.N.3L</b>	1SNA 290 407 R0000

## Characteristics

### Wire size

	IEC		UL/CSA
	NFC	DIN	
Rigid	0,2-6 mm <sup>2</sup>		24-10 AWG
Flexible	0,2-4 mm <sup>2</sup>		24-10 AWG
With isolated ferrule	0,5-4 mm <sup>2</sup>		

### Voltage

Rated	800 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

### Current

Rated	32 A	25 A
-------	------	------

### Wire size

Rated / Gauge	4 mm <sup>2</sup> / A4		10 AWG
Wire strip. length	Recomm. screwdriver	Weight	Protection
11 mm	4 mm	9 g	IP 20
.43"	.16"	.32 oz	NEMA 1

## Characteristics

### Wire size

	IEC		UL/CSA
	NFC	DIN	
Rigid	0,2 -6 mm <sup>2</sup>		24-10 AWG
Flexible	0,2-4 mm <sup>2</sup>		24-10 AWG
With isolated ferrule	0,5-4 mm <sup>2</sup>		

### Voltage

Rated	800 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

### Current

Rated	32 A	25 A
-------	------	------

### Wire size

Rated/gauge	4 mm <sup>2</sup> / A4		10 AWG
Wire strip. length	Recomm. screwdriver	Weight	Protection
11 mm	4 mm	12 g	IP 20
.43"	.16"	.42 oz	NEMA 1

## Type

Type	Part number
FED5.2L V0	th. 2,5 mm 1SNA 291 061 R2400
FED5.2L V0	th. 2,5 mm 1SNA 291 062 R2500
SCD5.2L V0	th. 2,5 mm 1SNA 291 352 R0400
FC2.MC V2	DIA. 2 mm 1SNA 107 239 R0300
BJDL6.2 V0	2 poles 1SNA 291 128 R2400
BJDL6.3 V0	3 poles 1SNA 291 129 R2500
BJDL6.4 V0	4 poles 1SNA 291 194 R1700
BJDL6.5 V0	5 poles 1SNA 291 195 R1000
BJDPL56 (1)	1SNA 291 150 R0600
BJDPL68 (1)	1SNA 291 170 R0200
BJDPL610 (1)	1SNA 291 482 R1000
BJDPL6.12(1)	1SNA 399 613 R0600

## Type

Type	Part number
FED6.3L V0	th. 2,5 mm 1SNA 291 694 R2400
FED6.3L V0	th. 2,5 mm 1SNA 291 695 R2500
FC2.MC V2	DIA. 2 mm 1SNA 107 239 R0300
BJDL6.2 V0	2 poles 1SNA 291 128 R2400
BJDL6.3 V0	3 poles 1SNA 291 129 R2500
BJDL6.4 V0	4 poles 1SNA 291 194 R1700
BJDL6.5 V0	5 poles 1SNA 291 195 R1000
BJDPL56 (1)	1SNA 291 150 R0600
BJDPL68 (1)	1SNA 291 170 R0200
BJDPL610 (1)	1SNA 291 482 R1000
BJDPL6.12(1)	1SNA 399 613 R0600

On top : RC 610 or RPC  
On sides : RC 65  
(1) End section must be inserted between 2 interconnected blocks.


On top : RC 610 or RPC  
On sides : RC 65






# Terminal blocks spring clamp

Standard

 DIN 3



 Block also available in ATEX (Explosive Atmosphere) approved version

End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop		th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

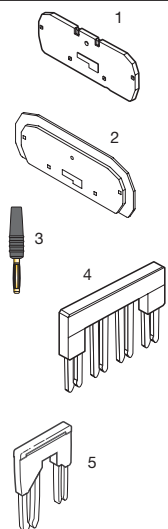
Other end stops, rails and accessories : see section on accessories.

## Notes

The use of some accessories may decrease the block's voltage rating. For more information, consult us.

One wire per spring.  
Terminal block body material is UL 94 V0.

## Accessories



<b>1</b> End section	grey	FED6.4L V0	th. 2,5 mm	1SNA 291 696 R2600
<b>2</b> Separator	orange	FED6.4L V0	th. 2,5 mm	1SNA 291 697 R2700
<b>3</b> Test plug	black	FC2.MC	DIA. 2 mm	1SNA 107 239 R0300
<b>4</b> Jumper bar IP 20 - 32 A	orange	BJDL6.2 V0	2 poles	1SNA 291 128 R2400
<b>5</b> Jumper bar IP 20 - 41 A	orange	BJDL6.3 V0	3 poles	1SNA 291 129 R2500
		BJDL6.4 V0	4 poles	1SNA 291 194 R1700
		BJDL6.5 V0	5 poles	1SNA 291 195 R1000
		BJDL8.2 V0	2 poles	1SNA 291 122 R1600
		BJDL8.3 V0	3 poles	1SNA 291 123 R1700
<b>R</b> See section on marking method		BJDL8.4 V0	4 poles	1SNA 291 144 R2400
		BJDL8.5 V0	5 poles	1SNA 291 145 R2500
		BJDPL56 (1)		1SNA 291 150 R0600
		BJDPL68 (1)		1SNA 291 170 R0200
		BJDPL610 (1)		1SNA 291 482 R1000
		BJDPL6.12 (1)		1SNA 399 613 R0600

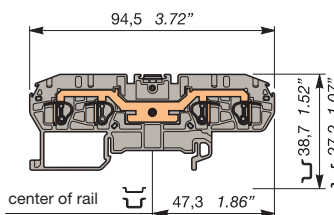
R



**R** See section on marking method




## D 4/6.4L

Spacing 6 mm +0,05 .238"



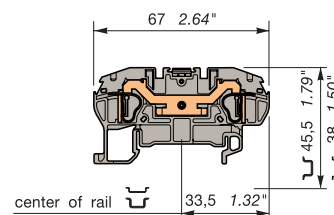
4 springs.



Color	Type	Part number
Grey	 D 4/6.4L	1SNA 290 410 R0600
Orange	 D 4/6.4L	1SNA 290 411 R2300
Blue	 D 4/6.N.4L	1SNA 290 412 R2400







## D 6/8.2L

Spacing 8 mm -0,05 .315"



2 springs.



Color	Type	Part number
Grey	 D 6/8.2L	1SNA 290 081 R2400
Orange	 D 6/8.2L	1SNA 290 082 R2500
Blue	 D 6/8.N.2L	1SNA 290 083 R2600
Black	 D 6/8.2L	1SNA 290 086 R2100
Red	 D 6/8.2L	1SNA 290 084 R2700
Yellow	 D 6/8.2L	1SNA 290 087 R2200

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,2-6 mm <sup>2</sup>		24-10 AWG
	0,2-4 mm <sup>2</sup>		24-10 AWG
With isolated ferrule	0,5-4 mm <sup>2</sup>		

Voltage		
Rated	800 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

Current		
Rated	32 A	25 A

Wire size			
Rated / Gauge	4 mm <sup>2</sup> / A4	10 AWG	
Wire strip. length	Recomm. screwdriver	Weight	Protection
11 mm	4 mm	14 g	IP 20
.43"	.16"	.49 oz	NEMA 1

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,5-10 mm <sup>2</sup>		22-8 AWG
	0,5-6 mm <sup>2</sup>		22-8 AWG
With isolated ferrule	0,5-6 mm <sup>2</sup>		

Voltage		
Rated	800 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

Current		
Rated	41 A	40 A

Wire size			
Rated/gauge	6 mm <sup>2</sup> / A5	8 AWG	
Wire strip. length	Recomm. screwdriver	Weight	Protection
13 mm	5,5 mm	13 g	IP 20
.53"	.22"	.46 oz	NEMA 1

Type	Part number
FED6.4L V0	th. 2,5 mm 1SNA 291 696 R2600
FED6.4L V0	th. 2,5 mm 1SNA 291 697 R2700
FC2.MC	DIA. 2 mm 1SNA 107 239 R0300
BJDL6.2 V0	2 poles 1SNA 291 128 R2400
BJDL6.3 V0	3 poles 1SNA 291 129 R2500
BJDL6.4 V0	4 poles 1SNA 291 194 R1700
BJDL6.5 V0	5 poles 1SNA 291 195 R1000
BJDPL56 (1)	1SNA 291 150 R0600
BJDPL68 (1)	1SNA 291 170 R0200
BJDPL610 (1)	1SNA 291 482 R1000
BJDPL6.12 (1)	1SNA 399 613 R0600

Type	Part number
FED8.2L V0	th. 2,5 mm 1SNA 291 161 R2500
FED8.2L V0	th. 2,5 mm 1SNA 291 162 R2600
FC2.MC	DIA. 2 mm 1SNA 107 239 R0300
BJDL8.2 V0	2 poles 1SNA 291 122 R1600
BJDL8.3 V0	3 poles 1SNA 291 123 R1700
BJDL8.4 V0	4 poles 1SNA 291 144 R2400
BJDL8.5 V0	5 poles 1SNA 291 145 R2500
BJDPL58 (1)	1SNA 291 160 R0000
BJDPL68 (1)	1SNA 291 170 R0200
BJDPL810 (1)	1SNA 291 484 R1200

On top : RC 610 or RPC  
On sides : RC 65  
(1) End section must be inserted between 2 interconnected blocks.


On top : RC 610 or RC 810 or RPC  
On sides : RC 65 or RCAL 85







# Terminal blocks spring clamp

Feed through

 DIN 3



 refer to the section "Special Applications" for part numbers and characteristics.

End stop		th. 9 mm	<b>BADL</b>	V0	1SNA 399 903 R0200
End stop		th. 9.1 mm	<b>BAM</b>	V2	1SNA 103 002 R2600
End stop		th. 9.1 mm	<b>BAM V0</b>	V0	1SNA 199 306 R0300
Rail		35 x 7,5 x 1	<b>PR30</b>	V0	1SNA 173 220 R0500
Rail		35 x 15 x 2,3	<b>PR4</b>	V0	1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>	V0	1SNA 168 700 R2200

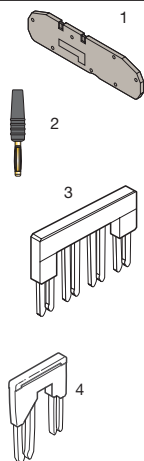
Other end stops, rails and accessories : see section on accessories.

## Notes

The use of some accessories may decrease the block's voltage rating. For more information, consult us.

One wire per spring.  
Terminal block body material is UL 94 V0.

## Accessories



<b>1</b>	End section	grey	FED8.3L	V0	th. 2,5 mm	1SNA 291 711 R2400
		orange	FED8.3L	V0	th. 2,5 mm	1SNA 291 713 R2600
<b>2</b>	Test plug	black	FC2.MC	V2	DIA. 2 mm	1SNA 107 239 R0300
<b>3</b>	Jumper bar	orange	BJDL8.2	V0	2 poles	1SNA 291 122 R1600
	IP 20 - 41 A		BJDL8.3	V0	3 poles	1SNA 291 123 R1700
			BJDL8.4	V0	4 poles	1SNA 291 144 R2400
			BJDL8.5	V0	5 poles	1SNA 291 145 R2500
<b>4</b>	Jumper bar	orange				
	For blocks of different spacing					
	- Spacing 5 and 6 mm	IP 20 - 24 A				
	- Spacing 5 and 8 mm	IP 20 - 24 A				
	- Spacing 6 and 8 mm	IP 20 - 32 A				
	- Spacing 6 and 10 mm	IP 20 - 32 A				
	- Spacing 8 and 10 mm	IP 20 - 41 A				

R



**R** See section on marking method

### D 6/8...3L

Spacing 8 mm -0,05 (.315")

3 springs.

### D 10/10.2L

Spacing 10 mm - 0,05 (.394")

Terminal block with 2 springs with 1 test + 1 interconnection on one side.

Color	Type	Part number
Grey	<input type="checkbox"/> <b>D 6/8.3L</b>	1SNA 290 418 R0200
Orange	<input type="checkbox"/> <b>D 6/8.3L</b>	1SNA 290 420 R0000
Blue	<input type="checkbox"/> <b>D 6/8.N.3L</b>	1SNA 290 419 R0300

Color	Type	Part number
Grey	<input type="checkbox"/> <b>D 10/10.2L</b>	1SNA 290 291 R0300
Orange	<input type="checkbox"/> <b>D 10/10.2L</b>	1SNA 290 292 R0400
Blue	<input type="checkbox"/> <b>D 10/10.N.2L</b>	1SNA 290 293 R0500
Black	<input type="checkbox"/> <b>D 10/10.2L</b>	1SNA 290 296 R0000
Red	<input type="checkbox"/> <b>D 10/10.2L</b>	1SNA 290 294 R0600
Yellow	<input type="checkbox"/> <b>D 10/10.2L</b>	1SNA 290 297 R0100

### Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,5-10 mm <sup>2</sup>		
Flexible	0,5-6 mm <sup>2</sup>		
With isolated ferrule	0,5-6 mm <sup>2</sup>		

### Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,5-16 mm <sup>2</sup>		20-6 AWG
Flexible	0,5-10 mm <sup>2</sup>		20-6 AWG
With isolated ferrule	0,5-10 mm <sup>2</sup>		

### Voltage

Rated	800 V	
Impulse withstand	8 kV	
Pollution degree	3	

### Current

Rated	41 A	
-------	------	--

### Wire size

Rated / Gauge	6 mm <sup>2</sup> / A5	
Wire strip. length	Recomm. screwdriver	Protection
13 mm	5,5 mm	IP 20
.51"	.22"	NEMA 1

### Voltage

Rated	1000 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

### Current

Rated	57 A	50 A
-------	------	------

### Wire size

Rated/gauge	10 mm <sup>2</sup> / B6	6 AWG
Wire strip. length	Recomm. screwdriver	Protection
12 mm	5,5 mm	IP 20
.47"	.22"	NEMA 1

Type	Part number
On top : RC 810, RPC, RC610	
On sides : RCAL 85	
(1) End section must be inserted between 2 interconnected blocks.	

Type	Part number
On top : RC 1010, RC 810, RC 610	
On sides : RCAL85, RC 65	

# Spring clamp terminal blocks

Standard

DIN 3



End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop		th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

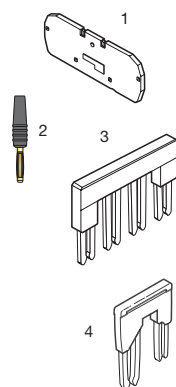
Other end stops, rails and accessories : see section on accessories.

## Notes

The use of some accessories may decrease the block's voltage rating. For more information, consult us.

Terminal block body material is UL 94 V0.  
One wire per spring.

## Accessories



<b>1</b> End section	grey	FED10.2L	V0	th. 2,5 mm	1SNA 291 461 R2200
	orange	FED10.2L	V0	th. 2,5 mm	1SNA 291 462 R2300
<b>2</b> Test plug	black	FC2.MC	V2	DIA. 2 mm	1SNA 107 239 R0300
<b>3</b> Jumper bar	orange	BJDL1.10.2	V0	2 poles	1SNA 291 472 R2500
		BJDL1.10.3	V0	3 poles	1SNA 291 474 R2700
		BJDL1.10.4	V0	4 poles	1SNA 291 476 R2100
		BJDL1.10.5	V0	5 poles	1SNA 291 478 R0300
<b>4</b> Jumper bar	orange	BJDPL510	(1)		1SNA 291 480 R2200
		BJDPL610	(1)		1SNA 291 482 R1000
		BJDPL810	(1)		1SNA 291 484 R1200

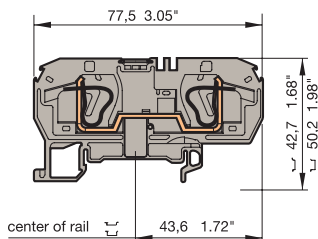
For blocks of different spacing  
- Spacing 5 and 6 mm IP 20 - 24 A  
- Spacing 6 and 10 mm IP 20 - 32 A  
- Spacing 8 and 10 mm IP 20 - 41 A



**R** See section on marking marking method

### D 10/10.1.2L

Spacing 10 mm - 0,05 (.394")



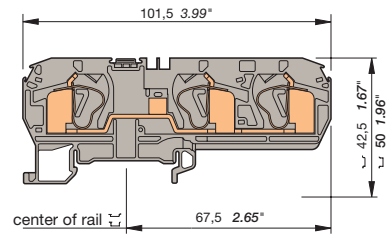
Terminal block with 2 springs with 2 interconnections on one side.



Color	Type	Part number
Grey <input type="checkbox"/>	D 10/10.1.2L	1SNA 290 301 R1500
Orange <input type="checkbox"/>	D 10/10.1.2L	1SNA 290 302 R1600
Blue <input type="checkbox"/>	D 10/10.1.N.2L	1SNA 290 303 R1700

### D 10/10.3L

Spacing 10 mm - 0,05 (.394")



Color	Type	Part number
Grey <input type="checkbox"/>	D 10/10.3L	1SNA 290 423 R2700
Orange <input type="checkbox"/>	D 10/10.3L	1SNA 290 425 R2100
Blue <input type="checkbox"/>	D 10/10.N.3L	1SNA 290 424 R2000

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,5-16 mm <sup>2</sup>		20-6 AWG
	0,5-10 mm <sup>2</sup>		20-6 AWG
with isolated ferrule	0,5-10 mm <sup>2</sup>		20-6 AWG

Voltage		
Rated	1000 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

Current		
Rated	57 A	50 A

Wire size			
Rated / Gauge	10 mm <sup>2</sup> / B6		6 AWG
Wire stripping length	Recommended screwdriver	Recommended torque	Protection
12 mm	5,5 mm		IP 20
.47"	.22"		NEMA 1

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,5-16 mm <sup>2</sup>		20-6 AWG
	0,5-10 mm <sup>2</sup>		20-6 AWG
with isolated ferrule	0,5-10 mm <sup>2</sup>		20-6 AWG

Voltage		
Rated	1000 V	
Impulse withstand	8 kV	
Pollution degree	3	

Current		
Rated	57 A	

Wire size			
Rated / Gauge	10 mm <sup>2</sup> / B6		
Wire stripping length	Recommended screwdriver	Recommended torque	Protection
12 mm	5,5 mm		IP 20
.47"	.22"		NEMA 1

Type	Part number
FED10.2L V0 th. 2,5 mm	1SNA 291 461 R2200
FED10.2L V0 th. 2,5 mm	1SNA 291 462 R2300
FC2.MC V2 DIA. 2 mm	1SNA 107 239 R0300
BJDL1.10.2 V0 2 poles	1SNA 291 472 R2500
BJDL1.10.3 V0 3 poles	1SNA 291 474 R2700
BJDL1.10.4 V0 4 poles	1SNA 291 476 R2100
BJDL1.10.5 V0 5 poles	1SNA 291 478 R0300
BJDPL510 (1)	1SNA 291 480 R2200
BJDPL610 (1)	1SNA 291 482 R1000
BJDPL810 (1)	1SNA 291 484 R1200

Type	Part number
FED10.3L V0 th. 2,5 mm	1SNA 291 731 R2000
FED10.3L V0 th. 2,5 mm	1SNA 291 733 R2200
FC2.MC V2 DIA. 2 mm	1SNA 107 239 R0300
BJDL1.10.2 V0 2 poles	1SNA 291 472 R2500
BJDL1.10.3 V0 3 poles	1SNA 291 474 R2700
BJDL1.10.4 V0 4 poles	1SNA 291 476 R2100
BJDL1.10.5 V0 5 poles	1SNA 291 478 R0300
BJDPL510 (1)	1SNA 291 480 R2200
BJDPL610 (1)	1SNA 291 482 R1000
BJDPL810 (1)	1SNA 291 484 R1200

On top : RC 1010, RC 810, RC 610  
On sides : RCAL85, RC 65  
(1) End section must be inserted between 2 interconnected blocks.

On top : RC 1010, RC 810, RC 610, RC 510, RPCV  
On sides : RC 85, RC 55

# Spring clamp terminal blocks

## Feed through

DIN 3



refer to the section "Special Applications" for part numbers and characteristics.

End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop		th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

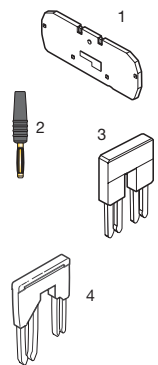
Other end stops, rails and accessories : see section on accessories.

### Notes

The use of some accessories may decrease the block's voltage rating. For more information, consult us.

Terminal block body material is UL 94 V0.  
One wire per spring.

### Accessories



1	End section	grey	FED12.2L V0	th. 2,5 mm	1SNA 399 571 R0400	
		blue	FED12.2L V0	th. 2,5 mm	1SNA 399 572 R0500	
		orange	FED12.2L V0	th. 2,5 mm	1SNA 400 152 R0600	
		black	FC2.MC V2	DIA. 2 mm	1SNA 107 239 R0300	
2	Test plug	black	FC2.MC V2	DIA. 2 mm	1SNA 107 239 R0300	
3	Jumper bar - IP 20	orange	BJDL12.2 V0	76 A	2 poles	1SNA 399 563 R0400
4	Jumper bar	orange	BJDPL6.12	(1)		1SNA 399 613 R0600

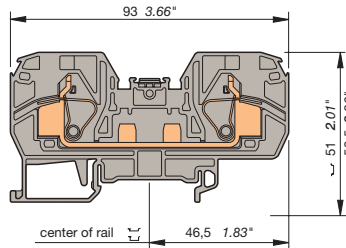
R



See section on markers marking method

## D 16/12.2L

Spacing 12 mm -0,05 (.473")



Terminal block with 2 springs with 1 test + 1 interconnection on both sides.

Color	Type	Part number
Grey	D 16/12.2L	1SNA 399 581 R2700
Blue	D 16/12.N.2L	1SNA 399 582 R2000
Black	D 16/12.2L	1SNA 400 178 R1000
Red	D 16/12.2L	1SNA 400 179 R1100
Yellow	D 16/12.2L	1SNA 400 180 R0700

### Characteristics

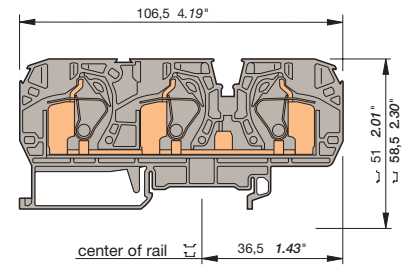
Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,5-25 mm <sup>2</sup>		20-6 AWG
Flexible	0,5-16 mm <sup>2</sup>		20-6 AWG

Voltage		
Rated	800 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	
Current		
Rated	76 A	54 A

Wire size			
Rated / Gauge	16 mm <sup>2</sup> / A7		6 AWG
Wire stripping length	Recommended screwdriver	Recommended torque	Protection
19 mm	6,5 mm		IP 20
.73"	.26"		NEMA 1

## D 16/12.3L

Spacing 12 mm -0,05 (.473")



Terminal block with 2 springs with 1 test + 1 interconnection on both sides.

Color	Type	Part number
Grey	D 16/12.3L	1SNA 290 428 R0400
Orange	D 16/12.3L	1SNA 290 430 R0200
Blue	D 16/12.N.3L	1SNA 290 429 R0500

### Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,5-25 mm <sup>2</sup>		
Flexible	0,5-16 mm <sup>2</sup>		

Voltage		
Rated	800 V	
Impulse withstand	8 kV	
Pollution degree	3	
Current		
Rated	76 A	

Wire size			
Rated / Gauge	16 mm <sup>2</sup> / A7		
Wire stripping length	Recommended screwdriver	Recommended torque	Protection
19 mm	6,5 mm		IP 20
.73"	.26"		NEMA 1

Type	Part number
FED12.2L V0	th. 2,5 mm 1SNA 399 571 R0400
FED12.2L V0	th. 2,5 mm 1SNA 399 572 R0500
FED12.2L V0	th. 2,5 mm 1SNA 400 152 R0600
FC2.MC V2	DIA. 2 mm 1SNA 107 239 R0300
BJDL12.2 V0	76 A 2 poles 1SNA 399 563 R0400
BJDPL6.12	(1) 1SNA 399 613 R0600

Type	Part number
FED12.3L V0	th. 2,5 mm 1SNA 291 721 R2600
FED12.3L V0	th. 2,5 mm 1SNA 291 723 R2000
FC2.MC V2	DIA. 2 mm 1SNA 107 239 R0300
BJDL12.2 V0	76 A 2 poles 1SNA 399 563 R0400
BJDPL6.12	(1) 1SNA 399 613 R0600

On top : RC 1010, RC 810, RC 610  
On sides : RCAL85, RC 65

On top : RC 1010, RC 810, RC 610  
On sides : RCAL85, RC 65

(1) End section must be inserted between 2 interconnected blocks.








# Angled terminal blocks spring clamp

Standard

 DIN 3



End stop		th. 9 mm	<b>BADL</b>	V0	1SNA 399 903 R0200
End stop		th. 10 mm	<b>BAM2 V0</b>	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	<b>PR3.Z2</b>		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

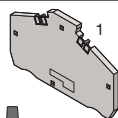
## Notes

The use of some accessories may decrease the block's voltage rating. For more information, consult us.

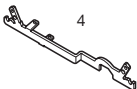
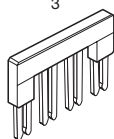
Terminal block body material is UL 94 V0.

\* ABB spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

## Accessories



- 1 End section grey
- 2 Test plug black
- 3 Jumper bar orange  
IP 20 - 24 A



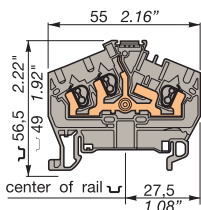
- 4 Shield connector





R See section on markers marking method

## D 2,5/5.I.3L

Spacing 5 mm +0,05 (.198")



3 springs + 1 test + 2 interconnections.

		
Color	Type	Part number
Grey <input type="checkbox"/>	<b>D 2,5/5.I.3L</b>	1SNA 399 068 R1700
Blue <input type="checkbox"/>	<b>D 2,5/5.I.N.3L</b>	1SNA 399 067 R0600
Orange <input type="checkbox"/>	<b>D 2,5/5.I.3L</b>	1SNA 399 260 R2000
Yellow <input type="checkbox"/>	<b>D 2,5/5.I.3L</b>	1SNA 400 219 R1100

## Characteristics

Wire size	Wire size		
	IEC NFC DIN	UL	CSA
Rigid	0,12-4* mm <sup>2</sup>	26-12 AWG	26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>	26-12 AWG	26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

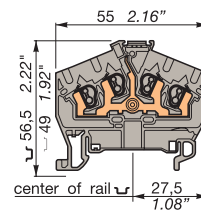
Voltage			
Rated	800 V	600 V	600 V
Impulse withstand	8 kV		
Pollution degree	3		

Current			
Rated	24 A	20 A	20 A



Wire size			
Rated / Gauge	2,5 mm <sup>2</sup> /A2	12 AWG	12 AWG
Wire strip. length	Recomm. screwdriver	Weight	Protection
9,5 mm	3,5 mm	8 g	IP20
.37"	.14"	.28 oz	NEMA 1

## D 2,5/5.I.4L

Spacing 5 mm +0,05 (.198")



4 springs + 1 test.

		
Color	Type	Part number
Grey <input type="checkbox"/>	<b>D 2,5/5.I.4L</b>	1SNA 399 071 R0200
Blue <input type="checkbox"/>	<b>D 2,5/5.I.N.4L</b>	1SNA 399 070 R1500
Orange <input type="checkbox"/>	<b>D 2,5/5.I.4L</b>	1SNA 399 270 R2200
Yellow <input type="checkbox"/>	<b>D 2,5/5.I.4L</b>	1SNA 400 220 R1600

## Characteristics

Wire size	Wire size		
	IEC NFC DIN	UL	CSA
Rigid	0,12-4* mm <sup>2</sup>	26-12 AWG	26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>	26-12 AWG	26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

Voltage			
Rated	800 V	600 V	600 V
Impulse withstand	8 kV		
Pollution degree	3		

Current			
Rated	24 A	20 A	20 A

Wire size			
Rated/gauge	2,5 mm <sup>2</sup> /A2	12 AWG	12 AWG
Wire strip. length	Recomm. screwdriver	Weight	Protection
9,5 mm	3,5 mm	9 g	IP20
.37"	.14"	.32 oz	NEMA 1

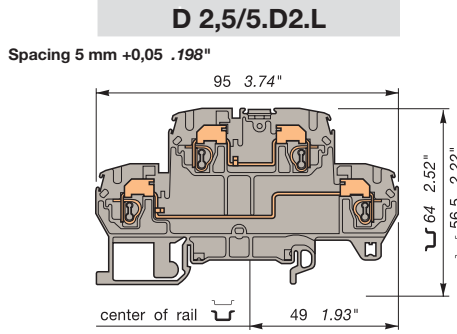
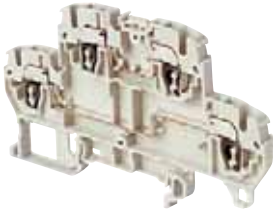
Type	Part number		
FED5.I.3L V0	th. 2,5 mm	1SNA 290 311 R0600	
FED5.I.3L V0	th. 2,5 mm	1SNA 290 314 R0100	
FC2.MC	DIA 2,0 mm	1SNA 107 239 R0300	
BJDL5.2 V0	2 poles	1SNA 291 102 R2300	
BJDL5.3 V0	3 poles	1SNA 291 103 R2400	
BJDL5.4 V0	4 poles	1SNA 291 104 R2500	
BJDL5.5 V0	5 poles	1SNA 291 105 R2600	
BJDL5.6 V0	6 poles	1SNA 291 106 R2700	
BJDL5.7 V0	7 poles	1SNA 291 107 R2000	
BJDL5.8 V0	8 poles	1SNA 291 108 R0100	
BJDL5.9 V0	9 poles	1SNA 291 109 R0200	
BJDL5.10 V0	10 poles	1SNA 291 110 R2600	
CBD5.2L	th. 0,5 mm	1SNA 291 077 R2400	

Type	Part number		
FED5.I.3L V0	th. 2,5 mm	1SNA 290 311 R0600	
FED5.I.3L V0	th. 2,5 mm	1SNA 290 314 R0100	
FC2.MC	DIA 2,0 mm	1SNA 107 239 R0300	
CBD5.2L	th. 0,5 mm	1SNA 291 077 R2400	

On top : RC 510 or RPC

On top : RC 510 or RPC

**Terminal blocks  
spring clamp  
double deck  
Standard**  
DIN 3



Standard terminal blocks spacing 5 mm.

<b>Color</b>	<b>Type</b>	<b>Part number</b>
Grey	D 2,5/5.D2.L	1SNA 290 161 R0000
Blue	D 2,5/5.D2.N.L	1SNA 290 163 R0200

End stop	th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop	th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
End stop	th. 12 mm	BADH	V2	1SNA 116 900 R2700
End stop	th. 9,1 mm	BAMH	V2	1SNA 114 836 R0000
End stop	th. 9,1 mm	BAMH V0	V0	1SNA 194 836 R0100
Rail	35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail	35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail	35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

**Characteristics**

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG
Rigid	0,5-2,5 mm <sup>2</sup>		
Flexible			

**Characteristics**

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid			
Flexible			
Rigid			
Flexible			

Voltage		
Rated	500 V	300 V
Impulse withstand	6 kV	
Pollution degree	3	

Voltage		
Rated		
Impulse withstand		
Pollution degree		

Current		
Rated	20 A	20 A

Current		
Rated		

Wire size			
Rated / Gauge	2,5 mm <sup>2</sup> / A2	12 AWG	
Wire stripping length	Recommended screwdriver	Weight	Protection
9,5 mm	3,5 mm	15 g	IP 20
.37"	.14"	.53 oz	NEMA 1

Wire size			
Rated / Gauge			
Wire stripping length	Recommended screwdriver	Weight	Protection

**Notes**

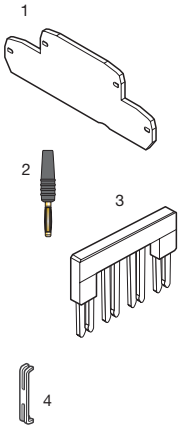
The use of some accessories may decrease the block's voltage rating. For more information, consult us.

One wire per spring.  
Terminal block body material is UL 94 V0.

\* Entrellec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

**Accessories**

- 1 End section grey
- 2 Test plug black
- 3 Jumper bar orange  
IP20 - 24 A



4 Vertical jumper bar

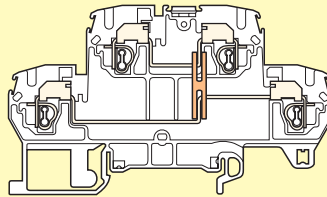
R



R See section on markers marking method

Type	Part number	
FED5.D.L V0	th. 2,5 mm	1SNA 291 441 R2600
FC2.MC	DIA. 2,0 mm	1SNA 107 239 R0300
BJDL5.2 V0	2 poles	1SNA 291 102 R2300
BJDL5.3 V0	3 poles	1SNA 291 103 R2400
BJDL5.4 V0	4 poles	1SNA 291 104 R2500
BJDL5.5 V0	5 poles	1SNA 291 105 R2600
BJDL5.6 V0	6 poles	1SNA 291 106 R2700
BJDL5.7 V0	7 poles	1SNA 291 107 R2000
BJDL5.8 V0	8 poles	1SNA 291 108 R0100
BJDL5.9 V0	9 poles	1SNA 291 109 R0200
BJDL5.10 V0	10 poles	1SNA 291 110 R2600
ITVE.L		1SNA 291 349 R1100

Mounting of the vertical jumper bar between decks (ITVE.L item 4)



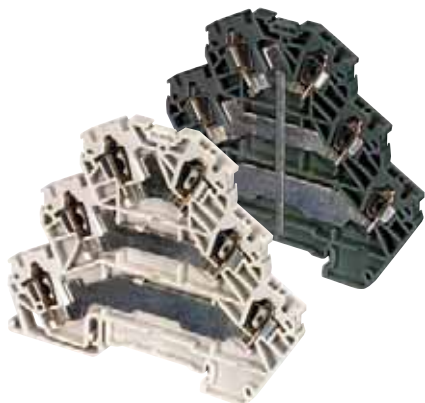
On top: RC510 or RPC  
On sides: RC55



# Terminal blocks spring clamp

Three level

↳ DIN 3



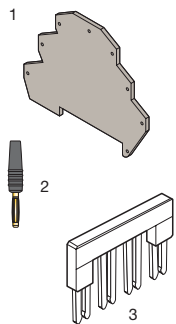
End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop		th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
End stop		th. 12 mm	BADH	V2	1SNA 116 900 R2700
End stop		th. 9,1 mm	BAMH	V2	1SNA 114 836 R0000
End stop		th. 9,1 mm	BAMH V0	V0	1SNA 194 836 R0100
Rail		35 x 7,5 x 1	PR3.22		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

## Notes

UL 94 V0 material.  
One wire per spring.

## Accessories



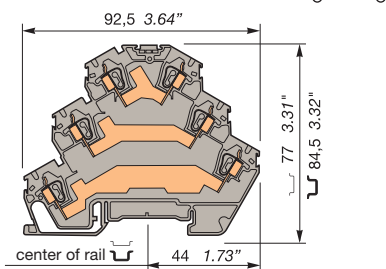
- 1 End section grey
- 2 Test plug black
- 3 Jumper bar orange  
IP 20 - 24 A



R See section on markers marking method

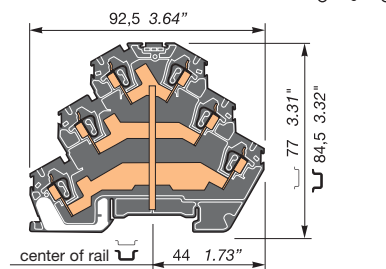
### D 2,5/5.T3.L

Spacing 5 mm +0,05 .198"



### D 2,5/5.T1.L

Spacing 5 mm +0,05 .198"



Colour	Type	Part number
3 circuits: "feed-through"		
Grey	D 2,5/5.T3.L	1SNA 290 456 R0000

Colour	Type	Part number
1 circuit: "feed-through" with 6 springs interconnected		
Black	D 2,5/5.T1.L	1SNA 290 457 R0100

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,14-4 mm <sup>2</sup>		
Flexible	0,14-2,5 mm <sup>2</sup>		
Isolating cover	2,5 mm <sup>2</sup>		
Ground bar			

Voltage		
Rated	500 V	
Impulse withstand	6 kV	
Pollution degree	3	

Current		
Rated	20 A	

Wire size			
Rated / Gauge	2,5 mm <sup>2</sup> / A2		
Wire strip. length	Recomm. screwdriver	Weight	Protection
9,5 mm .37"	3,5 mm .14"		IP 20 NEMA 1

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,14-4 mm <sup>2</sup>		
Flexible	0,14-2,5 mm <sup>2</sup>		
Isolating cover	2,5 mm <sup>2</sup>		
Ground bar			

Voltage		
Rated	500 V	
Impulse withstand	6 kV	
Pollution degree	3	

Current		
Rated	24 A	

Wire size			
Rated / Gauge	2,5 mm <sup>2</sup> / A2		
Wire strip. length	Recomm. screwdriver	Weight	Protection
9,5 mm .37"	3,5 mm .14"		IP 20 NEMA 1

Type	Part numbers			
FED5.T3.L V0	th. 2,5 mm	1SNA 291 817 R1700		
FC2.MC (1) V2	DIA 2,0 mm	1SNA 107 239 R0300		
BJDL5.2 V0	2 poles	1SNA 291 102 R2300		
BJDL5.3 V0	3 poles	1SNA 291 103 R2400		
BJDL5.4 V0	4 poles	1SNA 291 104 R2500		
BJDL5.5 V0	5 poles	1SNA 291 105 R2600		
BJDL5.6 V0	6 poles	1SNA 291 106 R2700		
BJDL5.7 V0	7 poles	1SNA 291 107 R2000		
BJDL5.8 V0	8 poles	1SNA 291 108 R0100		
BJDL5.9 V0	9 poles	1SNA 291 109 R0200		
BJDL5.10 V0	10 poles	1SNA 291 110 R2600		

Type	Part numbers			
FED5.T3.L V0	th. 2,5 mm	1SNA 291 817 R1700		
FC2.MC (1) V2	DIA 2,0 mm	1SNA 107 239 R0300		
BJDL5.2 V0	2 poles	1SNA 291 102 R2300		
BJDL5.3 V0	3 poles	1SNA 291 103 R2400		
BJDL5.4 V0	4 poles	1SNA 291 104 R2500		
BJDL5.5 V0	5 poles	1SNA 291 105 R2600		
BJDL5.6 V0	6 poles	1SNA 291 106 R2700		
BJDL5.7 V0	7 poles	1SNA 291 107 R2000		
BJDL5.8 V0	8 poles	1SNA 291 108 R0100		
BJDL5.9 V0	9 poles	1SNA 291 109 R0200		
BJDL5.10 V0	10 poles	1SNA 291 110 R2600		

On top : RC510 or RPC  
On sides : RC55

On top : RC510 or RPC  
On sides : RC55

(1) The use of the test plug decreases the block's voltage rating: U = 200 V.

### Terminal blocks spring clamp

ground terminal blocks not electrically connected to the mounting rail

DIN 3



\* Entelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

Other accessories of this terminal blocks: See pages of same size standard blocks.

#### Characteristics

Wire size	Rigid	0,12-4 * mm <sup>2</sup>
	Flexible	0,12-2,5 mm <sup>2</sup>
Rated current short-circuit	300A/1s	
Rated wire size nominal / gauge	2,5 mm <sup>2</sup> / A2	

#### Other characteristics

Wire strip. length	Recomm. screwdriver	Weight	Protection
9,5 mm .37"	3,5 mm .14"	6 g .21 oz	IP 20 NEMA 1

#### Approvals

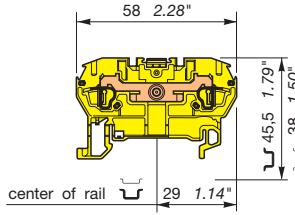
CE	UL	US
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#### Accessories

Type	P/N
1 End section grey	FED5.2L V0 th. 2,5 mm 1SNA 291 061 R2400
2 Separator orange	FED5.2L V0 th. 2,5 mm 1SNA 291 062 R2500
R See section on markers mode	SCD5.2L V0 th. 2,5 mm 1SNA 291 352 R0400
	RC55 RC510 RPC

#### D 2,5/5.PI.2L

Spacing 5 mm +0,05 .198"



Terminal block with 2 springs. Same size as D2,5/5. ...L terminal blocks.

Type	P/N
Yellow body / Green marking 2 springs	■ D 2,5/5.PI.2L 1SNA 290 030 R0400

IEC	UL/CSA
NFC DIN	
0,12-4 * mm <sup>2</sup>	26-12 AWG
0,12-2,5 mm <sup>2</sup>	26-12 AWG
Rated current short-circuit	300A/1s
Rated wire size nominal / gauge	2,5 mm <sup>2</sup> / A2

Wire strip. length	Recomm. screwdriver	Weight	Protection
9,5 mm .37"	3,5 mm .14"	6 g .21 oz	IP 20 NEMA 1

#### Approvals

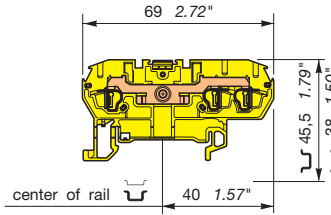
CE	UL	US
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#### Accessories

Type	P/N
FED5.2L V0 th. 2,5 mm 1SNA 291 061 R2400	
FED5.2L V0 th. 2,5 mm 1SNA 291 062 R2500	
SCD5.2L V0 th. 2,5 mm 1SNA 291 352 R0400	
	RC55 RC510 RPC

#### D 2,5/5.PI.3L

Spacing 5 mm +0,05 .198"



Terminal block with 3 springs. Same size as D2,5/5. ...L terminal blocks.

Type	P/N
Yellow body / Green marking 3 springs	■ D 2,5/5.PI.3L 1SNA 290 040 R1600

IEC	UL/CSA
NFC DIN	
0,12-4 * mm <sup>2</sup>	26-12 AWG
0,12-2,5 mm <sup>2</sup>	26-12 AWG
Rated current short-circuit	300A/1s
Rated wire size nominal / gauge	2,5 mm <sup>2</sup> / A2

Wire strip. length	Recomm. screwdriver	Weight	Protection
9,5 mm .37"	3,5 mm .14"	8 g .28 oz	IP 20 NEMA 1

#### Approvals

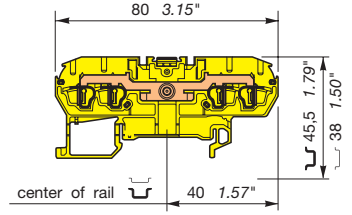
CE	UL	US
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#### Accessories

Type	P/N
FED5.3L V0 th. 2,5 mm 1SNA 291 051 R2200	
FED5.3L V0 th. 2,5 mm 1SNA 291 052 R2300	
SCD5.3L V0 th. 2,5 mm 1SNA 291 362 R0600	
	RC55 RC510 RPC

#### D 2,5/5.PI.4L

Spacing 5 mm +0,05 .198"



Terminal block with 4 springs. Same size as D2,5/5. ...L terminal blocks.

Type	P/N
Yellow body / Green marking 4 springs	■ D 2,5/5.PI.4L 1SNA 290 020 R0200

IEC	UL/CSA
NFC DIN	
0,12-4 * mm <sup>2</sup>	26-12 AWG
0,12-2,5 mm <sup>2</sup>	26-12 AWG
Rated current short-circuit	300A/1s
Rated wire size nominal / gauge	2,5 mm <sup>2</sup> / A2

Wire strip. length	Recomm. screwdriver	Weight	Protection
9,5 mm .37"	3,5 mm .14"	8 g .28 oz	IP 20 NEMA 1

#### Approvals

CE	UL	US
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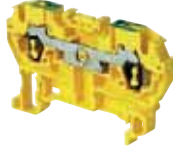
#### Accessories

Type	P/N
FED5.4L V0 th. 2,5 mm 1SNA 291 041 R2000	
FED5.4L V0 th. 2,5 mm 1SNA 291 042 R2100	
SCD5.4L V0 th. 2,5 mm 1SNA 291 372 R0000	
	RC55 RC510 RPC

### Terminal blocks spring clamp

ground terminal blocks not electrically connected to the mounting rail

DIN 3



Other accessories of this terminal blocks: See pages of same size standard blocks.

#### Characteristics

Wire size	Rigid	0,2-6 mm <sup>2</sup>
	Flexible	0,2-4 mm <sup>2</sup>
Rated current short-circuit	480A/1s	
Rated wire size nominal / gauge	4 mm <sup>2</sup> / A4	

#### Other characteristics

Wire strip. length	Recomm. screwdriver	Weight	Protection
11 mm .43"	4 mm .16"	9 g .32 oz	IP 20 NEMA 1

#### Approvals

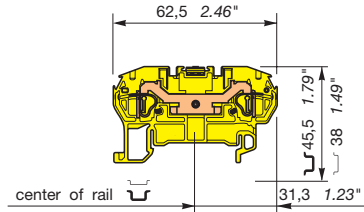
CE	UL	US
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#### Accessories

Type	P/N
1 End section grey	FED5.2L V0 th. 2,5 mm 1SNA 291 061 R2400
2 Separator orange	FED5.2L V0 th. 2,5 mm 1SNA 291 062 R2500
R See section on markers mode	SCD5.2L V0 th. 2,5 mm 1SNA 291 352 R0400
	RC65 RC610 RPC

#### D 4/6.PI.2L

Spacing 6 mm +0,05 .238"



2 springs.

Type	P/N
Yellow body / Green marking	■ D 4/6.PI.2L 1SNA 290 070 R1400

IEC	UL/CSA
NFC DIN	
0,2-6 mm <sup>2</sup>	24-10 AWG
0,2-4 mm <sup>2</sup>	24-10 AWG
Rated current short-circuit	480A/1s
Rated wire size nominal / gauge	4 mm <sup>2</sup> / A4

Wire strip. length	Recomm. screwdriver	Weight	Protection
11 mm .43"	4 mm .16"	9 g .32 oz	IP 20 NEMA 1

#### Approvals

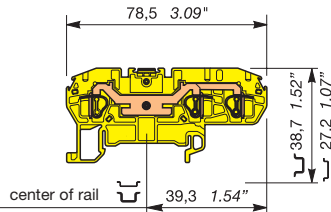
CE	UL	US
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#### Accessories

Type	P/N
FED5.2L V0 th. 2,5 mm 1SNA 291 061 R2400	
FED5.2L V0 th. 2,5 mm 1SNA 291 062 R2500	
SCD5.2L V0 th. 2,5 mm 1SNA 291 352 R0400	
	RC65 RC610 RPC

#### D 4/6.PI.3L

Spacing 6 mm +0,05 .238"



4 springs.

Type	P/N
Yellow body / Green marking	■ D 4/6.PI.3L 1SNA 290 408 R1100

IEC	UL/CSA
NFC DIN	
0,2-6 mm <sup>2</sup>	24-10 AWG
0,2-4 mm <sup>2</sup>	24-10 AWG
Rated current short-circuit	480A/1s
Rated wire size nominal / gauge	4 mm <sup>2</sup> / A4

Wire strip. length	Recomm. screwdriver	Weight	Protection
11 mm .43"	4 mm .16"	12 g .42 oz	IP 20 NEMA 1

#### Approvals

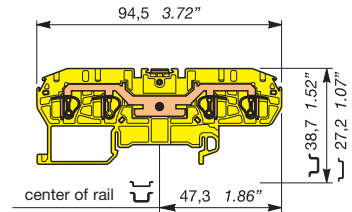
CE	UL	US
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#### Accessories

Type	P/N
FED5.3L V0 th. 2,5 mm 1SNA 291 694 R2400	
FED5.3L V0 th. 2,5 mm 1SNA 291 695 R2500	
	RC65 RC610 RPC

#### D 4/6.PI.4L

Spacing 6 mm +0,05 .238"



4 springs.

Type	P/N
Yellow body / Green marking	■ D 4/6.PI.4L 1SNA 290 413 R2500

IEC	UL/CSA
NFC DIN	
0,2-6 mm <sup>2</sup>	24-10 AWG
0,2-4 mm <sup>2</sup>	24-10 AWG
Rated current short-circuit	480A/1s
Rated wire size nominal / gauge	4 mm <sup>2</sup> / A4

Wire strip. length	Recomm. screwdriver	Weight	Protection
11 mm .43"	4 mm .16"	14 g .49 oz	IP 20 NEMA 1

#### Approvals

CE	UL	US
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#### Accessories

Type	P/N
FED5.4L V0 th. 2,5 mm 1SNA 291 696 R2600	
FED5.4L V0 th. 2,5 mm 1SNA 291 697 R2700	
	RC65 RC610 RPC

### Terminal blocks spring clamp

ground terminal blocks not electrically connected to the mounting rail

DIN 3



D 6/8.PI.2L	
Spacing 8 mm -0,05 .315"	
2 springs.	
Type	P/N
Yellow body / Green marking	
<b>D 6/8.PI.2L</b>	1SNA 290 090 R0100

D 6/8.PI.3L	
Spacing 8 mm -0,05 .315"	
2 springs.	
Type	P/N
Yellow body / Green marking	
<b>D 6/8.PI.3L</b>	1SNA 290 421 R2500

D 10/10.PI.2L	
Spacing 10 mm -0,05 .394"	
Terminal block with 2 springs and 1 test + 1 interconnection on one side.	
Type	P/N
Yellow body / Green marking	
<b>D 10/10.PI.2L</b>	1SNA 290 300 R2000

Other accessories of this terminal blocks:  
See pages of same size standard blocks.

Characteristics	IEC		UL/CSA		IEC		UL/CSA		IEC		UL/CSA		
	NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN	
Wire size	Rigid 0,5-10 mm <sup>2</sup>		22-8 AWG		Flexible 0,5-6 mm <sup>2</sup>		22-8 AWG		0,5-16 mm <sup>2</sup>		20-6 AWG		
Rated current short-circuit	720A/1s		720A/1s		1200 A / 1 s.		1200 A / 1 s.		1200 A / 1 s.		1200 A / 1 s.		
Rated wire size nominal / gauge	6 mm <sup>2</sup> /A5		8 AWG		6 mm <sup>2</sup> /A5		8 AWG		10 mm <sup>2</sup> / B6		6 AWG		
Other characteristics	Wire strip. length	Recomm. screwdriver	Protection		Wire strip. length	Recomm. screwdriver	Protection		Wire strip. length	Recomm. screwdriver	Protection		
	13 mm	5,5 mm	IP 20		12,5 mm	5,5 mm	IP 20		12 mm	5,5 mm	IP 20		
	.53"	.22"	NEMA 1		.49"	.22"	NEMA 1		.47"	.22"	NEMA 1		
Approvals	cULus				CE				cULus				
Accessories	Type	P/N		Type	P/N		Type	P/N		Type	P/N		
	1 End section	FED8.2L V0 th. 2,5 mm	1SNA 291 161 R2500	FED8.3L V0 th. 2,5 mm	1SNA 291 711 R2400	FED10.2L V0 th. 2,5 mm	1SNA 291 461 R2200	FED10.2L V0 th. 2,5 mm	1SNA 291 461 R2200	FED10.2L V0 th. 2,5 mm	1SNA 291 461 R2200	FED10.2L V0 th. 2,5 mm	1SNA 291 462 R2300
R See section on markers	mode	On top: RC1010, RC810, RC610, RPC	On sides: RC85AL, RC65	On top: RC1010, RC810, RC610, RPC	On sides: RC85AL, RC65	On top: RC1010, RC810, RC610, RPC	On sides: RC85AL, RC65	On top: RC1010, RC810, RC610, RPC	On sides: RC85AL, RC65	On top: RC1010, RC810, RC610, RPC	On sides: RC85AL, RC65	On top: RC1010, RC810, RC610, RPC	On sides: RC85AL, RC65

### Terminal blocks spring clamp

ground terminal blocks not electrically connected to the mounting rail

DIN 3

D 10/10.1.PI.2L	
Spacing 10 mm -0,05 .394"	
Terminal block with 2 springs with 2 interconnections on one side.	
Type	P/N
Yellow body / Green marking	
<b>D 10/10.1.PI.2L</b>	1SNA 290 310 R1100

D 10/10.PI.3L	
Spacing 10 mm -0,05 .394"	
Terminal block with 2 springs with 1 test + 1 interconnection on both sides.	
Type	P/N
Yellow body / Green marking	
<b>D 10/10.PI.3L</b>	1SNA 290 426 R2200

D 16/12.PI.2L	
Spacing 12 mm -0,05 .473"	
Terminal block with 2 springs with 1 test + 1 interconnection on both sides.	
Type	P/N
Yellow body / Green marking	
<b>D 16/12.PI.2L</b>	1SNA 399 583 R2100

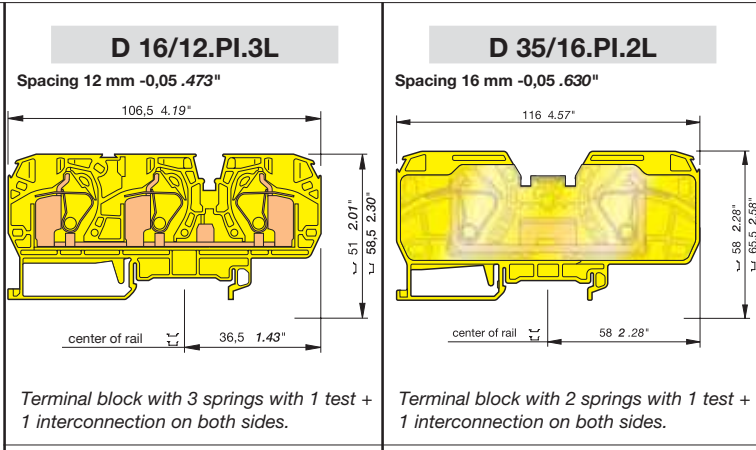
Other accessories of this terminal blocks:  
See pages of same size standard blocks.  
\* Max current according to rail. Consult us.

Characteristics	IEC		UL/CSA		IEC		UL/CSA		IEC		UL/CSA		
	NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN	
Wire size	Rigid 0,5-16 mm <sup>2</sup>		20-6 AWG		Flexible 0,5-10 mm <sup>2</sup>		20-6 AWG		0,5-16 mm <sup>2</sup>		20-6 AWG		
Rated current short-circuit	1200 A / 1 s.		1200 A / 1 s.		1920* A / 1 s.		1920* A / 1 s.		1200 A / 1 s.		1200 A / 1 s.		
Rated wire size nominal / gauge	10 mm <sup>2</sup> / B6		6 AWG		10 mm <sup>2</sup> / B6		6 AWG		16 mm <sup>2</sup> / A7		6 AWG		
Other characteristics	Wire strip. length	Recomm. screwdriver	Protection		Wire strip. length	Recomm. screwdriver	Protection		Wire strip. length	Recomm. screwdriver	Protection		
	12 mm	5,5 mm	IP 20		12 mm	5,5 mm	IP 20		19 mm	5,5 mm	IP 20		
	.47"	.22"	NEMA 1		.47"	.22"	NEMA 1		.73"	.22"	NEMA 1		
Approvals	cULus				CE				cULus				
Accessories	Type	P/N		Type	P/N		Type	P/N		Type	P/N		
	1 End section	FED10.2L V0 th. 2,5 mm	1SNA 291 461 R2200	FED10.3L V0 th. 2,5 mm	1SNA 291 731 R2000	FED12.2L V0 th. 2,5 mm	1SNA 399 571 R0400	FED12.2L V0 th. 2,5 mm	1SNA 399 572 R0500	FED12.2L V0 th. 2,5 mm	1SNA 399 574 R0700	FED12.2L V0 th. 2,5 mm	1SNA 399 574 R0700
2 Test plug	black	FED10.2L V0 th. 2,5 mm	1SNA 291 462 R2300	FED10.3L V0 th. 2,5 mm	1SNA 291 733 R2200	FC2 DIA. 2 mm	1SNA 007 865 R2600	FC2 DIA. 2 mm	1SNA 007 865 R2600	FC2 DIA. 2 mm	1SNA 007 865 R2600	FC2 DIA. 2 mm	1SNA 007 865 R2600
R See section on markers	mode	On top: RC1010, RC810, RC610, RPC	On sides: RC85AL, RC65	On top: RC1010, RC810, RC610, RPC	On sides: RC85AL, RC65	On top: RC1010, RC810, RC610, RPC	On sides: RC85AL, RC65	On top: RC1010, RC810, RC610, RPC	On sides: RC85AL, RC65	On top: RC1010, RC810, RC610, RPC	On sides: RC85AL, RC65	On top: RC1010, RC810, RC610, RPC	On sides: RC85AL, RC65

**Terminal blocks  
spring clamp**  
ground terminal blocks not  
electrically connected to the  
mounting rail  
DIN 3



Other accessories of this terminal blocks:  
See pages of same size standard blocks.



Type	P/N	Type	P/N
Yellow body / Green marking		Yellow body / Green marking	
<b>D 16/12.PI.3L</b>	1SNA 290 431 R2700	<b>D 35/16.PI.2L</b>	1SNA 399 619 R1400

Characteristics		IEC	UL/CSA
Wire size		NFC DIN	
Rigid		0,5-25 mm <sup>2</sup>	
Flexible		0,5-16 mm <sup>2</sup>	
Rated current short-circuit		1920 A / 1s.	
Rated wire size nominal / gauge		16 mm <sup>2</sup> / A7	

Characteristics		IEC	UL/CSA
Wire size		NFC DIN	
Rigid		2,5-50 mm <sup>2</sup>	14-2 AWG
Flexible		2,5-35 mm <sup>2</sup>	14-2 AWG
Rated current short-circuit		4200 A / 1s.	
Rated wire size nominal / gauge		35 mm <sup>2</sup> / A9	2 AWG

Other characteristics		Wire strip. length	Recomm. screwdriver	Protection
		19 mm	6,5 mm	IP 20
		.73"	.26"	NEMA 1

Other characteristics		Wire strip. length	Recomm. screwdriver	Protection
		19 mm	6,5 mm	IP 20
		.73"	.26"	NEMA 1

Approvals				
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Approvals				
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Accessories		Type	P/N
1	End section	grey orange	FED12.3L V0 2,5 mm 1SNA 291 721 R2600
2	Test plug	black	FED12.3L V0 2,5 mm 1SNA 291 723 R2000
R	See section on markers	mode	FC2 DIA. 2 mm 1SNA 007 865 R2600
		On top:	RC1010, RC810, RC610
		On sides:	RC85AL, RC65

Accessories		Type	P/N
1	End section	grey orange	FED12.3L V0 2,5 mm 1SNA 291 721 R2600
2	Test plug	black	FED12.3L V0 2,5 mm 1SNA 291 723 R2000
R	See section on markers	mode	FC2 DIA. 2 mm 1SNA 007 865 R2600
		On top:	RC1010, RC810, RC610
		On sides:	RC85AL, RC65

### Terminal blocks spring clamp

ground terminal blocks not electrically connected to the mounting rail

DIN 3

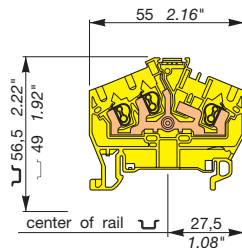


\*Entrelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

Other accessories of this terminal blocks: See pages of same size standard blocks.

### D2,5/5.I.PI.3L

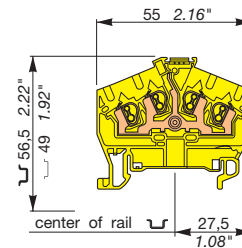
Spacing 5 mm +0,05 .198"



3 springs.

### D 2,5/5.I.PI.4L

Spacing 5 mm +0,05 .198"



4 springs.

### Characteristics

		IEC NFC DIN		UL/CSA		IEC NFC DIN		UL/CSA		IEC NFC DIN		UL/CSA	
Wire size	Rigid					0,12-4 * mm <sup>2</sup>		26-12 AWG		0,12-4 * mm <sup>2</sup>		26-12 AWG	
	Flexible					0,12-2,5 mm <sup>2</sup>		26-12 AWG		0,12-2,5 mm <sup>2</sup>		26-12 AWG	
Rated current short-circuit						300 A / 1s.				300 A / 1s.			
Rated wire size nominal / gauge						2,5 mm <sup>2</sup> / A2		12 AWG		2,5 mm <sup>2</sup> / A2		12 AWG	
Other characteristics		Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection
		9,5 mm	3,5 mm	8 g	IP 20	9,5 mm	3,5 mm	8 g	IP 20	9,5 mm	3,5 mm	9 g	IP 20
		.37"	.14"	.28 oz	NEMA 1	.37"	.14"	.32 oz	NEMA 1	.37"	.14"	.32 oz	NEMA 1

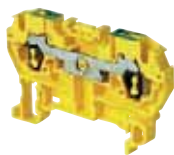
Approvals	cRU US				CE cRU US				CE
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Accessories	Type	P/N	Type	P/N	Type	P/N
1 End section grey orange			FED5.I.3LV0 th. 2,5 mm	1SNA 290 311 R0600	FED5.I.3LV0 th. 2,5 mm	1SNA 290 311 R0600
			FED5.I.3LV0 th. 2,5 mm	1SNA 290 314 R0100	FED5.I.3LV0 th. 2,5 mm	1SNA 290 314 R0100
R See section on markers mode			RC510 RPC		RC510 RPC	

### Terminal blocks spring clamp

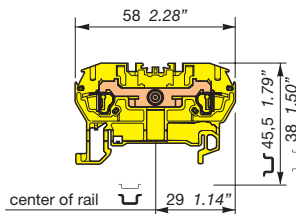
ground terminal blocks not electrically connected to the mounting rail

DIN 3



### D 1,5/4.PI.2L

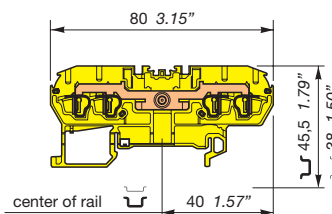
Spacing 4 mm +0,05 .158"



Terminal block with 2 springs. Same size as D1,5/4. ...L terminal blocks.

### D 1,5/4.PI.4L

Spacing 4 mm +0,05 .158"



Terminal block with 4 springs. Same size as D1,5/4. ...L terminal blocks.

Type	P/N	Type	P/N	Type	P/N
Yellow body / Green marking		Yellow body / Green marking			
2 springs		4 springs			
D 1,5/4.PI.2L	1SNA 290 380 R1000	D 1,5/4.PI.4L	1SNA 290 390 R1200		

### Characteristics

		IEC NFC DIN		UL/CSA		IEC NFC DIN		UL/CSA		IEC NFC DIN		UL/CSA	
Wire size	Rigid	0,12-2,5 mm <sup>2</sup>		26-16 AWG		0,12-2,5 mm <sup>2</sup>		26-16 AWG					
	Flexible	0,12-1,5 mm <sup>2</sup>		26-16 AWG		0,12-1,5 mm <sup>2</sup>		26-16 AWG					
Rated current short-circuit		180 A/1s.				180 A/1s.							
Rated wire size nominal / gauge		1,5 mm <sup>2</sup> / B1		16 AWG		1,5 mm <sup>2</sup> / B1		16 AWG					
Other characteristics		Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection
		9,5 mm	2,5 mm	7 g	IP 20	9,5 mm	2,5 mm	8 g	IP 20				
		.37"	.10"	.25 oz	NEMA 1	.37"	.10"	.28 oz	NEMA 1				

Approvals	cRU US				CE cRU US				CE
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Accessories	Type	P/N	Type	P/N	Type	P/N
1 End section grey orange	FED5.2L V0 th. 2,5 mm	1SNA 291 061 R2400	FED5.4L V0 th. 2,5 mm	1SNA 291 041 R2000	FED5.4L V0 th. 2,5 mm	1SNA 291 042 R2100
	FED5.2L V0 th. 2,5 mm	1SNA 291 062 R2500	FED5.4L V0 th. 2,5 mm	1SNA 291 042 R2100		
2 Separator orange	SCD5.2L V0 th. 2,5 mm	1SNA 291 352 R0400	SCD5.4L V0 th. 2,5 mm	1SNA 291 372 R0000		
R See section on markers mode	RC410		RC410			

### Terminal blocks spring clamp

ground terminal blocks electrically connected to the mounting rail

DIN 3

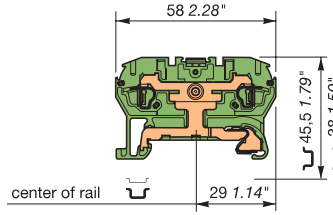


Block also available in ATEX (Explosive Atmosphere) approved version

\* Entelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires. Other accessories of this terminal blocks: refer to pages of same size standard blocks.

#### D 2,5/5.P.2L

Spacing 5 mm + 0,05 .198"

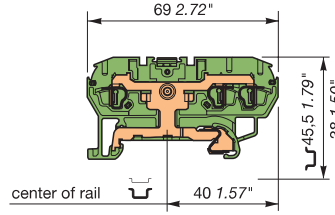


Terminal block with 2 springs. Same size as D2,5/5. ...L terminal blocks.

Type	P/N
Green body / Yellow marking	
2 springs	
<b>D 2,5/5.P.2L</b>	1SNA 290 029 R0700

#### D 2,5/5.P.3L

Spacing 5 mm + 0,05 .198"

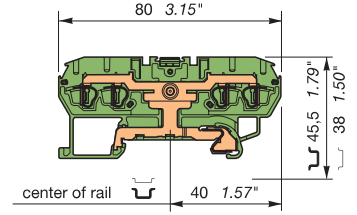


Terminal block with 3 springs. Same size as D2,5/5. ...L terminal blocks.

Type	P/N
Green body / Yellow marking	
3 springs	
<b>D 2,5/5.P.3L</b>	1SNA 290 039 R0100

#### D 2,5/5.P.4L

Spacing 5 mm + 0,05 .198"



Terminal block with 4 springs. Same size as D2,5/5. ...L terminal blocks.

Type	P/N
Green body / Yellow marking	
4 springs	
<b>D 2,5/5.P.4L</b>	1SNA 290 019 R0500

#### Characteristics

Wire size	Rigid		UL/CSA		Wire strip. length	Recomm. screwdriver		Weight	Protection	UL/CSA		
	NFC	DIN	NFC	DIN		NFC	DIN			NFC	DIN	
	0,12-4 * mm <sup>2</sup>		26-12 AWG		9,5 mm	3,5 mm	10 g	IP 20	0,12-4 * mm <sup>2</sup>		26-12 AWG	
	0,12-2,5 mm <sup>2</sup>		26-12 AWG		.37"	.14"	.35 oz	NEMA 1	0,12-2,5 mm <sup>2</sup>		26-12 AWG	
Rated current short-circuit	300A/1s				300A/1s				300A/1s			
Rated wire size nominal / gauge	2,5 mm <sup>2</sup> / A2		12 AWG		2,5 mm <sup>2</sup> / A2		12 AWG		2,5 mm <sup>2</sup> /A2			

Approvals		cULus		CE		cULus		CE		cULus		CE	
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#### Accessories

	Type	P/N
1 End section	grey orange	FED5.2L V0 th. 2,5 mm 1SNA 291 061 R2400 FED5.2L V0 th. 2,5 mm 1SNA 291 062 R2500
2 Separator	orange	SCD5.2L V0 th. 2,5 mm 1SNA 291 352 R0400
R See section on markers	mode	RC55 RC510 RPC

### Terminal blocks spring clamp

ground terminal blocks electrically connected to the mounting rail

DIN 3

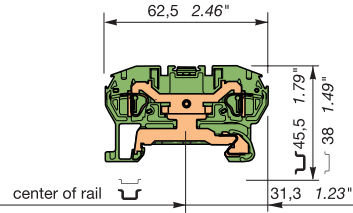


Block also available in ATEX (Explosive Atmosphere) approved version

Other accessories of this terminal blocks: refer to pages of same size standard blocks.

#### D 4/6.P.2L

Spacing 6 mm + 0,05 .238"

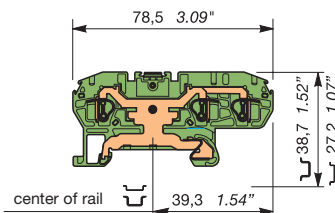


2 springs.

Type	P/N
Green body / Yellow marking	
<b>D 4/6.P.2L</b>	1SNA 290 069 R1700

#### D 4/6.P.3L

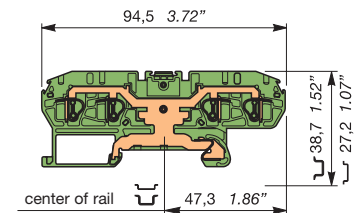
Spacing 6 mm + 0,05 .238"



Type	P/N
Green body / Yellow marking	
<b>D 4/6.P.3L</b>	1SNA 290 409 R1200

#### D 4/6.P.4L

Spacing 6 mm + 0,05 .238"



Type	P/N
Green body / Yellow marking	
<b>D 4/6.P.4L</b>	1SNA 290 414 R2600

#### Characteristics

Wire size	Rigid		UL/CSA		Wire strip. length	Recomm. screwdriver		Weight	Protection	UL/CSA		
	NFC	DIN	NFC	DIN		NFC	DIN			NFC	DIN	
	0,2-6 mm <sup>2</sup>		24-10 AWG		11 mm	4 mm	13 g	IP 20	0,2-6 mm <sup>2</sup>		24-10 AWG	
	0,2-4 mm <sup>2</sup>		24-10 AWG		.43"	.16"	.46 oz	NEMA 1	0,2-4 mm <sup>2</sup>		24-10 AWG	
Rated current short-circuit	480A/1s				480A/1s				480A/1s			
Rated wire size nominal / gauge	4 mm <sup>2</sup> /A4		24-10 AWG		4 mm <sup>2</sup> /A4		24-10 AWG		4 mm <sup>2</sup> /A4			

Approvals		cULus		CE		cULus		CE		cULus		CE	
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#### Accessories

	Type	P/N
1 End section	grey orange	FED5.2L V0 th. 2,5 mm 1SNA 291 061 R2400 FED5.2L V0 th. 2,5 mm 1SNA 291 062 R2500
2 Separator	orange	SCD5.2L V0 th. 2,5 mm 1SNA 291 352 R0400
R See section on markers	mode	RC65 RC610 RPC

**Terminal blocks  
spring clamp**  
ground terminal blocks  
electrically connected to the  
mounting rail

DIN 3



Other accessories of this terminal blocks:  
See pages of same size standard blocks.

Characteristics		IEC	UL/CSA
Wire size	Rigid Flexible	NFC DIN 0,5-10 mm <sup>2</sup> 0,5-6 mm <sup>2</sup>	22-8 AWG 22-8 AWG
Rated current short-circuit		720 A/1s	720 A/1s
Rated wire size nominal / gauge		6 mm <sup>2</sup> / A5	8 AWG
Other characteristics			
Wire strip. length	Recomm. screwdriver	Protection	
12,5 mm .49"	5,5 mm .22"	IP 20 NEMA 1	
Approvals			
cULus		CE	CE
Accessories			
Type	P/N	Type	P/N
1 End section	grey orange	FED8.2L V0 th. 2,5 mm 1SNA 291 161 R2500 FED8.2L V0 th. 2,5 mm 1SNA 291 162 R2600	FED8.3L V0 th. 2,5 mm 1SNA 291 711 R2400 FED8.3L V0 th. 2,5 mm 1SNA 291 713 R2600
2 Test plug	black		
R See section on markers	mode	On top: RC610, RC810, RPC On sides: RC85AL	On top: RC610, RC810, RPC On sides: RC85AL

**Terminal blocks  
spring clamp**  
ground terminal blocks  
electrically connected to the  
mounting rail

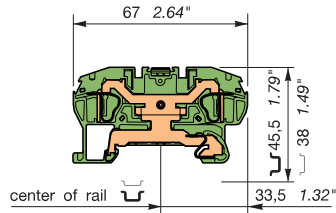
DIN 3

Other accessories of this terminal blocks:  
See pages of same size standard blocks.  
\* Max. current according to rail. Consult us.

Characteristics		IEC	UL/CSA
Wire size	Rigid Flexible	NFC DIN 0,5-16 mm <sup>2</sup> 0,5-10 mm <sup>2</sup>	20-6 AWG 20-6 AWG
Rated current short-circuit		1200 A / 1 s.	1200 A / 1 s.
Rated wire size nominal / gauge		10 mm <sup>2</sup> / B6	6 AWG
Other characteristics			
Wire strip. length	Recomm. screwdriver	Protection	
12 mm .47"	5,5 mm .22"	IP 20 NEMA 1	
Approvals			
cULus		CE	CE
Accessories			
Type	P/N	Type	P/N
1 End section	grey blue orange	FED10.2L V0 th. 2,5 mm 1SNA 291 461 R2200 FED10.2L V0 th. 2,5 mm 1SNA 291 462 R2300	FED10.3L V0 th. 2,5 mm 1SNA 291 731 R2000 FED10.3L V0 th. 2,5 mm 1SNA 291 733 R2200
2 Test plug	black		
R See section on markers	mode	On top: RC1010, RC810, RC610, RPC On sides: RC85AL, RC65	On top: RC1010, RC810, RC610, RC510, RPCV On sides: RC85, RC65

**D 6/8.P.2L**

Spacing 8 mm - 0,05 .315"

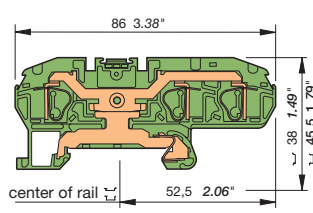


2 springs.

Type	P/N
Green body / Yellow marking	
D 6/8.P.2L	1SNA 290 089 R0400

**D 6/8.P.3L**

Spacing 8 mm - 0,05 .315"

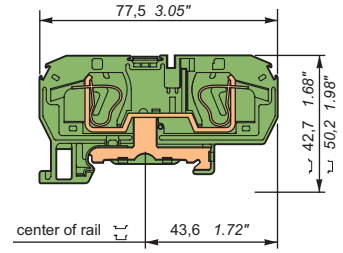


3 springs.

Type	P/N
Green body / Yellow marking	
D 6/8.P.3L	1SNA 290 422 R2600

**D 10/10.P.2L**

Spacing 10 mm - 0,05 .394"

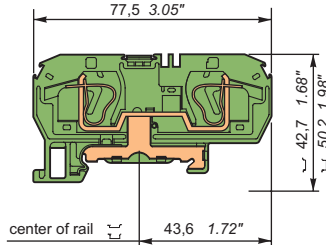


Terminal block with 2 springs and 1 test + 1 interconnection on one side.

Type	P/N
Green body / Yellow marking	
D 10/10.P.2L	1SNA 290 299 R1300

**D 10/10.1.P.2L**

Spacing 10 mm - 0,05 .394"

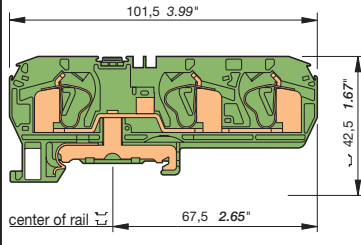


Terminal block with 2 springs with 2 interconnections on one side.

Type	P/N
Green body / Yellow marking	
D 10/10.1.P.2L	1SNA 290 309 R2500

**D 10/10.P.3L**

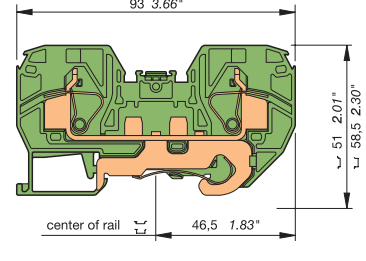
Spacing 10 mm - 0,05 .394"



Type	P/N
Green body / Yellow marking	
D 10/10.P.3L	1SNA 290 427 R2300

**D 16/12.P.2L**

Spacing 12 mm - 0,05 .473"

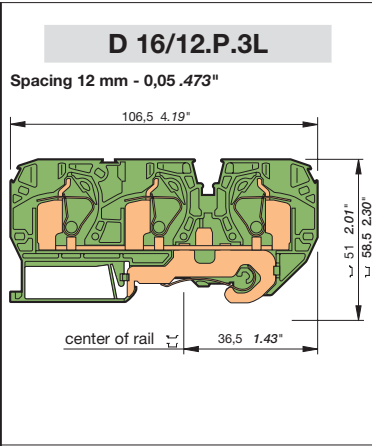


Terminal block with 2 springs with 1 test + 1 interconnection on both sides.

Type	P/N
Green body / Yellow marking	
D 16/12.P.2L	1SNA 399 584 R2200

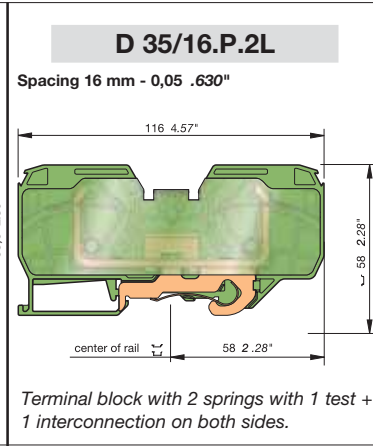
**Terminal blocks  
spring clamp  
ground terminal blocks  
electrically connected to the  
mounting rail**

DIN 3

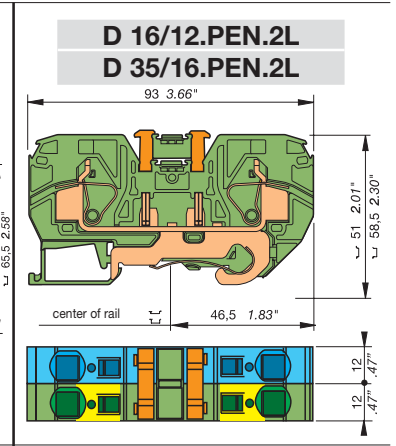


Type	P/N
Green body / Yellow marking	
<b>D 16/12.P.3L</b>	1SNA 290 432 R2000

Other accessories of this terminal blocks:  
See pages of same size standard blocks.



Type	P/N
Green body / Yellow marking	
<b>D 35/16.P.2L</b>	1SNA 399 620 R1100



Type	P/N
2 blocks linked with a double shunt, green body/yellow marking and blue body :	
sp. 12 mm <b>D 16/12.PEN.2L</b>	1SNA 399 631 R0000
sp. 16 mm <b>D 35/16.PEN.2L</b>	1SNA 399 668 R2500

Characteristics	IEC		UL/CSA		IEC		UL/CSA		IEC		UL/CSA	
	NFC	DIN	NFC	DIN	NFC	DIN	NFC	DIN	D 16/12...	D 35/16...	NFC	DIN
Wire size	Rigid Flexible		0,5-25 mm <sup>2</sup> 0,5-16 mm <sup>2</sup>		2,5-50 mm <sup>2</sup> 2,5-35 mm <sup>2</sup>		0,5-25 mm <sup>2</sup> 0,5-16 mm <sup>2</sup>		2,5-50 mm <sup>2</sup> 2,5-35 mm <sup>2</sup>			
Rated current short-circuit	1920* A / 1s.		4200 A / 1 s.		1,9 A/1 s.		4,2 A/1 s.					
Rated wire size nominal / gauge	16 mm <sup>2</sup> / A7		35 mm <sup>2</sup> / A9		16 mm <sup>2</sup> /A7		35 mm <sup>2</sup> /A9					
Other characteristics	Wire strip length	Recomm. screwdriver	Protection		Wire strip length	Recomm. screwdriver	Protection		Wire strip length	Recomm. screwdriver	Protection	
	19 mm	6,5 mm	IP 00		26 mm	6,5 mm	IP 20		See block alone	6,5 mm	IP 20	
	.72"	.25"			1.02"	.26"	NEMA 1			.26"	NEMA 1	

Approvals	CE		CE		cULus		CE	
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Accessories	Type	P/N	Type	P/N	Type	P/N
1 End section	grey blue orange				FED12.2L(1) V0 th. 2,5 mm	1SNA 399 571 R0400
2 Test plug	black				FED12.2L(1) V0 th. 2,5 mm	1SNA 399 572 R0500
R See section on markers	mode		FC2	DIA. 2 mm 1SNA 007 865 R2600	FED12.2L(1) V0 th. 2,5 mm	1SNA 400 152 R0600
	On top: RC85AL, RC65, RC810, RC610, RC 1010		On top: RC1010, RC810, RC610		FC2	DIA. 2 mm 1SNA 007 865 R2600
	On sides: RC85AL, RC65		On sides: RC85AL, RC65			

(1) D 16/12.PEN.2L only



**Terminal blocks  
spring connection**  
ground terminal blocks  
electrically connected to  
the mounting rail

DIN 3

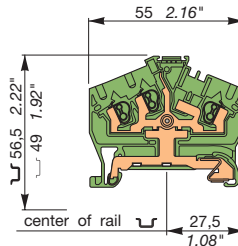


\* Entelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

Other accessories of this terminal blocks :  
See pages of same size standard blocks.

**D2,5/5.I.P.3L**

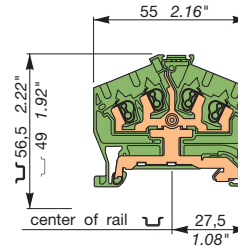
Spacing 5 mm + 0,05 .198"



3 springs.

**D 2,5/5.I.P.4L**

Spacing 5 mm + 0,05 .198"



4 springs.

Characteristics		IEC NFC DIN		UL/CSA		IEC NFC DIN		UL/CSA		IEC NFC DIN		UL/CSA		
Wire size	Rigid Flexible					0,12-4 * mm <sup>2</sup> 0,12-2,5 mm <sup>2</sup>		26-12 AWG 26-12 AWG		0,12-4 * mm <sup>2</sup> 0,12-2,5 mm <sup>2</sup>		26-12 AWG 26-12 AWG		
Rated current short-circuit				300 A / 1s.		300 A / 1s.				300 A / 1s.				
Rated wire size nominal / gauge				2,5 mm <sup>2</sup> / A2		2,5 mm <sup>2</sup> / A2		12 AWG		2,5 mm <sup>2</sup> / A2		12 AWG		
Other characteristics		Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	
		9,5 mm .37"		3,5 mm 137"		11 g .39 oz		IP 20 NEMA 1		9,5 mm .37"		3,5 mm .14"	12 g .42 oz	IP 20 NEMA 1
Approvals		cULus				CE cULus				CE				
Accessories		Type	P/N		Type	P/N		Type	P/N		Type	P/N		
1 End section	grey orange				FED5.I.3LVO th. 2,5 mm	1SNA 290 311 R0600		FED5.I.3LVO th. 2,5 mm	1SNA 290 311 R0600		FED5.I.3LVO th. 2,5 mm	1SNA 290 314 R0100		
R See section on markers	mode				RC510 RPC			RC510 RPC			RC510 RPC			

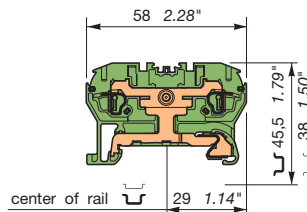
**Terminal blocks  
spring connection**  
ground terminal blocks  
electrically connected to  
the mounting rail

DIN 3



**D 1,5/4.P.2L**

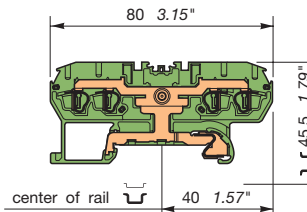
Spacing 4 mm + 0,05 .158"



Terminal block with 2 springs.  
Same size as D1,5/4. ...L terminal blocks.

**D 1,5/4.P.4L**

Spacing 4 mm + 0,05 .158"



Terminal block with 4 springs.  
Same size as D1,5/4. ...L terminal blocks.

Other accessories of this terminal blocks :  
See pages of same size standard blocks.

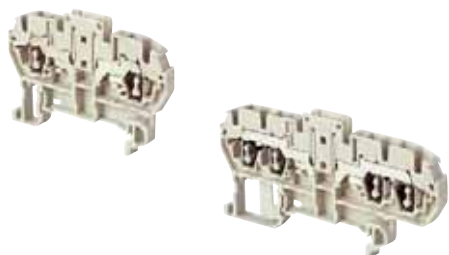
Characteristics		IEC NFC DIN		UL/CSA		IEC NFC DIN		UL/CSA		IEC NFC DIN		UL/CSA		
Wire size	Rigid Flexible	0,12-2,5 mm <sup>2</sup> 0,12-1,5 mm <sup>2</sup>		26-16 AWG 26-16 AWG		0,12-2,5 mm <sup>2</sup> 0,12-1,5 mm <sup>2</sup>		26-16 AWG 26-16 AWG						
Rated current short-circuit		180 A/1s.		16 AWG		180 A/1s.		16 AWG						
Rated wire size nominal / gauge		1,5 mm <sup>2</sup> / B1		16 AWG		1,5 mm <sup>2</sup> / B1		16 AWG						
Other characteristics		Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	
		9,5 mm .37"		2,5 mm .10"		10 g .35 oz		IP 20 NEMA 1		9,5 mm .37"		2,5 mm .10"	11 g .39 oz	IP 20 NEMA 1
Approvals		cULus				CE cULus				CE				
Accessories		Type	P/N		Type	P/N		Type	P/N		Type	P/N		
1 End section	grey orange	FED5.2L V0 th. 2,5 mm	1SNA 291 061 R2400		FED5.4L V0 th. 2,5 mm	1SNA 291 041 R2000		FED5.2L V0 th. 2,5 mm	1SNA 291 062 R2500		FED5.4L V0 th. 2,5 mm	1SNA 291 042 R2100		
2 Separator	orange	SCD5.2L V0 th. 2,5 mm	1SNA 291 352 R0400		SCD5.4L V0 th. 2,5 mm	1SNA 291 372 R0000								
R See section on markers	mode	RC410			RC410									

# Terminal blocks spring connection

## Heavy duty switch connection

### with plug

DIN 3



End stop		th. 9 mm	BADL	VO	1SNA 399 903 R0200
End stop		th. 10 mm	BAM2 VO	VO	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

### Notes

The use of some accessories may decrease the block's voltage rating. For more information, consult us.

One wire per spring.

Terminal block body material is UL 94 V0.

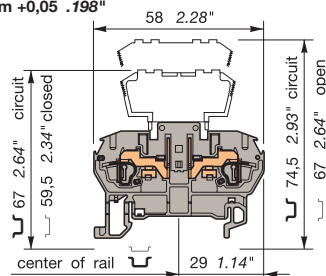
\* Entrellec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

### Accessories

	1 End section	grey	FED5.2L	VO	th. 2,5 mm	1SNA 291 061 R2400
	2 Separator	orange	FED5.2L	VO	th. 2,5 mm	1SNA 291 062 R2500
	3 Test plug	black	SCD5.2L	VO	th. 2,5 mm	1SNA 291 352 R0400
	4 Jumper bar	orange	FC2.MC		DIA. 2 mm	1SNA 107 239 R0300
	5 Shielding connector		BJDL5.2	VO	2 poles	1SNA 291 102 R2300
	6 Plug with solder tags		BJDL5.3	VO	3 poles	1SNA 291 103 R2400
	7 Plug extractor		BJDL5.4	VO	4 poles	1SNA 291 104 R2500
	8 Soldered fuses		BJDL5.5	VO	5 poles	1SNA 291 105 R2600
	9 Jumper bar	orange	BJDL5.6	VO	6 poles	1SNA 291 106 R2700
R	See section on markers marking method					

## D 2,5/5.SB.2L

Spacing 5 mm +0,05 .198"



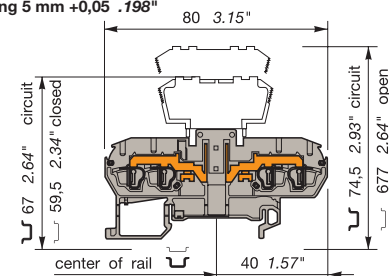
Terminal blocks with 2 springs and 1 interconnection on each sides. Polarized plug delivered separately.



Color	Type	Part number
Grey	D 2,5/5.SB.2L	1SNA 290 071 R0100

## D 2,5/5.SB.4L

Spacing 5 mm +0,05 .198"



Terminal blocks with 4 springs and 1 interconnection on each sides. Polarized plug delivered separately.



Color	Type	Part number
Grey	D 2,5/5.SB.4L	1SNA 290 151 R0600

### Characteristics

#### Wire size

	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

#### Voltage

Rated	500 V	600 V
Impulse withstand	6 kV	
Pollution degree	3	

#### Current

Rated	10 A	8 A
-------	------	-----

#### Wire size

Rated / Gauge	2,5 mm <sup>2</sup> / A2	12 AWG
Wire stripping length	Recommended screwdriver	Weight
9,5 mm	3,5 mm	7 g
.37"	.14"	.25 oz
		Protection
		IP 20
		NEMA 1

### Characteristics

#### Wire size

	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		
Flexible	0,12-2,5 mm <sup>2</sup>		
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

#### Voltage

Rated	500 V	
Impulse withstand	6 kV	
Pollution degree	3	

#### Current

Rated	10 A	
-------	------	--

#### Wire size

Rated/gauge	2,5 mm <sup>2</sup> / A2	12 AWG
Wire stripping length	Recommended screwdriver	Weight
9,5 mm	3,5 mm	11 g
.37"	.14"	.39 oz
		Protection
		IP 20
		NEMA 1

Type	Part number
FED5.2L VO	th. 2,5 mm 1SNA 291 061 R2400
FED5.2L VO	th. 2,5 mm 1SNA 291 062 R2500
SCD5.2L VO	th. 2,5 mm 1SNA 291 352 R0400
FC2.MC	DIA. 2 mm 1SNA 107 239 R0300
BJDL5.2 VO	2 poles 1SNA 291 102 R2300
BJDL5.3 VO	3 poles 1SNA 291 103 R2400
BJDL5.4 VO	4 poles 1SNA 291 104 R2500
BJDL5.5 VO	5 poles 1SNA 291 105 R2600
BJDL5.6 VO	6 poles 1SNA 291 106 R2700
BJDL5.7 VO	7 poles 1SNA 291 107 R2000
BJDL5.8 VO	8 poles 1SNA 291 108 R0100
BJDL5.9 VO	9 poles 1SNA 291 109 R0200
BJDL5.10 VO	10 poles 1SNA 291 110 R2600
CBD5.2L	th. 0,5 mm 1SNA 291 077 R2400
BNS5 V2	th. 5 mm 1SNA 116 702 R2400
EXBN2	1SNA 171 018 R2000
FUBS	0,5 A 1SNA 174 893 R1600
FUBS	1 A 1SNA 174 894 R1700
FUBS	2 A 1SNA 174 895 R1000
FUBS	3 A 1SNA 174 896 R1100
FUBS	5 A 1SNA 174 897 R1200
BJDPL56 (1)	1SNA 291 150 R0600
BJDPL58 (1)	1SNA 291 160 R0000
BJDPL510(1)	1SNA 291 480 R2200

Type	Part number
FED5.4L VO	th. 2,5 mm 1SNA 291 041 R2000
FED5.4L VO	th. 2,5 mm 1SNA 291 042 R2100
SCD5.4L	th. 2,5 mm 1SNA 291 372 R0000
FC2.MC	DIA. 2 mm 1SNA 107 239 R0300
BJDL5.2 VO	2 poles 1SNA 291 102 R2300
BJDL5.3 VO	3 poles 1SNA 291 103 R2400
BJDL5.4 VO	4 poles 1SNA 291 104 R2500
BJDL5.5 VO	5 poles 1SNA 291 105 R2600
BJDL5.6 VO	6 poles 1SNA 291 106 R2700
BJDL5.7 VO	7 poles 1SNA 291 107 R2000
BJDL5.8 VO	8 poles 1SNA 291 108 R0100
BJDL5.9 VO	9 poles 1SNA 291 109 R0200
BJDL5.10 VO	10 poles 1SNA 291 110 R2600
BNS5 V2	th. 5 mm 1SNA 116 702 R2400
EXBN2	1SNA 171 018 R2000
FUBS	0,5 A 1SNA 174 893 R1600
FUBS	1 A 1SNA 174 894 R1700
FUBS	2 A 1SNA 174 895 R1000
FUBS	3 A 1SNA 174 896 R1100
FUBS	5 A 1SNA 174 897 R1200
BJDPL56 (1)	1SNA 291 150 R0600
BJDPL58 (1)	1SNA 291 160 R0000
BJDPL510(1)	1SNA 291 480 R2200

On top: RC 510  
On sides: RC 55

On top: RC 510  
On sides: RC 55

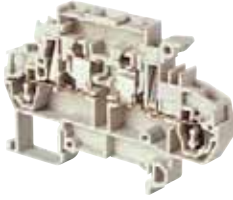
(1) End section must be inserted between 2 interconnected blocks.

# Spring connection terminal blocks

## Switch connection for fuses

### 5 x 20 mm and 5 x 25 mm

DIN 3



End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop		th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

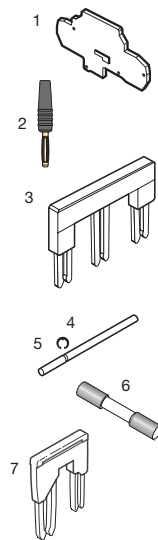
### Notes

The use of some accessories may decrease the block's voltage rating. For more information, consult us.

One wire per spring. Terminal block body material is UL 94 V0. On all the blocks a DIA. 2 or 2.3 mm test across the circuit can be performed.

\* Entrellec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

### Accessories



1	End section	grey	FED8SF.2LV0	th. 3 mm	1SNA 291 131 R1700
		orange	FED8SF.2LV0	th. 3 mm	1SNA 291 132 R1000
2	Test plug		FC2.MC	DIA. 2 mm	1SNA 107 239 R0300
3	Jumper bar	orange	BJDL8.2 V0	2 poles	1SNA 291 122 R1600
			BJDL8.3 V0	3 poles	1SNA 291 123 R1700
			BJDL8.4 V0	4 poles	1SNA 291 144 R2400
			BJDL8.5 V0	5 poles	1SNA 291 145 R2500
4	Assembly rod		TGA8	2 poles	1SNA 168 672 R1100
			TGA8	3 poles	1SNA 168 673 R1200
			TGA8	4 poles	1SNA 168 674 R1300
5	Assembly ring		ANT		1SNA 168 675 R1400
6	Fuse 5 x 20	250 V	FU520	0,5A	1SNA 008 288 R1500
			FU520	1A	1SNA 008 290 R1300
			FU520	2A	1SNA 008 291 R0000
			FU520	3,15A	1SNA 008 289 R1600
			FU520	5A	1SNA 008 292 R0100
	Fuse 5 x 25	250 V	FU525	1,6A	1SNA 167 546 R2200
	Quick fusion HPC 1500 A		FU525	2A	1SNA 167 547 R2300
			FU525	2,5A	1SNA 167 548 R0400
			FU525	4A	1SNA 167 549 R0500
			FU525	6,3A	1SNA 167 550 R0200
7	Jumper bar	orange	BJDPL58	(1)	1SNA 291 160 R0000
	For blocks of different spacing		BJDPL68	(1)	1SNA 291 170 R0200
	- spacing 5 and 8 mm IP 20 - 24 A		BJDPL810	(1)	1SNA 291 484 R1200
	- spacing 6 and 8 mm IP 20 - 32 A				
	- spacing 8 and 10 mm				

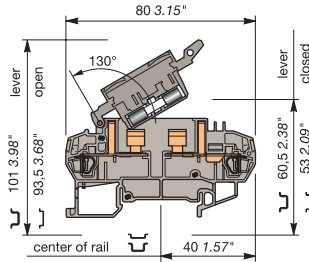
R



R See section on markers marking method

## D 2,5/8.SFT.2L

Spacing 8 mm -0,05 .315"



Terminal blocks with 2 springs and 2 interconnections on the outside of the lever.



Color	Type	Part number
With test socket DIA. 2 or 2.3 mm.		
Grey	D 2,5/8.SFT.2L	1SNA 290 091 R2600
Orange	D 2,5/8.SFT.2L	1SNA 290 092 R2700

### Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

### Voltage

Rated	630 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

### Current

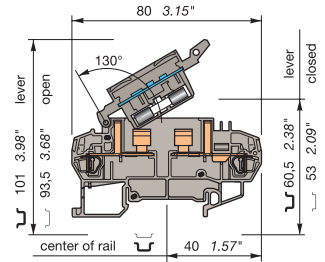
Rated	6,3 A	8 A
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### Wire size

Rated / Gauge	2,5 mm <sup>2</sup> / A2	12 AWG
Wire stripping length	Recommended screwdriver	Weight
9,5 mm	3,5 mm	15 g
.37"	.14"	.53 oz
		Protection
		IP 20
		NEMA 1

## D 2,5/8.SF...T.2L

Spacing 8 mm -0,05 .315"



Terminal blocks D 2,5/8.SFT.2L with blown-fuse indicator.



Color	Type	Part number
With test socket DIA. 2 or 2.3 mm.		
Grey (1)	D 2,5/8.SFLT.2L	1SNA 290 093 R2000
Grey (2)	D 2,5/8.SFDT.2L	1SNA 290 094 R2100
Grey (3)	D 2,5/8.SFD1T.2L	1SNA 290 095 R2200

### Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

### Voltage

Rated	630 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

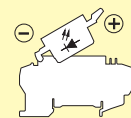
### Current

Rated	6,3 A	8 A
-------	-------	-----

### Wire size

Rated/gauge	2,5 mm <sup>2</sup> / A2	12 AWG
Wire stripping length	Recommended screwdriver	Weight
9,5 mm	3,5 mm	16 g
.37"	.14"	.56 oz
		Protection
		IP 20
		NEMA 1

- (1) Blown-fuse indicator with neon lamp 110 V - 220 V (leakage current with neon lamp < 0,5 mA (110 V) - < 0,7 mA (220 V)).
- (2) Blown-fuse indicator with LED 24 V (+24V marking) (leakage current with LED 24 V or 48 V < 4,5 mA) (\*).
- (3) Blown-fuse indicator with LED 48 V (+48V marking) (leakage current with LED 24 V or 48 V < 4,5 mA) (\*).



\* Blocks with LED indicators are labeled "+" on the outside of the lever. The indicator can be reversed in the field if required.

On older:	RC 510	or	RC 610
On sides:	RC 55	or	RC 65

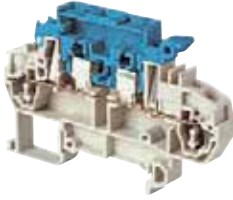
On older:	RC 510	or	RC 610
On sides:	RC 55	or	RC 65

(1) End section must be inserted between 2 interconnected blocks.

# Spring connection terminal blocks

"Neutral" switch blocks (blue)

DIN 3



End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop		th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

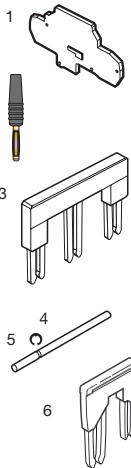
## Notes

The use of some accessories may decrease the block's voltage rating. For more information, consult us.

One wire per spring. Terminal block body material is UL 94 V0. On all the blocks a DIA. 2 or 2.3 mm test across the circuit can be performed.

\* Entelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

## Accessories



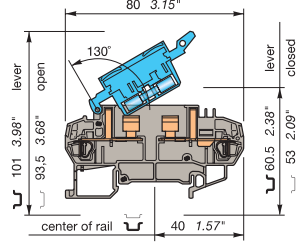
1	End section	grey orange
2	Test plug	
3	Jumper bar	orange IP 20 - 24 A
4	Assembly rod	
5	Assembly ring	
6	Jumper bar	orange For blocks of different spacing - spacing 5 and 8 mm IP 20 - 24 A - spacing 6 and 8 mm IP 20 - 32 A - spacing 8 and 10 mm



R See section on markers marking method

## D 2,5/8.SNT.2L

Spacing 8 mm -0,05 .315"



Terminal block D 2,5/8.SFT.2L with disconnect link bar locked on blue holder.



Color	Type	Part number	Color	Type	Part number
With test socket DIA. 2 or 2.3 mm. Grey body / Blue lever					
		<b>D 2,5/8.SNT.2L</b>			1SNA 290 097 R2400

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid			
Flexible			
With isolated ferrule			

## Voltage

Rated	630 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

## Voltage

Rated		
Impulse withstand		
Pollution degree		

## Current

Rated	6,3 A	8 A
-------	-------	-----

## Current

Rated		
-------	--	--

## Wire size

Rated / Gauge	2,5 mm <sup>2</sup> / A2		12 AWG
Wire stripping length	Recommended screwdriver	Weight	Protection
9,5 mm	3,5 mm	16 g	IP 20
.37"	.14"	.56 oz	NEMA 1

## Wire size

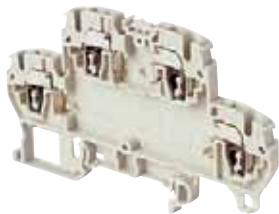
Rated/gauge	Wire stripping length	Recommended screwdriver	Weight	Protection

Type	Part number			Type	Part number
FED8SF.2L V0	th. 3 mm	1SNA	<b>291 131 R1700</b>		
FED8SF.2L V0	th. 3 mm	1SNA	<b>291 132 R1000</b>		
FC2.MC	DIA. 2 mm	1SNA	<b>107 239 R0300</b>		
BJDL8.2 V0	2 poles	1SNA	<b>291 122 R1600</b>		
BJDL8.3 V0	3 poles	1SNA	<b>291 123 R1700</b>		
BJDL8.4 V0	4 poles	1SNA	<b>291 144 R2400</b>		
BJDL8.5 V0	5 poles	1SNA	<b>291 145 R2500</b>		
TGA8	2 poles	1SNA	<b>168 672 R1100</b>		
TGA8	3 poles	1SNA	<b>168 673 R1200</b>		
TGA8	4 poles	1SNA	<b>168 674 R1300</b>		
ANT		1SNA	<b>168 675 R1400</b>		
BJDPL58 (1)		1SNA	<b>291 160 R0000</b>		
BJDPL68 (1)		1SNA	<b>291 170 R0200</b>		
BJDPL810 (1)		1SNA	<b>291 484 R1200</b>		

On older: RC 510 or RC 610  
On sides: RC 55 or RC 65

(1) End section must be inserted between 2 interconnected blocks.

**Spring connection terminal blocks component-holder Double deck**  
**DIN 3**



End stop		th. 9 mm	<b>BADL</b>	V0	1SNA 399 903 R0200
End stop		th. 10 mm	<b>BAM2 V0</b>	V0	1SNA 399 967 R0100
End stop		th. 12 mm	<b>BADH</b>	V2	1SNA 116 900 R2700
End stop		th. 9,1 mm	<b>BAMH</b>	V2	1SNA 114 836 R0000
End stop		th. 9,1 mm	<b>BAMH V0</b>	V0	1SNA 194 836 R0100
Rail		35 x 7,5 x 1	<b>PR3.Z2</b>		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

**Notes**

The use of some accessories may decrease the block's voltage rating. For more information, consult us.

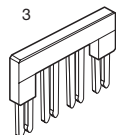
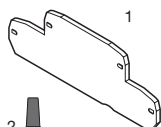
One wire per spring.

Terminal block body material is UL 94 V0.

\* Entelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

**Accessories**

- 1 End section grey
  - 2 Test plug black
  - 3 Jumper bar orange
- IP20 - 24 A



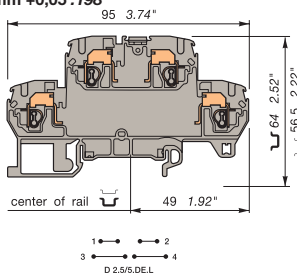
R



**R** See section on markers marking method

**D 2,5/5.DE.L**

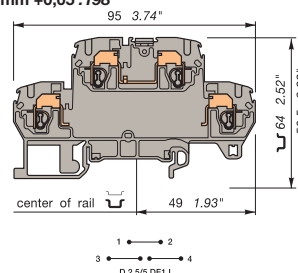
Spacing 5 mm +0,05 .198"



Empty unit components (4 mm max.)  
 Internal connections soldered, external by springs.

**D 2,5/5.DE1.L**

Spacing 5 mm +0,05 .198"



Empty unit components (4 mm max.)  
 Internal connections soldered, external by springs.

<b>CE</b>			<b>CE</b>				
Color	Type	Part number	Color	Type	Part number		
Upper and lower circuit open.							
Grey		<b>D 2,5/5.DE.L</b>	1SNA 290 191 R2700	Grey		<b>D 2,5/5.DE1.L</b>	1SNA 290 181 R2500

Characteristics			
Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

Voltage			
Rated (2)	500 V	300 V	
Impulse withstand			
Pollution degree			
Current			
Rated (2)	20 A	20 A	
Wire size			
Rated / Gauge	2,5 mm <sup>2</sup> / A2	12 AWG	
Wire stripping length	Recommended screwdriver	Weight	Protection
9,5 mm	3,5 mm	13 g	IP 20
.37 "	.14"	.46 oz	NEMA 1

Type	Part number	Type	Part number
FED5.D.L V0	th. 2,5 mm 1SNA 291 441 R2600	FED5.D.L V0	th. 2,5 mm 1SNA 291 441 R2600
FC2.MC	DIA. 2,0 mm 1SNA 107 239 R0300	FC2.MC	DIA. 2,0 mm 1SNA 107 239 R0300
BJDL5.2 (1) V0	2 poles 1SNA 291 102 R2300	BJDL5.2 (1) V0	2 poles 1SNA 291 102 R2300
BJDL5.3 (1) V0	3 poles 1SNA 291 103 R2400	BJDL5.3 (1) V0	3 poles 1SNA 291 103 R2400
BJDL5.4 (1) V0	4 poles 1SNA 291 104 R2500	BJDL5.4 (1) V0	4 poles 1SNA 291 104 R2500
BJDL5.5 (1) V0	5 poles 1SNA 291 105 R2600	BJDL5.5 (1) V0	5 poles 1SNA 291 105 R2600
BJDL5.6 (1) V0	6 poles 1SNA 291 106 R2700	BJDL5.6 (1) V0	6 poles 1SNA 291 106 R2700
BJDL5.7 (1) V0	7 poles 1SNA 291 107 R2000	BJDL5.7 (1) V0	7 poles 1SNA 291 107 R2000
BJDL5.8 (1) V0	8 poles 1SNA 291 108 R0100	BJDL5.8 (1) V0	8 poles 1SNA 291 108 R0100
BJDL5.9 (1) V0	9 poles 1SNA 291 109 R0200	BJDL5.9 (1) V0	9 poles 1SNA 291 109 R0200
BJDL5.10 (1) V0	10 poles 1SNA 291 110 R2600	BJDL5.10 (1) V0	10 poles 1SNA 291 110 R2600

On top:	RC 510	or RPC	On top:	RC 510	or RPC
On sides:	RC 55		On sides:	RC 55	

- (1) These accessories can be used on the upper connection only.
- (2) The use of some components may decrease the block's voltage or current ratings.

**Spring connection terminal blocks component-holder Double deck**  
**DIN 3**



End stop	th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop	th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
End stop	th. 12 mm	BADH	V2	1SNA 116 900 R2700
End stop	th. 9,1 mm	BAMH	V2	1SNA 114 836 R0000
End stop	th. 9,1 mm	BAMH V0	V0	1SNA 194 836 R0100
Rail	35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail	35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail	35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

**Notes**

The use of some accessories may decrease the block's voltage rating. For more information, consult us.

One wire per spring.

Terminal block body material is UL 94 V0.

\* Entelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

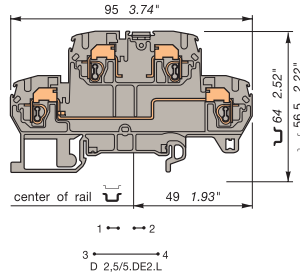
**Accessories**

	1 End section	grey
	2 Test plug	black
	3 Jumper bar	orange
	IP20 - 24 A	
	4 Vertical jumper bar	

**R** See section on marking method

**D 2,5/5.DE2.L**

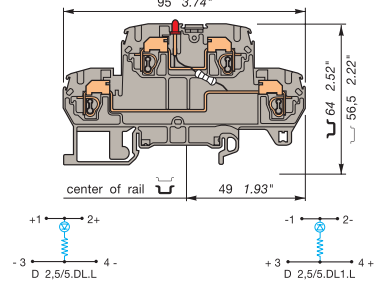
Spacing 5 mm +0,05 .198"



Empty unit components (4 mm max.)  
 Internal connections soldered, external by springs.

**D 2,5/5.DL...**

Spacing 5 mm +0,05 .198"



Terminal blocks equipped with a non-protected LED 24 V.

