LOW VOLTAGE ELECTRICAL COMPONENTS

Product Catalogue 2024-2025

CHINT

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finn electric
Power, Protection and Smart Energy

CHINT

Chint

Chint is one of the world´s three largest electrical equipment manufacturers and market leader in the Asian region. Product range of Chint includes circuit breakers, RCDs, contactors, control devices, and other. Chint offers cost-effective components that are widely recognized in international markets.

- Established in 1984
- Represented in appr. 140 countries
- More than 30.000 employees
- Turnover 2018: € 9 billion
- Compliance with standards ISO 9001, ISO 14001, and OHSAS 18001

CHINT ELECTRIC

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CHINT ELECTRIC

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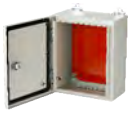

NXW5

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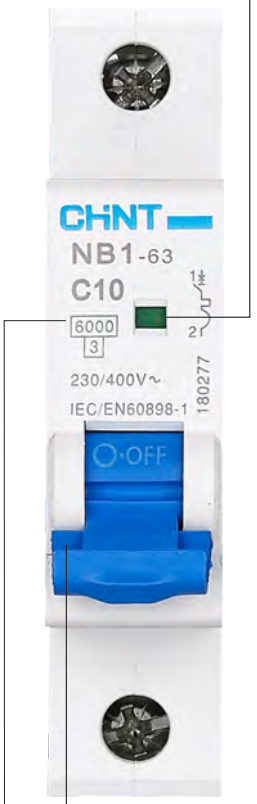
NB1 Miniature Circuit Breaker



1 Color coded contact position indicator provides visual indication of the device status and insulation function

2 Trip-free mechanism, device operation can not be defeated by holding the operator in the ON position

3 Breaking capacity up to 6000A

4 Magnetic trip elements provide Type B, C and D trip characteristics while bimetallic element protect against slight overload

5 Line and load side terminals accept bus bar connections for reduced costs and more efficient installation of multiple devices

6 Heat dissipation gap provides better cooling

7 Extendable DIN-rail holder for easy installation

I

NB1 -63
Miniature Circuit Breaker

1. General

1.1 Function

protection of circuits against short-circuit currents,
protection of circuits against overload currents,
switch,isolation.
NB1 circuit-breakers are used in domestic installation, as well as in commercial and industry electrical distribution systems.

1.2 Selection

Technical data of the network at the point considered:
short-circuit current at the circuit-breaker installation point, which must always be less than the breaking capacity of this device,network normal voltage.
Tripping curves:

B curve (3-5In)

protection for people and big length cables in TN and IT systems.

C curve (5-10In)

protection for resistive and inductive loads with low inrush current.

D curve(10-14In)

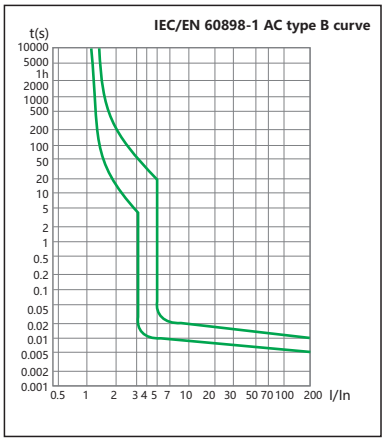
protection for circuits which supply loads with high inrush current at the circuit closing
(LV/LV transformers, breakdown lamps).