		CE			CE
Color	Type	Part number	Color	Type	Part number
Upper circuit open					
Grey	D 2,5/5.DE2.L	1SNA 290 186 R2200	+ on the upper circuit	Grey/LED red	D 2,5/5.DL.L 1SNA 290 166 R0500
+ on the lower circuit					
Grey	D 2,5/5.DL1.L	1SNA 290 167 R0600	Grey/LED red	D 2,5/5.DL1.L	1SNA 290 167 R0600

**Characteristics**

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

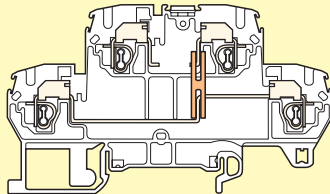
**Characteristics**

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

Voltage			Voltage		
Rated (2)	500 V	300 V	Rated	500 V	300 V
Impulse withstand			Impulse withstand		
Pollution degree			Pollution degree		
Current			Current		
Rated (2)	20 A	20 A	Rated	20 A	20 A
Wire size			Wire size		
Rated / Gauge	2,5 mm <sup>2</sup> / A2	12 AWG	Rated/gauge	2,5 mm <sup>2</sup> / A2	12 AWG
Wire stripping length	Recommended screwdriver	Weight	Protection	Wire stripping length	Recommended screwdriver
9,5 mm	3,5 mm	15 g	IP 20	9,5 mm	3,5 mm
.37 "	.14"	.53 oz	NEMA 1	.37 "	.14"

Type	Part number	Type	Part number
FED5.D.L V0 th. 2,5 mm	1SNA 291 441 R2600	FED5.D.L V0 th. 2,5 mm	1SNA 291 441 R2600
FC2.MC DIA. 2,0 mm	1SNA 107 239 R0300	FC2.MC DIA. 2,0 mm	1SNA 107 239 R0300
BJDL5.2 (1) V0 2 poles	1SNA 291 102 R2300	BJDL5.2 (1) V0 2 poles	1SNA 291 102 R2300
BJDL5.3 (1) V0 3 poles	1SNA 291 103 R2400	BJDL5.3 (1) V0 3 poles	1SNA 291 103 R2400
BJDL5.4 (1) V0 4 poles	1SNA 291 104 R2500	BJDL5.4 (1) V0 4 poles	1SNA 291 104 R2500
BJDL5.5 (1) V0 5 poles	1SNA 291 105 R2600	BJDL5.5 (1) V0 5 poles	1SNA 291 105 R2600
BJDL5.6 (1) V0 6 poles	1SNA 291 106 R2700	BJDL5.6 (1) V0 6 poles	1SNA 291 106 R2700
BJDL5.7 (1) V0 7 poles	1SNA 291 107 R2000	BJDL5.7 (1) V0 7 poles	1SNA 291 107 R2000
BJDL5.8 (1) V0 8 poles	1SNA 291 108 R0100	BJDL5.8 (1) V0 8 poles	1SNA 291 108 R0100
BJDL5.9 (1) V0 9 poles	1SNA 291 109 R0200	BJDL5.9 (1) V0 9 poles	1SNA 291 109 R0200
BJDL5.10 (1) V0 10 poles	1SNA 291 110 R2600	BJDL5.10 (1) V0 10 poles	1SNA 291 110 R2600
ITVE.L	1SNA 291 349 R1100		

Mounting of the vertical jumper bar between decks (ITVE.L Item 4)



On top:	RC 510	or RPC	On top:	RC 510	or RPC
On sides:	RC 55		On sides:	RC 55	

(1) These accessories can be used on the lower connection only.  
 (2) The use of some components may decrease the block's voltage or current ratings.

**Spring connection terminal blocks component-holder terminal blocks with LED double deck**  
**DIN 3**



End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop		th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
End stop		th. 12 mm	BADH	V2	1SNA 116 900 R2700
End stop		th. 9,1 mm	BAMH	V2	1SNA 114 836 R0000
End stop		th. 9,1 mm	BAMH V0	V0	1SNA 194 836 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

**Notes**

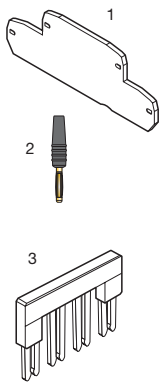
The use of some accessories may decrease the block's voltage rating. For more information, consult us.

One wire per spring.

Terminal block body material is UL 94 V0.

\* Entelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

**Accessories**



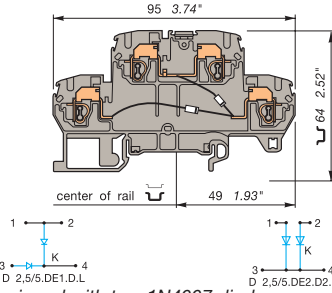
- |   |             |        |
|---|-------------|--------|
| 1 | End section | grey   |
| 2 | Test plug   | black  |
| 3 | Jumper bar  | orange |
- IP20 - 24 A



R See section on marking marking method

**D 2,5/5.DE...**

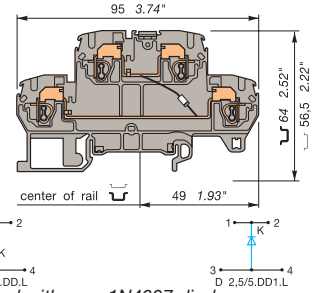
Spacing 5 mm +0,05 .198"



Blocks equipped with two 1N4007 diodes (1000 V peak - 250 V rating - 1 A) negative common.

**D 2,5/5.DD...**

Spacing 5 mm +0,05 .198"



Blocks equipped with one 1N4007 diode (1000 V peak - 250 V rating - 1 A).

Color	Type	Part number
Grey body	<input type="checkbox"/>	
1 negative output	<b>D 2,5/5.DE1.D.L</b>	1SNA 290 182 R2600
2 negative outputs	<b>D 2,5/5.DE2.D2.L</b>	1SNA 290 188 R0400

Color	Type	Part number
Grey body	<input type="checkbox"/>	
- cathode (K) of the blocking diode connected on the lower circuit:	<b>D 2,5/5.DD.L</b>	1SNA 290 164 R0300
- cathode (K) of the blocking diode connected on the upper circuit:	<b>D 2,5/5.DD1.L</b>	1SNA 290 165 R0400

**Characteristics**

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

**Characteristics**

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

Voltage			
Rated	500 V	300 V	
Impulse withstand			
Pollution degree			
Current			
Rated	20 A	20 A	
Wire size			
Rated / Gauge	2,5 mm <sup>2</sup> / A2		12 AWG
Wire stripping length	Recommended screwdriver	Weight	Protection
9,5 mm	3,5 mm	15 g	IP 20
.37 "	.14"	.53 oz	NEMA 1

Voltage			
Rated	500 V	300 V	
Impulse withstand			
Pollution degree			
Current			
Rated	20 A	20 A	
Wire size			
Rated/gauge	2,5 mm <sup>2</sup> / A2		12 AWG
Wire stripping length	Recommended screwdriver	Weight	Protection
9,5 mm	3,5 mm	15 g	IP 20
.37 "	.14"	.53 oz	NEMA 1

Type	Part number
FED5.D.L V0 th. 2,5 mm	1SNA 291 441 R2600
FC2.MC DIA. 2,0 mm	1SNA 107 239 R0300
BJDL5.2 (1) V0 2 poles	1SNA 291 102 R2300
BJDL5.3 (1) V0 3 poles	1SNA 291 103 R2400
BJDL5.4 (1) V0 4 poles	1SNA 291 104 R2500
BJDL5.5 (1) V0 5 poles	1SNA 291 105 R2600
BJDL5.6 (1) V0 6 poles	1SNA 291 106 R2700
BJDL5.7 (1) V0 7 poles	1SNA 291 107 R2000
BJDL5.8 (1) V0 8 poles	1SNA 291 108 R0100
BJDL5.9 (1) V0 9 poles	1SNA 291 109 R0200
BJDL5.10 (1) V0 10 poles	1SNA 291 110 R2600

Type	Part number
FED5.D.L V0 th. 2,5 mm	1SNA 291 441 R2600
FC2.MC DIA. 2,0 mm	1SNA 107 239 R0300
BJDL5.2 V0 2 poles	1SNA 291 102 R2300
BJDL5.3 V0 3 poles	1SNA 291 103 R2400
BJDL5.4 V0 4 poles	1SNA 291 104 R2500
BJDL5.5 V0 5 poles	1SNA 291 105 R2600
BJDL5.6 V0 6 poles	1SNA 291 106 R2700
BJDL5.7 V0 7 poles	1SNA 291 107 R2000
BJDL5.8 V0 8 poles	1SNA 291 108 R0100
BJDL5.9 V0 9 poles	1SNA 291 109 R0200
BJDL5.10 V0 10 poles	1SNA 291 110 R2600

On top: RC 510 or RPC  
 On sides: RC 55

On top: RC 510 or RPC  
 On sides: RC 55

(1) These accessories can be used only on:  
 - upper deck for D 2,5/5.DE1.D.L - lower deck for D 2,5/5.DE2.D2.L.

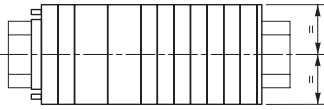
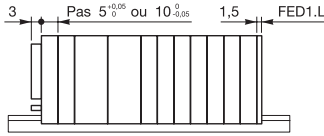
# Mini blocks spring connection

Standard

DIN 3



Mounting on section DIN3  
DS 2,5/5.2L or DS 2,5/10.4L



End stop		th. 9 mm	BADL	V0	1SNA 399 903 R0200
End stop		th. 10 mm	BAM2 V0	V0	1SNA 399 967 R0100
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200

Other end stops, rails and accessories : see section on accessories.

## Notes

The use of some accessories may decrease the block's voltage rating. For more information, consult us.

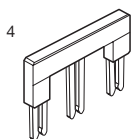
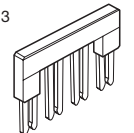
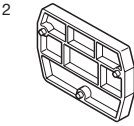
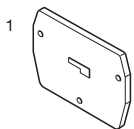
One wire per spring.

Terminal block body material is UL 94 V0.

\* Entrellec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

## Accessories

- End section  
grey
- separator  
grey
- Jumper bar  
IP 20 - 24 A  
orange



- Jumper bar  
IP 20 - 24 A  
orange

R See section on markers marking method

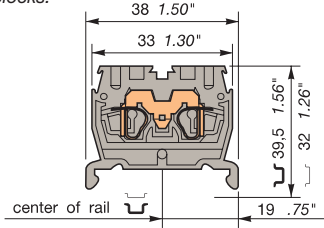


## DS 2,5/5.2L

Spacing 5 mm +0,05 .198"

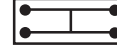


2 springs  
Mini blocks.

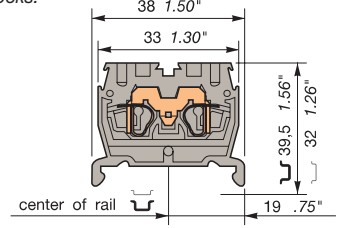


## DS 2,5/10.4L

Spacing 10 mm -0,05 .394"



4 springs  
Mini blocks.



Color	Type	Part number
Grey	DS 2,5/5.2L	1SNA 290 221 R0400
Orange	DS 2,5/5.2L	1SNA 290 222 R0500
Blue	DS 2,5/5.N.2L	1SNA 290 223 R0600

Color	Type	Part number
Grey	DS 2,5/10.4L	1SNA 290 231 R0600
Orange	DS 2,5/10.4L	1SNA 290 232 R0700
Blue	DS 2,5/10.N.4L	1SNA 290 233 R0000

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

## Voltage

Rated	800 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

## Voltage

Rated	800 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

## Current

Rated	24 A	15 A
-------	------	------

## Current

Rated	24 A	15 A
-------	------	------

## Wire size

Rated / Gauge	2,5 mm <sup>2</sup> / A2	12 AWG
Wire stripping length	Recommended screwdriver	Weight
9,5 mm	3,5 mm	4 g
.37"	.14"	.14 oz
		Protection
		IP 20
		NEMA 1

## Wire size

Rated/gauge	2,5 mm <sup>2</sup> / A2	12 AWG
Wire stripping length	Recommended screwdriver	Weight
9,5 mm	3,5 mm	7 g
.37"	.14"	.25 oz
		Protection
		IP 20
		NEMA 1

Type	Part number		
FED1.L V0	th. 1,5 mm	1SNA 291 301 R0200	
FED1.L V0	th. 1,5 mm	1SNA 291 302 R0300	
FED2.L V0	th. 4,0 mm	1SNA 291 311 R2300	
FED2.L V0	th. 4,0 mm	1SNA 291 312 R2400	
BJDL5.2 V0	2 poles	1SNA 291 102 R2300	
BJDL5.3 V0	3 poles	1SNA 291 103 R2400	
BJDL5.4 V0	4 poles	1SNA 291 104 R2500	
BJDL5.5 V0	5 poles	1SNA 291 105 R2600	
BJDL5.6 V0	6 poles	1SNA 291 106 R2700	
BJDL5.7 V0	7 poles	1SNA 291 107 R2000	
BJDL5.8 V0	8 poles	1SNA 291 108 R0100	
BJDL5.9 V0	9 poles	1SNA 291 109 R0200	
BJDL5.10 V0	10 poles	1SNA 291 110 R2600	

Type	Part number		
FED1.L V0	th. 1,5 mm	1SNA 291 301 R0200	
FED1.L V0	th. 1,5 mm	1SNA 291 302 R0300	
FED2.L V0	th. 4,0 mm	1SNA 291 311 R2300	
FED2.L V0	th. 4,0 mm	1SNA 291 312 R2400	
BJDL10.2 V0	2 poles	1SNA 291 322 R2600	
BJDL10.3 V0	3 poles	1SNA 291 323 R2700	
BJDL10.4 V0	4 poles	1SNA 291 324 R2000	
BJDL10.5 V0	5 poles	1SNA 291 325 R2100	

See section : mounting and accessories

See section : mounting and accessories

On top: RC 55  
On sides: RC 55

On top: RC 55  
On sides: RC 55



# Miniblocks spring connection

DIN 2



Block also available in ATEX (Explosive Atmosphere) approved version

End stop	th. 6,5 mm	BADRL	V0	1SNA 199 420 R2100
Rail	15 x 5 x 1	PR2		1SNA 164 600 R1200

Other end stops, rails and accessories : see section on accessories.

## Notes

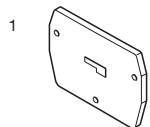
The use of some accessories may decrease the block's voltage rating. For more information, consult us.

One wire per spring.

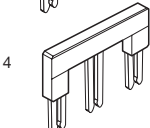
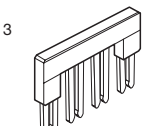
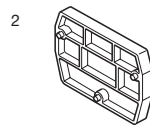
Terminal block body material is UL 94 V0.

\* Entelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

## Accessories

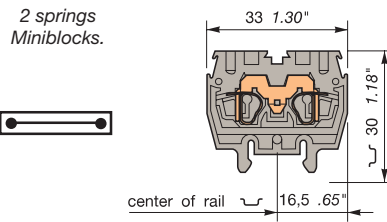


1	End section	grey	FED1.L	V0	th. 1,5 mm	1SNA 291 301 R0200
		orange	FED1.L	V0	th. 1,5 mm	1SNA 291 302 R0300
2	Separator	grey	FED2.L	V0	th. 4,0 mm	1SNA 291 311 R2300
		orange	FED2.L	V0	th. 4,0 mm	1SNA 291 312 R2400
3	Jumper bar IP 20 - 24 A	orange	BJDL5.2	V0	2 poles	1SNA 291 102 R2300
			BJDL5.3	V0	3 poles	1SNA 291 103 R2400
4	Jumper bar IP 20 - 24 A	orange	BJDL5.4	V0	4 poles	1SNA 291 104 R2500
			BJDL5.5	V0	5 poles	1SNA 291 105 R2600
R	See section on markers marking method		BJDL5.6	V0	6 poles	1SNA 291 106 R2700
			BJDL5.7	V0	7 poles	1SNA 291 107 R2000
			BJDL5.8	V0	8 poles	1SNA 291 108 R0100
			BJDL5.9	V0	9 poles	1SNA 291 109 R0200
			BJDL5.10	V0	10 poles	1SNA 291 110 R2600



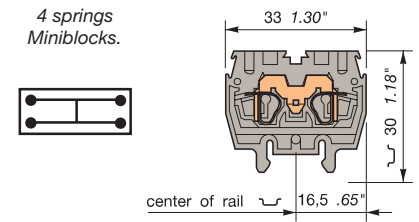
## DR 2,5/5.2L

Spacing 5 mm +0,05 .198"



## DR 2,5/10.4L

Spacing 10 mm -0,05 .394"



Color	Type	Part number
Grey	DR 2,5/5.2L	1SNA 290 201 R1100
Orange	DR 2,5/5.2L	1SNA 290 202 R1200
Blue	DR 2,5/5.N.2L	1SNA 290 203 R1300

Color	Type	Part number
Grey	DR 2,5/10.4L	1SNA 290 211 R0200
Orange	DR 2,5/10.4L	1SNA 290 212 R0300
Blue	DR 2,5/10.N.4L	1SNA 290 213 R0400

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

## Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

Voltage		
Rated	800 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	
Current		
Rated	24 A	15 A

Voltage		
Rated	800 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	
Current		
Rated	24 A	15 A

Wire size			
Rated / Gauge	2,5 mm <sup>2</sup> / A2	12 AWG	
Wire stripping length	Recommended screwdriver	Weight	Protection
9,5 mm	3,5 mm	4 g	IP 20
.37"	.14"	.14 oz	NEMA 1

Wire size			
Rated/gauge	2,5 mm <sup>2</sup> / A2	12 AWG	
Wire stripping length	Recommended screwdriver	Weight	Protection
9,5 mm	3,5 mm	7 g	IP 20
.37"	.14"	.25 oz	NEMA 1

Type	Part number		
FED1.L	V0	th. 1,5 mm	1SNA 291 301 R0200
FED1.L	V0	th. 1,5 mm	1SNA 291 302 R0300
FED2.L	V0	th. 4,0 mm	1SNA 291 311 R2300
FED2.L	V0	th. 4,0 mm	1SNA 291 312 R2400
BJDL5.2	V0	2 poles	1SNA 291 102 R2300
BJDL5.3	V0	3 poles	1SNA 291 103 R2400
BJDL5.4	V0	4 poles	1SNA 291 104 R2500
BJDL5.5	V0	5 poles	1SNA 291 105 R2600
BJDL5.6	V0	6 poles	1SNA 291 106 R2700
BJDL5.7	V0	7 poles	1SNA 291 107 R2000
BJDL5.8	V0	8 poles	1SNA 291 108 R0100
BJDL5.9	V0	9 poles	1SNA 291 109 R0200
BJDL5.10	V0	10 poles	1SNA 291 110 R2600

Type	Part number		
FED1.L	V0	th. 1,5 mm	1SNA 291 301 R0200
FED1.L	V0	th. 1,5 mm	1SNA 291 302 R0300
FED2.L	V0	th. 4,0 mm	1SNA 291 311 R2300
FED2.L	V0	th. 4,0 mm	1SNA 291 312 R2400
BJDL10.2	V0	2 poles	1SNA 291 322 R2600
BJDL10.2	V0	2 poles	1SNA 291 323 R2700
BJDL10.3	V0	3 poles	1SNA 291 324 R2000
BJDL10.4	V0	4 poles	1SNA 291 325 R2100
BJDL10.5	V0	5 poles	

See section: Mounting and accessories

See section: Mounting and accessories

On top:	RC 55
On sides:	RC 55

On top:	RC 55
On sides:	RC 55

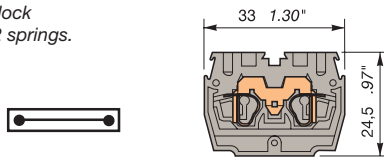
# Miniblocks spring connection Base mount with flanges



## DB 2,5/5.2L

Spacing 5 mm + 0,05 .198"

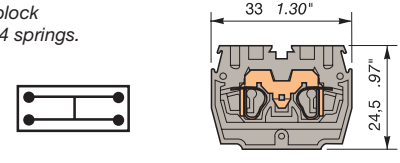
Miniblock with 2 springs.



## DB 2,5/10.4L

Spacing 10 mm - 0,05 .394"

Miniblock with 4 springs.



Color	Type	Part number
Miniblocks with 2 springs		
Grey	DB 2,5/5.2L	1SNA 290 241 R1000
Orange	DB 2,5/5.2L	1SNA 290 242 R1100
Blue	DB 2,5/5.N.2L	1SNA 290 243 R1200

Color	Type	Part number
Miniblocks with 4 springs		
Grey	DB 2,5/10.4L	1SNA 290 251 R1200
Orange	DB 2,5/10.4L	1SNA 290 252 R1300
Blue	DB 2,5/10.N.4L	1SNA 290 253 R1400

### Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

### Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

Voltage		
Rated	800 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

Voltage		
Rated	800 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

Current		
Rated	24 A	15 A

Current		
Rated	24 A	15 A

Wire size			
Rated / Gauge	2,5 mm <sup>2</sup> / A2	12 AWG	
Wire stripping length	Recommended screwdriver	Weight	Protection
9,5 mm	3,5 mm	4 g	IP 20
.37"	.14"	.14 oz	NEMA 1

Wire size			
Rated/gauge	2,5 mm <sup>2</sup> / A2	12 AWG	
Wire stripping length	Recommended screwdriver	Weight	Protection
9,5 mm	3,5 mm	7 g	IP 20
.37"	.14"	.25 oz	NEMA 1

Type	Part number		
FEDB.L V0	1SNA	290 281	R0100
FEDB.L V0	1SNA	290 282	R0200
FED2.L V0 th. 4,0 mm	1SNA	291 311	R2300
FED2.L V0 th. 4,0 mm	1SNA	291 312	R2400
BJDL5.2 V0 2 poles	1SNA	291 102	R2300
BJDL5.3 V0 3 poles	1SNA	291 103	R2400
BJDL5.4 V0 4 poles	1SNA	291 104	R2500
BJDL5.5 V0 5 poles	1SNA	291 105	R2600
BJDL5.6 V0 6 poles	1SNA	291 106	R2700
BJDL5.7 V0 7 poles	1SNA	291 107	R2000
BJDL5.8 V0 8 poles	1SNA	291 108	R0100
BJDL5.9 V0 9 poles	1SNA	291 109	R0200
BJDL5.10 V0 10 poles	1SNA	291 110	R2600

Type	Part number		
FEDB.L V0	1SNA	290 281	R0100
FEDB.L V0	1SNA	290 282	R0200
FED2.L V0 th. 4,0 mm	1SNA	291 311	R2300
FED2.L V0 th. 4,0 mm	1SNA	291 312	R2400
BJDL10.2 V0 2 poles	1SNA	291 322	R2600
BJDL10.3 V0 3 poles	1SNA	291 323	R2700
BJDL10.4 V0 4 poles	1SNA	291 324	R2000
BJDL10.5 V0 5 poles	1SNA	291 325	R2100

See page: assembly and accessories

See page: assembly and accessories

On top	RC 55
On side	RC 55

On top	RC 55
On side	RC 55

Block also available in ATEX (Explosive Atmosphere) approved version

For drilling pattern see page: assembly and accessories.

### Notes

The use of some accessories may decrease the block's voltage rating. For more information, consult us.

One wire per spring.  
Terminal block body material is UL 94 V0.

\* Entelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

### Accessories

	1 End section	grey	
		orange	
	2 Separator	grey	
		orange	
	3 Jumper bar	orange	IP 20 - 24 A
	4 Jumper bar	orange	IP 20 - 24 A
	R		See section on markers marking method

# Miniblocks spring connection

Base mount with snap in mounting foot



### DH 2,5/5.2L

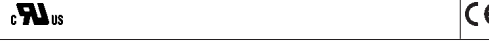
Spacing 5 mm + 0,05 .198"

Miniblock with 2 springs.

### DH 2,5/10.4L

Spacing 10 mm - 0,05 .394"

Miniblock with 4 springs.



Color	Type	Part number
Miniblocks with 2 springs		
Grey	DH 2,5/5.2L	1SNA 290 261 R1400
Orange	DH 2,5/5.2L	1SNA 290 262 R1500
Blue	DH 2,5/5.N.2L	1SNA 290 263 R1600

Color	Type	Part number
Miniblocks with 4 springs		
Grey	DH 2,5/10.4L	1SNA 290 271 R1600
Orange	DH 2,5/10.4L	1SNA 290 272 R1700
Blue	DH 2,5/10.N.4L	1SNA 290 273 R1000

### Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

### Characteristics

Wire size	IEC		UL/CSA
	NFC	DIN	
Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG
Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG
With isolated ferrule	0,5-2,5 mm <sup>2</sup>		

For panel with 0,6 to 1,2 mm thickness.  
For drilling pattern see page: assembly and accessories.

## Notes

The use of some accessories may decrease the block's voltage rating. For more information, consult us.

One wire per spring.  
Terminal block body material is UL 94 V0.

\* Entelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

### Voltage

Rated	800 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

### Voltage

Rated	800 V	600 V
Impulse withstand	8 kV	
Pollution degree	3	

### Current

Rated	24 A	15 A
-------	------	------

### Current

Rated	24 A	15 A
-------	------	------

### Wire size

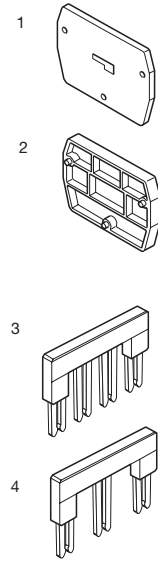
Rated / Gauge	2,5 mm <sup>2</sup> / A2	12 AWG
Wire stripping length	Recommended screwdriver	Weight
9,5 mm	3,5 mm	4 g
.37"	.14"	.14 oz
		Protection
		IP 20
		NEMA 1

### Wire size

Rated/gauge	2,5 mm <sup>2</sup> / A2	12 AWG
Wire stripping length	Recommended screwdriver	Weight
9,5 mm	3,5 mm	7 g
.37"	.14"	.25 oz
		Protection
		IP 20
		NEMA 1

## Accessories

Type	Part number
1 End section grey orange	FED1.L V0 th. 1,5 mm 1SNA 291 301 R0200
	FED1.L V0 th. 1,5 mm 1SNA 291 302 R0300
2 Separator grey orange	FED2.L V0 th. 4,0 mm 1SNA 291 311 R2300
	FED2.L V0 th. 4,0 mm 1SNA 291 312 R2400
3 Jumper bar IP 20 - 24 A orange	BJDL5.2 V0 2 poles 1SNA 291 102 R2300
	BJDL5.3 V0 3 poles 1SNA 291 103 R2400
	BJDL5.4 V0 4 poles 1SNA 291 104 R2500
	BJDL5.5 V0 5 poles 1SNA 291 105 R2600
	BJDL5.6 V0 6 poles 1SNA 291 106 R2700
	BJDL5.7 V0 7 poles 1SNA 291 107 R2000
	BJDL5.8 V0 8 poles 1SNA 291 108 R0100
	BJDL5.9 V0 9 poles 1SNA 291 109 R0200
	BJDL5.10 V0 10 poles 1SNA 291 110 R2600
	4 Jumper bar IP 20 - 24 A orange



Type	Part number
BJDL10.2 V0 2 poles	1SNA 291 322 R2600
BJDL10.3 V0 3 poles	1SNA 291 323 R2700
BJDL10.4 V0 4 poles	1SNA 291 324 R2000
BJDL10.5 V0 5 poles	1SNA 291 325 R2100
See page: Assembly and accessories	
On top:	RC 55
On sides:	RC 55

Type	Part number
BJDL10.2 V0 2 poles	1SNA 291 301 R0200
BJDL10.3 V0 3 poles	1SNA 291 302 R0300
BJDL10.4 V0 4 poles	1SNA 291 311 R2300
BJDL10.5 V0 5 poles	1SNA 291 312 R2400
See page: Assembly and accessories	
On top:	RC 55
On sides:	RC 55



R See section on markers marking method

**Mini blocks  
spring connection  
ground terminal blocks not  
electrically connected to the  
mounting rail**  
DIN 3



\* Entelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

Other accessories of this terminal blocks: See pages of same size standard blocks.

**Characteristics**

Wire size	Rigid	0,12-4 * mm <sup>2</sup>
	Flexible	0,12-2,5 mm <sup>2</sup>
Rated current short-circuit		300A/1s
Rated wire size nominal / gauge		2,5 mm <sup>2</sup> /A2

**Other characteristics**

Wire strip. length	Recomm. screwdriver	Weight	Protection
9,5 mm	3,5 mm	4 g	IP 20
.37"	.14"	.14 oz	NEMA 1

**Approvals**

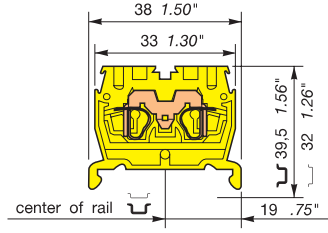
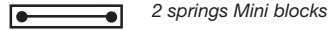


**Accessories**

1	End section	grey	FED1.L V0 th. 1,5 mm 1SNA 291 301 R0200
		orange	FED1.L V0 th. 1,5 mm 1SNA 291 302 R0300
R	See section on markers	mode	On top and sides: RC55

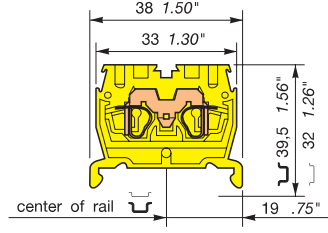
**DS 2,5/5.PI.2L**

Spacing 5 mm +0,05 .198"



**DS 2,5/10.PI.4L**

Spacing 10 mm -0,05 .394"



Type	P/N	Type	P/N	Type	P/N
------	-----	------	-----	------	-----

Yellow body / marking green  
DS 2,5/5.PI.2L 1SNA 290 230 R1100

Yellow body / marking green  
DS 2,5/10.PI.4L 1SNA 290 240 R2300

Characteristics		IEC		UL/CSA		IEC		UL/CSA		IEC		UL/CSA	
Wire size	Rigid	NFC	DIN	26-12 AWG		NFC	DIN	26-12 AWG		NFC	DIN	26-12 AWG	
	Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG		0,12-2,5 mm <sup>2</sup>		26-12 AWG		0,12-2,5 mm <sup>2</sup>		26-12 AWG	
Rated current short-circuit		300A/1s				300A/1s							
Rated wire size nominal / gauge		2,5 mm <sup>2</sup> /A2				2,5 mm <sup>2</sup> /A2							

Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection
9,5 mm	3,5 mm	4 g	IP 20	9,5 mm	3,5 mm	4 g	IP 20				
.37"	.14"	.14 oz	NEMA 1	.37"	.14"	.14 oz	NEMA 1				

Approvals	CE	UL	US	CE	UL	US	CE
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Accessories	Type	P/N	Type	P/N	Type	P/N
-------------	------	-----	------	-----	------	-----

1	End section	grey	FED1.L V0 th. 1,5 mm 1SNA 291 301 R0200	FED1.L V0 th. 1,5 mm 1SNA 291 301 R0200	FED1.L V0 th. 1,5 mm 1SNA 291 301 R0200	FED1.L V0 th. 1,5 mm 1SNA 291 301 R0200
		orange	FED1.L V0 th. 1,5 mm 1SNA 291 302 R0300	FED1.L V0 th. 1,5 mm 1SNA 291 302 R0300	FED1.L V0 th. 1,5 mm 1SNA 291 302 R0300	FED1.L V0 th. 1,5 mm 1SNA 291 302 R0300
R	See section on markers	mode	On top and sides: RC55	On top and sides: RC55	On top and sides: RC55	On top and sides: RC55

Characteristics		IEC		UL/CSA		IEC		UL/CSA		IEC		UL/CSA	
Wire size	Rigid	NFC	DIN			NFC	DIN			NFC	DIN		
	Flexible												
Rated current short-circuit													
Rated wire size nominal / gauge													

Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection

Approvals											
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Accessories	Type	P/N	Type	P/N	Type	P/N
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### Miniblocks spring connection ground terminal blocks not electrically connected to the mounting rail

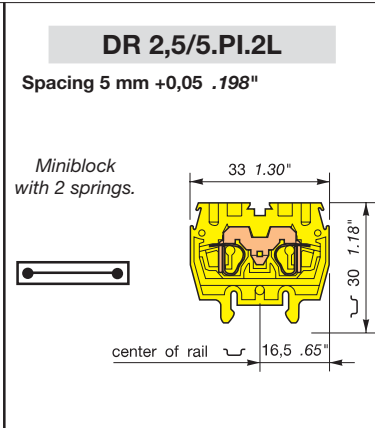
DIN 2



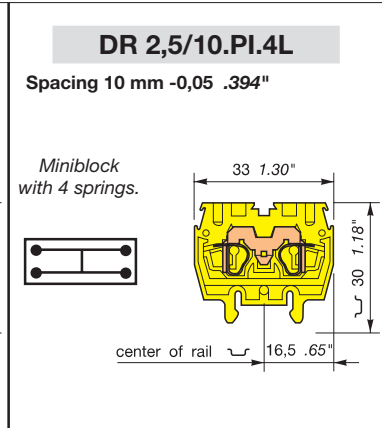
\* Entelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

Other accessories of this terminal blocks: See pages of same size standard blocks.

Characteristics		IEC NFC DIN		UL/CSA		IEC NFC DIN		UL/CSA		IEC NFC DIN		UL/CSA		
Wire size	Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG		0,12-4 * mm <sup>2</sup>		26-12 AWG						
	Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG		0,12-2,5 mm <sup>2</sup>		26-12 AWG						
Rated current short-circuit		300 A / 1s.				300 A / 1s.								
Rated wire size nominal / gauge		2,5 mm <sup>2</sup> / A2		12 AWG		2,5 mm <sup>2</sup> / A2		12 AWG						
Other characteristics		Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	
		9,5 mm	3,5 mm	4 g	IP 20	9,5 mm	3,5 mm	7 g	IP 20					
		.37"	.14"	.14 oz	NEMA 1	.37"	.14"	.25 oz	NEMA 1					
Approvals		cRU <sub>us</sub>				CE cRU <sub>us</sub>				CE				
Accessories		Type	Part number		Type	Part number		Type	Part number		Type	Part number		
1	End section	grey orange	FED1.L V0 th. 1,5 mm	1SNA 291 301 R0200	FED1.L V0 th. 1,5 mm	1SNA 291 301 R0200								
			FED1.L V0 th. 1,5 mm	1SNA 291 302 R0300	FED1.L V0 th. 1,5 mm	1SNA 291 302 R0300								
R	See section on markers	mode	RC55		RC55									



Type	Part number
Miniblocks with 2 springs	
Yellow body / Green marking	
■ DR 2,5/5.PI.2L	1SNA 290 210 R1500



Type	Part number
Miniblocks with 4 springs	
Yellow body / Green marking	
■ DR 2,5/10.PI.4L	1SNA 290 220 R1700

### Miniblocks spring connection ground terminal blocks electrically connected to the mounting rail

DIN 2

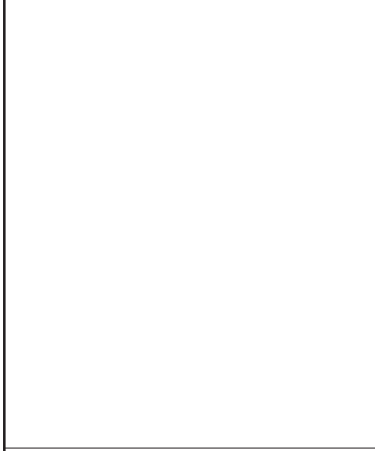


\* Entelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

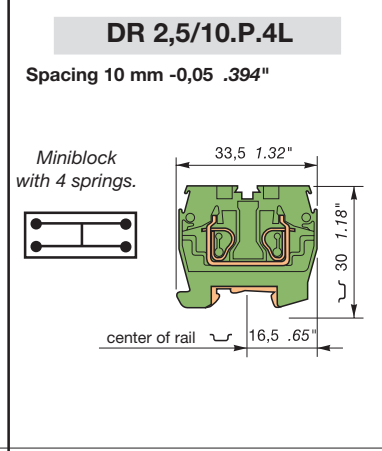
Other accessories of this terminal blocks: See pages of same size standard blocks.

⚡ Block also available in ATEX (Explosive Atmosphere) approved version

Characteristics		IEC NFC DIN		UL/CSA		IEC NFC DIN		UL/CSA		IEC NFC DIN		UL/CSA		
Wire size	Rigid					0,12-4 * mm <sup>2</sup>		26-12 AWG						
	Flexible					0,12-2,5 mm <sup>2</sup>		26-12 AWG						
Rated current short-circuit						300 A / 1s.								
Rated wire size nominal / gauge						2,5 mm <sup>2</sup> / A2		12 AWG						
Other characteristics		Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	
		9,5 mm	3,5 mm	8 g	IP 20	9,5 mm	3,5 mm	8 g	IP 20					
		.37"	.14"	.28 oz	NEMA 1	.37"	.14"	.28 oz	NEMA 1					
Approvals						cRU <sub>us</sub>				CE				
Accessories		Type	Part number		Type	Part number		Type	Part number		Type	Part number		
1	End section	grey orange			FED1.L V0 th. 1,5 mm	1SNA 291 301 R0200								
					FED1.L V0 th. 1,5 mm	1SNA 291 302 R0300								
R	See section on markers	mode	RC55		RC55									


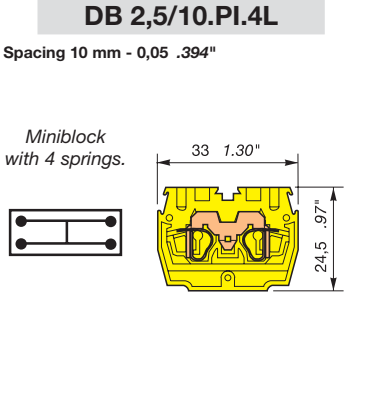
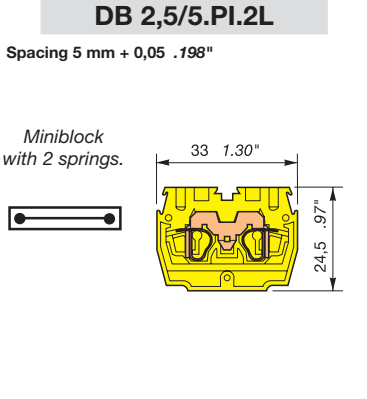



Type	Part number
Miniblocks with 4 springs	
Green body / Yellow marking	
■ DR 2,5/10.P.4L	1SNA 290 219 R1200




Type	Part number
Miniblocks with 4 springs	
Green body / Yellow marking	
■ DR 2,5/10.P.4L	1SNA 290 219 R1200

**Miniblocks spring connection**  
 Isolated ground not electrically connected to the mounting plate  
 Base mount with flanges










Type	Part number
Miniblocks with 2 springs	
Yellow body / Green marking	
 <b>DB 2,5/5.PI.2L</b>	1SNA 290 250 R2500

Type	Part number
Miniblocks with 4 springs	
Yellow body / Green marking	
 <b>DB 2,5/10.PI.4L</b>	1SNA 290 260 R2700

\* Entelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

Other accessories of this terminal blocks :  
 See pages of same size standard blocks.

Characteristics		IEC NFC DIN		UL/CSA		IEC NFC DIN		UL/CSA		IEC NFC DIN		UL/CSA	
Wire size	Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG		0,12-4 * mm <sup>2</sup>		26-12 AWG					
	Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG		0,12-2,5 mm <sup>2</sup>		26-12 AWG					
Rated current short-circuit		300 A / 1s.				300 A / 1s.							
Rated wire size nominal / gauge		2,5 mm <sup>2</sup> / A2		12 AWG		2,5 mm <sup>2</sup> / A2		12 AWG					
Other characteristics		Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection
		9,5 mm	3,5 mm	4 g	IP 20	9,5 mm	3,5 mm	7 g	IP 20				
		.37"	.14"	.14 oz	NEMA 1	.37"	.14"	.25 oz	NEMA 1				
Approvals													
Accessories		Type	Part number		Type	Part number		Type	Part number		Type	Part number	
1	End section	grey	FEDB.L V0	1SNA 290 281 R0100	FEDB.L V0	1SNA 290 281 R0100	FEDB.L V0	1SNA 290 281 R0100	FEDB.L V0	1SNA 290 281 R0100			
		orange	FEDB.L V0	1SNA 290 282 R0200	FEDB.L V0	1SNA 290 282 R0200	FEDB.L V0	1SNA 290 282 R0200					
R	See section on markers mode		RC55			RC55							

Characteristics		IEC NFC DIN		UL/CSA		IEC NFC DIN		UL/CSA		IEC NFC DIN		UL/CSA	
Wire size	Rigid												
	Flexible												
Rated current short-circuit													
Rated wire size nominal / gauge													
Other characteristics		Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection
Approvals													
Accessories		Type	Part number		Type	Part number		Type	Part number		Type	Part number	

### Miniblocks spring connection

Isolated ground not electrically connected to the mounting plate  
Base mount with snap in mounting foot



\* Entelec spring connection terminal blocks comply with IEC 947-1 standard for 2.5 mm<sup>2</sup> rated wire size. Never the less, our spring terminal blocks can be connected to 4 mm<sup>2</sup> rigid wires.

Other accessories of this terminal blocks:  
See pages of same size standard blocks.

#### Characteristics

		IEC		UL/CSA		IEC		UL/CSA		IEC		UL/CSA	
		NFC	DIN			NFC	DIN			NFC	DIN		
Wire size	Rigid	0,12-4 * mm <sup>2</sup>		26-12 AWG		0,12-4 * mm <sup>2</sup>		26-12 AWG					
	Flexible	0,12-2,5 mm <sup>2</sup>		26-12 AWG		0,12-2,5 mm <sup>2</sup>		26-12 AWG					
Rated current short-circuit		300 A / 1s.				300 A / 1s.							
Rated wire size nominal / gauge		2,5 mm <sup>2</sup> / A2		12 AWG		2,5 mm <sup>2</sup> / A2		12 AWG					
Other characteristics		Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection
		9,5 mm	3,5 mm	4 g	IP 20	9,5 mm	3,5 mm	7 g	IP 20				
		.37"	.14"	.14 oz	NEMA 1	.37"	.14"	.25 oz	NEMA 1				

Approvals				
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#### Accessories

		Type	Part number	Type	Part number	Type	Part number
1	End section	grey	FED1.L V0 th. 1,5 mm 1SNA 291 301 R0200	FED1.L V0 th. 1,5 mm 1SNA 291 301 R0200			
		orange	FED1.L V0 th. 1,5 mm 1SNA 291 302 R0300	FED1.L V0 th. 1,5 mm 1SNA 291 302 R0300			
R	See section on markers mode		RC55		RC55		

#### Characteristics

		IEC		UL/CSA		IEC		UL/CSA		IEC		UL/CSA	
		NFC	DIN			NFC	DIN			NFC	DIN		
Wire size	Rigid												
	Flexible												
Rated current short-circuit													
Rated wire size nominal / gauge													
Other characteristics		Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection	Wire strip. length	Recomm. screwdriver	Weight	Protection
Approvals													

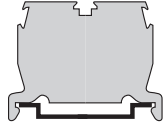
		Type	Part number	Type	Part number	Type	Part number

# SPRING MINI BLOCKS

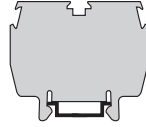


With an overall width of 33 mm, the mini blocks offer 2 connections with a 5 mm spacing and 4 connections with a 10 mm spacing.

### Mounting on sections DIN 3

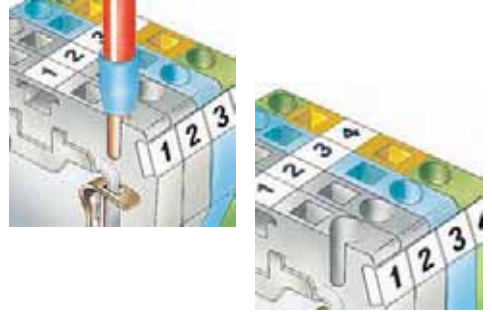


### Mounting on sections DIN 2



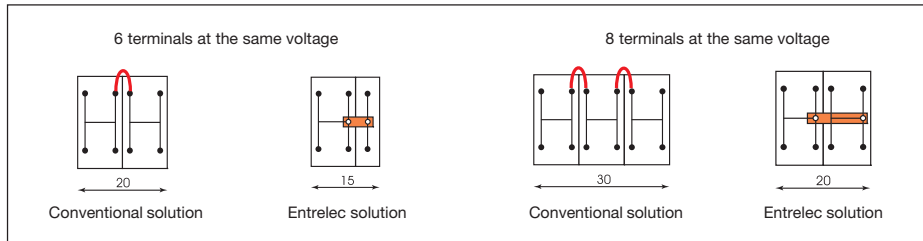
### Optimal connection capacity

2.5 mm<sup>2</sup> (14 AWG) with an insulated ferrule, in 5 mm spacing.



### Mini blocks designed for interconnection :

Entrelec Mini blocks all have built-in interconnection facilities, so the connection terminals are reserved for connecting conductors.



### Numerous marking options.

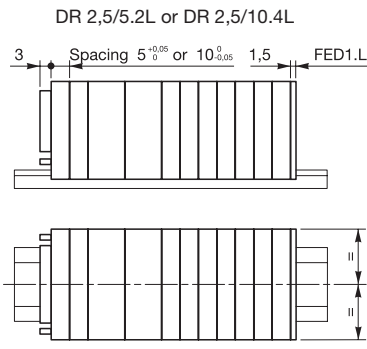
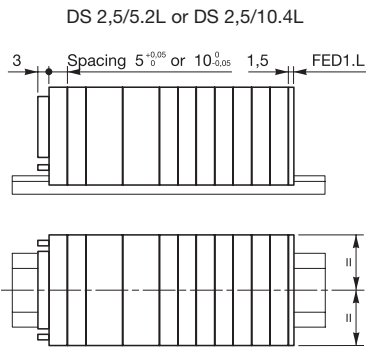
- on the top of the blocks a marking car (up to 4 characters)
- an additional marking card (up to 4 characters) on each side of the blocks, to comply with specific requirements.

## MINI BLOCKS MOUNTING AND ACCESSORIES

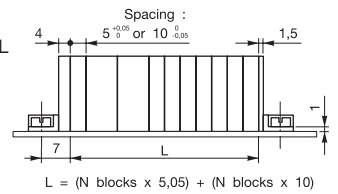
### Mounting on section DIN 3

### Rail mounted DIN2

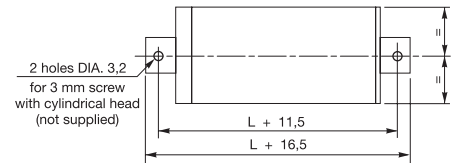
### Panel mounted:



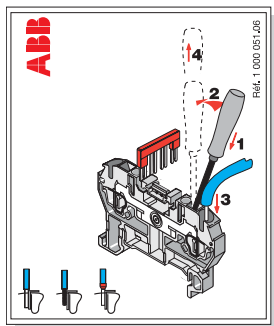
With flange:  
DB 2,5/5.2L  
or DB 2,5/10.4L



### Drilling



### ETRES1 User stickers

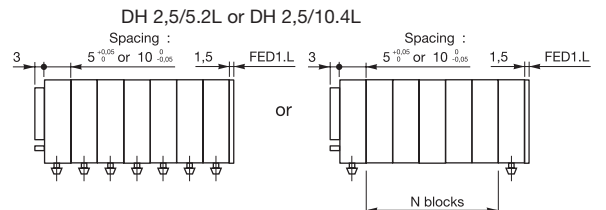


ETRES1

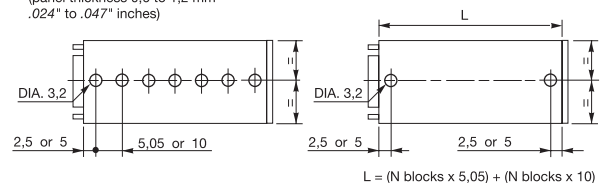
1SNB 000 051 R0600

- \* For 10 mm blocks, mount a DH block every 4 blocks.
- \* For 5 mm blocks, mount a DH block every 8 blocks.

### Clip-on:



Drilling  
(panel thickness 0,6 to 1,2 mm  
.024" to .047" inches)







# Terminal Blocks entrelec® according to IEC 60947-7

Quick-connect

A  
9

## Contents

Quick-connect Terminal Blocks with Longitudinal Tabs .....	176
Quick-connect Terminal Blocks with Longitudinal Tabs and Pins for Soldered Connection .....	179




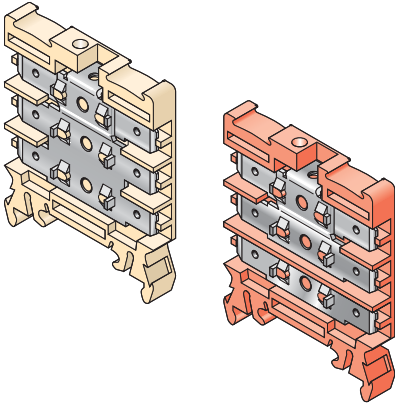
**IEC 60947-7**









# Terminal block with longitudinal quick connect tabs

Assembled without cover

 DIN 3 - reinforced rail type 2



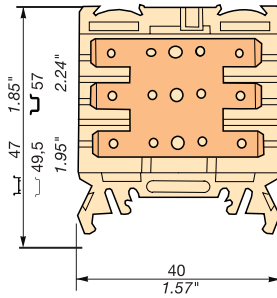
End stop		th. 10 mm	<b>BAM2</b>	V0	1SNA 296 351 R0000
End stop		th. 10,7 mm	<b>BAH24</b>		1SNA 168 355 R1300
Rail		35 x 7,5 x 1	<b>PR3.Z2</b>		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200
Rail		21,8 x 8,2 x 1,5	<b>PRH2R</b>		1SNA 163 350 R1500

Other end stops, rails and accessories : see section on accessories.

## Notes

### HD 2,5/6.3.3G.3G.1

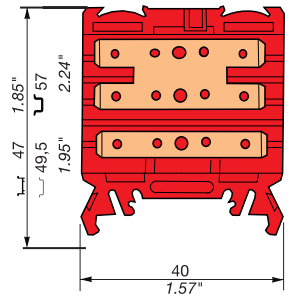
Spacing 6 mm




1 circuit. 1 terminal block with 6 tabs for 6.3 x 0.8 mm (.248" x .031") quick connect with possible testing and transverse connection.

### HD 2,5/6.3.2G.2G.1.GG

Spacing 6 mm



2 circuits. 1 terminal block with 4 tabs for 6.3 x 0.8 mm (.248" x .031") quick connect with possible testing and transverse connection. 1 terminal block with 2 tabs for 6.3 x 0.8 mm (.248" x .031") quick connect.

Color	Type	Part numbers
Beige 	<b>HD 2,5/6.3.3G.3G.1</b>	1SNA 190 316 R2700

Color	Type	Part numbers
Red 	<b>HD 2,5/6.3.2G.2G.1.GG</b>	1SNA 190 312 R2300

## Characteristics

Wire size	NFC		DIN	
	Quick-connect	6,3 x 0,8 mm (serie 250) - 2,5 mm <sup>2</sup> max.		

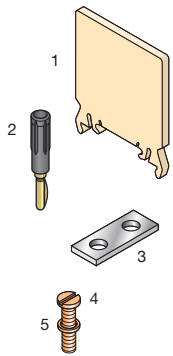
## Characteristics

Wire size	NFC		DIN	
	Quick-connect	6,3 x 0,8 mm (serie 250) - 6 mm <sup>2</sup> max.		

Rated voltage			
V AC	250 Cat. C (2)	250 Gr. C	
V DC	250 Cat. C (2)	300 Gr. C	
Pollution degre			
Rated current			
Rated	25		
Wire size			
Rated	2,5 mm <sup>2</sup>		
Weight			
10 g			
0.35 oz			


Rated voltage			
V AC	250 Cat. C (2)	250 Gr. C (2)	
V DC	250 Cat. C (2)	300 Gr. C (2)	
Pollution degre			
Rated current			
Rated	25 A		
Wire size			
Rated	2,5 mm <sup>2</sup>		
Weight			
10 g			
0.35 oz			

## Accessories



- End section
- Test plug
- Jumper bar

- Screw for **BJS**
- Washer for **VSJ6**

R  See section on markers marking method

Type	Part numbers
FEHD2 th. 3 mm	1SNA 168 949 R1700
FC2 DIA 2 mm	1SNA 007 865 R2600
BJS61 (1) spacing 6 mm	
2 poles	1SNA 168 481 R2300
3 poles	1SNA 168 482 R2400
4 poles	1SNA 168 483 R2500
5 poles	1SNA 168 484 R2600
10 poles	1SNA 168 485 R2700
VSJ6	1SNA 167 735 R2700
RDJ6	1SNA 173 241 R0600

Type	Part numbers
FEHD2 th. 3 mm	1SNA 168 949 R1700
FC2 DIA 2 mm	1SNA 007 865 R2600
BJS61 (1) spacing 6 mm	
2 poles	1SNA 168 481 R2300
3 poles	1SNA 168 482 R2400
4 poles	1SNA 168 483 R2500
5 poles	1SNA 168 484 R2600
10 poles	1SNA 168 485 R2700
VSJ6	1SNA 167 735 R2700
RDJ6	1SNA 173 241 R0600

RC610 On top RC65 Each side (on foot)

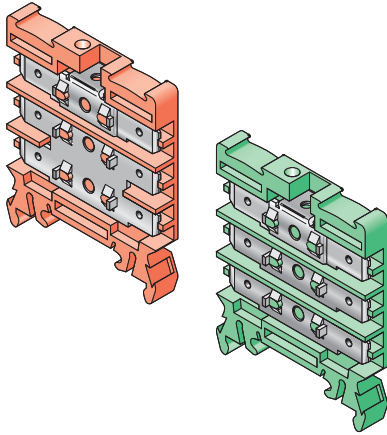
RC610 On top RC65 Each side (on foot)







- Use of these accessories requires the cut out of the block body (precut).
- Voltage only when isolated fast-on clips are used.

# Terminal block with longitudinal quick connect tabs

Assembled without cover

 DIN 3 - reinforced rail type 2



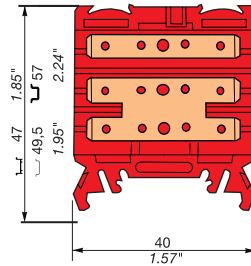
End stop		th. 10 mm	BAM2	V0	1SNA 296 351 R0000
End stop		th. 10,7 mm	BAH24		1SNA 168 355 R1300
Rail		35 x 7,5 x 1	PR3.Z2		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	PR4		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	PR5		1SNA 168 700 R2200
Rail		21,8 x 8,2 x 1,5	PRH2R		1SNA 163 350 R1500

Other end stops, rails and accessories : see section on accessories.

## Notes

### HD 2,5/6.3.GG1.2G.2G

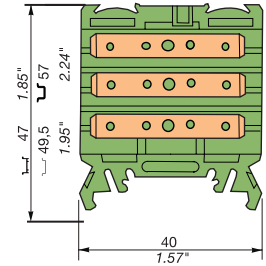
Spacing 6 mm



2 circuits. 1 terminal block with 2 tabs for 6.3 x 0.8 mm (.248" x .031") quick connect with possible testing and transverse connection. 1 terminal block with 4 tabs 6.3 x 0.8 mm (.248" x .031") quick connect.

### HD 2,5/6.3.GG.1.2GG

Spacing 6 mm



3 circuits. 1 terminal block with 2 tabs for 6.3 x 0.8 mm (.248" x .031") quick connect with possible testing and transverse connection. 2 terminal blocks with 2 tabs 6.3 x 0.8 mm (.248" x .031") quick connect.

Color	Type	Part numbers
Red ■	HD 2,5/6.3.GG1.2G.2G	1SNA 190 314 R2500

Color	Type	Part numbers
Green ■	HD 2,5/6.3.GG.1.2GG	1SNA 199 025 R1400

## Characteristics

Wire size	NFC		DIN	
	Quick-connect	6,3 x 0,8 mm (serie 250) - 2,5 mm <sup>2</sup> max.		

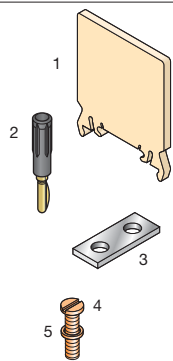
## Characteristics

Wire size	NFC		DIN	
	Quick-connect	6,3 x 0,8 mm (serie 250) - 6 mm <sup>2</sup> max.		

Rated voltage			
V AC	250 Cat. C (2)	250 Gr. C (2)	
V DC	250 Cat. C (2)	300 Gr. C (2)	
Pollution degree			
Rated current			
Rated	25		
Wire size			
Rated	2,5 mm <sup>2</sup>		
Weight			
10 g			
0.35 oz			


Rated voltage			
V AC	250 Cat. C (2)	250 Gr. C (2)	
V DC	250 Cat. C (2)	300 Gr. C (2)	
Pollution degree			
Rated current			
Rated	25 A		
Wire size			
Rated	2,5 mm <sup>2</sup>		
Weight			
10 g			
0.35 oz			

## Accessories



- End section
- Test plug
- Jumper bar

- Screw for BJS
- Washer for VSJ6

R  See section on marking method

Type	Part numbers
FEHD2 th. 3 mm	1SNA 168 949 R1700
FC2 DIA 2 mm	1SNA 007 865 R2600
BJS61 (1) spacing 6 mm	
2 poles	1SNA 168 481 R2300
3 poles	1SNA 168 482 R2400
4 poles	1SNA 168 483 R2500
5 poles	1SNA 168 484 R2600
10 poles	1SNA 168 485 R2700
VSJ6	1SNA 167 735 R2700
RDJ6	1SNA 173 241 R0600

Type	Part numbers
FEHD2 th. 3 mm	1SNA 168 949 R1700
FC2 DIA 2 mm	1SNA 007 865 R2600
BJS61 (1) spacing 6 mm	
2 poles	1SNA 168 481 R2300
3 poles	1SNA 168 482 R2400
4 poles	1SNA 168 483 R2500
5 poles	1SNA 168 484 R2600
10 poles	1SNA 168 485 R2700
VSJ6	1SNA 167 735 R2700
RDJ6	1SNA 173 241 R0600

RC610 On top RC65 Each side (on foot)

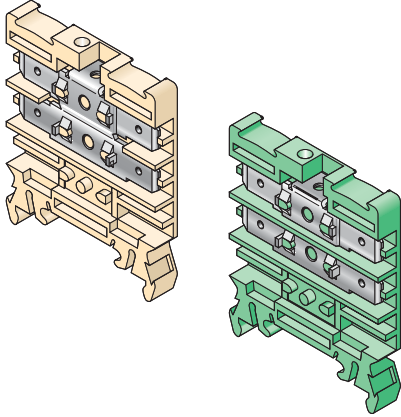
RC610 On top RC65 Each side (on foot)







- Use of these accessories requires the cut out of the block body (precut).
- Voltage only when isolated fast-on clips are used.

# Terminal block with longitudinal quick connect tabs

Assembled without cover

 DIN 3 - reinforced rail type 2

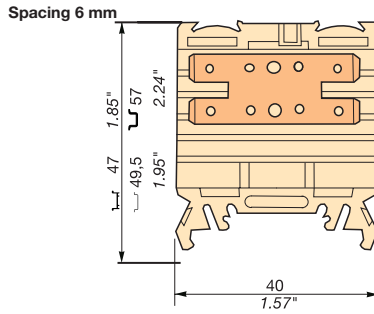


End stop		th. 10 mm	<b>BAM2</b>	V0	1SNA 296 351 R0000
End stop		th. 10,7 mm	<b>BAH24</b>		1SNA 168 355 R1300
Rail		35 x 7,5 x 1	<b>PR3.Z2</b>		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200
Rail		21,8 x 8,2 x 1,5	<b>PRH2R</b>		1SNA 163 350 R1500

Other end stops, rails and accessories : see section on accessories.

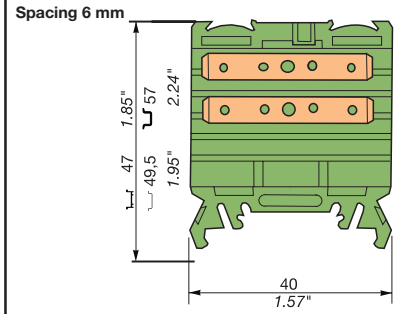
## Notes

### HD 2,5/6.3.2G.2G.1




1 circuit. 1 terminal block with 4 tabs for 6.3 x 0.8 mm (.248" x .031") quick connect with possible testing and transverse connection.

### HD 2,5/6.3.GG1.GG



2 circuits. 1 terminal block with 2 tabs for 6.3 x 0.8 mm (.248" x .031") quick connect with possible testing and transverse connection. 1 terminal block with 2 tabs 6.3 x 0.8 mm (.248" x .031") quick connect.

Color	Type	Part numbers
Beige	 <b>HD 2,5/6.3.2G.2G.1</b>	1SNA 190 305 R0500

Color	Type	Part numbers
Green	 <b>HD 2,5/6.3.GG1.GG</b>	1SNA 199 024 R1300

## Characteristics

Wire size	NFC	DIN
	Quick-connect	6,3 x 0,8 mm (serie 250) - 2,5 mm <sup>2</sup> max.

## Characteristics

Wire size	NFC	DIN
	Quick-connect	6,3 x 0,8 mm (serie 250) - 6 mm <sup>2</sup> max.

### Rated voltage

V AC	250 Cat. C (2)	250 Gr. C (2)
V DC	250 Cat. C (2)	300 Gr. C (2)

### Rated voltage

V AC	250 Cat. C (2)	250 Gr. C (2)
V DC	250 Cat. C (2)	300 Gr. C (2)

### Rated current

Rated	25
-------	----

### Rated current

Rated	25 A
-------	------

### Wire size

Rated	2,5 mm <sup>2</sup>
-------	---------------------

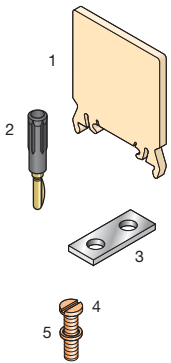
### Wire size

Rated	2,5 mm <sup>2</sup>
-------	---------------------

Weight	
10 g	
0.35 oz	


Weight	
10 g	
0.35 oz	

## Accessories



Type	Part numbers
1 End section	FEHD2 th. 3 mm 1SNA 168 949 R1700
2 Test plug	FC2 DIA 2 mm 1SNA 007 865 R2600
3 Jumper bar	BJS61 (1) spacing 6 mm
	2 poles 1SNA 168 481 R2300
	3 poles 1SNA 168 482 R2400
	4 poles 1SNA 168 483 R2500
	5 poles 1SNA 168 484 R2600
	10 poles 1SNA 168 485 R2700
4 Screw for BJS	VSJ6 1SNA 167 735 R2700
5 Washer for VSJ6	RDJ6 1SNA 173 241 R0600

Type	Part numbers
1 End section	FEHD2 th. 3 mm 1SNA 168 949 R1700
2 Test plug	FC2 DIA 2 mm 1SNA 007 865 R2600
3 Jumper bar	BJS61 (1) spacing 6 mm
	2 poles 1SNA 168 481 R2300
	3 poles 1SNA 168 482 R2400
	4 poles 1SNA 168 483 R2500
	5 poles 1SNA 168 484 R2600
	10 poles 1SNA 168 485 R2700
4 Screw for BJS	VSJ6 1SNA 167 735 R2700
5 Washer for VSJ6	RDJ6 1SNA 173 241 R0600

R  R See section on markers marking method


RC610 On top RC65 Each side (on foot)

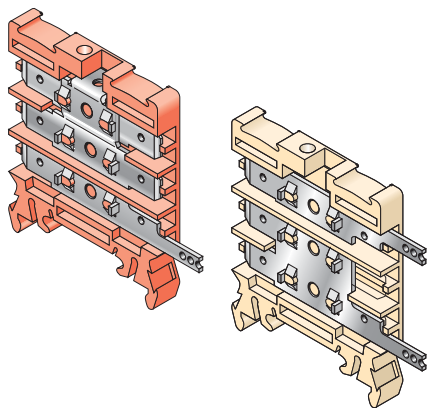
RC610 On top RC65 Each side (on foot)







- (1) Use of these accessories requires the cut out of the block body (precut).
- (2) Voltage only when isolated fast-on clips are used.

# Terminal block with longitudinal quick connect tabs

Assembled without cover

 DIN 3 - reinforced rail type 2

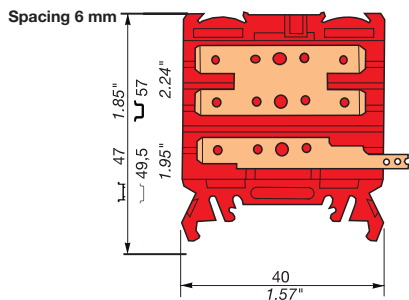


End stop		th. 10 mm	<b>BAM2</b>	V0	1SNA 296 351 R0000
End stop		th. 10,7 mm	<b>BAH24</b>		1SNA 168 355 R1300
Rail		35 x 7,5 x 1	<b>PR3.Z2</b>		1SNA 174 300 R1700
Rail		35 x 15 x 2,3	<b>PR4</b>		1SNA 168 500 R1200
Rail		35 x 15 x 1,5	<b>PR5</b>		1SNA 168 700 R2200
Rail		21,8 x 8,2 x 1,5	<b>PRH2R</b>		1SNA 163 350 R1500

Other end stops, rails and accessories : see section on accessories.

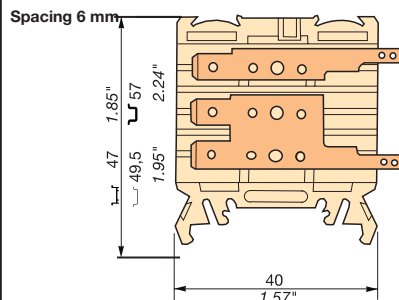
## Notes

### HD 2,5/6.3.2G.2G.GH



2 circuits. 1 terminal block with 4 tabs for 6.3 x 0.8 mm (.248" x .031") quick connect with possible testing and transverse connection. 1 terminal block with 1 tabs for 6.3 x 0.8 mm (.248" x .031") quick connect and 1 pin for soldered connection.

### HD 2,5/6.3.GH.2G.H



2 circuits. 1 terminal block with 1 tab for 6.3 x 0.8 mm (.248" x .031") quick connect. 1 terminal block with 1 tabs for 6.3 x 0.8 mm (.248" x .031") quick connect and 1 pin for soldered connection.

Color	Type	Part numbers
Red	 <b>HD 2,5/6.3.2G.2G.GH</b>	1SNA 199 029 R2000

Color	Type	Part numbers
Beige	 <b>HD 2,5/6.3.GH.2G.H</b>	1SNA 199 096 R1400

## Characteristics

Wire size	NFC		DIN	
	Quick-connect	6,3 x 0,8 mm (serie 250) - 2,5 mm <sup>2</sup> max.		
	0,5 - 1,5 mm <sup>2</sup>	0,5 - 1,5 mm <sup>2</sup>	0,5 - 1,5 mm <sup>2</sup>	0,5 - 1,5 mm <sup>2</sup>
	0,5 - 1 mm <sup>2</sup>	0,5 - 1 mm <sup>2</sup>	0,5 - 1 mm <sup>2</sup>	0,5 - 1 mm <sup>2</sup>

## Characteristics

Wire size	NFC		DIN	
	Quick-connect	6,3 x 0,8 mm (serie 250) - 6 mm <sup>2</sup> max.		
	0,5 - 1,5 mm <sup>2</sup>	0,5 - 1,5 mm <sup>2</sup>	0,5 - 1,5 mm <sup>2</sup>	0,5 - 1,5 mm <sup>2</sup>
	0,5 - 1 mm <sup>2</sup>	0,5 - 1 mm <sup>2</sup>	0,5 - 1 mm <sup>2</sup>	0,5 - 1 mm <sup>2</sup>

## Rated voltage

V AC	250 Cat. C (2)	250 Gr. C (2)
V DC	250 Cat. C (2)	300 Gr. C (2)

## Rated voltage

V AC	250 Cat. C (1)	250 Gr. C (1)
V DC	250 Cat. C (1)	300 Gr. C (1)

## Rated current

Rated	25
-------	----

## Rated current

Rated	25 A
-------	------

## Wire size

Rated	2,5 mm <sup>2</sup>
-------	---------------------

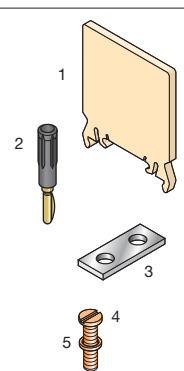
## Wire size

Rated	2,5 mm <sup>2</sup>
-------	---------------------

Weight	
10 g	
0.35 oz	

Weight	
10 g	
0.35 oz	

## Accessories



- End section
- Test plug
- Jumper bar
- Screw for **BJS**
- Washer for **VSJ6**

## Type

Type	Part numbers
FEHD2 th. 3 mm	1SNA 168 949 R1700
FC2 DIA 2 mm	1SNA 007 865 R2600
BJS61 (1) spacing 6 mm	
2 poles	1SNA 168 481 R2300
3 poles	1SNA 168 482 R2400
4 poles	1SNA 168 483 R2500
5 poles	1SNA 168 484 R2600
10 poles	1SNA 168 485 R2700
VSJ6	1SNA 167 735 R2700
RDJ6	1SNA 173 241 R0600

## Type

Type	Part numbers
FEHD2 th. 3 mm	1SNA 168 949 R1700

R See section on markers marking method

RC610 On top RC65 Each side (on foot)

RC610 On top RC65 Each side (on foot)

- Use of these accessories requires the cut out of the block body (precut).
- Voltage only when isolated fast-on clips are used.

# Notes



A  
9

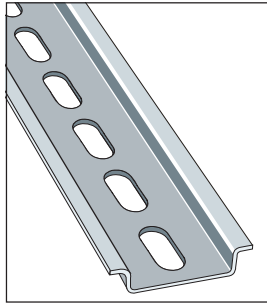
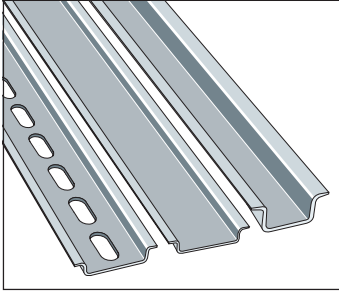


## Contents

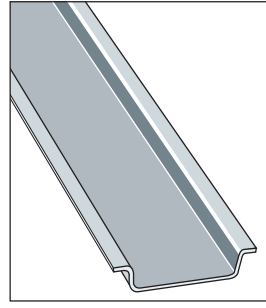
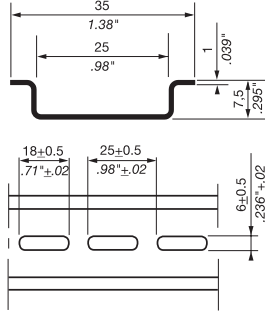
Rails .....	182
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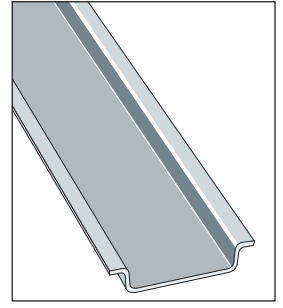
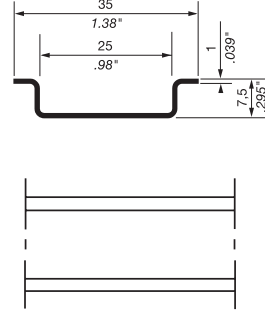
## Mounting rails Symmetrical - DIN 3



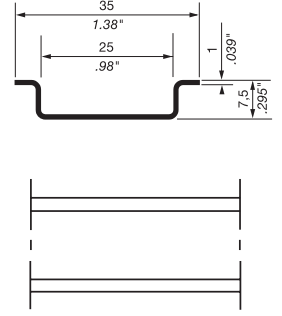
In compliance with EN 50022 standard  
(DIN 46277-3 - NFC 63015) DIN 3



In compliance with EN 50022 standard  
(DIN 46277-3 - NFC 63015) DIN 3



In compliance with EN 50022 standard  
(DIN 46277-3 - NFC 63015) DIN 3



### RAIL CURRENT CARRYING CAPACITY

Rail	Material	Current (A)	Wire size AWG	mm <sup>2</sup>
PR30	Steel	65	8	10
PR3.Z2 - PR3.G2	Steel	87	6	16
PR5	Steel	125	4	25
PR4	Steel	143	2	35

Type	P/N
<b>PR30</b>	<b>1SNA 173 220 R0500</b>

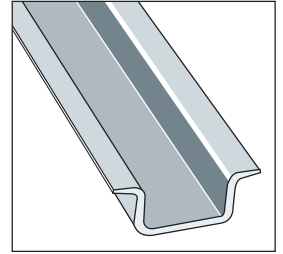
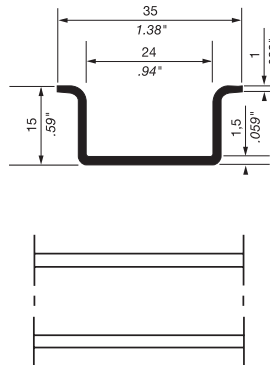
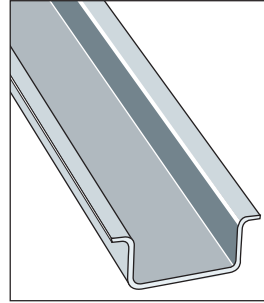
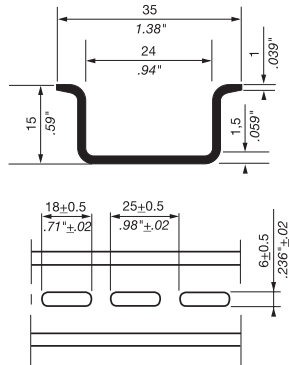
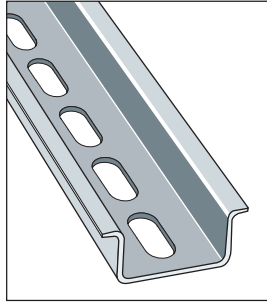
White, zinc plating and passivation, prepunched, length 2 m 6'6" (78") approx. The length and prepunched cut out dimensions are approximate.

Type	P/N
<b>PR3.Z2</b>	<b>1SNA 174 300 R1700</b>

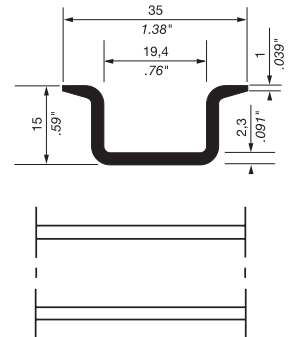
White, zinc plating and passivation, length 2 m 6'6" (78") approx.

Type	P/N
<b>PR3.G2</b>	<b>1SNA 164 800 R0300</b>

White, passivated galvanized steel, length 2 m 6'6" (78") approx.



In compliance with EN 50022 standard  
(NFC 63015) DIN 3



Type	P/N
------	-----

Type	P/N
<b>PR50</b>	<b>1SNA 178 529 R0400</b>

White, zinc plating and passivation, prepunched length 2 m 6'6" (78") approx. The length and prepunched cut out dimensions are approximate.

Type	P/N
<b>PR5</b>	<b>1SNA 168 700 R2200</b>

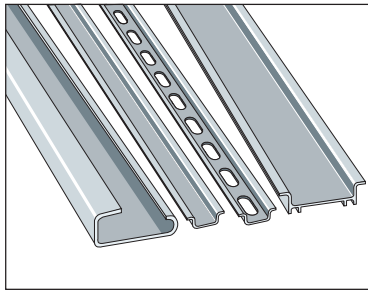
White, zinc plating and passivation, length 2 m 6'6" (78") approx.

Type	P/N
<b>PR4</b>	<b>1SNA 168 500 R1200</b>

White, zinc plating and passivation, length 2 m 6'6" (78") approx.



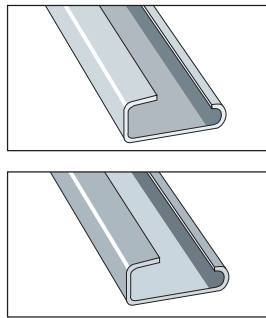
### Mounting rails Asymmetrical - DIN 1 Symmetrical - DIN 2



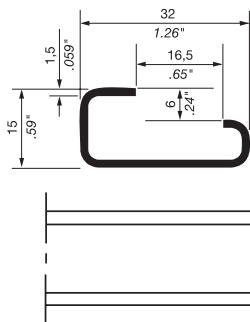
The "Series M" terminal blocks snap onto the PR1 asymmetrical DIN 1 rails described here.

The "Series DR" terminal blocks snap onto the PR2 symmetrical DIN 2 rail described here.

The rails are often used as grounding bars. The current carrying capacity of the rails and the copper wire sizes required to carry that current are given below.



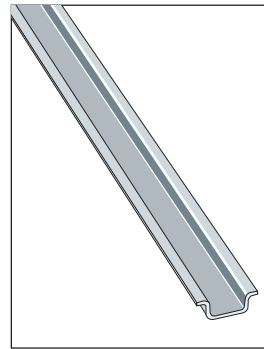
Asymmetrical 32 mm 1.26" G rail in compliance with EN 50035 standard (DIN 46277-1 - NFC 63018) DIN 1



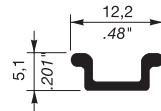
Rail	Material	Current (A)	Wire size AWG	Wire size mm <sup>2</sup>
PR1.Z2 - PR1.Z3	Steel	143	2	35
PR1.A2	Aluminium	265	000	95
PR2	Steel	35	12	4

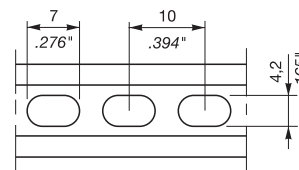
Type	P/N
<b>PR1.Z2</b>	1SNA 163 050 R0400
White, zinc plating and passivation, length 2 m 6'6" (78") approx.	
<b>PR1.A2</b>	1SNA 167 120 R2300
Aluminum alloy, length 3 m 9'9" (117") approx.	



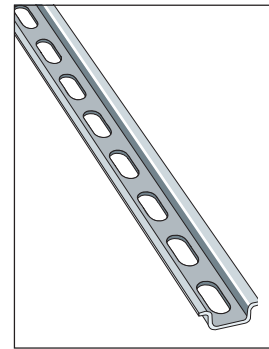
Symmetrical type 1 12,2 x 5,1 rail in compliance with NFC 93461 standard



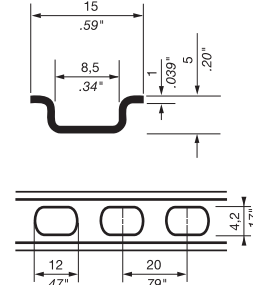
Type	P/N
<b>PRH1P</b>	1SNA 163 390 R0600
Aluminum anode-white alloy, not prepunched - Length 1 m	



<b>PRH1A</b>	1SNA 163 400 R0100
Prepunched aluminum anode-white alloy Length 1 m	

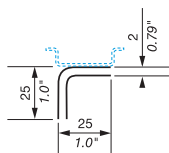


Symmetrical 15 mm .59" rail in compliance with EN 50045 standard (DIN 46277.2)



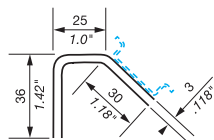
Type	P/N
<b>PR2</b>	1SNA 164 600 R1200
Prepunched white, zinc plating and passivation steel.	
<b>PR2P</b>	1SNA 206 596 R2500
Not prepunched white, zinc plating and passivation steel.	

### Rail offset brackets



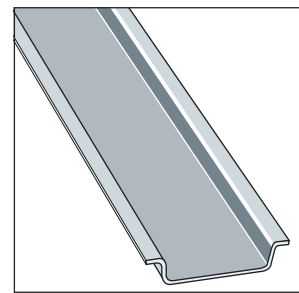
Deflection 90°

<b>EM90</b>	1SNA 008 520 R0100
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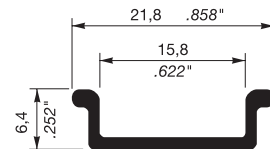


Deflection 45°

<b>EM45</b>	1SNA 008 521 R2600
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Symmetrical type 2 21,8 x 6,4 mm in compliance with NFC 93461 standard

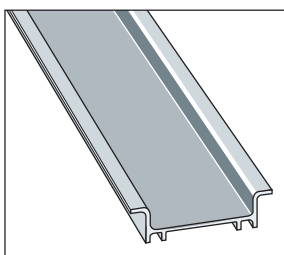


Aluminum anode-white alloy, not prepunched - Length 2 m

<b>PRH2P</b>	1SNA 163 370 R1100
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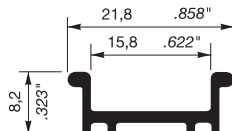
Prepunched aluminum anode-white alloy - Length 2 m

<b>PRH2A</b>	1SNA 163 380 R0400
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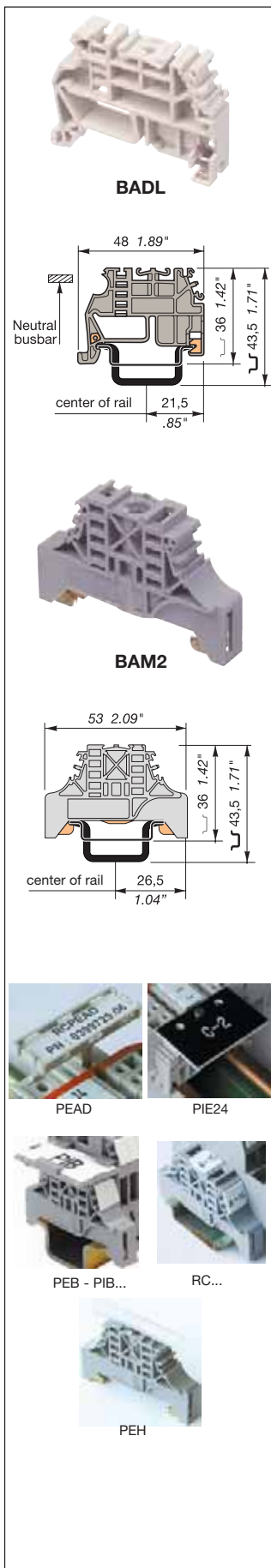
Symmetrical type 2 reinforced 21,8 x 8,2 mm in compliance with NFC 93461 standard.

Aluminum anode-white alloy, length 2 m



<b>PRH2R</b>	1SNA 163 350 R1500
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# End stops



## BADL

### Characteristics

Screwless, snaps on rail without tool. V0 grey polyamide for DIN 3 rail. Maintained in place and locked on the rail with metal grips. To reposition, do not slide on the rail. Withdraw and snap again (screwdriver DIA. 6,5 mm .256" max.)

Thickness : 9 mm .354"

### Selection

Description	Type	Order P/N	Packaging Weight kg
Screwless snap on end stop grey (same colour as spring, ADO System® and ATEX blocks)	<input type="checkbox"/> BADL 9 mm	1SNA 399 903 R0200	
grey (same colour as screw blocks)	<input type="checkbox"/> BADL 9 mm	1SNA 206 659 R2300	

## BAM2

### Characteristics

End stop of polyamide, equipped with a steel clamp allows mounting on PR3, PR4 and PR5 (DIN 3) rails.

Recommended screwdriver : DIA. 5,5 mm .217"

Recommended torque : Min. 0,8 mN - Max. 1 mN *Min. 7.1 lb.in - Max. 8.9 lb.in*

Thickness : 10 mm .394"

### Selection

Description	Type	Order P/N	Packaging Weight kg
End stop equipped with a steel clamp grey (same colour as screw blocks)	<input type="checkbox"/> BAM2 10 mm	1SNA 206 351 R1600	
grey (same colour as spring, ADO System® and ATEX blocks)	<input type="checkbox"/> BAM2 10 mm	1SNA 399 967 R0100	
beige (same colour as railway blocks)	<input type="checkbox"/> BAM2 10 mm	1SNA 296 351 R0000	

### Accessories

Adjustable marker-holder for end stop grey	<input type="checkbox"/> PEAD	1SNA 399 719 R1000	
Card of 40 blank markers for PEAD	RCPEAD 29 x 9 mm	1SNA 399 725 R0600	
Card of 20 transparent protection markers for PEAD	EPR2	1SNA 399 726 R0700	
Marker-holder, white engraving on black background, screw mounting on BADL	PIE24 (1) 37 x 24 mm	1SNA 007 871 R2400	
Marker-holder snapped on end stop (no marker included)			
(screw range) grey	<input type="checkbox"/> PEB 35 x 17 mm	1SNA 113 077 R1100	
(Atex-Spring-ADO) grey	<input type="checkbox"/> PEB 35 x 17 mm	1SNA 195 077 R1400	
Strip of 7 markers for PEB, to be printed with AMS500	PIB3 35 x 17 mm	1SNA 235 462 R2200	
Marker for PEB, white marking on black background	PIB 35 x 17 mm	1SNA 173 812 R1300	
Protection for PIB... marker	EPR1	1SNA 178 431 R2200	
PEB marker holder with marker to be written by hand or marking system, protection included	PEBM	1SNA 113 084 R0100	
Horizontal marker-holder, slide mouting on top of end stop	PEH	1SNA 163 211 R2600	
Card of 120 blank precut markers for PEH	RPEH 40 x 5 mm	1SNA 163 007 R2600	
Markers	RC810 8 mm	see marking section	
	RC1010 10 mm		
	RPA		

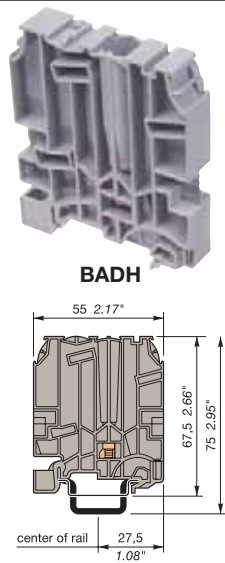
(1) For BADL only

# End stops

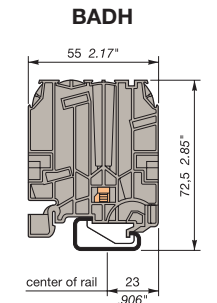
## Tall end stop BADH, BAEH

### Characteristics

Tall end stop of polyamide, for use with M 70/22, M 95/26 blocks, power blocks, double or triple deck blocks, and electronic interface modules series 7000, 8000, 10000, 11000 and 30000. Snaps on rail - Easy mounting and repositioning, even between 2 blocks.  
 Recommended screwdriver : DIA. 5,5 mm .217"  
 Recommended torque : Min. 1,2 Nm - Max. 1,4 Nm  
*Min. 10.6 lb.in - Max. 12.3 lb.in*  
 Thickness : 12 mm .472"



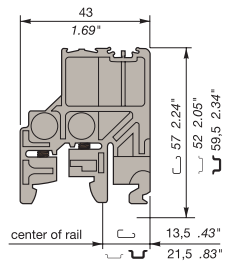
**BADH**



**BAEH**



**BAMH**



PEB - PIB...

RC...



PEH

### Selection

Description	Type	Order P/N	Packaging Weight kg
Snap on end stop, mounting on symmetrical DIN 3  rails	grey <input type="checkbox"/> BADH	12 mm 1SNA 116 900 R2700	
Snap on end stop, mounting on asymmetrical DIN 1  rail	grey <input type="checkbox"/> BAEH	12 mm 1SNA 116 934 R0400	

## Tall end stop BAMH

### Characteristics

Multi-rail end stop of V2 or V0 polyamide equipped with 2 blocking screws allows mounting on PR1, PR3, PR4 and PR5 (DIN 1, DIN 3) rails. Suitable for double deck blocks.  
 Recommended screwdriver : DIA. 5,5 mm .217"  
 Recommended torque : Min. 0,8 mN - Max. 1 mN *Min. 7.1 lb.in - Max. 8.9 lb.in*  
 Thickness : 9,1 mm .358"

### Selection

Description	Type	Order P/N	Packaging Weight kg
Multi-rail end stop	grey <input type="checkbox"/> BAMH	9,1 mm 1SNA 114 836 F0000	
Multi-rail end stop V0	beige <input type="checkbox"/> BAMH	9,1 mm 1SNA 194 836 F0100	

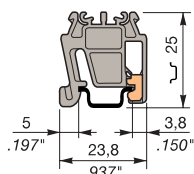
### Accessories

Marker-holder snapped on end stop (no marker included)	PEB	35 x 17 mm	1SNA 113 077 R1100	
Strip of 7 markers for PEB, to be printed with AMS500	PIB3	35 x 17 mm	1SNA 235 462 R2200	
Marker for PEB, white marking on black background	PIB	35 x 17 mm	1SNA 173 812 R1300	
Protection for PIB... marker	EPR1		1SNA 178 431 R2200	
PEB marker holder with marker to be written by hand or marking system, protection included	PEBM		1SNA 113 084 R0100	
Horizontal marker-holder, slide mounting on top of end stop	PEH		1SNA 163 211 R2600	
Card of 120 blank precut markers for PEH	RPEH	40 x 5 mm	1SNA 163 007 R2600	
Card of 100 markers for vertical marking	RC810	8 mm	see marking section	
	RC1010	10 mm		
	RPA			

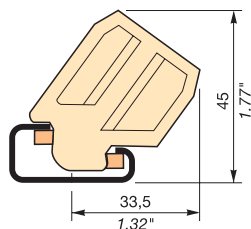
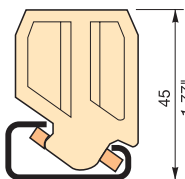
## End stops



**BADRL**



**BAR**



PIB...



PIE...



RPA

### BADRL

#### Characteristics

End stop of V0 grey polyamide snaps on DIN 2 rail, automatically maintained in place with metal grips. To reposition, do not slide on the rail. Withdraw and snap again (screwdriver DIA. 4 mm .157" max.)

Thickness : 6,5 mm .256"

#### Selection

Description	Type	Order P/N	Packaging Weight kg
Screwless snap on end stop grey (same colour as spring, ADO System® and ATEX blocks)	<input type="checkbox"/> BADRL 6,5 mm	1SNA 199 420 R2100	

### BAR

#### Characteristics

Butée d'arrêt réversible en polyamide beige avec équerre de blocage. Montage vertical ou à 30°, sur PR1 uniquement.

Épaisseur : 10 mm .394"

#### Selection

Description	Type	Order P/N	Packaging Weight kg
Screwless snap on end stop beige (same colour as railway blocks)	<input type="checkbox"/> BAR 10 mm	1SNA 164 519 R2400	

#### Accessories

Marker-holder for group marking, white engraving on black ground, screw mounting on end stop

PIE9 (1)	37 x 9 mm	1SNA 167 257 R0000	
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Marker-holder, white engraving on black background, screw mounting on end stops  
Mounting screw

PIE24 (1)	37 x 24 mm	1SNA 007 871 R2400	
VST28 (1)		1SNA 167 335 R2600	

Marker-holder snapped on end stop (no marker included)

PEB	35 x 17 mm	1SNA 113 077 R1100	
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Strip of 7 markers for PEB, to be printed with AMS500

PIB3	35 x 17 mm	1SNA 235 462 R2200	
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Marker for PEB, white marking on black background

PIB	35 x 17 mm	1SNA 173 812 R1300	
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Protection for PIB... marker

EPR1		1SNA 178 431 R2200	
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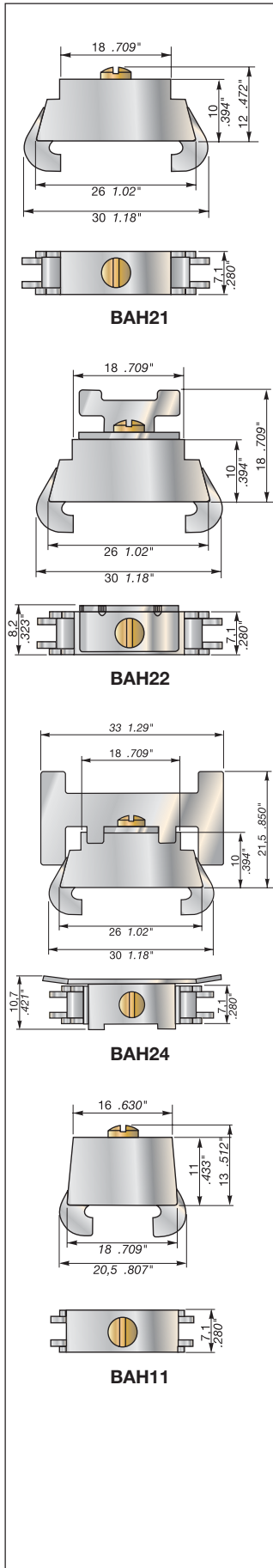
Markers

RC610 (2)	6 mm	see marking section	
RPA (1)			

(1) BAR only

(2) BADRL only

# End stops for railway applications



## BAH21

Steel end stop to be mounted on strengthened symmetrical rail type 2 : 21,8 x 8,2 mm .858 x .323" according to NFC 93 461 standard.

Thickness : 7,1 mm .280"

Recommended torque : min. 0,5 Nm - max. 0,8 Nm

Description	Type	Order P/N	Packaging Weight kg
Steel end stop	BAH21 7,1 mm	1SNA 167 489 R2200	

## BAH22

Steel end stop to be mounted on strengthened symmetrical rail type 2 : 21,8 x 8,2 mm .858 x .323" according to NFC 93 461 standard.

Thickness : 8,2 mm .323"

Recommended torque : min. 0,5 Nm - max. 0,8 Nm

Steel end stop with reinforcing part	BAH22 8,2 mm	1SNA 164 655 R0400	
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## BAH24

Steel end stop to be mounted on strengthened symmetrical rail type 2 : 21,8 x 8,2 mm .858 x .323" according to NFC 93 461 standard.

Thickness : 10,7 mm .421"

Recommended torque : min. 0,5 Nm - max. 0,8 Nm

Steel end stop with reinforcing part	BAH24 10,7 mm	1SNA 168 355 R1300	
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## BAH11

Steel end stop to be mounted on symmetrical rail type 1 : 12,2 x 5,1 mm .480 x .201" according to NFC 93 461 standard.

Thickness : 7,1 mm .280"

Recommended torque : min. 0,5 Nm - max. 0,8 Nm

Steel end stop	BAH11 7,1 mm	1SNA 164 659 R1000	
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# Circuit separators

## Separator end sections

Product	Type	Order P/N
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Possibility of marking, by the user, on the back of the separator.

For blocks : **M 4/6** except **D** and **G**  
**M 6/8 - M 10/10**  
**M 4/6.H**  
**M 1,5/6.HH** and **ADV**

Width : 51 mm 2.01"  
 Thickness : 2 mm .079"

Separator end section	grey <input type="checkbox"/>	<b>SCF61</b>	1SNA 114 202 R2500
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For **M 4/6.D** block only. Extends 2 mm .079" around the block.

Height :  $\curvearrowright$  61,5 mm 2.42"  
 $\curvearrowright$  69 mm 2.72"  
 $\curvearrowright$  66,5 mm 2.62"

Thickness : 1 mm .039"

Separator end section	grey <input type="checkbox"/>	<b>SCF6.D</b>	1SNA 118 495 R1700
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SCF.D



SCD

Only for **NTLP** blocks.

(1) With cut-out for busbar passage. Snapped on **PR3**, **PR4** and **PR5** rails. Extends 3 mm .12" around the block excepting on top.

(2) Snapped onto the extremity of the **BJM62** connector bars before they are mounted on the blocks.

Thickness (1) : 1,5 mm .059"

Separator end section	grey <input type="checkbox"/>	<b>SCF.D</b> (1)	1SNA 114 117 R0700
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Circuit separator	white <input type="checkbox"/>	<b>SCD</b> (2)	1SNA 103 189 R2600
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For spring blocks.

Thickness : 2,5 mm .098"

Separator end section	grey <input type="checkbox"/>	<b>SCD5.2L</b>	1SNA 291 351 R0300
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	orange <input type="checkbox"/>	<b>SCD5.2L</b>	1SNA 291 352 R0400
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	orange <input type="checkbox"/>	<b>SCD5.3L</b>	1SNA 291 362 R0600
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	orange <input type="checkbox"/>	<b>SCD5.4L</b>	1SNA 291 372 R0000
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SCM...

The **SCM** separator snaps onto the top of the open terminal blocks, once the terminal board is assembled. It does not increase the thickness of the blocks but extends 8 mm .315" on top.

For blocks : **MA 2,5/5** (1)

**MA 2,5/5.D** (2)

**M 1,5/6.HH** and **ADV** blocks, **M 4/6**, **M 6/8**,

**M 10/10**, **M 16/12** (3)

**M 4/6.D** (4)

**ADO System®** blocks (5)

Circuit separator	grey <input type="checkbox"/>	<b>SCMA5</b> (1)	1SNA 116 728 R2500
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	grey <input type="checkbox"/>	<b>SCMA5D</b> (2)	1SNA 116 720 R2100
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	grey <input type="checkbox"/>	<b>SCM6</b> (3)	1SNA 113 003 R1000
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	orange <input type="checkbox"/>	<b>SCM6</b> (3)	1SNA 103 233 R2100
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	grey <input type="checkbox"/>	<b>SCM6D</b> (4)	1SNA 113 482 R0500
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	grey <input type="checkbox"/>	<b>SCAD</b> (5)	1SNA 196 896 R0000
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Product	Type	Order P/N
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With possibility of mounting a protective cover **CPM**, and a marker-holder **PEP**. Extends 5 mm .20" on sides of the block and 11,5 mm .45" on top (1).

For blocks : **MA 2,5/5** (1)

**M 4/6** except **D** and **G** (1) (2)

**M 6/8 - M 10/10** (1) (2)

**M 4/6.H** (1)

Height :  $\curvearrowright$  59,5 mm 2.34"

$\curvearrowright$  67 mm 2.64"

$\curvearrowright$  64,5 mm 2.54"

Width : 51 mm 2.01"

Thickness : 3 mm .118"

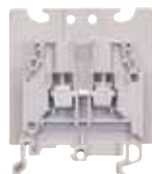
(1) For **SCF6**, snapped on block

(2) For **SCFM6**, mounting on **PR1**, **PR4** and **PR5** rails

Separator end section	grey <input type="checkbox"/>	<b>SCF6</b>	1SNA 118 707 R0300
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	blue <input type="checkbox"/>	<b>SCF6</b>	1SNA 128 707 R0500
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	grey <input type="checkbox"/>	<b>SCFM6</b>	1SNA 114 825 R0500
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With possibility of mounting a protective cover **CPM**, and a marker-holder **PEP**. Extends 5 mm .20" on sides of the block and 11,5 mm .45" on top.

For blocks : **M 4/6.G** (1)

**M 16/12** (2)

**M 35/16** (3)

**M 70/22** (4)

**M 6/8.ST**(5)

Thickness : 3 mm .118"

Separator end section	grey <input type="checkbox"/>	<b>SCF6G</b> (1)	1SNA 113 075 R1700
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	grey <input type="checkbox"/>	<b>SCF12</b> (2)	1SNA 113 102 R1000
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	grey <input type="checkbox"/>	<b>SCF22</b> (4)	1SNA 113 851 R1600
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	grey <input type="checkbox"/>	<b>SCFT2</b> (5)	1SNA 114 522 R0500
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With possibility of mounting a protective cover **CPM**, and a marker-holder **PEP**. Snap on mounting on **PR1**, **PR3**, **PR4** and **PR5**. This separator does not replace an end section which must be used on the block.

For blocks : **M 6/9.EE**

**M 6/12.FF**

Thickness : 1 mm .039"

Separator end section	white <input type="checkbox"/>	<b>SCF9</b>	1SNA 103 672 R0100
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Universal separator for use with terminal blocks, with possibility of mounting one or two protective covers **CPM** side by side. Snap on mounting on **PR1**, **PR3**, **PR4** and **PR5** rails.

Height :  $\curvearrowright$  63 mm 2.48"

$\curvearrowright$  70,5 mm 2.78"

$\curvearrowright$  68 mm 2.68"

Width : 77,5 mm 3.05"

Thickness : 1 mm .039"

Separator end section	grey <input type="checkbox"/>	<b>SCFT1*</b>	1SNA 103 588 R2600
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### Accessories :



CPM + RTC

**CPM** cover protects the user from accidental touch on live circuits. It is clipped onto the end sections (**FE**), onto the intermediate sections (**FJ**) and onto the **SCF**, **SCFT** or **SCFM** separators. It can also be used for marking the terminal unit by means of a blank strip **RTC**, which slides into the cover.

**CPM** width : 32 mm 1.26"

**CPM** length : 500 mm 19.70"

**RTC** width : 20 mm .79"

**RTC** length : 1 m 39"

Protective cover	clear <input type="checkbox"/>	<b>CPM</b>	1SNA 187 312 R1400
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	beige <input type="checkbox"/>	<b>CPM</b>	1SNA 197 312 R1600
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Top marking strip for CPM		<b>RTC</b>	1SNA 163 156 R2700
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Marker holder		<b>PEP</b>	1SNA 113 762 R2400
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PEP

This marker holder snaps on separator end sections **SCF** or **SCFM** and on the **ECP** and **ECS** power blocks' partitions. It can receive 1 label **RC610**.

\*Note : Not to be mounted on **SCFT1** separator end section.

# Circuit separators

## Separator end sections (cont.)

Product	Type	Order P/N	Product	Type	Order P/N
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**SCFCV + CPV**

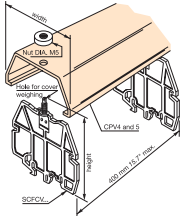
Separator end section

With possibility of mounting a protective cover **CPV**, and a marker-holder **PEP**. Snap on mounting on PR1, PR3, PR4 and PR5 rails.  
 For blocks :  
**MA 2,5/5 - M 4/6 - M 6/8 - M 10/10 - M 16/12 - M 35/16 (1)**  
**M 6/8.STA - M 6/8.SF (2)**  
**M 70/22 - M 10/12.SF - MB 10/24.SF - MB 25/30.SF - MU 10/13 - M 10/13.TSF (3)**  
**M 6/8.ST (4)**  
 Thickness : 3 mm .118"

grey <input type="checkbox"/>	<b>SCFCV1-2 (1)</b>	1SNA 116 795 R1100
grey <input type="checkbox"/>	<b>SCFCV3 (2)</b>	1SNA 116 796 R1200
grey <input type="checkbox"/>	<b>SCFCV4 (3)</b>	1SNA 116 797 R1300
grey <input type="checkbox"/>	<b>SCFCV5 (4)</b>	1SNA 116 798 R2400

**Accessories :**

Protective cover of transparent PVC, length 1 m 3'3" (39") approx.  
 For cover mounting, place a separator end section **SCFCV** every 400 mm approx., at terminal assembly extremities. It can also be used for marking the terminal unit by means of a blank marker strip **RTC**, which sticks under the cover.



**RTC** width : 20 mm .79"

**RTC** length : 1 m 39"

Separator	Cover	Width	Height
<b>SCFCV1-2</b>	<b>CPV1-2</b>	73 mm 2.87"	┌ 66 mm 2.62"
			└ 74 mm 2.91"
			└ 72 mm 2.83"
<b>SCFCV3</b>	<b>CPV3</b>	85 mm 3.35"	┌ 68,5 mm 2.70"
			└ 76 mm 2.99"
			└ 74 mm 2.91"
<b>SCFCV4</b>	<b>CPV4-S</b>	85 mm 3.35"	┌ 68,5 mm 2.70"
			└ 76 mm 2.99"
			└ 74 mm 2.91"
<b>SCFCV5</b>	<b>CPV4-S</b>	104 mm 4.09"	┌ 72 mm 2.83"
			└ 79,5 mm 3.13"
			└ 77,5 mm 3.05"

Protective cover	clear	<b>CPV1-2</b>	1SNA 176 816 R1200
	clear	<b>CPV3</b>	1SNA 176 817 R1300
	clear	<b>CPV4-S</b>	1SNA 176 791 R2100
Top marking strip		<b>RTC</b>	1SNA 163 156 R2700
Marker holder		<b>PEP</b>	1SNA 113 762 R2400



**PEP**

This marker holder snaps on separator end section **SCFCV**.  
 It can receive 1 label **RC610**.

## Separator section / End section

### Characteristics

This is used to conserve insulation between the stud blocks and the end stops.  
It can hold a CP cover, together with a PEF terminal block identification door.  
This is used to hold a cover in the middle of the terminal block when it is too long.  
It determines the height of the assembly : 31.8 mm, 40 mm or 55 mm.

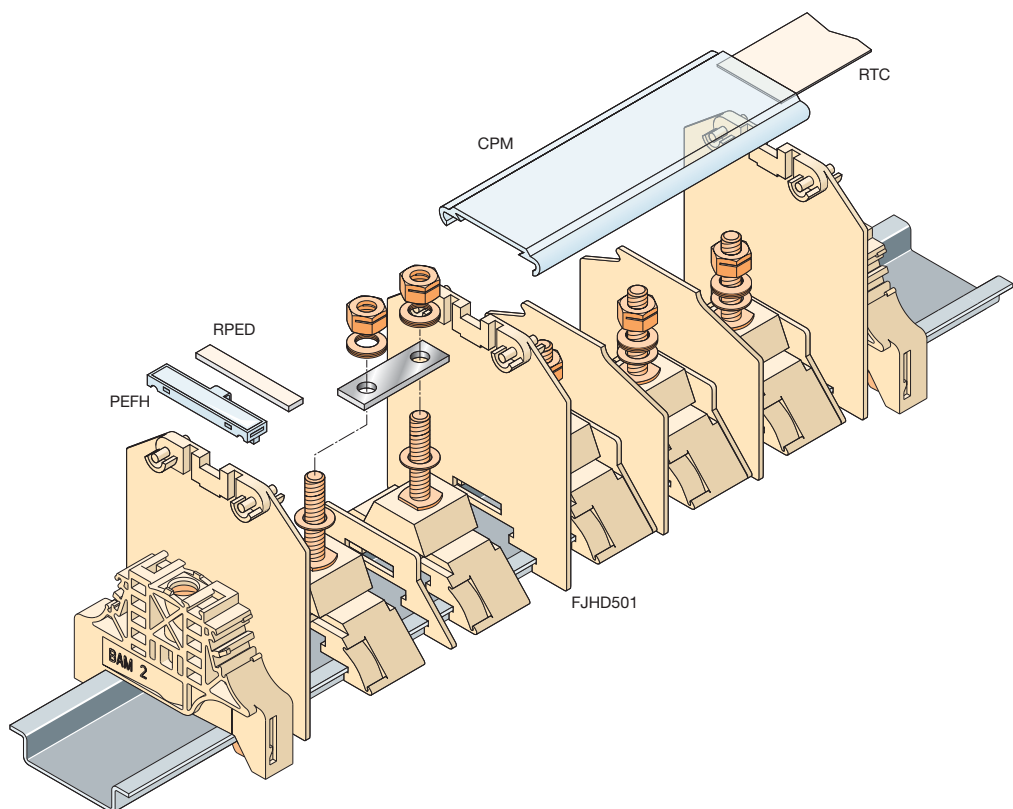
### Selection

Description	Type	Order P/N	Packaging Weight kg
Separator section for assembly height 31.8 mm	FJHD32 th. 1,5 mm	1SNA 295 431 R1000	
Separator section for assembly height 40 mm	FJHD40 th. 1,5 mm	1SNA 295 424 R1100	
Separator section for assembly height 50 mm	FJHD50 th. 1,5 mm	1SNA 295 425 R1200	
Separator section for assembly height 55 mm	FJH501 th. 1,5 mm	1SNA 199 411 R1400	
Separator section changing the height 40 / 50 mm	FJHD th. 1,5 mm	1SNA 295 426 R1300	

### Accessories

Protective cover *	transparent	CPM	32x500 mm	1SNA 187 312 R1400	
	beige 	CPM	32x500 mm	1SNA 197 312 R1600	
	yellow 	CPM	32x500 mm	1SNA 199 405 R2700	
Blank marker strip for CPM	RTC	20x1000 mm	1SNA 163 156 R2700		
Marker holder *	PEFH			1SNA 163 497 R1600	
card of 160 blank pre-cut markers for PEFH	RPED	29x5 mm		1SNA 163 518 R2200	

\* Snaps on end sections.





# Jumper bars for screw clamp and ADO System® terminal blocks



BJMI5 - BJMI6 - BJMI8

## IP20 assembled screw jumper bars

Fractionable model, composed of captive screws on a jumper bar system, with IP20 protection touchproof. This accessory can be used for connecting consecutive blocks only.

Max. recommended torque : 0,6 Nm

### Selection

Description	Type	Order P/N	Packaging Weight kg
IP20 jumper bar for blocks MA 2,5/5			
24 A - 2 poles	BJMI5	1SNA 176 278 R1600	
24 A - 3 poles	BJMI5	1SNA 176 279 R1700	
24 A - 4 poles	BJMI5	1SNA 176 280 R0500	
24 A - 5 poles	BJMI5	1SNA 176 281 R2200	
24 A - 10 poles	BJMI5	1SNA 176 282 R2300	
IP20 jumper bar for blocks M 4/6			
32 A - 2 poles	BJMI6	1SNA 176 663 R0000	
32 A - 3 poles	BJMI6	1SNA 176 664 R0100	
32 A - 4 poles	BJMI6	1SNA 176 665 R0200	
32 A - 5 poles	BJMI6	1SNA 176 666 R0300	
32 A - 10 poles	BJMI6	1SNA 176 667 R0400	
IP20 jumper bar for blocks M 6/8			
41 A - 2 poles	BJMI8	1SNA 176 669 R1600	
41 A - 3 poles	BJMI8	1SNA 176 670 R1300	
41 A - 4 poles	BJMI8	1SNA 176 671 R0000	
41 A - 5 poles	BJMI8	1SNA 176 672 R0100	
41 A - 10 poles	BJMI8	1SNA 176 673 R0200	

Simplified model, composed of a bar prepunched to the spacing of the blocks, and of captive screws and spacers. This accessory can be used for connecting blocks which are consecutive or not : in this case remove the screw and spacer which are not required.

Max. recommended torque : 0,6 Nm  
except for **BJMI16** : 1,2 Nm

### Selection

Description	Type	Order P/N	Packaging Weight kg
IP20 jumper bar for blocks MA 2,5/5.D			
24 A - 2 poles	BJMI5D	1SNA 176 736 R2100	
24 A - 3 poles	BJMI5D	1SNA 176 737 R2200	
24 A - 4 poles	BJMI5D	1SNA 176 738 R0300	
24 A - 5 poles	BJMI5D	1SNA 176 739 R0400	
24 A - 10 poles	BJMI5D	1SNA 176 740 R1100	
IP20 jumper bar for blocks M 4/6.D			
32 A - 2 poles	BJMI6D	1SNA 179 668 R2000	
32 A - 3 poles	BJMI6D	1SNA 179 669 R2100	
32 A - 4 poles	BJMI6D	1SNA 179 670 R2600	
32 A - 5 poles	BJMI6D	1SNA 179 671 R1300	
32 A - 10 poles	BJMI6D	1SNA 179 672 R1400	
IP20 jumper bar for blocks M 10/10			
57 A - 2 poles	BJMI10	1SNA 176 675 R0400	
57 A - 3 poles	BJMI10	1SNA 176 676 R0500	
57 A - 4 poles	BJMI10	1SNA 176 677 R0600	
57 A - 5 poles	BJMI10	1SNA 176 678 R1700	
57 A - 10 poles	BJMI10	1SNA 176 679 R1000	
IP20 jumper bar for blocks M 16/12			
76 A - 2 poles	BJMI12	1SNA 179 626 R0600	
76 A - 3 poles	BJMI12	1SNA 179 628 R1000	
76 A - 4 poles	BJMI12	1SNA 179 629 R1100	
76 A - 5 poles	BJMI12	1SNA 179 630 R1600	
76 A - 10 poles	BJMI12	1SNA 179 631 R0300	
IP20 jumper bar for blocks M 35/16			
110 A - 2 poles	BJMI16	1SNA 206 217 R0000	
110 A - 3 poles	BJMI16	1SNA 206 218 R1100	
110 A - 4 poles	BJMI16	1SNA 206 219 R1200	
110 A - 5 poles	BJMI16	1SNA 206 220 R1700	
110 A - 10 poles	BJMI16	1SNA 206 221 R0400	



BJMI5D - BJMI6D - BJMI10 - BJMI12 - BJMI16

# Jumper bars for screw clamp and ADO System® terminal blocks

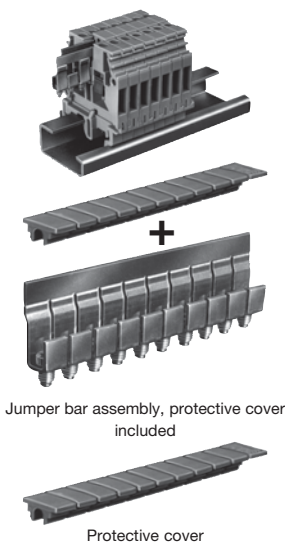
## Not assembled screw jumper bars

To connect terminal blocks, place the metal tube into the top center hole on each terminal block to be connected. The metal tube contacts the terminal block's internal connector bar. The perforated bar is cut to length and placed flat along the center opening of the series of terminal blocks. The screw is inserted into the perforated bar's hole which is located directly above the blocks being connected. The screw goes through the threaded metal tube and is screwed into the terminal block's internal connector bar. This completes the electrical connection to the perforated bar and connects the block.

Max. recommended torque : 0,6 Nm

### Selection

Description	Type	Order P/N	Packaging	Weight kg
Post + screw + washer for blocks MA 2,5/5 and DR 1,5/5	EV5	1SNA 168 629 R1600		
Perforated jumper bar for blocks MA 2,5/5 and DR 1,5/5	BJS5 20 poles - 24 A	1SNA 177 652 R0600		
Post + screw + washer for block MA 2,5/5.D	EV5D	1SNA 176 260 R1000		
Jumper bar for block MA 2,5/5.D	BJS5D 20 poles - 24 A	1SNA 177 651 R0500		
Insulated post + screw + washer for block M 4/6	EV6I	1SNA 206 394 R0200		
Jumper bar for block M 4/6	BJS6 20 poles - 32 A	1SNA 174 784 R2000		
Post + screw + washer for blocks M 4/6.D and MD 2,5/6...	EV6D	1SNA 168 400 R1600		
Perforated jumper bar for blocks M 4/6.D and MD 2,5/6...	BJS6I 10 poles - 32 A	1SNA 168 485 R2700		
Post + screw + washer for block DR 4/6	EVDR6	1SNA 168 399 R1000		
Jumper bar for block DR 4/6	BJS62D 10 poles - 24 A	1SNA 167 601 R0200		
Post + screw + washer for block M 6/8.ST	EV8S	1SNA 168 401 R0300		
Post + screw + washer for block M 4/8.D2.SF...J	VJS11	1SNA 163 394 R2600		
Perforated jumper bar for blocks M 6/8 - M 6/8.ST - M 4/8.D5.SF...J	BJS8 20 poles - 41 A	1SNA 174 789 R0500		
Jumper bar for block M 6/9.EE	BJS9,5 10 poles - 41 A	1SNA 173 819 R2200		
Jumper bar for block M 10/10	BJS10 20 poles - 57 A	1SNA 177 654 R0000		
Post + screw + washer for block M 16/12	EV12	1SNA 168 664 R1100		
Screw for block MB 10/12.SF		1SNA 163 574 R2200		
Washer for block MB 10/12.SF		1SNA 163 633 R2500		
Perforated jumper bar for blocks M 16/12 and MB 10/12.SF	BJS12 20 poles - 57 A	1SNA 177 653 R0700		
Jumper bar for block M 6/12.FF	BJS12,5 10 poles - 41 A	1SNA 174 396 R2300		
Jumper bar for block M 6/13.FF	BJS13 10 poles - 125 A	1SNA 167 224 R2700		
Screw for block ML 10/13.SF		1SNA 163 394 R2600		
Washer for block ML 10/13.SF		1SNA 168 783 R0100		
Jumper bar for block ML 10/13.SF	BJS131 10 poles - 57 A	1SNA 175 991 R1100		
Post + screw + washer for block M 35/16	EV16	1SNA 179 627 R0700		
Jumper bar for block M 35/16	BJS16 10 poles - 125 A	1SNA 168 238 R1600		
Screw for block M 70/22		1SNA 173 320 R0100		
Washer for block M 70/22		1SNA 173 331 R2000		
Jumper bar for block M 70/22	BJS22 10 poles - 192 A	1SNA 173 319 R0400		
Screw for block MB 10/24.SF		1SNA 163 607 R0400		
Jumper bar for block MB 10/24.SF	BJS24 10 poles - 30 A	1SNA 167 856 R2100		
Post + screw + washer for block M 95/26	VJS51	1SNA 173 320 R0100		
Washer for block M 95/26		1SNA 173 331 R2000		
Jumper bar for block M 95/26	BJS261 10 poles - 232 A	1SNA 177 511 R1100		



## Screw jumper bars for alternated jumping

This accessory permits the interconnection of consecutive or non-consecutive blocks. For this, detach the studs manually where connection is not required. The use of two bars permits alternated jumping. A captive screw is mounted on each stud. This jumper bar is delivered with a protective cover snapped onto the top of the block, assuring touch proof protection.

**Note :** At each extremity of the jumpers the assembly must be insulated. For this, use either a closed block or a circuit separator **SC**.

### Selection

Jumper bar assembly for blocks with 5 mm .200" spacing	10 poles	BJA5 24 A	1SNA 205 021 R2600	
	30 poles	BJA5 24 A	1SNA 205 197 R2400	
Jumper bar assembly for blocks with 6 mm .238" spacing	10 poles	BJA6 35 A	1SNA 116 541 R1200	
	30 poles	BJA6 35 A	1SNA 116 589 R1300	
Protective cover alone	10 poles			
for BJA5	grey	<input type="checkbox"/>	1SNA 119 847 R2000	
for BJA6	grey	<input type="checkbox"/>	1SNA 116 508 R2200	
	white	<input type="checkbox"/>	1SNA 103 819 R2500	

# Jumper bars for screw clamp and ADO System® terminal blocks



BJDP...

## Universal screw jumper bars

This accessory permits the interconnection of two consecutive blocks with different spacings. It is composed of : 2 posts, 2 screws, 2 washers, 1 connector plate.

Spacing of block 6 corresponds to **M 4/6** and its derivatives.  
 Spacing of block 6,5 corresponds to **M 4/6,5** and its derivatives.  
 Spacing of block 8 corresponds to **M 6/8** and its derivatives.  
 Spacing of block 10 corresponds to **M 10/10** and its derivatives.  
 Spacing of block 12 corresponds to **M 16/12** and its derivatives.  
 Spacing of block 16 corresponds to **M 35/16** and its derivatives.

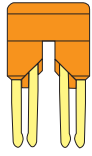
Max. recommended torque : 0,6 Nm

			IV	IV	8	Spacing of block B
		V	IV	IV	10	
	III	III	III	III	12	
II	I	I	I	I	16	
12	10	8	6.5	6		
Spacing of block A						

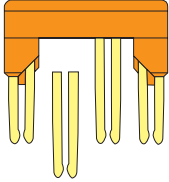
### Selection

Description	Type		Order P/N	Packaging Weight kg
Jumper bar kit N° I	BJDP1	50 A	1SNA <b>179 623 R0300</b>	
Jumper bar kit N° II	BJDP2	95 A	1SNA <b>179 624 R0400</b>	
Jumper bar kit N° III	BJDP3	70 A	1SNA <b>179 625 R0500</b>	
Jumper bar kit N° IV	BJDP4	50 A	1SNA <b>174 781 R2500</b>	
Jumper bar kit N° V	BJDP5	50 A	1SNA <b>174 782 R2600</b>	

# Jumper bars for spring blocks



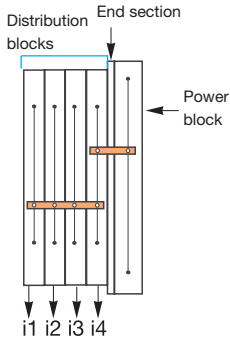
BJDL5.2



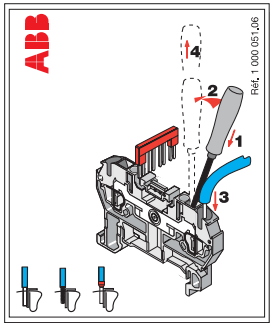
BJDL5.4 + remove manually (by successive folding) the unused metal pin



Example :



$I = i1 + i2 + i3 + i4 < I_{max} \text{ shunt}$



## BJDL... jumper bar for spring blocks with the same spacing

This accessory allows to connect two blocks next to each other or not. For this, remove manually the unconnected metal pins by folding them several times. Identification of cut pins is possible. This flexible connecting system allows contact by simple insertion.

### Selection

Description	Type	Order P/N	Packaging Weight kg
Jumper bar for spring blocks with 5 mm .200" spacing 10 poles	BJDL5.10	1SNA 291 110 R2600	
Jumper bar for spring blocks with 6 mm .238" spacing 5 poles	BJDL6.5	1SNA 291 195 R1000	
Jumper bar for spring blocks with 8 mm .315" spacing 5 poles	BJDL8.5	1SNA 291 145 R2500	
Jumper bar for spring blocks with 10 mm .400" spacing 5 poles	BJDL10.5 24 A	1SNA 291 325 R2100	
Jumper bar for spring blocks with 10 mm .400" spacing 5 poles	BJDL1.10.5 57 A	1SNA 291 478 R0300	

## BJDPL... jumper bar for spring blocks with different spacings

This accessory allows the connection of 2 spring terminal blocks with different spacings to each other (spacing 5 and 6 mm, 6 and 8 mm, 5 and 8 mm). It is not necessary to use a spring block with an additional spring to jump with a wire, but it is necessary to use an end section between the interconnected blocks, whatever the mounting direction of the blocks may be. These jumper bars and both slots for jumper bars permit current distribution (see "Example" drawing).

### Selection

Input block	Output block	Type	Order P/N	Current max.
6 mm .238" spacing	5 mm .200" spacing	BJDPL5.6	1SNA 291 150 R0600	24 A
8 mm .315" spacing	5 mm .200" spacing	BJDPL5.8	1SNA 291 160 R0000	24 A
	6 mm .238" spacing	BJDPL6.8	1SNA 291 170 R0200	32 A
10 mm .400" spacing	5 mm .200" spacing	BJDPL5.10	1SNA 291 480 R2200	24 A
	6 mm .238" spacing	BJDPL6.10	1SNA 291 482 R1000	32 A
	8 mm .315" spacing	BJDPL8.10	1SNA 291 484 R1200	41 A
12 mm .473" spacing	6 mm .238" spacing	BJDPL6.12	1SNA 399 613 R0600	32 A

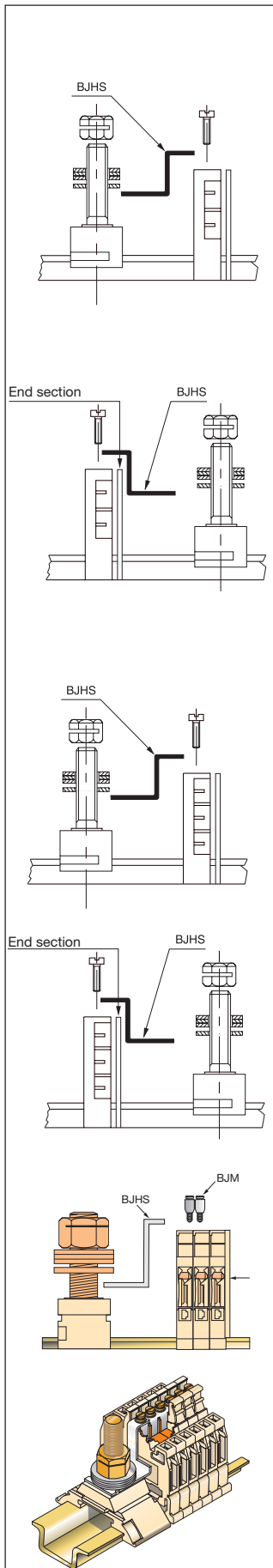
## ETRES1 explaining sticker

These stickers show how to use a spring block.

### Selection

Description	Type	Order P/N	Packaging Weight kg
Explaining sticker	ETRES1	1SNB 000 051 R0600	

# BJHS distribution bars for railway terminal blocks



## BJHS

### Characteristics

Jumper bar to be sawing divided for transversal interconnection between several terminal blocks.

### Selection

Description	Type	Order P/N	Packaging Weight kg
Connexion between one 16 mm block with M6 stud and one 8 mm block for quick connect tabs			
Assembly 1: left end stud block	BJHS-ENT7192	1SNA 178 803 R0000	
Assembly 1: right end stud block	BJHS-ENT7193	1SNA 178 802 R0700	

### Accessories

Closing plate	FEH3	th. 1 mm	1SNA 198 352 R0700	
Screw for BJHS	VSJ6		1SNA 167 735 R2700	
Washer for VSJ	RDJ6		1SNA 173 241 R0600	

### Selection

Description	Type	Order P/N	Packaging Weight kg
Connexion between one M6, M8 or M10 stud block and one type HD 2.5/6.3... longitudinal tongued block			
Assembly 1: left end stud block	BJHS	1SNA 179 782 R0300	
Assembly 1: right end stud block	BJHS	1SNA 179 781 R0200	

### Accessories

Closing plate	FEHD2	th. 1 mm	1SNA 168 949 R1700	
Screw for BJHS	VSJ6		1SNA 167 735 R2700	
Washer for VSJ	RDJ6		1SNA 173 241 R0600	

### Selection

Description	Type	Order P/N	Packaging Weight kg
Connexion between one M6, M8 or M10 stud block and one NF ADO System® terminal block			
Assembly : left end stud block	BJHS	1SNA 206 539 R0300	

# BJH jumper bars for railway terminal blocks

## Characteristics

Perforated bar, which can be cut by sawing, for making transverse connections between two or more identical terminal blocks.

## Selection

Description	Type	Order P/N	Packaging Weight kg
Jumper bar for blocks with quick connect	Spacing 6 mm	BJH6 2 poles 1SNA 168 481 R2300	
		BJH6 3 poles 1SNA 168 482 R2400	
		BJH6 4 poles 1SNA 168 483 R2500	
		BJH6 5 poles 1SNA 168 484 R2600	
		BJH6 10 poles 1SNA 168 485 R2700	
Jumper bar for blocks with quick connect	Spacing 7 mm	BJH7 2 poles 1SNA 168 486 R2000	
		BJH7 3 poles 1SNA 168 487 R2100	
		BJH7 4 poles 1SNA 168 488 R0200	
		BJH7 5 poles 1SNA 168 489 R0300	
		BJH7 10 poles 1SNA 168 490 R0000	
Jumper bar for blocks with quick connect	Spacing 8 mm	BJH8 2 poles 1SNA 168 456 R0100	
		BJH8 3 poles 1SNA 168 457 R0200	
		BJH8 4 poles 1SNA 168 458 R1300	
		BJH8 5 poles 1SNA 168 459 R1400	
		BJH8 10 poles 1SNA 168 356 R1400	
Jumper bar for blocks with quick connect	Spacing 9 mm	BJH9 2 poles 1SNA 168 460 R1100	
		BJH9 3 poles 1SNA 168 461 R0600	
		BJH9 4 poles 1SNA 168 462 R0700	
		BJH9 5 poles 1SNA 168 463 R0000	
		BJH9 10 poles 1SNA 168 357 R1500	
Jumper bar for blocks with quick connect	Sp. 11,2 mm	BJH11 10 poles 1SNA 164 562 R2700	
Jumper bar for blocks with quick connect	Sp. 13,2 mm	BJH13 10 poles 1SNA 163 556 R2000	

For quick connect blocks, a sub-assembly must be used: screw plus washer to connect the jumper bar onto the required block.

## Accessories

Screw for HD type blocks	VSJ6	1SNA 167 735 R2700	
Washer for HD type blocks	RDJ6	1SNA 173 241 R0600	
Screw for H type blocks	VSJ11	1SNA 163 394 R2600	
Washer for H type blocks	RDJ11	1SNA 168 783 R0100	

For stud blocks, the jumper bar is fitted under the washer and the nut of each block to be shunted.

## Selection

Description	Type	Order P/N	Packaging Weight kg
Jumper bar for stud block	Spacing 13,2 mm	BJH131 10 poles 1SNA 163 468 R0000	
Jumper bar for stud block	Spacing 13 mm	BJH132 10 poles 1SNA 167 224 R2700	
Jumper bar for stud block	Spacing 14 mm	BJH14 2 poles 1SNA 173 438 R2400	
		BJH14 3 poles 1SNA 173 439 R2500	
		BJH14 4 poles 1SNA 173 441 R2700	
		BJH14 5 poles 1SNA 173 449 R0700	
		BJH14 10 poles 1SNA 173 451 R2100	
Jumper bar for stud block	Spacing 17,2 mm	BJH17 10 poles 1SNA 163 475 R2700	
Jumper bar for stud block	Spacing 18,2 mm	BJH18 2 poles 1SNA 173 452 R2200	
		BJH18 3 poles 1SNA 173 453 R2300	
		BJH18 4 poles 1SNA 173 454 R2400	
		BJH18 5 poles 1SNA 173 460 R0600	
		BJH18 10 poles 1SNA 173 461 R2300	
Jumper bar for stud block	Spacing 23,2 mm	BJH23 10 poles 1SNA 163 476 R2000	

For H type stud block, an IN spacer is necessary in order to ensure insulation between the jumper bar and the rail.

## Accessories

Spacer 1,2 mm	INH1	1SNA 193 474 R1500	
Spacer 1,2 mm	yellow <span style="color: yellow;">■</span> INH1	1SNA 199 396 R2500	
Spacer 4 mm	INH3	1SNA 199 394 R2300	

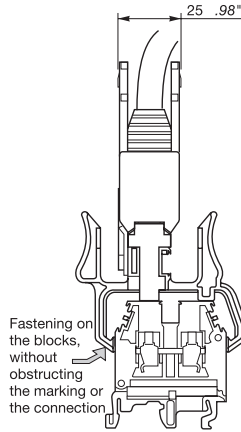
# Test connectors

For screw clamp blocks  DIN 1-3  
 For spring blocks  DIN 1-3

## CEV... test connectors for screw clamp blocks

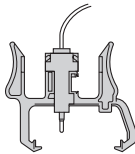


Test connector CEV...



### Unit connector

Simple test connector (1 pole) supplied with a 2 meters (6.6 Ft.) long wire.



Characteristics		IEC NFC VDE	UL	CSA
Wire size mm <sup>2</sup>	Rigid			
	Flexible	0,5(1) - 0,34		
Voltage	V	250 (2)		
Current	A	2		(1) For CEV 6.1 only
Short circuit current (M 4/6.PI)	A / s			(2) For low voltages (<24 V) take a typical contact resistance of 50 mΩ into account.
Rated wire size	mm <sup>2</sup> / AWG			
Wire stripping length	mm / inches			
Recommended torque	Nm / lb.in			

### To perform simple tests quickly :

This connector completes the range of modular connectors to mount on terminal strips. It is supplied ready for use, without any modification of the terminal strip :

The contact is made on the wire-clamp screw heads.

Fastening is performed on the terminal block wire inputs.

These connectors are supplied connected with 2 meters (6.6 Ft.) long wires, size 0,34 mm<sup>2</sup> (22 AWG). Standard 1 pole and 10 pole models are kept in stock. However, on request, 4 to 15 pole models are available.

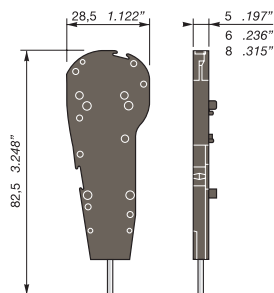
### Selection

Description	Type	Order P/N	Packaging Weight kg
Unit connector 1 pole	grey <input type="checkbox"/> CEV 6.1	1SNA 115 544 R1400	
Test connector 10 poles	grey <input type="checkbox"/> CEV 6.10 6 mm	1SNA 115 573 R1100	
Test connector 10 poles	grey <input type="checkbox"/> CEV 8.10 8 mm	1SNA 115 574 R1200	
Test connector 10 poles	grey <input type="checkbox"/> CEV 10.10 10 mm	1SNA 115 652 R2000	

## CEL... test connectors for spring blocks



Test connector CEL...



Characteristics		IEC NFC VDE	UL	CSA
Wire size mm <sup>2</sup>	Rigid	0,2 - 1,5		
	Flexible	0,22 - 1,5		
Voltage	V	(1)		(1) 250 V for CEL 1,5 and CEL 2,5
Current	A	6		400 V for CEL 1,6
Short circuit current	A / s			500 V for CEL 1,8
Rated wire size	mm <sup>2</sup> / AWG	0,5 mm <sup>2</sup>		
Wire stripping length	mm / inches	7 mm		
Recommended torque	Nm / lb.in	0.3 N.m		

### Selection

Description	Type	Order P/N	Packaging Weight kg
Test connector for standard 5 mm spacing spring blocks	grey <input type="checkbox"/> CEL 1.5	1SNA 400 262 R1400	
Test connector for standard 6 mm spacing spring blocks	grey <input type="checkbox"/> CEL 1.6	1SNA 400 263 R1500	
Test connector for standard 8 mm spacing spring blocks	grey <input type="checkbox"/> CEL 1.8	1SNA 400 264 R1600	
End module of connector	grey <input type="checkbox"/> CEL 1.E	1SNA 400 265 R1700	
Test connector for angled 5 mm spacing spring blocks	grey <input type="checkbox"/> CEL 2.5	1SNA 400 258 R2000	
End module of connector	grey <input type="checkbox"/> CEL 2.E	1SNA 400 261 R1300	

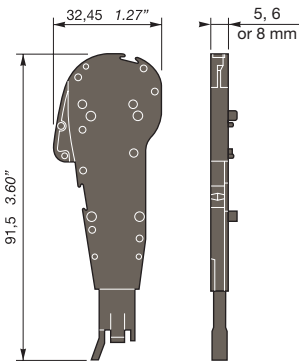
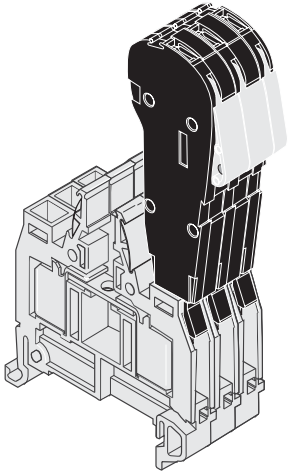
### Accessories

Markers	RC 55	see section on markers
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# Test connectors

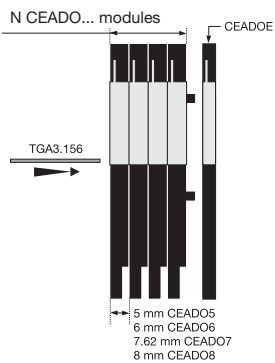
## For ADO System® blocks



### End module

This end module is the same for any unitary module spacing : 5, 6, 7.62 or 8 mm.

### Building a test connector



All modules joint together using dog points. A connector can be made of 20 poles max.

The assembly rod for levers (TGA3.156) cut at the convenient length is advised for connectors > 5 poles.

## CEADO... test connectors for ADO System® blocks

### Characteristics

Characteristics		IEC NFC VDE	UL	CSA
Wire size mm <sup>2</sup>	Rigid	0,2 - 0,75 mm <sup>2</sup>		
	Flexible	0,22 - 0,75 mm <sup>2</sup>		
Voltage	V	(1)		
Current	A	6 A		
Short circuit current (M 4/6.PI)	A / s			
Rated wire size	mm <sup>2</sup> / AWG			
Wire stripping length	mm / inches			
Recommended torque	Nm / lb.in			

(1) Rated voltage : 250 V for CEADO.5  
400 V for CEADO.6  
500 V for CEADO.8

### To perform simple tests quickly :

This connector completes the range of modular connectors to be mounted on terminal block assembly.

Contact is made on top of the ADO jaw.

Hooking is made on the wire input of terminal blocks.

It can be achieved without modifying the assembly.

### Selection

Description	Type	Order P/N	Packaging	Weight kg
Unit connector 1 pole	black ■ CEADO.5 5 mm	1SNA 399 345 R1100		
Unit connector 1 pole	black ■ CEADO.6 6 mm	1SNA 399 346 R1200		
Unit connector 1 pole	black ■ CEADO.7 7 mm	1SNA 399 347 R1300		
Unit connector 1 pole	black ■ CEADO.8 8 mm	1SNA 399 348 R2400		
End module	black ■ CEAD0E	1SNA 399 341 R1500		

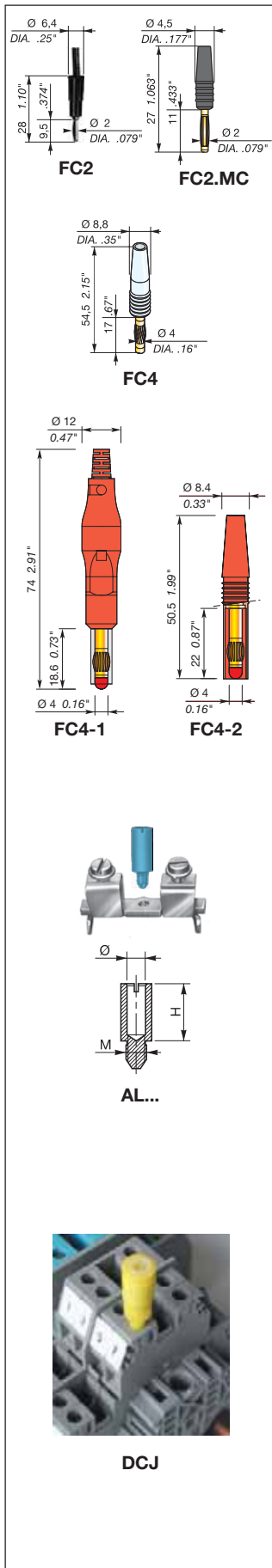
### Accessories

Assembly rod for levers DIA. 3 mm	TGA3.156 156 mm	1SNA 206 277 R1400		
Markers	RC 55 RTM	see section on markers		



# Test devices

## Test plugs Test sockets



### FC... test plugs

These accessories, when used with measuring or control equipment, are used for trouble shooting or testing of a circuit, on the blocks equipped with a test socket or by use of a test device (for **FC2** only).

#### Selection

Description	Type	Order P/N	Packaging	Weight kg
Test plug DIA. 2 mm .079" - Soldered connection : 1 mm <sup>2</sup> max. - 18 AWG	<b>FC2</b>	1SNA 007 865 R2600		
Test plug DIA. 2 mm .079" - Soldered connection : 1 mm <sup>2</sup> max. - 18 AWG	<b>FC2.MC</b>	1SNA 107 239 R0300		
Test plug DIA. 4 mm .16" - Soldered connection : 1,5 mm <sup>2</sup> max. - 16 AWG	<b>FC4</b>	1SNA 167 860 R0100		
Test plug DIA. 4 mm .16" - Soldered connection : 1,5 mm <sup>2</sup> max. - 16 AWG	<b>FC4-1</b>	1SNA 167 927 R1000		
Test plug DIA. 4 mm .16" - Soldered connection : 1,5 mm <sup>2</sup> max. - 16 AWG	<b>FC4-2</b>	1SNA 167 928 R2100		

### AL... test sockets

This accessory is screwed into the tapped holes of the connector bar of the terminal blocks. Some blocks are delivered socket mounted. This socket receives an **FC** test plug. The test sockets are characterized by their internal diameter.

#### Selection

Description	Type	Order P/N	Packaging	Weight kg
Test socket DIA. 2 mm .079" H = 12 mm .472" - M3 screw	<b>AL2</b>	1SNA 163 043 R2100		
Test socket DIA. 2 mm .079" H = 11,7 mm .461" - M2,6 screw	<b>AL2</b>	1SNA 163 046 R2400		
Test socket DIA. 2 mm .079" H = 8,5 mm .335" - M3 screw	<b>AL2</b>	1SNA 163 070 R0000		
Test socket DIA. 2 mm .079" H = 9,6 mm .378" - M3 screw	<b>AL2</b>	1SNA 164 950 R0000		
Test socket DIA. 2 mm .079" H = 8,5 mm .335" - M2,6 screw	<b>AL2</b>	1SNA 167 319 R0600		
Test socket DIA. 3 mm .12" H = 9,5 mm .374" - M3 screw	<b>AL3</b>	1SNA 163 261 R0000		
Test socket DIA. 4 mm .16" H = 12 mm .472" - M3 screw	<b>AL4</b>	1SNA 163 240 R1700		
Test socket DIA. 4 mm .16" H = 12,3 mm .484" - M3 screw	<b>AL4</b>	1SNA 163 262 R0100		
Test socket DIA. 4 mm .16" H = 13,5 mm .532" - M4 screw	<b>AL4</b>	1SNA 168 237 R0500		
Test socket DIA. 4 mm .16" H = 17,5 mm .689" - M3 screw	<b>AL4</b>	1SNA 179 762 R1600		

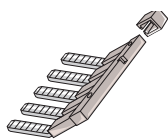
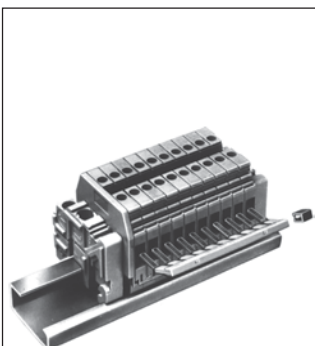
### DC... test device on screw head

This patented device is mounted on the round screwdriver opening. It is used for trouble shooting, measuring and control for monitoring and repairing an installation, on blocks without a test socket. For this, the device receives an **FC2** test plug.

#### Selection

Description	Type	Order P/N	Packaging	Weight kg
Test device for blocks with 5 mm spacing <span style="color: green;">■</span> green	<b>DCV</b>	1SNA 173 058 R0200		
Test device for MA 2,5/5 blocks <span style="color: blue;">■</span> blue	<b>DCB</b>	1SNA 105 028 R2100		
Test device for blocks with 6 mm spacing <span style="color: yellow;">■</span> yellow	<b>DCJ</b>	1SNA 173 059 R0300		
Test device for M4/6.D and MB 2,5/6 blocks <span style="color: grey;">■</span> grey	<b>DCG</b>	1SNA 163 218 R0500		
Test device for blocks with 8 mm spacing <span style="color: orange;">■</span> orange	<b>DCO</b>	1SNA 173 060 R0000		

## Other accessories



PC... + EIP

### PC... + EIP comb-type jumper bar + insulating tip

This accessory can be used only on the terminal blocks with at least one compression clamp connection. It permits the electrical connection of 2 to 10 blocks.

Interconnection of non-consecutive blocks is possible by removing the teeth opposite the blocks which must not be connected. The comb-type jumper bars can be cut using pliers (or a saw) : in this case, the use of an insulating tip **EIP** is recommended where possible ; otherwise, use an **SCF** separator or **FE** end section between two series of interconnected blocks, in order to preserve insulation. The comb is placed in the compression clamp before tightening the screws, above the eventual conductor.

#### Selection

To be mounted on blocks	Insulating tip for comb			Comb-type jumper bar		
	Type	Order P/N	Nb of poles	Type	Order P/N	Current
MA 2,5/5...	EIP	1SNA 113 550 R2400	2	PC5	1SNA 113 542 R1000	30 A
MA 2,5/5.D...			10	PC5	1SNA 113 544 R1200	30 A
DR 1,5/5...			10	PC51	1SNA 167 908 R0600	
M 4/6 - MS 4/6 - M 4/6.H	EIP	1SNA 113 550 R2400	2	PC6	1SNA 113 546 R1400	35 A
M 1,5/6.HH - M 4/6.M2			3	PC6	1SNA 116 536 R0500	35 A
M 4/6.G			4	PC6	1SNA 116 537 R0600	35 A
			10	PC6	1SNA 113 548 R2600	35 A
M 4/6.D - M 4/6.S...			10	PC61	1SNA 163 311 R2200	35 A
DR 4/6 - DR 2,5/6 - DRP 4/6						
M 6/8 - M 6/8.S...			2	PC8	1SNA 116 538 R1700	50 A
			3	PC8	1SNA 116 539 R1000	50 A
			4	PC8	1SNA 116 540 R2500	50 A
			10	PC8	1SNA 163 313 R2400	50 A
M 4/8.S...			10	PC81	1SNA 173 523 R1100	35 A
M 10/10			10	PC10	1SNA 163 315 R2600	70 A
M 10/13.S...			10	PC13	1SNA 173 510 R2000	70 A
MB 10/22.S...			2	PC22	1SNA 205 294 R0500	70 A
			3	PC22	1SNA 205 295 R0600	70 A
			10	PC22	1SNA 174 151 R2500	70 A
M 10/16.SF	EIP	1SNA 113 550 R2400	2	PC16	1SNA 116 729 R2600	70 A
			3	PC16	1SNA 116 733 R1200	70 A
			4	PC16	1SNA 116 734 R1300	70 A
			10	PC16	1SNA 116 735 R1400	70 A

### IDC jumper (insulation displacement jumper)

#### Characteristics

Characteristics	IEC		UL	CSA
	NFC	VDE		
Wire size mm <sup>2</sup> / AWG	Rigid	2,5 mm <sup>2</sup>		14 AWG
	Flexible	2,5 mm <sup>2</sup>		
Voltage	V	600		600
Current	A	26		15
Rated wire size	mm <sup>2</sup> / AWG	2,5 mm <sup>2</sup>		14 AWG
Working temperature	°C	-55°C -> +110°C		
Protection		IP20 / NEMA1		

Quick-jump lets you interconnect screw clamp terminals of different sizes, levels and all manufacturers quickly and safely. Its insulation displacement technology makes it easy to use, fast, economical and does not require a special tool. Use as a jumper between relays, switches and other electronic components. ABB Entrelec Quick-jump will fit any screw clamp type terminal block, from 6 mm .238" spacing and larger.

#### Selection

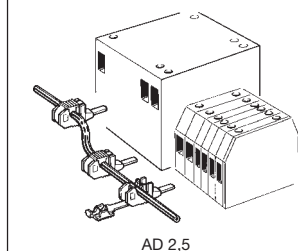
Description	Type	Order P/N	Packaging	Weight kg
Insulation displacement jumper	AD 2,5	1SNA 114 205 R2000		

#### How to use : connecting Quick-jump to your terminal

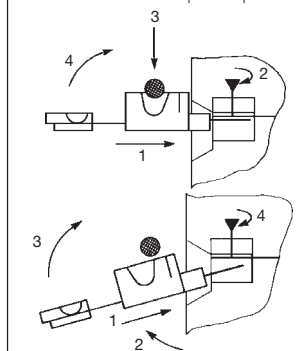
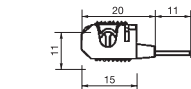
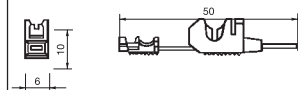
- 1 - Insert Entrelec Quick-jump into your terminal screw clamp.
- 2 - Tighten the terminal screw.
- 3 - Guide jumper wire through the V-shaped opening in the Quick-jump.
- 4 - Secure the wire by closing the Quick-jump lever with any flat nose pliers.

#### Adding a shunt in an installation :

- 1 - Insert Entrelec Quick-jump into your terminal screw clamp.
- 2 - Guide the terminal screw clamp into contact with the wire.
- 3 - Secure the wire by closing the Quick-jump lever with any flat nose pliers.
- 4 - Tighten the terminal screw.



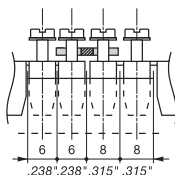
AD 2,5



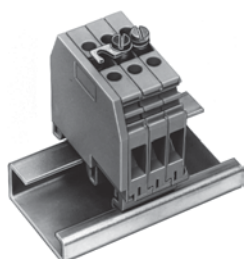
## Other accessories



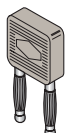
EL...



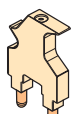
.238" .238" .315" .315"



BJP...



BP8.A4



BNSTP1



CB...

### EL... connector plate

This accessory is used for connecting electrically : two assembled interconnections with same spacing or two assembled interconnections with different spacings. Use only between the 5 mm .200" spacing, 6 mm .238" spacing and 8 mm .315" spacing blocks.

Current carrying capacity : 35 A

#### Selection

Description	Type	Order P/N	Packaging Weight kg
Connector plate	EL6	1SNA 173 627 R2100	
Connector plate for D 2,5/6.D... blocks	EL61	1SNA 177 812 R1700	

### BJP... pivoting jumper bar

This accessory is for connecting or disconnecting two consecutive blocks, open or closed. The use of a third non-connected is recommended, to allow for a "rest" position of the rotating jumper link. We recommend the use of a circuit separator **SC** in order to preserve the insulation. The **BJP** is mounted in the center of the terminal blocks, the connector bars of which are tapped for receiving the interconnection accessories. Max. recommended torque : 0,6 Nm.

#### Selection

Pivoting jumper bar for blocks with 6 mm .238" spacing	BJP6	35 A	1SNA 174 413 R1400	
Pivoting jumper bar for double deck blocks with 6 mm .238" spacing	BJP61	35 A	1SNA 167 225 R2000	
Pivoting jumper bar for blocks with 8 mm .315" spacing	BJP8	50 A	1SNA 174 448 R0700	
Pivoting jumper bar for double deck blocks with 8 mm .315" spacing	BJP82	50 A	1SNA 163 169 R0400	
Pivoting jumper bar for blocks with 10 mm .394" spacing	BJP10	70 A	1SNA 174 451 R2200	
Pivoting jumper bar for DR 4/6... blocks	BJPD6	35 A	1SNA 173 223 R2400	

### BP8.A4 short circuiting plug

This accessory permits electrical connection of 2 identical juxtaposed blocks. These blocks have 8 mm / .315" spacing, are equipped with a test socket DIA. 4 mm / .16".

#### Selection

Short-circuiting plug	BP8.A4	1SNA 173 888 R2000	
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### BNSTP1 short-circuiting plug

Shunt equipped with 2 plugs DIA. 4 mm/.16" for ES16 and M6/8.STP... blocks and one test socket DIA. 4 mm/.16".  
Rated voltage : 600 V Rated current : 20 A .

#### Selection

Short-circuiting plug light ivory	<input type="checkbox"/> BNSTP1	1SNA 196 792 R1700	
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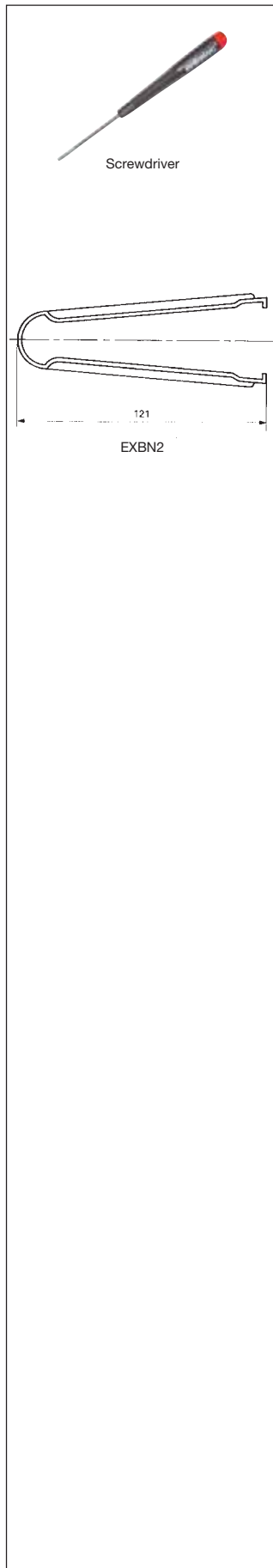
### CB... shield connector

Delivered separately, this bar of treated brass is mounted in the lower part of the terminal block. It ensures the continuity of the shield connection. The connection to the shield connector can be made either by soldering or by 2,8 x 0,5 mm or 2,8 x 0,8 mm quick connect tabs. Notch available for bridging all shieldings. This accessory overlaps on each side of the block by about 13,5 mm. Use of this bar reduces insulation between terminal and ground, working voltage must be derated (consult us if necessary).

#### Selection

Shield connector	CBD5.2L	1SNA 291 077 R2400	
	CBM5D	1SNA 173 530 R2400	
	CBD2S	1SNA 178 408 R1400	
	CBD2	1SNA 179 635 R0700	
	CBD1	1SNA 179 634 R0600	
	CBM8	1SNA 178 746 R1500	
	CBM5	1SNA 178 745 R1400	

# Tools



## Screwdriver

Description	Type	Order P/N	Packaging Weight kg
Screwdriver DIA. 3 mm . 118°		1SNA 206 573 R0500	

## EXBN2 extraction tool

Extraction tool for plug type disconnect terminal blocks.

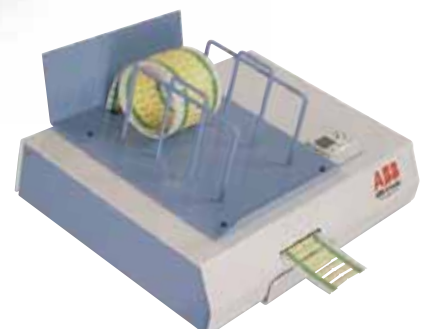
Extraction tool	EXBN2	1SNA 171 018 R2000	
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# Systems and Materials for Marking of the Terminal Blocks entrelec®

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# AMS 500 MARKING SYSTEM

## TECHNICAL SPECIFICATIONS

### Easy installation of the system

- 1** - Plug the power supply and the communication cable as shown on the plotter.
- 2** - Insertion of the CD in the computer. The installation program starts by itself.
- 3** - Automatic progress of the installation program.
- 4** - Restart the computer. The system is ready to operate.

### Plotter pen drying out protection system



**Up position :**  
The plotter pens are protected by the exclusive penstation design similar to pen caps.



**Intermediate position :**  
The pen station is a few millimeters down. The plotter head ...



... can take the pen.

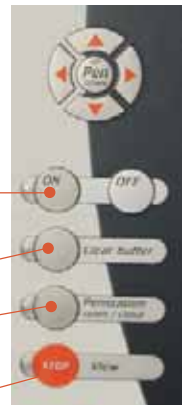


**Down position :**  
The pen station is down totally. The plotter pen can be released or put back in by the plotter head or manually.



### Keyboard

Great size keys for an easy acces.  
«STOP» key to stop / resume a plotting job.

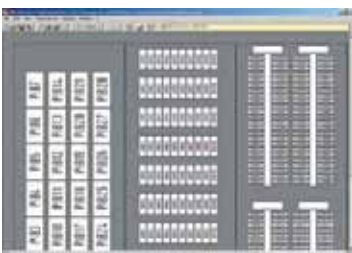


- Plotter power on / off.
- Clear data in the buffer memory of the plotter.
- Penstation command.
- Stop / resume of the current plotter job.

### Aluminium frame

Designed for workshop use and other difficult environments.

### Windows® based program



What you see on the screen is what you get. Many features of the program save time and ease the data input. Accurate indication of markers position.

### All marker types printing

- Automatic detection of removable templates system
- Easy and error-proof positioning of the templates.

## AMS SOFTWARE

Software ergonomoy similar to other Windows® based program for an easy learning.

Annotations for the AMS software interface:

- Text orientation
- Number of lines per tag
- Default font parameters
- Direct access symbols.
- Print preview.
- 3 ways to enter the data :
  - Sequences (ex: 101 to 200, A1 to A100, 1, 3, 5, 7, etc...)
  - Import from file (.txt, .xls, CAD syst)
  - Direct input.
- Font and size of the characters, pen size, speed.

Once the markers are selected, a right click opens the input data window.

### Last window before printing.

Annotations for the AMS 500 Plotter dialog box:

- Plotter pen test at the start of a print job.
- Reminder of the markers to put on the plotter.
- Print options, speed, pen size, selection print only.
- Plotter pen position.

Annotations for the main software window:

- Files management
- Print buttons
- Copy, cut, paste
- Zoom in / out
- Help menu

The display shows exactly the result after the print job.

# Various applications



## RC Terminal block marking

- template SPRC 1 for 8 cards
- template SPRC 16 for 2 cards.



## Wire marking

- RCCV + PETC
- template SPRCC 2.



## ABB contactor BA5-50 marker

- template SPRC 14
- RPA adhesive marker for modular devices
- template SPRC 13.



## RPA high performance adhesive for most surface type.

- template SPRC 13.



## PIB type marker for end-stop marker holder PEB.

- template SPRC 13.



## PIB adhesive for general purposes.

- template SPRC 13.

- Various pen size (DIA 0.18 to 1.00 mm) for every size of character
- Special ink resistant to the most severe environment or handling (oily atmosphere, alcohol, tape, rubbing, etc...)
- Plotter pen protection system

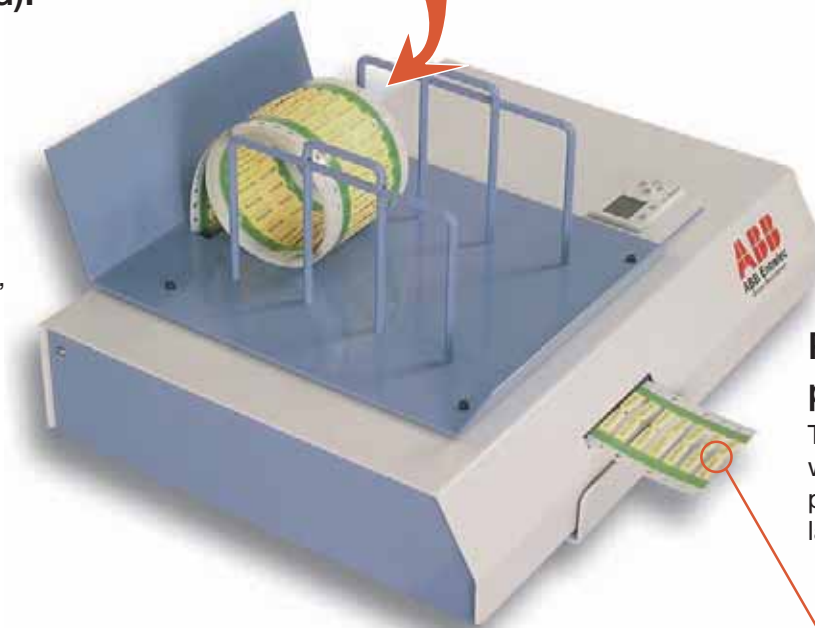


# OUCAM 100

## Partial shrinking module for heat-shrinkable tubing



Tyco label after printing (not shrunk).



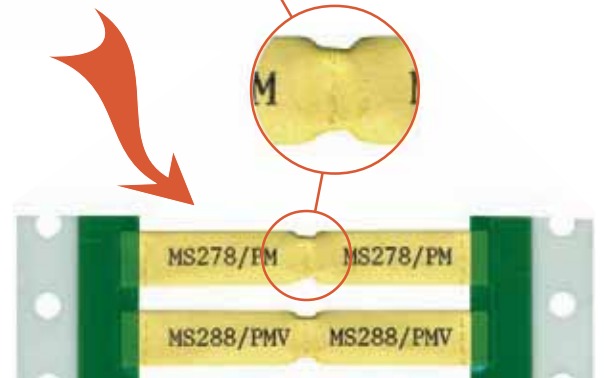
Automatic process, easy to use.

### Principle : partial shrinking

This machine is equipped with a heating module for partial shrinking of Tyco labels.

### Compatibility with Tyco labels :

- With TMS-SCE, ZH-SCE, D-SCE, RPS families.
- For widths of 2.36 to 6.35 mm (3/32" to 1/4") before shrinking.
- Up to 2 times precut.

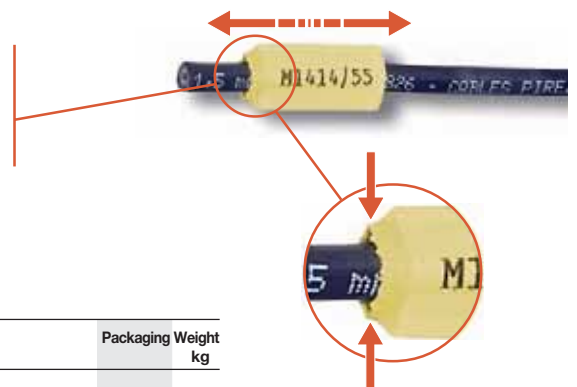


Specialy adapted to terminations without ferrule.



### Maintain and sliding

The marker is maintained on the wire while remaining free sliding.



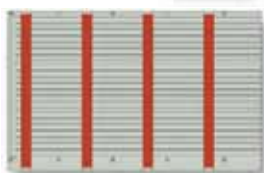
### Selection

Description	Type	Order P/N	Packaging Weight kg
Partial shrinking module	OUCAM 100	1SNA 360 200 F0100	

# Marking



Marking table



Templates

## Accessories for marking tables :



## Marking system

### Marking table

Marking system computer assisted.

Description	Type	Order P/N	Packaging	Weight kg
Full kit including 1 marking table, 1 power supply cable, 1 cable for parallele port, 1 software +	AMS 500	1SNA 360 000 R2400	1	
1 template for 8 RC cards	SPRC 1	1SNA 360 010 R1500	1	
1 plotter pen DIA. 0.25 mm	□ AMS PEN 0,25	1SNA 360 100 R2500	1	
1 plotter pen DIA. 0.35 mm	■ AMS PEN 0,35	1SNA 360 101 R1200	1	
5 ink cartridges	AMS INK	1SNA 360 150 R2600	1	
1 cleaning liquid	AMS CLEANER	1SNA 360 155 R1700	1	
1 cleaning device	AMS CLEANER BOTTLE	1SNA 360 156 R1000	1	

### Templates for marking table AMS 500

Template for blank wire markers RCCV	SPRCC 2	1SNA 360 011 R0200	1	
Template for RB strips	SPRC 4	1SNA 360 014 R0500	1	
Template for RTM7-9	SPRC 5	1SNA 360 015 R0600	1	
Template for PIB	SPRC 13	1SNA 360 023 R0600	1	
Template for BA5-50	SPRC 14	1SNA 360 024 R0700	1	
Template for RC-X10A	SPRC 15	1SNA 360 025 R0000	1	
Template for 2 RC Cards	SPRC 16	1SNA 360 026 R0100	1	

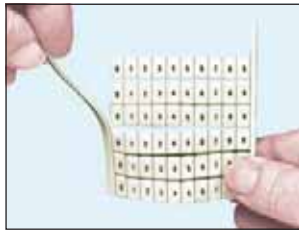
### Templates for other markers

Template for Wieland markers	SPRC 6	1SNA 360 016 R0700	1	
Template for Weidmüller markers	SPRC 7	1SNA 360 017 R0000	1	
Template for Phoenix ZBM 5/6 markers	SPRC 8	1SNA 360 018 R1100	1	
Template for Phoenix ZB markers	SPRC 9	1SNA 360 019 R1200	1	
Template for Allen Bradley WRZ markers	SPRC 10	1SNA 360 020 R1700	1	
Template for Wago mini WSB5 markers	SPRC 11	1SNA 360 021 R0400	1	

### Accessories for marking tables

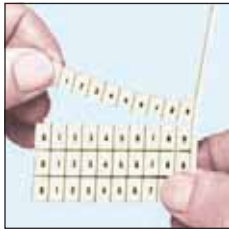
Plotter pen DIA. 0.18 mm	■ AMS PEN 0,18	1SNA 360 103 R1400	1	
Plotter pen DIA. 0.25 mm	□ AMS PEN 0,25	1SNA 360 100 R2500	1	
Plotter pen DIA. 0.35 mm	■ AMS PEN 0,35	1SNA 360 101 R1200	1	
Plotter pen DIA. 0.50 mm	■ AMS PEN 0,50	1SNA 360 104 R1500	1	
Plotter pen DIA. 0.70 mm	■ AMS PEN 0,70	1SNA 360 105 R1600	1	
Plotter pen DIA. 1 mm	■ AMS PEN 1,00	1SNA 360 106 R1700	1	
Disposable plotter pen DIA. 0.25 mm	□ DISPOSABLE AMS PEN 0,25	1SNA 360 120 R1000	1	
Disposable plotter pen DIA. 0.35 mm	■ DISPOSABLE AMS PEN 0,35	1SNA 360 121 R0500	1	
Ink bottle 30 ml	AMS INK BOTTLE	1SNA 360 157 R1100	1	
5 ink cartridges 1 ml	AMS INK	1SNA 360 150 R2600	1	
2 cleaning liquid bottles 10 ml	AMS CLEANER	1SNA 360 155 R1700	1	
Cleaning device kit including 1 bottle and 1 absorbent	AMS CLEANER BOTTLE	1SNA 360 156 R1000	1	
Pen	HAND PEN	1SNA 360 107 R1000	1	
Dust cover	DUST COVER AMS 500	1SNA 360 161 R1500	1	

# Marking



1

Remove one of the side bands of the card.



2

Separate the chosen strip from the rest of the card.



3

Press the first marker in place, hold it and slide your thumb on the rest of the strip.



Horizontal marking



Vertical marking



Top marking

## Marking for terminal blocks

### Selection table

Markers for blocks	RC410	RC 510	RC610	RC810	RC1010	RC55	RC65	RCAL85	RCT610	RCT810
<b>Screw/ADO</b>										
5 mm spacing	POSSIBLE	●	⊘	⊘	⊘	●	⊘	⊘	⊘	⊘
6 mm spacing	POSSIBLE	POSSIBLE	●	⊘	⊘	POSSIBLE	●	⊘	●	⊘
8 mm spacing	POSSIBLE	POSSIBLE	POSSIBLE	●	⊘	POSSIBLE	POSSIBLE	●	POSSIBLE	●
10 mm spacing	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE	●	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE
12 mm spacing	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE	●	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE
16 mm spacing	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE	●	POSSIBLE	POSSIBLE	POSSIBLE	⊘	⊘
<b>Spring</b>										
4 mm spacing	●	⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘
5 mm spacing	POSSIBLE	●	⊘	⊘	⊘	●	⊘	⊘	⊘	⊘
6 mm spacing	POSSIBLE	POSSIBLE	●	⊘	⊘	POSSIBLE	●	⊘	⊘	⊘
8 mm spacing	POSSIBLE	POSSIBLE	POSSIBLE	●	⊘	POSSIBLE	POSSIBLE	●	⊘	⊘
10 mm spacing	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE	●	POSSIBLE	POSSIBLE	POSSIBLE	⊘	⊘
12 mm spacing	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE	●	POSSIBLE	POSSIBLE	POSSIBLE	⊘	⊘
16 mm spacing	POSSIBLE	POSSIBLE	POSSIBLE	POSSIBLE	●	POSSIBLE	POSSIBLE	POSSIBLE	⊘	⊘
<b>Power</b>										
	POSSIBLE	POSSIBLE	POSSIBLE	●	⊘	⊘	⊘	⊘	⊘	⊘

Possible mounting : POSSIBLE

Recommended mounting : ●

Impossible mounting : ⊘

RC410 ... RC1010	Screw		Spring		ADO	
RC55 - RC65	Screw		Spring		ADO	
RCT610 - RCT810	Screw				ADO	



Vertical assembly



7 characters maximum for cards type RC 410, RC 510, RC 610, RC 810 and RC 1010  
3 characters maximum for cards type RC 55, RC 65 and RCAL 85

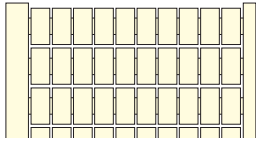


Horizontal assembly

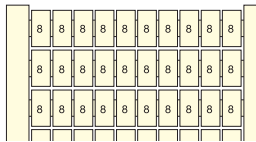
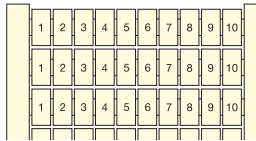


2 characters max. on the 4 mm block markers  
3 characters max. on the 5 and 6 mm block markers  
5 characters max. on the 8 mm block markers  
7 characters max. on the 10 mm and more block markers

# RC410 markers



Horizontal assembly



Vertical assembly



## Blank markers

Card of 100 markers

Description	Order P/N	Description	Order P/N	Description	Order P/N
white <input type="checkbox"/>	1SNA 229 000 R1500				

## Markers with numbers for horizontal terminal block assembly

Card of 100 markers, repeated increasing order 10 times

0 -> 9	1SNA 229 001 R0200	71 -> 80	1SNA 229 009 R1200
1 -> 10	1SNA 229 002 R0300	81 -> 90	1SNA 229 010 R0600
11 -> 20	1SNA 229 003 R0400	91 -> 100	1SNA 229 011 R2300
21 -> 30	1SNA 229 004 R0500		
31 -> 40	1SNA 229 005 R0600		
41 -> 50	1SNA 229 006 R0700		
51 -> 60	1SNA 229 007 R0000		
61 -> 70	1SNA 229 008 R1100		

Card of 100 markers, increasing order

1 -> 100	1SNA 229 030 R0200
----------	--------------------

Card of 100 markers, repeated identical numbers

100 x 0	1SNA 229 210 R1300	100 x 7	1SNA 229 217 R0600	100 x 15	1SNA 229 225 R0600
100 x 1	1SNA 229 211 R0000	100 x 8	1SNA 229 218 R1700	100 x 16	1SNA 229 226 R0700
100 x 2	1SNA 229 212 R0100	100 x 10	1SNA 229 220 R1500	100 x 17	1SNA 229 227 R0000
100 x 3	1SNA 229 213 R0200	100 x 11	1SNA 229 221 R0200	100 x 18	1SNA 229 228 R1100
100 x 4	1SNA 229 214 R0300	100 x 12	1SNA 229 222 R0300	100 x 19	1SNA 229 229 R1200
100 x 5	1SNA 229 215 R0400	100 x 13	1SNA 229 223 R0400	100 x 20	1SNA 229 230 R1700
100 x 6 / 100 x 9	1SNA 229 216 R0500	100 x 14	1SNA 229 224 R0500	100 x ... (-> 99)*	1SNA 229 231 R0400*

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 229 231 R0400 100 x 21

## Markers with numbers for vertical terminal block assembly

Card of 100 markers, repeated increasing order 10 times

0 -> 9	1SNA 229 040 R1400	71 -> 80	1SNA 229 048 R1000	151 -> 160	1SNA 229 056 R0000
1 -> 10	1SNA 229 041 R0100	81 -> 90	1SNA 229 049 R1100	161 -> 170	1SNA 229 057 R0100
11 -> 20	1SNA 229 042 R0200	91 -> 100	1SNA 229 050 R1600	171 -> 180	1SNA 229 058 R1200
21 -> 30	1SNA 229 043 R0300	101 -> 110	1SNA 229 051 R0300	181 -> 190	1SNA 229 059 R1300
31 -> 40	1SNA 229 044 R0400	111 -> 120	1SNA 229 052 R0400	191 -> 200	1SNA 229 072 R0000
41 -> 50	1SNA 229 045 R0500	121 -> 130	1SNA 229 053 R0500	201 -> ...*	1SNA 229 073 R0100*
51 -> 60	1SNA 229 046 R0600	131 -> 140	1SNA 229 054 R0600		
61 -> 70	1SNA 229 047 R0700	141 -> 150	1SNA 229 055 R0700		

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 229 073 R0100 10 x 301 to 310

Card of 100 markers, increasing order

1 -> 100	1SNA 229 060 R1000	401 -> 500	1SNA 229 064 R0000	801 -> 900	1SNA 229 068 R1400
101 -> 200	1SNA 229 061 R0500	501 -> 600	1SNA 229 065 R0100	901 -> 1000	1SNA 229 069 R1500
201 -> 300	1SNA 229 062 R0600	601 -> 700	1SNA 229 066 R0200	1001 -> ...*	1SNA 229 070 R1200*
301 -> 400	1SNA 229 063 R0700	701 -> 800	1SNA 229 067 R0300		

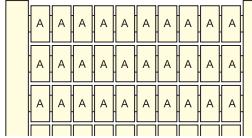
\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 229 070 R1200 1001 to 1100

# RC410 markers

## Markers with letters for horizontal terminal block assembly



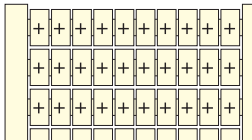
Horizontal assembly



Card of 100 markers, repeated identical letters

Description	Order P/N	Description	Order P/N	Description	Order P/N
100 x A	1SNA 229 150 R1700	100 x J	1SNA 229 159 R1400	100 x S	1SNA 229 168 R1500
100 x B	1SNA 229 151 R0400	100 x K	1SNA 229 160 R1100	100 x T	1SNA 229 169 R1600
100 x C	1SNA 229 152 R0500	100 x L	1SNA 229 161 R0600	100 x U	1SNA 229 170 R1300
100 x D	1SNA 229 153 R0600	100 x M	1SNA 229 162 R0700	100 x V	1SNA 229 171 R0000
100 x E	1SNA 229 154 R0700	100 x N	1SNA 229 163 R0000	100 x W	1SNA 229 172 R0100
100 x F	1SNA 229 155 R0000	100 x O	1SNA 229 164 R0100	100 x X	1SNA 229 173 R0200
100 x G	1SNA 229 156 R0100	100 x P	1SNA 229 165 R0200	100 x Y	1SNA 229 174 R0300
100 x H	1SNA 229 157 R0200	100 x Q	1SNA 229 166 R0300	100 x Z	1SNA 229 175 R0400
100 x I	1SNA 229 158 R1300	100 x R	1SNA 229 167 R0400		

## Markers with symbols for horizontal terminal block assembly



Card of 100 markers, repeated identical symbols

100 x +	1SNA 229 111 R2400	100 x ~	1SNA 229 114 R2700	100 x ±	1SNA 229 115 R2000
100 x -	1SNA 229 112 R2500	100 x =	1SNA 229 113 R2600		

## Markers with letters for vertical terminal block assembly



Vertical assembly



Card of 100 markers, repeated identical letters

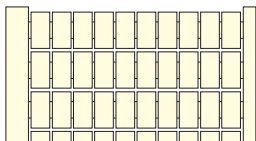
100 x A	1SNA 229 180 R0600	100 x J	1SNA 229 189 R0300	100 x S	1SNA 229 198 R0400
100 x B	1SNA 229 181 R2300	100 x K	1SNA 229 190 R0000	100 x T	1SNA 229 199 R0500
100 x C	1SNA 229 182 R2400	100 x L	1SNA 229 191 R2500	100 x U	1SNA 229 200 R2200
100 x D	1SNA 229 183 R2500	100 x M	1SNA 229 192 R2600	100 x V	1SNA 229 201 R1700
100 x E	1SNA 229 184 R2600	100 x N	1SNA 229 193 R2700	100 x W	1SNA 229 202 R1000
100 x F	1SNA 229 185 R2700	100 x O	1SNA 229 194 R2000	100 x X	1SNA 229 203 R1100
100 x G	1SNA 229 186 R2000	100 x P	1SNA 229 195 R2100	100 x Y	1SNA 229 204 R1200
100 x H	1SNA 229 187 R2100	100 x Q	1SNA 229 196 R2200	100 x Z	1SNA 229 205 R1300
100 x I	1SNA 229 188 R0200	100 x R	1SNA 229 197 R2300		

# RC510 markers

## Blank markers

Card of 100 markers

Description	Order P/N	Description	Order P/N	Description	Order P/N
white <input type="checkbox"/>	1SNA 231 000 R0700				
yellow <input checked="" type="checkbox"/>	1SNA 103 890 R2100				



Horizontal assembly



## Markers with numbers for horizontal terminal block assembly

Card of 100 markers, repeated increasing order 10 times

0 -> 9	1SNA 231 001 R2400	71 -> 80	1SNA 231 009 R0400	151 -> 160	1SNA 231 017 R1300
1 -> 10	1SNA 231 002 R2500	81 -> 90	1SNA 231 010 R2000	161 -> 170	1SNA 231 018 R2400
11 -> 20	1SNA 231 003 R2600	91 -> 100	1SNA 231 011 R1500	171 -> 180	1SNA 231 019 R2500
21 -> 30	1SNA 231 004 R2700	101 -> 110	1SNA 231 012 R1600	181 -> 190	1SNA 231 020 R2200
31 -> 40	1SNA 231 005 R2000	111 -> 120	1SNA 231 013 R1700	191 -> 200	1SNA 231 021 R1700
41 -> 50	1SNA 231 006 R2100	121 -> 130	1SNA 231 014 R1000	201 -> ... (-> 990)*	1SNA 231 022 R1000*
51 -> 60	1SNA 231 007 R2200	131 -> 140	1SNA 231 015 R1100		
61 -> 70	1SNA 231 008 R0300	141 -> 150	1SNA 231 016 R1200		

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 231 022 R1000 10 x 301 to 310

Card of 100 markers, increasing order

1 -> 100	1SNA 231 030 R2400	401 -> 500	1SNA 231 034 R1400	801 -> 900	1SNA 231 038 R2000
101 -> 200	1SNA 231 031 R1100	501 -> 600	1SNA 231 035 R1500	901 -> 1000	1SNA 231 039 R2100
201 -> 300	1SNA 231 032 R1200	601 -> 700	1SNA 231 036 R1600	1001 -> ...*	1SNA 231 071 R2100*
301 -> 400	1SNA 231 033 R1300	701 -> 800	1SNA 231 037 R1700		

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 231 071 R2100 1001 to 1100

Card of 100 markers, repeated identical numbers

100 x 0	1SNA 231 210 R0500	100 x 7	1SNA 231 217 R2000	100 x 15	1SNA 231 225 R2000
100 x 1	1SNA 231 211 R2200	100 x 8	1SNA 231 218 R0100	100 x 16	1SNA 231 226 R2100
100 x 2	1SNA 231 212 R2300	100 x 10	1SNA 231 220 R0700	100 x 17	1SNA 231 227 R2200
100 x 3	1SNA 231 213 R2400	100 x 11	1SNA 231 221 R2400	100 x 18	1SNA 231 228 R0300
100 x 4	1SNA 231 214 R2500	100 x 12	1SNA 231 222 R2500	100 x 19	1SNA 231 229 R0400
100 x 5	1SNA 231 215 R2600	100 x 13	1SNA 231 223 R2600	100 x 20	1SNA 231 230 R0100
100 x 6 / 100 x 9	1SNA 231 216 R2700	100 x 14	1SNA 231 224 R2700	100 x ... (-> 999)*	1SNA 231 231 R2600*

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 231 231 R2600 100 x 21

## Markers with numbers for vertical terminal block assembly

Card of 100 markers, repeated increasing order 10 times

0 -> 9	1SNA 231 040 R0600	71 -> 80	1SNA 231 048 R0200	151 -> 160	1SNA 231 056 R2200
1 -> 10	1SNA 231 041 R2300	81 -> 90	1SNA 231 049 R0300	161 -> 170	1SNA 231 057 R2300
11 -> 20	1SNA 231 042 R2400	91 -> 100	1SNA 231 050 R0000	171 -> 180	1SNA 231 058 R0400
21 -> 30	1SNA 231 043 R2500	101 -> 110	1SNA 231 051 R2500	181 -> 190	1SNA 231 059 R0500
31 -> 40	1SNA 231 044 R2600	111 -> 120	1SNA 231 052 R2600	191 -> 200	1SNA 231 072 R2200
41 -> 50	1SNA 231 045 R2700	121 -> 130	1SNA 231 053 R2700	201 -> ... (-> 990)*	1SNA 231 073 R2300*
51 -> 60	1SNA 231 046 R2000	131 -> 140	1SNA 231 054 R2000		
61 -> 70	1SNA 231 047 R2100	141 -> 150	1SNA 231 055 R2100		

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 231 073 R2300 10 x 301 to 310

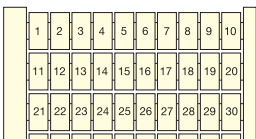
Card of 100 markers, increasing order

1 -> 100	1SNA 231 060 R0200	401 -> 500	1SNA 231 064 R2200	801 -> 900	1SNA 231 068 R0600
101 -> 200	1SNA 231 061 R2700	501 -> 600	1SNA 231 065 R2300	901 -> 1000	1SNA 231 069 R0700
201 -> 300	1SNA 231 062 R2000	601 -> 700	1SNA 231 066 R2400	1001 -> ...*	1SNA 231 070 R0400*
301 -> 400	1SNA 231 063 R2100	701 -> 800	1SNA 231 067 R2500		

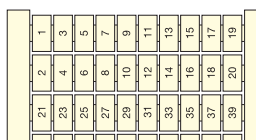
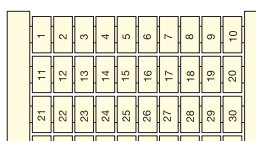
\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 231 070 R0400 1001 to 1100

Card of 100 markers, alternate even/odd numbered for 2 deck blocks

1 -> 20	1SNA 231 133 R1400	41 -> 60	1SNA 231 135 R1600	81 -> 100	1SNA 231 137 R1000
21 -> 40	1SNA 231 134 R1500	61 -> 80	1SNA 231 136 R1700		



Vertical assembly



# RC510 markers

## Markers with letters for horizontal terminal block assembly



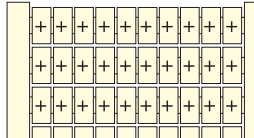
Horizontal assembly



Card of 100 markers, repeated identical letters

Description	Order P/N	Description	Order P/N	Description	Order P/N
100 x A	1SNA 231 150 R0100	100 x J	1SNA 231 159 R0600	100 x S	1SNA 231 168 R0700
100 x B	1SNA 231 151 R2600	100 x K	1SNA 231 160 R0300	100 x T	1SNA 231 169 R0000
100 x C	1SNA 231 152 R2700	100 x L	1SNA 231 161 R2000	100 x U	1SNA 231 170 R0500
100 x D	1SNA 231 153 R2000	100 x M	1SNA 231 162 R2100	100 x V	1SNA 231 171 R2200
100 x E	1SNA 231 154 R2100	100 x N	1SNA 231 163 R2200	100 x W	1SNA 231 172 R2300
100 x F	1SNA 231 155 R2200	100 x O	1SNA 231 164 R2300	100 x X	1SNA 231 173 R2400
100 x G	1SNA 231 156 R2300	100 x P	1SNA 231 165 R2400	100 x Y	1SNA 231 174 R2500
100 x H	1SNA 231 157 R2400	100 x Q	1SNA 231 166 R2500	100 x Z	1SNA 231 175 R2600
100 x I	1SNA 231 158 R0500	100 x R	1SNA 231 167 R2600		

## Markers with symbols for horizontal terminal block assembly



Card of 100 markers, repeated identical symbols

100 x +	1SNA 231 111 R1600	100 x ~	1SNA 231 114 R1100	100 x ±	1SNA 231 115 R1200
100 x -	1SNA 231 112 R1700	100 x =	1SNA 231 113 R1000		



Card of 100 markers, 5 different symbols 20 times repeated

20 x L1-L2-L3-N-PE	1SNA 231 131 R1200				
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Card of 100 markers, repeated identical symbols

100 x L1	1SNA 231 116 R1300	100 x L3	1SNA 231 118 R2500		
100 x L2	1SNA 231 117 R1400	100 x PE	1SNA 231 119 R2600		



Vertical assembly



## Markers with letters for vertical terminal block assembly

Card of 100 markers, repeated identical letters

100 x A	1SNA 231 180 R2000	100 x J	1SNA 231 189 R2500	100 x S	1SNA 231 198 R2600
100 x B	1SNA 231 181 R1500	100 x K	1SNA 231 190 R2200	100 x T	1SNA 231 199 R2700
100 x C	1SNA 231 182 R1600	100 x L	1SNA 231 191 R1700	100 x U	1SNA 231 200 R1400
100 x D	1SNA 231 183 R1700	100 x M	1SNA 231 192 R1000	100 x V	1SNA 231 201 R0100
100 x E	1SNA 231 184 R1000	100 x N	1SNA 231 193 R1100	100 x W	1SNA 231 202 R0200
100 x F	1SNA 231 185 R1100	100 x O	1SNA 231 194 R1200	100 x X	1SNA 231 203 R0300
100 x G	1SNA 231 186 R1200	100 x P	1SNA 231 195 R1300	100 x Y	1SNA 231 204 R0400
100 x H	1SNA 231 187 R1300	100 x Q	1SNA 231 196 R1400	100 x Z	1SNA 231 205 R0500
100 x I	1SNA 231 188 R2400	100 x R	1SNA 231 197 R1500		

# RC610 markers

## Blank markers

Card of 100 markers

Description	Order P/N	Description	Order P/N	Description	Order P/N
white <input type="checkbox"/>	1SNA 233 000 R0100	orange <input type="checkbox"/>	1SNA 206 232 R0700	red <input type="checkbox"/>	1SNA 206 235 R0200
yellow <input type="checkbox"/>	1SNA 206 231 R0600	blue <input type="checkbox"/>	1SNA 206 233 R0000		
green <input type="checkbox"/>	1SNA 206 230 R1100	violet <input type="checkbox"/>	1SNA 206 234 R0100		

## Markers with numbers for horizontal terminal block assembly

Card of 100 markers, repeated increasing order 10 times

0 -> 9	1SNA 233 001 R2600	171 -> 180	1SNA 233 019 R2700	351 -> 360	1SNA 233 097 R1600
1 -> 10	1SNA 233 002 R2700	181 -> 190	1SNA 233 020 R2400	361 -> 370	1SNA 233 098 R2700
11 -> 20	1SNA 233 003 R2000	191 -> 200	1SNA 233 021 R1100	371 -> 380	1SNA 233 099 R2000
21 -> 30	1SNA 233 004 R2100	201 -> 210	1SNA 233 022 R1200	381 -> 390	1SNA 233 100 R0200
31 -> 40	1SNA 233 005 R2200	211 -> 220	1SNA 233 023 R1300	391 -> 400	1SNA 233 101 R2700
41 -> 50	1SNA 233 006 R2300	221 -> 230	1SNA 233 024 R1400	401 -> 410	1SNA 233 102 R2000
51 -> 60	1SNA 233 007 R2400	231 -> 240	1SNA 233 025 R1500	411 -> 420	1SNA 233 103 R2100
61 -> 70	1SNA 233 008 R0500	241 -> 250	1SNA 233 026 R1600	421 -> 430	1SNA 233 104 R2200
71 -> 80	1SNA 233 009 R0600	251 -> 260	1SNA 233 027 R1700	431 -> 440	1SNA 233 105 R2300
81 -> 90	1SNA 233 010 R2200	261 -> 270	1SNA 233 028 R2000	441 -> 450	1SNA 233 106 R2400
91 -> 100	1SNA 233 011 R1700	271 -> 280	1SNA 233 029 R2100	451 -> 460	1SNA 233 107 R2500
101 -> 110	1SNA 233 012 R1000	281 -> 290	1SNA 233 090 R2300	461 -> 470	1SNA 233 108 R0600
111 -> 120	1SNA 233 013 R1100	291 -> 300	1SNA 233 091 R1000	471 -> 480	1SNA 233 109 R0700
121 -> 130	1SNA 233 014 R1200	301 -> 310	1SNA 233 092 R1100	481 -> 490	1SNA 233 110 R2300
131 -> 140	1SNA 233 015 R1300	311 -> 320	1SNA 233 093 R1200	491 -> 500	1SNA 233 120 R2500
141 -> 150	1SNA 233 016 R1400	321 -> 330	1SNA 233 094 R1300	501 -> ... (-> 999)*	1SNA 233 121 R1200*
151 -> 160	1SNA 233 017 R1500	331 -> 340	1SNA 233 095 R1400		
161 -> 170	1SNA 233 018 R2600	341 -> 350	1SNA 233 096 R1500		

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 233 121 R1200 601 to 610

Card of 100 markers, increasing order

1 -> 100	1SNA 233 030 R2600	401 -> 500	1SNA 233 034 R1600	801 -> 900	1SNA 233 075 R2700
101 -> 200	1SNA 233 031 R1300	501 -> 600	1SNA 233 035 R1700	901 -> 1000	1SNA 233 076 R2000
201 -> 300	1SNA 233 032 R1400	601 -> 700	1SNA 233 036 R1000	1001 -> ...*	1SNA 233 073 R2500*
301 -> 400	1SNA 233 033 R1500	701 -> 800	1SNA 233 074 R2600		

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 233 073 R2500 1001 to 1100

Card of 100 markers, repeated identical numbers

100 x 0	1SNA 233 201 R0300	100 x 7	1SNA 233 208 R1200	100 x 15	1SNA 233 216 R2100
100 x 1	1SNA 233 202 R0400	100 x 8	1SNA 233 209 R1300	100 x 16	1SNA 233 217 R2200
100 x 2	1SNA 233 203 R0500	100 x 10	1SNA 233 211 R2400	100 x 17	1SNA 233 218 R0300
100 x 3	1SNA 233 204 R0600	100 x 11	1SNA 233 212 R2500	100 x 18	1SNA 233 219 R0400
100 x 4	1SNA 233 205 R0700	100 x 12	1SNA 233 213 R2600	100 x 19	1SNA 233 220 R0100
100 x 5	1SNA 233 206 R0000	100 x 13	1SNA 233 214 R2700	100 x 20	1SNA 233 221 R2600
100 x 6 / 100 x 9	1SNA 233 207 R0100	100 x 14	1SNA 233 215 R2000	100 x ... (-> 999)*	1SNA 233 222 R2700*

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 233 222 R2700 100 x 21

Card of 100 markers, alternate even/odd numbered for 2 deck blocks

1 -> 20	1SNA 233 133 R1600	41 -> 60	1SNA 233 135 R1000	81 -> 100	1SNA 233 137 R1200
21 -> 40	1SNA 233 134 R1700	61 -> 80	1SNA 233 136 R1100		

Card of 100 markers, repeated increasing order 10 times

10 x 1 -> 9 + blank	1SNA 233 142 R2700				
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Card of 100 markers, repeated increasing order 2 times (from 1 to 50 and from 1 to 50 again)

2 x 1 -> 50	1SNA 233 141 R2600				
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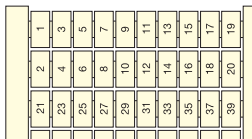
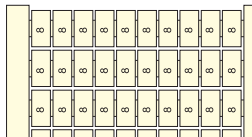
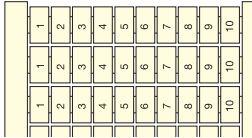


# RC610 markers

## Markers with numbers for vertical terminal block assembly



Vertical assembly



Card of 100 markers, repeated increasing order 10 times

0 -> 9	1SNA 233 040 R000	71 -> 80	1SNA 233 048 R0400	151 -> 160	1SNA 233 084 R1100
1 -> 10	1SNA 233 041 R2500	81 -> 90	1SNA 233 049 R0500	161 -> 170	1SNA 233 085 R1200
11 -> 20	1SNA 233 042 R2600	91 -> 100	1SNA 233 050 R0200	171 -> 180	1SNA 233 086 R1300
21 -> 30	1SNA 233 043 R2700	101 -> 110	1SNA 233 051 R2700	181 -> 190	1SNA 233 087 R1400
31 -> 40	1SNA 233 044 R2000	111 -> 120	1SNA 233 080 R2100	191 -> 200	1SNA 233 088 R2500
41 -> 50	1SNA 233 045 R2100	121 -> 130	1SNA 233 081 R1600	201 -> ... (-> 990)*	1SNA 233 071 R2300*
51 -> 60	1SNA 233 046 R2200	131 -> 140	1SNA 233 082 R1700		
61 -> 70	1SNA 233 047 R2300	141 -> 150	1SNA 233 083 R1000		

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 233 071 R2300 10 x 301 to 310

Card of 100 markers, increasing order

1 -> 100	1SNA 233 060 R0400	401 -> 500	1SNA 233 064 R2400	801 -> 900	1SNA 233 068 R0000
101 -> 200	1SNA 233 061 R2100	501 -> 600	1SNA 233 065 R2500	901 -> 1000	1SNA 233 069 R0100
201 -> 300	1SNA 233 062 R2200	601 -> 700	1SNA 233 066 R2600	1001 -> ...*	1SNA 233 070 R0600*
301 -> 400	1SNA 233 063 R2300	701 -> 800	1SNA 233 067 R2700		

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 233 070 R0600 1001 to 1100

Card of 100 markers, repeated identical numbers

100 x 0	1SNA 233 240 R1500	100 x 7	1SNA 233 247 R0000	100 x 15	1SNA 233 255 R0000
100 x 1	1SNA 233 241 R0200	100 x 8	1SNA 233 248 R1100	100 x 16	1SNA 233 256 R0100
100 x 2	1SNA 233 242 R0300	100 x 10	1SNA 233 250 R1700	100 x 17	1SNA 233 257 R0200
100 x 3	1SNA 233 243 R0400	100 x 11	1SNA 233 251 R0400	100 x 18	1SNA 233 258 R1300
100 x 4	1SNA 233 244 R0500	100 x 12	1SNA 233 252 R0500	100 x 19	1SNA 233 259 R1400
100 x 5	1SNA 233 245 R0600	100 x 13	1SNA 233 253 R0600	100 x 20	1SNA 233 260 R1100
100 x 6 / 100 x 9	1SNA 233 246 R0700	100 x 14	1SNA 233 254 R0700	100 x ... (-> 999)*	1SNA 233 261 R0600*

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 233 261 R0600 100 x 21

Card of 100 markers, alternate even/odd numbered for 2 deck blocks

1 -> 20	1SNA 233 143 R2000	41 -> 60	1SNA 233 145 R2200	81 -> 100	1SNA 233 147 R2400
21 -> 40	1SNA 233 144 R2100	61 -> 80	1SNA 233 146 R2300		

# RC610 markers

## Markers with letters for horizontal terminal block assembly

Card of 100 markers, repeated identical letters

Description	Order P/N	Description	Order P/N	Description	Order P/N
100 x A	1SNA 233 150 R0300	100 x J	1SNA 233 159 R0000	100 x S	1SNA 233 168 R0100
100 x B	1SNA 233 151 R2000	100 x K	1SNA 233 160 R0500	100 x T	1SNA 233 169 R0200
100 x C	1SNA 233 152 R2100	100 x L	1SNA 233 161 R2200	100 x U	1SNA 233 170 R0700
100 x D	1SNA 233 153 R2200	100 x M	1SNA 233 162 R2300	100 x V	1SNA 233 171 R2400
100 x E	1SNA 233 154 R2300	100 x N	1SNA 233 163 R2400	100 x W	1SNA 233 172 R2500
100 x F	1SNA 233 155 R2400	100 x O	1SNA 233 164 R2500	100 x X	1SNA 233 173 R2600
100 x G	1SNA 233 156 R2500	100 x P	1SNA 233 165 R2600	100 x Y	1SNA 233 174 R2700
100 x H	1SNA 233 157 R2600	100 x Q	1SNA 233 166 R2700	100 x Z	1SNA 233 175 R2000
100 x I	1SNA 233 158 R0700	100 x R	1SNA 233 167 R2000		

## Markers with symbols for horizontal terminal block assembly

Card of 100 markers, repeated identical symbols

100 x +	1SNA 233 111 R1000	100 x -	1SNA 233 114 R1300	100 x ⊥	1SNA 233 115 R1400
100 x -	1SNA 233 112 R1100	100 x =	1SNA 233 113 R1200		

Card of 100 markers, 5 different symbols 20 times repeated

20 x L1-L2-L3-N-PE	1SNA 233 131 R1400				
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Card of 100 markers, repeated identical symbols

100 x L1	1SNA 233 116 R1500	100 x L3	1SNA 233 118 R2700		
100 x L2	1SNA 233 117 R1600	100 x PE	1SNA 233 119 R2000		

Card of 100 markers, 9 different symbols 10 times repeated

10 x U1-U2-U3-V1-V2-V3-W1-W2-W3 + 10 x U1	1SNA 233 132 R1500				
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## Markers with letters for vertical terminal block assembly

Card of 100 markers, repeated identical letters

100 x A	1SNA 233 180 R2200	100 x J	1SNA 233 189 R2700	100 x S	1SNA 233 198 R2000
100 x B	1SNA 233 181 R1700	100 x K	1SNA 233 190 R2400	100 x T	1SNA 233 199 R2100
100 x C	1SNA 233 182 R1000	100 x L	1SNA 233 191 R1100	100 x U	1SNA 233 200 R1600
100 x D	1SNA 233 183 R1100	100 x M	1SNA 233 192 R1200	100 x V	1SNA 233 235 R2400
100 x E	1SNA 233 184 R1200	100 x N	1SNA 233 193 R1300	100 x W	1SNA 233 236 R2500
100 x F	1SNA 233 185 R1300	100 x O	1SNA 233 194 R1400	100 x X	1SNA 233 237 R2600
100 x G	1SNA 233 186 R1400	100 x P	1SNA 233 195 R1500	100 x Y	1SNA 233 238 R0700
100 x H	1SNA 233 187 R1500	100 x Q	1SNA 233 196 R1600	100 x Z	1SNA 233 239 R0000
100 x I	1SNA 233 188 R2600	100 x R	1SNA 233 197 R1700		

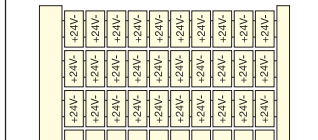
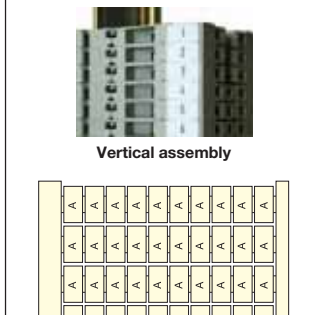
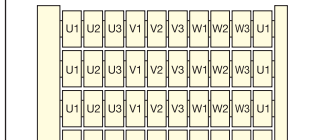
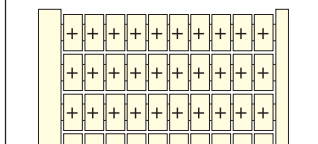
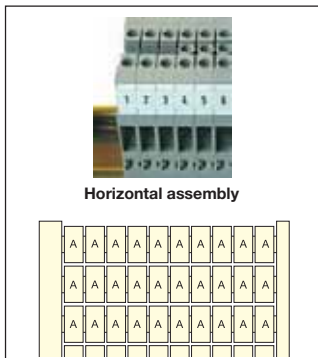
## Markers with symbols for vertical terminal block assembly

Card of 100 markers, repeated identical symbols

100 x +24V	1SNA 233 124 R1500				
100 x +48V	1SNA 233 125 R1600				

Card of 100 markers, repeated identical symbols

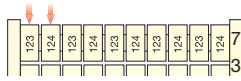
100 x +24V-	1SNA 233 126 R1700				
100 x +48V-	1SNA 233 127 R1000				



# Order form : custom markers for terminal blocks



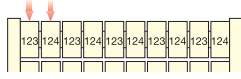
Vertical assembly



7 characters maximum for cards type RC 410, RC 510, RC 610, RC 810 and RC 1010  
3 characters maximum for cards type RC 55, RC 65 and RCAL 85



Horizontal assembly



2 characters max. on the 4 mm block markers  
3 characters max. on the 5 and 6 mm block markers  
5 characters max. on the 8 mm block markers  
7 characters max. on the 10 mm and more block markers

**TO AVOID MISTAKES, PLEASE WRITE CLEARLY.**


**Card type :**

- 10 strips of 10 markers for screw clamp, spring clamp, 4 mm spacing terminal blocks -----  **RC 410**
- 10 strips of 10 markers for screw clamp, spring clamp, ADO, 5 mm spacing terminal blocks -----  **RC 510**
- 10 strips of 10 markers for screw clamp, spring clamp, ADO, 6 mm spacing terminal blocks -----  **RC 610**
- 10 strips of 10 markers for screw clamp, spring clamp, ADO, 8 mm spacing terminal blocks -----  **RC 810**
- 10 strips of 8 markers for screw clamp, spring clamp, 8 mm spacing and more terminal blocks -----  **RC 1010**
- 10 strips of 10 markers for screw clamp, ADO, 5 mm spacing terminal blocks -----  **RC 55**
- 10 strips of 10 markers for screw clamp, ADO, 6 mm spacing terminal blocks -----  **RC 65**
- 10 strips of 10 markers for screw clamp, ADO, 8 mm spacing and more terminal blocks -----  **RCAL 85**

**Quantity (maximum 9) :** \_\_\_\_\_

<b>Order number :</b> _____
<b>Name :</b> _____
<b>Company :</b> _____
<b>Delivery adress :</b> _____ _____
<b>Zip/Code :</b> _____ <b>City :</b> _____
<b>Phone :</b> _____ <b>Fax :</b> _____
<b>E-mail :</b> _____

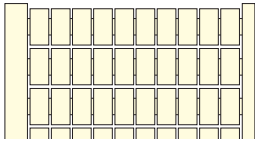
*Reserved to ABB*

<b>N° OV ABB Diff :</b> _____
<b>N° OA ABB Diff :</b> _____
<b>N° OF Projet :</b> _____
<b>N° OV EI :</b> _____

**For fast delivery, fax your order to your ABB agency**



# RC810 markers



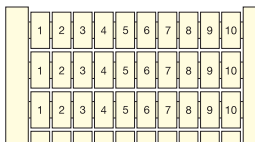
## Blank markers

Card of 100 markers

Description	Order P/N	Description	Order P/N	Description	Order P/N
white <input type="checkbox"/>	1SNA 234 000 R0200				



Horizontal assembly



## Markers with numbers for horizontal terminal block assembly

Card of 100 markers, repeated increasing order 10 times

0 -> 9	1SNA 234 001 R2700	71 -> 80	1SNA 234 009 R0700	151 -> 160	1SNA 234 017 R1600
1 -> 10	1SNA 234 002 R2000	81 -> 90	1SNA 234 010 R2300	161 -> 170	1SNA 234 018 R2700
11 -> 20	1SNA 234 003 R2100	91 -> 100	1SNA 234 011 R1000	171 -> 180	1SNA 234 019 R2000
21 -> 30	1SNA 234 004 R2200	101 -> 110	1SNA 234 012 R1100	181 -> 190	1SNA 234 020 R2500
31 -> 40	1SNA 234 005 R2300	111 -> 120	1SNA 234 013 R1200	191 -> 200	1SNA 234 021 R1200
41 -> 50	1SNA 234 006 R2400	121 -> 130	1SNA 234 014 R1300	201 -> ... (-> 999)*	1SNA 234 022 R1300*
51 -> 60	1SNA 234 007 R2500	131 -> 140	1SNA 234 015 R1400		
61 -> 70	1SNA 234 008 R0600	141 -> 150	1SNA 234 016 R1500		

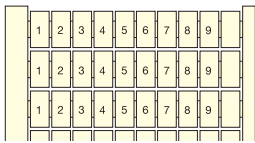
\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 234 022 R1300 301 to 310



Card of 100 markers, increasing order

1 -> 100	1SNA 234 030 R2700	401 -> 500	1SNA 234 034 R1700	801 -> 900	1SNA 234 038 R2300
101 -> 200	1SNA 234 031 R1400	501 -> 600	1SNA 234 035 R1000	901 -> 1000	1SNA 234 039 R2400
201 -> 300	1SNA 234 032 R1500	601 -> 700	1SNA 234 036 R1100	1001 -> ...*	1SNA 234 071 R2400*
301 -> 400	1SNA 234 033 R1600	701 -> 800	1SNA 234 037 R1200		

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 231 071 R2100 1001 to 1100

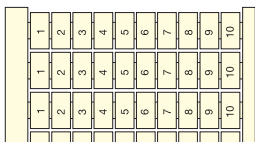


Card of 100 markers, repeated increasing order 10 times

10 x 1 -> 9 + blank	1SNA 234 130 R2000				
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Vertical assembly

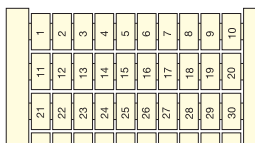


## Markers with numbers for vertical terminal block assembly

Card of 100 markers, repeated increasing order 10 times

0 -> 9	1SNA 234 040 R0100	71 -> 80	1SNA 234 048 R0500	151 -> 160	1SNA 234 056 R2500
1 -> 10	1SNA 234 041 R2600	81 -> 90	1SNA 234 049 R0600	161 -> 170	1SNA 234 057 R2600
11 -> 20	1SNA 234 042 R2700	91 -> 100	1SNA 234 050 R0300	171 -> 180	1SNA 234 058 R0700
21 -> 30	1SNA 234 043 R2000	101 -> 110	1SNA 234 051 R2000	181 -> 190	1SNA 234 059 R0000
31 -> 40	1SNA 234 044 R2100	111 -> 120	1SNA 234 052 R2100	191 -> 200	1SNA 234 072 R2500
41 -> 50	1SNA 234 045 R2200	121 -> 130	1SNA 234 053 R2200	201 -> ... (-> 999)*	1SNA 234 073 R2600*
51 -> 60	1SNA 234 046 R2300	131 -> 140	1SNA 234 054 R2300		
61 -> 70	1SNA 234 047 R2400	141 -> 150	1SNA 234 055 R2400		

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 234 073 R2600 301 to 310



Card of 100 markers, increasing order

1 -> 100	1SNA 234 060 R0500	401 -> 500	1SNA 234 064 R2500	801 -> 900	1SNA 234 068 R0100
101 -> 200	1SNA 234 061 R2200	501 -> 600	1SNA 234 065 R2600	901 -> 1000	1SNA 234 069 R0200
201 -> 300	1SNA 234 062 R2300	601 -> 700	1SNA 234 066 R2700	1001 -> ...*	1SNA 234 070 R0700*
301 -> 400	1SNA 234 063 R2400	701 -> 800	1SNA 234 067 R2000		

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 234 070 R0700 1001 to 1100

# RC810 markers

## Markers with letters for horizontal terminal block assembly



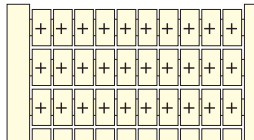
Horizontal assembly



Card of 100 markers, repeated identical letters

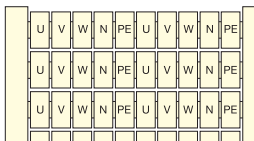
Description	Order P/N	Description	Order P/N	Description	Order P/N
100 x A	1SNA 234 150 R0400	100 x J	1SNA 234 159 R0100	100 x S	1SNA 234 168 R0200
100 x B	1SNA 234 151 R2100	100 x K	1SNA 234 160 R0600	100 x T	1SNA 234 169 R0300
100 x C	1SNA 234 152 R2200	100 x L	1SNA 234 161 R2300	100 x U	1SNA 234 170 R0000
100 x D	1SNA 234 153 R2300	100 x M	1SNA 234 162 R2400	100 x V	1SNA 234 171 R2500
100 x E	1SNA 234 154 R2400	100 x N	1SNA 234 163 R2500	100 x W	1SNA 234 172 R2600
100 x F	1SNA 234 155 R2500	100 x O	1SNA 234 164 R2600	100 x X	1SNA 234 173 R2700
100 x G	1SNA 234 156 R2600	100 x P	1SNA 234 165 R2700	100 x Y	1SNA 234 174 R2000
100 x H	1SNA 234 157 R2700	100 x Q	1SNA 234 166 R2000	100 x Z	1SNA 234 175 R2100
100 x I	1SNA 234 158 R0000	100 x R	1SNA 234 167 R2100		

## Markers with symbols for horizontal terminal block assembly



Card of 100 markers, repeated identical symbols

100 x +	1SNA 234 111 R1100	100 x ~	1SNA 234 114 R1400	100 x =	1SNA 234 115 R1500
100 x -	1SNA 234 112 R1200	100 x =	1SNA 234 113 R1300		



Card of 100 markers, 5 different symbols 20 times repeated

20 x U-V-W-N-PE	1SNA 234 116 R1600				
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Vertical assembly



## Markers with letters for vertical terminal block assembly

Card of 100 markers, repeated identical letters

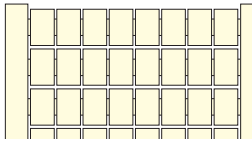
100 x A	1SNA 234 180 R2300	100 x J	1SNA 234 189 R2000	100 x S	1SNA 234 198 R2100
100 x B	1SNA 234 181 R1000	100 x K	1SNA 234 190 R2500	100 x T	1SNA 234 199 R2200
100 x C	1SNA 234 182 R1100	100 x L	1SNA 234 191 R1200	100 x U	1SNA 234 200 R1700
100 x D	1SNA 234 183 R1200	100 x M	1SNA 234 192 R1300	100 x V	1SNA 234 201 R0400
100 x E	1SNA 234 184 R1300	100 x N	1SNA 234 193 R1400	100 x W	1SNA 234 202 R0500
100 x F	1SNA 234 185 R1400	100 x O	1SNA 234 194 R1500	100 x X	1SNA 234 203 R0600
100 x G	1SNA 234 186 R1500	100 x P	1SNA 234 195 R1600	100 x Y	1SNA 234 204 R0700
100 x H	1SNA 234 187 R1600	100 x Q	1SNA 234 196 R1700	100 x Z	1SNA 234 205 R0000
100 x I	1SNA 234 188 R2700	100 x R	1SNA 234 197 R1000		

# RC1010 markers

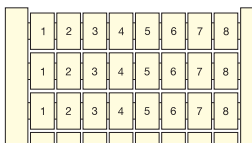
## Blank markers

Card of 80 markers

Description	Order P/N	Description	Order P/N	Description	Order P/N
white <input type="checkbox"/>	1SNA 238 000 R1600				



Horizontal assembly



## Markers with numbers for horizontal terminal block assembly

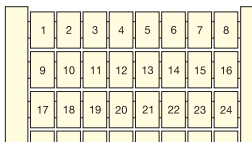
Card of 80 markers, repeated increasing order 10 times

0 -> 7	1SNA 238 001 R0300	65 -> 72	1SNA 238 010 R0700	137 -> 144	1SNA 238 019 R0400
1 -> 8	1SNA 238 002 R0400	73 -> 80	1SNA 238 011 R2400	145 -> 152	1SNA 238 020 R0100
9 -> 16	1SNA 238 003 R0500	81 -> 88	1SNA 238 012 R2500	153 -> 160	1SNA 238 021 R2600
17 -> 24	1SNA 238 004 R0600	89 -> 96	1SNA 238 013 R2600	161 -> 168	1SNA 238 022 R2700
25 -> 32	1SNA 238 005 R0700	97 -> 104	1SNA 238 014 R2700	169 -> 176	1SNA 238 023 R2000
33 -> 40	1SNA 238 006 R0000	105 -> 112	1SNA 238 015 R2000	177 -> 184	1SNA 238 024 R2100
41 -> 48	1SNA 238 007 R0100	113 -> 120	1SNA 238 016 R2100	185 -> 192	1SNA 238 025 R2200
49 -> 56	1SNA 238 008 R1200	121 -> 128	1SNA 238 017 R2200	193 -> 200	1SNA 238 026 R2300
57 -> 64	1SNA 238 009 R1300	129 -> 136	1SNA 238 018 R0300	201 -> ... (-> 998)*	1SNA 238 027 R2400*

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 238 027 R2400 301 to 308

Card of 80 markers, increasing order

1 -> 80	1SNA 238 030 R0300	321 -> 400	1SNA 238 034 R2300	641 -> 720	1SNA 238 038 R0700
81 -> 160	1SNA 238 031 R2000	401 -> 480	1SNA 238 035 R2400	721 -> 800	1SNA 238 039 R0000
161 -> 240	1SNA 238 032 R2100	481 -> 560	1SNA 238 036 R2500	801 -> 880	1SNA 238 040 R1500
241 -> 320	1SNA 238 033 R2200	561 -> 640	1SNA 238 037 R2600	881 -> 960	1SNA 238 041 R0200



## Markers with numbers for vertical terminal block assembly

Card of 80 markers, repeated increasing order 10 times

0 -> 7	1SNA 238 050 R1700	65 -> 72	1SNA 238 059 R1400	137 -> 144	1SNA 238 068 R1500
1 -> 8	1SNA 238 051 R0400	73 -> 80	1SNA 238 060 R1100	145 -> 152	1SNA 238 069 R1600
9 -> 16	1SNA 238 052 R0500	81 -> 88	1SNA 238 061 R0600	153 -> 160	1SNA 238 070 R1300
17 -> 24	1SNA 238 053 R0600	89 -> 96	1SNA 238 062 R0700	161 -> 168	1SNA 238 071 R0000
25 -> 32	1SNA 238 054 R0700	97 -> 104	1SNA 238 063 R0000	169 -> 176	1SNA 238 072 R0100
33 -> 40	1SNA 238 055 R0000	105 -> 112	1SNA 238 064 R0100	177 -> 184	1SNA 238 073 R0200
41 -> 48	1SNA 238 056 R0100	113 -> 120	1SNA 238 065 R0200	185 -> 192	1SNA 238 074 R0300
49 -> 56	1SNA 238 057 R0200	121 -> 128	1SNA 238 066 R0300	193 -> 200	1SNA 238 075 R0400
57 -> 64	1SNA 238 058 R1300	129 -> 136	1SNA 238 067 R0400	201 -> ... (-> 998)*	1SNA 238 076 R0500*

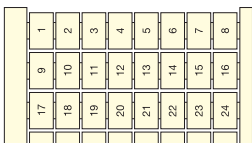
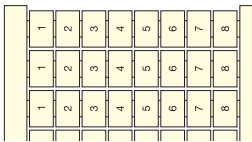
\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 238 076 R0500 301 to 308

Card of 80 markers, increasing order

1 -> 80	1SNA 238 080 R0600	241 -> 320	1SNA 238 083 R2500	481 -> 560	1SNA 238 086 R2000
81 -> 160	1SNA 238 081 R2300	321 -> 400	1SNA 238 084 R2600	561 -> 640	1SNA 238 087 R2100
161 -> 240	1SNA 238 082 R2400	401 -> 480	1SNA 238 085 R2700	641 -> 720	1SNA 238 088 R0200



Vertical assembly

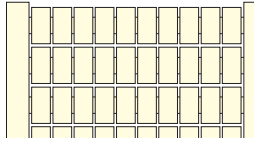


# RC55 markers

## Blank markers

Card of 100 markers

Description	Order P/N	Description	Order P/N	Description	Order P/N
white <input type="checkbox"/>	1SNA 230 000 R1200				



Horizontal assembly



## Markers with numbers for horizontal terminal block assembly

Card of 100 markers, repeated increasing order 10 times

0 -> 9	1SNA 230 001 R0700	71 -> 80	1SNA 230 009 R1700	151 -> 160	1SNA 230 017 R2600
1 -> 10	1SNA 230 002 R0000	81 -> 90	1SNA 230 010 R0300	161 -> 170	1SNA 230 018 R0700
11 -> 20	1SNA 230 003 R0100	91 -> 100	1SNA 230 011 R2000	171 -> 180	1SNA 230 019 R0000
21 -> 30	1SNA 230 004 R0200	101 -> 110	1SNA 230 012 R2100	181 -> 190	1SNA 230 020 R0500
31 -> 40	1SNA 230 005 R0300	111 -> 120	1SNA 230 013 R2200	191 -> 200	1SNA 230 021 R2200
41 -> 50	1SNA 230 006 R0400	121 -> 130	1SNA 230 014 R2300	201 -> ... (-> 999)*	1SNA 230 022 R2300*
51 -> 60	1SNA 230 007 R0500	131 -> 140	1SNA 230 015 R2400		
61 -> 70	1SNA 230 008 R1600	141 -> 150	1SNA 230 016 R2500		

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 230 022 R2300 301 to 310

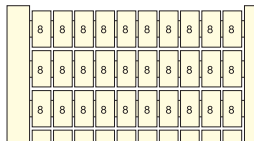
Card of 100 markers, increasing order

1 -> 100	1SNA 230 030 R0700	401 -> 500	1SNA 230 034 R2700	801 -> 900	1SNA 230 038 R0300
101 -> 200	1SNA 230 031 R2400	501 -> 600	1SNA 230 035 R2000	901 -> 1000	1SNA 230 039 R0400
201 -> 300	1SNA 230 032 R2500	601 -> 700	1SNA 230 036 R2100	1001 -> ...*	1SNA 230 071 R0400*
301 -> 400	1SNA 230 033 R2600	701 -> 800	1SNA 230 037 R2200		

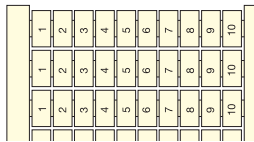
\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 230 071 R0400 1001 to 1100

Card of 100 markers, repeated identical numbers

100 x 0	1SNA 230 240 R2600	100 x 7	1SNA 230 247 R1100	100 x 15	1SNA 230 255 R1100
100 x 1	1SNA 230 241 R1300	100 x 8	1SNA 230 248 R2200	100 x 16	1SNA 230 256 R1200
100 x 2	1SNA 230 242 R1400	100 x 10	1SNA 230 250 R2000	100 x 17	1SNA 230 257 R1300
100 x 3	1SNA 230 243 R1500	100 x 11	1SNA 230 251 R1500	100 x 18	1SNA 230 258 R2400
100 x 4	1SNA 230 244 R1600	100 x 12	1SNA 230 252 R1600	100 x 19	1SNA 230 259 R2500
100 x 5	1SNA 230 245 R1700	100 x 13	1SNA 230 253 R1700	100 x 20	1SNA 230 260 R2200
100 x 6 / 100 x 9	1SNA 230 246 R1000	100 x 14	1SNA 230 254 R1000		



Vertical assembly



## Markers with numbers for vertical terminal block assembly

Card of 100 markers, repeated increasing order 10 times

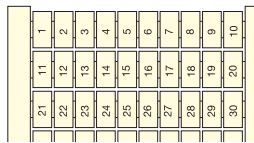
0 -> 9	1SNA 230 040 R1100	71 -> 80	1SNA 230 048 R1500	151 -> 160	1SNA 230 056 R0500
1 -> 10	1SNA 230 041 R0600	81 -> 90	1SNA 230 049 R1600	161 -> 170	1SNA 230 057 R0600
11 -> 20	1SNA 230 042 R0700	91 -> 100	1SNA 230 050 R1300	171 -> 180	1SNA 230 058 R1700
21 -> 30	1SNA 230 043 R0000	101 -> 110	1SNA 230 051 R0000	181 -> 190	1SNA 230 059 R1000
31 -> 40	1SNA 230 044 R0100	111 -> 120	1SNA 230 052 R0100	191 -> 200	1SNA 230 072 R0500
41 -> 50	1SNA 230 045 R0200	121 -> 130	1SNA 230 053 R0200	201 -> ... (-> 999)*	1SNA 230 073 R0600*
51 -> 60	1SNA 230 046 R0300	131 -> 140	1SNA 230 054 R0300		
61 -> 70	1SNA 230 047 R0400	141 -> 150	1SNA 230 055 R0400		