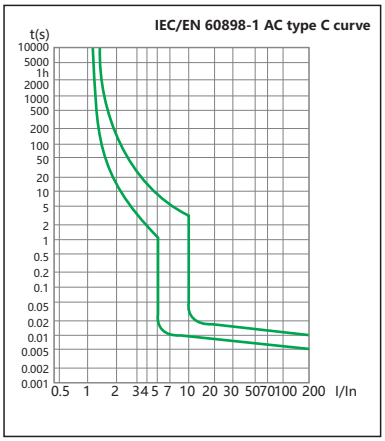
1.3 Approvals and certificates

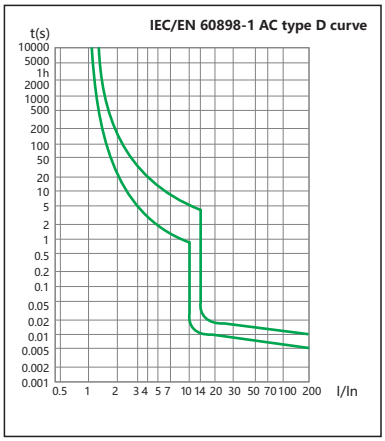
Detailed information, please refer to Certificates Table on the last page.

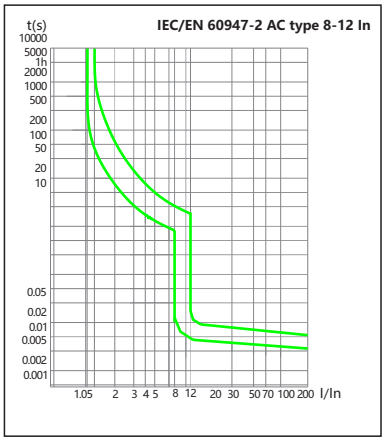
2. Technical data

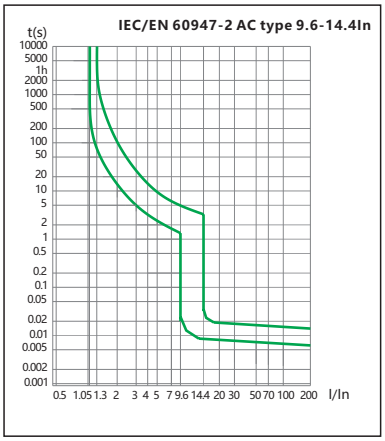
2.1 Curves

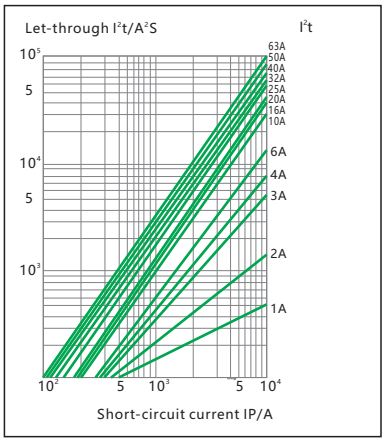












2.2

	Standard		IEC/EN 60898-1	IEC/EN 60947-2	UL1077	
Electrical features	Rated current In	A	1, 2, 3, 4, 6, 10, 13, 16, 20, 25, 32, 40, 50, 63		1, 2, 3, 4, 6, 10, 13, 16, 20, 25, 32, 40, 50, 63	
	Poles		1P, 1P+N, 2P, 3P, 3P+N, 4P	1P, 2P, 3P, 4P	1P, 2P, 3P, 4P	1P, 2P
	Rated voltage Ue	V	230/400~240/415		277/480	110/125
	Insulation voltage Ui	V	500			
	Rated frequency		50/60Hz			DC
	Rated breaking capacity	A	6000	6000	5000	10000
	Energy limiting class		3			
	Rated impulse withstand voltage(1.2/50) Uimp	V	4000			
	Dielectric test voltage at ind. Freq. for 1 min	kV	2	1.890	2	
	Pollution degree		2			
	Power loss per pole		Rated current (A)		Max power loss per pole (W)	
			1, 2, 3, 4, 6, 10		2	
			16, 20, 25, 32		3.5	
			40, 50, 63		5	
	Thermo-magnetic release characteristic		B, C, D	(8-12)In	B, C, D	
Mechanical features	Electrical life		4, 000			
	Mechanical life		20, 000			
	Contact position indicator		Yes			
	Protection degree		IP20			
	Reference temperature for setting of thermal element	℃	30			
	Ambient temperature (with daily average≤35℃)	℃	-35-+70			
	Storage temperation	℃	-35-+70			
Installation	Terminal connection type		Cable/U-type busbar/Pin-type busbar			
	Terminal size top/bottom for cable	mm^2	25			
		AWG	18-4			
	Terminal size top/bottom for busbar	mm^2	10			
		AWG	18-8			
	Tightening torque	N·m	2.0			
		In-lbs.	22			
	Mounting		On DIN rail EN 60715 (35mm) by means of fast clip device			
	Connection		From top and bottom			
Combination with accessories	Auxiliary contact		Yes			
	Shunt release		Yes			
	Under voltage release		Yes			
	Alarm contant		Yes			