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 230 073 R0600 301 to 310

Card of 100 markers, increasing order

1 -> 100	1SNA 230 060 R1500	401 -> 500	1SNA 230 064 R0500	801 -> 900	1SNA 230 068 R1100
101 -> 200	1SNA 230 061 R0200	501 -> 600	1SNA 230 065 R0600	901 -> 1000	1SNA 230 069 R1200
201 -> 300	1SNA 230 062 R0300	601 -> 700	1SNA 230 066 R0700	1001 -> ...*	1SNA 230 070 R1700*
301 -> 400	1SNA 230 063 R0400	701 -> 800	1SNA 230 067 R0000		

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 230 070 R1700 1001 to 1100



# RC55 markers

## Markers with letters for horizontal terminal block assembly

Card of 100 markers, repeated identical letters

Description	Order P/N	Description	Order P/N	Description	Order P/N
100 x A	1SNA 230 150 R1400	100 x J	1SNA 230 159 R1100	100 x S	1SNA 230 168 R1200
100 x B	1SNA 230 151 R0100	100 x K	1SNA 230 160 R1600	100 x T	1SNA 230 169 R1300
100 x C	1SNA 230 152 R0200	100 x L	1SNA 230 161 R0300	100 x U	1SNA 230 170 R1000
100 x D	1SNA 230 153 R0300	100 x M	1SNA 230 162 R0400	100 x V	1SNA 230 171 R0500
100 x E	1SNA 230 154 R0400	100 x N	1SNA 230 163 R0500	100 x W	1SNA 230 172 R0600
100 x F	1SNA 230 155 R0500	100 x O	1SNA 230 164 R0600	100 x X	1SNA 230 173 R0700
100 x G	1SNA 230 156 R0600	100 x P	1SNA 230 165 R0700	100 x Y	1SNA 230 174 R0000
100 x H	1SNA 230 157 R0700	100 x Q	1SNA 230 166 R0000	100 x Z	1SNA 230 175 R0100
100 x I	1SNA 230 158 R1000	100 x R	1SNA 230 167 R0100		



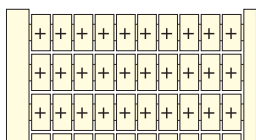
Horizontal assembly



## Markers with symbols for horizontal terminal block assembly

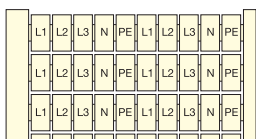
Card of 100 markers, repeated identical symbols

100 x +	1SNA 230 111 R2100	100 x ~	1SNA 230 114 R2400	100 x ±	1SNA 230 115 R2500
100 x -	1SNA 230 112 R2200	100 x =	1SNA 230 113 R2300		



Card of 100 markers, 5 different symbols 20 times repeated

20 x L1-L2-L3-N-PE	1SNA 230 131 R2500				
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Card of 100 markers, repeated identical symbols

100 x L1	1SNA 230 116 R2600	100 x L3	1SNA 230 118 R0000		
100 x L2	1SNA 230 117 R2700	100 x PE	1SNA 230 119 R0100		



## Markers with letters for vertical terminal block assembly

Card of 100 markers, repeated identical letters

100 x A	1SNA 230 180 R0300	100 x J	1SNA 230 189 R0000	100 x S	1SNA 230 198 R0100
100 x B	1SNA 230 181 R2000	100 x K	1SNA 230 190 R0500	100 x T	1SNA 230 199 R0200
100 x C	1SNA 230 182 R2100	100 x L	1SNA 230 191 R2200	100 x U	1SNA 230 200 R2700
100 x D	1SNA 230 183 R2200	100 x M	1SNA 230 192 R2300	100 x V	1SNA 230 201 R1400
100 x E	1SNA 230 184 R2300	100 x N	1SNA 230 193 R2400	100 x W	1SNA 230 202 R1500
100 x F	1SNA 230 185 R2400	100 x O	1SNA 230 194 R2500	100 x X	1SNA 230 203 R1600
100 x G	1SNA 230 186 R2500	100 x P	1SNA 230 195 R2600	100 x Y	1SNA 230 204 R1700
100 x H	1SNA 230 187 R2600	100 x Q	1SNA 230 196 R2700	100 x Z	1SNA 230 205 R1000
100 x I	1SNA 230 188 R0700	100 x R	1SNA 230 197 R2000		



Vertical assembly



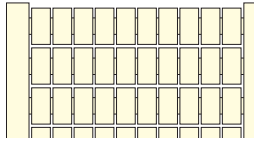


# RC65 markers

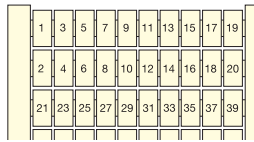
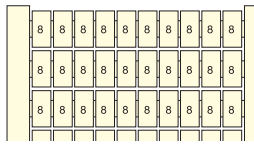
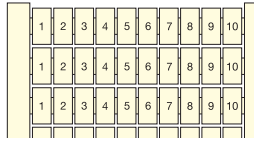
## Blank markers

Card of 100 markers

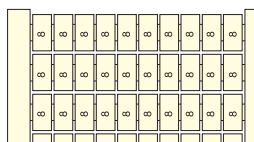
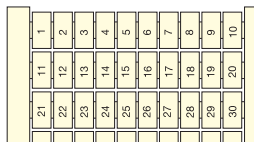
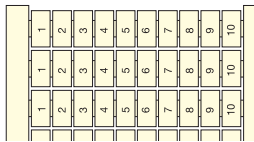
Description	Order P/N	Description	Order P/N	Description	Order P/N
white <input type="checkbox"/>	1SNA 232 000 R0000	blue <input type="checkbox"/>	1SNA 103 775 R0000	red <input type="checkbox"/>	1SNA 103 776 R0100



Horizontal assembly



Vertical assembly



## Markers with numbers for horizontal terminal block assembly

Card of 100 markers, repeated increasing order 10 times

0 -> 9	1SNA 232 001 R2500	71 -> 80	1SNA 232 009 R0500	151 -> 160	1SNA 232 017 R1400
1 -> 10	1SNA 232 002 R2600	81 -> 90	1SNA 232 010 R2100	161 -> 170	1SNA 232 018 R2500
11 -> 20	1SNA 232 003 R2700	91 -> 100	1SNA 232 011 R1600	171 -> 180	1SNA 232 019 R2600
21 -> 30	1SNA 232 004 R2000	101 -> 110	1SNA 232 012 R1700	181 -> 190	1SNA 232 020 R2300
31 -> 40	1SNA 232 005 R2100	111 -> 120	1SNA 232 013 R1000	191 -> 200	1SNA 232 021 R1000
41 -> 50	1SNA 232 006 R2200	121 -> 130	1SNA 232 014 R1100	201 -> ... (-> 990)*	1SNA 232 022 R1100*
51 -> 60	1SNA 232 007 R2300	131 -> 140	1SNA 232 015 R1200		
61 -> 70	1SNA 232 008 R0400	141 -> 150	1SNA 232 016 R1300		

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 232 022 R1100 10 x 301 to 310

Card of 100 markers, increasing order

1 -> 100	1SNA 232 030 R2500	401 -> 500	1SNA 232 034 R1500	801 -> 900	1SNA 232 038 R2100
101 -> 200	1SNA 232 031 R1200	501 -> 600	1SNA 232 035 R1600	901 -> 1000	1SNA 232 039 R2200
201 -> 300	1SNA 232 032 R1300	601 -> 700	1SNA 232 036 R1700	1001 -> ...*	1SNA 232 071 R2200*
301 -> 400	1SNA 232 033 R1400	701 -> 800	1SNA 232 037 R1000		

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 232 071 R2200 1001 to 1100

Card of 100 markers, repeated identical numbers

100 x 0	1SNA 232 201 R0200	100 x 7	1SNA 232 208 R1100	100 x 15	1SNA 232 216 R2000
100 x 1	1SNA 232 202 R0300	100 x 8	1SNA 232 209 R1200	100 x 16	1SNA 232 217 R2100
100 x 2	1SNA 232 203 R0400	100 x 9	1SNA 232 211 R2300	100 x 17	1SNA 232 218 R0200
100 x 3	1SNA 232 204 R0500	100 x 10	1SNA 232 212 R2400	100 x 18	1SNA 232 219 R0300
100 x 4	1SNA 232 205 R0600	100 x 11	1SNA 232 213 R2500	100 x 19	1SNA 232 220 R0000
100 x 5	1SNA 232 206 R0700	100 x 12	1SNA 232 214 R2600	100 x 20	1SNA 232 221 R2500
100 x 6 / 100 x 9	1SNA 232 207 R0000	100 x 13	1SNA 232 215 R2700	100 x 21	1SNA 232 222 R2600*
		100 x 14		100 x ... (-> 999)*	

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 232 222 R2600 100 x 21

Card of 100 markers, alternate even/odd numbered for 2 deck blocks

1 -> 20	1SNA 232 133 R1500	41 -> 60	1SNA 232 135 R1700	81 -> 100	1SNA 232 137 R1100
21 -> 40	1SNA 232 134 R1600	61 -> 80	1SNA 232 136 R1000		

## Markers with numbers for vertical terminal block assembly

Card of 100 markers, repeated increasing order 10 times

0 -> 9	1SNA 232 040 R0700	71 -> 80	1SNA 232 048 R0300	151 -> 160	1SNA 232 056 R2300
1 -> 10	1SNA 232 041 R2400	81 -> 90	1SNA 232 049 R0400	161 -> 170	1SNA 232 057 R2400
11 -> 20	1SNA 232 042 R2500	91 -> 100	1SNA 232 050 R0100	171 -> 180	1SNA 232 058 R0500
21 -> 30	1SNA 232 043 R2600	101 -> 110	1SNA 232 051 R2600	181 -> 190	1SNA 232 059 R0600
31 -> 40	1SNA 232 044 R2700	111 -> 120	1SNA 232 052 R2700	191 -> 200	1SNA 232 072 R2300
41 -> 50	1SNA 232 045 R2000	121 -> 130	1SNA 232 053 R2000	201 -> ... (-> 990)*	1SNA 232 073 R2400*
51 -> 60	1SNA 232 046 R2100	131 -> 140	1SNA 232 054 R2100		
61 -> 70	1SNA 232 047 R2200	141 -> 150	1SNA 232 055 R2200		

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 232 073 R2400 10 x 301 to 310

Card of 100 markers, increasing order

1 -> 100	1SNA 232 060 R0300	401 -> 500	1SNA 232 064 R2300	801 -> 900	1SNA 232 068 R0700
101 -> 200	1SNA 232 061 R2000	501 -> 600	1SNA 232 065 R2400	901 -> 1000	1SNA 232 069 R0000
201 -> 300	1SNA 232 062 R2100	601 -> 700	1SNA 232 066 R2500	1001 -> ...*	1SNA 232 070 R0500*
301 -> 400	1SNA 232 063 R2200	701 -> 800	1SNA 232 067 R2600		

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 232 070 R0500 1001 to 1100

Card of 100 markers, repeated identical numbers

100 x 0	1SNA 232 240 R1400	100 x 7	1SNA 232 247 R0700	100 x 15	1SNA 232 255 R0700
100 x 1	1SNA 232 241 R0100	100 x 8	1SNA 232 248 R1000	100 x 16	1SNA 232 256 R0000
100 x 2	1SNA 232 242 R0200	100 x 9	1SNA 232 250 R1600	100 x 17	1SNA 232 257 R0100
100 x 3	1SNA 232 243 R0300	100 x 10	1SNA 232 251 R0300	100 x 18	1SNA 232 258 R1200
100 x 4	1SNA 232 244 R0400	100 x 11	1SNA 232 252 R0400	100 x 19	1SNA 232 259 R1300
100 x 5	1SNA 232 245 R0500	100 x 12	1SNA 232 253 R0500	100 x 20	1SNA 232 260 R1000
100 x 6 / 100 x 9	1SNA 232 246 R0600	100 x 13	1SNA 232 254 R0600	100 x 21	1SNA 232 261 R0500*
		100 x 14		100 x ... (-> 999)*	

\* Part number identical for each group of numbers : on request (indicate marking). Ex.: 1SNA 232 261 R0500 100 x 21

# RC65 markers



Horizontal assembly



## Markers with letters for horizontal terminal block assembly

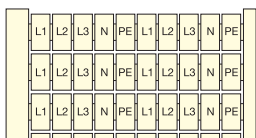
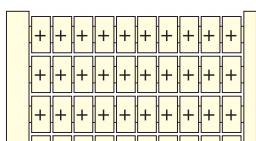
Card of 100 markers, repeated identical letters

Description	Order P/N	Description	Order P/N	Description	Order P/N
100 x A	1SNA 232 150 R0200	100 x J	1SNA 232 159 R0700	100 x S	1SNA 232 168 R0000
100 x B	1SNA 232 151 R2700	100 x K	1SNA 232 160 R0400	100 x T	1SNA 232 169 R0100
100 x C	1SNA 232 152 R2000	100 x L	1SNA 232 161 R2100	100 x U	1SNA 232 170 R0600
100 x D	1SNA 232 153 R2100	100 x M	1SNA 232 162 R2200	100 x V	1SNA 232 171 R2300
100 x E	1SNA 232 154 R2200	100 x N	1SNA 232 163 R2300	100 x W	1SNA 232 172 R2400
100 x F	1SNA 232 155 R2300	100 x O	1SNA 232 164 R2400	100 x X	1SNA 232 173 R2500
100 x G	1SNA 232 156 R2400	100 x P	1SNA 232 165 R2500	100 x Y	1SNA 232 174 R2600
100 x H	1SNA 232 157 R2500	100 x Q	1SNA 232 166 R2600	100 x Z	1SNA 232 175 R2700
100 x I	1SNA 232 158 R0600	100 x R	1SNA 232 167 R2700		

## Markers with symbols for horizontal terminal block assembly

Card of 100 markers, repeated identical symbols

100 x +	1SNA 232 111 R1700	100 x ~	1SNA 232 114 R1200	100 x ⊥	1SNA 232 115 R1300
100 x -	1SNA 232 112 R1000	100 x =	1SNA 232 113 R1100		



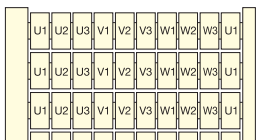
Card of 100 markers, 5 different symbols 20 times repeated

20 x L1-L2-L3-N-PE 1SNA 232 131 R1300



Card of 100 markers, repeated identical symbols

100 x L1	1SNA 232 116 R1400	100 x L3	1SNA 232 118 R2600		
100 x L2	1SNA 232 117 R1500	100 x PE	1SNA 232 119 R2700		



Card of 100 markers, 9 different symbols 10 times repeated

10 x U1-U2-U3-V1-V2-V3-W1-W2-W3 + 10 x U1 1SNA 232 132 R1400

## Markers with letters for vertical terminal block assembly

Card of 100 markers, repeated identical letters

100 x A	1SNA 232 180 R2100	100 x J	1SNA 232 189 R2600	100 x S	1SNA 232 198 R2700
100 x B	1SNA 232 181 R1600	100 x K	1SNA 232 190 R2300	100 x T	1SNA 232 199 R2000
100 x C	1SNA 232 182 R1700	100 x L	1SNA 232 191 R1000	100 x U	1SNA 232 200 R1500
100 x D	1SNA 232 183 R1000	100 x M	1SNA 232 192 R1100	100 x V	1SNA 232 235 R2300
100 x E	1SNA 232 184 R1100	100 x N	1SNA 232 193 R1200	100 x W	1SNA 232 236 R2400
100 x F	1SNA 232 185 R1200	100 x O	1SNA 232 194 R1300	100 x X	1SNA 232 237 R2500
100 x G	1SNA 232 186 R1300	100 x P	1SNA 232 195 R1400	100 x Y	1SNA 232 238 R0600
100 x H	1SNA 232 187 R1400	100 x Q	1SNA 232 196 R1500	100 x Z	1SNA 232 239 R0700
100 x I	1SNA 232 188 R2500	100 x R	1SNA 232 197 R1600		



Vertical assembly



# RCAL85 markers RCT610 - RCT810 markers

## RCAL85 markers, for 8 mm spacing spring and ADO System® blocks only

### Blank markers

Card of 100 markers

Description	Order P/N	Description	Order P/N	Description	Order P/N
white <input type="checkbox"/>	1SNA 237 000 R0500				

### Markers with numbers for horizontal terminal block assembly

Card of 100 markers, repeated increasing order 10 times

0 -> 9	1SNA 237 001 R2200	61 -> 70	1SNA 237 008 R0100	131 -> 140	1SNA 237 015 R1700
1 -> 10	1SNA 237 002 R2300	71 -> 80	1SNA 237 009 R0200	141 -> 150	1SNA 237 016 R1000
11 -> 20	1SNA 237 003 R2400	81 -> 90	1SNA 237 010 R2600	151 -> 160	1SNA 237 017 R1100
21 -> 30	1SNA 237 004 R2500	91 -> 100	1SNA 237 011 R1300	161 -> 170	1SNA 237 018 R2200
31 -> 40	1SNA 237 005 R2600	101 -> 110	1SNA 237 012 R1400	171 -> 180	1SNA 237 019 R2300
41 -> 50	1SNA 237 006 R2700	111 -> 120	1SNA 237 013 R1500	181 -> 190	1SNA 237 020 R2000
51 -> 60	1SNA 237 007 R2000	121 -> 130	1SNA 237 014 R1600	191 -> 200	1SNA 237 021 R1500

Card of 100 markers, increasing order

1 -> 100	1SNA 237 030 R2200	401 -> 500	1SNA 237 034 R1200	801 -> 900	1SNA 237 075 R2300
101 -> 200	1SNA 237 031 R1700	501 -> 600	1SNA 237 035 R1300	901 -> 1000	1SNA 237 076 R2400
201 -> 300	1SNA 237 032 R1000	601 -> 700	1SNA 237 036 R1400		
301 -> 400	1SNA 237 033 R1100	701 -> 800	1SNA 237 074 R2200		

### Markers with numbers for vertical terminal block assembly

Card of 100 markers, repeated increasing order 10 times

0 -> 9	1SNA 237 040 R0400	61 -> 70	1SNA 237 047 R2700	131 -> 140	1SNA 237 082 R1300
1 -> 10	1SNA 237 041 R2100	71 -> 80	1SNA 237 048 R0000	141 -> 150	1SNA 237 083 R1400
11 -> 20	1SNA 237 042 R2200	81 -> 90	1SNA 237 049 R0100	151 -> 160	1SNA 237 084 R1500
21 -> 30	1SNA 237 043 R2300	91 -> 100	1SNA 237 050 R0600	161 -> 170	1SNA 237 085 R1600
31 -> 40	1SNA 237 044 R2400	101 -> 110	1SNA 237 051 R2300	171 -> 180	1SNA 237 086 R1700
41 -> 50	1SNA 237 045 R2500	111 -> 120	1SNA 237 080 R2500	181 -> 190	1SNA 237 087 R1000
51 -> 60	1SNA 237 046 R2600	121 -> 130	1SNA 237 081 R1200	191 -> 200	1SNA 237 088 R2100

Card of 100 markers, increasing order

1 -> 100	1SNA 237 060 R0000	301 -> 400	1SNA 237 063 R2700	601 -> 700	1SNA 237 066 R2200
101 -> 200	1SNA 237 061 R2500	401 -> 500	1SNA 237 064 R2000	701 -> 800	1SNA 237 067 R2300
201 -> 300	1SNA 237 062 R2600	501 -> 600	1SNA 237 065 R2100	801 -> 900	1SNA 237 068 R0400

### Markers with symbols for horizontal terminal block assembly

Card of 100 markers, 5 different symbols 20 times repeated

20 x L1-L2-L3-N-PE	1SNA 237 131 R1000				
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Card of 100 markers, 9 different symbols 10 times repeated

10 x U1-U2-U3-V1-V2-V3-W1-W2-W3 + 10 x U1	1SNA 237 132 R1100				
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## RCT610 - RCT810 markers, for 6 mm or 8 mm spacing blocks

### Blank markers

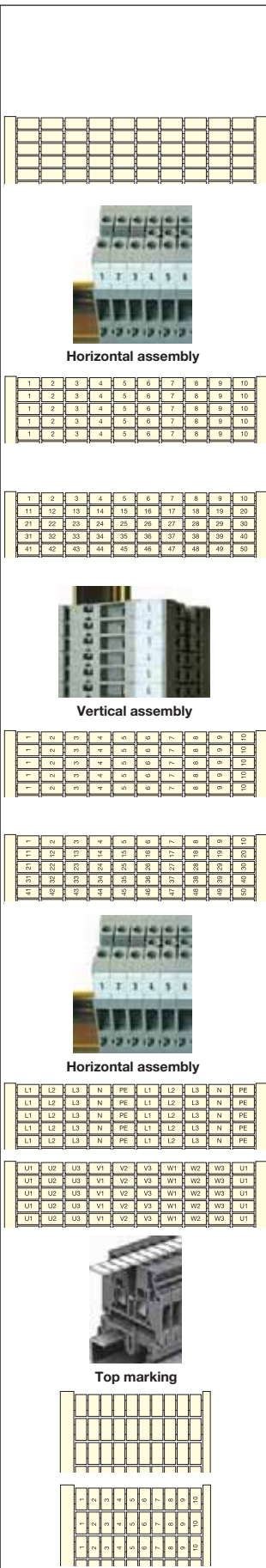
Card of 100 markers

RCT610	white <input type="checkbox"/>	1SNA 236 000 R0400	RCT810	white <input type="checkbox"/>	1SNA 236 500 R0600
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### Markers with numbers for top marking

Card of 100 markers, increasing order

RCT610	1 -> 100	1SNA 236 001 R2100	RCT810	1 -> 100	1SNA 236 501 R2300
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# REH3 and RB-12W7 markers

## REH3 Blank markers

Card of 680 precut markers - 7 x 5 mm .276" x .197"



Description	Type	Order P/N	Packaging
Card of 680 precut markers white <input type="checkbox"/> REH3	REH3	1SNA 163 155 R2600	

## REH3 Markers with numbers

Card of 680 precut markers - 7 x 5 mm .276" x .197" - Red impression on white background. On request black impression on white background. 6 series from 1 to 102 + 1 serie from 103 to 170.



Card of 680 precut markers with numbers	REH3	1SNA 163 167 R2200	
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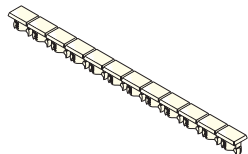
Card of 680 precut markers - 7 x 5 mm .276" x .197" - Red impression on white background. On request black impression on white background. 22 series from 1 to 30 + 1 serie from 1 to 20.



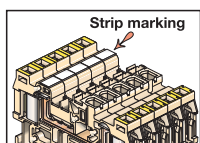
Card of 680 precut markers with numbers	REH3	1SNA 164 695 R2500	
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## RB-12W7 Blank markers

Strip of 12 markers for ADO/pluggable terminal blocks with 7,62 mm .300" spacing. Blank markers, printing on request. Width : 3,6 mm .142"



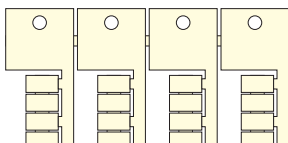
Strip of 12 blank markers white <input type="checkbox"/> RB-12W7	RB-12W7	1SNA 290 455 R0700	
Template for RB strips	SPRC 4	1SNA 360 014 R0500	



# Other markers

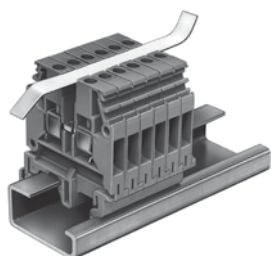
## Markers for terminal blocks

Card of blank polycarbonate markers for terminal blocks, to be printed using **AMS 500** system.



RC510A - RC610A - RC810A

Description	Type	Order P/N	Packaging
Card of 84 markers for terminal blocks 5 mm spacing	RC510A	1SNA 231 500 R0100	
Card of 72 markers for terminal blocks 6 mm spacing	RC610A	1SNA 233 500 R0300	
Card of 56 markers for terminal blocks 8 mm spacing	RC610A	1SNA 234 500 R0400	
Template for AMS 500 system	SPRC15	1SNA 360 025 R0000	



RTM...

## Top marking strip for terminal blocks

Strip for top marking : slides on a series of terminal blocks.

**RTM7** : for screw clamp + ADO System® terminal blocks with 6 mm .236" to 12 mm .472" spacing  
width : 7,6 mm .299"  
length : 0,50 m 19.70"

**RTM9** : for blocks type MA 2,5/5 and M 35/16  
width : 10 mm .394"  
length : 0,50 m 19.70"

Blank strip marker for blocks with 6 mm .236" to 12 mm .472" spacing	RTM7	1SNA 168 410 R0700	
Blank strip marker for blocks with 5 mm .197" and 16 mm .630" spacing	RTM9	1SNA 164 602 R0000	
Strip marker, black impression on white ground : 1 to 50 on one face, 51 to 100 on the other			
for blocks with 6 mm .236" spacing	RTM7	1SNA 103 115 R1300	
for blocks with 8 mm .315" spacing	RTM7	1SNA 103 116 R1400	
for blocks with 10 mm .394" spacing	RTM7	1SNA 103 922 R1400	

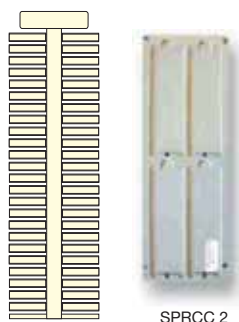


RCCV + PETC

## Wire markers

Card of 48 blank markers to be printed using **AMS 500** system.  
These markers are inserted into **PETC** tubes and mounted on wires.

Card of 48 blank wire markers	RCCV	1SNA 235 460 R0400	
Template for wire markers RCCV	SPRCC 2	1SNA 360 011 R0200	



RCCV

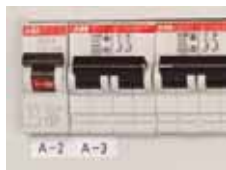
SPRCC 2

## Selection table of marker holder tube for wiring PETC

Wire size in mm <sup>2</sup>	Allowable wire DIA. for the tube in mm	PETC tubes P/N for 8 markers (18 mm)
0,1 to 1	1,1 to 3,3	1SNA 168 737 R0200
1 to 2,5	1,5 to 4,5	1SNA 168 741 R1600
2,5 to 10	3 to 8	1SNA 168 747 R1400

## Adhesive markers

Strip markers of 16 stickers to be printed using **AMS 500** system.  
High performance adhesive for most surface types.  
Dimensions : 8 x 17,5 mm



RPA

Strip of 16 stickers	RPA	1SNA 235 463 R2300	
Template for stickers RPA	SPRC 13	1SNA 360 023 R0600	



PIB2

Strip markers of 7 stickers for general purposes.  
High performance adhesive.  
Dimensions : 35 x 17,5 mm

Strip of 7 stickers	PIB2	1SNA 235 461 R2100	
Template for stickers PIB2	SPRC 13	1SNA 360 023 R0600	

# Other markers

Product	Type	Order P/N
<p><b>PIVOTING MOUNTING</b></p> <p>RC 510 or RC 610</p> <p>RC 55, RC 65 or nothing</p> <p>hinge</p> <p>hinge</p> <p>RC 55, RC 65 or nothing</p> <p>RC 55, RC 65 or nothing</p> <p><b>FIXED MOUNTING</b></p> <p>No locking if opposite side is detached.</p> <p>RC 55, RC 65 or nothing</p> <p>RC 55, RC 65 or nothing</p> <p>RC 510 or RC 610</p> <p>RC 510 or RC 610</p> <p>Card of 10 marking strips white □</p>	<p>This pivoting marker card allows marking of groups of terminal blocks. The marker rotates to allow access to screws without removing the marker. Compatible with RC type individual marking for terminal blocks (see mounting beside). Can be installed on adjacent terminal blocks. Clips into the marking slots on blocks :</p> <p><b>MA 2,5/5</b> <b>M 4/6</b> <b>M 6/8</b> <b>M 10/10</b> <b>M 16/12</b></p> <p>Spacing : 5 mm .197"</p>	<p><b>RCP5</b></p> <p>1SNA 103 888 R2300</p>

<p>Pivoting marker-holder</p>	<p>This pivoting marker holder slides into one of the two terminal blocks' markers slots, from 6 mm spacing, before they are mounted on rail ; the pivoting upper part permits the compression screw to be accessible. Designed to be mounted individually, they can be placed side by side from 10 mm spacing. Receives blank <b>RPEV</b> markers, dimensions : 29 x 6 mm 1.142" x .236"</p>	<p><b>PEV</b></p> <p>1SNA 113 180 R1200</p>
<p>Card of 99 blank precut markers</p>		<p><b>RPEV</b></p> <p>1SNA 173 178 R0700</p>

<p>Flag marker-holder</p>	<p>This flag marker-holder slides onto the upper part of terminal blocks : <b>M 35/16</b> (for example) before they snap on rail, or following end sections : <b>BADL, BADRL, BAM, BAMH</b> after they are mounted on rail. Spacing : 6 mm .236"</p>	<p><b>PED</b></p> <p>1SNA 167 334 R2500</p>
<p>Card of 160 blank precut markers</p>		<p><b>RPED</b></p> <p>1SNA 163 518 R2200</p>

<p>Adjustable marker-holder for BADL and BAM end stop</p>	<p>Adjustable marker-holder for end stop, to be mounted on top of <b>BADL</b>.</p> <p>Markers for <b>PEAD</b> : blank, transparent (protection markers) or standard marker cards <b>RC810</b> (3 markers max.) or <b>RC1010</b> (3 markers max.) Dimensions of blank markers : 29 x 9 mm 1.142" x .354"</p>	<p><b>PEAD</b></p> <p>1SNA 399 719 R1000</p>
<p>Card of 40 blank markers</p>		<p><b>RCPEAD</b></p> <p>1SNA 399 725 R0600</p>
<p>Card of 20 protection transparent markers</p>		<p><b>EPR2</b></p> <p>1SNA 399 726 R0700</p>

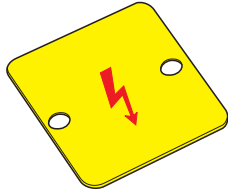
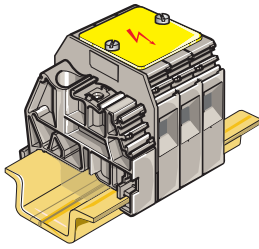
Product	Type	Order P/N
<p>Marker-holder for 4 RPC markers : marking from 0 to 9999</p>	<b>PEC4</b>	1SNA 114 012 R0100
<p>Marker-holder for 5 RPC markers : marking from 0 to 99999</p>	<b>PEC5</b>	1SNA 116 600 R0200
<p>Branch of 10 blank markers</p>	<b>RPCV</b>	1SNA 235 250 R1100
<p>Branch of 10 identical digits</p> <p>10 times 0 to 10 times 9 : 0</p>	<b>RPCC</b>	1SNA 235 260 R1300
1	<b>RPCC</b>	1SNA 235 261 R0000
2	<b>RPCC</b>	1SNA 235 262 R0100
3	<b>RPCC</b>	1SNA 235 263 R0200
4	<b>RPCC</b>	1SNA 235 264 R0300
5	<b>RPCC</b>	1SNA 235 265 R0400
6	<b>RPCC</b>	1SNA 235 266 R0500
7	<b>RPCC</b>	1SNA 235 267 R0600
8	<b>RPCC</b>	1SNA 235 268 R1700
9	<b>RPCC</b>	1SNA 235 269 R1000
<p>Branch of 10 digits 0 to 9</p>	<b>RPCC</b>	1SNA 235 270 R1500
<p>Branch of 10 identical letters</p> <p>10 times A to 10 times Z : A</p>	<b>RPCL</b>	1SNA 235 271 R0200
B	<b>RPCL</b>	1SNA 235 272 R0300
C	<b>RPCL</b>	1SNA 235 273 R0400
D	<b>RPCL</b>	1SNA 235 274 R0500
E	<b>RPCL</b>	1SNA 235 275 R0600
F	<b>RPCL</b>	1SNA 235 276 R0700
G	<b>RPCL</b>	1SNA 235 277 R0000
H	<b>RPCL</b>	1SNA 235 278 R1100
I	<b>RPCL</b>	1SNA 235 279 R1200
J	<b>RPCL</b>	1SNA 235 280 R0000
K	<b>RPCL</b>	1SNA 235 281 R2500
L	<b>RPCL</b>	1SNA 235 282 R2600
M	<b>RPCL</b>	1SNA 235 283 R2700
N	<b>RPCL</b>	1SNA 235 284 R2000
O	<b>RPCL</b>	1SNA 235 285 R2100
P	<b>RPCL</b>	1SNA 235 286 R2200
Q	<b>RPCL</b>	1SNA 235 287 R2300
R	<b>RPCL</b>	1SNA 235 288 R0400
S	<b>RPCL</b>	1SNA 235 289 R0500
T	<b>RPCL</b>	1SNA 235 290 R0200
U	<b>RPCL</b>	1SNA 235 291 R2700
V	<b>RPCL</b>	1SNA 235 292 R2000
W	<b>RPCL</b>	1SNA 235 293 R2100
X	<b>RPCL</b>	1SNA 235 294 R2200
Y	<b>RPCL</b>	1SNA 235 295 R2300
Z	<b>RPCL</b>	1SNA 235 296 R2400
<p>Branch of 10 identical conventional symbols :</p>	<b>RPCS</b>	1SNA 235 251 R0600
+	<b>RPCS</b>	1SNA 235 252 R0700
-	<b>RPCS</b>	1SNA 235 253 R0000
=	<b>RPCS</b>	1SNA 235 254 R0100
⊥	<b>RPCS</b>	1SNA 235 255 R0200

<p>Marker-holder for BAR or BADL</p>	<p>Marker-holders for mounting with 2 screws on end stop <b>BAR</b> after it has been mounted on the <b>PR1</b> rail. With or without engraving (text on request). <b>PIE24</b> : for terminal block assembly marking (mounting at the end). Can also be mounted with 1 screw on end stop <b>BADL</b> for DIN3 rail. White engraving on black ground. Dimensions : 37 x 24 mm 1.457 x .945" <b>PIE9</b> : for group marking. White engraving on black ground. Dimensions : 37 x 9 mm 1.457 x .354"</p>	<p><b>PIE24</b></p> <p>1SNA 007 871 R2400</p>
<p>Marker-holder for BAR</p>		<p><b>PIE9</b></p> <p>1SNA 167 257 R0000</p>
<p>Mounting screw</p>		<p><b>VST28</b></p> <p>1SNA 167 335 R2600</p>

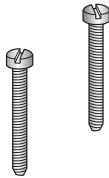
## Other markers

### EP... protection label

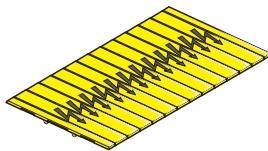
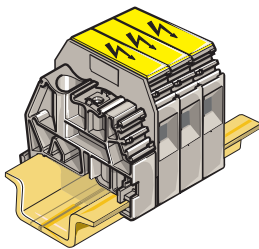
Indicates live circuits, prohibiting access to the connection screws. This accessory also protects the connections from dust and from touch. **EP...** Covers 3 or 4 blocks. The colour of the label is yellow with a red arrow. It can be fixed using 2 nylon screws **VSP...** to be ordered separately.



EP...



VSP...



EPU...

Type of blocks	Nb of blocks	Protection label		Screws for protection label	
		Type	Order part number	Type	Order part number
M 4/6	4	EP6	1SNA 163 427 R1700	VSP6	1SNA 163 433 R1500
M 6/8	3	EP6	1SNA 163 427 R1700	VSP6	1SNA 163 433 R1500
	4	EP8	1SNA 163 428 R2000	VSP6	1SNA 163 433 R1500
M 6/8.RS	3	EP6	1SNA 163 427 R1700	VSP68	1SNA 206 103 R0700
	4	EP8	1SNA 163 428 R2000	VSP68	1SNA 206 103 R0700
M 10/10	3	EP8	1SNA 163 428 R2000	VSP6	1SNA 163 433 R1500
	4	EP10	1SNA 163 429 R2100	VSP6	1SNA 163 433 R1500
M 10/10.RS	3	EP8	1SNA 163 428 R2000	VSP68	1SNA 206 103 R0700
	4	EP10	1SNA 163 429 R2100	VSP68	1SNA 206 103 R0700
M 16/12	3	EP10	1SNA 163 429 R2100	VSP12	1SNA 163 432 R1400
	4	EP12	1SNA 163 430 R2600	VSP12	1SNA 163 432 R1400
M 35/16	3	EP12	1SNA 163 430 R2600	VSP16	1SNA 173 147 R2000
	4	EP16	1SNA 163 431 R1300	VSP16	1SNA 173 147 R2000
M 70/22	3	EP223	1SNA 173 327 R2400	VSP22	1SNA 400 252 R1200
	4	EP224	1SNA 173 328 R0500	VSP22	1SNA 400 252 R1200

### EPU... protection label

Indicates live circuits, prohibiting access to the connection screws. This accessory also protects the connections from dust and from touch. **EPU...** covers 1 block. The colour of the label is yellow with a black arrow, to be snapped directly on the terminal block.

Delivered in cards of 12 labels.

Description	Type	Order P/N	Packaging
Protection label for blocks type MA 2,5/5	EPU5	1SNA 107 033 R1000	
Protection label for blocks type M 4/6 - M 6/8 - M 10/10 - M 16/12 (1)	EPU6	1SNA 107 038 R2500	

(1) Use 2 labels EPU6 for blocks spacing 12 mm.







Contents

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Fied bus passive tapping on mounting base .....233

# Field bus passive tapping

## ADO - ADO

1 subscriber

2 subscribers

3 subscribers

4 subscribers

BUS = pink + white core  
**A** Subscriber = pink + white + green + black core

**FX1 TAP**  
6 holes dia. 6.5

Mounting plate (ABB Entelec).  
 This metallic plate is screwed under the TAP box to allow mounting on any support.

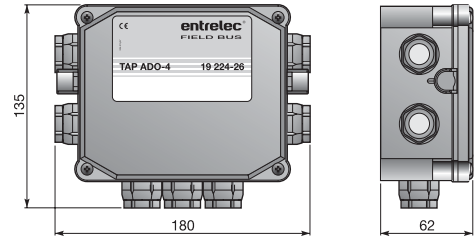
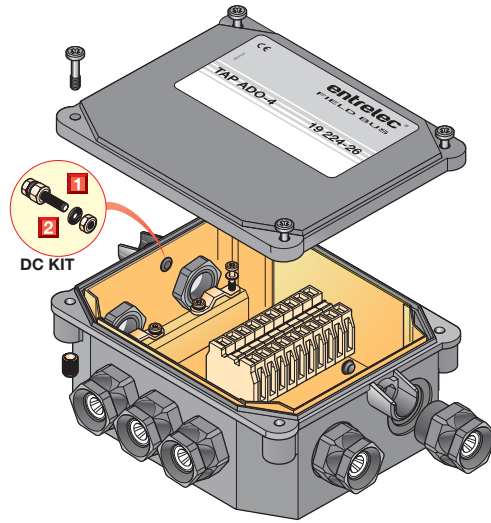
1

2

**KIT DC**

Allows external access to the internal shielding by means of a DIA. 4 mm thread according to the mounting schematic.

TAP ADO System applies to all diversions from a main trunk cable to one or more subscribers.



### TAP MAIN FUNCTION

(field bus passive tapping). Passive connecting device allowing the connection to a main cable (bus) of a subscriber.

A field bus installation requires a lot of tapings along the network. To simplify this critical operation, ABB Entelec has designed a new tapping device based on the unique ADO System.

**ADO System**  
**Reliable - Easy - Fast**

### FIP bus wiring schematic

The wiring layout is given for example purpose only. It may be adapted to the application.

Characteristics	Values	Standards
<b>BOX</b>		
Protection degree	IP 50 (IP 65 on request)	IEC 329
Flame class rating	V0	UL 94
thermoplastic material glass reinforced		
Vibration test	On board railway specification	NF EN 50-155
Characteristics impedance	150 Ω, ± 10 %	NF C 46-604
Electrostatic discharge	8 kV	IEC 801-2
Radiated Field test	10 V/m	IEC 801-3
Field wiring temperature range	-5 à + 40°C	IEC 947-1
Operating temperature	-40 à + 100°C	
<b>CABLE</b>		
Compatible cable type	PEDE289779 PEDE298849	Filotex Filotex
For any other cable, please contact us		
<b>CONNECTION</b>		
Connection type		
Insulation displacement ADO / ADO		
Wire size	Solid wire 0.28 to 1.5 mm <sup>2</sup> Stranded wire 0.34 to 1.5 mm <sup>2</sup>	IEC 947-7-1
Nominal voltage	1000 V	IEC 947-7-1
Schock wave test	8 kV	IEC 947-7-1
Nominal current	17.5 A	IEC 947-7-1

### Selection

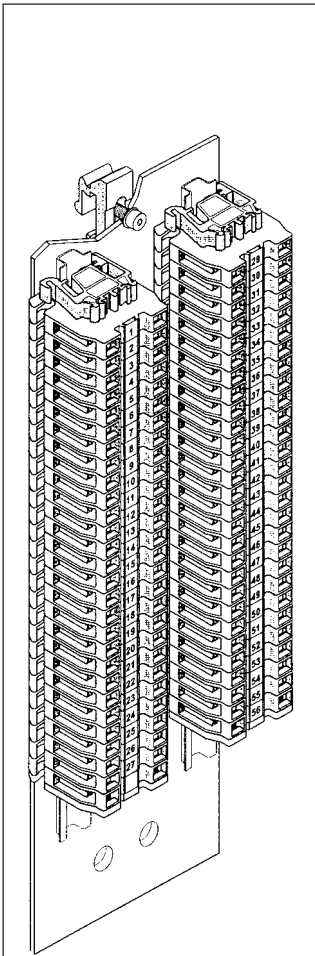
Description	Type	Order P/N	Packaging Weight kg
Field bus passive tapping	TAP ADO-4	1SNA 019 224 R2600	

### Accessories

Plate	FX1 TAP	1SNA 019 211 R2100	
DC Kit	KIT DC	1SNA 019 027 R1400	
Marking method	RC65	see marking	

# Field bus passive tapping

## ADO - ADO



TAP ADO System applies to all diversions from a main trunk cable to one or more subscribers.

This product has specially been developed to comply with cable connection requires (max. allowed 28 pairs) in order to set up phone, signal and remote control distributors. ADO System® technology allows a great cabling rapidity, an important connection safety and a large resistance to environmental aggressions (corrosive atmosphere, vibrations).

Simplicity, sturdiness and costs have been specially studied.

**Description of the product :**

- Terminal block mounting base in zinc bichromate plated steel
- DIN 1 rail mounting
- Wire size :
  - . 28 pairs of conductors from 0.34 mm<sup>2</sup> to 1.5 mm<sup>2</sup>.
  - . 2 conductors by connection are allowed if they have the same size and the same nature.
- Connection using a half automatic tool OUPAD or a manual tool (included).

**Electrical data :**

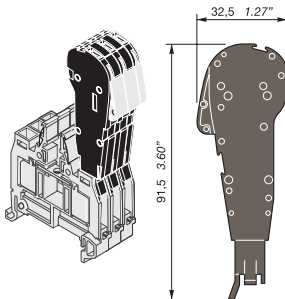
- Rated voltage: 1000 V according to CEI 60947-1
- Resistance to shock voltage : 8 kV according to CEI 60947-1
- Resistance to contacts lower than 2 mΩ.

**Dimensions :**

- Length : 255 mm
- Width : 90 mm
- Height : 50 mm



BJADO6...

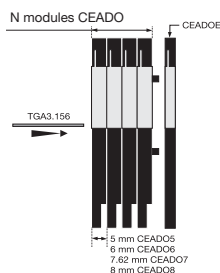


**Selection**

Description	Type	Order P/N	Packaging	Weight kg
Field bus passive tapping		1SNA 002 265 R0700		

**Accessories**

Screwless jumper bar IP20	orange			
	2 poles	BJADO6.2	1SNA 205 974 R0600	
	3 poles	BJADO6.3	1SNA 205 975 R0700	
	4 poles	BJADO6.4	1SNA 205 976 R0000	
	5 poles	BJADO6.5	1SNA 205 977 R0100	
	10 poles	BJADO6.10	1SNA 205 982 R2700	
20 poles	BJADO6.20	1SNA 205 992 R2100		
Test connectors on ADO jaw	CEADO.6	spacing 6 mm	1SNA 399 346 R1200	
End module	CEADO.E	th. 4.4 mm	1SNA 399 341 R1500	
Marking method	RC610		see marking	







# Contactors and Contactor Relays for Railway Applications

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# Contactors for Railway Applications

ABB contactors and contactor relays are used in versatile rolling stock applications, for examples :

- Lighting
- Heating
- Braking
- Air conditioning
- Ventilation
- Door control

## Main particularities of the railway applications

- Control network in d.c., with a wide variation in voltage due to battery use, typically  $0.7 U_c \dots 1.25 U_c$  ( $U_c$  as control voltage).  
In accordance with the train design and the national running rules the control network can be supplied in a.c.
- Wide variation of temperature: range of  $-40\text{ °C}$  to  $+70\text{ °C}$  to cover all cases all over the world.
- Continuous vibration stress
- Shocks, when trains are formed
- Fire and smoke withstand. Special care being taken for plastic materials for which specific tests are required.

Rolling stock applications need low voltage international standard compliance, such as IEC 60947-4-1 for contactors or IEC 60947-5-1 for contactor relays, and dedicated standards -national and international ones- focused on railway environment. See "Reference Standards" in opposite page.

In order to implement reliability and durability, most of **contactors and contactor relays for railway applications are using specific connection systems such as ring tongue terminals**. Some countries are accepting screw terminals as well, for the control network in particular.

Surge suppressors are more and more used on control coil of the conventional contactors.

**The ABB contactors AF... series are equipped with a built-in electronic coil interface which eliminates the need of extra surge suppressors.**

Furthermore, they are immune to short time voltage interruption (or voltage dips) up to 20 ms.

*This catalogue assembles all data needed  
to make the best contactor choice*



## Reference Standards

- **The contactor and contactor relays described in the next pages are in accordance with the following standards:**

**IEC 60077-1 and IEC 60077-2** : Railway applications - Electric equipment for rolling stock.

**IEC 61373** : Railway applications - Rolling stock - Shocks and vibration tests.

**NF F 60002** : French standard - Vibration tests.

**IEC 60947-4-1 / EN 60947-4-1** : Low voltage controlgear - Contactors and motor starters.

**IEC 60947-5-1 / EN 60947-5-1** : Low voltage controlgear - Control circuit devices and switching elements.

**NF F 62000** : French standard - Functional tests for French railways (SNCF).

- **"Fire and Smoke" classification**

**According to ASTM standards:**

ASTM standards, mainly used in North America, are splitting products in 2 categories:

- for the individual surface < 16 inch<sup>2</sup> the products are tested in accordance with ASTM E 1354 : flammability and visible smoke

- for the individual surface > 16 inch<sup>2</sup> the products are tested in accordance with E 662 (97): density of smoke, E 162 (98): flammability of surface and BSS 7239: toxicity of smoke (CO, HF, NO<sub>2</sub>, HCl, HCN, SO<sub>2</sub>).

Most of contactors, contactor relays and accessories have been tested according to the above standards. Certificates are available on request.

**According to NF F standards:**

French standards **NF F** (Normes Françaises Ferroviaires) are mainly used in Europe and Asia.

**NF F 16101** : Fire behavior - Material choosing.

**NF F 16102** : Fire behavior - Application to electrical equipment.

The contactors and accessories are at severity level 2 or 3 (classification level from 1 to 4) according to flammability (mark I) on the one hand, the opacity and toxicity of smoke (mark F) (CO, CO<sub>2</sub>, HCl, HBr, HCN, HF, SO<sub>2</sub>) in other hand.

Remark: French standards are still used as references in some international railways because they were used for a long time and were alone to qualify the fire and smoke problem.

There is no links between ASTM and NFF standards. A plastic material acceptable in NF F frame doesn't mean the acceptability in ASTM frame.

### **ABB has a long and large experience in equipment of rolling stocks. The list below gives some references of trains equipped by ABB through the world:**

- High speed trains aka TGV :  
TGV-A, TGV-PSE - TGV Duplex,  
TGV PBKA/THALYS  
TGV  
Eurostar - TGV Korea (KTX)
- Tramways: Citadis
- Commuter trains: ZTER, Z2N
- Transit authority trains: Atlanta, Seattle, Vancouver
- Underground: Mexico city, Athens, Caracas, Istanbul



# Railway Application Contactors

B  
2

## 3-pole Contactors

Screw Terminals



TAL 9 TAL 12 TAL 16 TAL 26 TAL 30 TAL 40

## 3-pole Contactors

Ring Tongue Terminals



TAL 9..RT TAL 12..RT TAL 16..RT TAL 26..RT TAL 30..RT TAL 40..RT

<b>a.c. Circuit Switching</b>	<b>AC-3</b> Rated power	220-230-240 V 380-400 V	<b>IEC</b>	<b>kW</b>	2.2	3	4	6.5	9	11	
	<b>AC-1</b> Rated current	$\theta \leq 40^\circ\text{C}$ , 690 V		<b>kW</b>	4	5.5	7.5	11	15	18.5	
	<b>Motor-rating</b>	480 V	<b>UL CSA</b> <sup>(1)</sup>	<b>A</b>	25	27	30	45	55 (TAL 30)	50 (TAL 30..RT)	60
	<b>Amp-rating</b>	600 V		<b>hp</b>	5	7.5	10	20	25	30	
Nema size				<b>A</b>	21	25	30	40	50	60	
					00	0	-	1	1P	-	

(1) UL/CSA only for TAL...(RT) and AF...(RT) contactors.

## 4-pole Contactors

Screw Terminals



TAL 9 TAL 16 TAL 26

## 4-pole Contactors

Ring Tongue Terminals



TAL 9..RT TAL 16..RT TAL 26..RT

<b>a.c. Circuit Switching</b>	<b>AC-1</b> Rated current	$\theta \leq 40^\circ\text{C}$ , 690 V	<b>IEC</b>	<b>A</b>	25	30	45
	<b>Amp-rating</b>	600 V		<b>A</b>	21	30	40
	Nema size			<b>UL CSA</b> <sup>(1)</sup>		00	0

(1) UL/CSA only for TAL...(RT) and AF...(RT) contactors.





AF 50 AF 63 AF 75  
TAE 50 TAE 75

AF 95B AF 110B  
TAE 95 TAE 110

AF 145B AF 185B

AF 210B AF 260B AF 300B



AF 50..RT AF 63..RT AF 75..RT  
TAE 50..RT TAE 75..RT

AF 95B..RT AF 110B..RT

AF 145B..RT AF 185B..RT

AF 210B..RT AF 260B..RT AF 300B..RT

15	18.5	22
<b>22</b>	<b>30</b>	<b>37</b>
100	115	125
40	60	60
80	90	105
2	-	3

25	30
<b>45</b>	<b>55</b>
145	160

45	55
<b>75</b>	<b>90</b>
250	275

59	80	90
<b>110</b>	<b>140</b>	<b>160</b>
350	400	500



AF 45 AF 50 AF 75  
TAE 45 TAE 50 TAE 75



AF 45..RT AF 75..RT  
TAE 45..RT TAE 75..RT

70	100	125
80	80	105
2	2	3



d.c. operated with large coil voltage range



a.c./d.c. operated with wide voltage range (Electronic coil interface)

## 1-pole Contactors

Ring Tongue Terminals



GTAE 75..RT

**d.c.**  
Circuit  
Switching

**DC-1** Rated current  
 $\theta \leq 55^\circ\text{C}$ , 440 V

IEC A

100

# TAL 9 ... TAL 40 and TAL 9..RT ... TAL 40..RT 3-pole Contactors



d.c. Operated - Large Coil Voltage Range

## Application

**TAL...** and **TAL..RT** contactors are mainly used for controlling 3-phase motors and more generally for controlling power circuits up to 690 V a.c. or 220 / 440 V d.c. These contactors have a low power consumption for direct control from PLC outputs. Consequently they are perfectly adapted for all applications associated with PLC control.

## Description

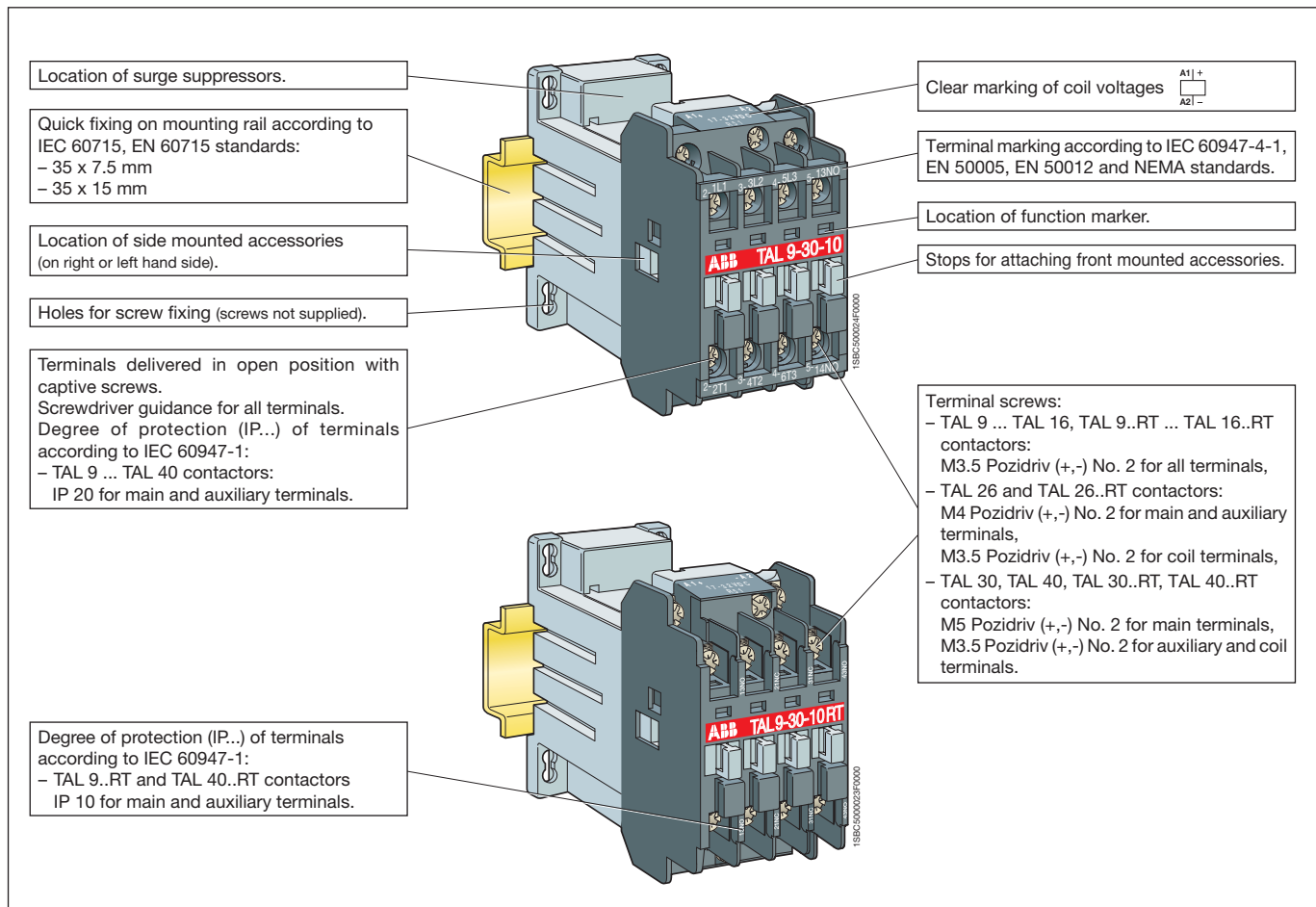
The **TAL...** series 3-pole contactors are of the block type design with a large coil voltage range.

The **TAL..RT** contactors are the Ring Tongue terminal version of the **TAL...** range.

- Main poles and auxiliary contact blocks
  - TAL 9..(RT) ... TAL 40..(RT) 1-stack contactors:**
    - 3 main poles,
    - 1 built-in auxiliary contact,
    - front or side mounted add-on auxiliary contact blocks.
- Control circuit: d.c. operated with solid core magnet circuit, low consumption coil and large coil voltage range. The coil must be energized from a d.c. supply and the polarity (A1+ and A2-) must be respected.
- Accessories: a wide range of accessories is available.

## Variants

- 4-pole: **TAL 9..(RT) ... TAL 26..(RT)** contactors (with 4 N.O. or 2 N.O. + 2 N.C. main poles).



# TAL 9 ... TAL 40 and TAL 9..RT ... TAL 40..RT



## 3-pole Contactors





d.c. Operated - Large Coil Voltage Range

### Ordering Details

#### 3-pole Contactors with Screw Terminals


IEC		UL/CSA		Auxiliary contacts fitted		Type	Order code	Weight kg
Rated power 400 V	Rated current $\theta \leq 40^\circ\text{C}$	3-Phase motor rating	General use rating	1 <sup>st</sup> stack	2 <sup>nd</sup> stack			
AC-3 kW	AC-1 A	480 V hp	600 V A			state coil voltage <input type="checkbox"/> <input type="checkbox"/> (see table below)	state coil voltage code <input type="checkbox"/> <input type="checkbox"/> (see table below)	Pack <sup>kg</sup> 1 piece
4	25	5	21	1 - - 1	- -	TAL 9-30-10 <input type="checkbox"/> <input type="checkbox"/> TAL 9-30-01 <input type="checkbox"/> <input type="checkbox"/>	1SBL 143 061 R <input type="checkbox"/> <input type="checkbox"/> 10 1SBL 143 061 R <input type="checkbox"/> <input type="checkbox"/> 01	0.520 0.520
5.5	27	7.5	25	1 - - 1	- -	TAL 12-30-10 <input type="checkbox"/> <input type="checkbox"/> TAL 12-30-01 <input type="checkbox"/> <input type="checkbox"/>	1SBL 163 061 R <input type="checkbox"/> <input type="checkbox"/> 10 1SBL 163 061 R <input type="checkbox"/> <input type="checkbox"/> 01	0.520 0.520
7.5	30	10	30	1 - - 1	- -	TAL 16-30-10 <input type="checkbox"/> <input type="checkbox"/> TAL 16-30-01 <input type="checkbox"/> <input type="checkbox"/>	1SBL 183 061 R <input type="checkbox"/> <input type="checkbox"/> 10 1SBL 183 061 R <input type="checkbox"/> <input type="checkbox"/> 01	0.520 0.520
11	45	20	40	1 - - 1	- -	TAL 26-30-10 <input type="checkbox"/> <input type="checkbox"/> TAL 26-30-01 <input type="checkbox"/> <input type="checkbox"/>	1SBL 243 061 R <input type="checkbox"/> <input type="checkbox"/> 10 1SBL 243 061 R <input type="checkbox"/> <input type="checkbox"/> 01	0.750 0.750
15	55	25	50	1 - - 1	- -	TAL 30-30-10 <input type="checkbox"/> <input type="checkbox"/> TAL 30-30-01 <input type="checkbox"/> <input type="checkbox"/>	1SBL 283 061 R <input type="checkbox"/> <input type="checkbox"/> 10 1SBL 283 061 R <input type="checkbox"/> <input type="checkbox"/> 01	0.850 0.850
18.5	60	30	60	1 - - 1	- -	TAL 40-30-10 <input type="checkbox"/> <input type="checkbox"/> TAL 40-30-01 <input type="checkbox"/> <input type="checkbox"/>	1SBL 323 061 R <input type="checkbox"/> <input type="checkbox"/> 10 1SBL 323 061 R <input type="checkbox"/> <input type="checkbox"/> 01	0.850 0.850

#### 3-pole Contactors with Ring Tongue Terminals

IEC		UL/CSA		Auxiliary contacts fitted		Type	Order code	Weight kg
Rated power 400 V	Rated current $\theta \leq 40^\circ\text{C}$	3-Phase motor rating	General use rating	1 <sup>st</sup> stack	2 <sup>nd</sup> stack			
AC-3 kW	AC-1 A	480 V hp	600 V A			state coil voltage <input type="checkbox"/> <input type="checkbox"/> (see table below)	state coil voltage code <input type="checkbox"/> <input type="checkbox"/> (see table below)	Pack <sup>kg</sup> 1 piece
4	25	5	21	1 - - 1	- -	TAL 9-30-10RT <input type="checkbox"/> <input type="checkbox"/> TAL 9-30-01RT <input type="checkbox"/> <input type="checkbox"/>	1SBL 143 060 R <input type="checkbox"/> <input type="checkbox"/> 10 1SBL 143 060 R <input type="checkbox"/> <input type="checkbox"/> 01	0.520 0.520
5.5	27	7.5	25	1 - - 1	- -	TAL 12-30-10RT <input type="checkbox"/> <input type="checkbox"/> TAL 12-30-01RT <input type="checkbox"/> <input type="checkbox"/>	1SBL 163 060 R <input type="checkbox"/> <input type="checkbox"/> 10 1SBL 163 060 R <input type="checkbox"/> <input type="checkbox"/> 01	0.520 0.520
7.5	30	10	30	1 - - 1	- -	TAL 16-30-10RT <input type="checkbox"/> <input type="checkbox"/> TAL 16-30-01RT <input type="checkbox"/> <input type="checkbox"/>	1SBL 183 060 R <input type="checkbox"/> <input type="checkbox"/> 10 1SBL 183 060 R <input type="checkbox"/> <input type="checkbox"/> 01	0.520 0.520
11	45	20	40	1 - - 1	- -	TAL 26-30-10RT <input type="checkbox"/> <input type="checkbox"/> TAL 26-30-01RT <input type="checkbox"/> <input type="checkbox"/>	1SBL 243 060 R <input type="checkbox"/> <input type="checkbox"/> 10 1SBL 243 060 R <input type="checkbox"/> <input type="checkbox"/> 01	0.750 0.750
15	50	25	50	1 - - 1	- -	TAL 30-30-10RT <input type="checkbox"/> <input type="checkbox"/> TAL 30-30-01RT <input type="checkbox"/> <input type="checkbox"/>	1SBL 283 060 R <input type="checkbox"/> <input type="checkbox"/> 10 1SBL 283 060 R <input type="checkbox"/> <input type="checkbox"/> 01	0.850 0.850
18.5	60	30	60	1 - - 1	- -	TAL 40-30-10RT <input type="checkbox"/> <input type="checkbox"/> TAL 40-30-01RT <input type="checkbox"/> <input type="checkbox"/>	1SBL 323 060 R <input type="checkbox"/> <input type="checkbox"/> 10 1SBL 323 060 R <input type="checkbox"/> <input type="checkbox"/> 01	0.850 0.850

#### Coil voltages and codes

Voltage	Code
<input type="checkbox"/> <input type="checkbox"/> V - d.c.	<input type="checkbox"/> <input type="checkbox"/>
17 ... 32	5 1
25 ... 45	5 2
36 ... 65	5 4
42 ... 78	5 8
50 ... 90	5 5
77 ... 143	6 2
90 ... 150	6 6
152 ... 264	6 8

 Voltage tolerances (-15 % and +10 %) included in the  $U_e$  min. and  $U_e$  max. values.



TAL 16-30-10



TAL 40-30-10



TAL 9-30-10RT



TAL 30-30-10RT

>> Accessory Fitting Details ..... pages 242, 243  
>> Technical Data..... page 260

>> Terminal Marking and Positioning..... pages 292, 293  
>> Dimensions..... page 300

# TAL 9 ... TAL 40 3-pole Contactors

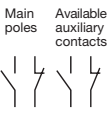

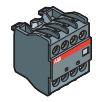
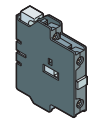
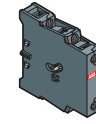
## Main Accessories



### Accessory Fitting Details

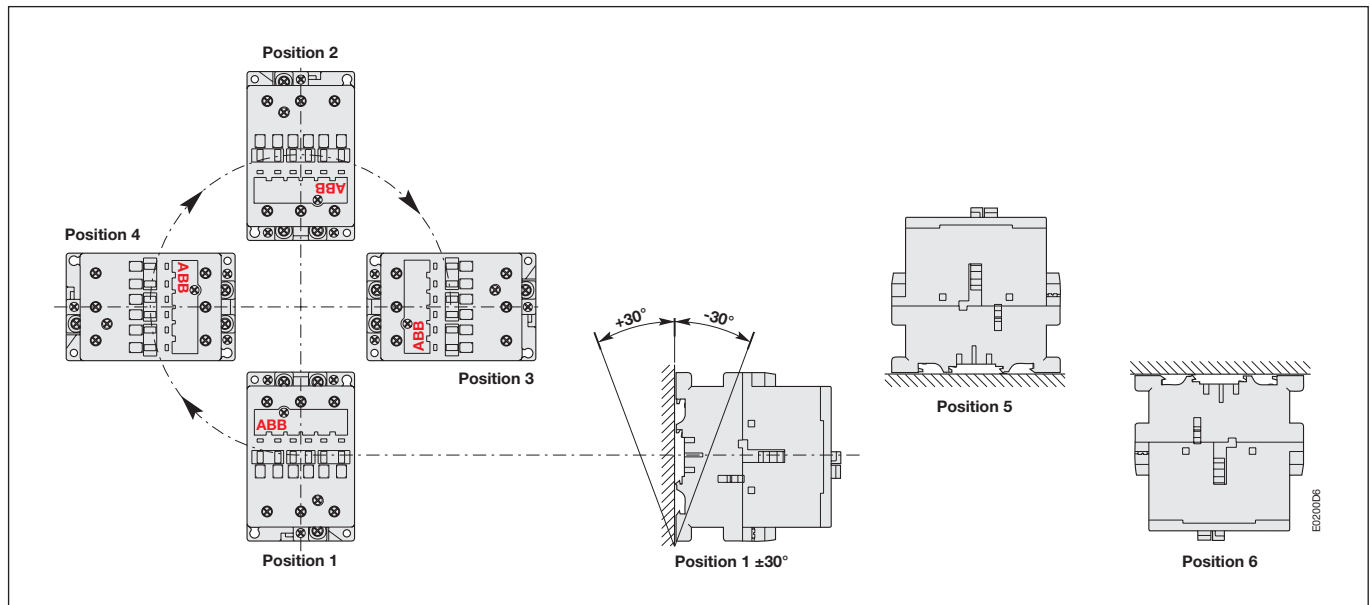
#### TAL 9 ... TAL 40 Contactors with Screw Terminals

Many configurations of accessories are possible depending on whether these are front mounted or side mounted.

Contactor configuration		Front mounted accessories		Side mounted accessories <sup>(5)</sup>	
<p>Contactor types</p> 		 <p>Auxiliary contact 1-pole CA 5-..</p>	 <p>Auxiliary contact 4-pole CA 5-..</p>	 <p>Auxiliary contact 2-pole CAL 5-11</p>	 <p>Interlock unit VM 5-.. or VE 5-..</p>
TAL 9 ... TAL 16	3 0 1 0	1 to 4 x CA 5-.. (1) or 1 x CA 5-.. (4-pole) (1)		1 x CAL 5-11	+ 1 x VM 5-1(4) or VE 5-1 (4)(2)
TAL 9 ... TAL 16	3 0 0 1				
TAL 26	3 0 1 0	1 to 4 x CA 5-.. (3) or 1 x CA 5-.. (4-pole) (3)		1 x CAL 5-11	+ 1 x VM 5-1 or VE 5-1
TAL 26	3 0 0 1				
TAL 30, TAL 40	3 0 1 0	1 to 5 x CA 5-.. (3) or 1 x CA 5-.. (4-pole) (3)		1 x CAL 5-11	+ 1 x VM 5-1 or VE 5-1(2)
TAL 30, TAL 40	3 0 0 1	+ 1 x 1-pole CA 5-..			

- (1) 2 N.C. auxiliary contacts maximum in all mounting positions except 5. In position 5 no N.C. auxiliary contact allowed.
- (2) With **VE5-1** interlock unit, a maximum of 3 N.O. auxiliary contacts are permitted.
- (3) 2 N.C. auxiliary contacts maximum in mounting position 5.
- (4) When **VM5-1** or **VE5-1** interlock unit is used, CAL 5-11 auxiliary contact is not permitted in any position.
- (5) Not allowed in mounting position  $1 \pm 30^\circ$ .

### Mounting Positions (see "Conditions for Use" for authorized positions)



# TAL 9..RT ... TAL 40..RT 3-pole Contactors






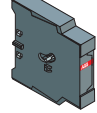


## Main Accessories

### Accessory Fitting Details

#### TAL 9..RT ... TAL 40..RT Contactors with Ring Tongue Terminals

Many configurations of accessories are possible depending on whether these are front mounted or side mounted.

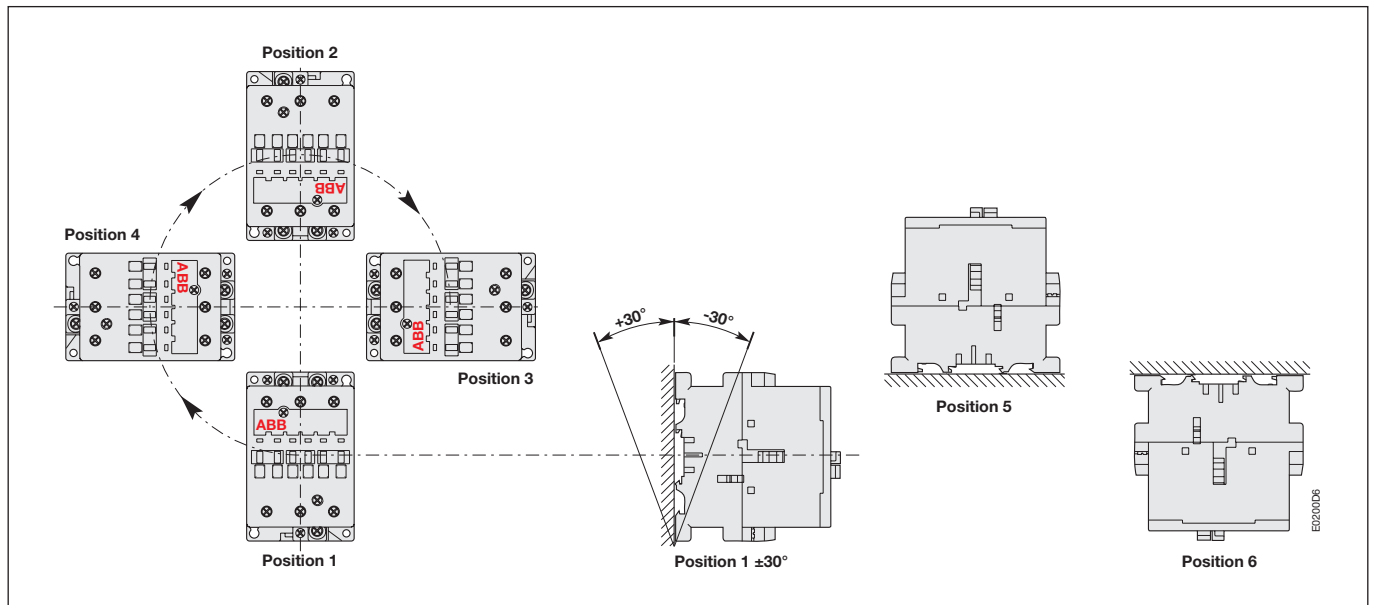
Contactor configuration	Main poles		Available auxiliary contacts		Front mounted accessories	Side mounted accessories (3)
Contactor types					 <b>Auxiliary contact 4-pole CA 5-..RT</b>	 <b>Interlock unit VM 5-1</b>
TAL 9..RT ... TAL 16..RT	3	0	1	0	1 x CA 5-..RT (4-pole) (1)	+ 1 x VM 5-1
TAL 9..RT ... TAL 16..RT	3	0	0	1	-	1 x VM 5-1
TAL 26..RT	3	0	1	0	1 x CA 5-..RT (4-pole) (2)	+ 1 x VM 5-1
TAL 26..RT	3	0	0	1	-	1 x VM 5-1
TAL 30..RT, TAL 40..RT	3	0	1	0	1 x CA 5-..RT (4-pole) (2)	+ 1 x VM 5-1
TAL 30..RT, TAL 40..RT	3	0	0	1	-	1 x VM 5-1

(1) 2 N.C. auxiliary contacts maximum in all mounting positions except 5. In position 5 no N.C. auxiliary contact allowed.

(2) 2 N.C. auxiliary contacts maximum in mounting position 5.

(3) Not allowed in mounting position 1±30°.

### Mounting Positions (see "Conditions for Use" for authorized positions)



>> Conditions for Use.....page 270

# AF 50 ... AF 110B and AF 50..RT ... AF 110B..RT 3-pole Contactors

a.c. / d.c. Operated - Wide Voltage Range



## Application

**AF 50 ... AF 110B** contactors are mainly used for controlling 3-phase motors and more generally for controlling power circuits up to 690 V a.c. or 220 V d.c. The contactors can also be used for many other applications such as bypass, capacitor switching, lighting, d.c. power circuits...

The **AF...** contactors are fitted with an electronic coil interface which accepts a wide control voltage range, on a.c. 50/60 Hz or d.c. supplies. The same contactor can accept various supply voltages according to the different countries where the electrical equipment will be installed, or some fluctuation in the control voltage due to the local supply or network.

The **AF...** contactors are also fully suitable for operation in a.c. or d.c. control circuit liable to voltage interruptions or voltage dip risks.

## Description

The **AF 50 ... AF 75** 3-pole contactors are of the block type design with fire and smoke approvals.

**AF 50..RT ... AF 75..RT** contactors are the ring tongue terminal version of the **AF...** range.

The **AF 95, AF 110** and **AF 95B, AF 110B** 3-pole contactors are of the block type design. **AF..B** contactors are fire and smoke certified.

**AF..B..RT** contactors are the ring tongue terminal version of the **AF..B...** range.

### ● Main poles and auxiliary contact blocks, **AF 50..(RT) ... AF 110(B)..(RT) 1-stack contactors:**

- 3 main poles,
- front or side mounted add-on auxiliary contact blocks.

### ● Electronic control:

The contactors are fitted with an electronic interface that very precisely controls the voltage to the coil. The electronic control circuit always works using d.c. current through the coil and in a.c. operation the current is rectified before being applied to the coil. To achieve the current levels required for making and holding respectively, the voltage is pulsed across the coil with the aid of a transistor. The pulsing also implies that the current in the coil can be optimally regulated all the time relatively independently of the voltage level. The function is controlled by a specific integrated circuit developed by **ABB**.

### Advantages

- Wide voltage range, e.g. 100 ... 250 V a.c. and d.c.,
- Can manage large voltage variations,
- Reduced power consumption,
- Very distinct closing and opening,
- Noise free,
- Can withstand voltage interruptions or voltage dips in the control supply ( $\leq 20$  ms).

### ● Accessories: a wide range of accessories are available.

## Variants

- 4-pole: **AF 45 ... AF 75** contactors with screw terminals (with 4 N.O. or 2 N.O. + 2 N.C. main poles).
- 4-pole: **AF 45..RT ... AF 75..RT** contactors with ring tongue terminals (with 4 N.O. main poles).

**AF..(B)..RT contactors** (for AF..(B)... contactors see TAE... contactors for general design).

Quick fixing on mounting rail according to IEC 60715, EN 60715 standards:

- 35 x 15 mm
- 75 x 25 mm

Control circuit with electronic coil interface.

Clear marking of coil voltages.

Terminal marking according to IEC 60947-4-1, EN 50005, EN 50012 and NEMA standards.

Location of side mounted accessories (on right or left hand side) for AF 95B..RT and AF 110B..RT only.

Holes for screw fixing (screws not supplied).

**Operating diagram**

Position

Contactor closed

Contactor open

Control voltage

$U_c$  min.       $U_c$  max.

Normal range

Operational limits

0.85  $U_c$  min.      1.1  $U_c$  max.

0.55  $U_c$  min.

E185800

Location of function marker.

Stops for attaching front mounted accessories.

Terminal screws:  
 AF 50..RT ... AF 75..RT,  
 AF 95B..RT, AF 110B..RT contactors:  
 - M6 Pozidriv (+,-) No. 2 for main terminals,  
 - M3.5 Pozidriv (+,-) No. 2 for coil terminals.

Degree of protection of terminals according to IEC 60947-1: IP 10 for all terminals.

# AF 50 ... AF 110B and AF 50..RT ... AF 110B..RT 3-pole Contactors

a.c. / d.c. Operated - Wide Voltage Range



## Ordering Details



AF 50-30-00

1SBC5 8271 4F0304



AF 50-30-00RT

1SBC5 8720 4F0301



AF 110B-30-11RT

1SFC1 0107 7F0201

IEC	UL/CSA		Auxiliary contacts fitted		Type	Order code	Weight kg
Rated power 400 V	Rated current $\theta \leq 40^\circ\text{C}$	3-Phase motor rating	General use rating	1 <sup>st</sup> stack	2 <sup>nd</sup> stack	state coil voltage <input type="checkbox"/> <input type="checkbox"/> (see table below)	state coil voltage code <input type="checkbox"/> <input type="checkbox"/> (see table below)
<b>AC-3</b>	<b>AC-1</b>	480 V	600 V				Pack <sup>ing</sup> 1 piece
<b>kW</b>	<b>A</b>	<b>hp</b>	<b>A</b>				

### 3-pole Contactors with Screw Terminals - Fire and Smoke Approvals

22	100	40	80	--	--	AF 50-30-00 <input type="checkbox"/> <input type="checkbox"/> AF 50-30-11 <input type="checkbox"/> <input type="checkbox"/>	1SBL 357 001 R <input type="checkbox"/> <input type="checkbox"/> 00 1SBL 357 001 R <input type="checkbox"/> <input type="checkbox"/> 11	1.180 1.220
30	115	60	90	--	--	AF 63-30-00 <input type="checkbox"/> <input type="checkbox"/> AF 63-30-11 <input type="checkbox"/> <input type="checkbox"/>	1SBL 377 001 R <input type="checkbox"/> <input type="checkbox"/> 00 1SBL 377 001 R <input type="checkbox"/> <input type="checkbox"/> 11	1.180 1.220
37	125	60	105	--	--	AF 75-30-00 <input type="checkbox"/> <input type="checkbox"/> AF 75-30-11 <input type="checkbox"/> <input type="checkbox"/>	1SBL 417 001 R <input type="checkbox"/> <input type="checkbox"/> 00 1SBL 417 001 R <input type="checkbox"/> <input type="checkbox"/> 11	1.180 1.220
45	145	-	-	1	1	AF 95B-30-11 <input type="checkbox"/> <input type="checkbox"/>	1SFL 437 063 R <input type="checkbox"/> <input type="checkbox"/> 11	2.070
55	160	-	-	1	1	AF 110B-30-11 <input type="checkbox"/> <input type="checkbox"/>	1SFL 457 063 R <input type="checkbox"/> <input type="checkbox"/> 11	2.070

### 3-pole Contactors with Screw Terminals - Standard Version

45	145	60	125	--	--	AF 95-30-00 <input type="checkbox"/> <input type="checkbox"/> AF 95-30-11 <input type="checkbox"/> <input type="checkbox"/>	1SFL 437 001 R <input type="checkbox"/> <input type="checkbox"/> 00 1SFL 437 001 R <input type="checkbox"/> <input type="checkbox"/> 11	2.030 2.070
55	160	75	140	--	--	AF 110-30-00 <input type="checkbox"/> <input type="checkbox"/> AF 110-30-11 <input type="checkbox"/> <input type="checkbox"/>	1SFL 457 001 R <input type="checkbox"/> <input type="checkbox"/> 00 1SFL 457 001 R <input type="checkbox"/> <input type="checkbox"/> 11	2.030 2.070

### 3-pole Contactors with Ring Tongue Terminals - Fire and Smoke Approvals

IEC	UL/CSA		Auxiliary contacts fitted		Type	Order code	Weight kg	
Rated power 400 V	Rated current $\theta \leq 40^\circ\text{C}$	3-Phase motor rating	General use rating	1 <sup>st</sup> stack	2 <sup>nd</sup> stack	state coil voltage <input type="checkbox"/> <input type="checkbox"/> (see table below)	state coil voltage code <input type="checkbox"/> <input type="checkbox"/> (see table below)	
<b>AC-3</b>	<b>AC-1</b>	480 V	600 V				Pack <sup>ing</sup> 1 piece	
<b>kW</b>	<b>A</b>	<b>hp</b>	<b>A</b>					
22	100	40	80	--	--	AF 50-30-00RT <input type="checkbox"/> <input type="checkbox"/> AF 50-30-11RT <input type="checkbox"/> <input type="checkbox"/>	1SBL 357 010 R <input type="checkbox"/> <input type="checkbox"/> 00 1SBL 357 010 R <input type="checkbox"/> <input type="checkbox"/> 11	1.180 1.220
30	115	60	90	--	--	AF 63-30-00RT <input type="checkbox"/> <input type="checkbox"/> AF 63-30-11RT <input type="checkbox"/> <input type="checkbox"/>	1SBL 377 010 R <input type="checkbox"/> <input type="checkbox"/> 00 1SBL 377 010 R <input type="checkbox"/> <input type="checkbox"/> 11	1.180 1.220
37	125	60	105	--	--	AF 75-30-00RT <input type="checkbox"/> <input type="checkbox"/> AF 75-30-11RT <input type="checkbox"/> <input type="checkbox"/>	1SBL 417 010 R <input type="checkbox"/> <input type="checkbox"/> 00 1SBL 417 010 R <input type="checkbox"/> <input type="checkbox"/> 11	1.180 1.220
45	145	-	-	1	1	AF 95B-30-11RT <input type="checkbox"/> <input type="checkbox"/>	1SFL 437 062 R <input type="checkbox"/> <input type="checkbox"/> 11	2.070
55	160	-	-	1	1	AF 110B-30-11RT <input type="checkbox"/> <input type="checkbox"/>	1SFL 457 062 R <input type="checkbox"/> <input type="checkbox"/> 11	2.070

#### Coil voltages and codes

Voltage <input type="checkbox"/> <input type="checkbox"/> V - 50/60 Hz	Voltage <input type="checkbox"/> <input type="checkbox"/> V - d.c.	Code <input type="checkbox"/> <input type="checkbox"/>
-	20 ... 60	7 2 (1)
48 ... 130	48 ... 130	6 9
100 ... 250	100 ... 250	7 0

(1) The connection polarities indicated close to the coil terminals must be respected: **A1** for the **positive** pole and **A2** for the **negative** pole.

#### Electromagnetic compatibility

AF... contactors comply with IEC 60947-1, 60947-4-1 and EN 60947-1, 60947-4-1.

**Note:** This product has been designed for **environment A**. Use of this product in **environment B** may cause unwanted electromagnetic disturbances in which case the user may be required to take adequate mitigation measures.

#### Definitions:

**Environment A:** "Mainly relates to low-voltage non public or industrial networks/locations/installations (see EN 50082-2 article 4) including highly disturbing sources".

**Environment B:** "Mainly relates to low-voltage public networks (see EN 50082-1 article 5) such as residential, commercial and light industrial locations/installations. Highly disturbing sources such as arc welders are not covered by this environment".

>> Accessory Fitting Details ..... page 248  
>> Technical Data..... page 260

>> Terminal Marking and Positioning..... pages 292, 293  
>> Dimensions..... page 309

# AF 145 ... AF 300, AF 145B ... AF 300B and AF 145B..RT ... AF 300B..RT 3-pole Contactors

a.c. / d.c. Operated - Wide Voltage Range



## Application

**AF 145 ... AF 300** contactors are mainly used for controlling 3-phase motors and generally for controlling power circuits up to 690 V a.c. / 1000 V a.c. or 220 V d.c. / 600 V d.c. The contactors can also be used for many other applications such as bypass, capacitor switching, lighting, d.c. power circuits...

The **AF...** contactors are fitted with an electronic coil interface which accepts a wide control voltage range, on a.c. 50/60 Hz or d.c. supplies. The same contactor can accept various supply voltages according to the different countries where the electrical equipment will be installed, or some fluctuation in the control voltage due to the local supply or network.

The **AF...** contactors are also fully suitable for operation in a.c. or d.c. control circuit liable to voltage interruptions or voltage dip risks.

## Description

The **AF 145 ... AF 300** 3-pole contactors are of the block type design.

The **AF 145B ... AF 300B** 3-pole contactors are of the block type design with fire and smoke approvals.

**AF..B..RT** contactors are the ring tongue terminal version of the **AF..B...** range.

- Main poles and auxiliary contact blocks:
  - 3 main poles,
  - 1 N.O. and 1 N.C. auxiliary contact block (fitted on the left side).

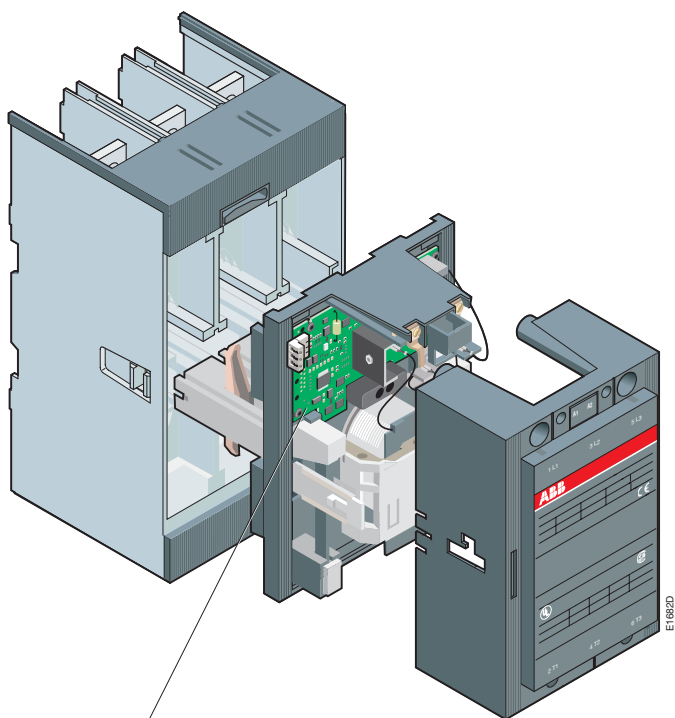
### Electronic control:

The contactors are fitted with an electronic interface that very precisely controls the voltage to the coil. The electronic control circuit always works using d.c. current through the coil and in a.c. operation the current is rectified before being applied to the coil. To achieve the current levels required for making and holding respectively, the voltage is pulsed across the coil with the aid of a transistor. The pulsing also implies that the current in the coil can be optimally regulated all the time relatively independently of the voltage level. The function is controlled by a specific integrated circuit developed by **ABB**.

### Advantages

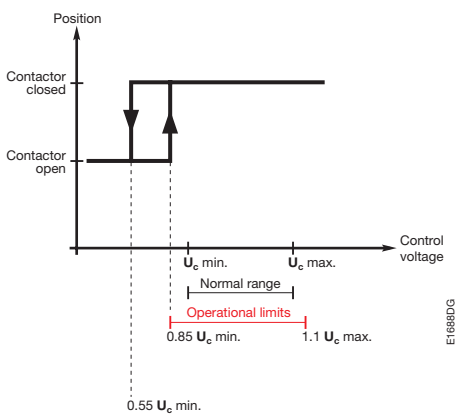
- Wide voltage range, e.g. 100 ... 250 V a.c. and d.c.,
  - Can manage large voltage variations,
  - Reduced power consumption,
  - Very distinct closing and opening,
  - Noise free,
  - Can withstand voltage interruptions or voltage dips in the control supply ( $\leq 20$  ms).
- Accessories: a wide range of accessories are available.

### AF... contactors specific design.



Control circuit with electronic coil interface.

### Operating diagram





# AF 145 ... AF 300, AF 145B ... AF 300B and AF 145B..RT ... AF 300B..RT 3-pole Contactors



a.c. / d.c. Operated - Wide Voltage Range

## Ordering Details



AF 300B-30-11

1SFC010446201

IEC	UL/CSA		Auxiliary contacts fitted		Type	Order code	Weight kg
Rated power 400 V	Rated current $\theta \leq 40^\circ\text{C}$	3-Phase motor rating	General use rating				
<b>AC-3</b>	<b>AC-1</b>	480 V	600 V		state coil voltage <input type="text"/> (see table below)	state coil voltage code <input type="text"/> <input type="text"/> (see table below)	Pack <sup>kg</sup> 1 piece
<b>kW</b>	<b>A</b>	<b>hp</b>	<b>A</b>				

### 3-pole Contactors with Screw on Coil Terminals - Fire and Smoke Approvals

75	250	-	-	1 1	AF 145B-30-11 <input type="text"/>	1SFL 477 063 R <input type="text"/> <input type="text"/> 11	3.600
90	275	-	-	1 1	AF 185B-30-11 <input type="text"/>	1SFL 497 063 R <input type="text"/> <input type="text"/> 11	3.600
110	350	-	-	1 1	AF 210B-30-11 <input type="text"/>	1SFL 517 063 R <input type="text"/> <input type="text"/> 11	6.200
140	400	-	-	1 1	AF 260B-30-11 <input type="text"/>	1SFL 537 063 R <input type="text"/> <input type="text"/> 11	6.200
160	500	-	-	1 1	AF 300B-30-11 <input type="text"/>	1SFL 557 063 R <input type="text"/> <input type="text"/> 11	6.200

### 3-pole Contactors with Screw on Coil Terminals - Standard Version

75	250	100	230	1 1	AF 145-30-11 <input type="text"/>	1SFL 477 001 R <input type="text"/> <input type="text"/> 11	3.600
90	275	125	250	1 1	AF 185-30-11 <input type="text"/>	1SFL 497 001 R <input type="text"/> <input type="text"/> 11	3.600
110	350	150	300	1 1	AF 210-30-11 <input type="text"/>	1SFL 517 001 R <input type="text"/> <input type="text"/> 11	6.200
140	400	200	350	1 1	AF 260-30-11 <input type="text"/>	1SFL 537 001 R <input type="text"/> <input type="text"/> 11	6.200
160	500	250	400	1 1	AF 300-30-11 <input type="text"/>	1SFL 557 001 R <input type="text"/> <input type="text"/> 11	6.200

### 3-pole Contactors with Ring Tongue on Coil Terminals - Fire and Smoke Approvals

IEC	UL/CSA		Auxiliary contacts fitted		Type	Order code	Weight kg
Rated power 400 V	Rated current $\theta \leq 40^\circ\text{C}$	3-Phase motor rating	General use rating				
<b>AC-3</b>	<b>AC-1</b>	480 V	600 V		state coil voltage <input type="text"/> (see table below)	state coil voltage code <input type="text"/> <input type="text"/> (see table below)	Pack <sup>kg</sup> 1 piece
<b>kW</b>	<b>A</b>	<b>hp</b>	<b>A</b>				
75	250	-	-	1 1	AF 145B-30-11RT <input type="text"/>	1SFL 477 062 R <input type="text"/> <input type="text"/> 11	3.600
90	275	-	-	1 1	AF 185B-30-11RT <input type="text"/>	1SFL 497 062 R <input type="text"/> <input type="text"/> 11	3.600
110	350	-	-	1 1	AF 210B-30-11RT <input type="text"/>	1SFL 517 062 R <input type="text"/> <input type="text"/> 11	6.200
140	400	-	-	1 1	AF 260B-30-11RT <input type="text"/>	1SFL 537 062 R <input type="text"/> <input type="text"/> 11	6.200
160	500	-	-	1 1	AF 300B-30-11RT <input type="text"/>	1SFL 577 062 R <input type="text"/> <input type="text"/> 11	6.200

#### Coil voltages and codes

Voltage <input type="text"/> V - 50/60 Hz	Voltage <input type="text"/> V - d.c.	Code <input type="text"/> <input type="text"/>
-	20 ... 60	7 2 (1)
48 ... 130	48 ... 130	6 9
100 ... 250	100 ... 250	7 0

(1) The connection polarities indicated close to the coil terminals must be respected: **A1** for the **positive** pole and **A2** for the **negative** pole.

#### Electromagnetic compatibility

AF... contactors comply with IEC 60947-1, 60947-4-1 and EN 60947-1, 60947-4-1.

**Notice:** This product has been designed for **environment A**. Use of this product in **environment B** may cause unwanted electromagnetic disturbances in which case the user may be required to take adequate mitigation measures.

#### Definitions:

**Environment A:** "Mainly relates to low-voltage non public or industrial networks/locations/installations (see EN 50082-2 article 4) including highly disturbing sources".

**Environment B:** "Mainly relates to low-voltage public networks (see EN 50082-1 article 5) such as residential, commercial and light industrial locations/installations. Highly disturbing sources such as arc welders are not covered by this environment".

>> Accessory Fitting Details ..... page 249	>> Terminal Marking and Positioning ..... page 294
>> Technical Data..... page 260	>> Dimensions ..... page 313

# AF 50 ... AF 110B and AF 50..RT ... AF 110B..RT 3-pole Contactors

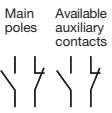
## Main Accessories



### Accessory Fitting Details

#### AF 50 ... AF 110B Contactors with Screw Terminals

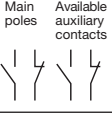
Many configurations of accessories are possible depending on whether these are front mounted or side mounted.

Contactor configuration	Front mounted accessories			Side mounted accessories	
	Auxiliary contact 1-pole CA 5-..	Auxiliary contact 4-pole CA 5-..	Pneumatic timer TP .. A	Auxiliary contact 2-pole CAL...	Interlock unit VE 5-..
<b>Contactor types</b> 					
<b>AF 50 ... AF 75</b>	3 0	0 0	1 to 6 x CA 5-.. or 1 x CA 5-.. (4-pole) + 2 x 1-pole CA 5-..	1 x TP .. A + 2 x CA 5-.. (1-pole)	+ 1 to 2 x CAL 5-11 or 1 x VE 5-2 + 1 x CAL 5-11
<b>AF 50 ... AF 75</b>	3 0	1 1	1 to 6 x CA 5-.. or 1 x CA 5-.. (4-pole) + 2 x 1-pole CA 5-..	1 x TP .. A + 2 x CA 5-.. (1-pole)	+ 1 x CAL 5-11 or 1 x VE 5-2
<b>AF 95, AF 110</b>	3 0	0 0	1 to 6 x CA 5-.. or 1 x CA 5-.. (4-pole) + 2 x 1-pole CA 5-..	-	+ 1 to 2 x CAL 18-11 or 1 x VE 5-2 + 1 x CAL 18-11
<b>AF 95, AF 110 AF 95B, AF 110B</b>	3 0	1 1	1 to 6 x CA 5-.. or 1 x CA 5-.. (4-pole) + 2 x 1-pole CA 5-..	-	+ 1 x CAL 18-11 or 1 x VE 5-2

### Accessory Fitting Details

#### AF 50..RT ... AF 110B..RT Contactors with Ring Tongue Terminals

Many configurations of accessories are possible depending on whether these are front mounted or side mounted.

Contactor configuration	Front mounted accessories	Side mounted accessories
	Auxiliary contact 4-pole CA 5-..RT	Auxiliary contact 2-pole CAL..RT
<b>Contactor types</b> 		
<b>AF 50..RT ... AF 75..RT</b>	1 x CA 5-..RT (4-pole)	-
<b>AF 95B..RT AF 110B..RT</b>	1 x CA 5-..RT (4-pole)	+ 1 x CAL 18-11RT

# AF 145 ... AF 300, AF 145B ... AF 300B and AF 145B..RT ... AF 300B..RT 3-pole Contactors

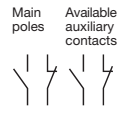
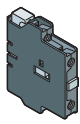
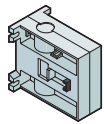



## Main Accessories



### Accessory Fitting Details

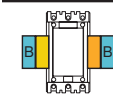
#### AF 145 ... AF 300B Contactors with Screw on Coil Terminals

Many configurations of accessories are possible depending on whether these are side mounted.

<p><b>Contactor configuration</b></p> <p>Main poles Available auxiliary contacts</p>  <p><b>Contactor types</b></p>	<p><b>Side mounted accessories</b> (front mounted accessories are not available on large AF... or AF..B... contactors)</p>  <p><b>Add-on auxiliary contact blocks CAL 18-11, CAL 18-11B</b></p>  <p><b>Mechanical interlock units</b> (For 2 horizontal mounted contactors)</p>	<p><b>Mounting and positioning</b></p> <ul style="list-style-type: none"> <li> Factory mounted auxiliary contacts</li> <li> Add-on CAL 18-11 auxiliary contacts</li> <li> Add-on CAL 18-11B auxiliary contacts</li> </ul>
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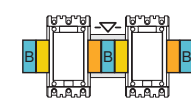
#### Contactor types + auxiliary contact blocks

AF 145 ... AF 300	3 0 1 1	1 x CAL 18-11 + 2 x CAL 18-11B	-
AF 145B ... AF 300B			

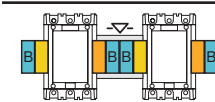


#### Contactor types with mechanical interlocking + auxiliary contact blocks

AF 145, AF 185	3 0 1 1	2 x CAL 18-11 (1) + 3 x CAL 18-11B (1) + VM..H (2)	
AF 145B, AF 185B			



AF 210 ... AF 300	3 0 1 1	2 x CAL 18-11 (1) + 4 x CAL 18-11B (1) + VM..H (2)	
AF 210B ... AF 300B			

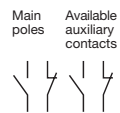
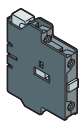
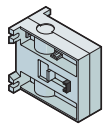




(1) Total number of auxiliary contact blocks for two contactors. (2) Interlock type according to the contactor ratings (see "Accessories").

### Accessory Fitting Details

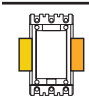
#### AF 145B..RT ... AF 300B..RT Contactors with Ring Tongue on Coil Terminals

Many configurations of accessories are possible depending on whether these are side mounted.

<p><b>Contactor configuration</b></p> <p>Main poles Available auxiliary contacts</p>  <p><b>Contactor types</b></p>	<p><b>Side mounted accessories</b> (front mounted accessories are not available on large AF..B..RT contactors)</p>  <p><b>Add-on auxiliary contact blocks CAL 18-11RT</b></p>  <p><b>Mechanical interlock units</b> (For 2 horizontal mounted contactors)</p>	<p><b>Mounting and positioning</b></p> <ul style="list-style-type: none"> <li> Factory mounted auxiliary contacts</li> <li> Add-on CAL 18-11RT auxiliary contacts</li> </ul>
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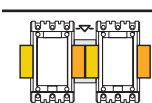
#### Contactor types + auxiliary contact blocks

AF 145B..RT ... AF 300B..RT	3 0 1 1	1 x CAL 18-11RT	-
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#### Contactor types with mechanical interlocking + auxiliary contact blocks

AF 145B..RT ... AF 300B..RT	3 0 1 1	2 x CAL 18-11RT (1) + VM..H (2)	
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(1) Total number of auxiliary contact blocks for two contactors. (2) Interlock type according to the contactor ratings (see "Accessories").

# TAE 50 ... TAE 110 and TAE 50..RT, TAE 75..RT 3-pole Contactors

d.c. Operated - Large Coil Voltage Range



## Application

**TAE 50 ... TAE 110...** contactors are mainly used for controlling 3-phase motors and more generally for controlling power circuits up to 690 V a.c. / 1000 V a.c. or 220 / 440 V d.c. Example: battery supply.

The **TAE...** version offers a large coil voltage range with standard double-winding d.c. coils.

## Description

The **TAE 50 ... TAE 110** 3-pole contactors are of the block type design.

**TAE 50..RT, TAE 75..RT** contactors are the ring tongue terminal version of the **TAE 50, TAE 75** range.

Note: for larger d.c. operated contactors: use AF 95B..RT and AF 110B..RT types.

- Main poles and auxiliary contact blocks
  - TAE 95, TAE 110, TAE 50..(RT), TAE 75..(RT) 1-stack contactors:**
    - 3 main poles,
    - front or side mounted add-on auxiliary contact blocks.
- Control circuit: d.c. operated.
- Accessories: a wide range of accessories is available.

## Variants

- 4-pole: **TAE 45 ... TAE 75** contactors with screw terminals (with 4 N.O. main poles).
- 4-pole: **TAE 45..RT ... TAE 75..RT** contactors with ring tongue terminals (with 4 N.O. main poles).

**TAE... and TAE..RT contactors general design**

Location of surge suppressors.

Clear marking of coil voltages.

Quick fixing on mounting rail according to IEC 60715, EN 60715 standards:  
– 35 x 15 mm  
– 75 x 25 mm

Location of side-mounted accessories (on right or left hand side).

Holes for screw fixing (screws not supplied).

Degree of protection of terminals according to IEC 60947-1:  
– TAE 50..RT and TAE 75..RT contactors IP 10 for all terminals.

Terminal marking according to IEC 60947-4-1, EN 50005, EN 50012 and NEMA standards.

Location of function marker.

Stops for attaching front mounted accessories.

Terminals delivered in open position with captive screws.  
Screwdriver guidance for all terminals.  
Degree of protection (IP..) of terminals according to IEC 60947-1:  
TAE 50 ... TAE 110 contactors:  
– IP 10 for main terminals,  
– IP 20 for auxiliary terminals.

Terminal screws:  
– TAE 50, TAE 75, TAE 50..RT, TAE 75..RT contactors:  
M6 Pozidriv (+,-) No. 2 for main terminals,  
M3.5 Pozidriv (+,-) No. 2 for coil terminals.  
– TAE 95, TAE 110 contactors:  
M8 Hexagon socket (s=4mm) for main terminals,  
M3.5 Pozidriv (+,-) No. 2 for coil terminals.

**Add-on lagging contact (factory mounted) for insertion of the "holding" winding.**  
N.C. lagging auxiliary contact block with built-in varistor:

- CDL 5-01 type fitted on TAE 50, TAE 75, TAE 50..RT and TAE 75..RT contactors,
- CCL 18-01 type fitted on TAE 95, TAE 110 contactors

\* Extra RV 5 (or RT 5) surge suppressor can be added on to the "Pull-in" winding, if required. Please order separately (see "Accessories").



# TAE 50 ... TAE 110 and TAE 50..RT, TAE 75..RT 3-pole Contactors



d.c. Operated - Large Coil Voltage Range

## Ordering Details

### 3-pole Contactors with Screw Terminals

IEC		UL/CSA		Auxiliary contacts fitted		Type	Order code	Weight kg
Rated power 400 V	Rated current $\theta \leq 40^\circ\text{C}$	3-Phase motor rating	General use rating	1 <sup>st</sup> stack	2 <sup>nd</sup> stack			
AC-3 kW	AC-1 A	480 V hp	600 V A			state coil voltage <input type="checkbox"/> <input type="checkbox"/> (see table below)	state coil voltage code <input type="checkbox"/> <input type="checkbox"/> (see table below)	Pack <sup>ing</sup> 1 piece
22	100	-	-	--	--	TAE 50-30-00 <input type="checkbox"/> <input type="checkbox"/>	1SBL 359 061 R <input type="checkbox"/> <input type="checkbox"/> 00	1.200
				1 1	--	TAE 50-30-11 <input type="checkbox"/> <input type="checkbox"/>	1SBL 359 061 R <input type="checkbox"/> <input type="checkbox"/> 11	1.240
37	125	-	-	--	--	TAE 75-30-00 <input type="checkbox"/> <input type="checkbox"/>	1SBL 419 061 R <input type="checkbox"/> <input type="checkbox"/> 00	1.200
				1 1	--	TAE 75-30-11 <input type="checkbox"/> <input type="checkbox"/>	1SBL 419 061 R <input type="checkbox"/> <input type="checkbox"/> 11	1.240
45	145	-	-	--	--	TAE 95-30-00 <input type="checkbox"/> <input type="checkbox"/>	1SFL 439 061 R <input type="checkbox"/> <input type="checkbox"/> 00	2.040
				1 1	--	TAE 95-30-11 <input type="checkbox"/> <input type="checkbox"/>	1SFL 439 061 R <input type="checkbox"/> <input type="checkbox"/> 11	2.070
55	160	-	-	--	--	TAE 110-30-00 <input type="checkbox"/> <input type="checkbox"/>	1SFL 459 061 R <input type="checkbox"/> <input type="checkbox"/> 00	2.040
				1 1	--	TAE 110-30-11 <input type="checkbox"/> <input type="checkbox"/>	1SFL 459 061 R <input type="checkbox"/> <input type="checkbox"/> 11	2.070



TAE 50-30-00

1SBCS 8375 4F0304



TAE 50-30-00



1SBCS 9206 4F0303



TAE 50-30-00RT

1SBCS 8183 3F0301


### 3-pole Contactors with Ring Tongue Terminals

IEC		UL/CSA		Auxiliary contacts fitted		Type	Order code	Weight kg
Rated power 400 V	Rated current $\theta \leq 40^\circ\text{C}$	3-Phase motor rating	General use rating	1 <sup>st</sup> stack	2 <sup>nd</sup> stack			
AC-3 kW	AC-1 A	480 V hp	600 V A			state coil voltage <input type="checkbox"/> <input type="checkbox"/> (see table below)	state coil voltage code <input type="checkbox"/> <input type="checkbox"/> (see table below)	Pack <sup>ing</sup> 1 piece
22	100	-	-	--	--	TAE 50-30-00RT <input type="checkbox"/> <input type="checkbox"/>	1SBL 359 060 R <input type="checkbox"/> <input type="checkbox"/> 00	1.200
37	125	-	-	--	--	TAE 75-30-00RT <input type="checkbox"/> <input type="checkbox"/>	1SBL 419 060 R <input type="checkbox"/> <input type="checkbox"/> 00	1.200

### Coil voltages and codes

Voltage <input type="checkbox"/> <input type="checkbox"/> V - d.c.	Code <input type="checkbox"/> <input type="checkbox"/>
17 ... 32	5 1
25 ... 45	5 2
36 ... 65	5 4
42 ... 78	5 8
50 ... 90	5 5
77 ... 143	6 2
90 ... 150	6 6
152 ... 264	6 8

Other voltages: please consult us.

 Voltage tolerances (-15 % and +10 %) included in the  $U_c$  min. and  $U_c$  max. values.

>> Accessory Fitting Details ..... page 252  
>> Technical Data..... page 260

>> Terminal Marking and Positioning..... pages 292, 293  
>> Dimensions..... page 315

# TAE 50 ... TAE 110 and TAE 50..RT, TAE 75..RT 3-pole Contactors

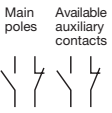
## Main Accessories



### Accessory Fitting Details

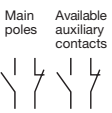
#### TAE 50 ... TAE 110 Contactors with Screw Terminals

Many configurations of accessories are possible depending on whether these are front mounted or side mounted.

Contactor configuration	Front mounted accessories			Side mounted accessories	
	Auxiliary contact 1-pole CA 5-..	Auxiliary contact 4-pole CA 5-..	Pneumatic timer TP .. A	Auxiliary contact 2-pole CAL...	Interlock unit VE 5-..
<b>Contactor types</b> 					
<b>TAE 50, TAE 75</b>	3 0	0 0	1 to 6 x CA 5-.. or 1 x CA 5-.. (4-pole) + 2 x 1-pole CA 5-..	1 x TP .. A + 2 x CA 5-.. (1-pole)	+ 1 x CAL 5-11 or 1 x VE 5-2
<b>TAE 50, TAE 75</b>	3 0	1 1	1 to 6 x CA 5-.. or 1 x CA 5-.. (4-pole) + 2 x 1-pole CA 5-..	1 x TP .. A + 2 x CA 5-.. (1-pole)	-
<b>TAE 95, TAE 110</b>	3 0	0 0	1 to 6 x CA 5-.. or 1 x CA 5-.. (4-pole) + 2 x 1-pole CA 5-..	-	+ 1 x CAL 18-11 or 1 x VE 5-2
<b>TAE 95, TAE 110</b>	3 0	1 1	1 to 6 x CA 5-.. or 1 x CA 5-.. (4-pole) + 2 x 1-pole CA 5-..	-	-

### Accessory Fitting Details

#### TAE 50..RT, TAE 75..RT Contactors with Ring Tongue Terminals

Contactor configuration	Front mounted accessories	
Contactor types	Auxiliary contact 4-pole CA 5-..RT	
		
<b>TAE 50..RT TAE 75..RT</b>	3 0	0 0
		1 x CA 5-..RT (4-pole)

# GTAE 75..RT

## 1-pole Contactors for d.c. Switching

### d.c. Operated - Large Coil Voltage Range



GTAE 75-10-00RT

### Ordering Details

IEC Rated operational current <b>DC-1</b> 440 V $\theta \leq 55^\circ\text{C}$ <b>A</b>	Available auxiliary contacts 	Type	Order code	Weight kg  Pack <sup>ing</sup> 1 piece
100	- -	GTAE 75-10-00RT	25-45 V d.c. 1SBL 419 028 R9002	1.260
100	- -	GTAE 75-10-00RT	17-32 V d.c. 1SBL 419 028 R9004	1.260

**Note:** for other voltages, please consult your ABB sales office.

### Application

**GTAE 75..RT** contactors are designed for d.c. circuit switching.

Arc suppression is more difficult in d.c. than in a.c. To choose a contactor, it is necessary to know the current and voltage to be broken as well as the L/R time constant of the power circuit to be controlled.