2.3 Selectivity

	In (A)	Power supply side: RT36-00 (fuse)								
		20	25	36	50	63	80	100	125	160
		Is (kA)								
Load side: NB1-63, NB1-63H Curve B, C	2	1.2	4	> 12	> 12	> 12	> 12	> 12	> 12	> 12
	3	0.7	1.2	3.8	5.3	6	6	6	6	6
	4	0.6	0.9	2.5	3.8	6	6	6	6	6
	6	0.5	0.8	1.9	2.5	4.5	5	6	6	6
	10		0.7	1.4	2.2	3.2	3.6	6	6	6
	16			1.2	1.8	2.6	3	5.6	6	6
	20				1.5	2.2	2.5	4.6	6	6
	25				1.3	2	2.2	4.1	5.5	6
	32					1.7	1.9	3.8	4.5	6
	40						1.7	3	4	5
	50						1.5	2.6	3.5	4.5
	63							2.4	3.3	4.5

	In (A)	Power supply side: NM8-100S/H/R								
		16	20	25	32	40	50	63	80	100
		Is (kA)								
Load side: NB1-63, NB1-63H Curve B, C	≤10	0.19	0.19	0.3	0.4	0.5	0.5	0.5	0.63	0.8
	16			0.3	0.4	0.5	0.5	0.5	0.63	0.8
	20					0.5	0.5	0.5	0.63	0.8
	25						0.5	0.5	0.63	0.8
	32							0.5	0.63	0.8
	40								0.63	0.8
	50									0.8
	63									

2.4 Backup protection

	In (A)	Power supply side: RT16 series						
		40	50	63	80	100	125	160
		Is (kA)						
Load side: NB1-63, NB1-63H Curve B, C	1~6	40	40	40	40	40	40	40
	8~10	40	40	40	40	40	40	40
	13	40	40	40	40	35	35	35
	16	40	40	40	40	30	30	30
	20	40	40	40	40	30	30	30
	25	40	40	40	40	30	30	30
	32	40	40	40	40	30	30	30
	40	40	40	40	40	30	30	30
	50	30	30	30	30	30	30	30
	63	20	20	20	20	15	15	15

	In (A)	Power supply side: NM8					
		NM8-125S	NM8-125H	NM8-125R	NM8-250S	NM8-250H	NM8-250R
		Is (kA)					
Load side: NB1-63, NB1-63H Curve B, C	1~6	15	18	18	15	15	15
	10~20	12	15	15	12	12	12
	32~40	12	15	15	12	12	12
	50~60	12	15	15	12	12	12

2.5 Temperature derating

The maximum permissible current in a circuit breaker depends on the ambient temperature where the circuit breaker is placed. Ambient temperature is the temperature inside the enclosure or switchboard in which the circuit breakers are installed.