For your information, typical DC-1 time constant values for non inductive loads such as resistance furnaces: L/R  $\approx$  1 ms,

**Remark:** the addition of a resistor in parallel with an inductive winding makes arc suppression easier.

### Description

**GTAE 75..RT** contactors are of the block type design with ring tongue terminals.

● Main poles

**GTAE 75..RT** contactors are fitted with arc chutes with permanent magnets specially designed for d.c. breaking.

The three contactor paths are arranged in series via two supplied and fitted insulated connections (25 mm<sup>2</sup>). The **GTAE 75..RT** are "single-pole" devices for which the connection polarities indicated next to the connection terminals must be respected. Furthermore, they are marked **1L1 for the positive terminal** and **2T1 for the negative terminal**.

**Remark:** Main contacts cannot be changed.

● Control circuit: d.c. operated with large coil voltage range.

### Specific Technical Data

- Rated insulation voltage  $U_i = 1000$  V d.c. according to IEC 60947-4-1 and EN 60947-4-1.
- Maximum switching frequencies: 300 operating cycles/h.

Maximum rated operational current  $I_e$  acc. to IEC

DC-1	$U_e \leq 440$ V	100 A	2 x 25 mm <sup>2</sup>
$\theta \leq 55^\circ\text{C}$	$U_e \leq 600$ V	75 A	1 x 25 mm <sup>2</sup>
	$U_e \leq 1000$ V	35 A	1 x 10 mm <sup>2</sup>

### Connection Diagrams

In d.c. circuits, the source to earth (or frame) connection mode is an important element.

Three modes are mainly used:

**A** – insulated source, i.e. unearthed (or not connected to the frame),

**B** – source earthed via its central point,

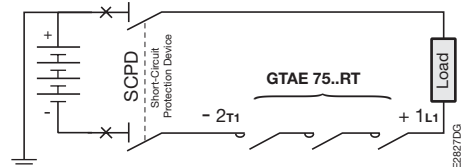
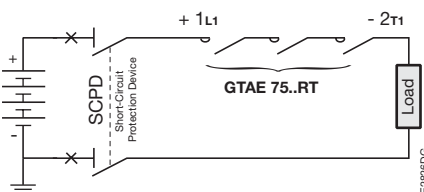
**C** – source earthed via one of its outer poles.

Modes **A** and **B** do not impose any constraints with regard to the distribution of the contactor poles between the two source / load connecting branches. Mode **C** requirements are therefore suitable for modes **A** and **B**.

For mode **C**, all the poles necessary for breaking must be installed in series between the load and the unearthed (also not connected to the frame) source polarity.

**We recommend this solution for all connection modes.**

The above provisions relate to power circuit switching, the SCPD (Short-Circuit Protection Device) must comply with protection rules.



>> Terminal Marking and Positioning..... page 294

>> Dimensions..... page 328

# TAL 9 ... TAL 26 and TAL 9..RT ... TAL 26..RT


## 4-pole Contactors

### d.c. Operated - Large Coil Voltage Range



### Ordering Details

#### 4-pole Contactors with Screw Terminals


IEC	UL/CSA	Auxiliary contacts fitted	Type	Order code	Weight kg
Rated current $\theta \leq 40^\circ\text{C}$	General use rating				
<b>AC-1</b>	600 V		state coil voltage <input type="text"/> (see table below)	state coil voltage code <input type="checkbox"/> <input type="checkbox"/> (see table below)	Pack <sup>ing</sup> 1 piece
<b>A</b>	<b>A</b>				

#### 4 N.O. Main Poles


25	21	--	TAL 9-40-00 <input type="text"/>	1SBL 143 261 R <input type="checkbox"/> <input type="checkbox"/> 00	0.520
30	30	--	TAL 16-40-00 <input type="text"/>	1SBL 183 261 R <input type="checkbox"/> <input type="checkbox"/> 00	0.520
45	40	--	TAL 26-40-00 <input type="text"/>	1SBL 243 261 R <input type="checkbox"/> <input type="checkbox"/> 00	0.750

#### 2 N.O. + 2 N.C. Main Poles

25	21	--	TAL 9-22-00 <input type="text"/>	1SBL 143 561 R <input type="checkbox"/> <input type="checkbox"/> 00	0.520
30	30	--	TAL 16-22-00 <input type="text"/>	1SBL 183 561 R <input type="checkbox"/> <input type="checkbox"/> 00	0.520
45	40	--	TAL 26-22-00 <input type="text"/>	1SBL 243 561 R <input type="checkbox"/> <input type="checkbox"/> 00	0.750

Note: The polarity on the coil terminals (A1+ and A2-) must be respected for TAL... contactors 

#### 4-pole Contactors with Ring Tongue Terminals

IEC	UL/CSA	Auxiliary contacts fitted	Type	Order code	Weight kg
Rated current $\theta \leq 40^\circ\text{C}$	General use rating				
<b>AC-1</b>	600 V		state coil voltage <input type="text"/> (see table below)	state coil voltage code <input type="checkbox"/> <input type="checkbox"/> (see table below)	Pack <sup>ing</sup> 1 piece
<b>A</b>	<b>A</b>				

#### 4 N.O. Main Poles

25	21	--	TAL 9-40-00RT <input type="text"/>	1SBL 143 260 R <input type="checkbox"/> <input type="checkbox"/> 00	0.520
30	30	--	TAL 16-40-00RT <input type="text"/>	1SBL 183 260 R <input type="checkbox"/> <input type="checkbox"/> 00	0.520
45	40	--	TAL 26-40-00RT <input type="text"/>	1SBL 243 260 R <input type="checkbox"/> <input type="checkbox"/> 00	0.750

#### 2 N.O. + 2 N.C. Main Poles

25	21	--	TAL 9-22-00RT <input type="text"/>	1SBL 143 560 R <input type="checkbox"/> <input type="checkbox"/> 00	0.520
30	30	--	TAL 16-22-00RT <input type="text"/>	1SBL 183 560 R <input type="checkbox"/> <input type="checkbox"/> 00	0.520
45	40	--	TAL 26-22-00RT <input type="text"/>	1SBL 243 560 R <input type="checkbox"/> <input type="checkbox"/> 00	0.750

Note: The polarity on the coil terminals (A1+ and A2-) must be respected for TAL..RT contactors 



TAL 9-40-00



TAL 9-40-00RT




TAL 26-40-00RT

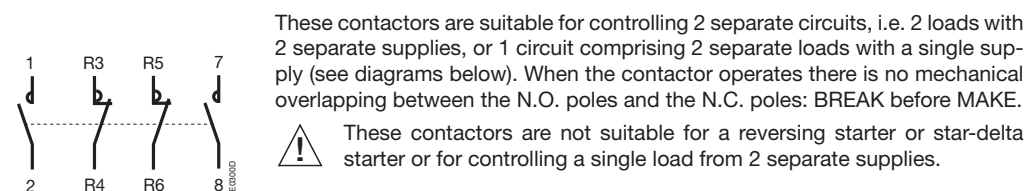
#### Coil voltages and codes

Voltage <input type="text"/> V - d.c.	Code <input type="checkbox"/> <input type="checkbox"/>
17 ... 32	5 1
25 ... 45	5 2
36 ... 65	5 4
42 ... 78	5 8
50 ... 90	5 5
77 ... 143	6 2
90 ... 150	6 6
152 ... 264	6 8

Other voltages: please consult us.

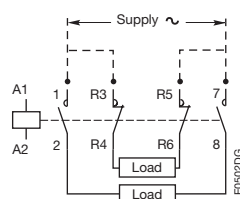
 Voltage tolerances (-15 % and +10 %) included in the  $U_c$  min. and  $U_c$  max. values.

#### Remark for 4-pole contactors fitted with 2 N.O. + 2 N.C. main poles

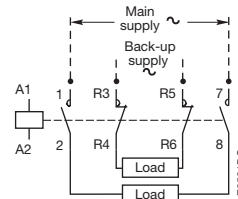


#### Block diagrams

##### ● Single supply and 2 separate loads



##### ● 2 separate supplies and 2 separate loads



>> Accessory Fitting Details ..... page 255  
>> Technical Data..... page 260

>> Terminal Marking and Positioning..... pages 295, 296  
>> Dimensions ..... page 318



# TAL 9 ... TAL 26 and TAL 9..RT ... TAL 26..RT 4-pole Contactors



## Main Accessories

### Accessory Fitting Details

#### TAL 9 ... TAL 26 Contactors with Screw Terminals

Many configurations of accessories are possible depending on whether these are front mounted or side mounted.

Contactor configuration	Front mounted accessories		Side mounted accessories (7)			
Contactor types	Main poles	Available auxiliary contacts	Auxiliary contact 1-pole CA 5-..	Auxiliary contact 4-pole CA 5-..	Auxiliary contact 2-pole CAL 5-11	Interlock unit VM 5-.. or VE 5-..
TAL 9, TAL 16	4 0	0 0	1 to 4 x CA 5-.. (1)	or 1 x CA 5-.. (4-pole) (1)	1 x CAL 5-11	+ 1 x VM 5-1 (2) or VE 5-1 (2)(3)
TAL 9, TAL 16	2 2	0 0	1 to 4 x CA 5-.. (4)	or 1 x CA 5-.. (4-pole) (4)	1 x CAL 5-11	-
TAL 26	4 0	0 0	1 to 4 x CA 5-.. (5)	or 1 x CA 5-.. (4-pole) (5)	1 x CAL 5-11	+ 1 x VM 5-1 or VE 5-1
TAL 26	2 2	0 0	1 to 4 x CA 5-.. (6)	or 1 x CA 5-.. (4-pole) (6)	1 x CAL 5-11	-

- (1) 2 N.C. auxiliary contacts maximum in all mounting positions except 5. In position 5 no N.C. auxiliary contact allowed.  
 (2) When **VM5-1** or **VE5-1** interlock unit is used, CAL 5-11 auxiliary contact is not permitted in any position.  
 (3) With **VE5-1** interlock unit, a maximum of 3 N.O. auxiliary contacts are permitted.  
 (4) 2 N.C. auxiliary contacts maximum.  
 (5) 2 N.C. auxiliary contacts maximum in mounting position 5.  
 (6) N.C. auxiliary contacts are not allowed.  
 (7) Mounting position 1±30° not allowed.

### Accessory Fitting Details

#### TAL 9..RT ... TAL 26..RT Contactors with Ring Tongue Terminals

Many configurations of accessories are possible depending on whether these are front mounted or side mounted.

Contactor configuration	Front mounted accessories		Side mounted accessories (5)	
Contactor types	Main poles	Available auxiliary contacts	Auxiliary contact 4-pole CA 5-..RT	Interlock unit VM 5-1
TAL 9..RT, TAL 16..RT	4 0	0 0	1 x CA 5-..RT (4-pole) (1)	+ 1 x VM 5-1
TAL 9..RT, TAL 16..RT	2 2	0 0	1 x CA 5-..RT (4-pole) (2)	-
TAL 26..RT	4 0	0 0	1 x CA 5-..RT (4-pole) (3)	+ 1 x VM 5-1
TAL 26..RT	2 2	0 0	1 x CA 5-..RT (4-pole) (4)	-

- (1) 2 N.C. auxiliary contacts maximum in all mounting positions except 5. In position 5 no N.C. auxiliary contact allowed.  
 (2) 2 N.C. auxiliary contacts maximum.  
 (3) 2 N.C. auxiliary contacts maximum in mounting position 5.  
 (4) N.C. auxiliary contacts are not allowed.  
 (5) Mounting position 1±30° not allowed.

# AF 45 ... AF 75 and AF 45..RT, AF 75..RT


## 4-pole Contactors



a.c. / d.c. Operated - Wide Voltage Range

### Ordering Details

#### 4-pole Contactors with Screw Terminals

IEC	UL/CSA	Auxiliary contacts fitted	Type	Order code	Weight kg
Rated current $\theta \leq 40^\circ\text{C}$	General use rating				
<b>AC-1</b>	600 V		state coil voltage <input type="text"/>	state coil voltage code <input type="checkbox"/> <input type="checkbox"/>	Pack <sup>19</sup>
<b>A</b>	<b>A</b>		(see table below)	(see table below)	1 piece


#### 4 N.O. Main Poles

70	80	--	AF 45-40-00 <input type="text"/>	1SBL 337 201 R <input type="checkbox"/> <input type="checkbox"/> 00	1.420
100	80	--	AF 50-40-00 <input type="text"/>	1SBL 357 201 R <input type="checkbox"/> <input type="checkbox"/> 00	1.420
125	105	--	AF 75-40-00 <input type="text"/>	1SBL 417 201 R <input type="checkbox"/> <input type="checkbox"/> 00	1.420

#### 2 N.O. + 2 N.C. Main Poles

70	80	--	AF 45-22-00 <input type="text"/>	1SBL 337 501 R <input type="checkbox"/> <input type="checkbox"/> 00	1.420
125	105	--	AF 75-22-00 <input type="text"/>	1SBL 417 501 R <input type="checkbox"/> <input type="checkbox"/> 00	1.420

#### 4-pole Contactors with Ring Tongue Terminals

IEC	UL/CSA	Auxiliary contacts fitted	Type	Order code	Weight kg
Rated current $\theta \leq 40^\circ\text{C}$	General use rating				
<b>AC-1</b>	600 V		state coil voltage <input type="text"/>	state coil voltage code <input type="checkbox"/> <input type="checkbox"/>	Pack <sup>19</sup>
<b>A</b>	<b>A</b>		(see table below)	(see table below)	1 piece

#### 4 N.O. Main Poles

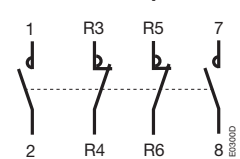
100	80	--	AF 45-40-00RT <input type="text"/>	1SBL 337 210 R <input type="checkbox"/> <input type="checkbox"/> 00	1.420
125	105	--	AF 75-40-00RT <input type="text"/>	1SBL 417 210 R <input type="checkbox"/> <input type="checkbox"/> 00	1.420

#### Coil voltages and codes

Voltage <input type="text"/> V - 50/60 Hz	Voltage <input type="text"/> V - d.c.	Code <input type="checkbox"/> <input type="checkbox"/>
—	20 ... 60	7 2 (1)
48 ... 130	48 ... 130	6 9
100 ... 250	100 ... 250	7 0

(1) The connection polarities indicated close to the coil terminals must be respected: **A1** for the **positive** pole and **A2** for the **negative** pole.

#### Remark for 4-pole contactors fitted with 2 N.O. + 2 N.C. main poles



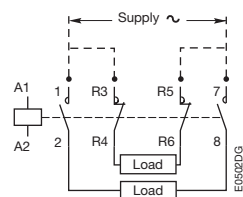
These contactors are suitable for controlling 2 separate circuits, i.e. 2 loads with 2 separate supplies, or 1 circuit comprising 2 separate loads with a single supply (see diagrams below). When the contactor operates there is no mechanical overlapping between the N.O. poles and the N.C. poles: **BREAK before MAKE**.



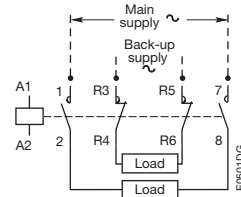
These contactors are not suitable for a reversing starter or star-delta starter or for controlling a single load from 2 separate supplies.

#### Block diagrams

##### ● Single supply and 2 separate loads



##### ● 2 separate supplies and 2 separate loads



>> Electromagnetic compatibility for Environments A and B.....	page 245
>> Accessory Fitting Details.....	page 257
>> Technical Data.....	page 260
>> Terminal Marking and Positioning.....	pages 295, 296
>> Dimensions.....	page 324

# AF 45 ... AF 75 and AF 45..RT, AF 75..RT 4-pole Contactors



## Main Accessories

### Accessory Fitting Details

#### AF 45 ... AF 75 Contactors with Screw Terminals

Many configurations of accessories are possible depending on whether these are front mounted or side mounted.

Contactor configuration	Front mounted accessories			Side mounted accessories		
Contactor types	Main poles	Available auxiliary contacts	Auxiliary contact 1-pole CA 5-..	Auxiliary contact 4-pole CA 5-..	Auxiliary contact 2-pole CAL 5-11	Interlock unit VM 5-.. or VE 5-..
AF 45 ... AF 75	4	0	0	1 to 6 x CA 5-.. or 1 x CA 5-.. (4-pole) + 2 x 1-pole CA 5-..	1 x TP .. A + 2 x 1-pole CA 5-..	1 to 2 x CAL 5-11 or 1 x VE 5-2 + 1 x CAL 5-11
AF 45, AF 75	2	2	0 (1)	1 to 6 x CA 5-.. or 1 x CA 5-.. (4-pole) + 2 x 1-pole CA 5-..	1 x TP .. A + 2 x 1-pole CA 5-..	1 to 2 x CAL 5-11 -

(1) 2 N.C. CA 5-.. auxiliary contacts maximum.

### Accessory Fitting Details

#### AF 45..RT, AF 75..RT Contactors with Ring Tongue Terminals

Contactor configuration	Front mounted accessories			
Contactor types	Main poles	Available auxiliary contacts	Auxiliary contact 4-pole CA 5-..RT	
AF 45..RT, AF 75..RT	4	0	0	1 x CA 5-..RT (4-pole)


# TAE 45 ... TAE 75 and TAE 45..RT, TAE 75..RT 4-pole Contactors



d.c. Operated - Large Coil Voltage Range

## Ordering Details


### 4-pole Contactors with Screw Terminals

IEC	UL/CSA	Auxiliary contacts fitted	Type	Order code	Weight kg
Rated current $\theta \leq 40^\circ\text{C}$	General use rating				
<b>AC-1</b>	600 V		state coil voltage $\underline{\quad}\underline{\quad}$ (see table below)	state coil voltage code $\square\square$ (see table below)	Pack <sup>ng</sup> 1 piece
<b>A</b>	<b>A</b>				

### 4 N.O. Main Poles

70	-	--	TAE 45-40-00 $\underline{\quad}\underline{\quad}$	1SBL 339 261 R $\square\square$ 00	1.430
100	-	--	TAE 50-40-00 $\underline{\quad}\underline{\quad}$	1SBL 359 261 R $\square\square$ 00	1.430
125	-	--	TAE 75-40-00 $\underline{\quad}\underline{\quad}$	1SBL 419 261 R $\square\square$ 00	1.430

### 4-pole Contactors with Ring Tongue Terminals

IEC	UL/CSA	Auxiliary contacts fitted	Type	Order code	Weight kg
Rated current $\theta \leq 40^\circ\text{C}$	General use rating				
<b>AC-1</b>	600 V		state coil voltage $\underline{\quad}\underline{\quad}$ (see table below)	state coil voltage code $\square\square$ (see table below)	Pack <sup>ng</sup> 1 piece
<b>A</b>	<b>A</b>				


### 4 N.O. Main Poles

100	-	--	TAE 45-40-00RT $\underline{\quad}\underline{\quad}$	1SBL 339 260 R $\square\square$ 00	1.430
125	-	--	TAE 75-40-00RT $\underline{\quad}\underline{\quad}$	1SBL 419 260 R $\square\square$ 00	1.430

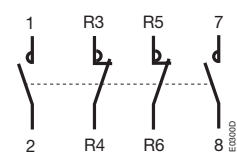
### Coil voltages and codes

Voltage $\underline{\quad}\underline{\quad}$ V - d.c.	Code $\square\square$
17 ... 32	5 1
25 ... 45	5 2
36 ... 65	5 4
42 ... 78	5 8
50 ... 90	5 5
77 ... 143	6 2
90 ... 150	6 6
152 ... 264	6 8


Other voltages: please consult us.

 Voltage tolerances (-15 % and +10 %) included in the  $U_e$  min. and  $U_e$  max. values.

### Remark for 4-pole contactors fitted with 2 N.O. + 2 N.C. main poles



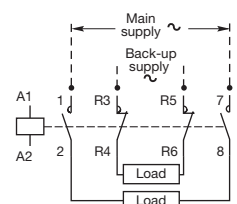
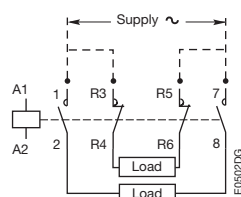
These contactors are suitable for controlling 2 separate circuits, i.e. 2 loads with 2 separate supplies, or 1 circuit comprising 2 separate loads with a single supply (see diagrams below). When the contactor operates there is no mechanical overlapping between the N.O. poles and the N.C. poles: BREAK before MAKE.

 These contactors are not suitable for a reversing starter or star-delta starter or for controlling a single load from 2 separate supplies.

### Block diagrams

● Single supply and 2 separate loads

● 2 separate supplies and 2 separate loads



>> Accessory Fitting Details ..... page 259  
>> Technical Data..... page 260

>> Terminal Marking and Positioning ..... pages 295, 296  
>> Dimensions ..... page 326

# TAE 45 ... TAE 75 and TAE 45..RT, TAE 75..RT 4-pole Contactors

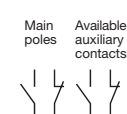




## Main accessories

### Accessory Fitting Details

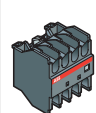
#### TAE 45 ... TAE 75 Contactors with Screw Terminals

Many configurations of accessories are possible depending on whether these are front mounted or side mounted.

Contactor configuration	Front mounted accessories	Side mounted accessories	
<p>Contactor types</p> <p>Main poles: 4</p> <p>Available auxiliary contacts: 0</p> 	<p>Auxiliary contact 1-pole CA 5-..</p> <p>Auxiliary contact 4-pole CA 5-..</p> <p>Pneumatic timer TP .. A</p> 	<p>Auxiliary contact 2-pole CAL 5-11</p> <p>Interlock unit VE 5-..</p> 	
TAE 45 ... TAE 75	4 0 0 0	1 to 6 x CA 5-.. or 1 x CA 5-.. (4-pole) + 2 x 1-pole CA 5-.. or 1 x TP .. A + 2 x 1-pole CA 5-..	+ 1 x CAL 5-11 or 1 x VE 5-2

### Accessory Fitting Details

#### TAE 45..RT, TAE 75..RT Contactors with Ring Tongue Terminals

Contactor configuration	Front mounted accessories	
<p>Contactor types</p> <p>Main poles: 4</p> <p>Available auxiliary contacts: 0</p> 	<p>Auxiliary contact 4-pole CA 5-..RT</p> 	
TAE 45..RT, TAE 75..RT	4 0 0 0	1 x CA 5-..RT (4-pole)



# TAL..., AF..., AF..B..., TAE... Contactors with Screw Terminals

## Technical Data

### Main Pole - Utilization Characteristics acc. to IEC

Contactor types: TAL...	9	12	16	26	30	40	-	-	-	-	-	-
TAE..., AF..., AF..B...	-	-	-	-	-	-	45	50	63	75	95	110
<b>Rated operational voltage <math>U_e</math> max. V</b>	690						1000 (690 for AF.. contactors)				1000	
<b>Rated frequency limits Hz</b>	25 ... 400											
<b>Conventional free-air thermal current <math>I_{th}</math></b> acc. to IEC 60947-4-1, open contactors, $\theta \leq 40^\circ\text{C}$	26	28	30	45	65	65	100	100	125	125	145	160
with conductor cross-sectional area $\text{mm}^2$	4	4	4	6	16	16	35	35	50	50	50	70
<b>Rated operational current <math>I_e</math> / AC-1</b> for air temperature close to contactor												
$U_e$ max. 690 V - 50/60 Hz												
$\theta \leq 40^\circ\text{C}$	A 25	A 27	A 30	A 45	A 55	A 60	A 70	A 100	A 115	A 125	A 145	A 160
$\theta \leq 55^\circ\text{C}$	A 22	A 25	A 27	A 40	A 55	A 60	A 60	A 85	A 95	A 105	A 135	A 145
$\theta \leq 70^\circ\text{C}$ (3)	A 18	A 20	A 23	A 32	A 39	A 42	A 50	A 70	A 80	A 85	A 115	A 130
with conductor cross-sectional area $\text{mm}^2$	2.5	4	4	6	10	16	25	35	50	50	50	70
<b>Utilization category AC-3</b> for air temperature close to contactor $\leq 55^\circ\text{C}$												
<b>Max. rated operational current <math>I_e</math> AC-3 (1)</b>												
220-230-240 V	A 9	A 12	A 17	A 26	A 33	A 40	A 40	A 53	A 65	A 75	A 96	A 110
3-phase motors 380-400 V	A 9	A 12	A 17	A 26	A 32	A 37	A 37	A 50	A 65	A 75	A 96	A 110
415 V	A 9	A 12	A 17	A 26	A 32	A 37	A 37	A 50	A 65	A 75	A 96	A 110
440 V	A 9	A 12	A 16	A 26	A 32	A 37	A 37	A 45	A 65	A 70	A 93	A 100
500 V	A 9	A 12	A 14	A 22	A 28	A 33	A 33	A 45	A 55	A 65	A 80	A 100
690 V	A 7	A 9	A 10	A 13	A 18	A 21	A 25	A 35	A 43	A 46	A 65	A 82
1000 V	A -	A -	A -	A -	A -	A -	A -	A 23 (4)	A 25 (4)	A 28 (4)	A 30	A 30
<b>Rated operational power AC-3 (1)</b>												
1500 r.p.m. 50 Hz 220-230-240 V	kW 2.2	kW 3	kW 4	kW 6.5	kW 9	kW 11	kW 11	kW 15	kW 18.5	kW 22	kW 25	kW 30
1800 r.p.m. 60 Hz 380-400 V	kW 4	kW 5.5	kW 7.5	kW 11	kW 15	kW 18.5	kW 18.5	kW 22	kW 30	kW 37	kW 45	kW 55
3-phase motors 415 V	kW 4	kW 5.5	kW 9	kW 11	kW 15	kW 18.5	kW 18.5	kW 25	kW 37	kW 40	kW 55	kW 59
440 V	kW 4	kW 5.5	kW 9	kW 15	kW 18.5	kW 22	kW 22	kW 25	kW 37	kW 40	kW 55	kW 59
500 V	kW 5.5	kW 7.5	kW 9	kW 15	kW 18.5	kW 22	kW 22	kW 30	kW 37	kW 45	kW 55	kW 59
690 V	kW 5.5	kW 7.5	kW 9	kW 11	kW 15	kW 18.5	kW 22	kW 30	kW 37	kW 40	kW 55	kW 75
1000 V	kW -	kW -	kW -	kW -	kW -	kW -	kW -	kW 30 (4)	kW 33 (4)	kW 37 (4)	kW 40	kW 40
<b>Rated making capacity AC-3</b>	10 x $I_e$ AC-3 acc. to IEC 60947-4-1											
<b>Rated breaking capacity AC-3</b>	8 x $I_e$ AC-3 acc. to IEC 60947-4-1											
<b>Short-circuit protection</b> for contactors without thermal O/L relay - Motor protection excluded (2)												
$U_e \leq 500$ V a.c. - gG type fuse	A 25	A 32	A 32	A 50	A 63		A 80	A 100	A 125	A 160	A 160	A 200
<b>Rated short-time withstand current <math>I_{cw}</math></b> at 40 °C ambient temp., in free air, from a cold state												
1 s	A 250	A 280	A 300	A 400	A 600		A 1000				A 1320	
10 s	A 100	A 120	A 140	A 210	A 400		A 650				A 800	
30 s	A 60	A 70	A 80	A 110	A 225		A 370				A 500	
1 min	A 50	A 55	A 60	A 90	A 150		A 250				A 350	
15 min	A 26	A 28	A 30	A 45	A 65		A 110	A 110	A 135	A 135	A 160	A 175
<b>Maximum breaking capacity</b>												
$\cos \phi = 0.45$ 440 V	A 250			A 420	A 470		A 900	A 1300			A 1160	
( $\cos \phi = 0.35$ for $I_e > 100$ A) 690 V	A 100			A 106	A 175		A 490	A 630			A 800	
<b>Heat dissipation per pole <math>I_e</math> / AC-1 W</b>	0.8	1	1.2	1.8	2.5	3	2.5	5	6.5	7	6.5	7.5
$I_e$ / AC-3 W	0.1	0.2	0.35	0.6	0.9	1.3	0.65	1.3	1.5	2	2.7	3.6
<b>Max. electrical switching frequency</b>												
- for AC-1 cycles/h	600						300					
- for AC-3 cycles/h	1200						300					
- for AC-2, AC-4 cycles/h	300						150					
<b>Mechanical durability</b>												
- millions of operating cycles	10 (5 for TAE... contactors)											
- max. switching frequency cycles/h	3600 (300 for AF.. contactors)											



(1) For the corresponding kW/A or hp/A values of 1500 r.p.m., 50Hz or 1800 r.p.m., 60Hz, 3-phase motors, see "Main Catalogue".  
(2) For the protection of motor starters against short circuits, see "Main Catalogue".  
(3) Authorized for TAL..., TAE 45 ... TAE 75 contactors for ambient temperature  $55^\circ\text{C} < \theta \leq 70^\circ\text{C}$  according to IEC 60077.  
Unauthorized for TAE 95 and TAE 110 contactors for ambient temperature  $55^\circ\text{C} < \theta \leq 70^\circ\text{C}$ : select AF 95(B) and AF 110(B) contactors.  
(4) AF... contactors excluded.



# AF..., AF..B... Contactors with Screw Terminals

## Technical Data

### Main Pole - Utilization Characteristics acc. to IEC

Contactor types: AF..., AF..B...	145	185	210	260	300	
<b>Rated operational voltage <math>U_e</math> max. V</b>	1000		690			
<b>Rated frequency limits Hz</b>	25 ... 400					
<b>Conventional free-air thermal current <math>I_{th}</math></b> acc. to IEC 60947-4-1, open contactors, $\theta \leq 40^\circ\text{C}$	<b>A</b> 250	275	350	400	500	
with conductor cross-sectional area (3) <b>mm<sup>2</sup></b>	120	150	185	240	300 (4)	
<b>Rated operational current <math>I_e</math> / AC-1</b> for air temperature close to contactor						
<b><math>U_e</math> max. 690 V</b> - 50/60 Hz	$\theta \leq 40^\circ\text{C}$ <b>A</b>	<b>250</b>	<b>275</b>	<b>350</b>	<b>400</b>	<b>500 (4)</b>
	$\theta \leq 55^\circ\text{C}$ <b>A</b>	230	250	300	350	400
	$\theta \leq 70^\circ\text{C}$ <b>A</b>	180	180	240	290	325
<b><math>U_e</math> max. 1000 V</b> - 50/60 Hz	$\theta \leq 40^\circ\text{C}$ <b>A</b>	<b>180</b>	<b>200</b>	–	–	–
	$\theta \leq 55^\circ\text{C}$ <b>A</b>	180	200	–	–	–
	$\theta \leq 70^\circ\text{C}$ <b>A</b>	180	180	–	–	–
with conductor cross-sectional area <b>mm<sup>2</sup></b>	120	150	185	240	240 (4)	
<b>Utilization category AC-3</b> for air temperature close to contactor $\leq 55^\circ\text{C}$						
<b>Max. rated operational current <math>I_e</math> AC-3 (1)</b>						
 3-phase motors	220-230-240 V <b>A</b>	145	185	210	260	305
	380-400 V <b>A</b>	145	185	210	260	305
	415 V <b>A</b>	145	185	210	260	300
	440 V <b>A</b>	145	185	210	240	280
	500 V <b>A</b>	145	170	210	240	280
	690 V <b>A</b>	120	170	210	220	280
	1000 V <b>A</b>	80	95	–	–	–
	<b>Rated operational power AC-3 (1)</b>					
 3-phase motors	1500 r.p.m. 50 Hz 220-230-240 V <b>kW</b>	45	55	59	80	90
	1800 r.p.m. 60 Hz 380-400 V <b>kW</b>	75	90	110	140	160
	415 V <b>kW</b>	75	90	110	140	160
	440 V <b>kW</b>	75	90	110	140	160
	500 V <b>kW</b>	90	110	132	180	200
	690 V <b>kW</b>	110	132	160	200	250
	1000 V <b>kW</b>	110	132	–	–	–
	<b>Rated making capacity AC-3</b>	10 x $I_e$ AC-3 acc. to IEC 60947-4-1				
<b>Rated breaking capacity AC-3</b>	8 x $I_e$ AC-3 acc. to IEC 60947-4-1					
<b>Short-circuit protection</b> for contactors without thermal O/L relay - Motor protection excluded (2)						
$U_e \leq 500$ V a.c. - gG type fuse <b>A</b>	315	355	400	500		
<b>Rated short-time withstand current <math>I_{cw}</math></b> at 40 °C ambient temp., in free air, from a cold state						
1 s <b>A</b>	1800	2000	2500	3500		
10 s <b>A</b>	1200	1500	1700	2400		
30 s <b>A</b>	800	1000	1200	1500		
1 min <b>A</b>	600	800	1000	1100		
15 min <b>A</b>	280	320	400	500		
<b>Maximum breaking capacity</b>						
$\cos \varphi = 0.45$ 440 V <b>A</b>	1500	2000	2300	2600	3000	
( $\cos \varphi = 0.35$ for $I_e > 100$ A) 690 V <b>A</b>	1200	1600	2000	2400	2500	
<b>Heat dissipation per pole <math>I_e</math> / AC-1 W</b>	13	16	18	25	32	
$I_e$ / AC-3 <b>W</b>	5	8	9	14	18	
<b>Max. electrical switching frequency</b>						
– for AC-1 <b>cycles/h</b>	300		300			
– for AC-3 <b>cycles/h</b>	300		300			
– for AC-2, AC-4 <b>cycles/h</b>	150		150			
<b>Mechanical durability</b>						
– millions of operating cycles	5					
– max. switching frequency <b>cycles/h</b>	300					

(1) For the corresponding kW/A or hp/A values of 1500 r.p.m., 50Hz or 1800 r.p.m., 60Hz, 3-phase motors, see "Main Catalogue".

(2) For the protection of motor starters against short circuits, see "Main Catalogue".

(3) Conductors with preparation.

(4) For currents above 450 A use 300 mm<sup>2</sup> and terminal extension / enlargement pieces (LX 300 / LW 300: see "Main Catalogue").



# TAL..RT, AF..RT, AF..B..RT, TAE..RT Contactors with Ring Tongue Terminals

## Technical Data

### Main Pole - Utilization Characteristics acc. to IEC

Contactor types: TAL..RT	9	12	16	26	30	40	-	-	-	-	-	-	
AF..RT, AF..B..RT, TAE..RT	-	-	-	-	-	-	45	50	63	75	95	110	
<b>Rated operational voltage <math>U_e</math> max. V</b>	690						1000 (690 for AF.. contactors)				1000		
<b>Rated frequency limits Hz</b>	25 ... 400												
<b>Conventional free-air thermal current <math>I_{th}</math></b> acc. to IEC 60947-4-1, open contactors, $\theta \leq 40^\circ\text{C}$	26	28	30	45	65	65	100	100	125	125	145	160	
with conductor cross-sectional area <b>mm<sup>2</sup></b>	2 x 2.5	2 x 2.5	2 x 2.5	2 x 4	1 x 16	1 x 16	2 x 25	2 x 25	2 x 25	2 x 25	50	70	
<b>Rated operational current <math>I_e</math> / AC-1</b> for air temperature close to contactor													
$U_e$ max. 690 V													
50/60 Hz													
with conductor cross-sectional area <b>mm<sup>2</sup></b>	2 x 2.5	2 x 2.5	2 x 2.5	2 x 4	1 x 10	1 x 16	2 x 25	2 x 25	2 x 25	2 x 25	50	70	
$U_e$ max. 690 V													
50/60 Hz													
with conductor cross-sectional area <b>mm<sup>2</sup></b>	1 x 2.5	1 x 2.5	1 x 2.5	1 x 6	-	-	1 x 25	1 x 25	1 x 25	1 x 25	-	-	
<b>Utilization category AC-3</b> for air temperature close to contactor $\leq 55^\circ\text{C}$													
<b>Max. rated operational current <math>I_e</math> AC-3</b>													
220-230-240 V	9	12	17	26	33	40	40	53	65	75	96	110	
3-phase motors 380-400 V	9	12	17	26	32	37	37	50	65	75	96	110	
415 V	9	12	17	26	32	37	37	50	65	75	96	110	
440 V	9	12	16	26	32	37	37	45	65	70	93	100	
500 V	9	12	14	22	28	33	33	45	55	65	80	100	
690 V	7	9	10	13	18	21	25	35	43	46	65	82	
1000 V	-	-	-	-	-	-	-	23 (2)	25 (2)	28 (2)	30	30	
<b>Rated operational power AC-3</b>													
1500 r.p.m. 50 Hz 220-230-240 V	kW	2.2	3	4	6.5	9	11	11	15	18.5	22	25	
1800 r.p.m. 60 Hz 380-400 V	kW	4	5.5	7.5	11	15	18.5	18.5	22	30	37	45	
3-phase motors 415 V	kW	4	5.5	9	11	15	18.5	18.5	25	37	40	55	
440 V	kW	4	5.5	9	15	18.5	22	22	25	37	40	55	
500 V	kW	5.5	7.5	9	15	18.5	22	22	30	37	45	55	
690 V	kW	5.5	7.5	9	11	15	18.5	22	30	37	40	55	
1000 V	kW	-	-	-	-	-	-	-	30 (2)	33 (2)	37 (2)	40	
<b>Rated making capacity AC-3</b>	10 x $I_e$ AC-3 acc. to IEC 60947-4-1												
<b>Rated breaking capacity AC-3</b>	8 x $I_e$ AC-3 acc. to IEC 60947-4-1												
<b>Short-circuit protection</b> for contactors without thermal O/L relay - Motor protection excluded $U_e \leq 500$ V a.c. - gG type fuse	A	25	32	32	50	63	100	100	125	160	160	200	
<b>Rated short-time withstand current <math>I_{cw}</math></b> at 40 °C ambient temp., in free air, from a cold state													
1 s	A	250	280	300	400	600	1000				1320		
10 s	A	100	120	140	210	400	650				800		
30 s	A	60	70	80	110	225	370				500		
1 min	A	50	55	60	90	150	250				350		
15 min	A	26	28	30	45	65	110	110	135	135	160	175	
<b>Maximum breaking capacity</b> $\cos \varphi = 0.45$ ( $\cos \varphi = 0.35$ for $I_e > 100$ A)	A	250			420	470	900	1300			1160		
440 V	A	100			106	175	490	630			800		
690 V	A												
<b>Heat dissipation per pole <math>I_e</math> / AC-1</b> W	0.8	1	1.2	1.8	2.4	3	5	5	6.5	7	6.5	7.5	
$I_e$ / AC-3 W	0.1	0.2	0.35	0.6	0.9	1.3	0.65	1.3	1.5	2	2.7	3.6	
<b>Max. electrical switching frequency</b>													
- for AC-1	cycles/h	600						300					
- for AC-3	cycles/h	1200						300					
- for AC-2, AC-4	cycles/h	300						150					
<b>Mechanical durability</b>													
- millions of operating cycles		10 (5 for TAE..RT contactors)											
- max. switching frequency	cycles/h	3600 (300 for AF..RT contactors)											

(1) TAL..RT, TAE..RT contactors for ambient temperature  $55^\circ\text{C} < \theta \leq 70^\circ\text{C}$  according to IEC 60077.  
(2) AF..RT contactors excluded.






# AF..B..RT Contactors with Ring Tongue Terminals

## Technical Data

### Main Pole - Utilization Characteristics acc. to IEC

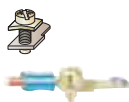
Contactor types: AF..B..RT	145	185	210	260	300	
<b>Rated operational voltage <math>U_e</math> max. V</b>	1000		690			
<b>Rated frequency limits Hz</b>	25 ... 400					
<b>Conventional free-air thermal current <math>I_{th}</math></b> acc. to IEC 60947-4-1, open contactors, $\theta \leq 40^\circ\text{C}$ <b>A</b>	250	275	350	400	500	
with conductor cross-sectional area (3) <b>mm<sup>2</sup></b>	120	150	185	240	300 (4)	
<b>Rated operational current <math>I_e</math> / AC-1</b> for air temperature close to contactor						
<b><math>U_e</math> max. 690 V</b> - 50/60 Hz	$\theta \leq 40^\circ\text{C}$ <b>A</b>	<b>250</b>	<b>275</b>	<b>350</b>	<b>400</b>	<b>500 (4)</b>
	$\theta \leq 55^\circ\text{C}$ <b>A</b>	230	250	300	350	400
	$\theta \leq 70^\circ\text{C}$ <b>A</b>	180	180	240	290	325
<b><math>U_e</math> max. 1000 V</b> - 50/60 Hz	$\theta \leq 40^\circ\text{C}$ <b>A</b>	<b>180</b>	<b>200</b>	–	–	–
	$\theta \leq 55^\circ\text{C}$ <b>A</b>	180	200	–	–	–
	$\theta \leq 70^\circ\text{C}$ <b>A</b>	180	180	–	–	–
with conductor cross-sectional area <b>mm<sup>2</sup></b>	120	150	185	240	240 (4)	
<b>Utilization category AC-3</b> for air temperature close to contactor $\leq 55^\circ\text{C}$						
<b>Max. rated operational current <math>I_e</math> AC-3 (1)</b>						
 3-phase motors	220-230-240 V <b>A</b>	145	185	210	260	305
	380-400 V <b>A</b>	145	185	210	260	305
	415 V <b>A</b>	145	185	210	260	300
	440 V <b>A</b>	145	185	210	240	280
	500 V <b>A</b>	145	170	210	240	280
	690 V <b>A</b>	120	170	210	220	280
	1000 V <b>A</b>	80	95	–	–	–
	<b>Rated operational power AC-3 (1)</b>					
1500 r.p.m. 50 Hz 220-230-240 V <b>kW</b>	45	55	59	80	90	
1800 r.p.m. 60 Hz 380-400 V <b>kW</b>	75	90	110	140	160	
3-phase motors						
415 V <b>kW</b>	75	90	110	140	160	
440 V <b>kW</b>	75	90	110	140	160	
500 V <b>kW</b>	90	110	132	180	200	
690 V <b>kW</b>	110	132	160	200	250	
1000 V <b>kW</b>	110	132	–	–	–	
<b>Rated making capacity AC-3</b>	10 x $I_e$ AC-3 acc. to IEC 60947-4-1					
<b>Rated breaking capacity AC-3</b>	8 x $I_e$ AC-3 acc. to IEC 60947-4-1					
<b>Short-circuit protection</b> for contactors without thermal O/L relay - Motor protection excluded (2)						
$U_e \leq 500$ V a.c. - gG type fuse <b>A</b>	315	355	400	500		
<b>Rated short-time withstand current <math>I_{cw}</math></b> at 40 °C ambient temp.,						
1 s <b>A</b>	1800	2000	2500	3500		
in free air,						
10 s <b>A</b>	1200	1500	1700	2400		
from a cold state						
30 s <b>A</b>	800	1000	1200	1500		
1 min <b>A</b>	600	800	1000	1100		
15 min <b>A</b>	280	320	400	500		
<b>Maximum breaking capacity</b>						
$\cos \varphi = 0.45$ 440 V <b>A</b>	1500	2000	2300	2600	3000	
( $\cos \varphi = 0.35$ for $I_e > 100$ A) 690 V <b>A</b>	1200	1600	2000	2400	2500	
<b>Heat dissipation per pole <math>I_e</math> / AC-1 W</b>	13	16	18	25	32	
$I_e$ / AC-3 <b>W</b>	5	8	9	14	18	
<b>Max. electrical switching frequency</b>						
– for AC-1 <b>cycles/h</b>	300		300			
– for AC-3 <b>cycles/h</b>	300		300			
– for AC-2, AC-4 <b>cycles/h</b>	150		150			
<b>Mechanical durability</b>						
– millions of operating cycles	5					
– max. switching frequency <b>cycles/h</b>	300					

(1) For the corresponding kW/A or hp/A values of 1500 r.p.m., 50Hz or 1800 r.p.m., 60Hz, 3-phase motors, see "Main Catalogue".

(2) For the protection of motor starters against short circuits, see "Main Catalogue".

(3) Conductors with preparation.



(4) For currents above 450 A use 300 mm<sup>2</sup> and terminal extension / enlargement pieces (LX 300 / LW 300: see "Main Catalogue").



# TAL..., AF..., AF..B..., TAE.. Contactors with Screw Terminals and ..RT Versions with Ring Tongue Terminals

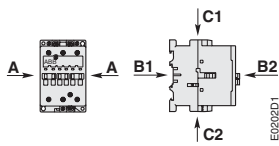
## Technical Data

### Main Pole - Utilization Characteristics acc. to UL/CSA

Contactor types:	TAL..., TAL..RT	9	12	16	26	30	40	-	-	-	-	-	-	
	AF..., AF..RT	-	-	-	-	-	-	45	50	63	75	95	110	
<b>NEMA size</b>		00	0	-	1	1P	-	2	2	-	3	-	-	
<b>General use rating</b>	600 V	A												
<b>Amp-rating</b>		21	25	30	40	50	60	80	80	90	105	125	140	
<b>3-phase motor rating</b>														
<b>Amp-rating (1)</b>														
	200-208 V	A	7.8	11	17.5	25.3	32.2	32.2	48.3	48.3	62.1	78.2	92	92
	220-240 V	A	6.8	9.6	15.2	28	28	42	54	54	68	80	80	104
	440-480 V	A	7.6	11	14	27	34	40	52	52	77	77	77	96
	550-600 V	A	9	11	17	27	32	41	52	52	77	77	77	99
<b>Motor power (1)</b>														
	200-208 V	hp	2	3	5	7.5	10	10	15	15	20	25	30	30
	220-240 V	hp	2	3	5	10	10	15	20	20	25	30	30	40
	440-480 V	hp	5	7.5	10	20	25	30	40	40	60	60	60	75
	550-600 V	hp	7.5	10	15	25	30	40	50	50	75	75	75	100
<b>Short-circuit protection</b> for contactors without thermal O/L relay - Motor protection excluded														
<b>Fuse rating</b>	A	35	35	60	90	150	150	175	175	200	200	200	200	
<b>Fuse type, 600 V</b>		FRS-R						J						
<b>Max. electrical switching frequency</b>														
- for general use	cycles/h	600						300						
- for motor use	cycles/h	1200						300						

(1) For the corresponding kW/A or hp/A values of 1500 r.p.m., 50Hz or 1800 r.p.m., 60Hz, 3-phase motors, see "Main Catalogue".

### General Technical Data

Contactor types:	TAL..., TAL..RT	9	12	16	26	30	40	-	-	-	-	-	-
	AF..., AF..B..., TAE... AF..RT, AF..B..RT, TAE..RT	-	-	-	-	-	-	45	50	63	75	95	110
<b>Rated insulation voltage U<sub>i</sub></b>		1000 (690 for TAL..RT)											
according to IEC 60947-4-1	V												
according to UL/CSA	V	600 (TAL, TAL..RT, AF and AF..RT only)											
<b>Rated impulse withstand voltage U<sub>imp</sub></b>	kV	8 (6 for TAL..RT)											
<b>Standards</b>		Devices complying with IEC 60947-1 / 60947-4-1 and EN 60947-1 / 60947-4-1											
<b>Air temperature</b> close to contactor		see "Conditions for use", for control voltage limits and authorized mounting positions											
- fitted with thermal O/L relay	°C	-25 to +55											
- without thermal O/L relay	°C	-40 to +70 (1)											
- for storage	°C	-60 to +80										-40 to +70	
<b>Climatic withstand</b>		acc. to IEC 60068-2-30 and 60068-2-11 - UTE C 63-100 specification II										acc. to IEC 68-2-30	
<b>Operating altitude</b>	m	≤ 3000											
<b>Shock withstand</b>		1/2 sinusoidal shock for 11 ms: no change in contact position											
acc. IEC 60068-2-27 and EN 60068-2-27													
Mounting position 1													
													
<b>Shock direction</b>													
A													
B1													
B2													
C1													
C2													
		TAL 9 ...TAL 40, TAL 9..RT ... TAL 40..RT contactors						AF 45 ... AF 110, AF 95B..., AF 110B..., TAE 45 ... TAE 110, AF 45..RT ... AF 75..RT, AF 95B..RT, AF 110B..RT, TAE 45..RT ... TAE 75..RT contactors					
		Closed position						Closed position					
		Open position						Open position					
		20 g	15 g	10 g	20 g	14 g	20 g	20 g	10 g	15 g	20 g	20 g	20 g
		10 g	5 g	5 g	8 g	8 g	20 g	20 g	5 g (2)	15 g (3)	20 g	20 g	20 g
		5 g	5 g	10 g	10 g	8 g	20 g	20 g	20 g	20 g	20 g	20 g	20 g
		8 g	8 g	10 g	10 g	8 g	20 g	20 g	20 g	20 g	20 g	20 g	20 g
		8 g	8 g	10 g	10 g	8 g	20 g	20 g	20 g	20 g	20 g	20 g	20 g

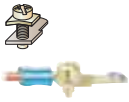
**Note :** for AF 95, AF 95B, AF 95B..RT, TAE 95, AF 110, AF 110B, AF 110B..RT, TAE 110 contactors, these values are not valid for rail mounting.

(1) Authorized for TAL...(RT), TAE 45...(RT) ... TAE 75...(RT) contactors to ambient temperature 55 °C < θ ≤ 70 °C according to IEC 60077.

Unauthorized for TAE 95 and TAE 110 contactors for ambient temperature 55 °C < θ ≤ 70 °C.

(2) 3 g for AF 45-22, AF 75-22.

(3) 10 g for AF 45-22, AF 75-22.



# AF..., AF..B... Contactors with Screw Terminals and AF..B..RT Versions with Ring Tongue Terminals

## Technical Data

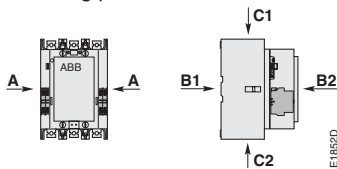
### Main Pole - Utilization Characteristics acc. to UL/CSA

Contactor types:	AF...	145	185	210	260	300
<b>NEMA size</b>		4	-	-	5	-
<b>General use rating</b>						
<b>Amp-rating</b>	600 V <b>A</b>	230	250	300	350	400
<b>3-phase motor rating</b>						
<b>Amp-rating (1)</b>						
	200-208 V <b>A</b>	119.6	149.5	166.8	220.8	285.2
	220-240 V <b>A</b>	130	154	192	248	248
	440-480 V <b>A</b>	124	156	180	240	302
	550-600 V <b>A</b>	125	144	192	242	289
<b>Motor power (1)</b>						
	200-208 V <b>hp</b>	40	50	60	75	100
	220-240 V <b>hp</b>	50	60	75	100	100
	440-480 V <b>hp</b>	100	125	150	200	250
	550-600 V <b>hp</b>	125	150	200	250	300
<b>Short-circuit protection</b> for contactors without thermal O/L relay - Motor protection excluded						
<b>Fuse rating</b>	<b>A</b>	300	400	800		
<b>Fuse type, 600 V</b>		J/K5				
<b>Max. electrical switching frequency</b>						
- for general use	<b>cycles/h</b>	300				
- for motor use	<b>cycles/h</b>	300				

(1) For the corresponding kW/A or hp/A values of 1500 r.p.m., 50Hz or 1800 r.p.m., 60Hz, 3-phase motors, see "Main Catalogue".

### General Technical Data

Contactor types:	AF..., AF..B..., AF..B..RT	145	185	210	260	300
<b>Rated insulation voltage <math>U_i</math></b>						
according to IEC 60947-4-1	<b>V</b>	1000				
according to UL/CSA	<b>V</b>	600 (AF... only)				
<b>Rated impulse withstand voltage <math>U_{imp}</math></b>	<b>kV</b>	8				
<b>Standards</b>		Devices complying with IEC 60947-1 / 60947-4-1 and EN 60947-1 / 60947-4-1				
<b>Air temperature</b> close to contactor		see "Conditions for use", for control voltage limits and authorized mounting positions				
- fitted with thermal O/L relay	<b>°C</b>	-25 to +55				
- fitted with electronic O/L relay	<b>°C</b>	-25 to +70				
- without O/L relay	<b>°C</b>	-40 to +70				
- for storage	<b>°C</b>	-60 to +80				
<b>Climatic withstand</b>		acc. to IEC 60068-2-30				
<b>Operating altitude</b>	<b>m</b>	≤ 3000				
<b>Shock withstand</b>		1/2 sinusoidal shock for 11 ms: no change in contact position				
acc. IEC 60068-2-27 and EN 60068-2-27		5 g in all directions (A, B1, B2, C1, C2)				
Mounting position 1						



# d.c. Circuit Switching Contactor Selection

## General










The arc switching on d.c. is more difficult than on a.c.

- For selecting a contactor it is essential to determine the current, the voltage and the L/R time constant of the controlled load.
- For information, typical time constant values are quoted hereafter: non inductive loads such as resistance furnaces ( $L/R \approx 1$  ms), inductive loads such as shunt motors ( $L/R \approx 2$  ms) or series motors ( $L/R \approx 7.5$  ms).
- The addition of a resistor in parallel with an inductive winding helps in the elimination of the arcs.
- All the poles required for breaking must be connected in series between the load and the source polarity not linked to earth (or chassis).

**Selection Table** - After selection from the ratings quoted in the tables below, please refer to "Ordering Details".

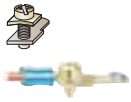
a.c. / d.c. operated (electronic coil interface)	-	-	-	-	-	-	AF 45	AF 50	AF 63	AF 75	-		
d.c. operated contactors	TAL 9	TAL 12	TAL 16	TAL 26	TAL 30	TAL 40	TAE 45	TAE 50	-	TAE 75	GTAE 75		
<b>Utilization category DC-1, L/R ≤ 1 ms</b>													
	≤ 72 V	A	25	27	30	45	55	60	70	100	110	120	120
	110 V	A	10	15	20	-	-	-	-	-	-	-	120
	220 V	A	-	-	-	-	-	-	-	-	-	-	120
	440 V	A	-	-	-	-	-	-	-	-	-	-	100
	600 V	A	-	-	-	-	-	-	-	-	-	-	75
	≤ 72 V	A	25	27	30	45	55	60	70	100	110	120	-
	110 V	A	25	27	30	45	55	60	70	100	110	120	-
	220 V	A	10	15	20	-	-	-	-	-	-	-	-
	≤ 72 V	A	25	27	30	45	55	60	70	100	110	120	-
	110 V	A	25	27	30	45	55	60	70	100	110	120	-
	220 V	A	25	27	30	45	55	60	70	100	110	120	-
	≤ 72 V	A	25	27	30	45	-	-	70	100	-	120	-
	110 V	A	25	27	30	45	-	-	70	100	-	120	-
	220 V	A	25	27	30	45	-	-	70	100	-	120	-
	440 V	A	10	15	20	-	-	-	-	-	-	-	-
<b>Utilization category DC-3, L/R ≤ 2 ms</b>													
	≤ 72 V	A	25	27	30	45	55	60	70	100	110	120	120
	110 V	A	6	7	8	-	-	-	-	-	-	-	120
	220 V	A	-	-	-	-	-	-	-	-	-	-	100
	440 V	A	-	-	-	-	-	-	-	-	-	-	85
	≤ 72 V	A	25	27	30	45	55	60	70	100	110	120	-
	110 V	A	25	27	30	45	55	60	70	100	110	120	-
	220 V	A	6	7	8	-	-	-	-	-	-	-	-
	≤ 72 V	A	25	27	30	45	55	60	70	100	110	120	-
	110 V	A	25	27	30	45	55	60	70	100	110	120	-
	220 V	A	25	27	30	45	55	60	70	100	110	120	-
	≤ 72 V	A	25	27	30	45	-	-	70	100	-	120	-
	110 V	A	25	27	30	45	-	-	70	100	-	120	-
	220 V	A	25	27	30	45	-	-	70	100	-	120	-
	440 V	A	6	7	8	-	-	-	-	-	-	-	-
<b>Utilization category DC-5, L/R ≤ 7.5 ms</b>													
	≤ 72 V	A	9	12	16	25	30	40	50	50	63	75	85
	110 V	A	4	4	4	-	-	-	-	-	-	-	85
	220 V	A	-	-	-	-	-	-	-	-	-	-	85
	440 V	A	-	-	-	-	-	-	-	-	-	-	35
	≤ 72 V	A	25	27	30	45	55	60	70	100	110	120	-
	110 V	A	10	15	20	30	45	50	70	80	90	100	-
	220 V	A	4	4	4	-	-	-	-	-	-	-	-
	≤ 72 V	A	25	27	30	45	55	60	70	100	110	120	-
	110 V	A	25	27	30	45	55	60	70	100	110	120	-
	220 V	A	9	12	16	25	30	40	50	50	63	75	-
	≤ 72 V	A	25	27	30	45	-	-	70	100	-	120	-
	110 V	A	25	27	30	45	-	-	70	100	-	120	-
	220 V	A	10	15	20	30	-	-	70	70	-	100	-
	440 V	A	4	4	4	-	-	-	-	-	-	-	-

# d.c. Circuit Switching Contactor Selection

a.c. / d.c. operated (electronic coil interface)	AF 95	AF 110	AF 145	AF 185	AF 210	AF 260	AF 300
d.c. operated contactors	TAE 95	TAE 110	-	-	-	-	-
<b>Utilization category DC-1, L/R ≤ 1 ms</b>							
 ≤ 110 V <b>A</b>	-	-	-	-	-	-	-
 ≤ 110 V <b>A</b>	145	160	250	275	350	400	450
220 V <b>A</b>	-	-	-	-	-	-	-
 ≤ 110 V <b>A</b>	145	160	250	275	350	400	450
220 V <b>A</b>	145	160	250	275	350	400	450
440 V <b>A</b>	-	-	-	-	-	-	-
600 V <b>A</b>	-	-	-	-	-	-	-
<b>Utilization category DC-3, L/R ≤ 2 ms</b>							
 ≤ 110 V <b>A</b>	-	-	-	-	-	-	-
 ≤ 110 V <b>A</b>	145	160	250	275	350	400	450
220 V <b>A</b>	-	-	-	-	-	-	-
 ≤ 110 V <b>A</b>	145	160	250	275	350	400	450
220 V <b>A</b>	145	160	250	275	350	400	450
440 V <b>A</b>	-	-	-	-	-	-	-
600 V <b>A</b>	-	-	-	-	-	-	-
<b>Utilization category DC-5, L/R ≤ 7.5 ms</b>							
 ≤ 110 V <b>A</b>	-	-	-	-	-	-	-
 ≤ 110 V <b>A</b>	145	160	250	275	350	400	450
220 V <b>A</b>	-	-	-	-	-	-	-
 ≤ 110 V <b>A</b>	145	160	250	275	350	400	450
220 V <b>A</b>	145	160	250	275	350	400	450
440 V <b>A</b>	-	-	-	-	-	-	-
600 V <b>A</b>	-	-	-	-	-	-	-

## Technical Data

- The tables indicate for the standard contactors the  $I_e$  max. operating currents depending on: the utilization category (i.e. L/R) DC-1, DC-3, DC-5 as defined in the IEC 60947-4-1 publication, the operating voltage  $U_e$  and the pole coupling details. Ampere values quoted in these tables are valid for a -25 ... +70 °C temperature close to the contactors, **as long as the AC-1 Ampere values for the corresponding ambient temperature are not exceeded.**
- Max. switching frequency: 300 cycles/h.
- For switching higher d.c. ratings, we recommend the use of bar mounted contactors, R series (63 ... 2000 A).



# TAL..., AF..., AF..B..., TAE... Contactors with Screw Terminals and ..RT Versions with Ring Tongue Terminals

## Technical Data

### Magnet System Characteristics for AF..., AF..B..., AF..RT and AF..B..RT Contactors

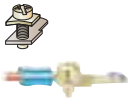
Contactor types: AF..., AF..B... AF..RT, AF..B..RT			45	50	63	75	95	110	145	185	210	260	300
<b>Rated control circuit voltage <math>U_c</math></b>													
- at 50 Hz	<b>V</b>		48 ... 250										
- at 60 Hz	<b>V</b>		48 ... 250										
- at d.c.	<b>V</b>		20 ... 250										
<b>Coil operating limits</b> acc. to IEC 60947-4-1			0.85 x $U_c$ min. ... 1.1 x $U_c$ max. (at $\theta \leq 70^\circ\text{C}$ ) see "Conditions for Use"										
<b>Drop-out voltage</b> in % of $U_c$ min.			55 %										
<b>Coil consumption</b>													
Average pull-in value	50 Hz	<b>VA</b>	210				350		430		470		
	60 Hz	<b>VA</b>	210				350		430		470		
	d.c.	<b>W</b>	190				400		500		520		
Average holding value	50 Hz	<b>VA/W</b>	7/2.8				7/3.5		12/3.5		10/2.5		
	60 Hz	<b>VA/W</b>	7/2.8				7/3.5		12/3.5		10/2.5		
	d.c.	<b>W</b>	2.8				2						
<b>Operating time</b>													
between coil energization and:													
- N.O. contact closing	<b>ms</b>		30 ... 100				30 ... 80		30 ... 115				
- N.C. contact opening	<b>ms</b>		27 ... 95				27 ... 77		30 ... 115				
between coil de-energization and:													
- N.O. contact opening	<b>ms</b>		30 ... 110				55 ... 125		25 ... 80				
- N.C. contact closing	<b>ms</b>		35 ... 115				60 ... 130		25 ... 80				

### Magnet System Characteristics for TAL..., TAE..., TAL..RT and TAE..RT Contactors

Contactor types: TAL..., TAL..RT			9	12	16	26	30	40	-	-	-	-	-	-
TAE..., TAE..RT			-	-	-	-	-	-	45	50	-	75	95	110
<b>Rated control circuit voltage <math>U_c</math></b>														
	<b>V d.c.</b>		17 ... 264											
<b>Coil operating limits</b>			$U_c$ min. ... $U_c$ max. (at $\theta \leq 70^\circ\text{C}$ ) (2) see "Conditions for Use"											
<b>Drop-out voltage</b> in % of $U_c$ max.			approx. 9 ... 25 %						approx. 10 ... 35 %					
<b>Coil consumption</b>														
values for $U_c$ min. ... $U_c$ max. ( $\theta \leq 70^\circ\text{C}$ ) (2)														
- pull-in value	<b>W</b>		2.5 ... 8.5			2.7 ... 9			120 ... 250			250 ... 700		
- holding value	<b>W</b>		2.5 ... 8.5			2.7 ... 9			1.7 ... 6.5			2 ... 7		
<b>Coil time constant</b>														
- open	L/R	<b>ms</b>	28			38			3			6		
- closed	L/R	<b>ms</b>	74			62			15			40		
<b>Operating time</b>														
between coil energization and:														
- N.O. contact closing	<b>ms</b>		50 ... 100			55 ... 110			13 ... 30			15 ... 25		
- N.C. contact opening	<b>ms</b>		20 ... 70			25 ... 75			10 ... 27			12 ... 22		
between coil de-energization and:														
- N.O. contact opening	<b>ms</b>		10 ... 17 (1)			12 ... 18 (1)			5 ... 15 (1)			15 ... 20 (1)		
- N.C. contact closing	<b>ms</b>		16 ... 27 (1)			18 ... 28 (1)			8 ... 18 (1)			18 ... 23 (1)		

(1) The use of surge suppressors increases the opening time with a factor of 1.1 to 1.5 for a varistor suppressor and a factor of 1.5 to 3 for a diode suppressor.

(2) Authorized for TAL...(RT), TAE 45...(RT) ... TAE 75...(RT) contactors for ambient temperature  $55^\circ\text{C} < \theta \leq 70^\circ\text{C}$  according to IEC 60077.  
Unauthorized for TAE 95 et TAE 110 contactors for ambient temperature  $55^\circ\text{C} < \theta \leq 70^\circ\text{C}$ .



# TAL... Contactors with Screw Terminals and ..RT Versions with Ring Tongue Terminals

## Technical Data

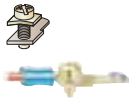
Built-in Auxiliary Contacts - Other auxiliary contacts see "Accessories"

### Utilization characteristics acc. to IEC

Contactor types: <b>TAL...</b>	<b>9</b>	<b>12</b>	<b>16</b>	<b>26</b>	<b>30</b>	<b>40</b>
<b>TAL..RT</b>	<b>9</b>	<b>12</b>	<b>16</b>	<b>26</b>	<b>30</b>	<b>40</b>
<b>Rated operational voltage <math>U_e</math> max. V</b>	690					
<b>Conventional free air thermal current <math>I_{th}</math> - <math>\theta \leq 40</math> °C</b>	<b>A</b> 16					
with conductor cross-sectional area	<b>mm<sup>2</sup></b> 1 x 2.5					
<b>Rated frequency limits</b>	<b>Hz</b> 25 ... 400					
<b>Rated operational current <math>I_e</math> / AC-15</b> according to IEC 60947-5-1						
24-127 V 50/60 Hz	<b>A</b> 6					
220-240 V 50/60 Hz	<b>A</b> 4					
380-440 V 50/60 Hz	<b>A</b> 3					
500 V 50/60 Hz	<b>A</b> 2					
690 V 50/60 Hz	<b>A</b> 2					
<b>Rated operational current <math>I_e</math> / DC-13</b> according to IEC 60947-5-1						
24 V d.c.	<b>A</b> 6 (144 W)					
48 V d.c.	<b>A</b> 2.8 (134 W)					
72 V d.c.	<b>A</b> 2 (144 W)					
110 V d.c.	<b>A</b> 1.1 (121 W)					
125 V d.c.	<b>A</b> 1.1 (138 W)					
220 V d.c.	<b>A</b> 0.55 (121 W)					
250 V d.c.	<b>A</b> 0.55 (138 W)					
<b>Making capacity</b> acc. to IEC 60947-5-1	10 x $I_e$ / AC-15					
<b>Breaking capacity</b> acc. to IEC 60947-5-1	10 x $I_e$ / AC-15					
<b>Short-circuit protection</b> gG type fuse	<b>A</b> 10					
<b>Rated short-time withstand current <math>I_{cw}</math></b> for 1.0 s	<b>A</b> 100					
for 0.1 s	<b>A</b> 140					
<b>Minimum switching capacity V / mA</b> with failure rate acc. to IEC 60947-5-4	17 / 5 $\leq 10^{-7}$					
<b>Non-overlapping time between N.O. and N.C. contacts</b>	<b>ms</b> $\geq 2$					
<b>Heat dissipation per pole at 6 A</b>	<b>W</b> 0.10					

### Utilization characteristics acc. to UL/CSA

Contactor types: <b>TAL...</b>	<b>9</b>	<b>12</b>	<b>16</b>	<b>26</b>	<b>30</b>	<b>40</b>
<b>TAL..RT</b>	<b>9</b>	<b>12</b>	<b>16</b>	<b>26</b>	<b>30</b>	<b>40</b>
<b>Max. rated voltage</b>	<b>V</b> 600					
<b>Pilot duty</b>	A 600, P 300					



# TAL..., AF., AF..B., TAE.. Contactors with Screw Terminals and ..RT Versions with Ring Tongue Terminals

## Technical Data

### Mounting Characteristics

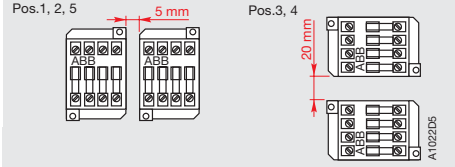
<b>Contactor types:</b> TAL...(RT)	9	12	16	26	30	40	-	-	-	-	-	-
AF...(RT), AF..B(RT)	-	-	-	-	-	-	45	50	63	75	95	110
TAE...(RT)	-	-	-	-	-	-	45	50	-	75	95	110

### Mounting positions

see "Conditions for use"

### Mounting distances

Distances for ambient temperature 20 ... 70 °C (1) The contactors can be assembled side by side



### Fixing

on rail	35 x 7.5 mm	35 x 15 mm	35 x 15 mm	35 x 15 mm
according to IEC 60715, EN 60715	35 x 15 mm	75 x 25 mm	75 x 25 mm	75 x 25 mm
by screws (not supplied)	2 x M4	2 x M6	2 x M6	2 x M6

(2) TAL...(RT), TAE 45...(RT) ... TAE 75...(RT) contactors for ambient temperature 55 °C <  $\theta$  ≤ 70 °C according to IEC 60077.

### Conditions for Use

Sustainable utilization conditions for contactors involving at the same time the Mounting position, Ambient temperature and Control voltage operating limits are summarized in the table below.

<b>Contactor types:</b> TAL...(RT), TAE...(RT)	9	12	16	26	30	40	-	-	-	-	-	-
	-	-	-	-	-	-	45	50	-	75	95	110

<b>Control voltage / Ambient temperature</b>		$U_c$ min. ... $U_c$ max.	
Mounting positions	≤ 55 °C	$U_c$ min. ... $U_c$ max. (2)	unauthorized
1, 1 ± 30°, 2, 3, 4, 5 (1)	> 55 °C		
Mounting pos. 6	-	unauthorized	

<b>Contactor types:</b> AF...(RT), AF..B(RT)	-	-	-	-	-	-	45	50	63	75	95	110
--	---	---	---	---	---	---	----	----	----	----	----	-----

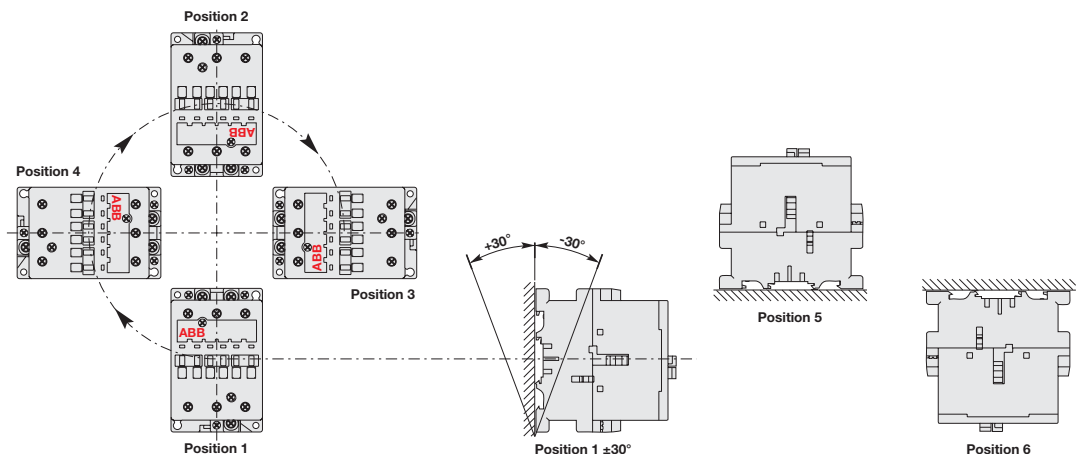
<b>Control voltage / Ambient temperature</b>		0.85 x $U_c$ min. ... 1.1 x $U_c$ max.
Mounting positions	≤ 70 °C	
1, 1 ± 30°, 2, 3, 4, 5 (1)		
Mounting pos. 6	-	unauthorized

(1) Notes for 4-pole contactors

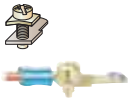
Whatever the coil voltage: Pos. 5 unauthorized for TAL 9-22-00, TAL 16-22-00, TAL 26-22-00, TAL 9-22-00RT, TAL 16-22-00RT, TAL 26-22-00RT, AF 45-22-00, AF 75-22-00 contactors.

(2) TAL...(RT), TAE 45...(RT) ... TAE 75...(RT) contactors for ambient temperature 55 °C <  $\theta$  ≤ 70 °C according to IEC 60077.

### Mounting Positions (see the above table for authorized positions)







# AF..., AF..B... Contactors with Screw Terminals and AF..B..RT Versions with Ring Tongue Terminals

## Technical Data

### Mounting Characteristics

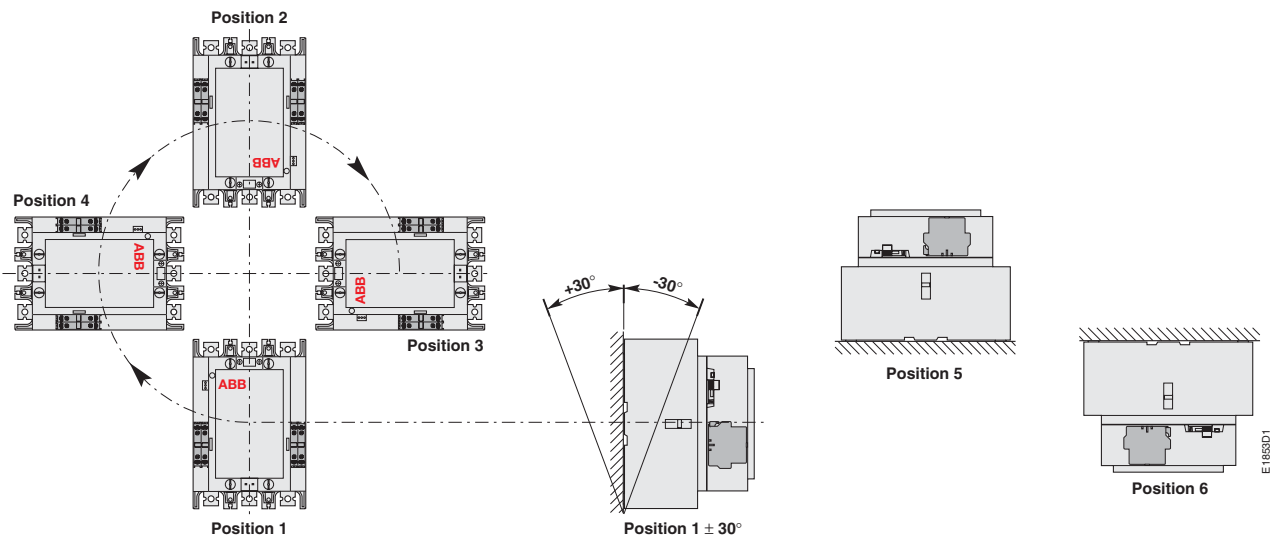
<b>Contactor types:</b> AF..., AF..B AF..B..RT	145	185	210	260	300
<b>Mounting positions</b>	see "Conditions for use"				
<b>Mounting distances</b>	No mounting distance required between contactors				
<b>Fixing</b>					
on rail	-				
according to IEC 60715, EN 60715	-				
by screws (not supplied)	4 x M5				

### Conditions for Use

Sustainable utilization conditions for contactors involving at the same time the Mounting position, Ambient temperature and Control voltage operating limits are summarized in the table below.

<b>Contactor types:</b> AF..., AF..B AF..B..RT	145	185	210	260	300
<b>Control voltage / Ambient temperature</b>					
Mounting positions 1, 1 ± 30°, 2, 3, 4, 5	≤ 70 °C				
Mounting pos. 6	-				
	0.85 x U <sub>c</sub> min. ... 1.1 x U <sub>c</sub> max.				
	unauthorized				

### Mounting Positions (see the above table for authorized positions)





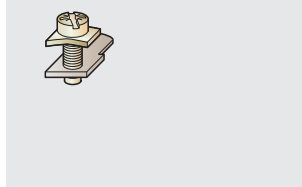
# TAL..., AF..., AF..B..., TAE... Contactors with Screw Terminals

## Technical Data

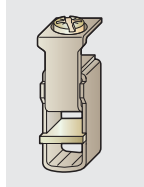
### Connecting Characteristics

<b>Contactors types:</b> TAL...	9	12	16	26	30	40	-	-	-	-	-	-
AF..., AF..B...,	-	-	-	-	-	-	45	50	63	75	95	110
TAE...	-	-	-	-	-	-	45	50	-	75	95	110

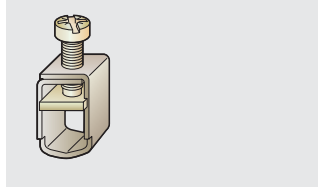
### Main terminals



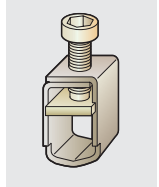
with cable clamp



with double connector  
2 x (5.6 x 6.5 mm)



with single connector  
(13 x 10 mm)



with single connector  
(14 x 14 mm)

### Connecting capacity (min. ... max.)

#### Main conductors (poles)

Rigid: solid ( $\leq 4 \text{ mm}^2$ )	1 x mm <sup>2</sup>	1 ... 4	1.5 ... 6	2.5 ... 16	6 ... 50	10 ... 95
stranded ( $\geq 6 \text{ mm}^2$ )	2 x mm <sup>2</sup>	1 ... 4	1.5 ... 6	2.5 ... 16	6 ... 25	6 ... 35
Rigid with connector						
single for Cu cable	mm <sup>2</sup>	-	-	-	-	-
single for Al/Cu cable	mm <sup>2</sup>	-	-	-	-	-
double for Al/Cu cable	mm <sup>2</sup>	-	-	-	-	-
Flexible with cable end						
1 x mm <sup>2</sup>	0.75 ... 2.5	0.75 ... 4	2.5 ... 10	6 ... 35	10 ... 70	
2 x mm <sup>2</sup>	0.75 ... 2.5	0.75 ... 4	2.5 ... 10	6 ... 16	6 ... 35	
Bars or lugs	L mm $\leq$ l mm $>$	7.7	10	-	-	30 (2)
		3.7	4.2	-	-	6
Capacity acc. to <b>UL/CSA</b>	<b>AWG</b>	10-18	8-12	4-8	1-8	6-2/0

#### Auxiliary conductors

(built-in auxiliary terminals + coil terminals)

Rigid solid						
1 x mm <sup>2</sup>	1 ... 4					0.75 ... 2.5
2 x mm <sup>2</sup>	1 ... 4					0.75 ... 2.5
Flexible with cable end						
1 x mm <sup>2</sup>	0.75 ... 2.5			1 ... 2.5		0.75 ... 2.5
2 x mm <sup>2</sup>	0.75 ... 2.5					
Lugs	L mm $\leq$ l mm $>$	7.7	(1)	8		
		3.7	(1)	3.7		
Capacity acc. to <b>UL/CSA</b>	<b>AWG</b>	18-14				

### Degree of protection acc. to IEC 60947-1 / EN 60947-1 and IEC 60529 / EN 60529

- Main terminals
- Coil terminals
- Built-in auxiliary terminals

#### Protection against direct contact in acc. with EN 50274

IP 20	IP 10
IP 20	
IP 20	- - - - -

### Screw terminals

Main terminals	(delivered in open position, screws of unused terminals must be tightened)					
	(+,-) pozidriv 2 screws					
	M3.5	M4	M5	M6	hexagon socket M8 (s = 4 mm)	
Coil terminals	M3.5 (+,-) pozidriv 2 screws with cable clamp					
Built-in auxiliary terminals	(+,-) pozidriv 2 screws with cable clamp					
	M3.5	M4	M3.5	-	-	-

### Tightening torque

Main pole terminals						
- recommended	<b>Nm / lb.in</b>	1.00 / 9	1.7 / 15	2.30 / 20	4.00 / 35	6.00 / 53
- max.	<b>Nm</b>	1.20	2.20	2.60	4.50	6.50
Coil terminals						
- recommended	<b>Nm / lb.in</b>	1.00 / 9				
- max.	<b>Nm</b>	1.20				
Built-in auxiliary terminals						
- recommended	<b>Nm / lb.in</b>	1.00 / 9	1.7 / 15	1.00 / 9	-	-
- max.	<b>Nm</b>	1.20	2.20	1.20	-	-

(1) L  $\leq$  8 and l  $>$  3.7 for coil terminals - L  $\leq$  10 and l  $>$  4.2 for built-in auxiliary terminals.

(2) With LW 110 enlargement piece: see "Main Catalogue".



# AF..., AF..B... Contactors with Screw Terminals

## Technical Data

### Connecting Characteristics

Contactor types:		145	185	210	260	300
AF..., AF..B...						
<b>Main terminals</b>						
Flat type						
<b>Connecting capacity</b> (min. ... max.)						
Main conductors (poles)						
Rigid:		1 x mm <sup>2</sup>	-	-	-	-
		2 x mm <sup>2</sup>	-	-	-	-
Rigid with connector						
single for Cu cable		mm <sup>2</sup>	6 ... 185		16 ... 240	
single for Al/Cu cable		mm <sup>2</sup>	25 ... 150		120 ... 240	
double for Al/Cu cable		mm <sup>2</sup>	-		2 x 95 ... 120	
Flexible		1 x mm <sup>2</sup>	-	-	-	-
		2 x mm <sup>2</sup>	-	-	-	-
Bars or lugs		L mm ≤ Ø mm >	24 8		32 10	
Capacity acc. to <b>UL/CSA</b>		<b>AWG</b>	6-250 MCM		(2) 4-500 MCM	
Auxiliary conductors (coil terminals)						
Rigid solid		1 x mm <sup>2</sup>	1 ... 4			
		2 x mm <sup>2</sup>	1 ... 4			
Flexible with cable end		1 x mm <sup>2</sup>	0.75 ... 2.5			
		2 x mm <sup>2</sup>	0.75 ... 2.5			
Lugs		L mm ≤ l mm >	8 3.7			
Capacity acc. to <b>UL/CSA</b>		<b>AWG</b>	18-14			
<b>Degree of protection</b> acc. to IEC 60947-1 / EN 60947-1 and IEC 60529 / EN 60529						
- Main terminals			Protection against direct contact in acc. with EN 50274			
- Coil terminals			IP 00			
- Built-in auxiliary terminals			IP 20			
			-			
<b>Screw terminals</b>						
Main terminals			Screws and bolts			
			M8		M10	
Coil terminals (delivered in open position)			M3.5 (+,-) pozidriv 2 screws with cable clamp			
Built-in auxiliary terminals			-	-	-	-
			-	-	-	-
<b>Tightening torque</b>						
Main pole terminals						
- recommended	<b>Nm / lb.in</b>		18 / 160		28 / 240	
- max.	<b>Nm</b>		20		30	
Coil terminals						
- recommended	<b>Nm / lb.in</b>		1.00 / 9			
- max.	<b>Nm</b>		1.20			
Built-in auxiliary terminals						
- recommended	<b>Nm / lb.in</b>		-	-	-	-
- max.	<b>Nm</b>		-	-	-	-



# TAL..RT, AF..RT, AF..B..RT, TAE..RT Contactors with Ring Tongue Terminals

## Technical Data

### Connecting Characteristics

Contactor types:	TAL..RT	9	12	16	26	30	40	-	-	-	-	-	-
	AF..RT, AF..B..RT	-	-	-	-	-	-	45	50	63	75	95	110
	TAE..RT	-	-	-	-	-	-	45	50	-	75	95	110

### Main terminals

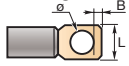


Conductors with insulated ring tongue cable end

### Connecting capacity (min. ... max.)

#### Main conductors (poles)

Flexible with lug



2 x mm<sup>2</sup>

Ø mm >

L mm ≤

B mm ≤

0.75 ... 2.5

3.7

7.7

2.2

1 ... 6

4.2

10

3.3

2.5 ... 16

5.2

12.5

3.8

6 ... 25

6

13

3.3

6 ... 35

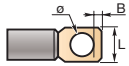
6

16

5

#### Coil conductors

Flexible with lug



2 x mm<sup>2</sup>

Ø mm >

L mm ≤

B mm ≤

0.75...2.5

3.7

8

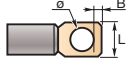
2.1

1.7

2.1

#### Auxiliary conductors

Flexible with lug



2 x mm<sup>2</sup>

Ø mm >

L mm ≤

B mm ≤

0.75 ... 2.5

3.7

7.7

2.2

0.75...6

4.2

10

3.3

0.75 ... 2.5

3.7

8

2.2

-

-

-

-

**Degree of protection** acc. to IEC 60947-1 / EN 60947-1 and IEC 60529 / EN 60529

All terminals

Protection against direct contact in acc. with EN 50274

IP 10

### Screw terminals

#### for ring tongue cable end

- Main terminals

(+,-) pozidriv 2 screws (screws of unused terminals must be tightened)

M 3.5

M 4

M 5

M 6

- Coil terminals

M 3.5

- Built-in aux. terminals

M 3.5

M 4

M 3.5

-

### Tightening torque

#### Main pole terminals

- recommended

Nm / lb.in

1.00 / 9

1.70 / 15

2.30 / 20

4.00 / 40

- max.

Nm

1.20

2.20

2.60

4.50

#### Coil terminals

- recommended

Nm / lb.in

1.00 / 9

- max.

Nm

1.20

#### Built-in auxiliary terminals

- recommended

Nm / lb.in

1.00 / 9

1.70 / 15

1.00 / 9

-

- max.

Nm

1.20

2.20

1.20

-



# AF..B..RT Contactors with Ring Tongue Terminals

## Technical Data

### Connecting Characteristics

#### Contactor types:

AF..B..RT

145

185

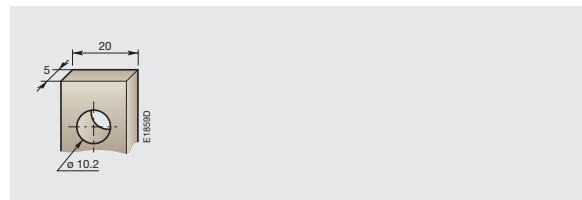
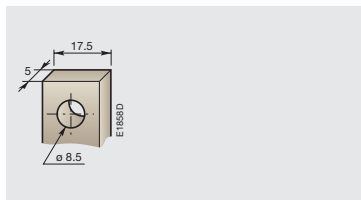
210

260

300

#### Main terminals

Flat type



#### Connecting capacity

Main conductors (poles)

Bars or lugs



L mm ≤  
ø mm >

24

8

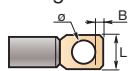
32

10

Coil conductors

Flexible with lug

2 x mm<sup>2</sup>



ø mm >  
L mm ≤  
B mm ≤

0.75...2.5

3.7

8

2.1

**Degree of protection** acc. to IEC 60947-1 / EN 60947-1 and IEC 60529 / EN 60529

Protection against direct contact in acc. with EN 50274

– Main terminals

IP 00

– Coil terminals

IP 20

– Built-in auxiliary terminals

–

#### Screw terminals

Main terminals

Screws and bolts

M8

M10

Coil terminals (delivered in open position)

M3.5 (+,-) pozidriv 2 screws with cable clamp

Built-in auxiliary terminals

–

–

–

–

–

#### Tightening torque

Main pole terminals

– recommended

Nm / lb.in

18 / 160

28 / 240

– max.

Nm

20

30

Coil terminals

– recommended

Nm / lb.in

1.00 / 9

– max.

Nm

1.20

Built-in auxiliary terminals

– recommended

Nm / lb.in

–

–

–

–

–

– max.

Nm

–

–

–

–

–

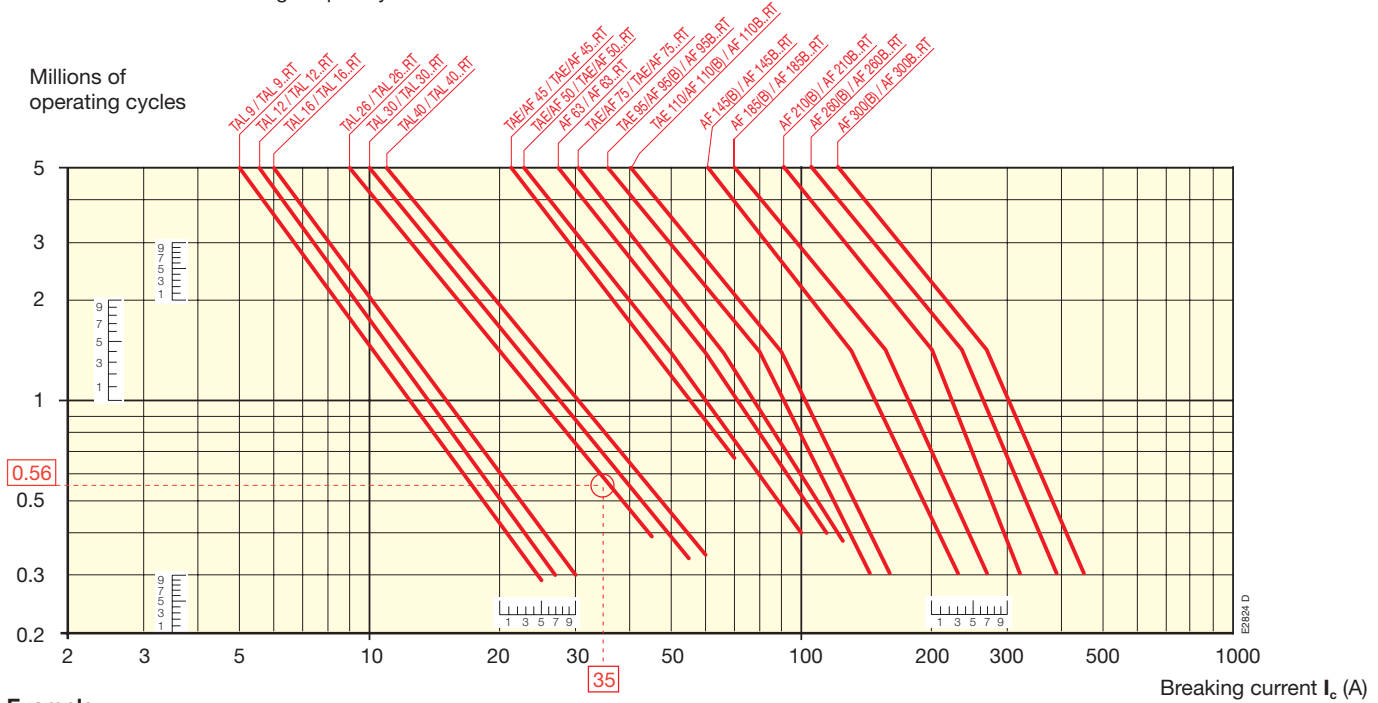
# TAL..., AF..., AF..B..., TAE... Contactors

## TAL..RT, AF..RT, AF..B..RT, TAE..RT Contactors

### Electrical Durability

Electrical Durability for **AC-1** Utilization Category  $U_e \leq 690$  V. Ambient Temperature  $\leq 55$  °C

Switching non-inductive or slightly inductive loads. The breaking current  $I_c$  for AC-1 is equal to the rated operational current of the load. Maximum electrical switching frequency: see "Technical Data".



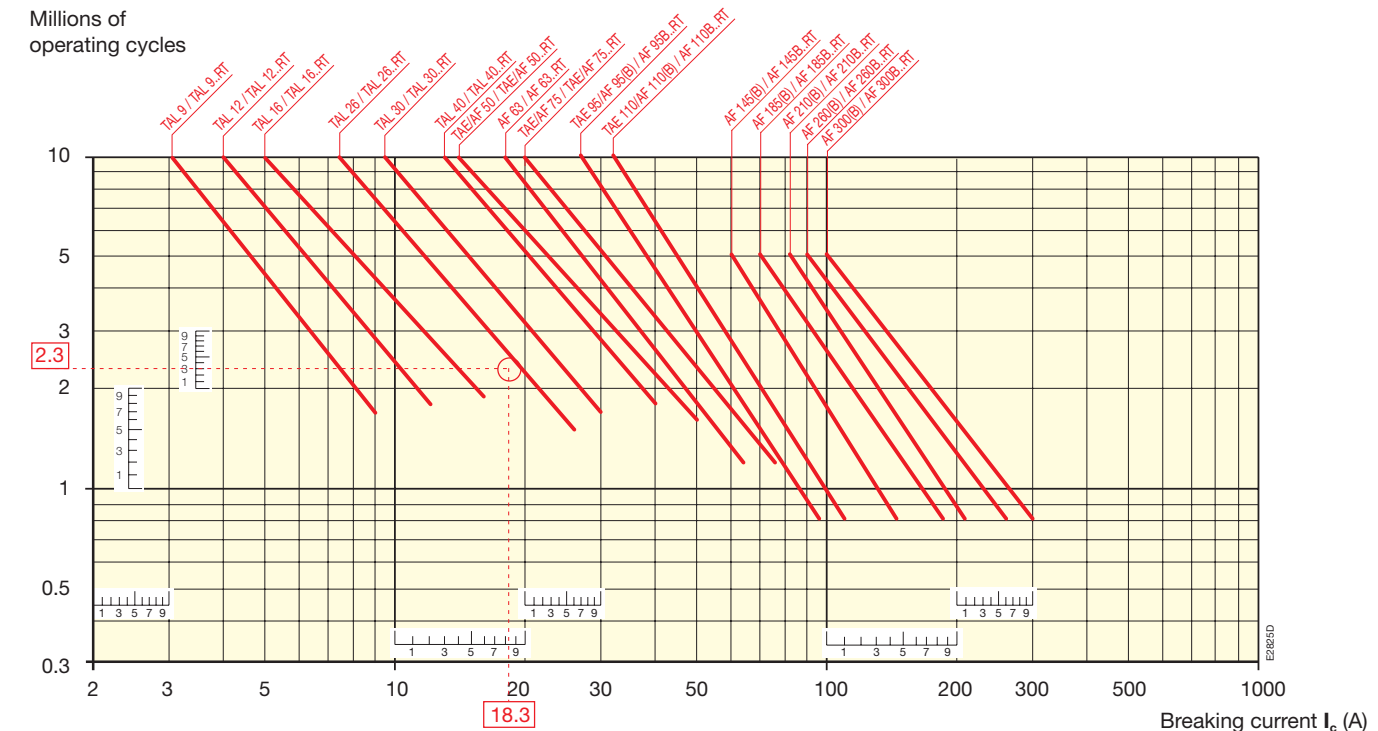
**Example:**

$I_c$  / AC-1 = 35 A – Electrical durability required = 560 000 operating cycles.

Using the AC-1 curves above select the TAL 26 contactor at intersection "O" (35 A / 560 000 operating cycles).

Electrical Durability for **AC-3** Utilization Category -  $U_e \leq 440$  V. Ambient Temperature  $\leq 55$  °C

Switching cage motors: starting and switching off running motors. The breaking current  $I_c$  for AC-3 is equal to the rated operational current  $I_e$  ( $I_c = I_e$ ). Maximum electrical switching frequency: see "Technical Data".



**Example:**

Motor power 9 kW for AC-3 -  $U_e = 400$  V and  $I_e = 18.3$  A utilization – Electrical durability required = 2.3 million operating cycles.

For AC-3:  $I_c = I_e$ . Select the TAL 26 contactor at intersection "O" (18.3 A / 2.3 million operating cycles) on the curves (AC-3 -  $U_e \leq 500$  V).

# Auxiliary Contacts

## Electrical Durability

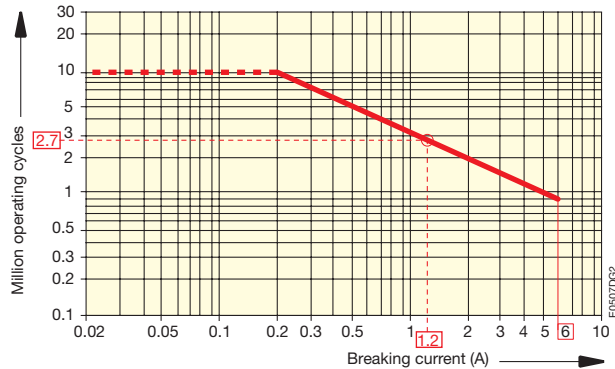
### Electrical Durability for AC-15 Utilization Category

AC-15 utilization category according to IEC 60947-5-1 / EN 60947-5-1:

- making current:  $10 \times I_e$  with  $\cos \varphi = 0.7$  and  $U_e$
- breaking current:  $I_e$  with  $\cos \varphi = 0.4$  and  $U_e$

These curves represent the electrical durability of the built-in or add-on auxiliary contacts or pneumatic timer contacts, in relation to the breaking current.

The curves have been drawn for resistive and inductive loads up to 690 V, 40 ... 60 Hz.

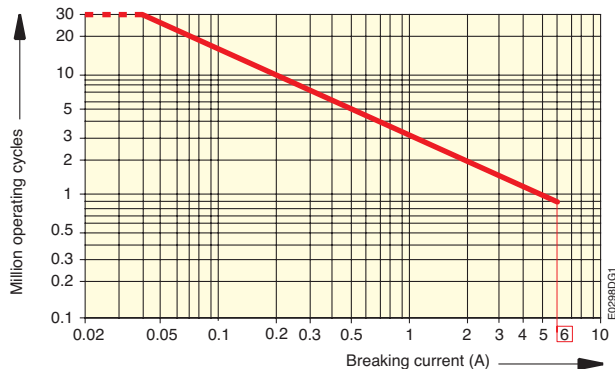


- TAL 9 ... TAL 40 and TAL 9..RT ... TAL 40..RT contactor built-in auxiliary contacts
- 1-pole and 4-pole CA 5-..., CA 5-..RT, 2-pole CAL 5-..., CAL 18-.. and CAL 18-11RT add-on auxiliary contacts.

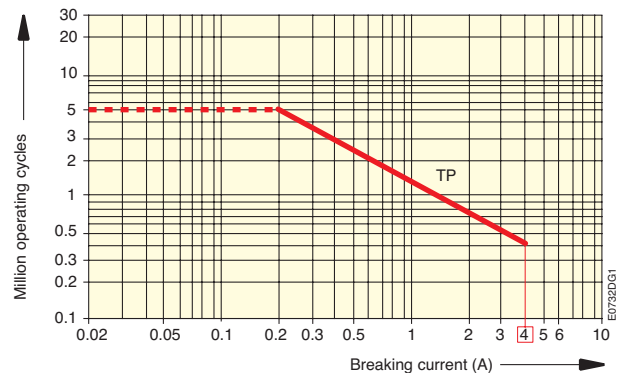
**Example:**

Breaking current = 1.2 A

On the opposite curve at intersection "O" 1.2 A the corresponding value for the electrical durability is approximately  $2.7 \cdot 10^6$  operating cycles.



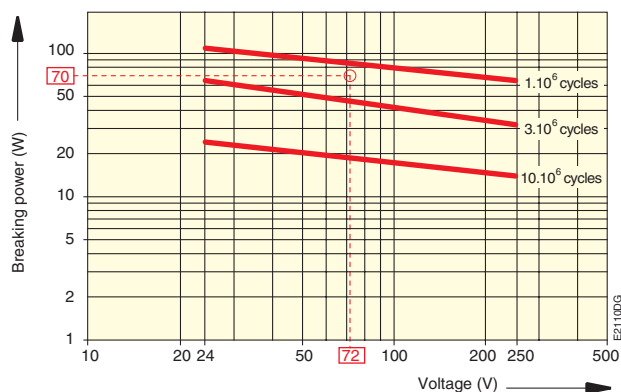
- TNL... and TNL..RT contactor relays. (For add-on auxiliary contacts see above curve).



- TP... pneumatic timer contacts.

### Electrical Durability for DC-13 Utilization Category

DC-13 utilization category according to IEC 60947-5-1 / EN 60947-5-1: making and breaking current =  $I_e$  with  $U_e$  value.



- TAL 9 ... TAL 40 and TAL 9..RT ... TAL 40..RT contactor built-in auxiliary contacts
- 1-pole and 4-pole CA 5-..., CA 5-..RT, 2-pole CAL 5-..., CAL 18-.. and CAL 18-11RT add-on auxiliary contacts.
- TNL... and TNL..RT contactor relays,
- TP... pneumatic timer contacts

**Example:**

Control of d.c. electro-magnet:  $U_e$  voltage = 72 V d.c. and breaking power = 70 W.

On the opposite curve at intersection "O" 72 V / 70 W the corresponding value for the electrical durability is approximately  $2.1 \cdot 10^6$  operating cycles.

# Railway Application Contactor Relays

## 1-stack Contactor Relays, 4-poles

Screw Terminals



TNL 22 E

TNL 31 E

TNL 40 E



d.c. operated with large coil voltage range

Ring Tongue Terminals



TNL 22 ERT

TNL 31 ERT

TNL 40 ERT



<b>Main contacts</b>			<b>N.O + N.C.</b>	
Rated operational current	<b>AC-15</b>	240 V	<b>IEC</b>	<b>A</b>
		<b>400 V</b>		<b>A</b>
		690 V		<b>A</b>
	<b>DC-13</b>	24 V	<b>A/W</b>	
		250 V	<b>A/W</b>	
Pilot duty			<b>UL/CSA</b>	

2 2	3 1	4 0
	4	
	<b>3</b>	
	2	
	6 / 144	
	0.3 / 75	
A 600, Q 300		

## 2-stack Contactor Relays, 8-poles

Screw Terminals



TNL 44 E

TNL 62 E

TNL 80 E



d.c. operated with large coil voltage range

Ring Tongue Terminals



TNL 44 ERT

TNL 62 ERT

TNL 80 ERT



<b>Main contacts</b>			<b>N.O + N.C.</b>	
Rated operational current	<b>AC-15</b>	240 V	<b>IEC</b>	<b>A</b>
		<b>400 V</b>		<b>A</b>
		690 V		<b>A</b>
	<b>DC-13</b>	24 V	<b>A/W</b>	
		250 V	<b>A/W</b>	
Pilot duty			<b>UL/CSA</b>	

4 4	6 2	8 0
	4	
	<b>3</b>	
	2	
	6 / 144	
	0.3 / 75	
A 600, Q 300		



# TNL... and TNL..RT Contactor Relays



d.c. Operated - Large Coil Voltage Range

## Application

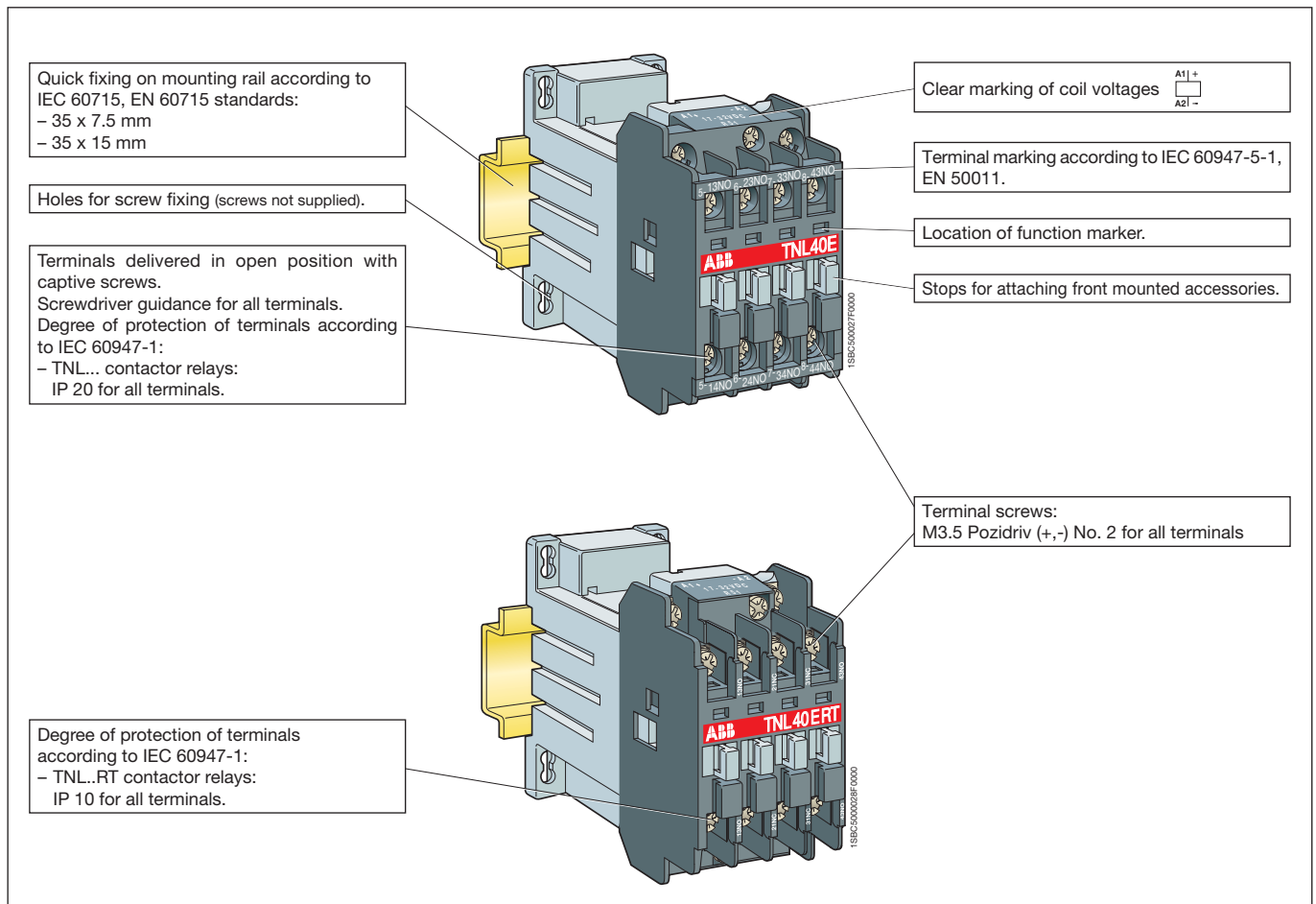
**TNL...** and **TNL..RT** contactor relays are used for switching auxiliary circuits and control circuits. Their low power consumption allows the direct control from transistor PLC outputs.

## Description

The **TNL...** contactor relays are fitted with low consumption and large voltage d.c. coil.

**TNL..RT** contactors are the ring tongue terminal version of the **TNL** range.

- Poles:
  - 1-stack contactor relays: 4-pole (mechanically linked contact elements available),
  - 2-stack contactor relays: 8-pole (mechanically linked contact elements available).  
The width of 8-pole devices is identical to that of 4-pole devices ; only the depth is increased.
- Control circuit: d.c. operated. The polarity on the coil terminals (A1+ and A2-) must be respected.
- Accessories: a wide range of accessories is available.



# TNL... and TNL..RT Contactor Relays

d.c. Operated - Large Coil Voltage Range



## Ordering Details

Number of contacts	Type	Order code	Weight kg
1 <sup>st</sup> stack	state coil voltage <input type="text"/> (see table below)	state coil voltage code <input type="text"/> <input type="text"/> (see table below)	Pack <sup>ing</sup> 1 piece
2 <sup>nd</sup> stack			

### 4-pole, 1-stack Contactor Relays with Screw Terminals

2	2	-	-	-	-	TNL 22 E <input type="text"/>	1SBH 143 061 R <input type="text"/> <input type="text"/> 22	0.520
3	1	-	-	-	-	TNL 31 E <input type="text"/>	1SBH 143 061 R <input type="text"/> <input type="text"/> 31	0.520
4	-	-	-	-	-	TNL 40 E <input type="text"/>	1SBH 143 061 R <input type="text"/> <input type="text"/> 40	0.520

### 8-pole, 2-stack Contactor Relays with Screw Terminals

4	-	-	4	-	-	TNL 44 E <input type="text"/>	1SBH 143 061 R <input type="text"/> <input type="text"/> 44	0.580
4	-	2	2	-	-	TNL 62 E <input type="text"/>	1SBH 143 061 R <input type="text"/> <input type="text"/> 62	0.580
4	-	4	-	-	-	TNL 80 E <input type="text"/>	1SBH 143 061 R <input type="text"/> <input type="text"/> 80	0.580

### 4-pole, 1-stack Contactor Relays with Ring Tongue Terminals

2	2	-	-	-	-	TNL 22 ERT <input type="text"/>	1SBH 143 060 R <input type="text"/> <input type="text"/> 22	0.520
3	1	-	-	-	-	TNL 31 ERT <input type="text"/>	1SBH 143 060 R <input type="text"/> <input type="text"/> 31	0.520
4	-	-	-	-	-	TNL 40 ERT <input type="text"/>	1SBH 143 060 R <input type="text"/> <input type="text"/> 40	0.520


### 8-pole, 2-stack Contactor Relays with Ring Tongue Terminals

4	-	-	4	-	-	TNL 44 ERT <input type="text"/>	1SBH 143 060 R <input type="text"/> <input type="text"/> 44	0.580
4	-	2	2	-	-	TNL 62 ERT <input type="text"/>	1SBH 143 060 R <input type="text"/> <input type="text"/> 62	0.580
4	-	4	-	-	-	TNL 80 ERT <input type="text"/>	1SBH 143 060 R <input type="text"/> <input type="text"/> 80	0.580

#### Coil voltages and codes

Voltage <input type="text"/> <input type="text"/> <input type="text"/> V - d.c.	Code <input type="text"/> <input type="text"/>
17 ... 32	5 1
25 ... 45	5 2
36 ... 65	5 4
42 ... 78	5 8
50 ... 90	5 5
77 ... 143	6 2
90 ... 150	6 6
152 ... 264	6 8

Other voltages: please consult us.

 Voltage tolerances (-15 % and +10 %) included in the  $U_c$  min. and  $U_c$  max. values.



TNL 22 E

1SBH 9019 4F0304



TNL 80 E

1SBH 9020 4F0304



TNL 40 ERT

1SBH 9088 5F0304



TNL 80 ERT

1SBH 9163 4F0304



# TNL... and TNL..RT Contactor Relays



## Main Accessories

### Accessory Fitting Details


#### TNL... Contactor Relays with Screw Terminals

Contactor relay configuration			Front mounted accessories	
Contactor types	Built-in contacts 1 <sup>st</sup> stack    2 <sup>nd</sup> stack			
			Auxiliary contact 1-pole CA 5-..	Auxiliary contact 4-pole CA 5-..
TNL 22 E (3)	2 2	--	1 to 4 x CA 5-.. (2) or	1 x CA 5-.. (4-pole) (2)
TNL 31 E	3 1	--	1 to 4 x CA 5-.. (1) or	1 x CA 5-.. (4-pole) (1)
TNL 40 E	4 0	--		
TNL 44 E	4 0	0 4		
TNL 62 E	4 0	2 2	-	-
TNL 80 E	4 0	4 0		

- (1) 2 N.C. auxiliary contacts maximum in all mounting positions except 5. In position 5 no N.C. auxiliary contact allowed.  
 (2) 2 N.C. auxiliary contacts maximum.  
 (3) Mounting in position 5 is not allowed.

### Accessory Fitting Details

#### TNL..RT Contactor Relays with Ring Tongue Terminals

Contactor relay configuration			Front mounted accessories	
Contactor types	Built-in contacts 1 <sup>st</sup> stack    2 <sup>nd</sup> stack			
			Auxiliary contact 4-pole CA 5-..RT	
TNL 22 ERT (3)	2 2	--	1 x CA 5-..RT (2)	
TNL 31 ERT	3 1	--	1 x CA 5-..RT (1)	
TNL 40 ERT	4 0	--	1 x CA 5-..RT (1)	
TNL 44 ERT	4 0	0 4	-	
TNL 62 ERT	4 0	2 2	-	
TNL 80 ERT	4 0	4 0	-	

- (1) 2 N.C. auxiliary contacts maximum in all mounting positions except 5. In position 5 no N.C. auxiliary contact allowed.  
 (2) 2 N.C. auxiliary contacts maximum.  
 (3) Mounting in position 5 is not allowed.

# TNL... and TNL..RT Contactor Relays

## Technical Data

### Contact Utilization Characteristics

#### Utilization characteristics according to IEC

Contactor relay types	TNL..., TNL..RT	
<b>Rated operational voltage <math>U_e</math> max.</b>	<b>V</b>	690
<b>Conventional free air thermal current <math>I_{th}</math></b> according to IEC 60947-5-1, open contactors $\theta \leq 40$ °C	<b>A</b>	16
<b>Rated frequency limits</b>	<b>Hz</b>	25 ... 400
<b>Rated operational current <math>I_e</math> / AC-15</b> according to IEC 60947-5-1		
24-127 V	50/60 Hz	<b>A</b> 6
230-240 V	50/60 Hz	<b>A</b> 4
400-415 V	50/60 Hz	<b>A</b> 3
500 V	50/60 Hz	<b>A</b> 2
690 V	50/60 Hz	<b>A</b> 2
<b>Rated operational current <math>I_e</math> / DC-13</b> according to IEC 60947-5-1		
24 V d.c.	<b>A / W</b>	6 / 144
48 V d.c.	<b>A / W</b>	2.8 / 134
72 V d.c.	<b>A / W</b>	1 / 72
110 V d.c.	<b>A / W</b>	0.55 / 60
125 V d.c.	<b>A / W</b>	0.55 / 69
220 V d.c.	<b>A / W</b>	0.30 / 66
250 V d.c.	<b>A / W</b>	0.30 / 75
<b>Making capacity</b> according to IEC 60947-5-1		10 x $I_e$ / AC-15
<b>Breaking capacity</b> according to IEC 60947-5-1		10 x $I_e$ / AC-15
<b>Short-circuit protection</b> $U_e \leq 500$ V a.c. - gG type fuse	<b>A</b>	10
<b>Rated short-time withstand current <math>I_{cw}</math></b> at 40 °C ambient temp., in free air, from a cold state		
1.0 s	<b>A</b>	100
0.1 s	<b>A</b>	140
<b>Minimum switching capacity</b> with failure rate acc. to IEC 60947-5-4	<b>V / mA</b>	17 / 5 $\leq 10^{-7}$
<b>Non-overlapping time between N.O. and N.C. contacts</b>	<b>ms</b>	$\geq 2$
<b>Heat dissipation per pole at 6 A</b>	<b>W</b>	0.10
<b>Max. electric switching frequency</b>	<b>cycles/h</b>	1200
<b>Mechanical durability</b> – millions of operating cycles – max. mechanical switching frequency	<b>cycles/h</b>	> 20 6000

#### Utilization characteristics according to UL/CSA

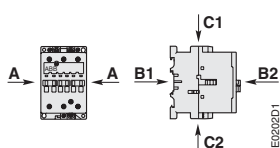
Contactor relay types	TNL..., TNL..RT
<b>Max. rated voltage</b>	<b>V</b> 600
<b>Pilot duty</b>	A 600, Q 300

# TNL... and TNL..RT Contactor Relays

## Technical Data

### General Technical Data

Contactor relay types	TNL...	TNL..RT
<b>Rated insulation voltage <math>U_i</math></b> according to IEC 60947-5-1	<b>V</b> 690	
according to UL/CSA	<b>V</b> 600	
<b>Rated impulse withstand voltage <math>U_{imp}</math></b>	<b>kV</b> 8	6
<b>Standards</b>	Devices complying with IEC 60947-5-1 and EN 60947-5-1	
<b>Air temperature</b> close to contactor – for operation in free air	<b>°C</b> -40 to +70 (1)	see "Conditions for use", for control voltage limits and authorized mounting positions
– for storage	<b>°C</b> -60 to +80	
<b>Climatic withstand</b>	acc. to IEC 60068-2-30 and 60068-2-11 - UTE C 63-100 specification II	
<b>Operating altitude</b>	<b>m</b> ≤ 3000	
<b>Shock withstand</b> acc. IEC 60068-2-27 and EN 60068-2-27 Mounting position 1	1/2 sinusoidal shock for 11 ms: no change in contact position	
	<b>Shock direction</b>	
	A	20 g
	B1	15 g
	B2	10 g
	C1	20 g
	C2	14 g
		Open position
		10 g
		5 g
		10 g
		8 g
		8 g



(1) TNL...(RT) contactors for ambient temperature  $55\text{ °C} < \theta \leq 70\text{ °C}$  according to IEC 60077.

### Magnet System Characteristics for TNL..., TNL..RT Contactor Relays

Contactor relay types	TNL..., TNL..RT
<b>Rated control circuit voltage <math>U_c</math></b>	<b>V d.c.</b> 17 ... 264
<b>Coil operating limits</b>	$U_c$ min. ... $U_c$ max. ( $\theta \leq 70\text{ °C}$ ) (2) see "Conditions for Use"
<b>Drop-out voltage</b> in % of $U_c$ max.	approx. 9 ... 25 %
<b>Coil consumption</b> for $U_c$ min. ... $U_c$ max.	<b>W</b> 2.5 ... 8.5 at pull-in and holding
<b>Coil time constant</b>	
– open L/R	<b>ms</b> 28
– closed L/R	<b>ms</b> 74
<b>Operating time</b>	
between coil energization and:	
– N.O. contact closing	<b>ms</b> 50 ... 100
– N.C. contact opening	<b>ms</b> 20 ... 70
between coil de-energization and:	
– N.O. contact opening	<b>ms</b> 10 ... 17 (1)
– N.C. contact closing	<b>ms</b> 16 ... 27 (1)

(1) The use of surge suppressors increases the opening time with a factor of 1.1 to 1.5 for a varistor suppressor and a factor of 1.5 to 3 for a transient diode suppressor.

(2) TNL...(RT) contactors for ambient temperature  $55\text{ °C} < \theta \leq 70\text{ °C}$  according to IEC 60077.

# TNL... and TNL..RT Contactor Relays

## Technical Data

### Mounting Characteristics

<b>Contactor relay types</b>	TNL..., TNL..RT
<b>Mounting positions</b>	see "Conditions for Use"
<b>Mounting distances</b>	Distances for ambient temperature 20 ... 70 °C (1)
<b>Fixing</b>	
on rail	35 x 7.5 mm 35 x 15 mm
by screws (not supplied)	2 x M4

(1) TNL..(RT) contactors for ambient temperature 55 °C <  $\theta$  ≤ 70 °C according to IEC 60077.

### Conditions for Use

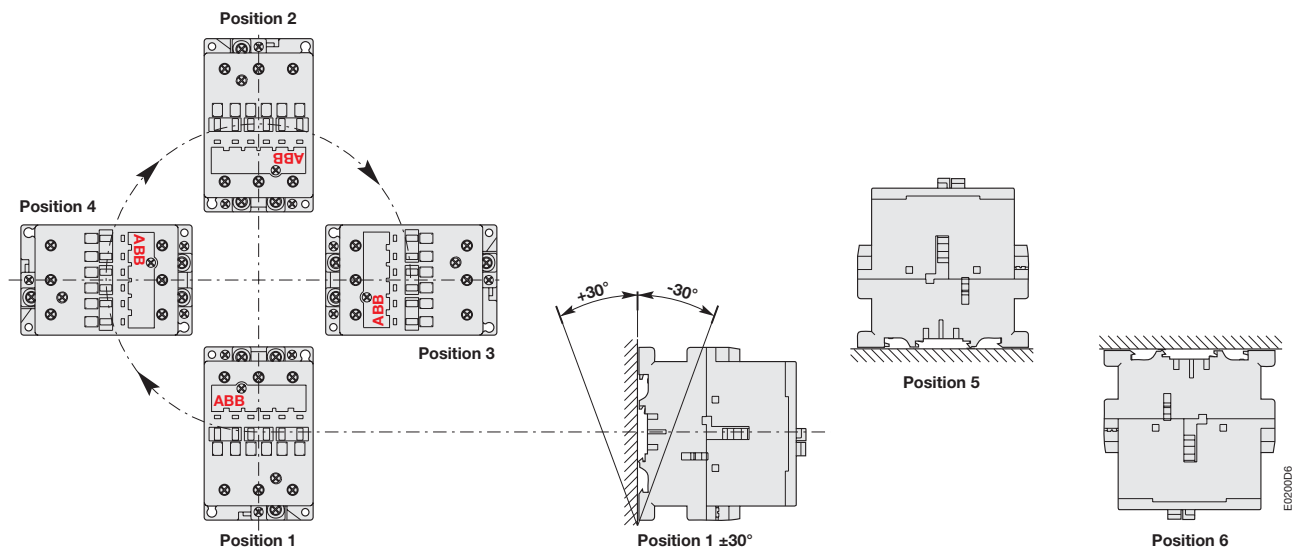
Sustainable utilization conditions for contactor relays involving at the same time the Mounting position, Ambient temperature and Control Voltage operating limits are summarized in the table below.

<b>Contactor relay types</b>	TNL..., TNL..RT
<b>Control Voltage / Ambient temperature</b>	
Mounting positions	≤ 70 °C (2)
1, 1 ± 30°, 2, 3, 4, 5 (1)	U <sub>c</sub> min. ... U <sub>c</sub> max.
Mounting position 6	unauthorized

(1) TNL 22 E and TNL 22 ERT not allowed in position 5.

(2) TNL..(RT) contactors for ambient temperature 55 °C <  $\theta$  ≤ 70 °C according to IEC 60077.





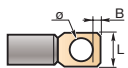
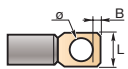
### Mounting Positions (see the above table for authorized positions)



# TNL... and TNL..RT Contactor Relays

## Technical Data

### Connecting Characteristics

Contactor relay types	TNL...	TNL..RT
<b>Terminals</b>	 with cable clamp	 with insulated ring tongue cable end
<b>Connecting capacity</b> (min. ... max.) Pole and coil terminals with cable clamp		
Rigid solid	1 x mm <sup>2</sup> 2 x mm <sup>2</sup>	1 ... 4 -
Flexible with cable end	1 x mm <sup>2</sup> 2 x mm <sup>2</sup>	0.75 ... 2.5 -
<b>Lugs</b>		
- Pole terminals	 L mm ≤ l mm >	7.7 3.7
- Coil terminals	 L mm ≤ l mm >	8 3.7
<b>Connecting capacity</b> (min. ... max.) Pole and coil terminals with insulated ring tongue cable end		
Flexible with lug		
- Pole terminals	 2 x mm <sup>2</sup> Ø mm > L mm ≤ B mm ≤	- 0.75...2.5 3.7 7.7 2.2
- Coil terminals	 Ø mm > L mm ≤ B mm ≤	- 3.7 8 2.1
<b>Degree of protection</b> acc. to IEC 60947-1 / EN 60947-1 and IEC 60529 / EN 60529 All terminals	Protection against direct contact in acc. with EN 50274	
<b>Screw terminals</b> All terminals	IP 20 M 3.5 (+,-) pozidriv 2 screws with cable clamp delivered in open position Screws of unused terminals must be tightened	IP 10 M 3.5 (+,-) pozidriv 2 screws
<b>Tightening torque</b> - recommended - max.	Nm / lb.in Nm	1.00 / 9 1.20

# Accessories for TAL 9 ... TAL 40, AF 45 ... AF 110B, TAE 45 ... TAE 110 Contactors

## Screw Terminals

### Auxiliary Contact Blocks

Positioning	Mounting on :	Contacts	Type	Order code	Pack <sup>ing</sup> piece	Weight kg
Front face	TAL 9 ... TAL 40 AF 45 ... AF 110 AF 95B ... AF 110B TAE 45 ... TAE 110	1 - - 1	CA 5-10 CA 5-01	1SBN 010 010 R1010 1SBN 010 010 R1001	10 10	0.014 0.014
	TAL 9 ... TAL 40-30-10	3 1 2 2	CA 5-31 M CA 5-22 M	1SBN 010 040 R1131 1SBN 010 040 R1122	2 2	0.060 0.060
	TAL 9 ... TAL 40-30-01	3 1 2 2	CA 5-31 U CA 5-22 U	1SBN 010 040 R1331 1SBN 010 040 R1322	2 2	0.060 0.060
	AF 45 ... AF 110, AF 95B, AF 110B, TAE 45 ... TAE 110 TAL 9 ... TAL 26-40-00 TAL 9 ... TAL 26-22-00	3 1 2 2	CA 5-31 E CA 5-22 E	1SBN 010 040 R1031 1SBN 010 040 R1022	2 2	0.060 0.060
	Side	AF 45 ... AF 75 TAE 45 ... TAE 75	1 1	CAL 5-11	1SBN 010 020 R1011	2
	AF 95, AF 110 AF 95B, AF 110B	1 1	CAL 18-11	1SBN 010 720 R1011	2	0.050

### Pneumatic Timers

Mounting on :	Timing range :	Contacts	Type	Order code	Pack <sup>ing</sup> piece	Weight kg
AF 45 ... AF 75 TAE 45 ... TAE 75	Direct 0.1...40s	1 1	TP 40 DA	1SBN 020 300 R1000	1	0.070
	Direct 10...180s	1 1	TP 180 DA	1SBN 020 300 R1001	1	0.070
	Inverse 0.1...40s	1 1	TP 40 IA	1SBN 020 301 R1000	1	0.070
	Inverse 10...180s	1 1	TP 180 IA	1SBN 020 301 R1001	1	0.070

Note: Pneumatic timers are not allowed on TAL... and TAL..RT contactors.

### Electronic Timers for star-delta starters (dwelling time 50 ms)

Mounting :	Timing range :	Supply voltage	Type	Order code	Pack <sup>ing</sup> piece	Weight kg
Independent	Direct 0.8...8 s or 6...60 s	24 V a.c. / d.c.	TE5S-24	1SBN 020 010 R1001	1	0.080
		110 ... 120 V a.c.	TE5S-120	1SBN 020 010 R1002	1	0.080
		220 ... 240 V a.c.	TE5S-240	1SBN 020 010 R1003	1	0.080
		380 ... 440 V a.c.	TE5S-440	1SBN 020 010 R1004	1	0.080

### Interlocks

Feature	Mounting on :	Contacts	Type	Order code	Pack <sup>ing</sup> piece	Weight kg
Mech. / elec.	TAL 9 ... TAL 40	- 2	VE 5-1	1SBN 030 110 R1000	1	0.076
	AF 45 ... AF 110 AF 95B, AF 110B TAE 45 ... TAE 110	- 2	VE 5-2	1SBN 030 210 R1000	1	0.146
	Mechanical	TAL 9 ... TAL 40	- -	VM 5-1	1SBN 030 100 R1000	1

Note: For TAL... contactors, only same size contactors can be interlocked together.

### Surge Suppressors

For contactors	Control voltage		Type	Order code	Pack <sup>ing</sup> piece	Weight kg
	V	d.c. a.c.				
TAL 9 ... TAL 40	12 ... 32	● -	RT 5/32	1SBN 050 020 R1000	2	0.015
TAE 45 ... TAE 110	25 ... 65	● -	RT 5/65	1SBN 050 020 R1001	2	0.015
	50 ... 90	● -	RT 5/90	1SBN 050 020 R1002	2	0.015
	77 ... 150	● -	RT 5/150	1SBN 050 020 R1003	2	0.015
	150 ... 264	● -	RT 5/264	1SBN 050 020 R1004	2	0.015
	24 ... 50	● ●	RV 5/50	1SBN 050 010 R1000	2	0.015
	50 ... 133	● ●	RV 5/133	1SBN 050 010 R1001	2	0.015
	110 ... 250	● ●	RV 5/250	1SBN 050 010 R1002	2	0.015
	250 ... 440	● ●	RV 5/440	1SBN 050 010 R1003	2	0.015

### Function Marker

Feature	Mounting on :	Type	Order code	Pack <sup>ing</sup> box	Weight kg
50 pcs in a box	TAL..., AF..., AF..B..., TAE...	BA 5-50	1SBN 110 000 R1000	1	0.017

Note: For other accessories, please see the "Main Catalogue".



CAL 5-11



CA 5-10



TP 40 DA



TE5S



VE 5-1



RV 5/50



RT 5/32



# Accessories for AF 145 ... AF 300 and AF 145B ... AF 300B Contactors

## Screw Terminals

### Auxiliary Contact Blocks

Positioning	Mounting on :	Contacts	Type	Order code	Pack <sup>ing</sup>	Weight
					piece	kg
Side	AF 145B ... AF 300B	1 1	CAL 18-11	1SFN 010 720 R1011	2	0.050
		1 1	CAL 18-11B	1SFN 010 720 R3311	2	0.050

### Electronic Timers for star-delta starters (dwelling time 50 ms)

Mounting :	Timing range :	Supply Voltage	Type	Order code	Pack <sup>ing</sup>	Weight
					piece	kg
Independent	Direct 0.8 ... 8 s or 6 ... 60 s	24 V a.c. / d.c.	TE5S-24	1SBN 020 010 R1001	1	0.080
		110 ... 120 V a.c.	TE5S-120	1SBN 020 010 R1002	1	0.080
		220 ... 240 V a.c.	TE5S-240	1SBN 020 010 R1003	1	0.080
		380 ... 440 V a.c.	TE5S-440	1SBN 020 010 R1004	1	0.080

### Interlocks for two horizontal mounted contactors

Feature	Left Contactor	Right Contactor	Type	Order code	Pack <sup>ing</sup>	Weight
					piece	kg
Mechanical	AF 95B...AF 300B	AF 145B...AF 300B	VM 300H	1SFN 034 700 R1000	1	0.150

### Connectors

Cables	Mounting on :	Cable cross section: mm <sup>2</sup>	Type	Order code	Pack <sup>ing</sup>	Weight
					piece	kg
Single, Cu	AF 145B, AF 185B AF 210B...AF 300B	6...185	-	1SDA 023 354 R0001	3	0.200
		16...240	-	1SDA 023 368 R0001	3	0.400
Single Al & Cu	AF 145B, AF 185B AF 210B...AF 300B	35...95	-	1SDA 023 356 R0001	3	0.100
		25...150	-	1SDA 023 357 R0001	3	0.100
Double, Cu	AF 145B, AF 185B AF 210B...AF 300B	120...240	-	1SDA 023 370 R0001	3	0.200
		2x(50...120)	LZ 185-2C/120	1SFN 074 709 R1000	3	0.300
Double Al & Cu	AF 210B...AF 300B	2x(95...120)	-	1SDA 025 766 R0001	3	0.400

### Shrouds

Suitable for contactor with :	Mounting on :	Type	Order code	Pack <sup>ing</sup>	Weight
				piece	kg
Cable connectors	AF 145B, AF 185B	LT 185-AC	1SFN 124 701 R1000	2	0.050
Cable lugs	AF 145B, AF 185B	LT 185-AL	1SFN 124 703 R1000	2	0.220
For shorting bar LY 185	AF 145B, AF 185B	LT 185-AY	1SFN 124 704 R1000	1	0.050
Cable connectors	AF 210B ... AF 300B	LT 300-AC	1SFN 125 101 R1000	2	0.070
Cable lugs	AF 210B ... AF 300B	LT 300-AL	1SFN 125 103 R1000	2	0.280
For shorting bar LY 300	AF 210B ... AF 300B	LT 300-AY	1SFN 125 104 R1000	1	0.075

**Note:** The accessories provided for **AF 145B ... AF 300B** contactors can be used for **AF 145 ... AF 300** types. For other accessories, please see the "Main Catalogue".



CAL 18-11



TE5S



VM 300H



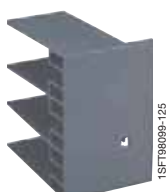
LZ...



LT...-AC



LT...-AY




LT...-AL

# Accessories for TAL 9..RT ... TAL 40..RT, AF 45..RT ... AF 110B..RT and TAE 45..RT ... TAE 75..RT Contactors


## Ring Tongue Terminals

### Front Mounted 4-pole Auxiliary Contact Blocks

Mounting on contactors	Contact blocks	Type	Order Code	Pack <sup>ing</sup> piece	Weight kg
					1 piece
TAL 9..RT ... TAL 26-40-00RT TAL 9..RT ... TAL 26-22-00RT TAE 45..RT ... TAE 75..RT AF 45..RT ... AF 75..RT AF 95B..RT ... AF 110B..RT	{ 4 0 3 1 2 2	CA 5-40 ERT CA 5-31 ERT CA 5-22 ERT	1SBN 010 042 R1040 1SBN 010 042 R1031 1SBN 010 042 R1022	2 2 2	0.060 0.060 0.060
TAL 9..RT ... TAL 40-30-10RT	{ 3 1 2 2	CA 5-31 MRT CA 5-22 MRT	1SBN 010 042 R1131 1SBN 010 042 R1122	2 2	0.060 0.060

See "Accessory Fitting Details" and "Technical Data".

### Side Mounted 2-pole Auxiliary Contact Blocks

Mounting on contactors	Contact blocks	Type	Order Code	Pack <sup>ing</sup> piece	Weight kg
					1 piece
AF 95B..RT, AF 110B..RT	1 1	CAL 18-11RT	1SFN 010 729 R1011	2	0.050

### Interlocks

Mounting on contactors	Feature	Contacts	Type	Order Code	Pack <sup>ing</sup> piece	Weight kg
TAL..RT	Mechanical	- -	VM 5-1	1SBN 030 100 R1000	1	0.066

**Nota:** Only same size contactors can be interlocked together.

### Surge Suppressors

Mounting on contactors	Feature	Voltage range	Type	Order Code	Pack <sup>ing</sup> piece	Weight kg
						1 piece
TAL..RT	Varistor	24 ... 50 V a.c./d.c.	RV 5/50	1SBN 050 010 R1000	2	0.015
		50 ... 133 V a.c./d.c.	RV 5/133	1SBN 050 010 R1001	2	0.015
		110 ... 250 V a.c./d.c.	RV 5/250	1SBN 050 010 R1002	2	0.015
		250 ... 440 V a.c./d.c.	RV 5/440	1SBN 050 010 R1003	2	0.015
TAE..RT	Diode	12 ... 32 V d.c.	RT 5/32	1SBN 050 020 R1000	2	0.015
		25 ... 65 V d.c.	RT 5/65	1SBN 050 020 R1001	2	0.015
		50 ... 90 V d.c.	RT 5/90	1SBN 050 020 R1002	2	0.015
		77 ... 150 V d.c.	RT 5/150	1SBN 050 020 R1003	2	0.015
		150 ... 264 V d.c.	RT 5/264	1SBN 050 020 R1004	2	0.015

### Function Marker

Mounting on contactors	Feature	Type	Order Code	Pack <sup>ing</sup> box	Weight kg
TAL..RT, AF..RT, AF..B..RT, TAE..RT	50 Pieces in a box	BA 5-50	1SBN 110 000 R1000	1	0.017

### Other Accessories

Various other accessories with screw terminals can be used with the contactors with Ring Tongue terminals, these include:

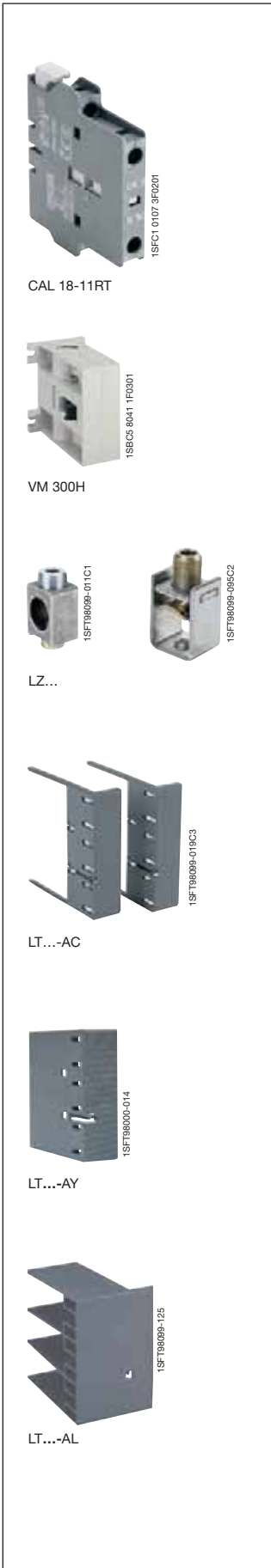
- VE 5-1 and VE 5-2 interlock units,
- CAL 5-11 side mounted auxiliary contact block,
- CA5.. 1-pole auxiliary contact block
- CE 5.. 1-pole auxiliary contact block, } on TAL 26..RT ... TAL 40..RT, TAE..RT, AF..RT,
- TP... pneumatic timer block (only TAE..RT and AF..RT),
- TE5S electronic timer,
- TA..DU thermal overload relays (independant mounting kit required),

For "Technical Data" and "Accessory Fitting Details", please see the "Main Catalogue".




# Accessories for AF 145B..RT ... AF 300B..RT Contactors

## Ring Tongue Terminals



### Auxiliary Contact Blocks

Positioning	Mounting on :	Contacts	Type	Order code	Pack <sup>ing</sup> piece	Weight kg
Side	AF 145B..RT ... AF 300B..RT	 1 1	CAL 18-11RT	1SFN 010 729 R1011	2	0.050

### Interlocks for two horizontal mounted contactors

Feature	Left Contactor	Right Contactor	Type	Order code	Pack <sup>ing</sup> piece	Weight kg
Mechanical	AF 145B..RT ... AF 300B..RT	AF 145B..RT ... AF 300B..RT	VM 300H	1SFN 034 700 R1000	1	0.150



### Connectors

Cables	Mounting on :	Cable cross section: mm <sup>2</sup>	Type	Order code	Pack <sup>ing</sup> piece	Weight kg
Single, Cu	AF 145B..RT, AF 185B..RT	6 ... 185	–	1SDA 023 354 R0001	3	0.200
	AF 210B..RT...AF 300B..RT	16 ... 240	–	1SDA 023 368 R0001	3	0.400
Single Al & Cu	AF 145B..RT, AF 185B..RT	35 ... 95	–	1SDA 023 356 R0001	3	0,100
	AF 145B..RT, AF 185B..RT	25 ... 150	–	1SDA 023 357 R0001	3	0.100
	AF 210B..RT...AF 300B..RT	120 ... 240	–	1SDA 023 370 R0001	3	0.200
Double, Cu	AF 145B..RT, AF 185B..RT	2x(50 ... 120)	LZ 185-2C/120	1SFN 074 709 R1000	3	0.300
Double Al & Cu	AF 210B..RT...AF 300B..RT	2x(95 ... 120)	–	1SDA 025 766 R0001	3	0.400

### Shrouds

Suitable for contactor with :	Mounting on :	Type	Order code	Pack <sup>ing</sup> piece	Weight kg
Cable connectors	AF 145B..RT, AF 185B..RT	LT 185-AC	1SFN 124 701 R1000	2	0.050
Cable lugs	AF 145B..RT, AF 185B..RT	LT 185-AL	1SFN 124 703 R1000	2	0.220
For shorting bar LY 185	AF 145B..RT, AF 185B..RT	LT 185-AY	1SFN 124 704 R1000	1	0.050
Cable connectors	AF 210B..RT...AF 300B..RT	LT 300-AC	1SFN 125 101 R1000	2	0.070
Cable lugs	AF 210B..RT...AF 300B..RT	LT 300-AL	1SFN 125 103 R1000	2	0.280
For shorting bar LY 300	AF 210B..RT...AF 300B..RT	LT 300-AY	1SFN 125 104 R1000	1	0.075

# Accessories for TNL..., TNL..RT Contactor Relays

Screw Terminals  - Ring Tongue Terminals 



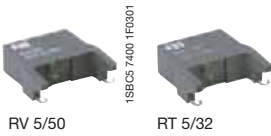
CA 5-10



CA5-40 N



CA 5-40 NRT




RV 5/50

RT 5/32




BA 5-50

## Auxiliary Contact Blocks with Screw Terminals

Mounting on contactor relays	Positioning	Contact blocks	Type	Order Code	Pack <sup>ing</sup> piece	Weight kg
						1 piece
TNL...	Front face	1 -	CA 5-10	1SBN 010 010 R1010	10	0.014
		- 1	CA 5-01	1SBN 010 010 R1001	10	0.014
	Front face	4 0	CA 5-40 N	1SBN 010 040 R1240	2	0.060
		3 1	CA 5-31 N	1SBN 010 040 R1231	2	0.060
		2 2	CA 5-22 N	1SBN 010 040 R1222	2	0.060

See "Accessory Fitting Details".

## 4-pole Auxiliary Contact Blocks with Ring Tongue Terminals

Mounting on contactor relays	Positioning	Contact blocks	Type	Order Code	Pack <sup>ing</sup> piece	Weight kg
						1 piece
TNL..RT	Front face	4 0	CA 5-40 NRT	1SBN 010 042 R1240	2	0.060
		3 1	CA 5-31 NRT	1SBN 010 042 R1231	2	0.060
		2 2	CA 5-22 NRT	1SBN 010 042 R1222	2	0.060

See "Accessory Fitting Details".

## Surge Suppressors

Mounting on contactor relays	Feature	Voltage range	Type	Order Code	Pack <sup>ing</sup> piece	Weight kg
TNL..., TNL..RT	Varistor	24 ... 50 V a.c./d.c.	RV 5/50	1SBN 050 010 R1000	2	0.015
		50 ... 133 V a.c./d.c.	RV 5/133	1SBN 050 010 R1001	2	0.015
		110 ... 250 V a.c./d.c.	RV 5/250	1SBN 050 010 R1002	2	0.015
		250 ... 440 V a.c./d.c.	RV 5/440	1SBN 050 010 R1003	2	0.015
	Transil Diode	12 ... 32 V d.c.	RT 5/32	1SBN 050 020 R1000	2	0.015
25 ... 65 V d.c.		RT 5/65	1SBN 050 020 R1001	2	0.015	
50 ... 90 V d.c.		RT 5/90	1SBN 050 020 R1002	2	0.015	
77 ... 150 V d.c.		RT 5/150	1SBN 050 020 R1003	2	0.015	
150 ... 264 V d.c.		RT 5/264	1SBN 050 020 R1004	2	0.015	

## Function Marker

Mounting on contactor relays	Feature	Type	Order Code	Pack <sup>ing</sup> box	Weight kg
TNL..., TNL..RT	50 Pieces in a box	BA 5-50	1SBN 110 000 R1000	1	0.017

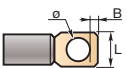
# Auxiliary Contact Blocks

Front and Side Mounting  
Ring Tongue Terminals



## Technical Data

### Utilization characteristics according to IEC

Types	4-pole CA 5-..RT	2-pole CAL 18-..RT
<b>Compliance with standards</b>	IEC 60947-5-1 and EN 60947-5-1	
<b>Rated insulation voltage <math>U_i</math></b> according to IEC 60947-5-1	<b>V</b> 690	
<b>Rated operational voltage <math>U_e</math></b>	<b>V a.c.</b> 24 ... 690	
<b>Conventional thermal current <math>I_{th}</math></b>	<b>A</b> 16	
<b>Rated operational current <math>I_e</math></b> according to IEC 60947-5-1		
a.c.	<b>AC-15</b>	
24 ... 127 V	<b>A</b> 6	
220 ... 240 V	<b>A</b> 4	
380 ... 440 V	<b>A</b> 3	
500 ... 690 V	<b>A</b> 2	
d.c.	<b>DC-13</b>	
24 V	<b>A / W</b> 6 / 144	
48 V	<b>A / W</b> 2.8 / 134	
72 V	<b>A / W</b> 1 / 72	
110 V	<b>A / W</b> 0.55 / 60	
125 V	<b>A / W</b> 0.55 / 69	
220 V	<b>A / W</b> 0.3 / 66	
250 V	<b>A / W</b> 0.3 / 75	
<b>Short circuit protection</b> - gG type fuses	<b>A</b> 10	
<b>Making capacity</b>	10 x $I_e$ AC-15	
<b>Breaking capacity</b>	10 x $I_e$ AC-15	
<b>Rated short-time withstand current <math>I_{cw}</math></b> 1 s	<b>A</b> 100	
$\theta = 40^\circ\text{C}$ 0.1 s	<b>A</b> 140	
<b>Power loss per pole at 6 A</b>	<b>W</b> 0.10 0.15	
<b>Min. switching capacity</b>	<b>V / mA</b> 17 / 1 24 / 50 (0.5 million operating cycles)	
with failure rate acc. to IEC 60947-5-4	$\leq 10^{-7}$ -	
<b>Mechanical durability</b> - millions of operating cycles	10 5 (AF 95B..RT ... AF 185B..RT), 3 (AF 210B..RT ... AF 300B..RT)	
- max. mech. switching frequency <b>cycles/h</b>	3600	
<b>Electrical durability</b> - millions of operating cycles	see "Electrical Durability" curves	
- max. elec. switching frequency <b>cycles/h</b>	1200	
<b>Connecting capacity</b> (min. ... max.)		
Flexible with lug	<b>mm<sup>2</sup></b> 2 x 0.75 ... 2.5	
	<b>Ø mm &gt;</b> 3.7 3.7	
	<b>L mm ≤</b> 7.7 8	
	<b>B mm ≤</b> 1.9	
<b>Degree of protection</b> acc. to IEC 60947-1 / EN 60947-1 and IEC 60529 / EN 60529	IP 10 IP 20	
- All terminals		
<b>Screw terminals for ring tongue cable end</b> - All terminals	(+, -) pozidriv 2 screws M 3.5	
<b>Tightening torque</b> - recommended	<b>Nm / lb.in</b> 1.00 / 9	
- max.	<b>Nm</b> 1.20	
<b>Utilization characteristics according to UL/CSA</b>		
<b>Max. rated voltage</b>	<b>V</b> 600	
<b>Pilot duty</b>	A 600, Q 300	

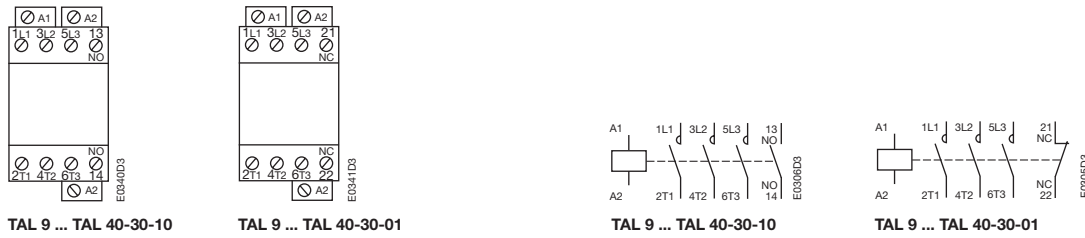
>> Electrical Durability Curves .....page 277

# Terminal Marking and Positioning

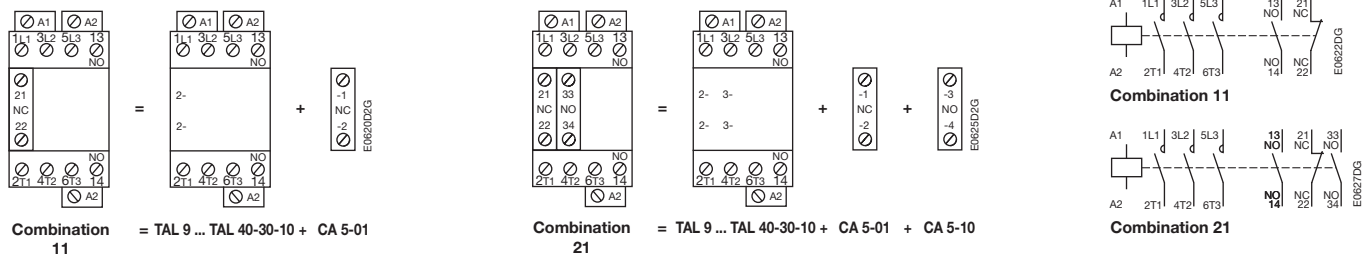
TAL 9 ... TAL 40, AF 50 ... AF 110, AF 95B, AF 110B  
and TAE 50 ... TAE 110 3-pole Contactors

**TAL... Contactors** - d.c. operated (the polarity A1+, A2- must be respected)

**Standard devices without addition of auxiliary contacts**

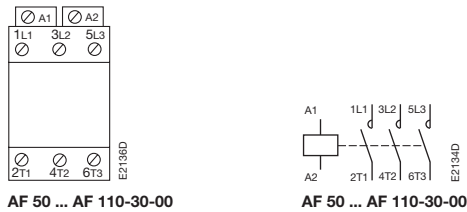


**Other possible contact combinations with auxiliary contacts added by the user**

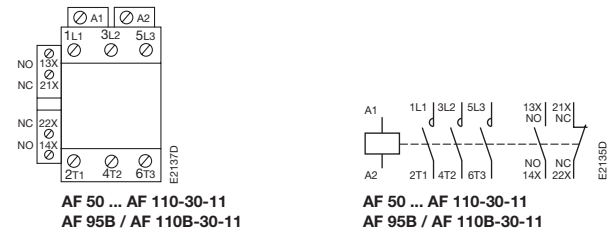


**AF 50 ... AF 110 Contactors** - a.c. / d.c. operated

**Standard devices without addition of auxiliary contacts**

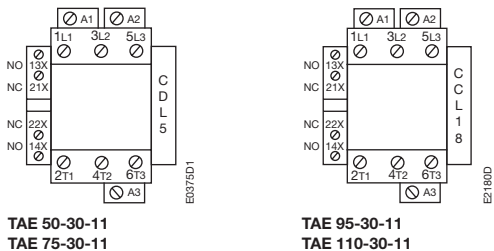
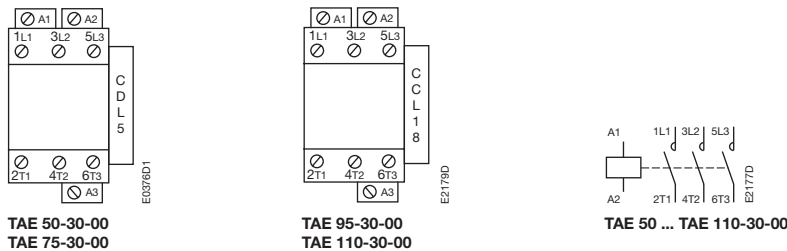


**Standard devices with factory mounted auxiliary contacts**



**TAE... Contactors** - d.c. operated

**Standard devices without addition of auxiliary contacts**

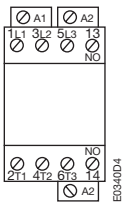


# Terminal Marking and Positioning

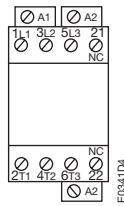
## TAL..RT, AF..RT, AF.B..RT and TAE..RT 3-pole Contactors

**TAL..RT Contactors** - d.c. operated (the polarity A1+, A2- must be respected)

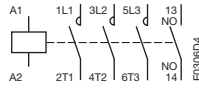
**Standard devices without addition of auxiliary contacts**



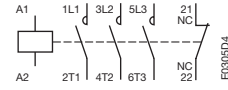
TAL 9 ... TAL 40-30-10RT



TAL 9 ... TAL 40-30-01RT

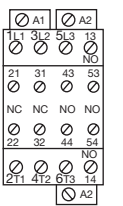


TAL 9 ... TAL 40-30-10RT

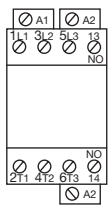


TAL 9 ... TAL 40-30-01RT

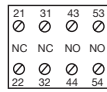
**Other possible contact combinations with auxiliary contacts added by the user**



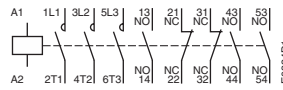
TAL 9 ... TAL 40-30-32RT =



TAL 9 ... TAL 40-30-10RT +



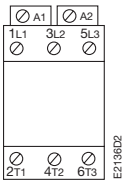
CA 5-22 MRT



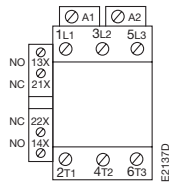
Contactage 32

**AF 50..RT ... AF 75..RT, AF 95B..RT, AF 110B..RT Contactors** - a.c. / d.c. operated

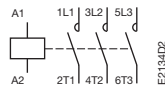
**Standard devices without addition of auxiliary contacts**



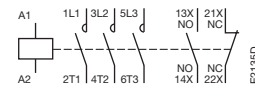
AF 50 ... AF 75-30-00RT



AF 95B-30-11RT  
AF 110B-30-11RT



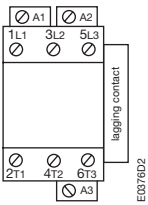
AF 50 ... AF 75-30-00RT



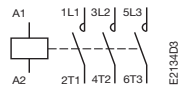
AF 95B-30-11RT  
AF 110B-30-11RT

**TAE..RT Contactors** - d.c. operated

**Standard devices without addition of auxiliary contacts**



TAE 50-30-00RT  
TAE 75-30-00RT



TAE 50-30-00RT  
TAE 75-30-00RT

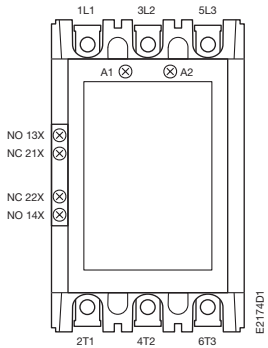
# Terminal Marking and Positioning

## AF 145B ... AF 300B 3-pole Contactors and RT Versions

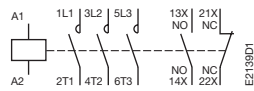
### GTAE 75..RT 1-pole Contactors

AF... Contactors - a.c. / d.c. operated

Standard devices with factory mounted auxiliary contacts



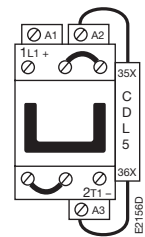
AF 145B ... AF 300B-30-11  
AF 145B ... AF 300B-30-11RT



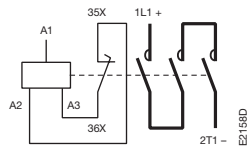
AF 145B ... AF 300B-30-11  
AF 145B ... AF 300B-30-11RT

GTAE 75..RT Contactors - d.c. operated

Standard devices without addition of auxiliary contacts



GTAE 75-30-00RT



GTAE 75-30-00RT

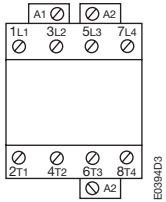


# Terminal Marking and Positioning

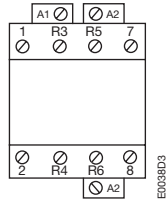
## TAL..., AF... and TAE... 4-pole Contactors

**TAL... Contactors** - d.c. operated (the polarity A1+, A2- must be respected)

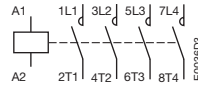
**Standard devices without addition of auxiliary contacts**



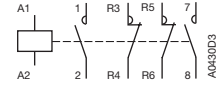
TAL 9 ... TAL 26-40-00



TAL 9 ... TAL 26-22-00



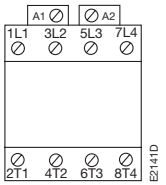
TAL 9 ... TAL 26-40-00



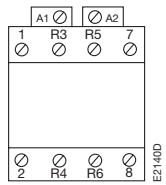
TAL 9 ... TAL 26-22-00

**AF 45 ... AF 75 Contactors** - a.c. / d.c. operated

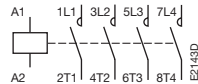
**Standard devices without addition of auxiliary contacts**



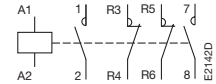
AF 45 ... AF 75-40-00



AF 45-22-00  
AF 75-22-00



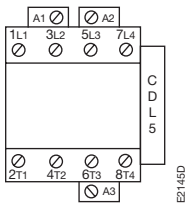
AF 45 ... AF 75-40-00



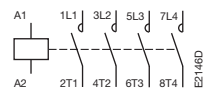
AF 45-22-00  
AF 75-22-00

**TAE... Contactors** - d.c. operated

**Standard devices without addition of auxiliary contacts**



TAE 45 ... TAE 75-40-00



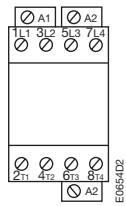
TAE 45 ... TAE 75-40-00

# Terminal Marking and Positioning

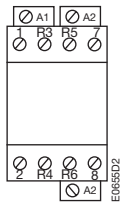
## TAL..RT, AF..RT and TAE..RT 4-pole Contactors

**TAL..RT Contactors** - d.c. operated (the polarity A1+, A2- must be respected)

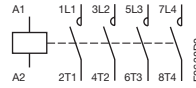
**Standard devices without addition of auxiliary contacts**



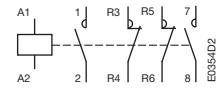
TAL 9 ... TAL 26-40-00RT



TAL 9 ... TAL 26-22-00RT

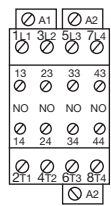


TAL 9 ... TAL 26-40-00RT

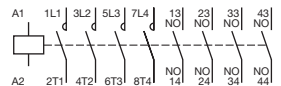
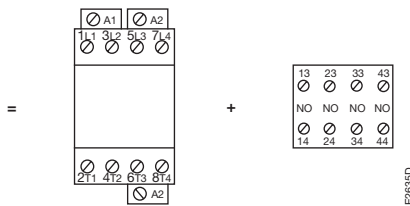


TAL 9 ... TAL 26-22-00RT

**Other possible contact combinations with auxiliary contacts added by the user**



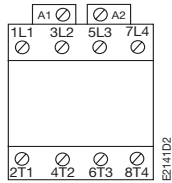
TAL 9 ... TAL 26-40-40RT = TAL 9 ... TAL 26-40-00RT + CA 5-40 ERT



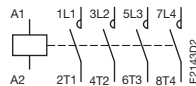
TAL 9 ... TAL 26-40-00RT

**AF 45..RT ... AF 75..RT Contactors** - a.c. / d.c. operated

**Standard devices without addition of auxiliary contacts**



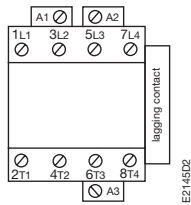
AF 45-40-00RT  
AF 75-40-00RT



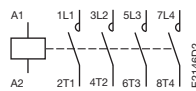
AF 45-40-00RT  
AF 75-40-00RT

**TAE..RT Contactors** - d.c. operated

**Standard devices without addition of auxiliary contacts**

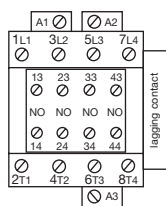


TAE 45-40-00RT  
TAE 75-40-00RT

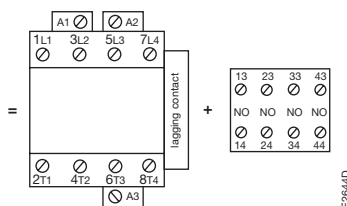


TAE 45-40-00RT  
TAE 75-40-00RT

**Other possible contact combinations with auxiliary contacts added by the user**



TAE 45-40-40RT  
TAE 75-40-40RT



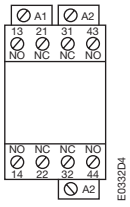
TAE 45-40-00RT + CA 5-40 ERT  
TAE 75-40-00RT + CA 5-40 ERT

# Terminal Marking and Positioning

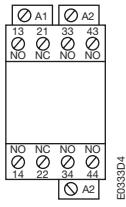
## TNL... Contactor Relays

TNL... Contactor Relays - d.c. operated (the polarity A1+, A2- must be respected)

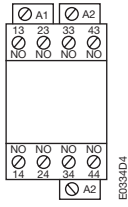
Standard devices without addition of auxiliary contacts



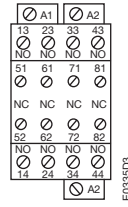
TNL 22 E



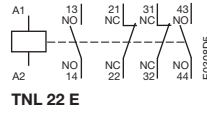
TNL 31 E



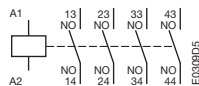
TNL 40 E



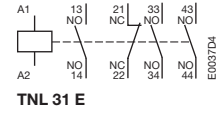
TNL 44 E



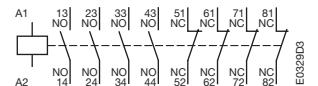
TNL 22 E



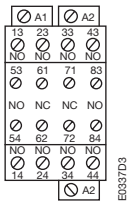
TNL 40 E



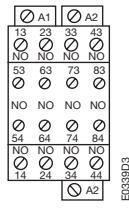
TNL 31 E



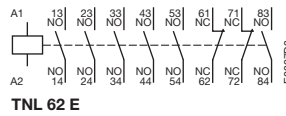
TNL 44 E



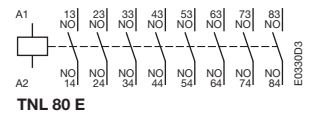
TNL 62 E



TNL 80 E

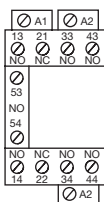


TNL 62 E

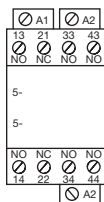


TNL 80 E

Other possible contact combinations with auxiliary contacts added by the user



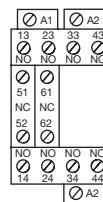
Combination 41 E



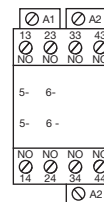
TNL 31 E



CA 5-10



Combination 42 E



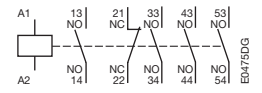
TNL 40 E



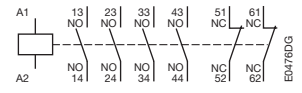
CA 5-01



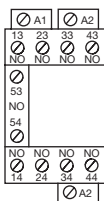
CA 5-01



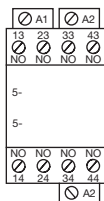
Combination 41 E



Combination 42 E



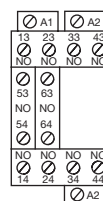
Combination 50 E



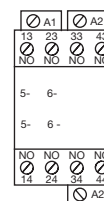
TNL 40 E



CA 5-10



Combination 60 E



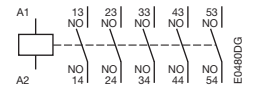
TNL 40 E



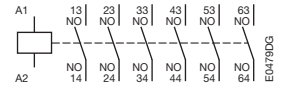
CA 5-10



CA 5-10



Combination 50 E



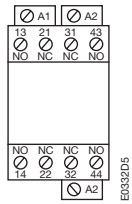
Combination 60 E

# Terminal Marking and Positioning

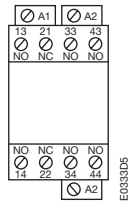
## TNL..RT Contactor Relays

TNL..RT Contactor Relays - d.c. operated (the polarity A1+, A2- must be respected)

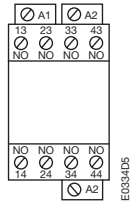
Standard devices without addition of auxiliary contacts



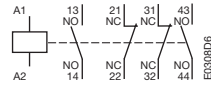
TNL 22 ERT



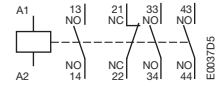
TNL 31 ERT



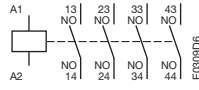
TNL 40 ERT



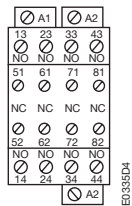
TNL 22 ERT



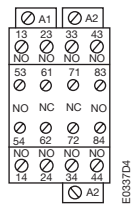
TNL 31 ERT



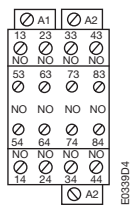
TNL 40 ERT



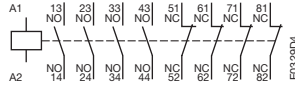
TNL 44 ERT



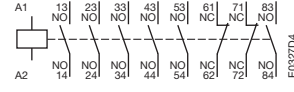
TNL 62 ERT



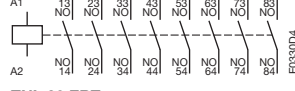
TNL 80 ERT



TNL 44 ERT

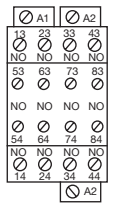


TNL 62 ERT

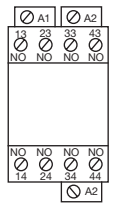


TNL 80 ERT

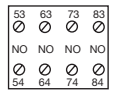
Other possible contact combinations with auxiliary contacts added by the user



TNL 80 ERT



TNL 40 ERT



CA 5-40 NRT

TNL 80 ERT = TNL 40 ERT + CA 5-40 NRT

# Terminal Marking and Positioning

## Add-on Auxiliary Contacts

### One-pole Auxiliary Contacts



CA5-01

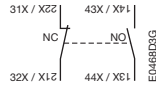


CA5-10

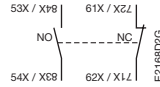
### One-pole Auxiliary Contacts



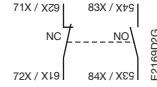
CA5-11  
CAL18-11, CAL18-11RT  
(L. h. s. mounted)



CA5-11  
CAL18-11, CAL18-11RT  
(R. h. s. mounted)

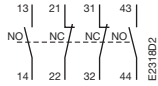


CAL18-11B  
(L. h. s. mounted)

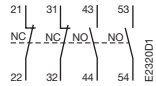


CAL18-11B  
(R. h. s. mounted)

### Four-pole Auxiliary Contacts



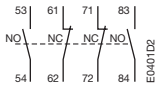
CA5-22 E, CA5-22 ERT



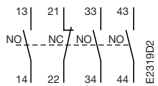
CA5-22 M, CA5-22 MRT



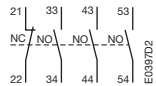
CA5-22 U



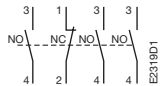
CA5-22 N, CA5-22 NRT



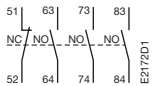
CA5-31 E, CA5-31 ERT



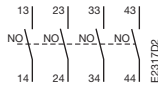
CA5-31 M, CA5-31 MRT



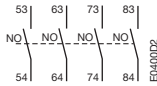
CA5-31 U



CA5-31 N, CA5-31 NRT



CA5-40 E, CA5-40 ERT

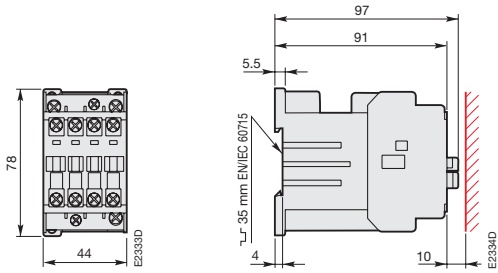


CA5-40 N, CA5-40 NRT

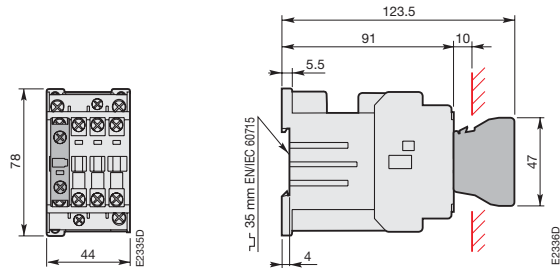
# TAL 9 ... TAL 16 3-pole Contactors



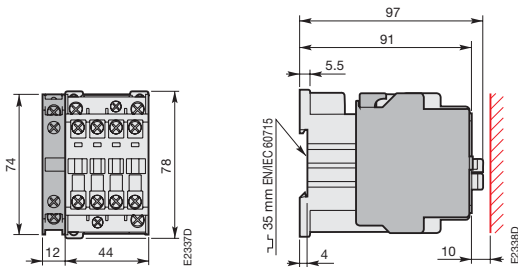
## Dimensions (mm)



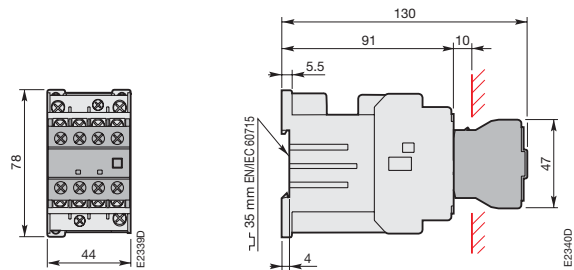
TAL 9 ... TAL 16



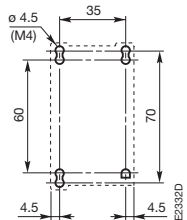
TAL 9 ... TAL 16  
+ CA 5 front mounted 1-pole auxiliary contact block



TAL 9 ... TAL 16  
+ CAL 5 side mounted 2-pole auxiliary contact block



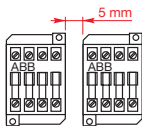
TAL 9 ... TAL 16  
+ CA 5 front mounted 4-pole auxiliary contact block



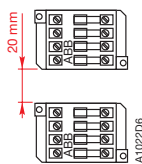
TAL 9 ... TAL 16 - drilling plan

## Mounting distance (for side by side mounting)

TAL 9 ... TAL 16  
Position 1, 2, 5  
 $20\text{ }^{\circ}\text{C} \leq \theta \leq 70\text{ }^{\circ}\text{C}$



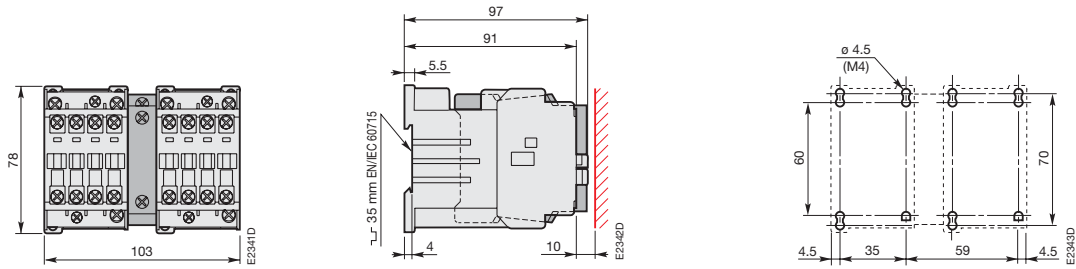
TAL 9 ... TAL 16  
Position 3, 4  
 $20\text{ }^{\circ}\text{C} \leq \theta \leq 70\text{ }^{\circ}\text{C}$



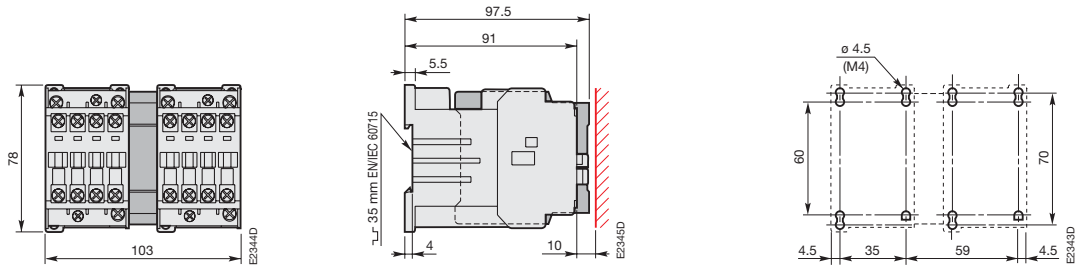
# TAL 9 ... TAL 16 3-pole Contactors



## Dimensions (mm)



### TAL 9 ... TAL 16 + VE 5-1 electrical and mechanical interlock unit

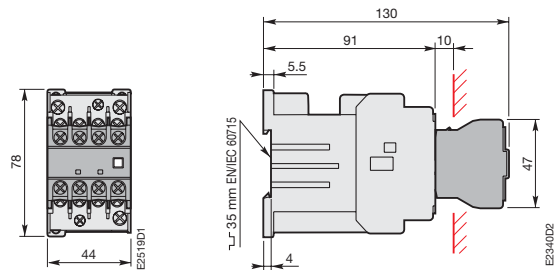
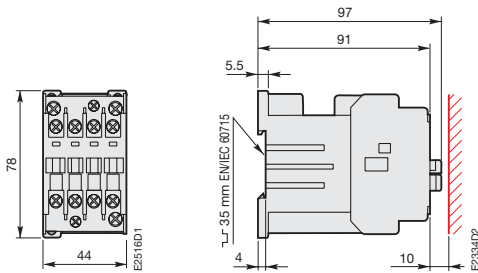


### TAL 9 ... TAL 16 + VM 5-1 mechanical interlock unit

# TAL 9..RT ... TAL 16..RT 3-pole Contactors

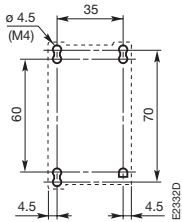


## Dimensions (mm)



TAL 9..RT ... TAL 16..RT

TAL 9..RT ... TAL 16..RT  
+ CA 5..RT front mounted 4-pole auxiliary contact block

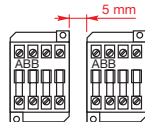


TAL 9..RT ... TAL 16..RT - drilling plan

## Mounting distance (for side by side mounting)

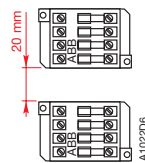
TAL 9..RT ... TAL16..RT

Position 1, 2, 5  
 $20\text{ }^{\circ}\text{C} \leq \theta \leq 70\text{ }^{\circ}\text{C}$



TAL 9..RT ... TAL16..RT

Position 3, 4  
 $20\text{ }^{\circ}\text{C} \leq \theta \leq 70\text{ }^{\circ}\text{C}$

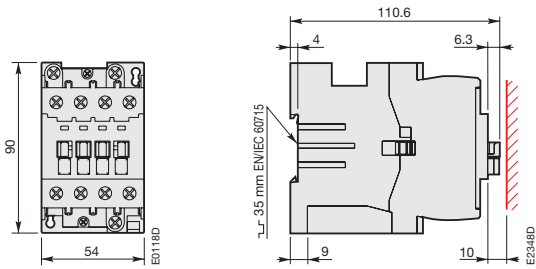




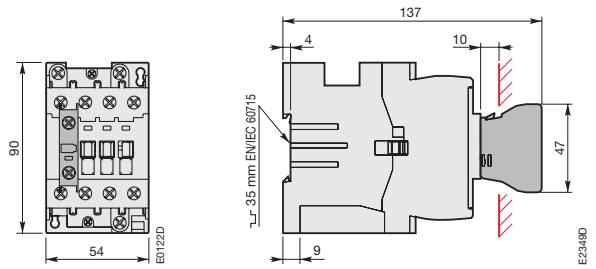
# TAL 26 3-pole Contactors



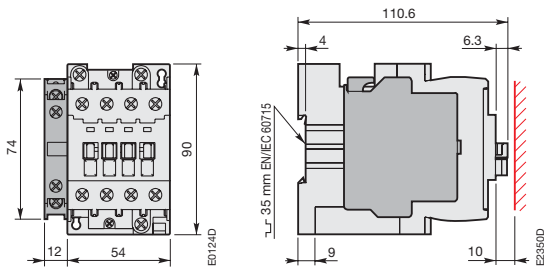
## Dimensions (mm)



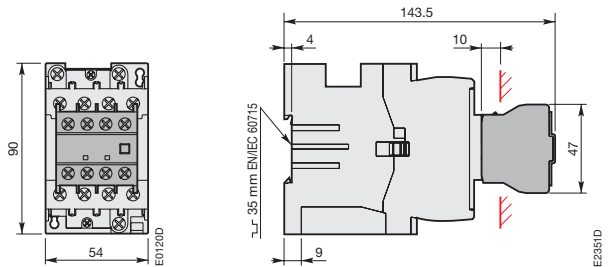
**TAL 26**



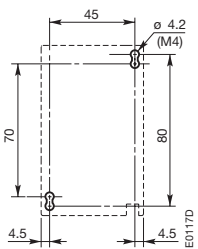
**TAL 26**  
+ CA 5 front mounted 1-pole auxiliary contact block



**TAL 26**  
+ CAL 5 side mounted 2-pole auxiliary contact block



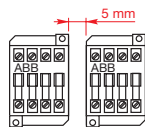
**TAL 26**  
+ CA 5 front mounted 4-pole auxiliary contact block



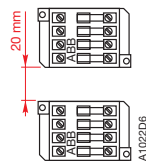
**TAL 26 - drilling plan**

## Mounting distance (for side by side mounting)

**TAL 26**  
Position 1, 2, 5  
 $20\text{ °C} \leq \theta \leq 70\text{ °C}$



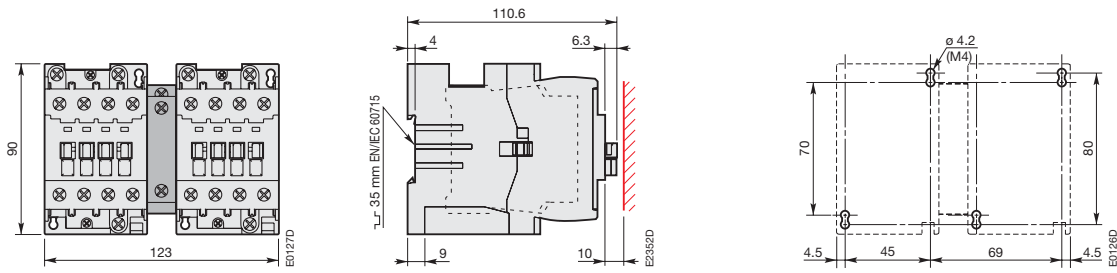
**TAL 26**  
Position 3, 4  
 $20\text{ °C} \leq \theta \leq 70\text{ °C}$



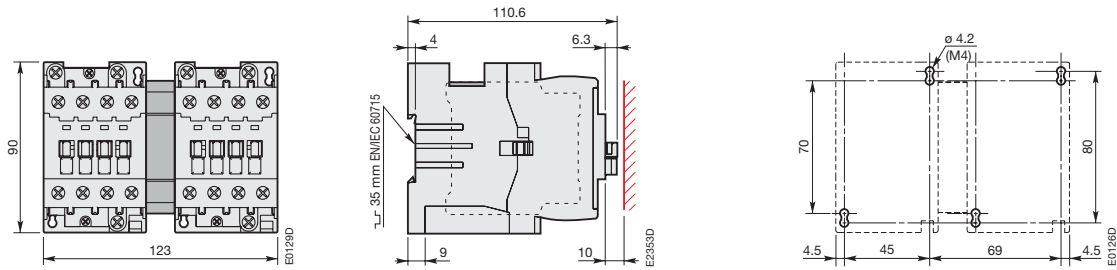
# TAL 26 3-pole Contactors



## Dimensions (mm)



**TAL 26**  
+ VE 5-1 electrical and mechanical interlock unit

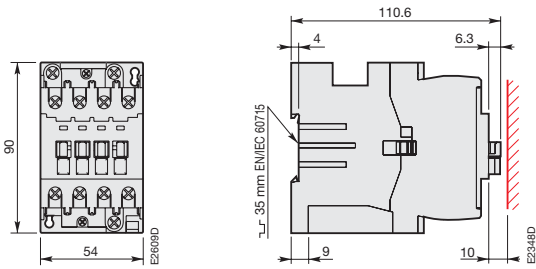


**TAL 26**  
+ VM 5-1 mechanical interlock unit

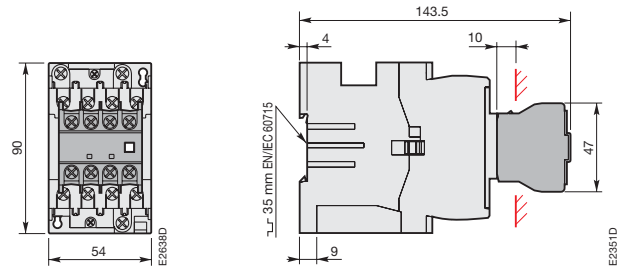
# TAL 26..RT 3-pole Contactors



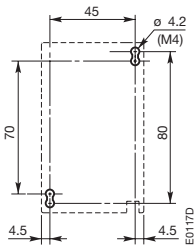
## Dimensions (mm)



TAL 26..RT



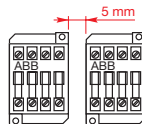
TAL 26..RT  
+ CA 5..RT front mounted 4-pole auxiliary contact block



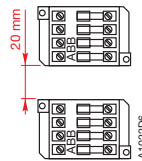
TAL 26..RT - drilling plan

## Mounting distance (for side by side mounting)

TAL 26..RT  
Position 1, 2, 5  
 $20^{\circ}\text{C} \leq \theta \leq 70^{\circ}\text{C}$



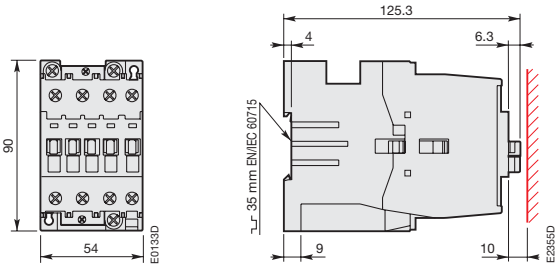
TAL 26..RT  
Position 3, 4  
 $20^{\circ}\text{C} \leq \theta \leq 70^{\circ}\text{C}$



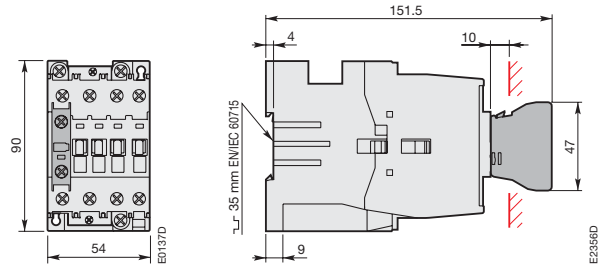
# TAL 30, TAL 40 3-pole Contactors



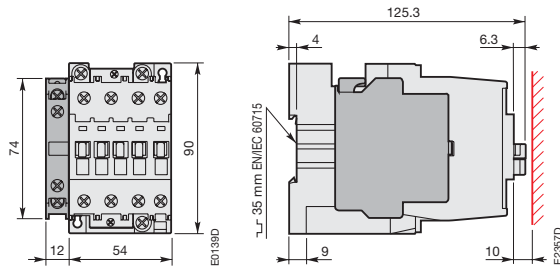
## Dimensions (mm)



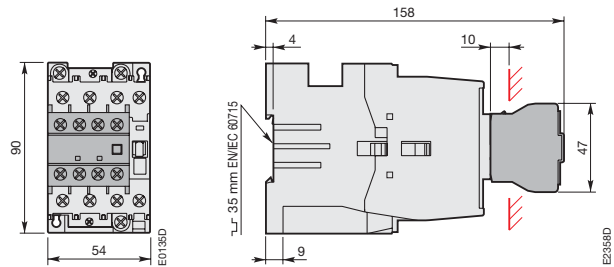
**TAL 30, TAL 40**



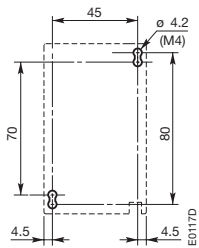
**TAL 30, TAL 40  
+ CA 5 front mounted 1-pole auxiliary contact block**



**TAL 30, TAL 40  
+ CAL 5 side mounted 2-pole auxiliary contact block**



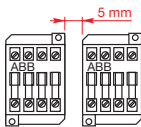
**TAL 30, TAL 40  
+ CA 5 front mounted 4-pole auxiliary contact block**



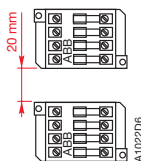
**TAL 40 - drilling plan**

## Mounting distance (for side by side mounting)

**TAL 30, TAL 40**  
Position 1, 2, 5  
 $20\text{ °C} \leq \theta \leq 70\text{ °C}$



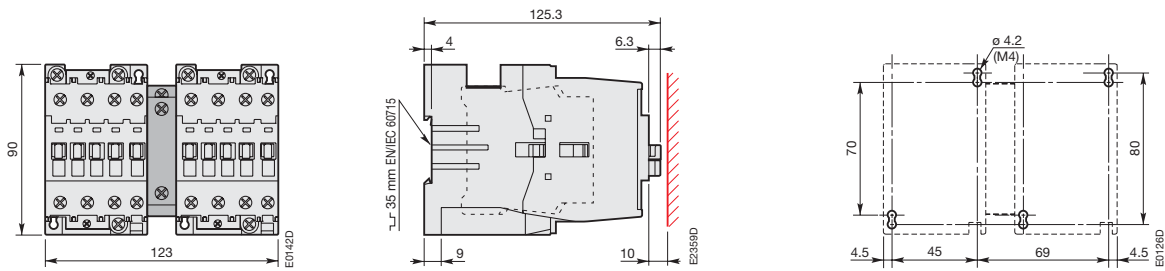
**TAL 30, TAL 40**  
Position 3, 4  
 $20\text{ °C} \leq \theta \leq 70\text{ °C}$



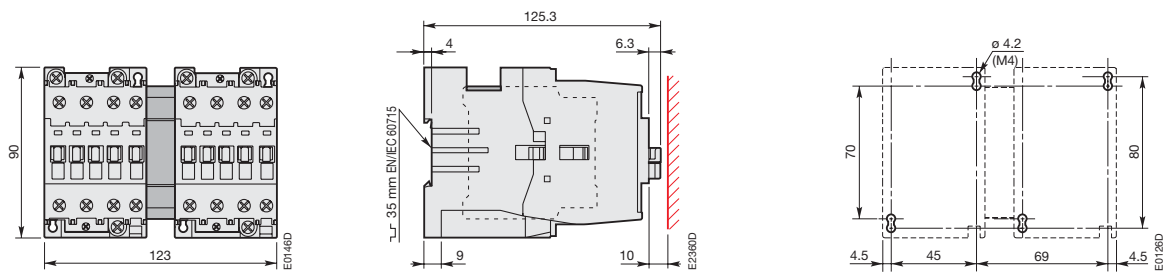
# TAL 30, TAL 40 3-pole Contactors



## Dimensions (mm)



**TAL 30, TAL 40**  
+ VE 5-1 electrical and mechanical interlock unit

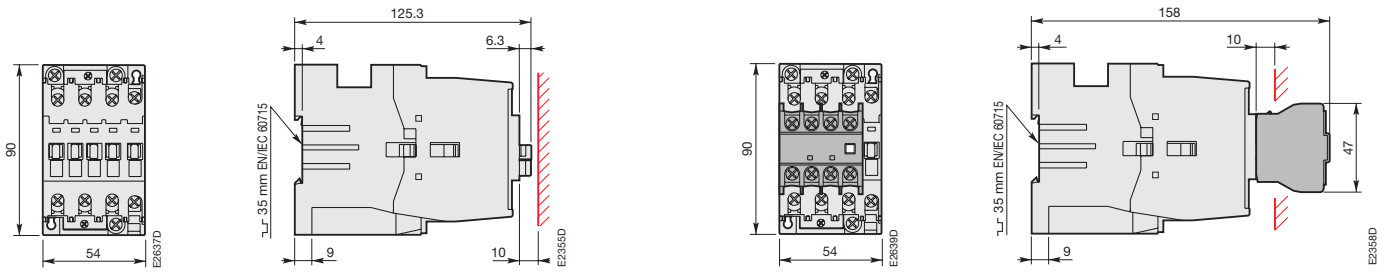


**TAL 30, TAL 40**  
+ VM 5-1 mechanical interlock unit

# TAL 30..RT, TAL 40..RT 3-pole Contactors

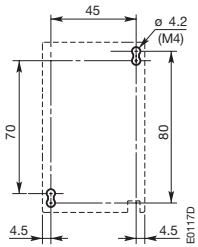


## Dimensions (mm)



TAL 30..RT, TAL 40..RT

TAL 30..RT, TAL 40..RT  
+ CA 5..RT front mounted 4-pole auxiliary contact block

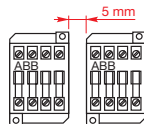


TAL 30..RT, TAL 40..RT - drilling plan

## Mounting distance (for side by side mounting)

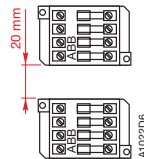
### TAL 30..RT, TAL 40..RT

Position 1, 2, 5  
20°C ≤ θ ≤ 70 °C



### TAL 30..RT, TAL 40..RT

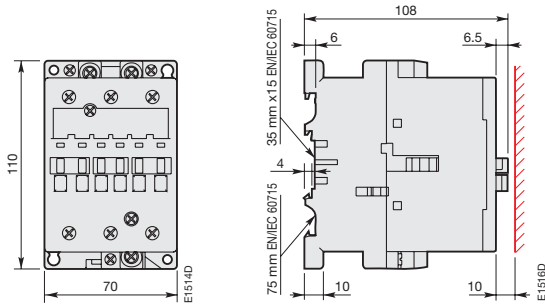
Position 3, 4  
20°C ≤ θ ≤ 70 °C



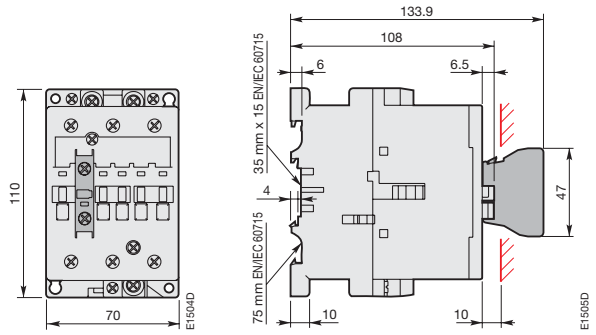
# AF 50, AF 63 and AF 75 3-pole Contactors



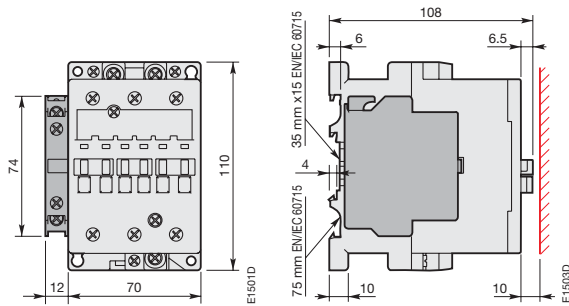
## Dimensions (mm)



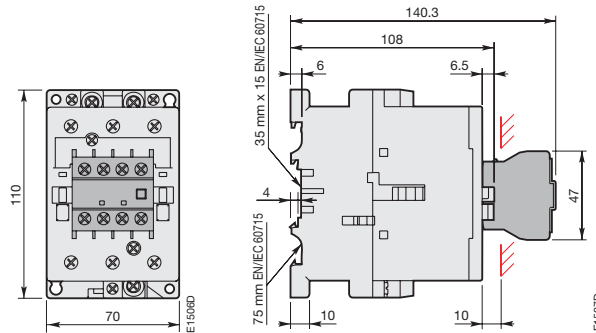
AF 50, AF 63, AF 75



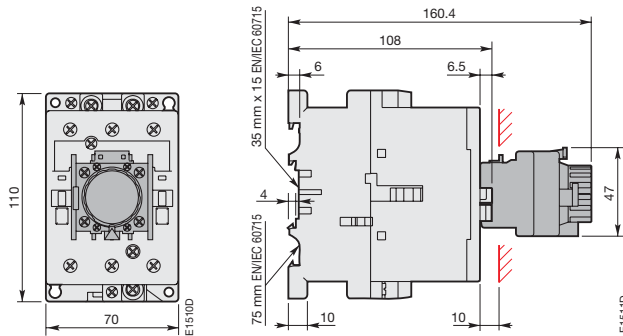
AF 50, AF 63, AF 75  
+ CA 5 front mounted 1-pole auxiliary contact block



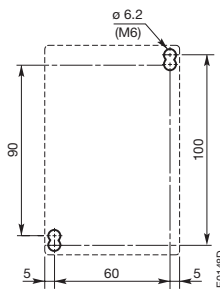
AF 50, AF 63, AF 75  
+ CAL 5 side mounted 2-pole auxiliary contact block



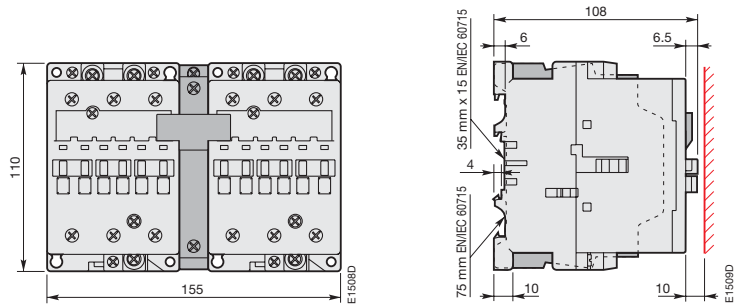
AF 50, AF 63, AF 75  
+ CA 5 front mounted 4-pole auxiliary contact block



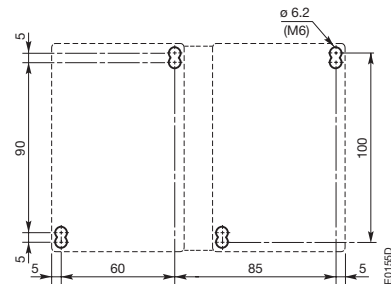
AF 50, AF 63, AF 75  
+ TP pneumatic timer



AF 50, AF 63, AF 75 - drilling plan



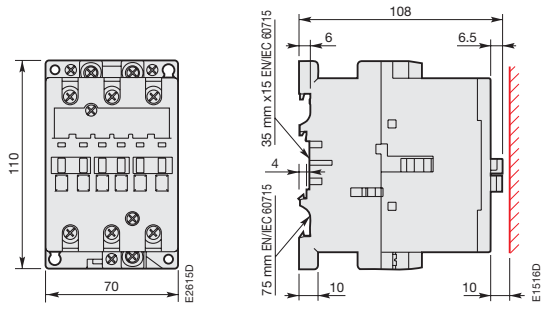
AF 50, AF 63, AF 75  
+ VE 5-2 electrical and mechanical interlock unit



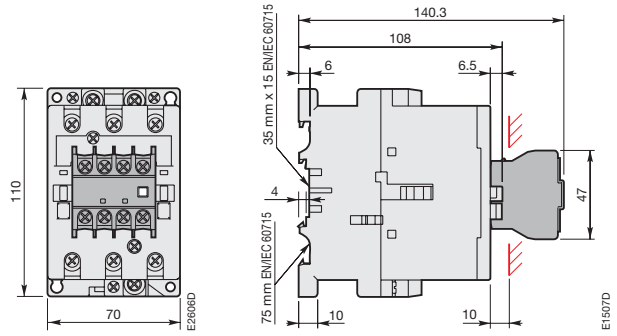
# AF 50..RT, AF 63..RT and AF 75..RT 3-pole Contactors



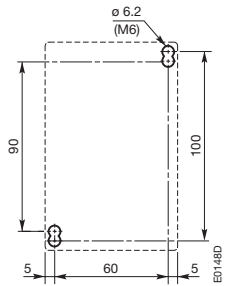
## Dimensions (mm)



AF 50..RT, AF 63..RT, AF 75..RT



AF 50..RT, AF 63..RT, AF 75..RT  
+ CA 5 front mounted 4-pole auxiliary contact block



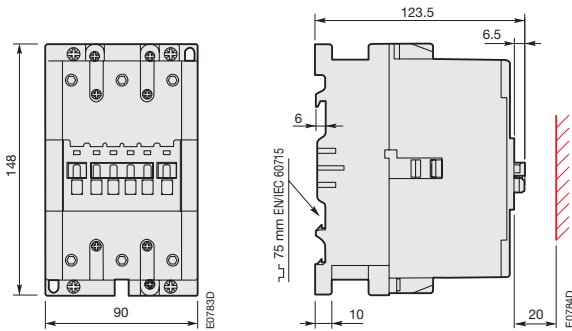
AF 50..RT, AF 63..RT, AF 75..RT - drilling plan



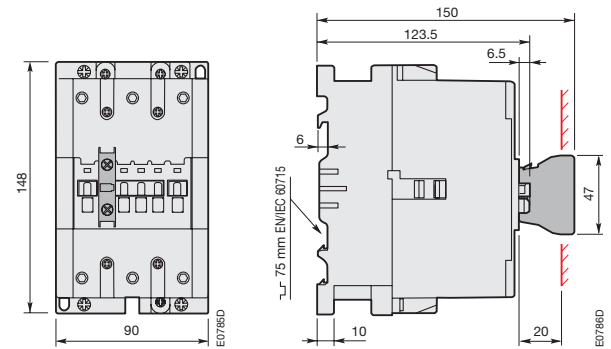
# AF 95, AF 110 and AF 95B, AF 110B 3-pole Contactors



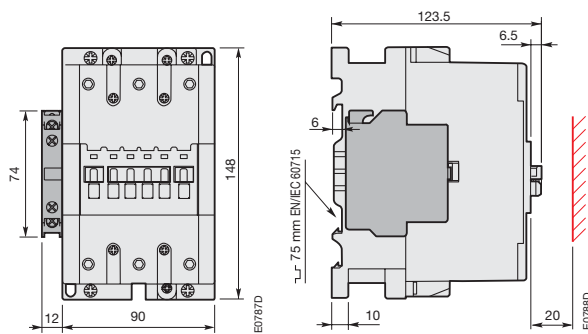
## Dimensions (mm)



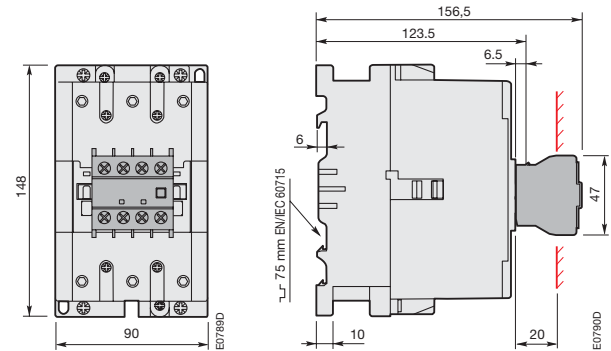
AF 95, AF 110, AF 95B, AF 110B



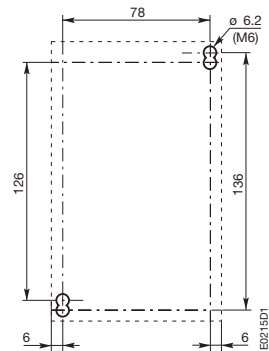
AF 95, AF 110, AF 95B, AF 110B  
+ CA 5 front mounted 1-pole auxiliary contact block



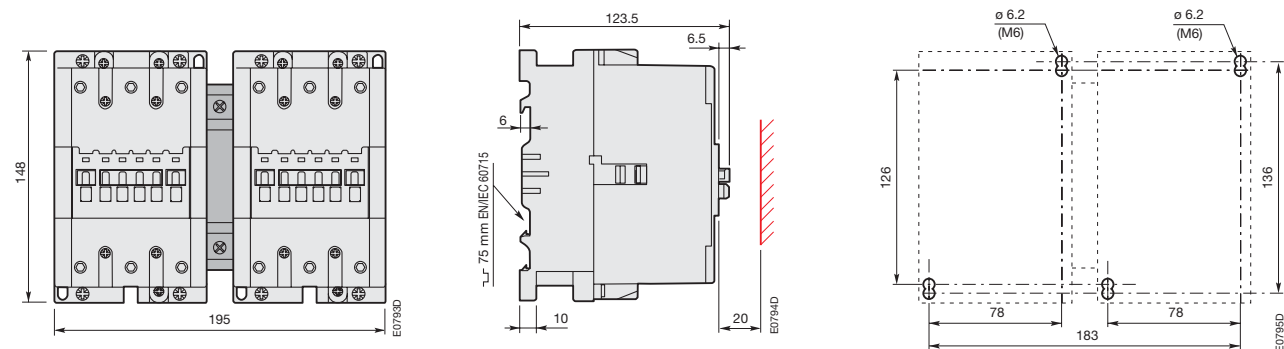
AF 95, AF 110, AF 95B, AF 110B  
+ CAL 18 side mounted 2-pole auxiliary contact block



AF 95, AF 110, AF 95B, AF 110B  
+ CA 5 front mounted 4-pole auxiliary contact block



AF 95, AF 110, AF 95B, AF 110B - drilling plan

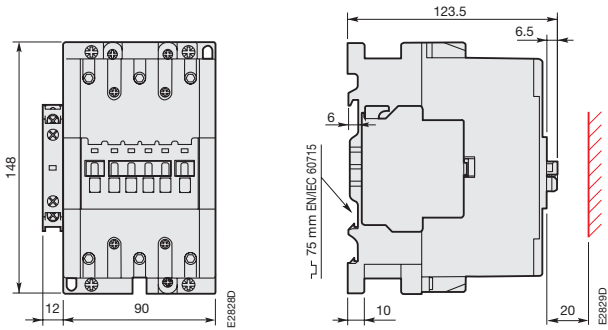


AF 95, AF 110, AF 95B, AF 110B  
+ VE 5-2 electrical and mechanical interlock unit

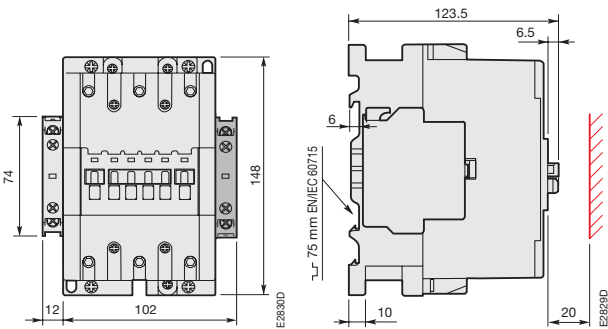
# AF 95B..RT, AF 110B..RT 3-pole Contactors



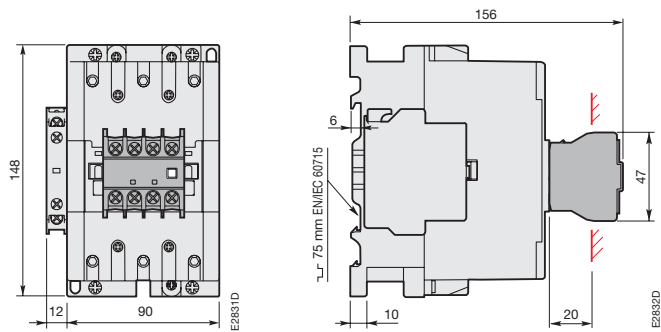
## Dimensions (mm)



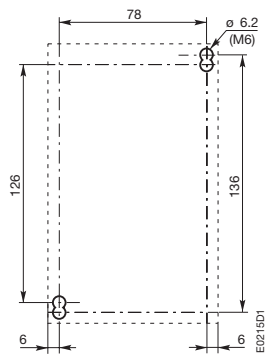
**AF 95B..RT, AF 110B..RT**



**AF 95B..RT, AF 110B..RT  
+ CAL 18-11RT side mounted 2-pole auxiliary contact block**



**AF 95B..RT, AF 110B..RT  
+ CA 5-..RT front mounted 4-pole auxiliary contact block**

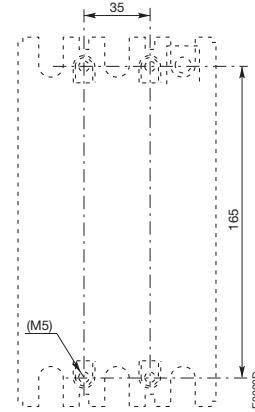
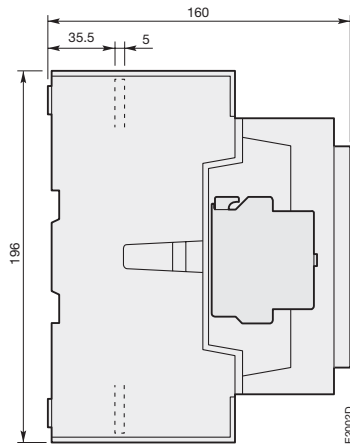
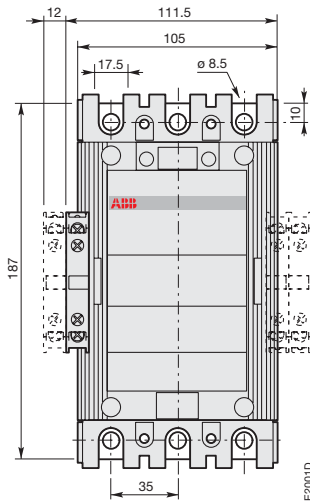


**AF 95B..RT, AF 110B..RT - drilling plan**

# AF 145, AF 145B and AF 185, AF 185B, AF 145B..RT and AF 185B..RT 3-pole Contactors

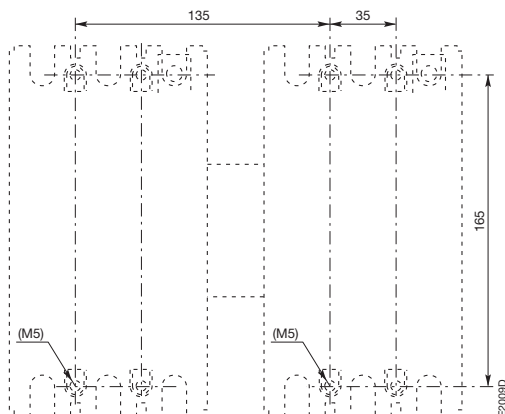
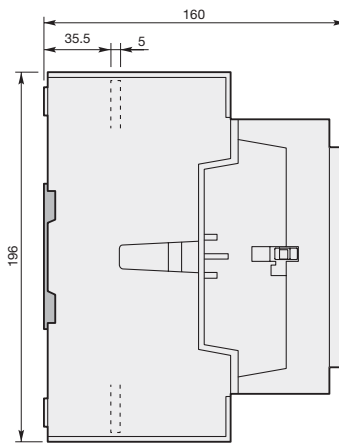
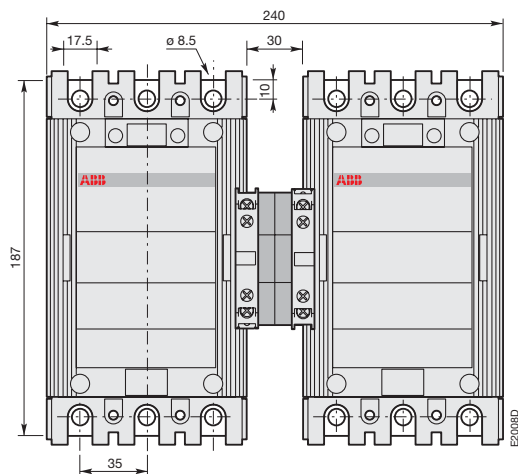


## Dimensions (mm)



AF 145, AF 185, AF 145B, AF 185B c/w 1 x CAL 18  
AF 145B..RT, AF 185B..RT c/w 1 x CAL 18-11RT

AF 145, AF 185, AF 145B, AF 185B  
AF 145B..RT, AF 185B..RT - drilling plan

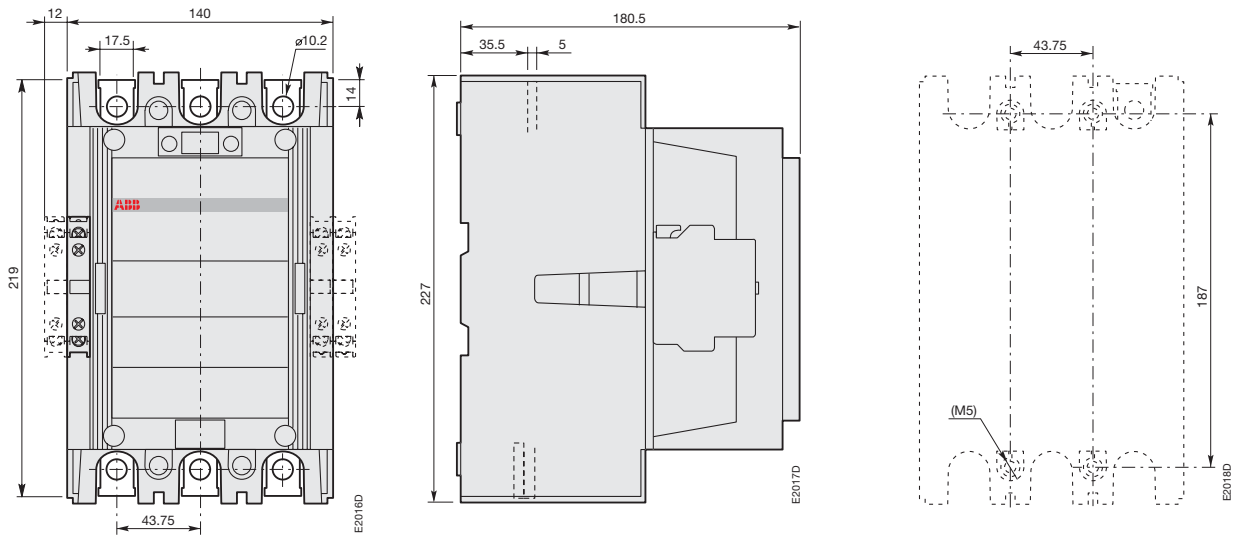


AF 145, AF 185, AF 145B, AF 185B c/w 1 x CAL 18  
AF 145B..RT, AF 185B..RT c/w 1 x CAL 18-11RT  
+ VM 300H mechanical interlock unit

# AF 210, AF 210B, AF 260, AF 260B, AF 300, AF 300B AF 210B..RT, AF 260B..RT, AF 300B..RT 3-pole Contactors

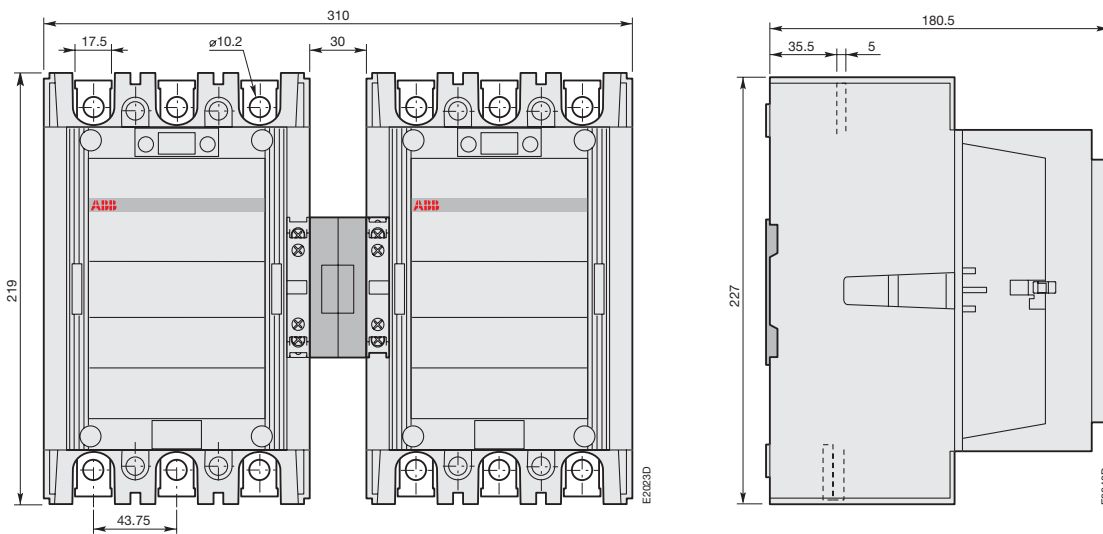


## Dimensions (mm)



AF 210, AF 260, AF 300, AF 210B, AF 260B, AF 300B c/w 1 x CAL18  
AF 210B..RT, AF 260B..RT, AF 300B..RT c/w 1 x CAL18-11RT

AF 210, AF 260, AF 300, AF 210B,  
AF 260B, AF 300B, AF 210B..RT,  
AF 260B..RT, AF 300B..RT - drilling plan

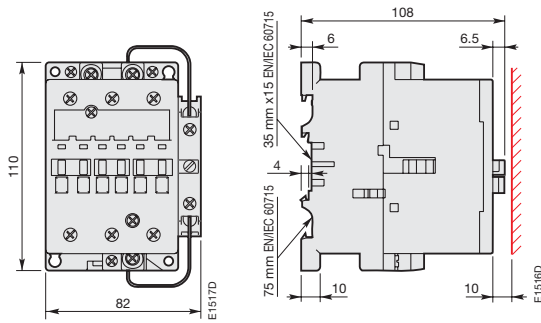


AF 210, AF 260, AF 300, AF 210B, AF 260B, AF 300B c/w 1 x CAL18  
AF 210B..RT, AF 260B..RT, AF 300B..RT c/w 1 x CAL18-11RT  
+ VM 300H mechanical interlock unit

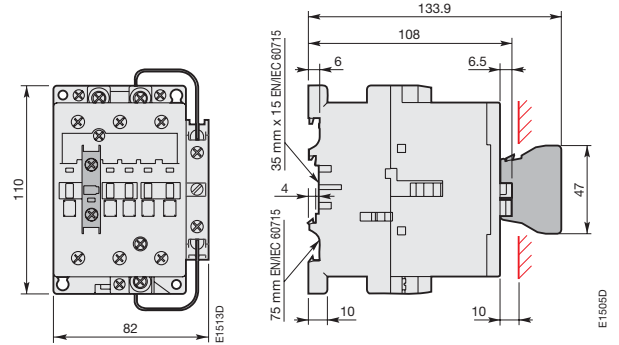
# TAE 50 and TAE 75 3-pole Contactors



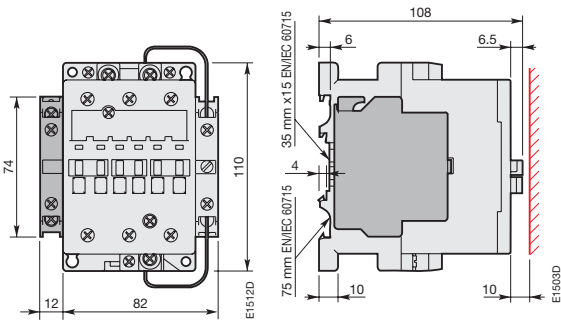
## Dimensions (mm)



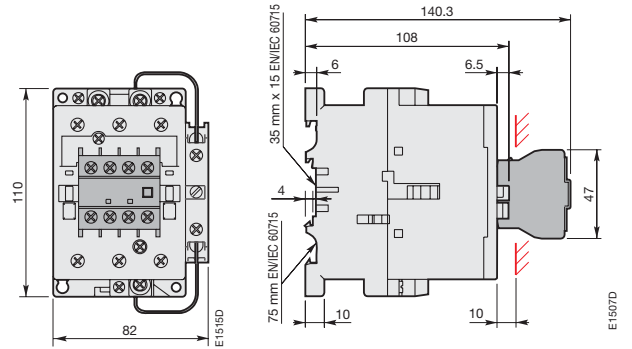
TAE 50, TAE 75



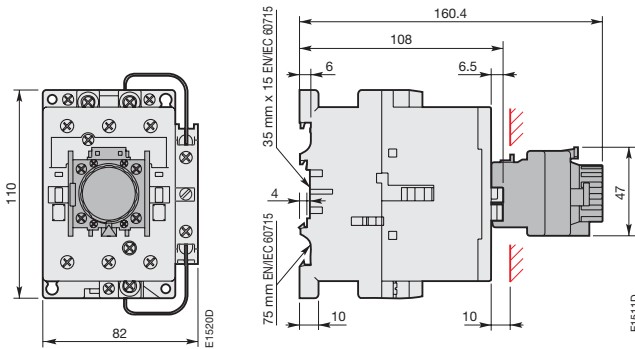
TAE 50, TAE 75  
+ CA 5 front mounted 1-pole auxiliary contact block



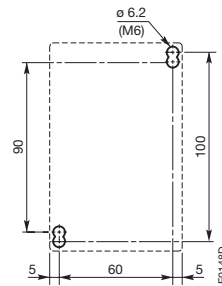
TAE 50, TAE 75  
+ CAL 5 side mounted 2-pole auxiliary contact block



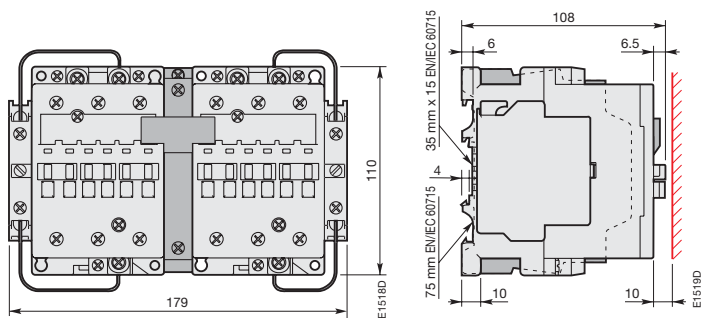
TAE 50, TAE 75  
+ CA 5 front mounted 4-pole auxiliary contact block



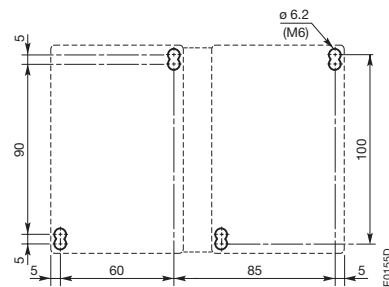
TAE 50, TAE 75  
+ TP pneumatic timer



TAE 50, TAE 75 - drilling plan



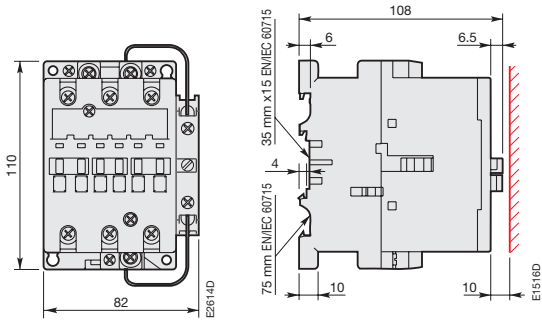
TAE 50, TAE 75  
+ VE 5-2 electrical and mechanical interlock unit



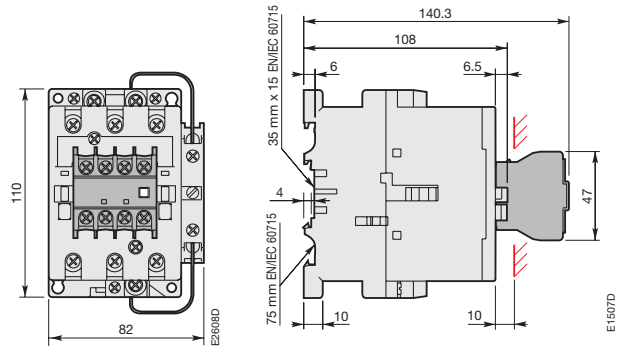
# TAE 50..RT and TAE 75..RT 3-pole Contactors



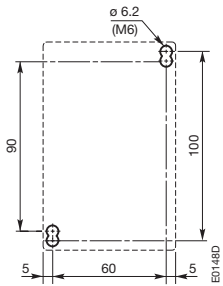
## Dimensions (mm)



TAE 50..RT, TAE 75..RT



TAE 50..RT, TAE 75..RT  
+ CA 5 front mounted 4-pole auxiliary contact block

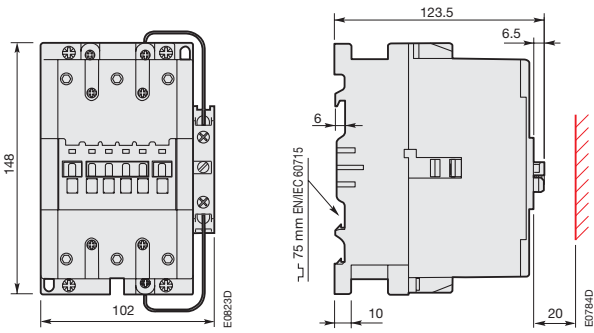


TAE 50..RT, TAE 75..RT - drilling plan

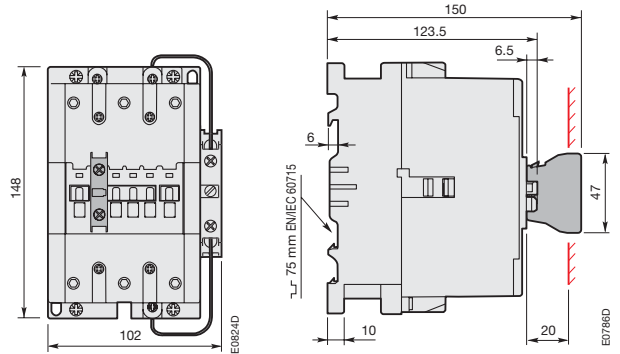
# TAE 95 and TAE 110 3-pole Contactors



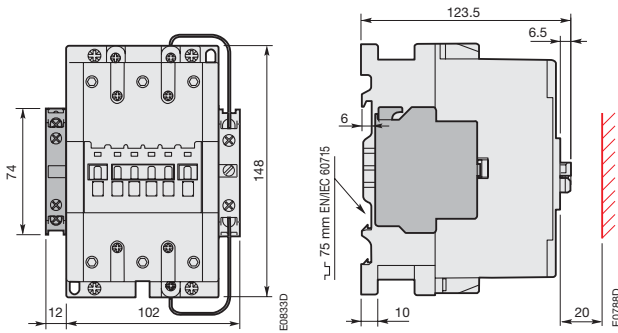
## Dimensions (mm)



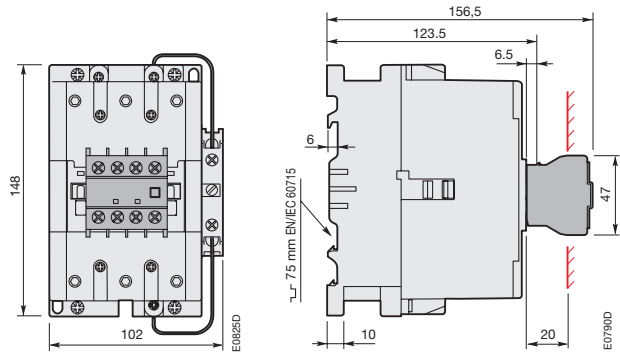
TAE 95, TAE 110



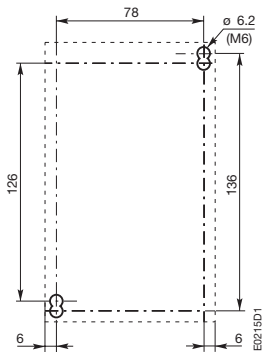
TAE 95, TAE 110  
+ CA 5 front mounted 1-pole auxiliary contact block



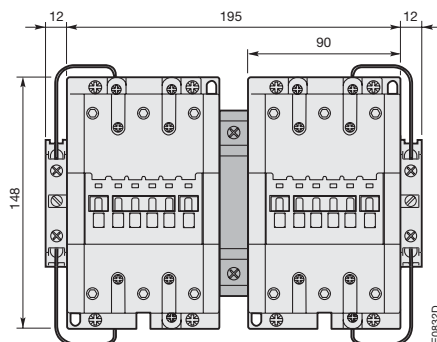
TAE 95, TAE 110  
+ CAL 18 side mounted 2-pole auxiliary contact block



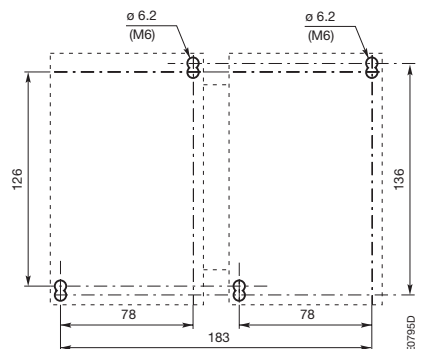
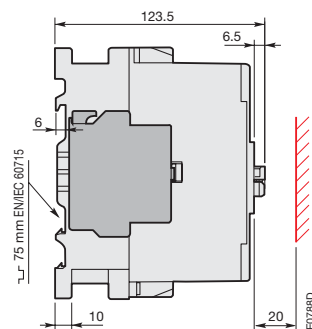
TAE 95, TAE 110  
+ CA 5 front mounted 4-pole auxiliary contact block



TAE 95, TAE 110 - drilling plan



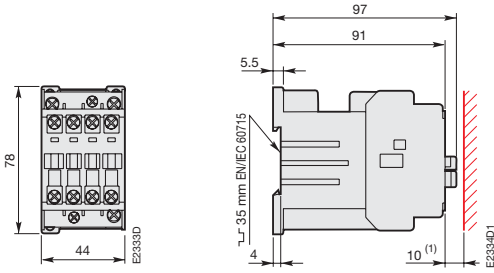
TAE 95, TAE 110  
+ VE 5-2 electrical and mechanical interlock unit



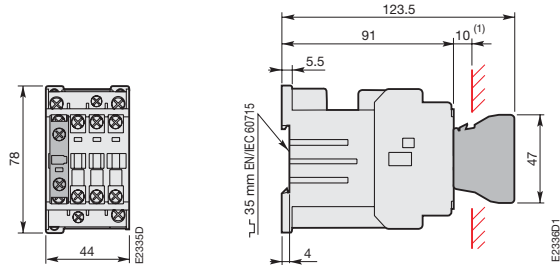
# TAL 9, TAL 16 4-pole Contactors TNL... Contactor Relays



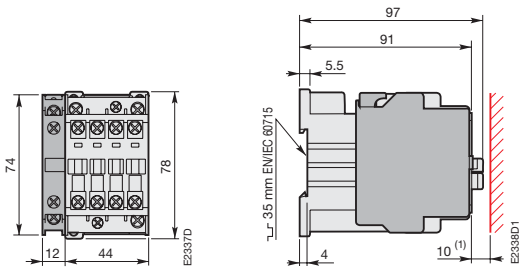
## Dimensions (mm)



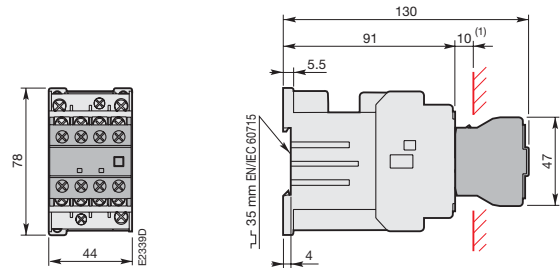
TAL 9, TAL 16, TNL...



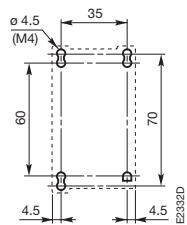
TAL 9, TAL 16, TNL...  
+ CA 5 front mounted 1-pole auxiliary contact block



TAL 9, TAL 16, TNL...  
+ CAL 5 side mounted 2-pole auxiliary contact block



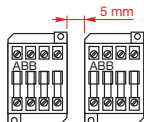
TAL 9, TAL 16, TNL...  
+ CA 5 front mounted 4-pole auxiliary contact block



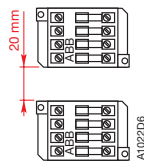
TAL 9, TAL 16, TNL... - drilling plan

## Mounting distance (for side by side mounting)

TAL 9, TAL16, TNL...  
Position 1, 2, 5  
20 °C ≤ θ ≤ 70 °C



TAL 9, TAL16, TNL...  
Position 3, 4  
20 °C ≤ θ ≤ 70 °C



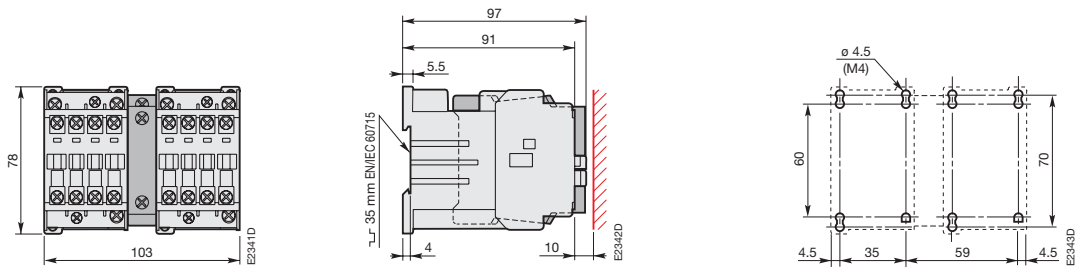
(1) Note: No recommended distance to earth is applicable to TNL... contactor relays.



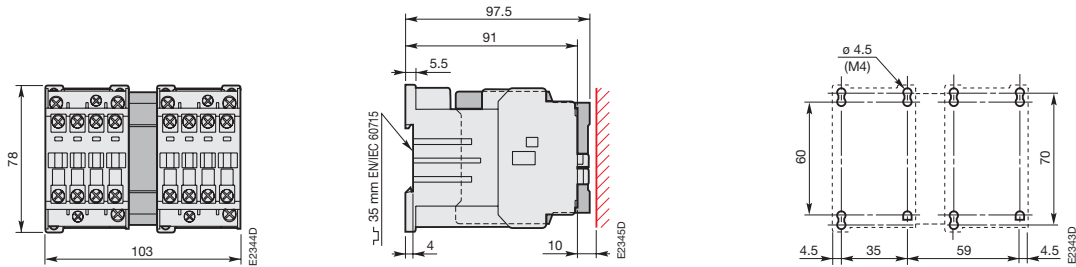
# TAL 9, TAL 16 4-pole Contactors



## Dimensions (mm)



**TAL 9-40, TAL 16-40**  
+ VE 5-1 electrical and mechanical interlock unit

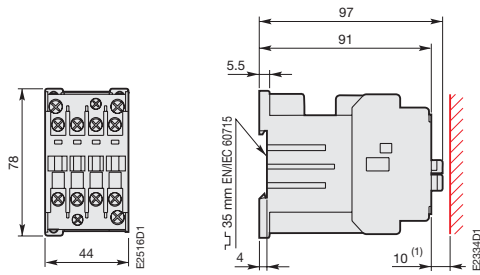


**TAL 9-40, TAL 16-40**  
+ VM 5-1 mechanical interlock unit

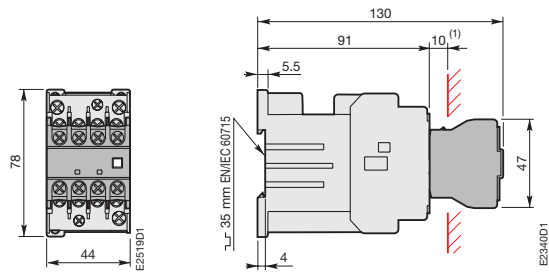
# TAL 9..RT, TAL 16..RT 4-pole Contactors TNL..RT Contactor Relays



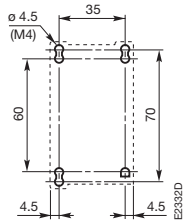
## Dimensions (mm)



TAL 9..RT, TAL 16..RT, TNL..RT



TAL 9..RT, TAL 16..RT, TNL..RT  
+ CA 5..RT front mounted 4-pole auxiliary contact block

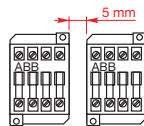


TAL 9..RT, TAL 16..RT, TNL..RT  
drilling plan

## Mounting distance (for side by side mounting)

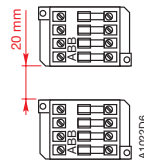
### TAL 9..RT, TAL 16..RT, TNL..RT

Position 1, 2, 5  
20 °C ≤ θ ≤ 70 °C



### TAL 9..RT, TAL 16..RT, TNL..RT

Position 3, 4  
20 °C ≤ θ ≤ 70 °C

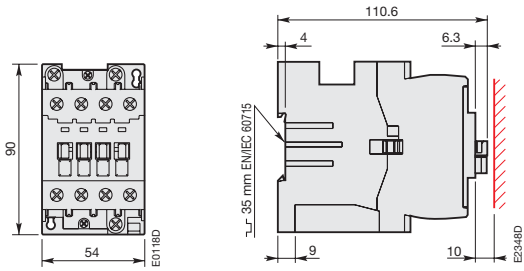


(1) **Note:** No recommended distance to earth is applicable to TNL..RT contactor relays.

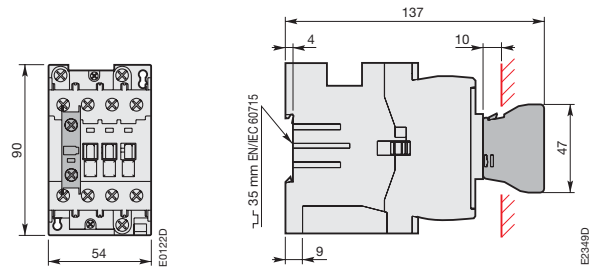
# TAL 26 4-pole Contactors



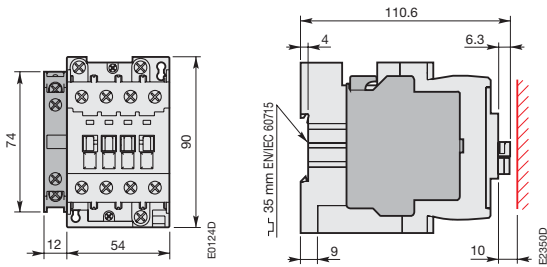
## Dimensions (mm)



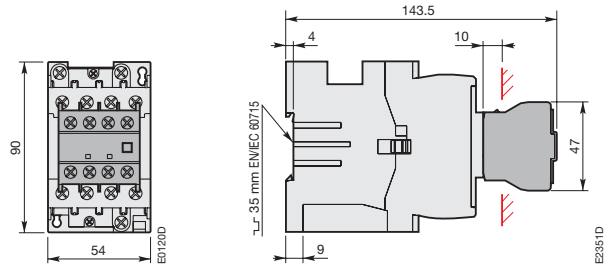
TAL 26



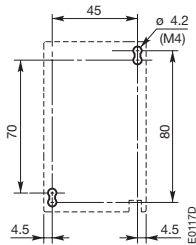
TAL 26  
+ CA 5 front mounted 1-pole auxiliary contact block



TAL 26  
+ CAL 5 side mounted 2-pole auxiliary contact block



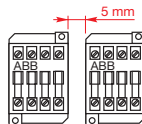
TAL 26  
+ CA 5 front mounted 4-pole auxiliary contact block



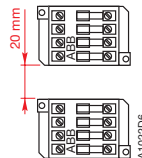
TAL 26 - drilling plan

## Mounting distance (for side by side mounting)

TAL 26  
Position 1, 2, 5  
 $20^{\circ}\text{C} \leq \theta \leq 70^{\circ}\text{C}$



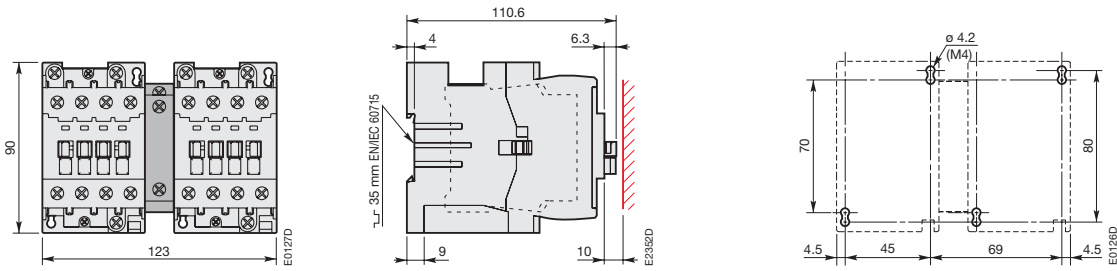
TAL 26  
Position 3, 4  
 $20^{\circ}\text{C} \leq \theta \leq 70^{\circ}\text{C}$



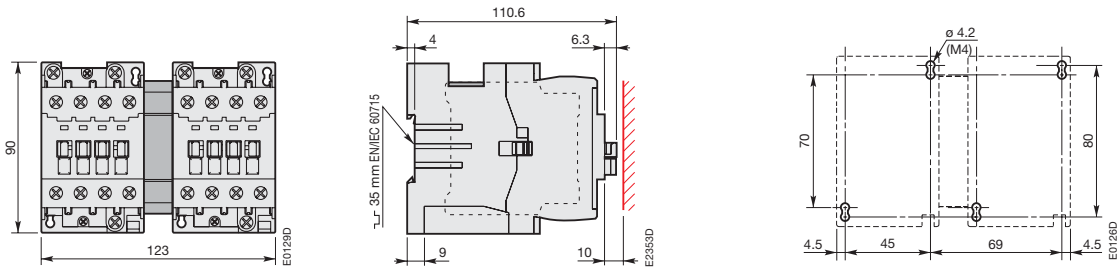
# TAL 26 4-pole Contactors



## Dimensions (mm)



**TAL 26-40**  
+ VE 5-1 electrical and mechanical interlock unit

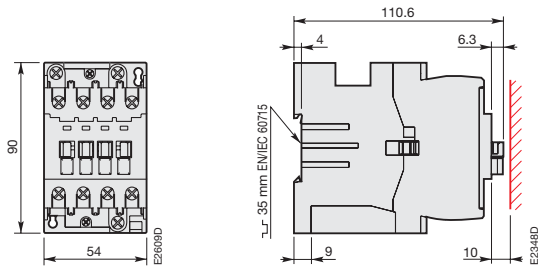


**TAL 26-40**  
+ VM 5-1 mechanical interlock unit

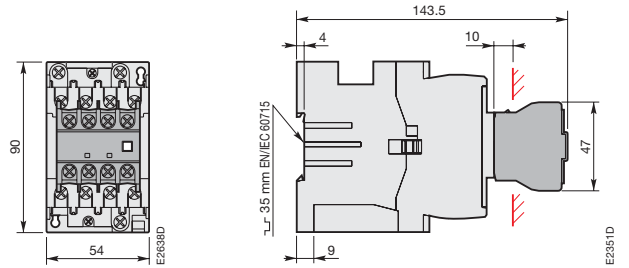
# TAL 26..RT 4-pole Contactors



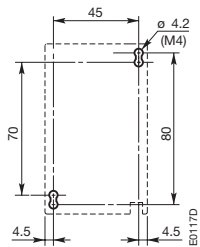
## Dimensions (mm)



TAL 26..RT



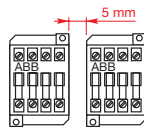
TAL 26..RT  
+ CA 5..RT front mounted 4-pole auxiliary contact block



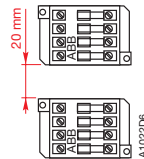
TAL 26..RT - drilling plan

## Mounting distance (for side by side mounting)

TAL 26..RT  
Position 1, 2, 5  
 $20\text{ }^{\circ}\text{C} \leq \theta \leq 70\text{ }^{\circ}\text{C}$



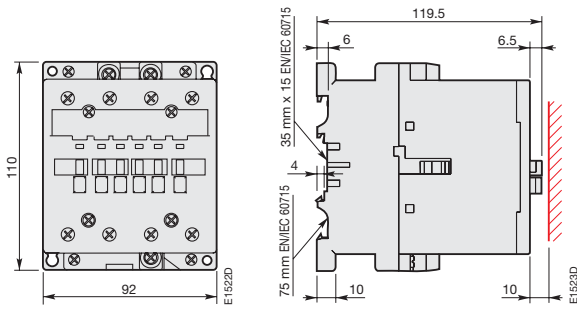
TAL 26..RT  
Position 3, 4  
 $20\text{ }^{\circ}\text{C} \leq \theta \leq 70\text{ }^{\circ}\text{C}$



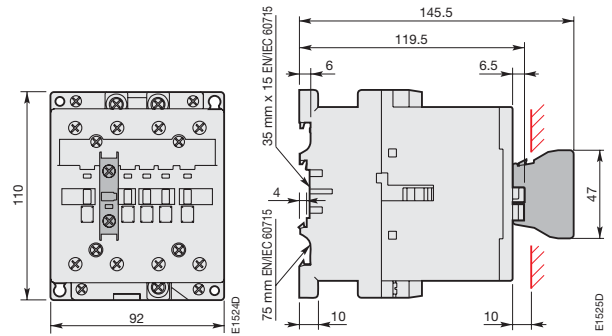
# AF 45, AF 50 and AF 75 4-pole Contactors



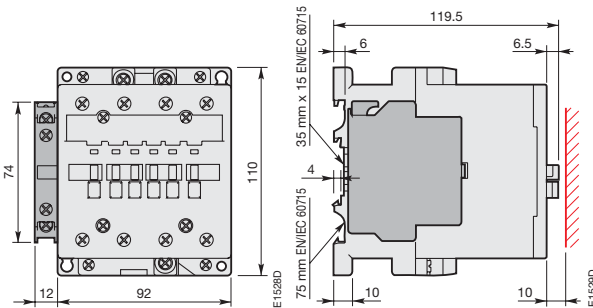
## Dimensions (mm)



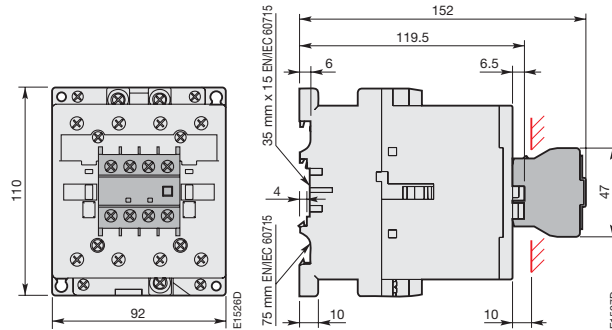
AF 45, AF 50, AF 75



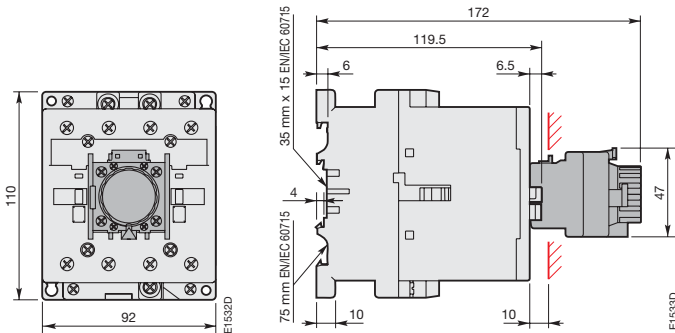
AF 45, AF 50, AF 75  
+ CA 5 front mounted 1-pole auxiliary contact block



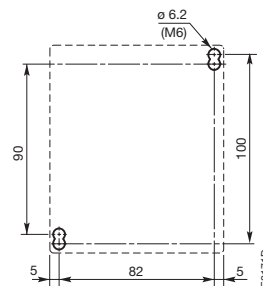
AF 45, AF 50, AF 75  
+ CAL 5 side mounted 2-pole auxiliary contact block



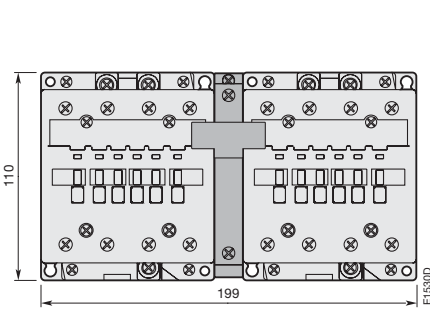
AF 45, AF 50, AF 75  
+ CA 5 front mounted 4-pole auxiliary contact block



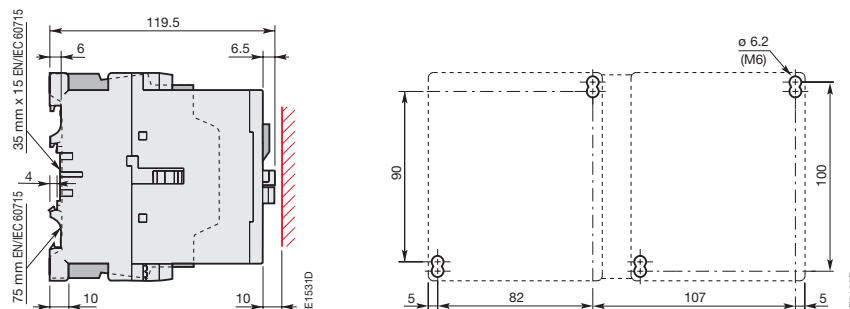
AF 45, AF 50, AF 75  
+ TP pneumatic timer



AF 45, AF 50, AF 75 - drilling plan



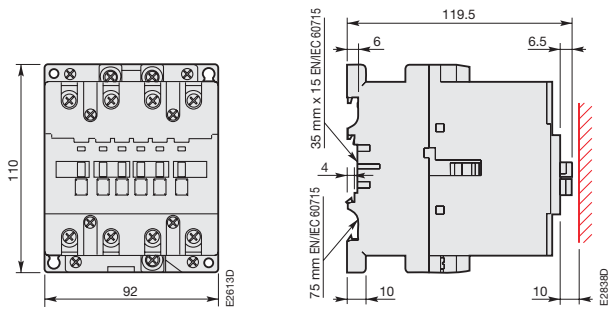
AF 45-40, AF 50-40, AF 75-40  
+ VE 5-2 electrical and mechanical interlock unit



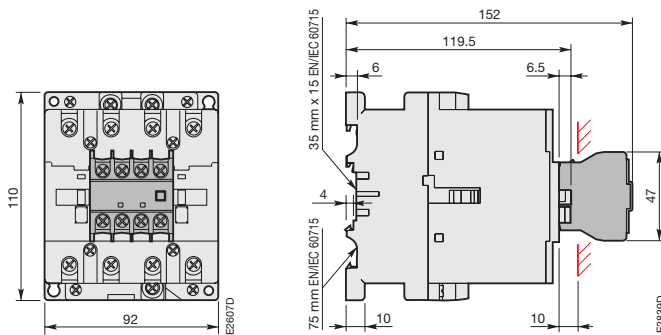
# AF 45..RT, AF 75..RT 4-pole Contactors



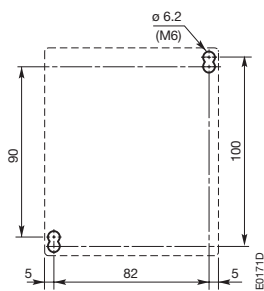
## Dimensions (mm)



AF 45..RT, AF 75..RT



AF 45..RT, AF 75..RT  
+ CA 5 front mounted 4-pole auxiliary contact block

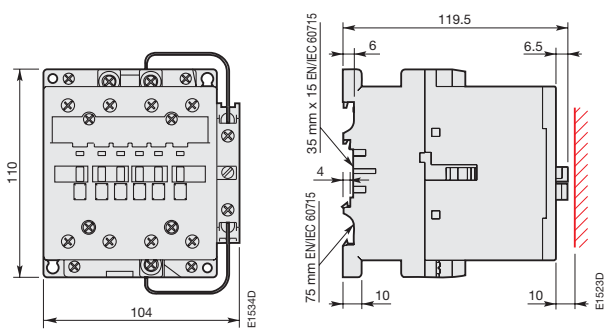


AF 45..RT, AF 75..RT - drilling plan

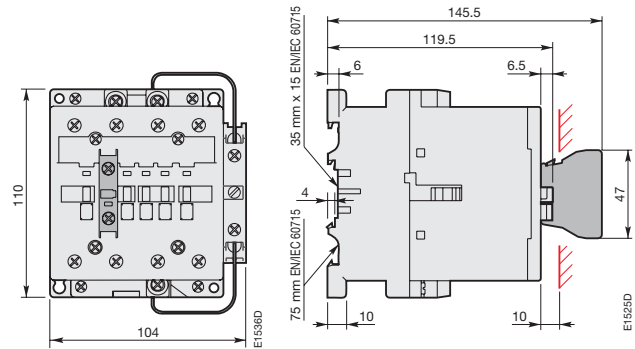
# TAE 45, TAE 50 and TAE 75 4-pole Contactors



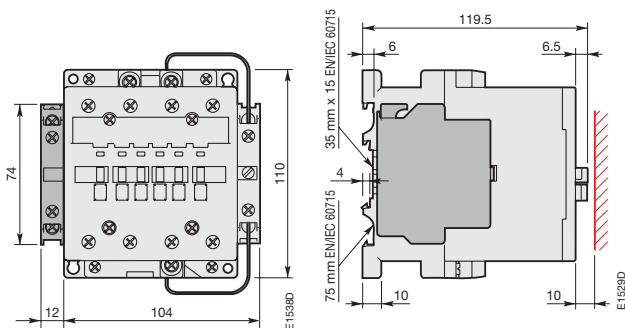
## Dimensions (mm)



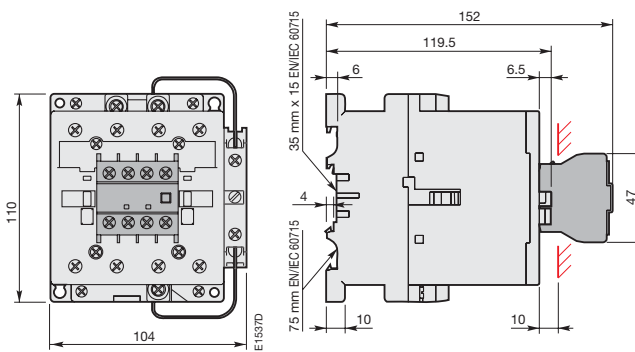
TAE 45, TAE 50, TAE 75



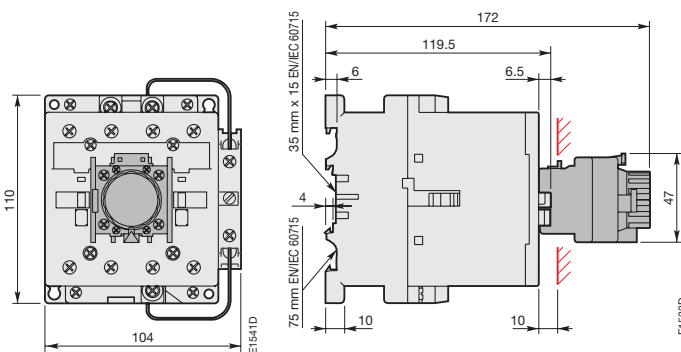
TAE 45, TAE 50, TAE 75  
+ CA 5 front mounted 1-pole auxiliary contact block



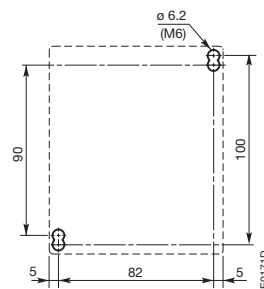
TAE 45, TAE 50, TAE 75  
+ CAL 5 side mounted 2-pole auxiliary contact block



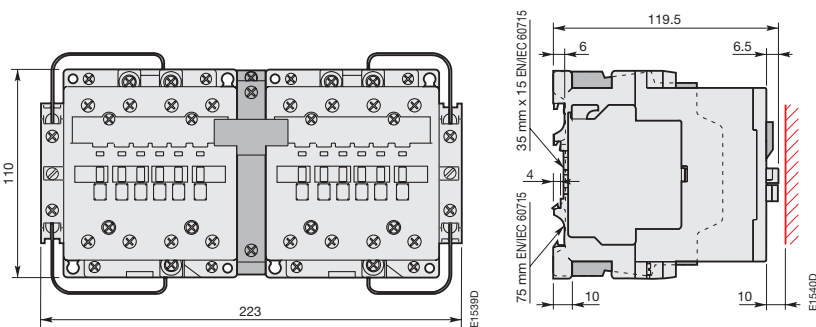
TAE 45, TAE 50, TAE 75  
+ CA 5 front mounted 4-pole auxiliary contact block



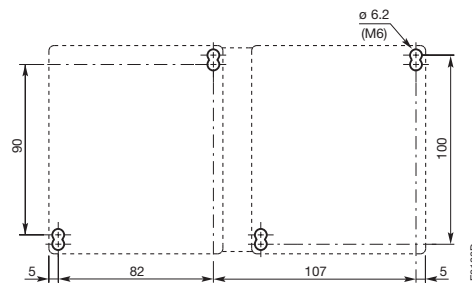
TAE 45, TAE 50, TAE 75  
+ TP pneumatic timer



TAE 45, TAE 50, TAE 75 - drilling plan



TAE 45-40, TAE 50-40, TAE 75-40  
+ VE 5-2 electrical and mechanical interlock unit

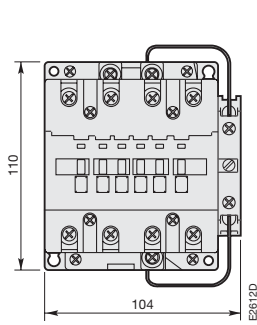




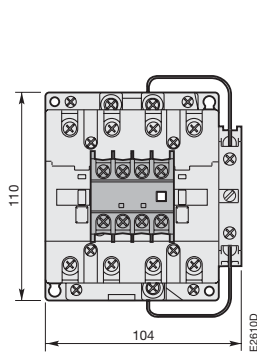
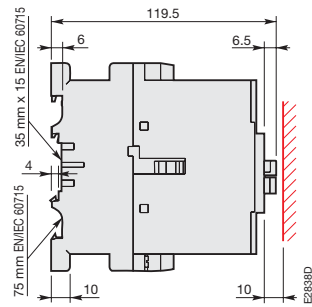
# TAE 45..RT, TAE 75..RT 4-pole Contactors



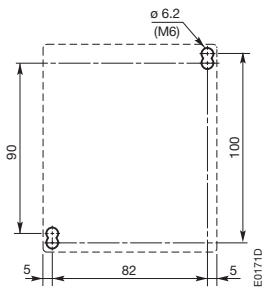
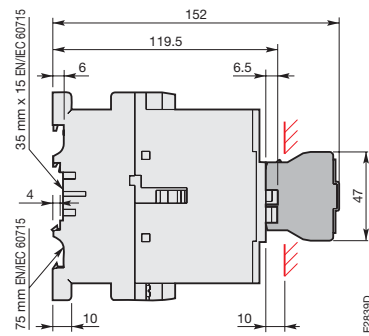
## Dimensions (mm)



TAE 45..RT, TAE 75..RT



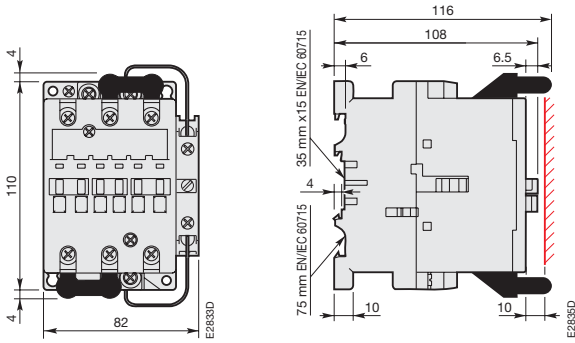
TAE 45..RT, TAE 75..RT  
+ CA 5 front mounted 4-pole auxiliary contact block



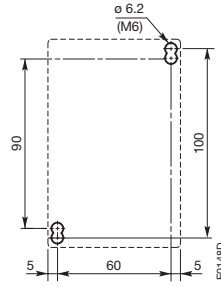
TAE 45..RT, TAE 75..RT - drilling plan

# GTAE 75..RT 1-pole Contactor

## Dimensions (mm)



GTAE 75..RT



GTAE 75..RT - drilling plan

# Notes







# R.. Series Contactors for Railway Applications

## Contents

Presentation .....	333
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Questionnaire: specification for contactors .....	338

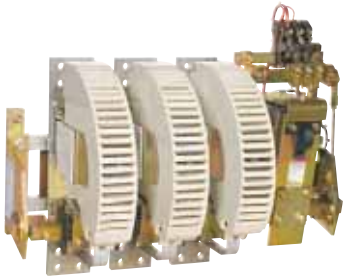


# R.. Series Contactors

## 63 ... 4100 A Ratings



IOR 200-20-CC



IORR 1700-30-CC  
with 3 auxiliary contacts

### Description

R.. series contactors with variable number of poles and their variants (contactors with N.C. + N.O. poles, couplers...) are used for controlling power circuits up to 500/1000 V a.c. or 440/1000/1500 V d.c.

They are designed with common standard components. With the combination of these elements, and the adaptation possibilities, special versions can be provided.

Based on a simple and sturdy construction this type of contactors is suitable for intensive duty and a high number of operations. All component parts are easily accessible and removable from the front.

**Number of poles:** variable

**Power circuit:** 500/1000 V a.c. or 440/1000/1500 V d.c.

**Ratings:** 63 ... 4100 A

**Control circuit:** a.c. or d.c., large coil voltage range available

**Auxiliary contacts:** up to 20 contacts, or more

### Applications

Designed for long-lasting operation and demanding applications, the **ABB** contactors **R.. series** are used for many railway networks and rolling stock all over the world: trains, metros, tramways, trolleybus.

Examples:

- heating circuit control of the trains in the stations,
  - supply contactors for power lines,
  - rail grounding contactors in the repair depot,
  - control of a.c. converters on engines,
- and all power d.c. circuits with multiple coupling possibilities of the poles.



>> Catalogue "R.. Series Contactors" on request

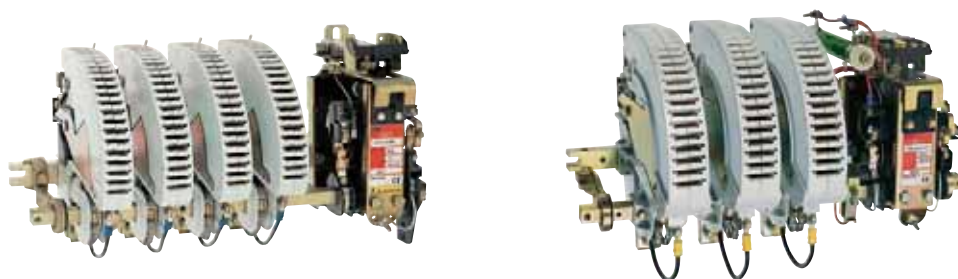
# R.. Series Contactors

Voltage  $U_e$  up to 500 Va.c. and Current  $I_e$  up to 2000 A (AC-1)



Contactor type	a.c. control circuit	~	IOR 85	IOR 170	IOR 260	IOR 420
	d.c. control circuit	≡	IORE 85	IORE 170	IORE 260	IORE 420
$I_{th}$ at 40 °C		<b>A</b>	85	170	275	400
$I_e$ AC-1 at 40 °C		<b>A</b>	85	170	260	400
$I_e$ AC-3	$U_e$ 400-415 Va.c.	<b>A</b>	77	150	245	370
	$U_e$ max. 500 Va.c.	<b>A</b>	73	130	245	370
Power AC-3	$U_e$ 400 Va.c.	<b>kW</b>	40	80	132	200

Voltage  $U_e$  up to 1000 Va.c. and Current  $I_e$  up to 1850 A (AC-1)



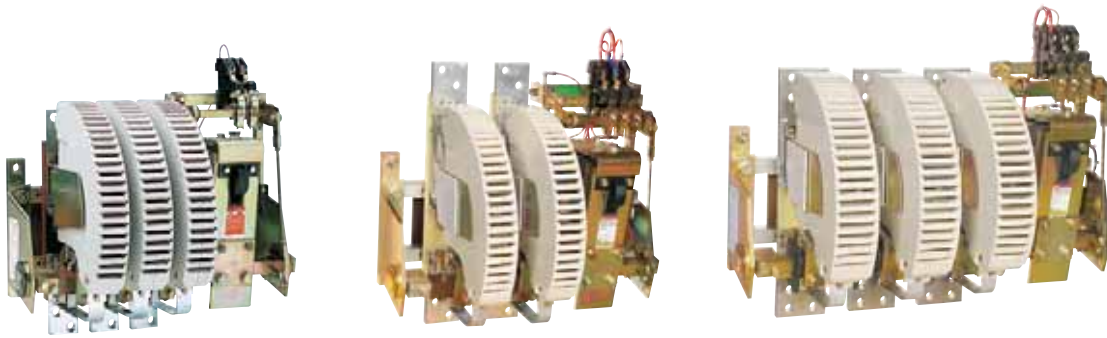
Contactor type	a.c. control circuit	~	IOR 63..-MT	IOR 125..-MT	IOR 200..-MT
	d.c. control circuit	≡	IORE 63..-MT	IORE 125..-MT	IORE 200..-MT
$I_{th}$ at 40 °C		<b>A</b>	85	170	275
$I_e$ AC-1 at 40 °C		<b>A</b>	85	170	260
$I_e$ AC-3	$U_e$ 690 Va.c.	<b>A</b>	85	160	260
$I_e$ AC-3	$U_e$ max. 1000 Va.c.	<b>A</b>	56	105	180
Power AC-3	$U_e$ 690 Va.c.	<b>kW</b>	80	150	240

**Reminder:**

All contactors fulfill the IEC 60947-4-1 / EN 60947-4-1 standards.  
 AC-1 conditions: max. breaking current =  $1.5 \times I_e$ , max. making current =  $1.5 \times I_e$ .  
 AC-3 conditions: max. breaking current =  $8 \times I_e$ , max. making current =  $10 \times I_e$ .



# for a.c. Circuit Switching



**IOR 550**

**IOR 800**

**IORR 1000**

**IORR 1400**

**IORR 1700**

**IORR 2100**

**IORE 550**

**IORE 800**

**IORE 1000**

**IORE 1400**

**IORE 1700**

**IORE 2100**

550

900

1000

1400

1700

2100

550

900

1000

1350

1650

2000

550

800

800

1060

1260

1520

550

800

800

1080

1220

1340

**300**

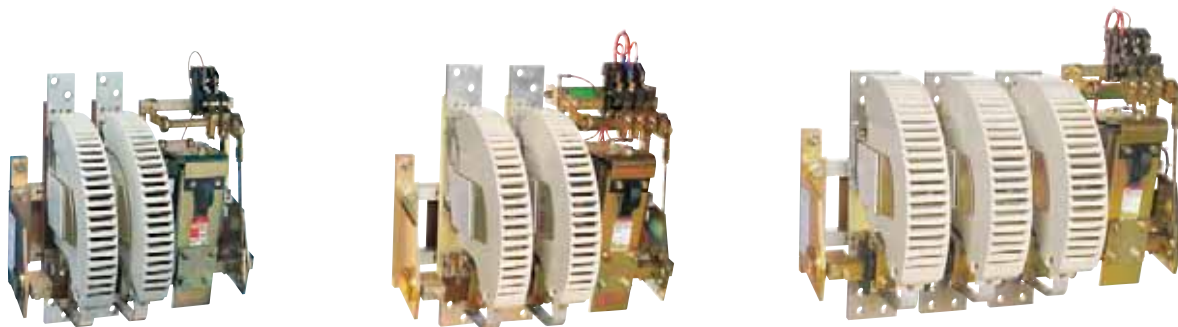
**450**

**450**

**630**

**750**

**900**



**IOR 500..-MT**

**IOR 800..-MT**

**IORR 1400..-MT**

**IORR 1700..-MT**

**IORR 2100..-MT**

**IORE 500..-MT**

**IORE 800..-MT**

**IORE 1400..-MT**

**IORE 1700..-MT**

**IORE 2100..-MT**

550

800

1300

1700

1850

550

800

1250

1650

1850

550

800

970

1170

1270

380

580

610

680

810

**540**

**780**

**1000**

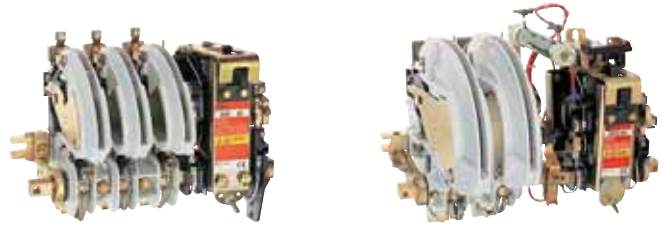
**1200**



**1300**

For contactors with N.C. main poles, couplers for no load breaking, magnetical or mechanical latching, see the main catalogues.  
Ratings > 2000 A, 500 Va.c. or > 1850 A, 1000 Va.c.: on request.

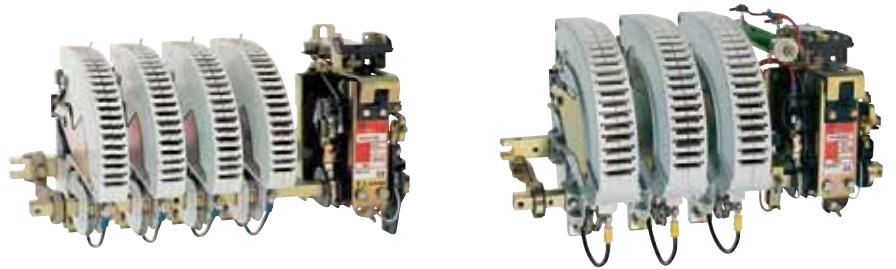
# R.. Series Contactors




Economical Contactors for Voltage  $U_e$  up to 440 Vd.c. and Current  $I_e$  up to 550 A (



Contactor type	a.c. control circuit	$U_e$ max.	$I_e$ A	IOR 85	IOR 170	IOR 260	IOR 420
	d.c. control circuit			IORE 85	IORE 170	IORE 260	IORE 420
$I_{th}$ at 40 °C			A	85	170	275	400
1 pole 	DC-1	220 Vd.c.	$I_e$ A	85	170	275	400
	DC-3 / DC-5	220 Vd.c.	$I_e$ A	68	140	205	350
2 poles 	DC-1	440 Vd.c.	$I_e$ A	85	170	275	400
	DC-3 / DC-5	440 Vd.c.	$I_e$ A	68	140	205	350

Standard Contactors for Voltage  $U_e$  up to 1500 Vd.c. and Current  $I_e$  up to 2000 A (



Contactor type	a.c. control circuit	$U_e$ max.	$I_e$ A	IOR 63..-CC	IOR 125..-CC	IOR 200..-CC	IOR 500..-CC
	d.c. control circuit			IORE 63..-CC	IORE 125..-CC	IORE 200..-CC	IORE 500..-CC
$I_{th}$ at 40 °C			A	85	170	275	550
1 pole 	DC-1	500 Vd.c.	$I_e$ A	85	170	275	550
	DC-3 / DC-5	500 Vd.c.	$I_e$ A	68	140	205	500
2 poles 	DC-1	1000 Vd.c.	$I_e$ A	85	170	275	550
	DC-3 / DC-5	1000 Vd.c.	$I_e$ A	68	140	205	500
3 poles 	DC-1	1500 Vd.c.	$I_e$ A	85	170	275	550
	DC-3 / DC-5	1500 Vd.c.	$I_e$ A	68	140	205	500

# for d.c. Circuit Switching

DC-1)



**IOR 550**

**IORE 550**

550

550

500

550

500

**Reminder:**

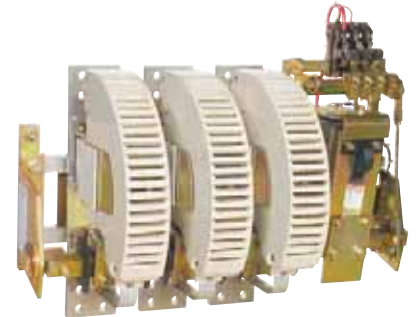
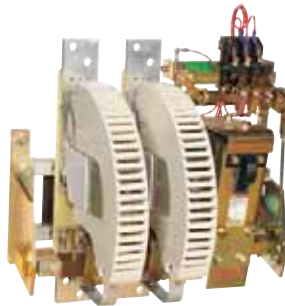
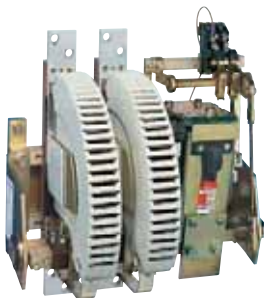
All contactors fulfill the IEC 60947-4-1 / EN 60947-4-1 standards.

DC-1 conditions: max. breaking current =  $1.5 \times I_e$ , max. making current =  $1.5 \times I_e$ .

DC-3 / DC-5 conditions: max. breaking current =  $4 \times I_e$ , max. making current =  $4 \times I_e$ .

Contactors with N.C. main poles, magnetical or mechanical latching on request.  
Ratings > 2000 A, 1500 Vd.c.: on request

DC-1, DC-3, DC-5)



**IOR 800..-CC**

**IORE 800..-CC**

800

**IORR 1000..-CC**

**IORE 1000..-CC**

1000

**IORR 1400..-CC**

**IORE 1400..-CC**

1300

**IORR 1700..-CC**

**IORE 1700..-CC**

1700

**IORR 2100..-CC**

**IORE 2100..-CC**

2000

**A**

750 Vd.c. **I<sub>e</sub> A**

800

1000

1250

1600

2000

600 Vd.c. **I<sub>e</sub> A**

720

1000

1250

1600

2000

1500 Vd.c. **I<sub>e</sub> A**

800

1000

1250

1600

2000

1000 Vd.c. **I<sub>e</sub> A**

720

1000

1250

1600

2000

1500 Vd.c. **I<sub>e</sub> A**

800

1000

1250

1600

2000

1500 Vd.c. **I<sub>e</sub> A**

720

1000

1250

1600

2000



Customer .....  
 Contact person ..... Date .....  
 Tel. .... e-mail .....

ABB .....  
 Contact person .....  
 Tel. ....

Quantity ..... Requested delivery date .....  
 Project / Application .....

**Power Circuit**

**a.c. switching**

Application type

AC-1 (resistive load)

AC-3 (starting, switching off running motors)

No load breaking

Other .....

Number of poles: N.O. .... N.C. ....

Rated operational current  $I_e$  ..... A

Rated operational voltage  $U_e$  ..... V ..... Hz

\_\_\_\_\_ or \_\_\_\_\_

**d.c. switching**

Application type

DC-1 (resistive load)

DC-3 (shunt motors)

DC-5 (series motors)

No load breaking

Other ..... L/R ..... ms

Number of poles: N.O. .... N.C. ....

Rated operational current  $I_e$  ..... A

Making current ..... A

Breaking current min. .... A max. .... A

Rated operational voltage  $U_e$  ..... V d.c.

**Operating conditions**

Switching frequency ..... cycles/h

Mech. Durability required (millions of operating cycles) .....

Remarks .....

**Accessories** .....

Please add any other useful documents for further information e.g. technical specification, drawing, wiring diagram, etc.

**Replacement of an existing contactor**

Brand .....

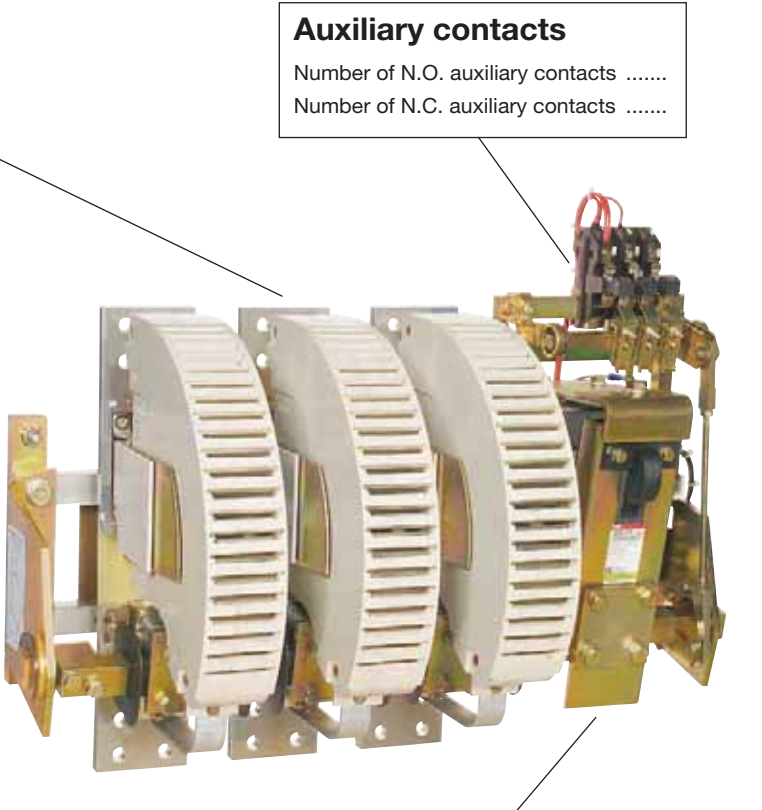
Typ .....

Fixing dimension F = ..... mm

Overall dimensions W = ..... mm

H = ..... mm

D = ..... mm



**Auxiliary contacts**

Number of N.O. auxiliary contacts .....

Number of N.C. auxiliary contacts .....

**Control circuit (coil)**

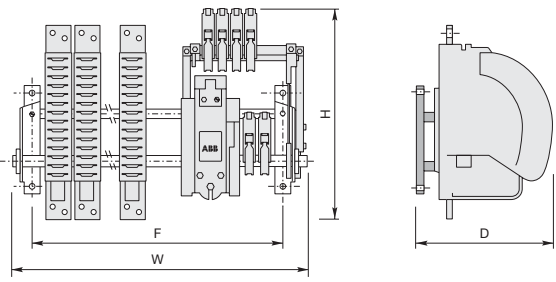
a.c.  Voltage ..... V ..... Hz

d.c.  Voltage ..... V d.c.

**Options**

Magnetical latching

Mechanical latching



Please photocopy and forward (see catalogue last back cover page).

Questionnaire also available on the ABB Website  
[www.abb.com/lowvoltage](http://www.abb.com/lowvoltage) left menu: "Low Voltage On-Line" select: "Support Tools".







## Circuit-breakers for Railway Applications

### Contents

<b>Miniature flush-mount circuit-breakers</b> .....	342
Tripping curves .....	345
Accessories for circuit-breakers .....	346
<b>Modular circuit-breakers system proM compact</b> .....	348
<b>High performance circuit-breakers</b> .....	350

# Flush-mountable STOPCIRCUIT Circuit Breakers for Railway Applications



For more than 40 years, ABB France has equipped rolling stock with flush-mountable thermo-magnetic circuit breakers.

STOPCIRCUIT circuit breakers are compliant with all the specific rolling stock requirements:

- Operation in the  $-25^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$  temperature range.
- Compliance with Railway Standard NF F62 001 regarding thermo-magnetic circuit breakers.
- Compliance with railway fire and smoke behaviour standards NF F16 101 and NF F 16102.
- Resistance to vibrations; shocks and tremors.

These products have been used in a very large number of projects throughout the entire world, for example:

- High-Speed Trains: TGV-PSE; TGV-A; TGV-R; THALYS; Channel Tunnel; TGV-Korea ...
- Regional Trains: TER; Z-TER; TER 2N-NG; X40...
- Tramways: CITADIS; ROTTERDAM; SINGAPORE; SHANGAI...
- Locomotives: LOCOFRET...
- Subways: MF77; MP89; SINGAPORE; MELBOURNE...



Advantages of STOPCIRCUIT circuit breakers:

- DC operating voltage up to 150 V DC per pole.
- Rating on request.
- Thermo-magnetic detection; Thermal or Magnetic alone.
- Control and mounting on request.
- Connection on request.
- Numerous other options possible: reinforced shock resistance; rating marked on the release button; front panel sealing accessory; ...
- Can be used as protection circuit breakers or signalling circuit breakers.



Advantages of STOPCIRCUIT flush-mountable circuit breakers:

- Can also be used for both stationary rail equipment and rolling stock applications.
- Fault trip during thermal compensation from  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  offers the best possible stability over time compared to other technologies.
- Reinforcement of shock resistance allows them to be used in the most severe conditions (conditions currently required in military applications).
- Excellent feedback based on numerous years of experience in highly technical applications in harsh environments: mobile military, railway, telecommunications and electrical utility applications (EDF); ...

The flexibility ensured through the product's design allows special applications to be created to customer specifications → GS...



# Flush mountable or pluggable circuit breakers

## How to order "GN" - "GV" series circuit breakers

### Flush mountable



Threaded bush  
1 or 2 buttons



Screw  
1 or 2 handles

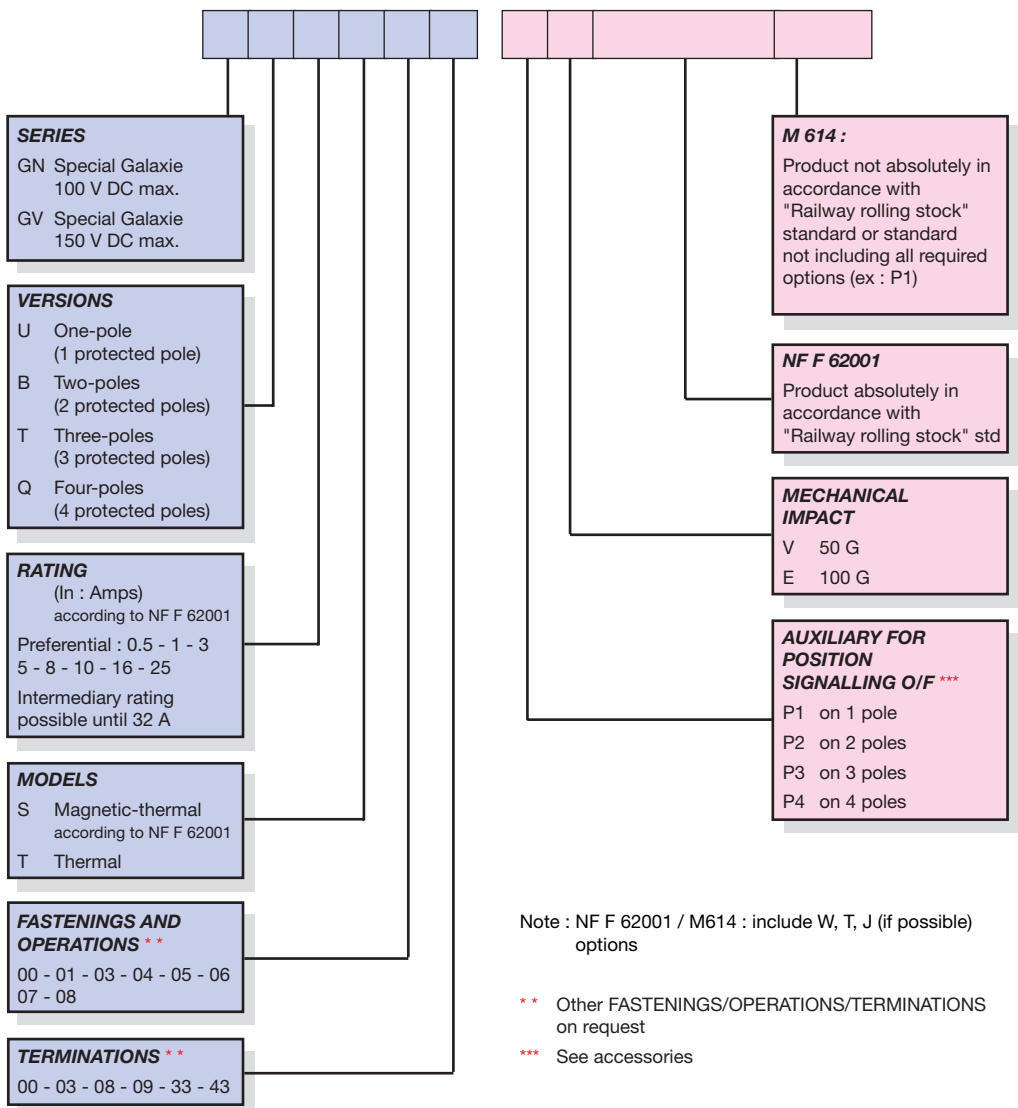


Threaded bush  
Push-Pull  
1 button

### Pluggable



1 or 2 buttons  
Pluggable  
on DIN rail  
or plate



#### Example N° 1

1 circuit breaker **SERIE** : Special Galaxie 100 V DC - **VERSION** : 2 protected poles - **RATING** : 10 A  
**MODEL** : Magnetic-thermal, curve S - **FASTENINGS AND OPERATIONS** : Metal threaded bush flush type 2 buttons -  
**TERMINATION** : Screws and Onduflex washers.  
With option : **AUXILIARY FOR POSITION SIGNALLING O/F** : on 2 poles

has reference : **GNB10S0743P2M614** (M614 in place of NFF62001 because : - two-poles with move of center buttons  
- auxiliary contacts P2)

**GN B 10 S 07 43 P2 - - M614**

#### Example N° 2

1 circuit breaker **SERIE** : Special Galaxie 100 V DC - **VERSION** : 1 protected pole - **RATING** : 16 A  
**MODEL** : Magnetic-thermal, curve S - **FASTENINGS AND OPERATIONS** : Metal threaded bush flush type 2 buttons -  
**TERMINATION** : 6,35 mm snaps on rear side.

has reference : GNU16S0709NFF62001

**GN U 16 S 07 09 - - NF F 62001 -**

#### Special design :

We design special circuit-breakers, by-products of the Galaxie range, on customer's specification (type GS...). These devices are described on specific technical data sheets.

**...Consult us**

# Flush mountable or pluggable circuit breakers

## Technical characteristics - Dimensions

### Flush mountable



Threaded bush  
1 or 2 buttons



Screw  
1 or 2 handles



Threaded bush  
Push-Pull  
1 button

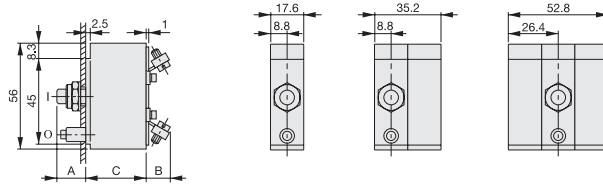
### Pluggable



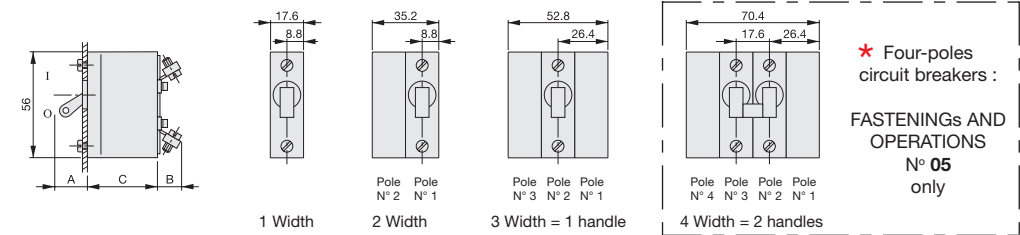
1 or 2 buttons  
Pluggable  
on DIN rail  
or plate

### DIMENSIONS

FASTENINGS AND OPERATIONS N°s 00 - 01 - 03 - 04 - 06 - 07 - 08



FASTENINGS AND OPERATIONS N°s 05



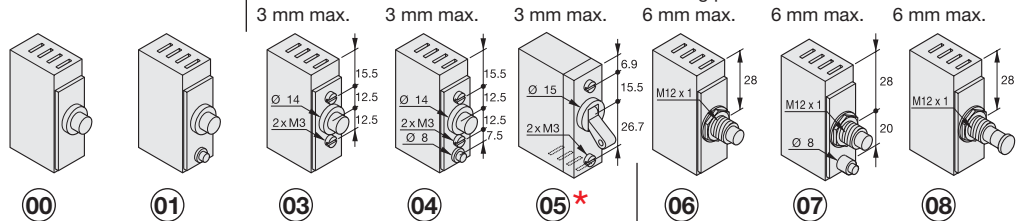
FASTENINGS / OPERATIONS	00	01	03	04	05	06	07	08
Cote : A (mm)	8	8	8	8	17,5	15	15	21
Cote : C (mm)	32	32	32	32	37	32	32	32
<b>TERMINATIONS</b>	<b>00</b>	<b>03</b>	<b>33</b>	<b>43</b>	<b>08</b>	<b>09</b>		
Cote : B (mm)	15	12	12	12	4	11		

### FASTENINGS AND OPERATIONS

PROJECTION MOUNTING

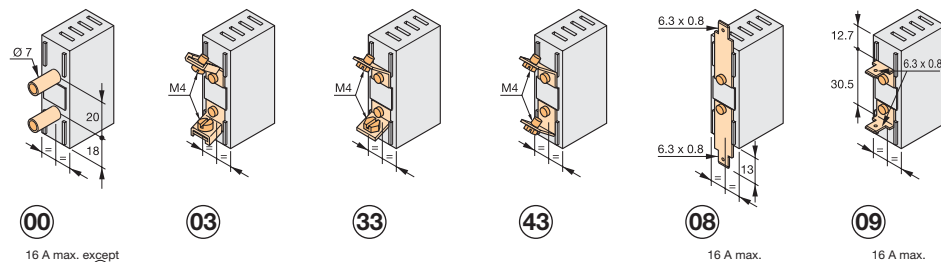
SCREW FLUSH MOUNTING

Maximum thickness of mounting panel :



Tightening torque :  
1,8 Nm max. with plastic bush  
3 Nm max. with metal bush

### TERMINATIONS



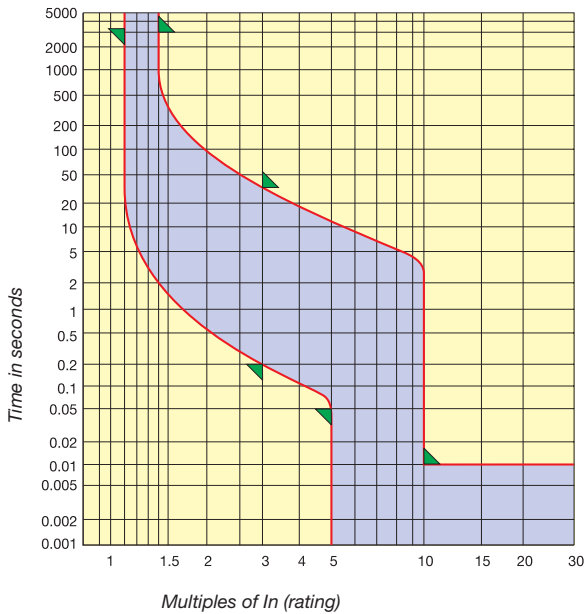
Characteristics according NF F 62001	SERIE GN	SERIE GV
Direct rated voltage per pole	100 V DC max.	150 V DC max.
Alternative rated voltage (F = 50/60 Hz)		
	One-pole version	240 / 415 V AC
	Multipole version	415 V AC
Ambient temperature	- 25°C to + 70°C	
Life, number of cycles	4000	
Dielectric withstanding voltage	2000 V rms	
Sinusoidal vibration	4 g / 11 ms	
Mechanical shock	30 g / 11 ms	
Tripping curve	5 In < S < 10 In for rating from 0,1 to 2 A included	
Tripping curve	7 In < S < 14 In for rating from 3 to 32 A included	
Breaking capacity	500 A	1000 A
Fire / Smoke rating according NF F 16101 and 16102	I2 F3	

# Current curves for "GN" and "GV" series - Type S and T

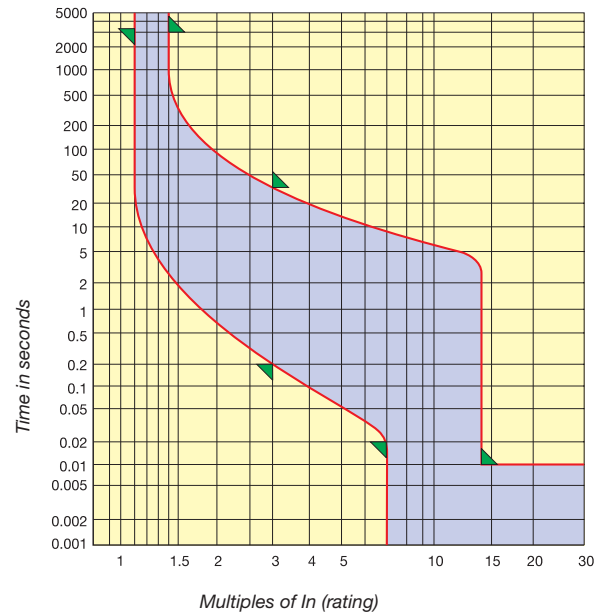
## DC curves - Magnetic-thermal circuit breakers for "GN" and "GV" series, Type S

In DC current, at +20 °C according NF F 62001 standard

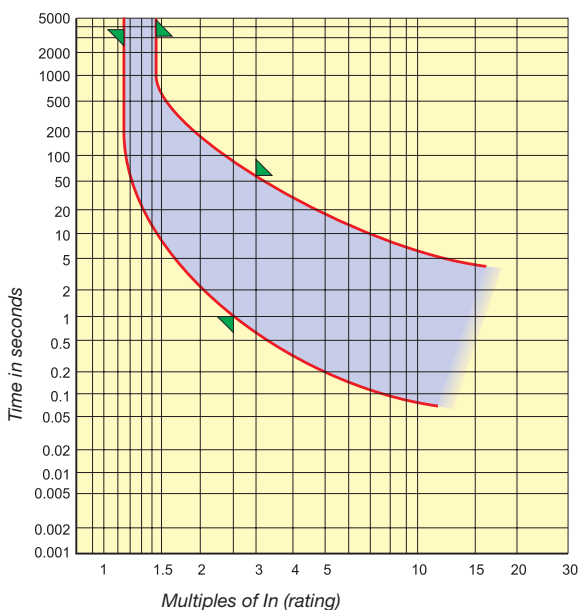
Rating < 3A





Rating ≥ 3A



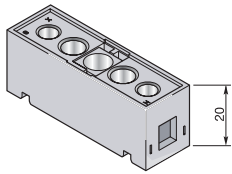
## AC - DC curves - Thermal circuit breakers for "GN" and "GV" series, Type T



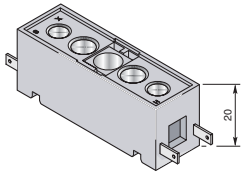
-  Limits standard
-  For information
- Tests realized
  - cold (I = 0 before overload)
  - overload on all the poles for multipoles

# Accessories for circuit breakers "GN" and "GV" series

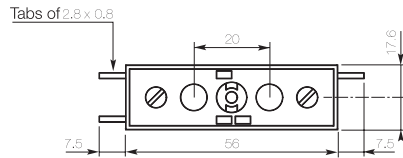
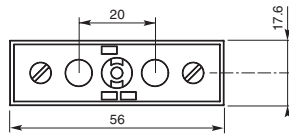
## Bases for pluggable circuit breakers - Plate mounting



Without auxiliary contact

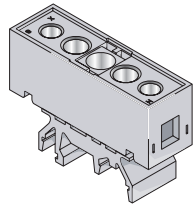


With auxiliary contact

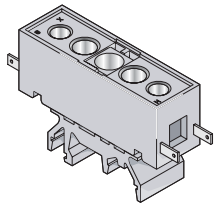


Number of auxiliary changeover contacts	1 pole	2 poles	3 poles	4 poles
0	821B10001	821B20001	821B30001	821B40001
1	821B10101	821B20101	821B30101	821B40101
2		821B20201	821B30201	821B40201
3			821B30301	821B40301
4				821B40401

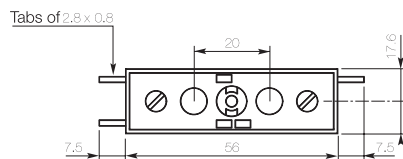
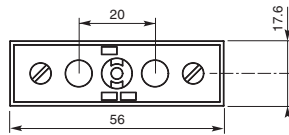
## Bases for pluggable circuit breakers - mounting on DIN 1 - 3 rails



Without auxiliary contact

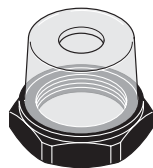


With auxiliary contact



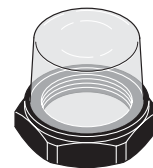
Number of auxiliary changeover contacts	1 pole	2 poles	3 poles	4 poles
0	821B13001	821B23001	821B33001	821B43001
1	821B13101	821B23101	821B33101	821B43101
2		821B23201	821B33201	821B43201
3			821B33301	821B43301
4				821B43401

## Waterproof covers



Reference  
821E20801

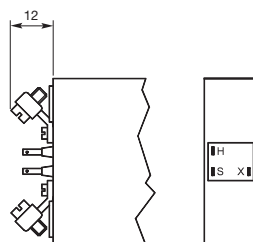
For fastening / operation "08"



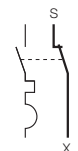
Reference  
821E20601

For fastening / operation "06"

## Auxiliary changeover contact



Max value : 3 A under 240 VAC / 48 VDC  
Min value : 5 mA under 15 VDC



Terminations with 2,8 x 0,8 mm tabs

# Notes



# DIN rail mounted Circuit Breakers

## Power Circuit Breakers

### Residual Current Circuit Breakers

These products are very easy mounted on a DIN rail. They are small in size (2 modules wide = 35mm) and cover the 6 to 40A rating range with sensitivity from 10 to 300mA. Their cage-type terminals accept cable sizes up to 16mm<sup>2</sup>.



### Thermo-magnetic Modular Circuit Breakers

#### System proM compact S200

The patented double cage-type terminal guarantees these units a highly reliable and efficient connection.

An extremely wide range covers 0.5 A to 63 A for AC and up to 60 V DC per pole for DC applications. All standardised curves are also available.

#### System proM classic S280 UC

A special DC version up to 220Vdc per pole is available, from 0.5A to 63A with K and Z tripping curves.

#### High Performance S800 Circuit Breakers

This range extends from 10A to 125A. A special DC version up to 250Vdc per pole is available for 1 to 4 poles and for B and K curves.

The standard version features cage-type terminals that are interchangeable with ring-lug type terminals for current ranges from 40 to 125 A.

All ranges propose numerous accessories, including:

- Auxiliary signal contact.
- Fault signal contact.
- Shunt trip.
- Undervoltage release.
- Residual current device-block.
- Busbars...

Generally speaking, all ABB products comply with a great number of national and international approvals.



# Technical Data

Residual current circuit breakers DS951 - Modular circuit breakers S200, S200P, S280 UC - S800N, S800S, S800S-R

## Residual Current Circuit Breakers



DS951



S201P



S202



S282



S802S



S804S-R

Type	<b>DS951</b>	
Rating	<b>A</b>	6 to 40
Sensibility	<b>A</b>	0.03 - 0.3
Wave form	AC / A	
Number poles	1 + N	
Rated operating voltage	<b>V AC</b>	230
Minimum operating voltage	<b>V AC</b>	110
Tripping curve	C	
Breaking capacity		
per: - NF EN 60898	<b>A</b>	6 000
- NF EN 60947-2	<b>A</b>	10 000

## Modular System proM compact and System proM classic Circuit Breakers

Type		<b>S200</b>	<b>S200P</b>	<b>S200P</b>	<b>S280 UC</b>
Rating	<b>A</b>	0.5 to 63	0.5 to 63	0.5 to 63	0.5 to 63
Number of poles		1 to 4	1 to 4	1 to 4	1 and 2
Maximum operating voltage	<b>V AC</b>	440	440	440	440
Maximum operating voltage					
- One-pole	<b>V DC</b>	60	60	60	220
- Two-pole	<b>V DC</b>	125	125	125	440
Minimum operating voltage	<b>V AC/DC</b>	12	12	12	12
Tripping curve		B / C / D	B / C	K / Z	K / Z
Breaking capacity					
per: - NF EN 60898	<b>A</b>	6 000	25 000 (0.5A à 25A)		
- NF EN 60898	<b>A</b>		15 000 (32A to 63A)		
- NF EN 60947-2	<b>A</b>		25 000 (0.5A to 25A)	25 000 (0.5A to 25A)	Infinity (0.5A to 2A)
- NF EN 60947-2	<b>A</b>	10 000	15 000 (32A to 63A)	15 000 (32A to 63A)	6 000 (3A to 32A)
- NF EN 60947-2	<b>A</b>				4 500 (40A to 63A)

## High Performance Modular Circuit Breakers

Type		<b>S800N</b>	<b>S800S</b>	<b>S800S-R</b>
Connection		cage-type	cage-type	ring-lug type
Rating	<b>A</b>	10 to 125	10 to 125	40 to 125
Number of poles		1 to 4	1 to 4	1 to 4
Maximum operating voltage	<b>V AC</b>	690	690	690
Maximum operating voltage	<b>V DC</b>		250 (1 pole) 500 (2 poles) 750 (3-4 poles)	
Tripping curve		B / C / D	B / C / D	B / C / D
Breaking capacity				
per: - NF EN 60898	<b>A</b>	25 000	25 000	25 000
- NF EN 60947-2	<b>A</b>	36 000	50 000	50 000

# Tmax T2 ... T6 moulded case circuit breakers

## For 1.6 A to 800 A applications up to 1000 V AC/DC

The ABB Tmax series has been on the market for many years with a range suitable to all installation requirements. For railway traction applications, the AC or DC range is suitable to all installation needs with a wide selection of thermomagnetic relays. Tmax offers high-performance in extremely compact size. The excellent weight/performance ratio and maximum reliability make ABB's Tmax circuit breakers the perfect choice for railway applications. The range covers all applications from 1.6 A to 800 A up to 1000 V AC/DC.

Tmax main characteristics are:

- Thermomagnetic or electronic trip unit
- Ring-lug type connectors
- Double insulation
- Fire resistance tests according to standards NF F 16101 and NF F 16102, level 4
- UL94-V0, ASTM E1354, IEC 61373
- Positive operation
- Breaking capacity
- Operating temperature -25 °C / +70 °C

## Panorama



Power circuit breakers			T2	T4	T5	T6
In	A		1.6 ... 160	20 ... 250	320 ... 500	500 ... 800
Poles	Qty		3/4	3/4	3/4	3/4
Ue	V	(AC) 50 - 60 Hz	690	690	690	690
	V	(DC)	500	750	750	750
Icu (380-415 V AC)	kA	N	36	36	36	36
	kA	S	50	50	50	50
	kA	H	70	70	70	70
	kA	L	85	120	120	100
	kA	V		200	200	

Circuit breakers for applications up to 1000 V			T4	T5	T6
Iu	A		250	400/630	630/800
Poles	Qty		3/4	3/4	3/4
Icu max.	kA	1115 V AC	20	20	12
	kA	1000 V DC 4 poles in series	40	40	40

Comment : Moulded case circuit breakers compliant with Standards UL489 and CSA C22.2 are also available (see catalogue: "ABB SACE moulded case circuit breakers - UL 489 and CSA C22.2 Standard").

## Installation

Tmax circuit breakers can be installed in switchboards, mounted in any horizontal, vertical or lying down position on the back plate or on rails, without their rating being downgraded. Tmax circuit breakers can be easily installed, in particular due to the possibility of being supplied either by the top or bottom terminals, without jeopardising the unit's functionality.

Apart from installation on the back plate, the T2 and T3 can also be mounted on DIN 50022 rails, thanks to the special fixing brackets.



# Tmax T2 ... T6 moulded case circuit breakers

## For 1.6 A to 800 A applications up to 1000 V AC/DC

### Trip Units

#### Thermomagnetic trip units

The Tmax T2, T4, T5 and T6 circuit breakers can be fitted with thermomagnetic trip units and are used to protect AC and DC networks with an application range from 1.6 A to 800 A. They allow protection against overloads with a thermal device (with adjustable threshold for T2, T4, T5, T6), made using the bimetal technique, and protection against short-circuit with a magnetic device (with fixed threshold for T2 and T4, the latter up to 50 A; and with adjustable threshold for T4, T5 and T6).

As standard, four-pole circuit breakers are always supplied with the neutral fully protected by the trip unit (100%) up to 100 A. Over 100 A, neutral can be either reduced (50%) or full (100%).

#### TMD thermomagnetic trip units with adjustable thermal and fixed magnetic release

##### Thermal threshold

Adjustable from 0.7 to 1 x I<sub>n</sub>



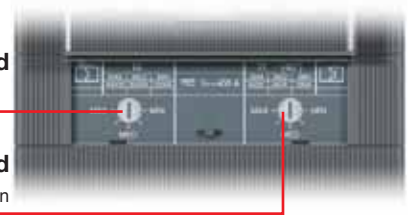
#### TMA thermomagnetic trip units with adjustable thermal and magnetic release

##### Magnetic threshold

Adjustable

##### Magnetic threshold

Adjustable from 0.7 to 1 x I<sub>n</sub>



### Range of accessories

#### Accessories

The comprehensive, rational installation possibilities of the Tmax series are also achieved thanks to innovative accessory development solutions:



### Connection

#### Front extended terminals - EF



Type	Bars (mm)			Lugs (mm)	
	L	P	Ø	L	Ø
T1	15	5	8.5	15	8.5
T2	20	4	8.5	20	8.5
T3	20	6	10	20	10
T4	20	10	10	20	10
T5	30	7	11	30	11
T6 630	40	5	11	40	11
T6 800	50	5	14	50	14

Allows the connection of bars or cables fitted with a lug.

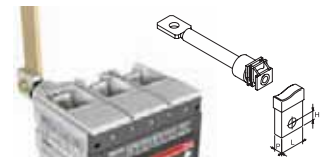
#### Front extended spread terminals - ES



Type	Bars (mm)			Lugs (mm)	
	L	P	Ø	L	Ø
T2	30	4	10.5	30	10.5
T3	30	4	10.5	30	10.5
T4	30	6	10.5	30	10.5
T5	40	10	11	11	11
T6	80	5	3 x 13	3 x 45	13

Allows the connection of bars or cables fitted with a lug.

#### Rear oriented terminals - R



Type	Bars (mm)		
	L	P	Ø
T2	20	4	8.5
T3	20	6	8.5
T4	20	10	8.5
T5	30	7	11
T6 630	40	5	14
T6 800	50	5	14

Allows the connection of bars or lugs at the rear.

They can be oriented in 4 different positions to facilitate cable/bar connection





# Current Sensors, Voltage Sensors and Voltage Detectors

## Table of contents

<b>Introduction</b> .....	354
<b>Current sensors</b>	
CS range - Rolling stock and fixed installations .....	356
NCS range - Fixed installations.....	361
<b>Voltage sensors</b>	
VS range - Rolling stock and fixed installations.....	373
EM010 range - Rolling stock and fixed installations.....	377
<b>Voltage detectors</b>	
VD range - Rolling stock and fixed installations.....	381

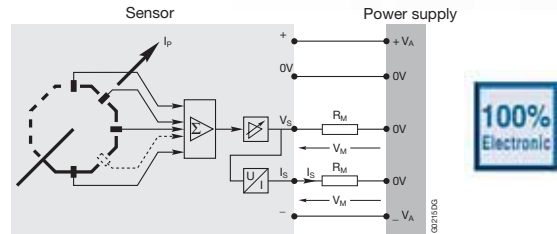
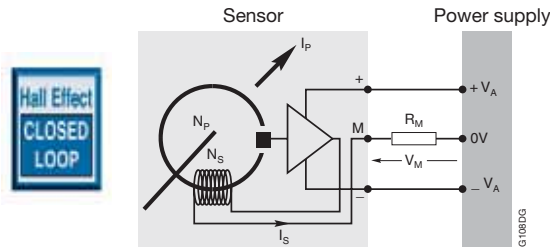


# Current and voltage sensors for railway application

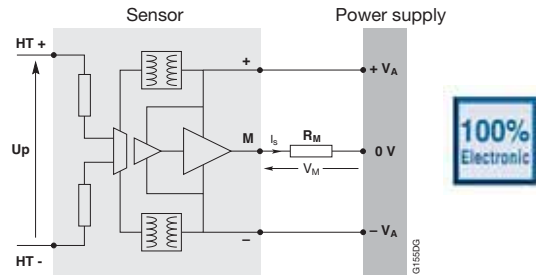
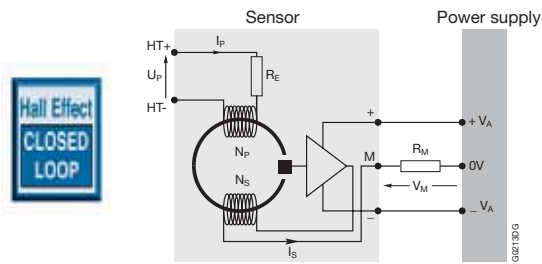
ABB sensors put all their know-how and talent for innovation in order to improve our products for traction. ABB have developed several technologies:



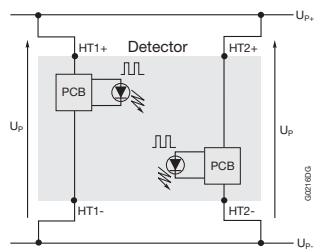
## Current Sensors



## Voltage Sensors



## Voltage Detector



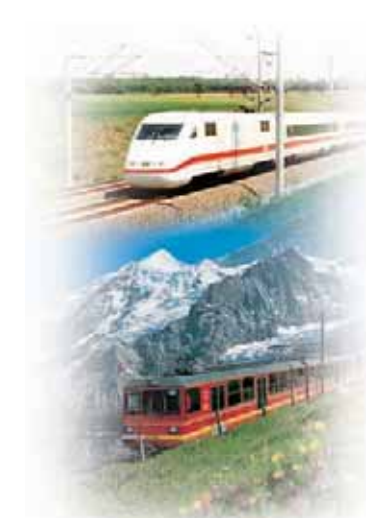
Our dedicated traction products can be used in many applications like:

- Main converters
- Auxiliary converters
- Electronic power devices integrating capacitors banks
- Battery chargers
- Choppers
- Sub-stations
- Mining

This catalogue assembles all data needed to make the best sensor choice.

Main particularities of the railway applications :

- Wide variation of temperature
- Continuous vibration stress
- Shocks
- Fire and smoke withstand: special care are being taken for plastic materials for which specific tests are required



# Reference Standards

The current and voltage sensor and voltage detector described in the next pages are in accordance with the following standards:

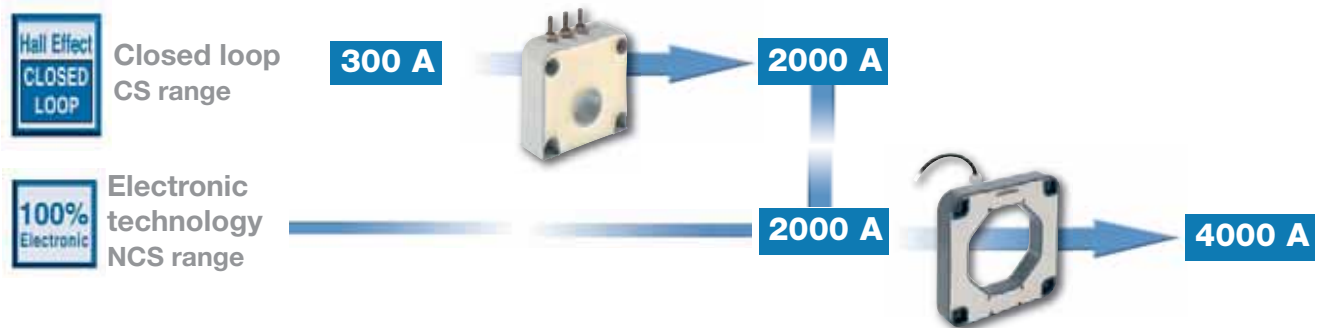
- **EN 50155** Electrical equipment used on rolling stock - shock and vibration test
- **EN 61373** Electronic equipment shock and vibration test
- **EN 50163** Standard catenary line DC voltages
- **EN 50121-3-2** EMC (electro magnetic compatibility)
- **EN 50124-1** Electrical security
- **EN 60068-2-1** Cold
- **EN 60068-2-2** Dry heat
- **EN 60068-2-11** Salt mist
- **EN 60068-2-30** Damp heat, cyclic
- **NF F 16-101** Directive relative to selecting materials in relation to their fire resistance in terms of its behaviour in fire, the opacity of smoke and the toxicity of gas released
- **NF F 16-102** This standard complements NF F 16-101 standard. Its purpose is to specify the applications of NF F 16-101 to electrical equipment and especially to individual apparatus



Numerous projects using ABB sensors have been worldwide realized. Some examples:

- Engines: BR189 (Germany), ES64F4 (Dispolok, Switzerland, Italy, Slovenia), 1116 (OEBB), 8200 (Korea), OSE (Greece), SD90 (USA)
- Metros: Korean, VVF (Korea), Guangchou, Shanghai, shenzen, Madrid, Monterray
- Intercity train: Train-Tram Aulnay Bondy (France), Pendolina (China), Brazil, South Africa, Elektrostar, LUL-VLU, LUL-SSL, AGC, Queensland
- High speed train: TGV (France), THSRC (Taiwan), KTX2 (Korea)

## Current Sensors



## Voltage Sensors



## Voltage Detector





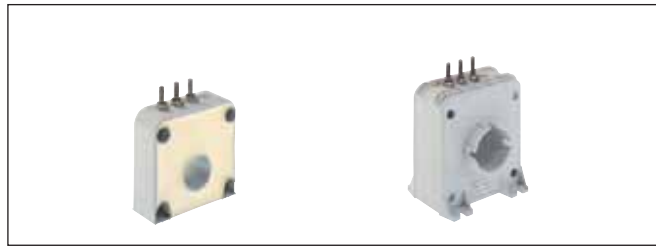
# CS traction current sensors

## Rolling stock and fixed installations

### Utilisation

Sensors to measure d.c., a.c. or pulsating currents with a galvanic insulation between primary and secondary circuits.

### CS300 / CS503 / CS500



### Technical data

	Horizontal mounting	Vertical mounting	CS300BR	CS503BR	CS500BR	CS500-9936
	Horizontal + Screen	Vertical + Screen	CS300BRV	CS503BRV	CS500BRV	CS500-9937
	Horizontal + Screen	Vertical + Screen	CS300BRE	CS503BRE	CS500BRE	CS500-9938
	Horizontal + Screen	Vertical + Screen	CS300BRVE	CS503BRVE	CS500BRVE	CS500-9939
Nominal primary current		<b>A r.m.s.</b>	300	500	500	500
Measuring range	@ ±15V (±5%)	<b>A peak</b>	±600	-	-	±1000
Measuring range	@ ±24V (±5%)	<b>A peak</b>	±600	±750	±1000	±1000
Not measurable overload	10ms/hour	<b>A peak</b>	3000	5000	5000	5000
Max. measuring resistance	@ I <sub>PMAX</sub> & ±15V (±5%)	Ω	12	-	-	12
Max. measuring resistance	@ I <sub>PMAX</sub> & ±24V (±5%)	Ω	40	6	37	46
Min. measuring resistance	@ I <sub>PN</sub> & ±15V (±5%)	Ω	0	-	-	0
Min. measuring resistance	@ I <sub>PN</sub> & ±24V (±5%)	Ω	32	0	0	0
Turn number			2000	3500	5000	4000
Secondary current at I <sub>PN</sub>		<b>mA</b>	150	142.86	100	125
Accuracy at I <sub>PN</sub>	@ +25°C	%	≤±0.5	≤±0.5	≤±0.5	≤±0.5
Accuracy at I <sub>PN</sub>	-40 ... +85°C	%	≤±1	≤±1	≤±1	≤±1
Offset current	@ +25°C & ±24V (±5%)	<b>mA</b>	≤±0.6	≤±0.3	≤±0.25	≤±0.3
Linearity		%	≤0.1	≤0.1	≤0.1	≤0.1
Thermal drift coefficient	-40 ... +85°C	<b>µA/°C</b>	≤10	≤7	≤5	≤6
Delay time		<b>µs</b>	≤1	≤1	≤1	≤1
di/dt correctly followed		<b>A / µs</b>	≤100	≤100	≤100	≤100
Bandwidth	-1dB	<b>kHz</b>	≤100	≤100	≤100	≤100
Max. no-load consumption current	@ ±24V (±5%)	<b>mA</b>	≤10	≤15	≤15	≤15
Secondary resistance	@ +85°C	Ω	≤27	≤88	≤64	≤35
Dielectric strength Primary/Secondary (or Primary/(Secondary+Screen) if relevant)	50 Hz, 1 min	<b>kV</b>	6.5	6.5	12	12
Dielectric strength Secondary/Screen (if relevant)	50 Hz, 1 min	<b>kV</b>	0.5	0.5	0.5	0.5
Supply voltage	±5%	<b>V d.c.</b>	±15 ... ±24	±15 ... ±24	±15 ... ±24	±15 ... ±24
Voltage drop		<b>V</b>	≤2.5	≤2.5	≤2.5	≤2.5
Mass		<b>kg</b>	0.36	0.36	0.78	0.78
Mass with side plates		<b>kg</b>	0.45	0.45	0.95	0.95
Operating temperature		<b>°C</b>	-40 ... +85	-40 ... +85	-40 ... +85	-40 ... +85
Storage temperature		<b>°C</b>	-50 ... +90	-50 ... +90	-50 ... +90	-50 ... +90

### General data

- Plasticcase and insulating resin are self-extinguishing.
- Fixing holes in the case moulding for horizontal or vertical mounting, with side plates.
- Direction of the current: A primary current flowing in the direction of the arrow results in a positive secondary output current from terminal M.
- Internal electrostatic screen: All CS sensors have an electrostatic screen, this is connected to the screen terminal «E». Depending on the version, when this screen terminal «E» is not provided, the screen is connected to the (-) terminal of the sensor.

- Protections:
  - of the measuring circuit against short-circuits.
  - of the measuring circuit against opening.
  - of the power supply against polarity reversal.
- Burn-in test in accordance with FPTC 404304 cycle.

### Primary connection

Hole for primary conductor. The temperature of the primary conductor in contact with the case must not exceed 100°C.



# CS traction current sensors

## Rolling stock and fixed installations

### CS1000 / CS2000



### Technical data

			Horizontal mounting			
			CS1000BR	CS1000-9940	CS2000BR*	CS2000-9944*
			CS1000BRV	CS1000-9941	CS2000BR*	CS2000-9944*
			CS1000BRE	CS1000-9942	CS2000BR*	CS2000-9944*
			CS1000BRVE	CS1000-9943	CS2000BRV	CS2000-9945
Nominal primary current		<b>A r.m.s.</b>	1000	1000	2000	2000
Measuring range	@ ±15V (±5%)	<b>A peak</b>	-	-	-	-
Measuring range	@ ±24V (±5%)	<b>A peak</b>	±2000	±2000	±3000	±3000
Not measurable overload	10ms/hour	<b>A peak</b>	10000	10000	20000	20000
Max. measuring resistance	@ I <sub>PMAX</sub> & ±15V (±5%)	<b>Ω</b>	-	-	-	-
Max. measuring resistance	@ I <sub>PMAX</sub> & ±24V (±5%)	<b>Ω</b>	4	7	5	9
Min. measuring resistance	@ I <sub>PN</sub> & ±15V (±5%)	<b>Ω</b>	-	-	-	-
Min. measuring resistance	@ I <sub>PN</sub> & ±24V (±5%)	<b>Ω</b>	0	0	0	0
Turn number			5000	4000	5000	4000
Secondary current at I <sub>PN</sub>		<b>mA</b>	200	250	400	500
Accuracy at I <sub>PN</sub>	@ +25°C	<b>%</b>	≤±0.5	≤±0.5	≤±0.5	≤±0.5
Accuracy at I <sub>PN</sub>	-40 ... +85°C	<b>%</b>	≤±1	≤±1	≤±1	≤±1
Offset current	@ +25°C & ±24V (±5%)	<b>mA</b>	≤0.25	≤0.25	≤0.25	≤0.25
Linearity		<b>%</b>	≤0.1	≤0.1	≤0.1	≤0.1
Thermal drift coefficient	-40 ... +85°C	<b>µA/°C</b>	≤10	≤12.5	≤20	≤25
Delay time		<b>µs</b>	≤1	≤1	≤1	≤1
di/dt correctly followed		<b>A / µs</b>	≤100	≤100	≤100	≤100
Bandwidth	-1dB	<b>kHz</b>	≤100	≤100	≤100	≤100
Max. no-load consumption current	@ ±24V (±5%)	<b>mA</b>	≤15	≤15	≤25	≤25
Secondary resistance	@ +85°C	<b>Ω</b>	≤46	≤34	≤30	≤20
Dielectric strength Primary/Secondary (or Primary/(Secondary+Screen) if relevant)	50 Hz, 1 min	<b>kV</b>	12	12	12	12
Dielectric strength Secondary/Screen (if relevant)	50 Hz, 1 min	<b>kV</b>	0.5	0.5	1.5	1.5
Supply voltage	±5%	<b>V d.c.</b>	±15 ... ±24	±15 ... ±24	±15 ... ±24	±15 ... ±24
Voltage drop		<b>V</b>	≤2.5	≤2.5	≤1.5	≤1.5
Mass		<b>kg</b>	0.85	0.85	1.5	1.5
Mass with side plates		<b>kg</b>	1	1	1.66	1.66
Operating temperature		<b>°C</b>	-40 ... +85	-40 ... +85	-40 ... +85	-40 ... +85
Storage temperature		<b>°C</b>	-50 ... +90	-50 ... +90	-50 ... +90	-50 ... +90

\* Horizontal or vertical mounting is possible.

### Standard secondary connections

- M5 studs and Faston 6.35 x 0.8: see details on next page.

### Accessories

- Side plate kits (including the fixing screws): set of 2 plates allowing for:
  - Vertical or bar mounting for CS300 to CS1000
  - Bar mounting for CS2000 (vertical mounting is possible without side plate for CS2000)
- Mounting bar kits (including the fixing screws) for CS300 to CS2000. See next page for details.

### Conformity

EN50155

EN50121-3-2

EN50124-1



# Accessories and options for CS sensors

## Rolling stock and fixed installations

### Accessories

#### Side plates:

Side plate kits include all the necessary screws for fixing the plates to the sensor.

Type	Sensor concerned	Technical description	Order code
Side plate kit CST0	CS300 & CS503	set of 2 plates	1SBT170000R2001
Side plate kit CST1	CS500 & CS1000	set of 2 plates	1SBT170000R2002
Side plate kit CST2	CS2000	set of 2 plates	1SBT170000R2007

#### Bar kits:

Bar kits include all the necessary screws for mounting the bar on the sensor (the sensor must already be fitted with side plates prior to mounting the bar).

Type	Sensor concerned	Technical description of the bar	Order code
Bar kit CST0	CS300 & CS503	6x25x155 mm <sup>2</sup> , 0.280 kg	1SBT170000R2003
Bar kit CST1-6	CS500 & CS1000	6x40x185 mm <sup>2</sup> , 0.510 kg	1SBT170000R2004
Bar kit CST1-10	CS500 & CS1000	10x40x185 mm <sup>2</sup> , 0.760 kg	1SBT170000R2005
Bar kit CST1 special	CS500 & CS1000	10x40x210 mm <sup>2</sup> , 0.8 kg (for compatibility with TA600, TA800 et EA1000 sensors)	1SBT170000R2010
Bar kit CST2	CS2000	20x60x240 mm <sup>2</sup> , 2.5 kg	1SBT170000R2011
Bar kit CST2 special	CS2000	20x60x370 mm <sup>2</sup> , 3.8 kg (for compatibility with EA2000 sensors)	1SBT170000R2012

For other bar dimensions: Please contact us for details.

### Options

The main available options are shown below.

Other options are possible: Please contact us for details.

#### Number of secondary turns Ns:

Sensor	CS300	CS503	CS500
Ns	1000 2500	4000 5000	3500

#### Secondary connection:

Sensor	CS300 & CS503	CS500 & CS1000	CS2000
Secondary connection	- 3 M5 inserts 4 M5 inserts 3 pin Lemo connector 4 pin Lemo connector Shielded cable (2 m)	- 3 M5 inserts 4 M5 inserts 3 pin Lemo connector 4 pin Lemo connector Shielded cable (2 m)	3 M5 studs 3 M5 inserts 4 M5 inserts 3 pin Lemo connector 4 pin Lemo connector Shielded cable (2 m)



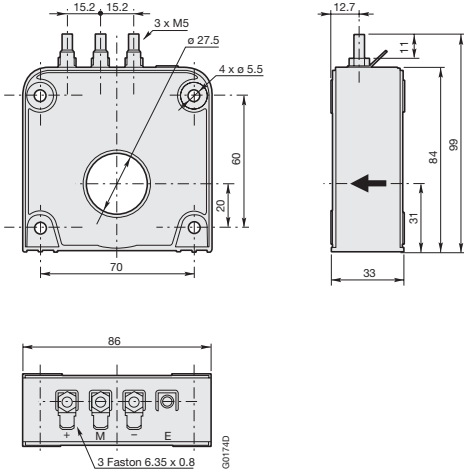


# CS traction current sensors

## Rolling stock and fixed installations

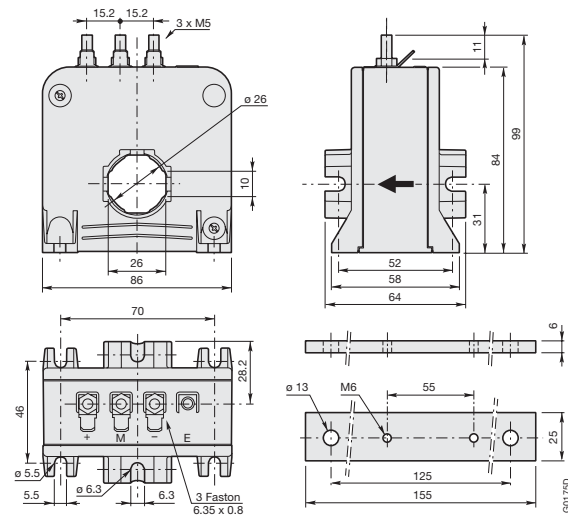
### Dimensions (mm)

#### Horizontal mounting



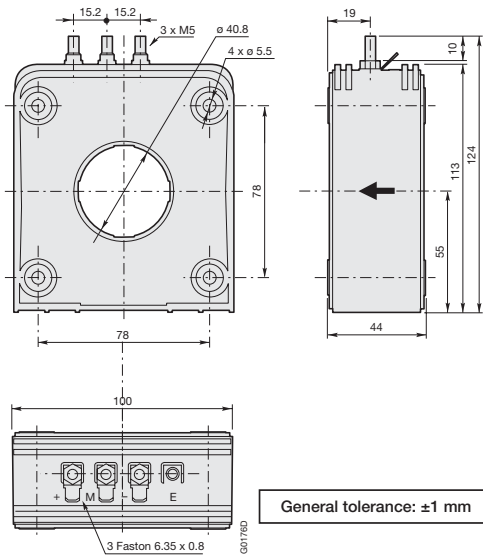
Size 0 - CS300BR and CS503BR

#### Vertical mounting



Size 0 - CS300BRV and CS503BRV Bar CST0

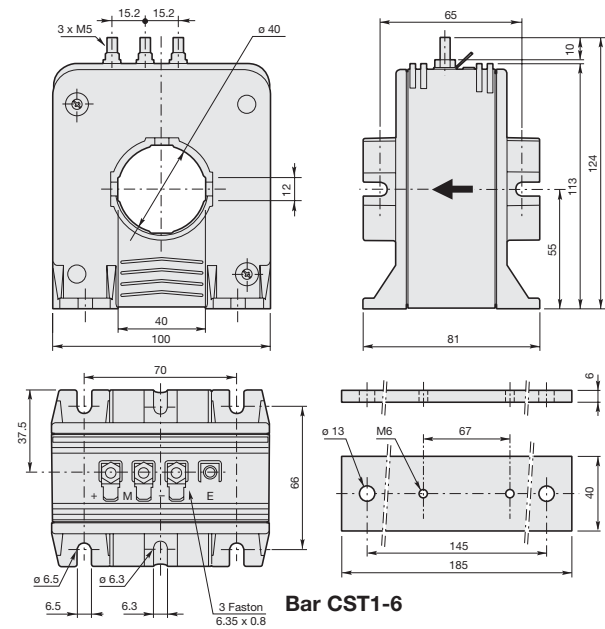
#### Horizontal mounting



General tolerance: ±1 mm

Size 1 - CS500BR and CS1000BR

#### Vertical mounting



Size 1 - CS500BRV and CS1000BRV

Bar CST1-6

Bar CST1-10

General tolerance: ±1 mm

The primary bar kit is only available with the vertical mounting versions.  
Tightening torque for M5 terminal studs (N.m) : 2





# NCS traction current sensors

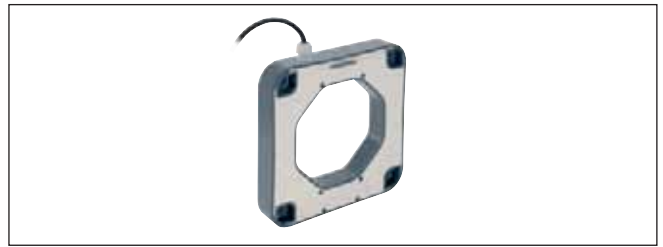
## Fixed installations

### Utilisation

Sensors to measure d.c., a.c. or pulsating currents with a galvanic insulation between primary and secondary circuits.

### Technical data

#### NCS125T from 2000 to 4000 A



	Output current shielded cable		NCS125T-2AF	-	NCS125T-4AF	-
	Output voltage shielded cable		-	NCS125T-2VF	-	NCS125T-4VF
Nominal primary current		<b>A peak</b>	2000	2000	4000	4000
Measuring range		<b>A peak</b>	10000	10000	20000	20000
Not measured overload	1s/h	<b>A peak</b>	20000	20000	80000	80000
Secondary current $I_{S1}$ at $I_{PN}$		<b>mA peak</b>	±20	-	±20	-
Secondary current $I_{S2}$ at $I_{P_{MAX}}$		<b>mA peak</b>	±20	-	±20	-
Residual current $I_{S1,0}$	@ +25°C	<b>µA</b>	≤±250	-	≤±250	-
Residual current $I_{S2,0}$	@ +25°C	<b>µA</b>	≤±180	-	≤±180	-
Thermal drift coefficient (outputs $I_{S1}$ , $I_{S2}$ )		<b>µA/°C</b>	≤±4	-	≤±4	-
Measuring resistance (outputs $I_{S1}$ , $I_{S2}$ )		<b>Ω</b>	0 ... 350	-	0 ... 350	-
Secondary voltage $V_{S1}$ at $I_{PN}$		<b>V peak</b>	-	±10	-	±10
Secondary voltage $V_{S2}$ at $I_{P_{MAX}}$		<b>V peak</b>	-	±10	-	±10
Residual voltage $V_{S1,0}$	@ +25°C	<b>mV</b>	-	≤±100	-	≤±100
Residual voltage $V_{S2,0}$	@ +25°C	<b>mV</b>	-	≤±50	-	≤±50
Thermal drift coefficient (outputs $V_{S1}$ , $V_{S2}$ )		<b>mV/°C</b>	-	≤±2	-	≤±2
Measuring resistance (outputs $V_{S1}$ , $V_{S2}$ )		<b>Ω</b>	-	10000 ... ∞	-	10000 ... ∞
Rms accuracy 50Hz (without offset) <sup>1</sup> at $I_{PN}$	@ +25°C	<b>%</b>	≤±1	≤±1	≤±1	≤±1
Rms accuracy 50Hz (without offset) <sup>1</sup> at $I_{P_{MAX}}$	@ +25°C	<b>%</b>	≤±3	≤±3	≤±3	≤±3
Gain thermal drift	-25°C ... +85°C	<b>%/°C</b>	≤0.03	≤0.03	≤0.03	≤0.03
Gain thermal drift	-40°C ... -25°C	<b>%/°C</b>	≤0.1	≤0.1	≤0.1	≤0.1
Linearity (typical)		<b>%</b>	±0.5	±0.5	±0.5	±0.5
Delay time (typical)		<b>µs</b>	≤3	≤3	≤3	≤3
di/dt correctly followed		<b>A / µs</b>	≤100	≤100	≤100	≤100
Bandwidth	@ -1dB	<b>kHz</b>	0 ... 10	0 ... 10	0 ... 10	0 ... 10
No load consumption current ( $I_{A0,+}$ )	@ -40°C	<b>mA</b>	≤180	≤180	≤180	≤180
No load consumption current ( $I_{A0,-}$ )		<b>mA</b>	≤35	≤35	≤35	≤35
Dielectric strength Primary/Secondary	50 Hz, 1 min	<b>kV r.m.s.</b>	20	20	20	20
Supply voltage	± 25%	<b>V d.c.</b>	±24	±24	±24	±24
Mass		<b>Kg</b>	1	1	1	1
Operating temperature		<b>°C</b>	-40 ... +85	-40 ... +85	-40 ... +85	-40 ... +85
Storage/startup temperature		<b>°C</b>	-50 ... +90	-50 ... +90	-50 ... +90	-50 ... +90

<sup>1</sup>Maximum current  $I_{PN}$  generated: 5000A r.m.s.

### General data

- Plastic case and insulating resin are self-extinguishing.
- Two fixing modes:
  - Horizontal or vertical with fixing holes in the case moulding
  - By bar using the intermediate flange kit (Refer to Accessories and options on the following page)
- Max tightening torque for M6 screws (flange mounting): 2 N.m
- **Direction of the current:**
  - Output current ( $I_{S1}$  and  $I_{S2}$ ): A primary current flowing in the direction of the arrow results in a positive secondary output current on terminals  $I_{S1}$  and  $I_{S2}$ .
  - Output voltage ( $V_{S1}$  and  $V_{S2}$ ): A primary current flowing in the direction of the arrow results in a positive secondary output voltage on terminals  $V_{S1}$  and  $V_{S2}$ .

- Burn-in test in accordance with FPTC 404304 cycle

### Primary connection

Hole for primary conductor.  
The temperature of the primary conductor in contact with the case must not exceed 100°C.

### Secondary connection

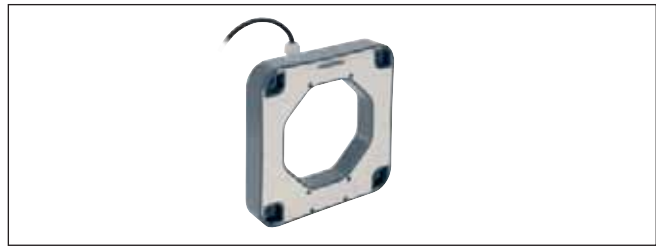
- Shielded cable 6 x 2000 mm (cross section 0.5 mm<sup>2</sup>)



# NCS traction current sensors

## Fixed installations

### NCS125T from 6000 to 10000 A



### Technical data

	Output current shielded cable		NCS125T-6AF	-	NCS125T-10AF	-
	Output voltage shielded cable		-	NCS125T-6VF	-	NCS125T-10VF
Nominal primary current		<b>A peak</b>	6000	6000	10000	10000
Measuring range		<b>A peak</b>	30000	30000	30000	30000
Not measured overload	1s/h	<b>A peak</b>	120000	120000	200000	200000
Secondary current $I_{S1}$ at $I_{PN}$		<b>mA peak</b>	±20	-	±20	-
Secondary current $I_{S2}$ at $I_{P_{MAX}}$		<b>mA peak</b>	±20	-	±20	-
Residual current $I_{S1,0}$	@ +25°C	<b>µA</b>	≤±250	-	≤±250	-
Residual current $I_{S2,0}$	@ +25°C	<b>µA</b>	≤±180	-	≤±180	-
Thermal drift coefficient (outputs $I_{S1}$ , $I_{S2}$ )		<b>µA/°C</b>	≤±4	-	≤±4	-
Measuring resistance (outputs $I_{S1}$ , $I_{S2}$ )		<b>Ω</b>	0 ... 350	-	0 ... 350	-
Secondary voltage $V_{S1}$ at $I_{PN}$		<b>V peak</b>	-	±10	-	±10
Secondary voltage $V_{S2}$ at $I_{P_{MAX}}$		<b>V peak</b>	-	±10	-	±10
Residual voltage $V_{S1,0}$	@ +25°C	<b>mV</b>	-	≤±100	-	≤±100
Residual voltage $V_{S2,0}$	@ +25°C	<b>mV</b>	-	≤±50	-	≤±50
Thermal drift coefficient (outputs $V_{S1}$ , $V_{S2}$ )		<b>mV/°C</b>	-	≤±2	-	≤±2
Measuring resistance (outputs $V_{S1}$ , $V_{S2}$ )		<b>Ω</b>	-	10000 ... ∞	-	10000 ... ∞
Rms accuracy 50Hz (without offset) <sup>1</sup> at $I_{PN}$	@ +25°C	<b>%</b>	≤±1	≤±1	≤±1	≤±1
Rms accuracy 50Hz (without offset) <sup>1</sup> at $I_{P_{MAX}}$	@ +25°C	<b>%</b>	≤±3	≤±3	≤±3	≤±3
Gain thermal drift	-25°C ... +85°C	<b>%/°C</b>	≤0.03	≤0.03	≤0.03	≤0.03
Gain thermal drift	-40°C ... -25°C	<b>%/°C</b>	≤0.1	≤0.1	≤0.1	≤0.1
Linearity (typical)		<b>%</b>	±0.5	±0.5	±0.5	±0.5
Delay time (typical)		<b>µs</b>	≤3	≤3	≤3	≤3
di/dt correctly followed		<b>A / µs</b>	≤100	≤100	≤100	≤100
Bandwidth	@ -1dB	<b>kHz</b>	0 ... 10	0 ... 10	0 ... 10	0 ... 10
No load consumption current ( $I_{A0+}$ )	@ -40°C	<b>mA</b>	≤180	≤180	≤180	≤180
No load consumption current ( $I_{A0-}$ )		<b>mA</b>	≤35	≤35	≤35	≤35
Dielectric strength Primary/Secondary	50 Hz, 1 min	<b>kV r.m.s.</b>	20	20	20	20
Supply voltage	± 25%	<b>V d.c.</b>	±24	±24	±24	±24
Mass		<b>Kg</b>	1	1	1	1
Operating temperature		<b>°C</b>	-40 ... +85	-40 ... +85	-40 ... +85	-40 ... +85
Storage/startup temperature		<b>°C</b>	-50 ... +90	-50 ... +90	-50 ... +90	-50 ... +90

<sup>1</sup>Maximum current  $I_{PN}$  generated: 5000A r.m.s.

### Accessories and options

#### Flanges (or right angle brackets)

For installation of the flanges, please refer to the mounting instructions ref. **1SBC146005M1701**

- Flange kit NCS125T:

ABB order code: **1SBT200000R2002**

For other options please contact us.

### Conformity

EN50155

EN50121-5, EN50123-1, EN50124-1





# NCS traction current sensors

## Fixed installations

### Utilisation

Sensors to measure d.c., a.c. or pulsating currents with a galvanic insulation between primary and secondary circuits.

### Technical data

	Output current shielded cable		NCS165T-4AF	-	NCS165T-6AF	-
	Output voltage shielded cable		-	NCS165T-4VF	-	NCS165T-6VF
Nominal primary current		<b>A peak</b>	4000	4000	6000	6000
Measuring range		<b>A peak</b>	20000	20000	30000	30000
Not measured overload	1s/h	<b>A peak</b>	80000	80000	120000	120000
Secondary current $I_{S1}$ at $I_{FN}$		<b>mA peak</b>	±20	-	±20	-
Secondary current $I_{S2}$ at $I_{FMAX}$		<b>mA peak</b>	±20	-	±20	-
Residual current $I_{S10}$	@ +25°C	<b>µA</b>	≤±250	-	≤±250	-
Residual current $I_{S20}$	@ +25°C	<b>µA</b>	≤±180	-	≤±180	-
Thermal drift coefficient (outputs $I_{S1}$ , $I_{S2}$ )		<b>µA/°C</b>	≤±4	-	≤±4	-
Measuring resistance (outputs $I_{S1}$ , $I_{S2}$ )		<b>Ω</b>	0 ... 350	-	0 ... 350	-
Secondary voltage $V_{S1}$ at $I_{FN}$		<b>V peak</b>	-	±10	-	±10
Secondary voltage $V_{S2}$ at $I_{FMAX}$		<b>V peak</b>	-	±10	-	±10
Residual voltage $V_{S10}$	@ +25°C	<b>mV</b>	-	≤±100	-	≤±100
Residual voltage $V_{S20}$	@ +25°C	<b>mV</b>	-	≤±50	-	≤±50
Thermal drift coefficient (outputs $V_{S1}$ , $V_{S2}$ )		<b>mV/°C</b>	-	≤±2	-	≤±2
Measuring resistance (outputs $V_{S1}$ , $V_{S2}$ )		<b>Ω</b>	-	10000 ... ∞	-	10000 ... ∞
Rms accuracy 50Hz (without offset) <sup>1</sup> at $I_{FN}$	@ +25°C	<b>%</b>	≤±1	≤±1	≤±1	≤±1
Rms accuracy 50Hz (without offset) <sup>1</sup> at $I_{FMAX}$	@ +25°C	<b>%</b>	≤±3	≤±3	≤±3	≤±3
Gain thermal drift	-25°C ... +85°C	<b>%/°C</b>	≤0.03	≤0.03	≤0.03	≤0.03
Gain thermal drift	-40°C ... -25°C	<b>%/°C</b>	≤0.1	≤0.1	≤0.1	≤0.1
Linearity (typical)		<b>%</b>	±0.5	±0.5	±0.5	±0.5
Delay time (typical)		<b>µs</b>	≤3	≤3	≤3	≤3
di/dt correctly followed		<b>A / µs</b>	≤100	≤100	≤100	≤100
Bandwidth	@ -1dB	<b>kHz</b>	0 ... 10	0 ... 10	0 ... 10	0 ... 10
No load consumption current ( $I_{AD+}$ )	@ -40°C	<b>mA</b>	≤210	≤210	≤210	≤210
No load consumption current ( $I_{AD-}$ )		<b>mA</b>	≤35	≤35	≤35	≤35
Dielectric strength Primary/Secondary	50 Hz, 1 min	<b>kV r.m.s.</b>	20	20	20	20
Supply voltage	± 25%	<b>V d.c.</b>	±24	±24	±24	±24
Mass		<b>Kg</b>	1.2	1.2	1.2	1.2
Operating temperature		<b>°C</b>	-40 ... +85	-40 ... +85	-40 ... +85	-40 ... +85
Storage/startup temperature		<b>°C</b>	-50 ... +90	-50 ... +90	-50 ... +90	-50 ... +90

<sup>1</sup>Maximum current  $I_{FN}$  generated: 5000A r.m.s.

### General data

- Plastic case and insulating resin are self-extinguishing.
- Two fixing modes:
  - Horizontal or vertical with fixing holes in the case moulding.
  - By bar using the intermediate flange kit (Refer to accessories and options on the following page)
- Max tightening torque for M6 screws (flange mounting): 2 N.m
- **Direction of the current:**
  - Output current ( $I_{S1}$  and  $I_{S2}$ ): A primary current flowing in the direction of the arrow results in a positive secondary output current on terminals  $I_{S1}$  and  $I_{S2}$ .
  - Output voltage ( $V_{S1}$  and  $V_{S2}$ ): A primary current flowing in the direction of the arrow results in a positive secondary output voltage on terminals  $V_{S1}$  and  $V_{S2}$ .

- Burn-in test in accordance with FPTC 404304 cycle

### Primary connection

Hole for primary conductor.  
The temperature of the primary conductor in contact with the case must not exceed 100°C.

### Secondary connection

- Shielded cable 6 x 2000 mm (cross section 0.5 mm<sup>2</sup>)



# NCS traction current sensors

## Fixed installations

### NCS165T from 10000 to 20000 A



### Technical data

	Output current shielded cable		NCS165T-10AF	-	NCS165T-20AF	-
	Output voltage shielded cable		-	NCS165T-10VF	-	NCS165T-20VF
Nominal primary current		<b>A peak</b>	10000	10000	20000	20000
Measuring range		<b>A peak</b>	30000	30000	40000	40000
Not measured overload	1s/h	<b>A peak</b>	200000	200000	200000	200000
Secondary current $I_{S1}$ at $I_{PN}$		<b>mA peak</b>	±20	-	±20	-
Secondary current $I_{S2}$ at $I_{P_{MAX}}$		<b>mA peak</b>	±20	-	±20	-
Residual current $I_{S1,0}$	@ +25°C	<b>µA</b>	≤±250	-	≤±250	-
Residual current $I_{S2,0}$	@ +25°C	<b>µA</b>	≤±180	-	≤±180	-
Thermal drift coefficient (outputs $I_{S1}$ , $I_{S2}$ )		<b>µA/°C</b>	≤±4	-	≤±4	-
Measuring resistance (outputs $I_{S1}$ , $I_{S2}$ )		<b>Ω</b>	0 ... 350	-	0 ... 350	-
Secondary voltage $V_{S1}$ at $I_{PN}$		<b>V peak</b>	-	±10	-	±10
Secondary voltage $V_{S2}$ at $I_{P_{MAX}}$		<b>V peak</b>	-	±10	-	±10
Residual voltage $V_{S1,0}$	@ +25°C	<b>mV</b>	-	≤±100	-	≤±100
Residual voltage $V_{S2,0}$	@ +25°C	<b>mV</b>	-	≤±50	-	≤±50
Thermal drift coefficient (outputs $V_{S1}$ , $V_{S2}$ )		<b>mV/°C</b>	-	≤±2	-	≤±2
Measuring resistance (outputs $V_{S1}$ , $V_{S2}$ )		<b>Ω</b>	-	10000 ... ∞	-	10000 ... ∞
Rms accuracy 50Hz (without offset) <sup>1</sup> at $I_{PN}$	@ +25°C	<b>%</b>	≤±1	≤±1	≤±1	≤±1
Rms accuracy 50Hz (without offset) <sup>1</sup> at $I_{P_{MAX}}$	@ +25°C	<b>%</b>	≤±3	≤±3	≤±3	≤±3
Gain thermal drift	-25°C ... +85°C	<b>%/°C</b>	≤0.03	≤0.03	≤0.03	≤0.03
Gain thermal drift	-40°C ... -25°C	<b>%/°C</b>	≤0.1	≤0.1	≤0.1	≤0.1
Linearity (typical)		<b>%</b>	±0.5	±0.5	±0.5	±0.5
Delay time (typical)		<b>µs</b>	≤3	≤3	≤3	≤3
di/dt correctly followed		<b>A / µs</b>	≤100	≤100	≤100	≤100
Bandwidth	@ -1dB	<b>kHz</b>	0 ... 10	0 ... 10	0 ... 10	0 ... 10
No load consumption current ( $I_{A0+}$ )	@ -40°C	<b>mA</b>	≤210	≤210	≤210	≤210
No load consumption current ( $I_{A0-}$ )		<b>mA</b>	≤35	≤35	≤35	≤35
Dielectric strength Primary/Secondary	50 Hz, 1 min	<b>kV r.m.s.</b>	20	20	20	20
Supply voltage	± 25%	<b>V d.c.</b>	±24	±24	±24	±24
Mass		<b>Kg</b>	1.2	1.2	1.2	1.2
Operating temperature		<b>°C</b>	-40 ... +85	-40 ... +85	-40 ... +85	-40 ... +85
Storage/startup temperature		<b>°C</b>	-50 ... +90	-50 ... +90	-50 ... +90	-50 ... +90

<sup>1</sup>Maximum current  $I_{PN}$  generated: 5000A r.m.s.

### Accessories and options

#### Flanges (or right angle brackets)

For installation of the flanges, please refer to the mounting instructions ref. **1SBC146004M1701**

- Flange kit NCS165T:

ABB order code: **1SBT200000R2001**

For other options please contact us.

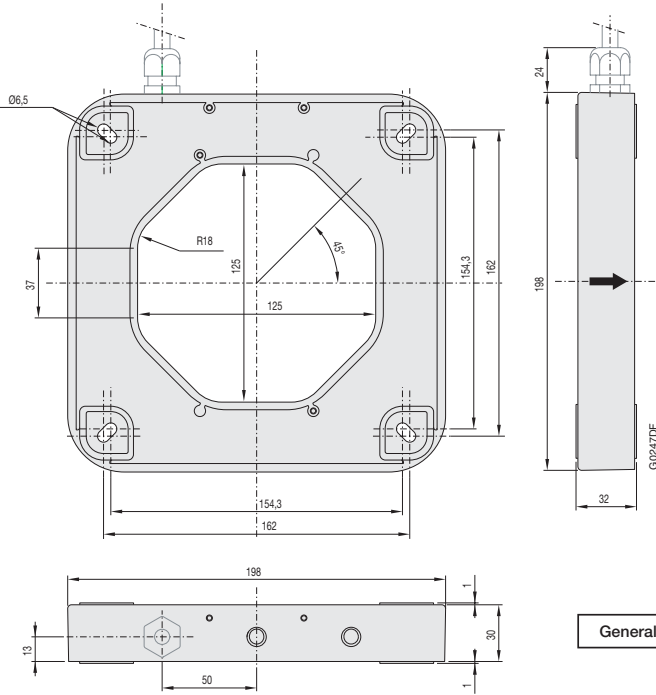
### Conformity

EN 50155

EN 50121-5, EN 50123-1, EN 50124-1

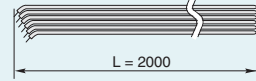


### Dimensions (mm)



General tolerance:  $\pm 1$  mm

#### Standard NCS125T-AF sensors secondary connection



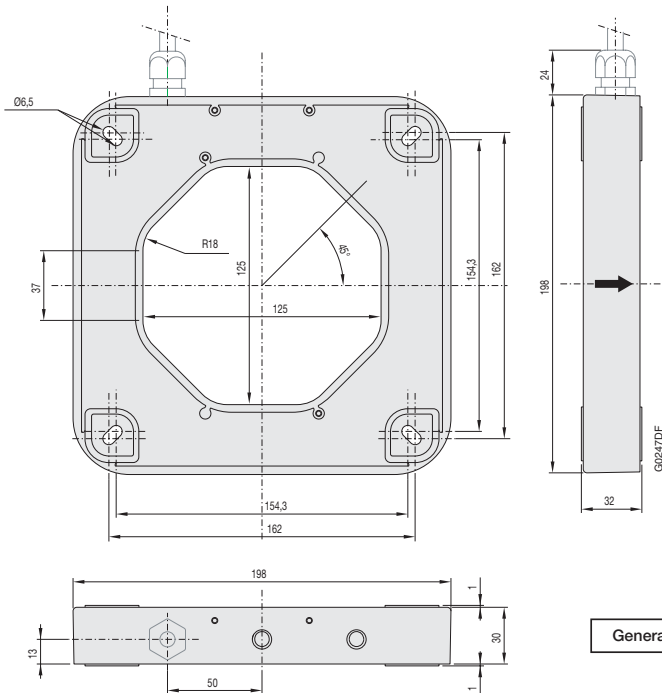
Shielded cable with braided earth:

#### AF range wires identification:

- 1 : Red:  $+V_A$  (+24V d.c.)
- 2 : Black: 0V
- 3 : Blue:  $-V_A$  (-24V d.c.)
- 4 : NC:
- 5 : NC:
- 6 : Green:  $I_{S1}$  ( $\pm 20$ mA @  $I_{PN}$ )
- 7 : White:  $I_{S2}$  ( $\pm 20$ mA @  $I_{PMAX}$ )
- 8 : Brown: 0V

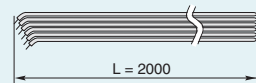
Shielding: consult us

### NCS125T-AF



General tolerance:  $\pm 1$  mm

#### Standard NCS125T-VF sensors secondary connection



Shielded cable with braided earth:

#### VF range wires identification:

- 1 : Red:  $+V_A$  (+24V d.c.)
- 2 : Black: 0V
- 3 : Blue:  $-V_A$  (-24V d.c.)
- 4 : Green:  $V_{S1}$  ( $\pm 10$ V @  $I_{PN}$ )
- 5 : White:  $V_{S2}$  ( $\pm 10$ V @  $I_{PMAX}$ )
- 6 : NC:
- 7 : NC:
- 8 : Brown: 0V

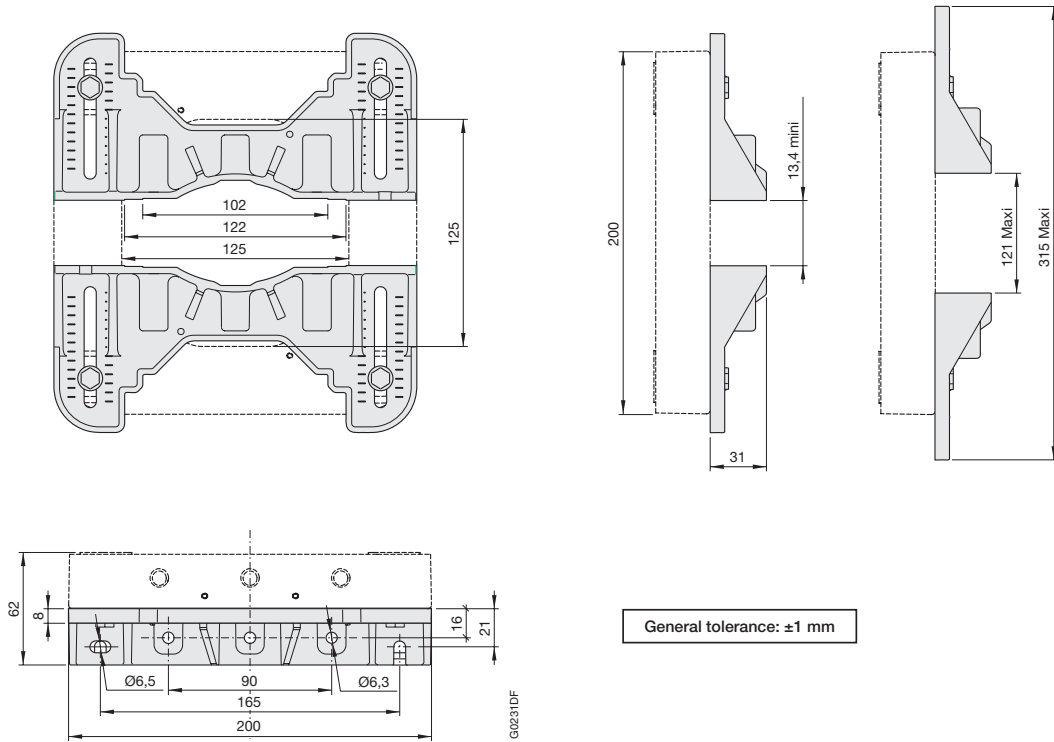
Shielding: consult us

### NCS125T-VF

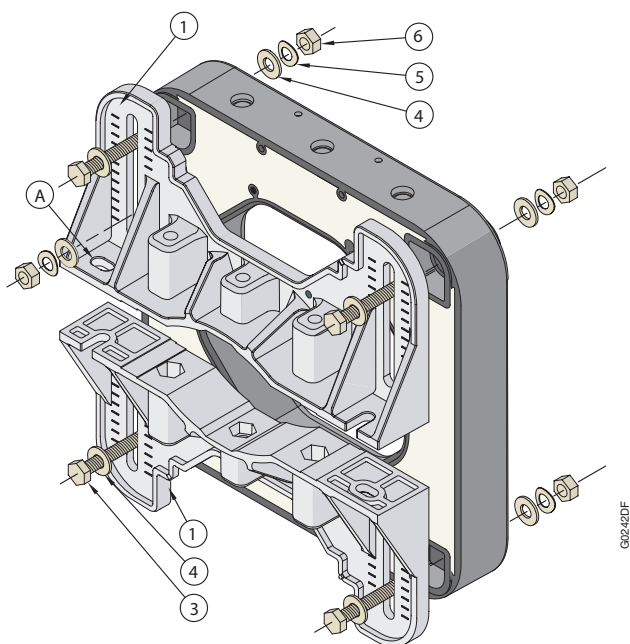




### Dimensions and arrangement of right angle brackets (mm)



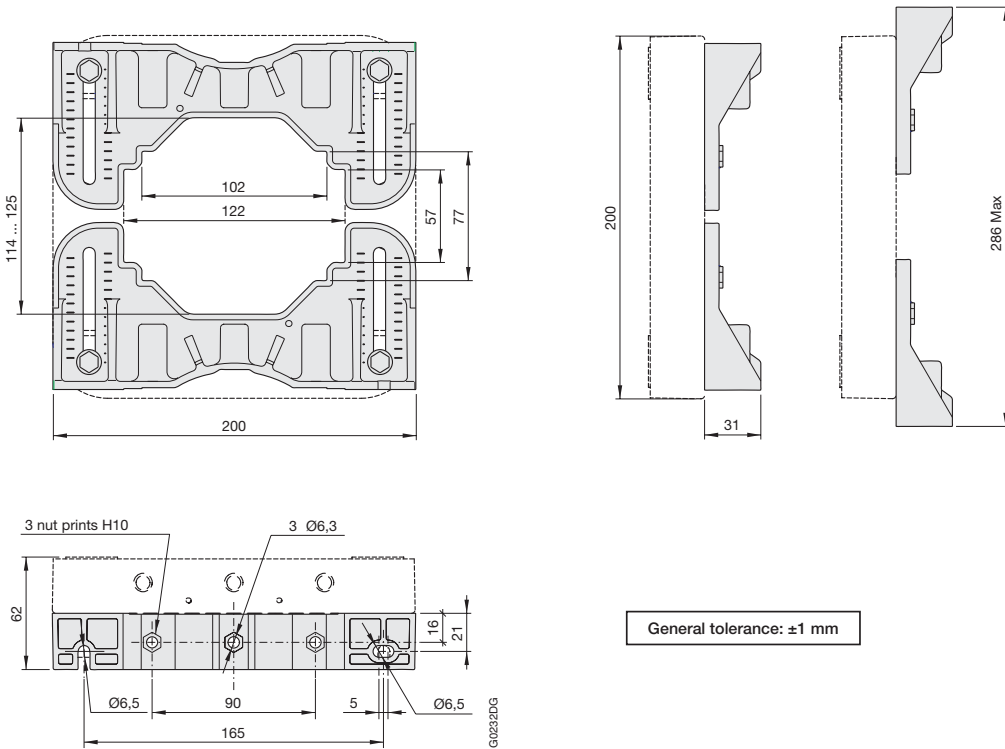
### Right angle brackets mounting on NCS125T sensors



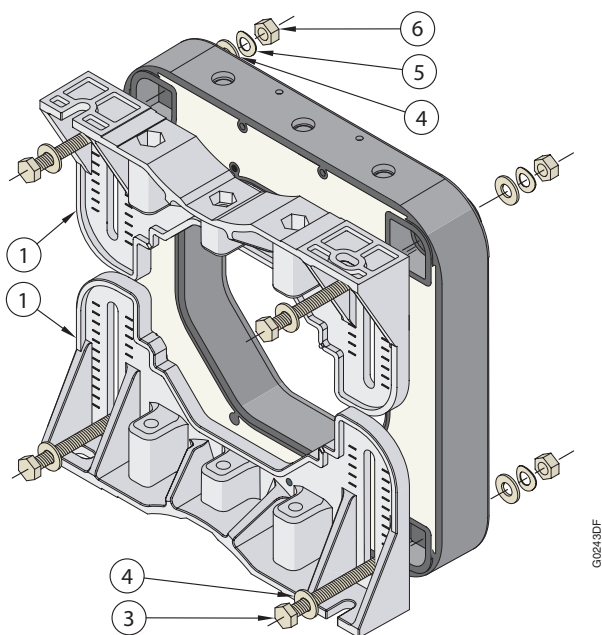
- |   |
|---|
| 1 - Flange: x2                          |
| 3 - Flange screw M6: x4 (6x30)          |
| 4 - Flat washer: x8                     |
| 5 - Spring washer: x4                   |
| 6 - Locknut: x4                         |
| 7 - Not used:                           |
| • Flange screw M6: x4 (6x50)            |
| • Standard positioning screw: x2 (3x12) |

A - The screws for clamping the flanges to the bar (or cable) are not supplied

### Dimensions and arrangement of right angle brackets (mm)

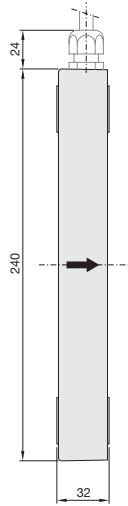
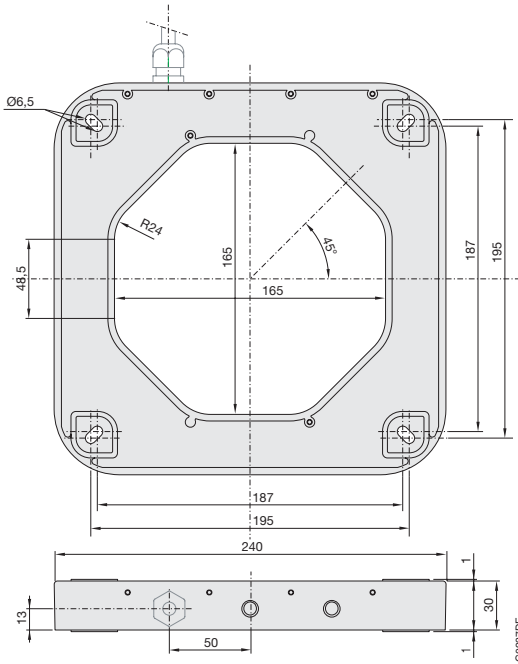


### Right angle brackets mounting on NCS125T sensors

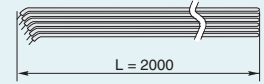


- |   |   |
|---|---|
| 1 | - Flange: x2                            |
| 3 | - Flange screw M6: x4 (6x30)            |
| 4 | - Flat washer: x8                       |
| 5 | - Spring washer: x4                     |
| 6 | - Locknut: x4                           |
| 7 | - Not used:                             |
|   | • Flange screw M6: x2 (6x50)            |
|   | • Standard positioning screw: x2 (3x12) |

### Dimensions (mm)



#### Standard NCS165T-AF sensors secondary connection



Shielded cable with braided earth:

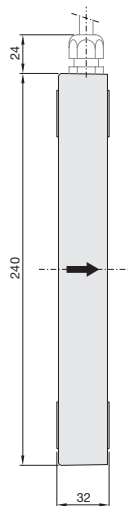
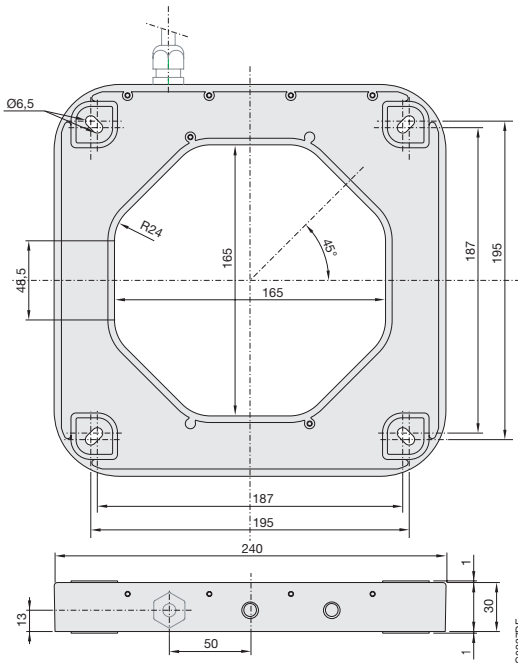
#### AF range wires identification:

- 1 : Red:  $+V_A$  (+24V d.c.)
- 2 : Black: 0V
- 3 : Blue:  $-V_A$  (-24V d.c.)
- 4 : NC:
- 5 : NC:
- 6 : Green:  $I_{S1}$  ( $\pm 20\text{mA}$  @  $I_{PN}$ )
- 7 : White:  $I_{S2}$  ( $\pm 20\text{mA}$  @  $I_{PMAX}$ )
- 8 : Brown: 0V

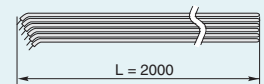
Shielding: consult us

General tolerance:  $\pm 1$  mm

### NCS165T-AF



#### Standard NCS165T-VF sensors secondary connection



Shielded cable with braided earth:

#### VF range wires identification:

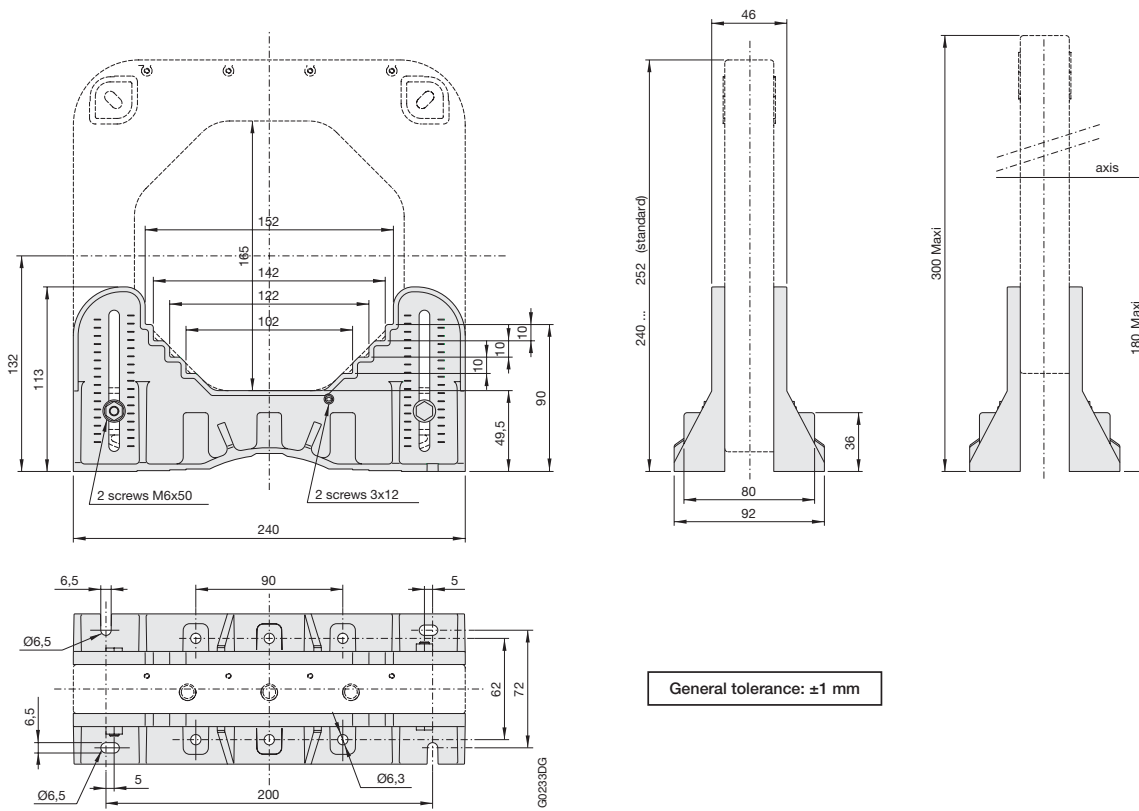
- 1 : Red:  $+V_A$  (+24V d.c.)
- 2 : Black: 0V
- 3 : Blue:  $-V_A$  (-24V d.c.)
- 4 : Green:  $V_{S1}$  ( $\pm 10\text{V}$  @  $I_{PN}$ )
- 5 : White:  $V_{S2}$  ( $\pm 10\text{V}$  @  $I_{PMAX}$ )
- 6 : NC:
- 7 : NC:
- 8 : Brown: 0V

Shielding: consult us

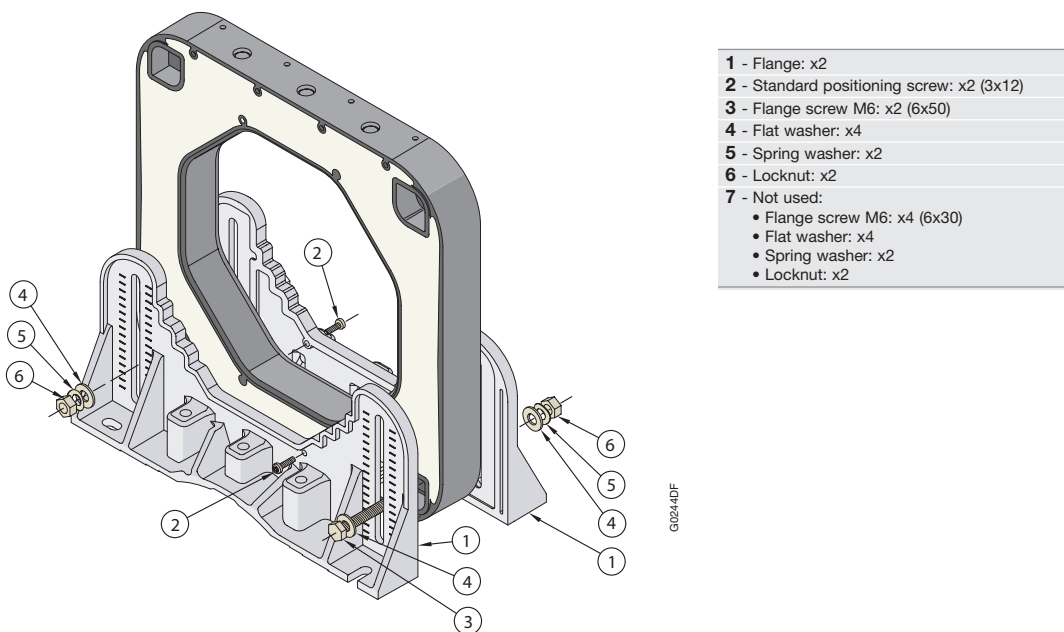
General tolerance:  $\pm 1$  mm

### NCS165T-VF

### Dimensions and arrangement of right angle brackets (mm)



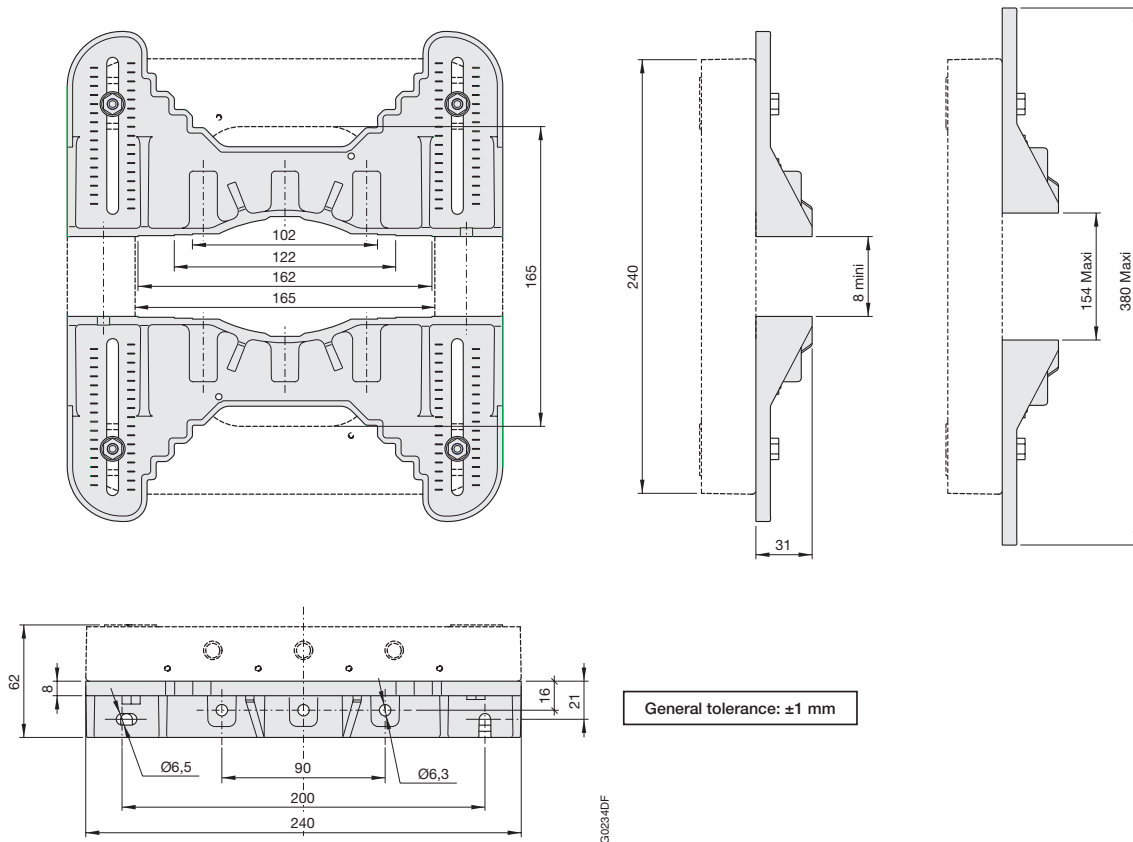
### Right angle brackets mounting on NCS165T sensors



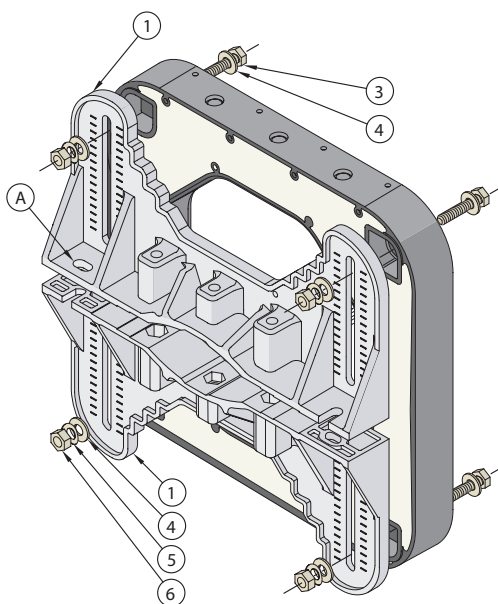
# NCS traction current sensors

## Fixed installations

Dimensions and arrangement of right angle brackets (mm)



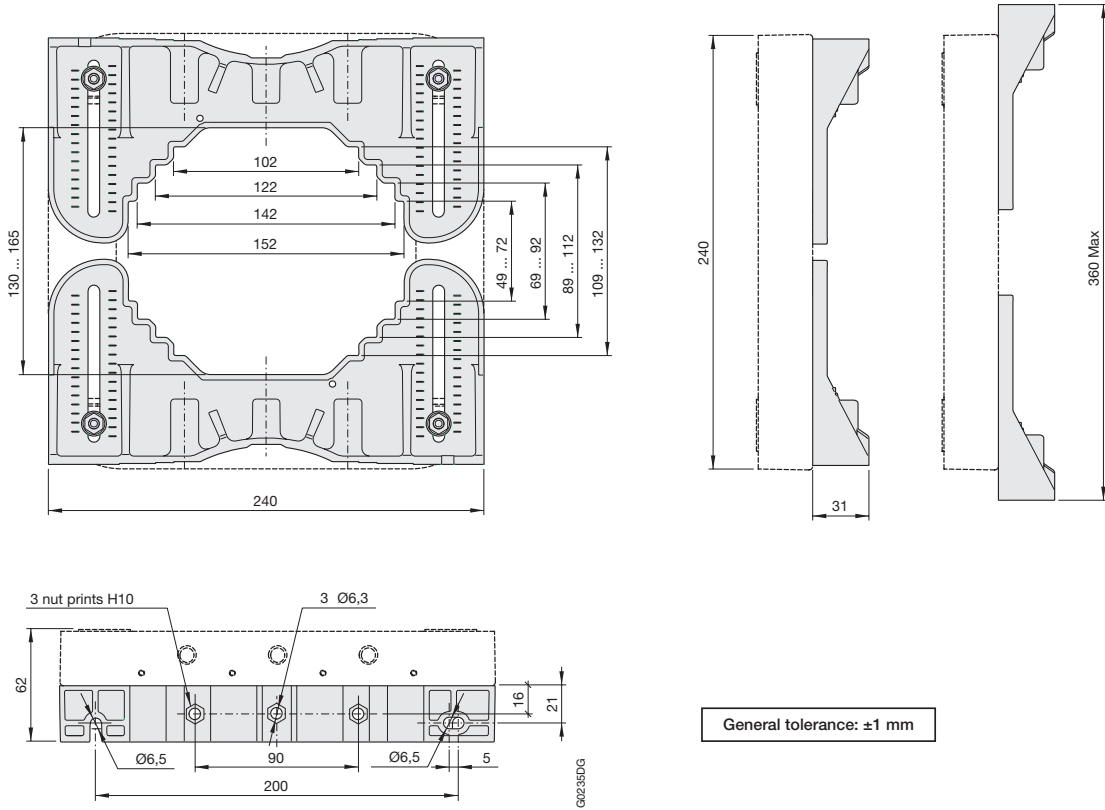
Right angle brackets mounting on NCS165T sensors



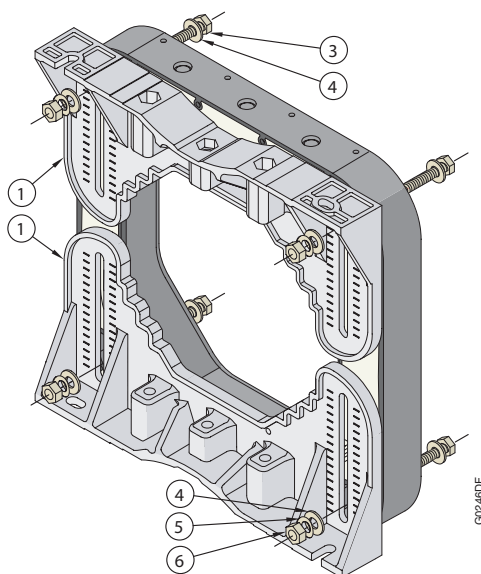
- |   |
|---|
| 1 - Flange: x2                          |
| 3 - Flange screw M6: x4 (6x30)          |
| 4 - Flat washer: x8                     |
| 5 - Spring washer: x4                   |
| 6 - Locknut: x4                         |
| 7 - Not used:                           |
| • Flange screw M6: x2 (6x50)            |
| • Standard positioning screw: x2 (3x12) |

A - The screws for clamping the flanges to the bar (or cable) are not supplied

### Dimensions and arrangement of right angle brackets (mm)



### Right angle brackets mounting on NCS165T sensors



- |   |   |
|---|---|
| 1 | - Flange: x2                            |
| 3 | - Flange screw M6: x4 (6x30)            |
| 4 | - Flat washer: x8                       |
| 5 | - Spring washer: x4                     |
| 6 | - Locknut: x4                           |
| 7 | - Not used:                             |
|   | • Flange screw M6: x2 (6x50)            |
|   | • Standard positioning screw: x2 (3x12) |



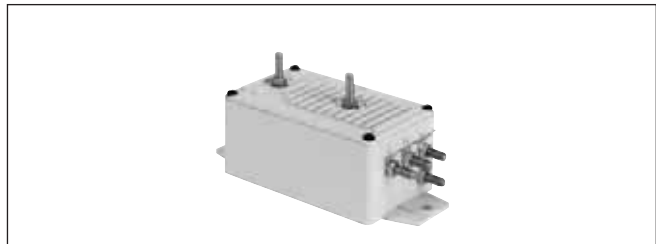
# VS traction voltage sensors

## Rolling stock and fixed installations

### Utilisation

Electronic sensors to measure d.c., a.c. or pulsating voltages with insulation between primary and secondary circuits..

### VS50B to VS500B



### Technical data

			VS50B	VS125B	VS250B	VS500B
Nominal primary voltage		<b>V r.m.s.</b>	50	125	250	500
Measuring range	@ ±12V (±5%)	<b>V peak</b>	±75	±187.5	±375	±750
Measuring range	@ ±24V (±5%)	<b>V peak</b>	±75	±187.5	±375	±750
Not measurable overload	1s/hour	<b>V peak</b>	150	375	750	1500
Max. measuring resistance	@ U <sub>PMAX</sub> & ±12V (±5%)	Ω	67	67	67	67
Max. measuring resistance	@ U <sub>PMAX</sub> & ±24V (±5%)	Ω	188	188	188	188
Min. measuring resistance	@ U <sub>PN</sub> & ±24V (±5%)	Ω	0	0	0	0
Secondary current at U <sub>PN</sub>		<b>mA</b>	50	50	50	50
Accuracy at U <sub>PN</sub>	@ +25°C	%	≤±0.9	≤±0.9	≤±0.9	≤±0.9
Accuracy at U <sub>PN</sub>	-25 ... +70°C	%	≤±1.5	≤±1.5	≤±1.5	≤±1.5
Accuracy at U <sub>PN</sub>	-40 ... +85°C	%	≤±1.7	≤±1.7	≤±1.7	≤±1.7
Offset current	@ +25°C & ±24V (±5%)	<b>mA</b>	≤±0.15	≤±0.15	≤±0.15	≤±0.15
Linearity	0.1U <sub>PN</sub> ... 1.5U <sub>PN</sub>	%	≤0.3	≤0.3	≤0.3	≤0.3
Delay time		<b>µs</b>	≤10	≤10	≤10	≤10
dv/dt correctly followed		<b>V / µs</b>	≤0.6	≤1.5	≤3	≤6
Bandwidth	-3 dB & R <sub>M</sub> = 50 Ω	<b>kHz</b>	≤13	≤13	≤13	≤13
Max. no-load consumption current	@ ±24V (±5%)	<b>mA</b>	≤50	≤50	≤50	≤50
Dielectric strength Primary/(Secondary+Screen)	50 Hz, 1 min	<b>kV</b>	3.3	3.3	3.3	3.3
Dielectric strength Secondary/Screen	50 Hz, 1 min	<b>kV</b>	0.5	0.5	0.5	0.5
Partial discharges : extinction voltage	@10pC, 50Hz	<b>kV</b>	≥1.1	≥1.1	≥1.1	≥1.1
Supply voltage	±5%	<b>V d.c.</b>	±12 ... ±24	±12 ... ±24	±12 ... ±24	±12 ... ±24
Mass		<b>kg</b>	0.450	0.450	0.450	0.450
Operating temperature		<b>°C</b>	-40 ... +85	-40 ... +85	-40 ... +85	-40 ... +85
Storage temperature		<b>°C</b>	-50 ... +90	-50 ... +90	-50 ... +90	-50 ... +90

### Max. common mode voltage

The following two conditions must be continuously and simultaneously respected:

- 1)  $U_{HT+} + U_{HT-} \leq 4.2 \text{ kV peak}$   
and
- 2)  $|U_{HT+} - U_{HT-}| \leq U_{PMAX}$

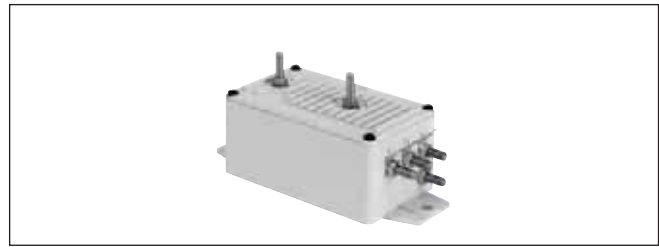
### General data

- Coated electronic circuit.
- Plastic case and insulating resin are self-extinguishing.
- Direction of the current: A positive primary differential voltage ( $U_{HT+} - U_{HT-} > 0$ ) results in a positive secondary output current from terminal M.
- Protections:
  - of the measuring circuit against short-circuits.
  - of the measuring circuit against opening.
  - of the power supply against polarity reversal.
- Burn-in test in accordance with FPTC 404304 cycle.
- Tightening torque for M5 terminal studs (N.m): 2 N.m.

# VS traction voltage sensors

## Rolling stock and fixed installations

### VS750B to VS1500B



### Technical data

			VS750B	VS1000B	VS1500B
Nominal primary voltage		<b>V r.m.s.</b>	750	1000	1500
Measuring range	@ ±12V (±5%)	<b>V peak</b>	±1125	±1500	±2250
Measuring range	@ ±24V (±5%)	<b>V peak</b>	±1125	±1500	±2250
Not measurable overload	1s/hour	<b>V peak</b>	2250	3000	4500
Max. measuring resistance	@ U <sub>PMAX</sub> & ±12V (±5%)	Ω	67	67	67
Max. measuring resistance	@ U <sub>PMAX</sub> & ±24V (±5%)	Ω	188	188	188
Min. measuring resistance	@ U <sub>PN</sub> & ±24V (±5%)	Ω	0	0	0
Secondary current at U <sub>PN</sub>		<b>mA</b>	50	50	50
Accuracy at U <sub>PN</sub>	@ +25°C	%	≤±0.9	≤±0.9	≤±0.9
Accuracy at U <sub>PN</sub>	-25 ... +70°C	%	≤±1.5	≤±1.5	≤±1.5
Accuracy at U <sub>PN</sub>	-40 ... +85°C	%	≤±1.7	≤±1.7	≤±1.7
Offset current	@ +25°C & ±24V (±5%)	<b>mA</b>	≤±0.15	≤±0.15	≤±0.15
Linearity	0.1U <sub>PN</sub> ... 1.5U <sub>PN</sub>	%	≤0.3	≤0.3	≤0.3
Delay time		<b>μs</b>	≤10	≤10	≤10
dv/dt correctly followed		<b>V / μs</b>	≤9	≤12	≤18
Bandwidth	-3 dB & R <sub>M</sub> = 50 Ω	<b>kHz</b>	≤13	≤13	≤13
Max. no-load consumption current	@ ±24V (±5%)	<b>mA</b>	≤50	≤50	≤50
Dielectric strength Primary/(Secondary+Screen)	50 Hz, 1 min	<b>kV</b>	4.3	5.5	6.5
Dielectric strength Secondary/Screen	50 Hz, 1 min	<b>kV</b>	0.5	0.5	0.5
Partial discharges : extinction voltage	@10pC, 50Hz	<b>kV</b>	≥1.1	≥2.2	≥2.2
Supply voltage	±5%	<b>V d.c.</b>	±12 ... ±24	±12 ... ±24	±12 ... ±24
Mass		<b>kg</b>	0.450	0.450	0.450
Operating temperature		<b>°C</b>	-40 ... +85	-40 ... +85	-40 ... +85
Storage temperature		<b>°C</b>	-50 ... +90	-50 ... +90	-50 ... +90

### Primary connection

- 2 M5 studs

### Standard secondary connections

- 4 M5 studs and 3 Faston 6.35 x 0.8

### Options

- Primary connection: 2 separated High Voltage cables.
- Secondary connection: Shielded cable (2m), M5 inserts, Lemo connector.

For other options please contact us.

### Conformity

EN 50155

EN 50121-3-2

EN 50124-1







# VS traction voltage sensors

## Rolling stock and fixed installations

### Utilisation

Electronic sensors to measure d.c., a.c. or pulsating voltages with insulation between primary and secondary circuits.

### Technical data

Nominal primary voltage		<b>V r.m.s.</b>
Measuring range	@ ±12V (±5%)	<b>V peak</b>
Measuring range	@ ±24V (±5%)	<b>V peak</b>
Not measurable overload	1s/hour	<b>V peak</b>
Max. measuring resistance	@ $U_{P_{MAX}}$ & ±12V (±5%)	$\Omega$
Max. measuring resistance	@ $U_{P_{MAX}}$ & ±24V (±5%)	$\Omega$
Min. measuring resistance	@ $U_{PN}$ & ±24V (±5%)	$\Omega$
Secondary current at $U_{PN}$		<b>mA</b>
Accuracy at $U_{PN}$	@ +25°C	<b>%</b>
Accuracy at $U_{PN}$	-25 ... +70°C	<b>%</b>
Accuracy at $U_{PN}$	-40 ... +85°C	<b>%</b>
Offset current	@ +25°C & ±24V (±5%)	<b>mA</b>
Linearity	0.1 $U_{PN}$ ... 1.5 $U_{PN}$	<b>%</b>
Delay time		<b><math>\mu</math>s</b>
dv/dt correctly followed		<b>V / <math>\mu</math>s</b>
Bandwidth	-3 dB & $R_M = 50 \Omega$	<b>kHz</b>
Max. no-load consumption current	@ ±24V (±5%)	<b>mA</b>
Dielectric strength Primary/Secondary	50 Hz, 1 min	<b>kV</b>
Partial discharges : extinction voltage	@10pC, 50Hz	<b>kV</b>
Supply voltage	±5%	<b>V d.c.</b>
Mass		<b>kg</b>
Operating temperature		<b>°C</b>
Storage temperature		<b>°C</b>

### VS2000B to VS4200B



	VS2000B	VS3000B	VS4000B	VS4200B
Nominal primary voltage	2000	3000	4000	4200
Measuring range	±3000	±4500	±6000	±6000
Measuring range	±3000	±4500	±6000	±6000
Not measurable overload	6000	9000	12000	12000
Max. measuring resistance	61	61	61	61
Max. measuring resistance	183	183	183	183
Min. measuring resistance	0	0	0	0
Secondary current at $U_{PN}$	50	50	50	50
Accuracy at $U_{PN}$	≤±0.9	≤±0.9	≤±0.9	≤±0.9
Accuracy at $U_{PN}$	≤±1.5	≤±1.5	≤±1.5	≤±1.5
Accuracy at $U_{PN}$	≤±1.7	≤±1.7	≤±1.7	≤±1.7
Offset current	≤±0.15	≤±0.15	≤±0.15	≤±0.15
Linearity	≤0.3	≤0.3	≤0.3	≤0.3
Delay time	≤10	≤10	≤10	≤10
dv/dt correctly followed	≤24	≤36	≤48	≤50
Bandwidth	≤13	≤13	≤13	≤13
Max. no-load consumption current	≤50	≤50	≤50	≤50
Dielectric strength Primary/Secondary	8	12	12	12
Partial discharges : extinction voltage	≥4.3	≥4.3	≥4.3	≥4.3
Supply voltage	±12 ... ±24	±12 ... ±24	±12 ... ±24	±12 ... ±24
Mass	1.5	1.5	1.5	1.5
Operating temperature	-40 ... +85	-40 ... +85	-40 ... +85	-40 ... +85
Storage temperature	-50 ... +90	-50 ... +90	-50 ... +90	-50 ... +90

### Max. common mode voltage

The following two conditions must be continuously and simultaneously respected:

- $U_{HT+} + U_{HT-} \leq 10$  kV peak and
- $|U_{HT+} - U_{HT-}| \leq U_{P_{MAX}}$

### General data

- Coated electronic circuit.
- Plastic case and insulating resin are self-extinguishing.
- Direction of the current: A positive primary differential voltage ( $U_{HT+} - U_{HT-} > 0$ ) results in a positive secondary output current from terminal M.
- Protections :
  - of the measuring circuit against short-circuits.
  - of the measuring circuit against opening.
  - of the power supply against polarity reversal.
- Burn-in test in accordance with FPTC 404304 cycle.
- Tightening torque for M5 terminal studs (N.m): 2 N.m.

### Primary connection

- 2 M5 studs

### Standard secondary connection

- 3 M5 studs

### Options

- Primary connection: 2 separated High Voltage cables.
- Secondary connection: shielded cable (2 m), M5 inserts, Lemo connector.
- Nominal secondary current  $I_{SN}$  :  
 $I_{SN}$  (for  $U_{PN}$ )= 20 mA or  $I_{SN}$  (for  $U_{PN}$ ) = 80 mA.

For other options please contact us.

### Conformity

EN 50155

EN 50121-3-2

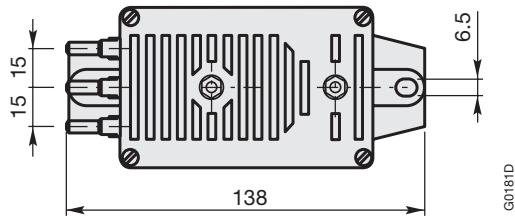
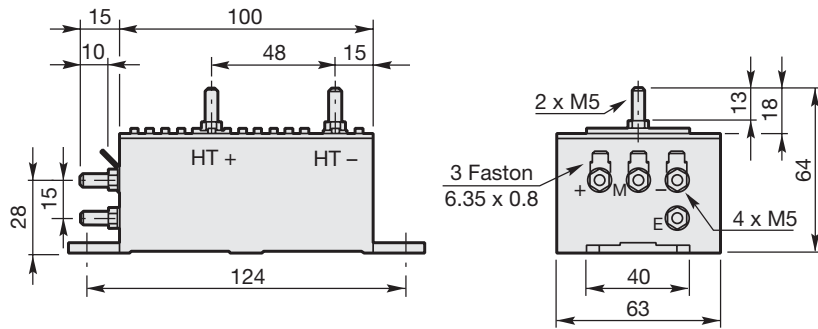
EN 50124-1



# VS traction voltage sensors

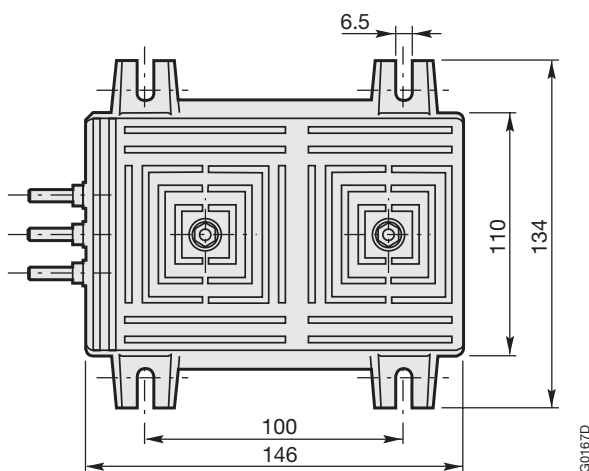
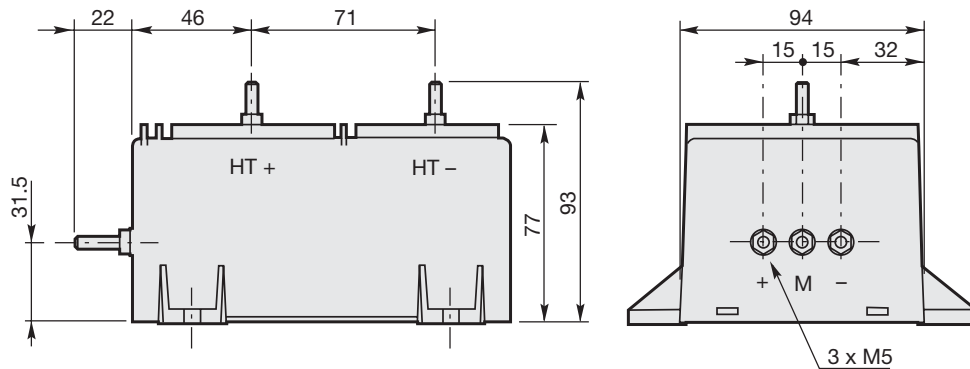
## Rolling stock and fixed installations

### Dimensions (mm)



General tolerance:  $\pm 1$  mm

### Size 0 (VS50B to VS1500B)



General tolerance:  $\pm 1$  mm

### Size 1 (VS2000B to VS4200B)



# Calibrated EM010 traction voltage sensors

## Rolling stock and fixed installations

### Utilisation

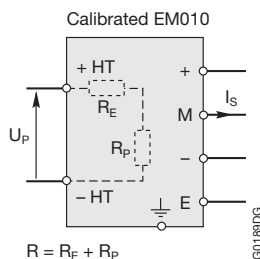
Sensors to measure d.c. or a.c. voltages with a galvanic insulation between primary and secondary circuits. The input resistor  $R_E$  is included with calibrated EM010 sensors, the voltage to be measured  $U_p$  can be applied directly to the primary terminals marked «+HT» and «-HT» (see diagram below).

### Technical data

			EM010 from 600 to 1500 V			
			EM010-9239	EM010-9240	EM010-9371	EM010-9317
Nominal primary voltage		<b>V r.m.s.</b>	600	750	1000	1500
Measuring range		<b>V peak</b>	±900	±1125	±1500	±2250
Min. measuring resistance	@ $U_{PN}$ & ±15V	$\Omega$	0	0	0	0
Primary turn number			10000	7500	15000	15000
Secondary turn number			2000	2000	2000	2000
Secondary current at $U_{PN}$		<b>mA</b>	50	50	50	50
Accuracy at $U_{PN}$	@ +25°C	<b>%</b>	≤±1	≤±1	≤±1	≤±1
Offset current	@ +25°C	<b>mA</b>	≤±0.3	≤±0.3	≤±0.3	≤±0.3
Linearity		<b>%</b>	≤±0.1	≤±0.1	≤±0.1	≤±0.1
Thermal drift coefficient	-25 ... +70°C	<b>µA/°C</b>	≤±5	≤±5	≤±5	≤±5
Delay time		<b>µs</b>	≤100	≤100	≤100	≤100
Max. no-load consumption current	@ ±12V	<b>mA</b>	15	15	15	15
Max. no-load consumption current	@ ±24V	<b>mA</b>	25	25	25	25
Primary resistance	@ +25°C	<b>kΩ</b>	60	56	150	225
Secondary resistance	@ +70°C	<b>Ω</b>	60	60	60	60
Dielectric strength Primary/(Secondary+Screen+Ground)	50 Hz, 1 min	<b>kV</b>	6	6	12	12
Dielectric strength Secondary/(Screen+Ground)	50 Hz, 1 min	<b>kV</b>	1	1	1	1
Supply voltage	±10%	<b>V d.c.</b>	±12 ... ±24	±12 ... ±24	±12 ... ±24	±12 ... ±24
Voltage drop		<b>V</b>	≤1.5	≤1.5	≤1.5	≤1.5
Mass		<b>kg</b>	0.550	0.550	0.550	0.550
Operating temperature		<b>°C</b>	-25 ... +70	-25 ... +70	-25 ... +70	-25 ... +70
Storage temperature		<b>°C</b>	-40 ... +85	-40 ... +85	-40 ... +85	40 ... +85
Primary connections			2 x M5 studs	2 x M5 studs	2 x M5 studs	2 x M5 studs
Secondary connections			5 x M5 studs	5 x M5 studs	5 x M5 studs	5 x M5 studs



### Diagram



### General data

- Plastic case and insulating resin are self-extinguishing.
- Direction of the current: A positive primary differential voltage ( $U_{HT+} - U_{HT-} > 0$ ) results in a positive secondary output current from terminal M.
- The internal electrostatic screen between the primary and secondary is linked to the terminal «E».
- The heatsink for the integrated input resistance  $R_E$  is connected to the marked earth terminal (⊕) on the sensor.
- Protection of the power supply against polarity reversal.
- Burn-in test in accordance with FPTC 404304 cycle.
- Tightening torque for M5 terminal studs (N.m): 2.8 N.m.
- The primary resistance  $R$  is made up of the integrated input resistance  $R_E$  in series with the resistance  $R_P$  of the primary winding:  $R = R_E + R_P$



# Calibrated EM010 traction voltage sensors

## Rolling stock and fixed installations

### EM010 from 2000 to 5000 V



### Technical data

			EM010-9318	EM010-9319	EM010-9394	EM010-9354
Nominal primary voltage		<b>V r.m.s.</b>	2000	3000	4200	5000
Measuring range		<b>V peak</b>	±3000	±4500	±8000	±8000
Min. measuring resistance	@ U <sub>PN</sub> & ±15V	Ω	0	0	0	0
Primary turn number			20000	30000	30000	20000
Secondary turn number			2000	2000	1260	1000
Secondary current at U <sub>PN</sub>		<b>mA</b>	50	50	50	50
Accuracy at U <sub>PN</sub>	@ +25°C	%	≤±1	≤±1	≤±1	≤±1
Offset current	@ +25°C	<b>mA</b>	≤±0.3	≤±0.3	≤±0.3	≤±0.3
Linearity		%	≤±0.1	≤±0.1	≤±0.1	≤±0.1
Thermal drift coefficient	-25 ... +70°C	<b>µA/°C</b>	≤±5	≤±5	≤±5	≤±5
Delay time		<b>µs</b>	≤100	≤100	≤100	≤100
Max. no-load consumption current	@ ±12V	<b>mA</b>	15	15	15	15
Max. no-load consumption current	@ ±24V	<b>mA</b>	25	25	25	25
Primary resistance	@ +25°C	<b>k Ω</b>	400	900	2000	2000
Secondary resistance	@ +70°C	Ω	60	60	25	20
Dielectric strength Primary/(Secondary+Screen+Ground)	50 Hz, 1 min	<b>kV</b>	12	12	12	12
Dielectric strength Secondary/(Screen+Ground)	50 Hz, 1 min	<b>kV</b>	1	1	1	1
Supply voltage	±10%	<b>V d.c.</b>	±12 ... ±24	±12 ... ±24	±12 ... ±24	±12 ... ±24
Voltage drop		<b>V</b>	≤1.5	≤1.5	≤1.5	≤1.5
Mass		<b>kg</b>	0.550	0.550	0.550	0.550
Operating temperature		<b>°C</b>	-25 ...+70	-25 ...+70	-25 ...+70	-25 ...+70
Storage temperature		<b>°C</b>	-40 ...+85	-40 ...+85	-40 ...+85	-40 ...+85
Primary connections			2 x M5 studs	2 x M5 studs	2 x M5 studs	2 x M5 studs
Secondary connections			5 x M5 studs	5 x M5 studs	5 x M5 studs	5 x M5 studs

### Options

- Other connection types
- Other temperature operating ranges.

For other options please contact us.

### Conformity





# Not calibrated EM010 traction voltage sensors

## Rolling stock and fixed installations

### Utilisation

Sensors to measure d.c. or a.c. currents with a galvanic insulation between primary and secondary circuits.

**Warning:** The voltage  $U_p$  to be measured cannot be directly applied to the primary terminals marked «+» and «-» for not calibrated EM010 sensors.

In order to use these not calibrated EM010 sensors for voltage measurement, an input resistance  $R_E$  must be added to the primary (see diagram below).

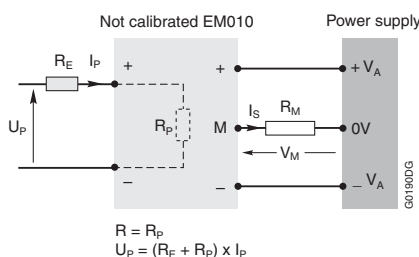
The voltage rating is determined from the value of this resistance  $R_E$  (refer to calculation examples at the end of this catalogue).

### Technical data

			EM010BBFHP1N	EM010BEFHP1N	EM010TENHP1N
Nominal primary current		<b>mA r.m.s.</b>	10	10	10
Measuring range		<b>mA Peak</b>	20	20	20
Overload	2s/hour	<b>mA Peak</b>	20	20	20
Max. measuring resistance	@ $I_{P_{MAX}}$ & $\pm 12V$	$\Omega$	40	40	40
Max. measuring resistance	@ $I_{P_{MAX}}$ & $\pm 24V$	$\Omega$	160	160	160
Min. measuring resistance	@ $U_{PN}$ & $\pm 15V$	$\Omega$	0	0	0
Primary turn number			10000	10000	10000
Secondary turn number			2000	2000	2000
Secondary current at $I_{PN}$		<b>mA</b>	50	50	50
Accuracy at $I_{PN}$	@ +25°C	<b>%</b>	$\leq \pm 1$	$\leq \pm 1$	$\leq \pm 1$
Offset current	@ +25°C	<b>mA</b>	$\leq \pm 0.3$	$\leq \pm 0.3$	$\leq \pm 0.3$
Linearity		<b>%</b>	$\leq \pm 0.1$	$\leq \pm 0.1$	$\leq \pm 0.1$
Thermal drift coefficient	-25 ... +70°C	<b><math>\mu A / ^\circ C</math></b>	$\leq \pm 5$	$\leq \pm 5$	$\leq \pm 5$
Delay time		<b><math>\mu s</math></b>	$\leq 100$	$\leq 100$	$\leq 100$
Max. no-load consumption current	@ $\pm 12V$	<b>mA</b>	15	15	15
Max. no-load consumption current	@ $\pm 24V$	<b>mA</b>	25	25	25
Primary resistance	@ +25°C	<b>k<math>\Omega</math></b>	1.5	1.5	1.5
Secondary resistance	@ +70°C	<b><math>\Omega</math></b>	60	60	60
Dielectric strength Primary/Secondary	50 Hz, 1 min	<b>kV</b>	6	6	6
Supply voltage	$\pm 10\%$	<b>V d.c.</b>	$\pm 12 \dots \pm 24$	$\pm 12 \dots \pm 24$	$\pm 12 \dots \pm 24$
Voltage drop		<b>V</b>	$\leq 1.5$	$\leq 1.5$	$\leq 1.5$
Mass		<b>kg</b>	0.350	0.350	0.350
Operating temperature		<b>°C</b>	-25 ... +70	-25 ... +70	-25 ... +70
Storage temperature		<b>°C</b>	-40 ... +85	-40 ... +85	-40 ... +85
Primary connections			2 x M5 studs	2 x M5 studs	2 inserts M5
Secondary connections			3 x M5 studs	3 x 6,35 Faston	3 x 6,35 Faston



### Diagram



### General data

- Plastic case and insulating resin are self-extinguishing.
- Direction of the current: A primary current flowing from the primary terminal «+» to the primary terminal «-» results in a positive secondary output current from terminal M.

- The internal electrostatic screen between the primary and secondary is linked to the secondary terminal «-» (negative supply terminal).
- Protection of the power supply against polarity reversal.
- Burn-in test in accordance with FPTC 404304 cycle.
- Tightening torque for M5 terminal studs (N.m): 2.8 N.m.
- The primary resistance R is made up of the primary winding resistance  $R_p$ :  $R = R_p$

### Options

- Other connection types.
  - Other temperature operating ranges.
- For other options please contact us.

### Conformity

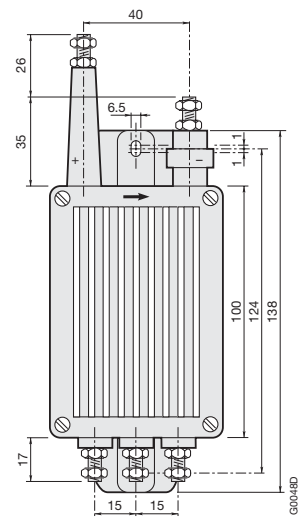
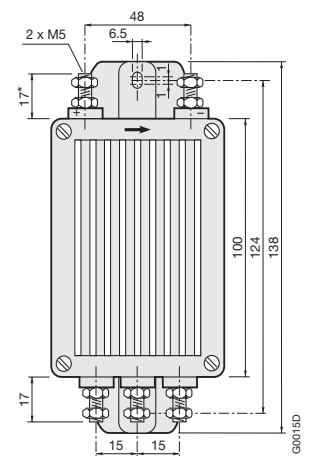
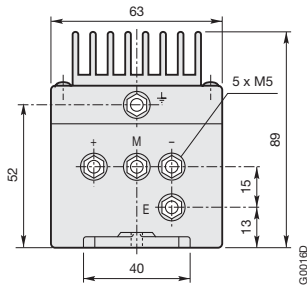
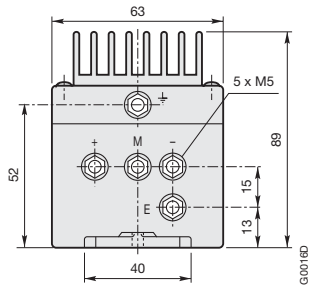




# EM010 traction voltage sensors

## Rolling stock and fixed installations

### Dimensions (mm)



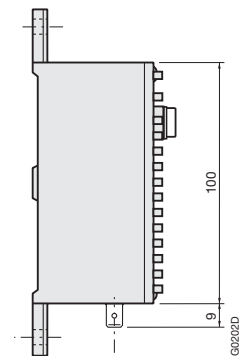
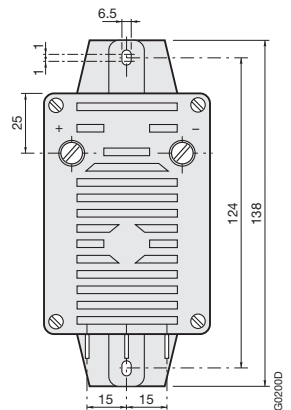
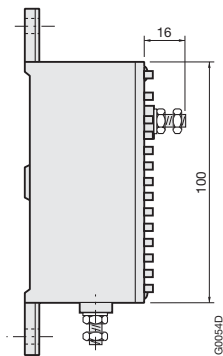
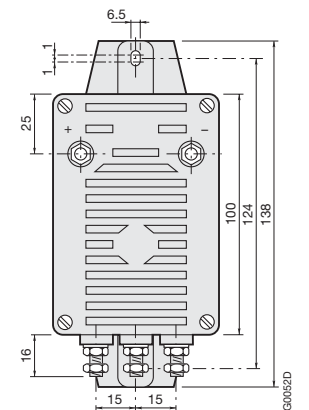
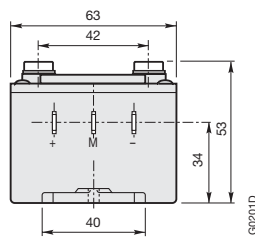
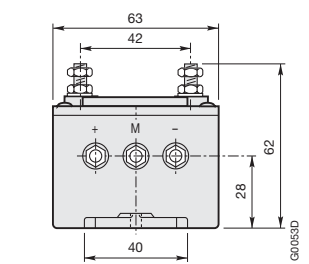
General tolerance: ±1 mm

#### Calibrated EM010

600 V ≤ U<sub>N</sub> ≤ 2000 V  
 \* 35 mm for U<sub>N</sub> = 1500 and 2000 V

#### Calibrated EM010

U<sub>N</sub> ≥ 3000 V



#### Not calibrated EM010BBFHP1N

General tolerance: ±1 mm

#### Not calibrated EM010TENHP1N

General tolerance: ±1 mm



# VD traction voltage detectors

## Rolling stock and fixed installations

### Utilisation

Electronic detectors for direct and alternating voltages. This safety device signals the presence of dangerous voltages via the independent flashing of two LEDs (Light emitting diodes). A secondary supply voltage is not necessary.

### Technical data

Nominal voltage ( $U_N$ )		<b>V d.c.</b>
Maximum voltage permanent $U_{MAX1}$		<b>V d.c.</b>
Maximum voltage long duration $U_{MAX2}$	5 min	<b>V d.c.</b>
Maximum voltage overload $U_{MAX3}$	20 msec	<b>V d.c.</b>
Insulation voltage rating <sup>1</sup> ( $U_{NM}$ )	50 Hz, 10 sec	<b>kV</b>
Average current consumption (LED flashing)		<b>mA</b>
LED flashing frequency		<b>Hz</b>
Activating voltage $U_{ON}$		<b>V d.c.</b>
Activating voltage $U_{OFF}$		<b>V d.c.</b>
Mass		<b>Kg</b>
Operating temperature		<b>°C</b>
Operating and starting temperature		<b>°C</b>
Light Emitting Diode (LED) colour		
Light Emitting Diode (LED) angle of vision		

<sup>1</sup> Overload category: 3 (OV3), pollution degree: 2 (PD2)

### General data

- Plastic case and insulating resin are self-extinguishing.
- The casing temperature must not exceed 105°C.
- Fixing holes in the case moulding for horizontal mounting.
- Changing of the 2 LEDs is without tools.
- Product mounting according to the document: *VD1500 range Mounting Instructions* (ref. 1SBC140001M1701).
- Product Use and Maintenance instructions according to the document: *Use of the Voltage Detector - Preventive and Curative Maintenance VD1500 Range* (ref. 1SBD370058P0001).
- Tightening torque: 2Nm

### Safety

Only qualified and authorised personnel may carry out any operation on the detector; without voltage applied to the terminals of the voltage detector and with the equipment (power converter) electrically isolated. In order to maintain the high level of reliability, the 2 LEDs must always be replaced at the same time.

### Primary connection

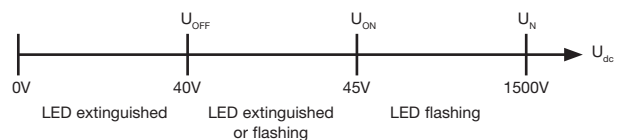
- Insert M5x7 for terminals HT1+ and HT2+
- Insert M4x7 for terminals HT1- and HT2-

### VD1500



VD1500	
	1500
	1800
	1950
	2538
	6.5
	≤1
	1.7
	> 45
	< 40
	≤0.5
	-40 ... +70
	-40 ... +85
	red
	≤15°

### General operation



$U_{OFF}$  : Low limit at which the LEDs extinguish when the equipment is electrically isolated.

$U_{ON}$  : High limit at which the LEDs illuminate (flashing frequency approximately 1.7Hz) when the equipment power is switched on.

Between these two limits the LEDs maybe extinguished or flashing.

### Accessories

#### LED replacement kit

- ABB order code: 1SBT900000R2002 including 5 LEDs with plastic support.

#### Lens replacement kit (transparent cover)

- ABB order code: 1SBT900000R2001 including 10 lenses.

### Conformity

EN 50155, EN 50129,

EN 50124-1, EN 50121-3-2

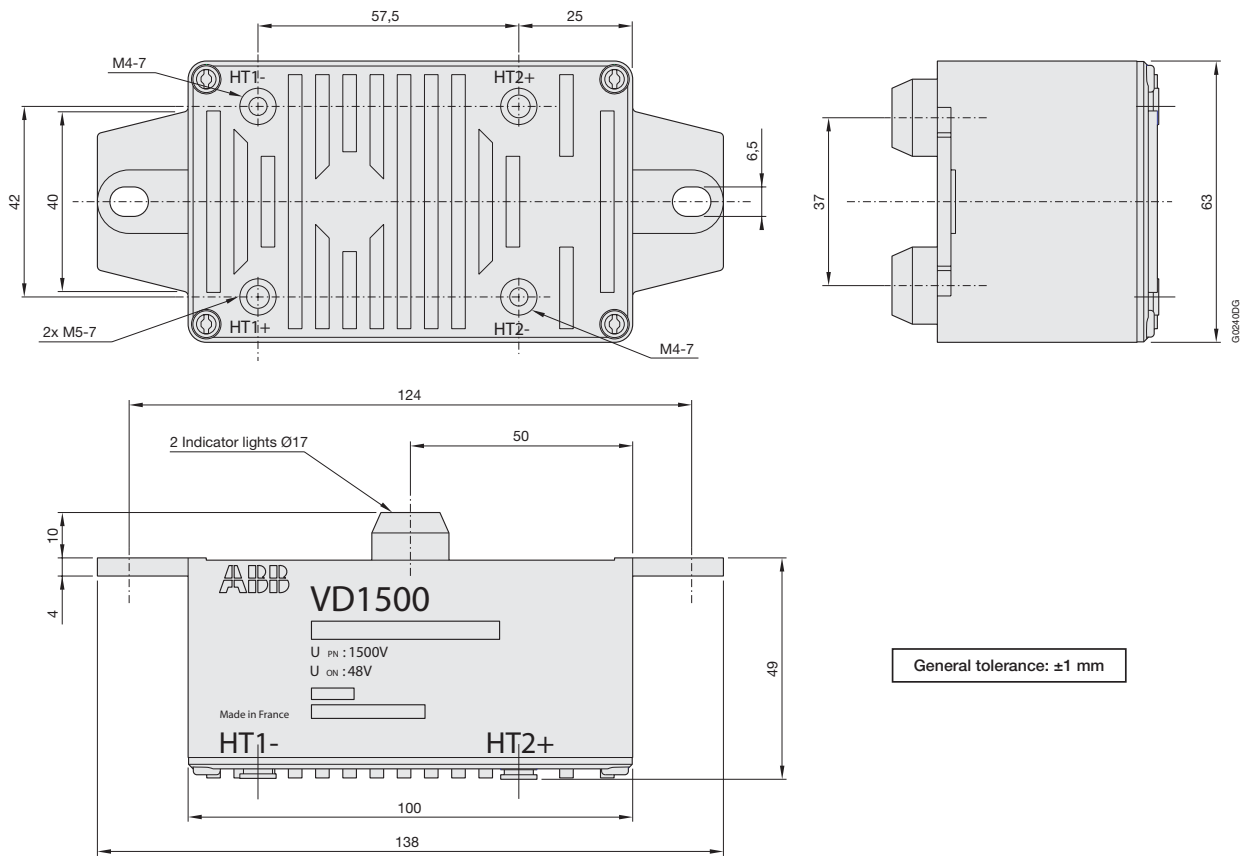




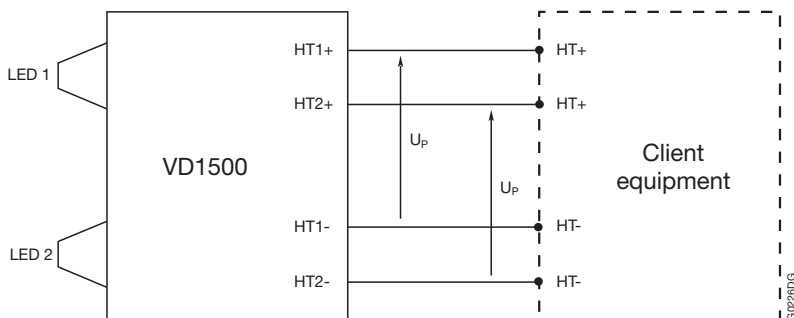
# VD traction voltage detectors

## Rolling stock and fixed installations

### Dimensions (mm)



### Wiring diagram



The two connections HT + (client equipment side) must be made at different connection points.  
 The two connections HT - (client equipment side) must be made at different connection points.









# LS Series Limit Switches for Railway Applications

## Contents

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LS2..M.. - LS3..M.. - LS4..M.. - LS7..M.. Limit Switches .....	390





# LS.. Series Limit Switches

Plastic or Metal Casing - 30, 40 and 60 mm Width

IP 67 Metal Casing, Cable Connection - 30 mm Width



LS20M22B11 - Roller plunger  
Protection IP67



LS32M32B11 - Roller lever



LS40M51B11 - Adjustable roller lever



LS72M45B11 - Roller lever

## Description

Electromechanical limit switches, in plastic or metal casing, are usual in all automatic installations and industrial or railway applications.

3 casing sizes and 5 variants for cable connection are available. They can be equipped with 6 types of contact blocks and various operating heads.

The limit switches in **plastic casing (LS..P...)** are made of fibre-glass reinforced UL-Vo thermoplastic material, they offer double insulation and a degree of protection IP65.

The limit switches in **metal casing (LS..M...)** are made of zinc alloy (zamak) or aluminium alloy (LS4..M only), they offer a degree of protection IP66.

### Casing

- LS3.. P... and LS3..M... 30 mm width, standardized dimensions according to EN 50047, one cable inlet.
- LS4.. P... and LS4..M... 40 mm width, standardized dimensions according to EN 50041, one cable inlet.
- LS7.. P... and LS7..M... 60 mm width, 2 cable inlets (LS7..P...) and 3 cable inlets (LS7..M...)

### Types of cable inlets

Pg11, Pg13.5, M16x1.5, M20x1.5 and 1/2" NPT (only Pg13.5, M20x1.5 and 1/2" NPT for LS4P and LS4M)

### Contact blocks

- B11 : 1NC+1NO with snap action
- B02 : 2NC with snap action
- C11 : 1NC+1NO with dependent (slow) action: overlapping, early make
- D11 : 1NC+1NO with dependent (slow) action: non-overlapping, late make
- L20 : 2NO with dependent (slow) action: simultaneous
- L02 : 2NC with dependent (slow) action: simultaneous

All contact blocks (except L20 type) have a positive contact opening operation of the NC contact(s). Symbolization ⊕

### Operating heads

- Plain plunger
- Roller plunger
- Roller lever on plunger
- Swivelling roller lever, adjustable or non adjustable.

### IP 67 Limit switches

The **LS2..M...** limit switches in metal casing (30 mm width, 16 mm depth) offer a degree of protection IP67. Connection with cable CEI 20/22 (various lengths).

They can be equipped with contact blocks B11 (1NC+1 NO) with snap action or D11 (1NC+1NO) with dependent (slow) action (non-overlapping, late make), and operating heads identical to the above description.

## Applications

### Easy to use, the limit switches offer specific qualities:

- Direct mechanical actuation (cam, plunger, door, casing, stop, etc.) .
- Visible operation
- Able to switch strong currents (10 A conventional thermal current).
- High voltage
- Contact blocks with dependent action or snap action, with positive opening operation of the NC contact(s). Symbolization ⊕
- Electrically separated contacts.
- Suitable for industrial environment
- Precise operating points (consistency).
- Immune to electromagnetic disturbances.

### These specific features make the limit switches ideal for detection of:

- presence
- absence
- passing
- displacement
- counting
- positioning
- travel limit, etc.

**Specific railway and rolling stock applications:** detection and control for opening and closing of the doors in the trains, metros, tramways, bus...

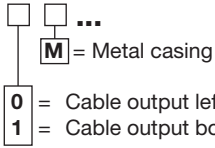
>> Catalogue "LS.. Series Limit Switches" on request

# LS Series Limit Switches

Metal Casing IP67

**30 mm width**

**LS 2**



Type	<b>LS2..M11</b>	<b>LS2..M12</b>	<b>LS2..M13</b>	<b>LS2..M14</b>
Actuator	Brass plain plunger	Steel roller plunger	Plastic roller plunger	Cross steel roller plunger
Action type				
CENELEC Conformity / Positive opening operation	-	-	-	-

Metal Casing IP66

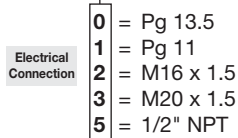
**30 mm**

**LS 3** □ **M...**

**60 mm**

**LS 7** □ **M...**

**Width**



Type	<b>LS..M11</b>	<b>LS..M12, LS..M13</b>	<b>LS..M14</b>	<b>LS..M31</b>
Actuator	Plain plunger	Roller plunger	Plain plunger	Roller lever
Action type				
CENELEC conformity / Positive opening operation	EN 50047	EN 50047	EN 50047	EN 50047

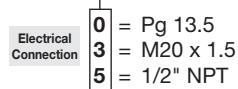
**Nota:** For LS7□M... (60 mm width) compatible with EN 50047 (fixing)

Metal Casing IP66

**40 mm**













**LS 4** □ **M...**




**Width**













Type	<b>LS..M11</b>	<b>LS..M13</b>	<b>LS..M21</b>	<b>LS..M22</b>	<b>LS..M31</b>
Actuator	Plain plunger	Roller plunger	Plain plunger	Roller plunger	Roller lever
Action type					
CENELEC conformity / Positive opening operation	EN 50041	EN 50041	EN 50041	EN 50041	-

# Metal Casing IP66 and IP67

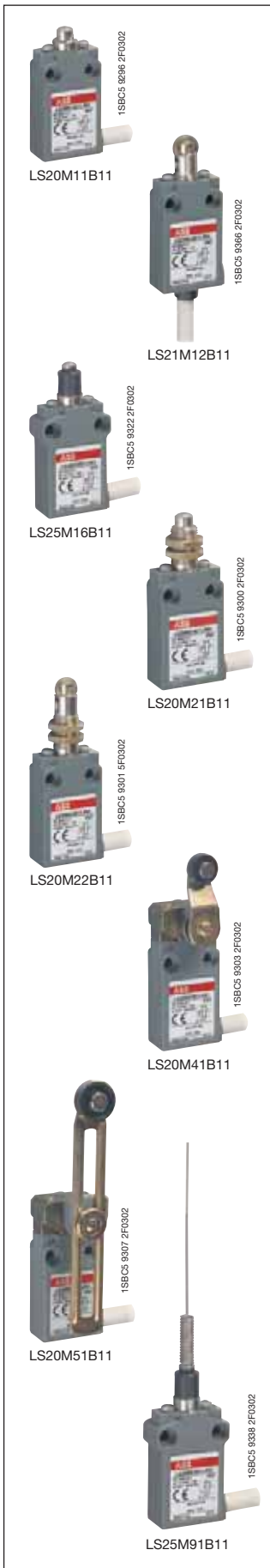
					
<b>LS2..M15</b>	<b>LS2..M21</b>	<b>LS2..M22</b>	<b>LS2..M41</b>	<b>LS2..M51</b>	<b>LS2..M91</b>
Cross plastic roller plunger	Brass plain plunger with fixing nuts	Steel roller plunger with fixing nuts	Ø14 plastic roller lever	Adjustable Ø18 plastic roller lever	Spring rod
					
-	-	-	-	-	-

					
<b>LS..M32</b>	<b>LS..M35</b>	<b>LS..M38</b>	<b>LS..M41, LS..M43</b>	<b>LS..M42</b>	<b>LS..M51</b>
Roller lever	Roller lever	Adjustable roller lever	Roller lever	Roller lever	Adjustable roller lever
					
-	EN 50047	-	EN 50047	-	-

					
<b>LS..M41</b>	<b>LS..M51</b>	<b>LS..M54</b>	<b>LS..M61</b>	<b>LS..M72</b>	<b>LS..M91</b>
Roller lever	Adjustable roller levers		Adjustable flexible and rigid rod levers		Flexible rod
					
EN 50041	-	-	-	EN 50041	-

# LS2..M.. Limit Switches

Metal Casing IP67 - 30 mm and 35 mm Width



LS20M: 1 cable output left / right .....	0	.....	5	5
LS21M: 1 cable output bottom .....	1	.....	5	6
LS25M: 1 cable output left / right .....	5	.....	6	3
LS26M: 1 cable output bottom .....	6	.....	6	4

Metal Casing - IP67  
**30 mm Width**  
Metal Casing - IP67  
**35 mm Width**

## Ordering Details

Contact blocks	Type	Order code	Weight kg (1)(2)	Pack <sup>ing</sup>
 B11	state cable output code <input type="checkbox"/>	state cable output code <input type="checkbox"/>		1 piece
 D11	<input type="checkbox"/>	<input type="checkbox"/>		

### Brass plain plunger (nickel plated)

1	-	LS2 <input type="checkbox"/> M11B11-P <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 11R20 <input type="checkbox"/>	0.175
1	-	LS2 <input type="checkbox"/> M11B11-U <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 11R26 <input type="checkbox"/>	0.175
-	1	LS2 <input type="checkbox"/> M11D11-P <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 11R21 <input type="checkbox"/>	0.175
-	1	LS2 <input type="checkbox"/> M11D11-U <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 11R27 <input type="checkbox"/>	0.175

### Steel roller plunger (zinc plated)

1	-	LS2 <input type="checkbox"/> M12B11-P <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 12R20 <input type="checkbox"/>	0.180
1	-	LS2 <input type="checkbox"/> M12B11-U <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 12R26 <input type="checkbox"/>	0.180
-	1	LS2 <input type="checkbox"/> M12D11-P <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 12R21 <input type="checkbox"/>	0.180
-	1	LS2 <input type="checkbox"/> M12D11-U <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 12R27 <input type="checkbox"/>	0.180

### Brass plain plunger (nickel plated) with dust protection

1	-	LS2 <input type="checkbox"/> M16B11-P <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 16R20 <input type="checkbox"/>	0.175
1	-	LS2 <input type="checkbox"/> M16B11-U <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 16R26 <input type="checkbox"/>	0.175
-	1	LS2 <input type="checkbox"/> M16D11-P <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 16R21 <input type="checkbox"/>	0.175
-	1	LS2 <input type="checkbox"/> M16D11-U <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 16R27 <input type="checkbox"/>	0.175

### Brass plain plunger (nickel plated) with fixing nuts

1	-	LS2 <input type="checkbox"/> M21B11-P <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 21R20 <input type="checkbox"/>	0.190
1	-	LS2 <input type="checkbox"/> M21B11-U <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 21R26 <input type="checkbox"/>	0.190
-	1	LS2 <input type="checkbox"/> M21D11-P <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 21R21 <input type="checkbox"/>	0.190
-	1	LS2 <input type="checkbox"/> M21D11-U <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 21R27 <input type="checkbox"/>	0.190

### Steel roller plunger (zinc plated) with fixing nuts

1	-	LS2 <input type="checkbox"/> M22B11-P <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 22R20 <input type="checkbox"/>	0.195
1	-	LS2 <input type="checkbox"/> M22B11-U <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 22R26 <input type="checkbox"/>	0.195
-	1	LS2 <input type="checkbox"/> M22D11-P <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 22R21 <input type="checkbox"/>	0.195
-	1	LS2 <input type="checkbox"/> M22D11-U <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 22R27 <input type="checkbox"/>	0.195

### ø14 plastic (polyacetal) roller lever

1	-	LS2 <input type="checkbox"/> M41B11-P <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 41R20 <input type="checkbox"/>	0.225
1	-	LS2 <input type="checkbox"/> M41B11-U <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 41R26 <input type="checkbox"/>	0.225
-	1	LS2 <input type="checkbox"/> M41D11-P <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 41R21 <input type="checkbox"/>	0.225
-	1	LS2 <input type="checkbox"/> M41D11-U <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 41R27 <input type="checkbox"/>	0.225

### Adjustable ø18 plastic (polyacetal) roller lever

1	-	LS2 <input type="checkbox"/> M51B11-P <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 51R20 <input type="checkbox"/>	0.240
1	-	LS2 <input type="checkbox"/> M51B11-U <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 51R26 <input type="checkbox"/>	0.240
-	1	LS2 <input type="checkbox"/> M51D11-P <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 51R21 <input type="checkbox"/>	0.240
-	1	LS2 <input type="checkbox"/> M51D11-U <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 51R27 <input type="checkbox"/>	0.240

### Spring rod

1	-	LS2 <input type="checkbox"/> M91B11-P <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 91R20 <input type="checkbox"/>	0.240
1	-	LS2 <input type="checkbox"/> M91B11-U <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 91R26 <input type="checkbox"/>	0.240
-	1	LS2 <input type="checkbox"/> M91D11-P <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 91R21 <input type="checkbox"/>	0.240
-	1	LS2 <input type="checkbox"/> M91D11-U <input type="checkbox"/>	1SBV01 <input type="checkbox"/> <input type="checkbox"/> 91R27 <input type="checkbox"/>	0.240

(1) For LS25 & LS26 add extra 0.005 kg - (2) With 1 m of cable (add 0.1 kg by extra meter length)

Cable length	Length cable code		(Other length on request)	
	Code	Code	Code	Code
1 m	0 1		0 1	
2 m	0 2		0 2	
5 m	0 5		0 5	
10 m	1 0		1 0	

Note: -P  = cable IEC 20/22 II PVC, -U  = cable UL 62 PVC maxi. 10 m



# LS3..M.. Limit Switches

## Metal Casing IP66 - 30 mm Width



LS32M11B11



LS32M12B11



LS32M38B11



LS32M41B11



LS32M51B11

LS30M: 1 cable inlet for Pg 13.5 cable gland ..... 0 ..... 1 8  
 LS31M: 1 cable inlet for Pg 11 cable gland ..... 1 ..... 1 7  
 LS32M: 1 cable inlet for ISO 16 cable gland ..... 2 ..... 1 9  
 LS33M: 1 cable inlet for ISO 20 cable gland ..... 3 ..... 3 8  
 LS35M: 1 cable inlet for 1/2" NPT cable gland ..... 5 ..... 3 7

### Ordering Details

Contact blocks	Type	Order code	Weight kg
 B11	state cable inlet code □	state cable inlet code □ □	Pack <sup>109</sup> 1 piece
 D11	state cable inlet code □	state cable inlet code □ □	

#### Steel plain plunger (zinc plated)

1	-	LS3 □ M11B11	1SBV01 □ □ 11R1211	0.180
-	1	LS3 □ M11D11	1SBV01 □ □ 11R1411	0.180

#### Steel roller plunger (zinc plated)

1	-	LS3 □ M12B11	1SBV01 □ □ 12R1211	0.185
-	1	LS3 □ M12D11	1SBV01 □ □ 12R1411	0.185

#### ø12.5 plastic (polyacetal) roller lever on steel plunger (zinc plated) horizontal action

1	-	LS3 □ M31B11	1SBV01 □ □ 31R1211	0.175
-	1	LS3 □ M31D11	1SBV01 □ □ 31R1411	0.175

#### ø12.5 plastic (polyacetal) roller lever on steel plunger (zinc plated) vertical action

1	-	LS3 □ M32B11	1SBV01 □ □ 32R1211	0.175
-	1	LS3 □ M32D11	1SBV01 □ □ 32R1411	0.175

#### ø22 plastic (polyacetal) roller lever on steel plunger (zinc plated)

1	-	LS3 □ M38B11	1SBV01 □ □ 38R1211	0.180
-	1	LS3 □ M38D11	1SBV01 □ □ 38R1411	0.180

#### ø18 plastic (polyacetal) roller lever

1	-	LS3 □ M41B11	1SBV01 □ □ 41R1211	0.230
-	1	LS3 □ M41D11	1SBV01 □ □ 41R1411	0.230

#### ø50 rubber roller lever

1	-	LS3 □ M42B11	1SBV01 □ □ 42R1211	0.255
-	1	LS3 □ M42D11	1SBV01 □ □ 42R1411	0.255

#### Adjustable ø18 plastic (polyacetal) roller lever

1	-	LS3 □ M51B11	1SBV01 □ □ 51R1211	0.240
-	1	LS3 □ M51D11	1SBV01 □ □ 51R1411	0.240

#### Adjustable ø50 rubber roller lever

1	-	LS3 □ M52B11	1SBV01 □ □ 52R1211	0.265
-	1	LS3 □ M52D11	1SBV01 □ □ 52R1411	0.265

#### Spring rod

1	-	LS3 □ M91B11	1SBV01 □ □ 91R1211	0.180
-	1	LS3 □ M91D11	1SBV01 □ □ 91R1411	0.180

# LS4..M.. Limit Switches

## Metal Casing IP66 - 40 mm Width



LS40M11B11



LS40M41B11



LS40M51B11



LS40M91B11

LS40M: 1 cable inlet for Pg 13.5 cable gland ..... 0 ..... 1 1  
 LS43M: 1 cable inlet for ISO 20 cable gland ..... 3 ..... 1 6  
 LS45M: 1 cable inlet for 1/2" NPT cable gland ..... 5 ..... 3 1

### Ordering Details

Contact blocks	Type	Order code	Weight kg
B11	D11	state cable inlet code □ □	Pack <sup>ing</sup> 1 piece

#### Stainless steel plain plunger

1	-	LS4 □ M11B11	1SBV01 □ □ 11R1211	0.240
-	1	LS4 □ M11D11	1SBV01 □ □ 11R1411	0.240

#### ø12 stainless steel roller plunger

1	-	LS4 □ M13B11	1SBV01 □ □ 13R1211	0.240
-	1	LS4 □ M13D11	1SBV01 □ □ 13R1411	0.240

#### ø22 plastic (polyacetal) roller lever on stainless steel plunger

1	-	LS4 □ M31B11	1SBV01 □ □ 31R1211	0.275
-	1	LS4 □ M31D11	1SBV01 □ □ 31R1411	0.275

#### ø22 plastic (polyacetal) roller lever

1	-	LS4 □ M41B11	1SBV01 □ □ 41R1211	0.280
-	1	LS4 □ M41D11	1SBV01 □ □ 41R1411	0.280

#### ø22 stainless steel roller lever

1	-	LS4 □ M42B11	1SBV01 □ □ 42R1211	0.280
-	1	LS4 □ M42D11	1SBV01 □ □ 42R1411	0.280

#### Adjustable ø22 plastic (polyacetal) roller lever

1	-	LS4 □ M51B11	1SBV01 □ □ 51R1211	0.290
-	1	LS4 □ M51D11	1SBV01 □ □ 51R1411	0.290

#### Adjustable ø6 plastic (polyacetal) rod lever

1	-	LS4 □ M72B11	1SBV01 □ □ 72R1211	0.285
-	1	LS4 □ M72D11	1SBV01 □ □ 72R1411	0.285

#### Spring rod

1	-	LS4 □ M91B11	1SBV01 □ □ 91R1211	0.235
-	1	LS4 □ M91D11	1SBV01 □ □ 91R1411	0.235

# LS7..M.. Limit Switches

Metal Casing IP66 - 60 mm Width



LS72M11B11

1SBC5 8603 4F0302



LS72M12B11

1SBC5 8604 4F0302



LS72M38B11

1SBC5 8607 4F0302



LS72M45B11

1SBC5 8610 4F0302



LS72M98B11-A

1SBC5 8620 5F0302

LS70M: 3 cable inlets for Pg 13.5 cable gland ..... 0 ..... 4 2  
 LS71M: 3 cable inlets for Pg 11 cable gland ..... 1 ..... 4 1  
 LS72M: 3 cable inlets for ISO 16 cable gland ..... 2 ..... 4 3  
 LS73M: 3 cable inlets for ISO 20 cable gland ..... 3 ..... 5 2  
 LS75M: 3 cable inlets for 1/2" NPT cable gland ..... 5 ..... 5 1

## Ordering Details

Contact blocks	Type	Order code	Weight kg
B11	state cable inlet code □	state cable inlet code □ □	Pack <sup>109</sup> 1 piece
D11			

### Steel plain plunger (zinc plated)

1	-	LS7 □ M11B11	1SBV01 □ □ 11R1211	0.270
-	1	LS7 □ M11D11	1SBV01 □ □ 11R1411	0.270

### Steel roller plunger (zinc plated)

1	-	LS7 □ M12B11	1SBV01 □ □ 12R1211	0.280
-	1	LS7 □ M12D11	1SBV01 □ □ 12R1411	0.280

### ø12.5 plastic (polyacetal) roller lever on steel plunger (zinc plated) horizontal action

1	-	LS7 □ M31B11	1SBV01 □ □ 31R1211	0.265
-	1	LS7 □ M31D11	1SBV01 □ □ 31R1411	0.265

### ø22 plastic (polyacetal) roller lever on steel plunger (zinc plated)

1	-	LS7 □ M38B11	1SBV01 □ □ 38R1211	0.270
-	1	LS7 □ M38D11	1SBV01 □ □ 38R1411	0.270

### ø18 plastic (polyacetal) roller with bent lever

1	-	LS7 □ M45B11	1SBV01 □ □ 45R1211	0.335
-	1	LS7 □ M45D11	1SBV01 □ □ 45R1411	0.335

### Adjustable ø3 stainless steel rod lever

1	-	LS7 □ M71B11	1SBV01 □ □ 71R1211	0.380
-	1	LS7 □ M71D11	1SBV01 □ □ 71R1411	0.380

### Spring rod

1	-	LS7 □ M91B11	1SBV01 □ □ 91R1211	0.315
-	1	LS7 □ M91D11	1SBV01 □ □ 91R1411	0.315

### Pull action with ring

1	-	LS7 □ M98B11-A	1SBV01 □ □ 98R1211	0.350
-	1	LS7 □ M98D11-A	1SBV01 □ □ 98R1411	0.350





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1SBH 143 061 R_62	280	1SBT 170 000 R2001	358	1SNA 103 890 R2100	212	1SNA 163 475 R2700	196	1SNA 173 461 R2300	196	1SNA 193 137 R0300	75	1SNA 199 411 R1400	190
1SBH 143 061 R_80	280	1SBT 170 000 R2002	358	1SNA 103 922 R1400	227	1SNA 163 476 R2000	196	1SNA 173 510 R2000	200	1SNA 193 251 R2500	69	1SNA 199 412 R1500	49
1SBH 143 061 R_22	280	1SBT 170 000 R2003	358	1SNA 105 028 R2100	199	1SNA 163 479 R0300	62	1SNA 173 523 R1100	200	1SNA 193 358 R0000	69	1SNA 199 420 R2100	186
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1SBL 143 060 R_10	241	1SBT 170 000 R2010	358	1SNA 113 003 R1000	188	1SNA 163 556 R2000	196	1SNA 173 819 R2200	192	1SNA 194 836 R0100	185	1SNA 199 436 R1500	103
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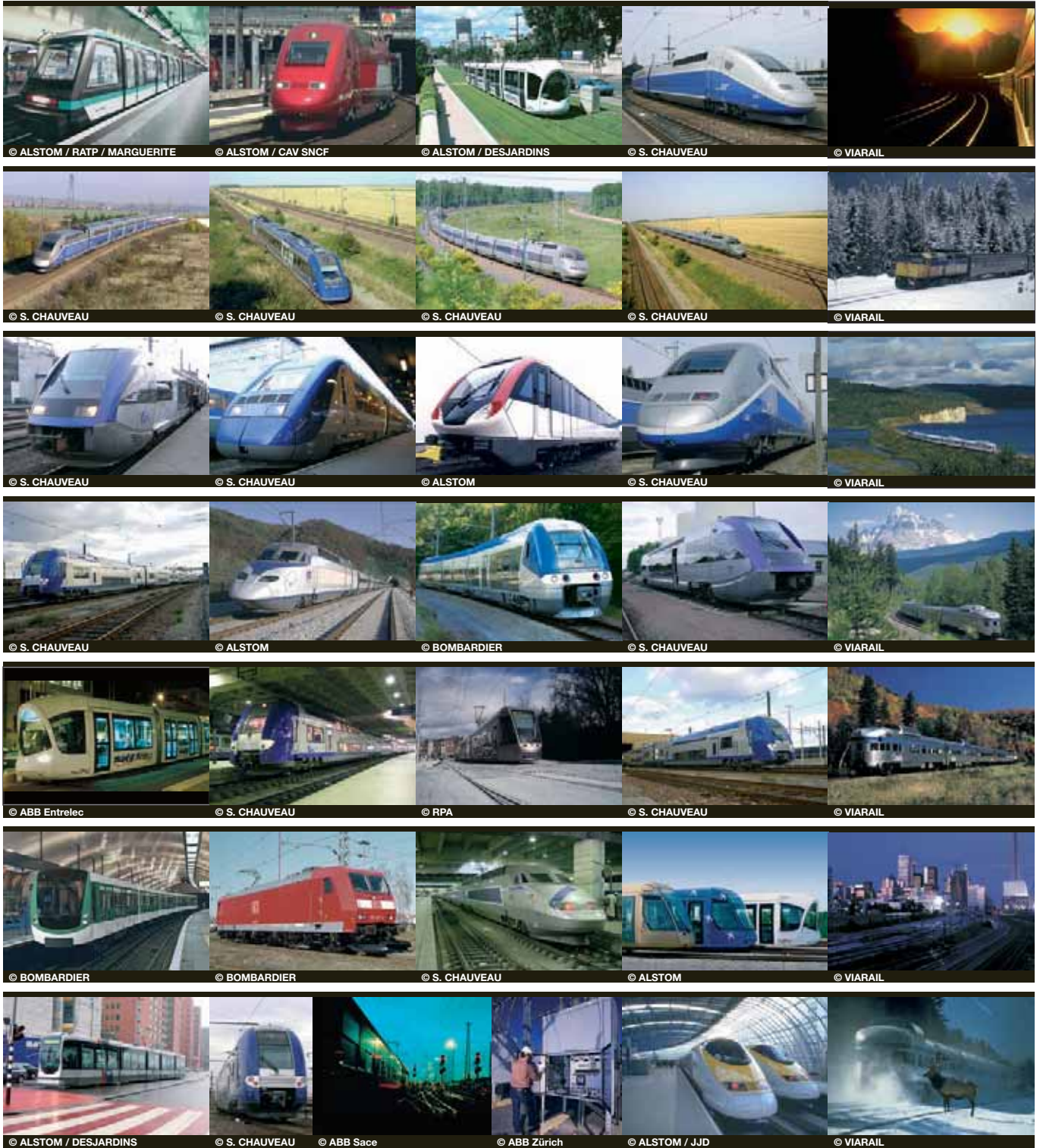


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