The reference temperature is 30℃

Ambient temperature / Rated current(A)	-35	-30	-20	-10	0	10	20	30	40	50	60	70
1	1. 3	1.26	1.23	1.19	1.15	1.11	1.05	1	0.96	0.93	0.88	0. 83
2	2. 6	2.52	2.46	2.38	2.28	2.2	2.08	2	1.92	1.86	1.76	1. 66
3	3. 9	3.78	3.69	3.57	3.42	3.3	3.12	3	2.88	2.79	2.64	2. 49
4	5. 2	5.04	4.92	4.76	4.56	4.4	4.16	4	3.84	3.76	3.52	3.32
6	7. 80	7.56	7.38	7.14	6.84	6.6	6.24	6	5.76	5.64	5.28	4. 98
10	13. 20	12.7	12.5	12	11.5	11.1	10.6	10	9.6	9.3	8.9	8. 40
16	21. 12	20.48	20	19.2	18.4	17.76	16.96	16	15.36	14.88	14.24	10. 92
20	26. 40	25.6	25	24	23	22.2	21.2	20	19.2	18.6	17.8	16. 80
25	33	32	31.25	30	28.75	27.75	26.5	25	24	23.25	22.25	21
32	42. 56	41.28	40	38.72	37.12	35.52	33.92	32	30.72	29.76	28.16	26. 88
40	53. 20	51.2	50	48	46.4	44.8	42.4	40	38.4	37.2	35.6	33. 60
50	67	65.5	63	60.5	58	56	53	50	48	46.5	44	41. 50
63	83. 79	81.9	80.01	76.86	73.71	70.56	66.78	63	60.48	58.9	55.44	52. 29

When several simultaneously operating circuit breakers are mounted side by side in a small enclosure, the temperature rise inside the enclosure causes a reduction in current rating.
You must then assign the rating (already derated if necessary according to ambient temperatuer) a downrating factor of 0.8.

3. Overall and mounting dimensions (mm)

NB1-63H
Miniature Circuit Breaker

1. General

1.1 Function

protection of circuits against short-circuit currents,
protection of circuits against overload currents,
switch,isolation.
NB1-63H circuit-breakers are used in domestic installation, as well as in commercial and industry electrical distribution systems.

1.2 Selection

Technical data of the network at the point considered:
short-circuit current at the circuit-breaker installation point, which must always be less than the breaking capacity of this device,network normal voltage.
Tripping curves:

B curve (3-5In)

protection for people and big length cables in TN and IT systems.

C curve (5-10In)

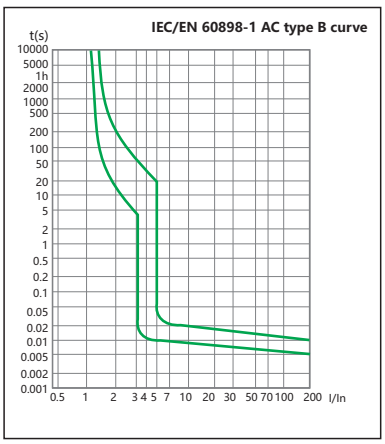
protection for resistive and inductive loads with low inrush current.

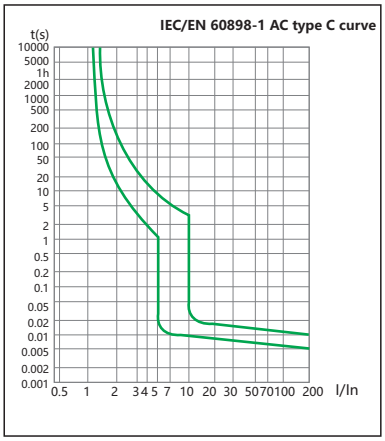
D curve(10-14In)

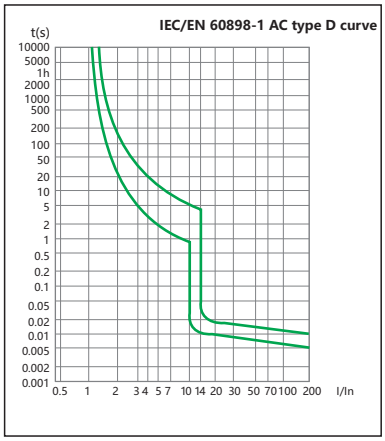
protection for circuits which supply loads with high inrush current at the circuit closing
(LV/LV transformers, breakdown lamps).

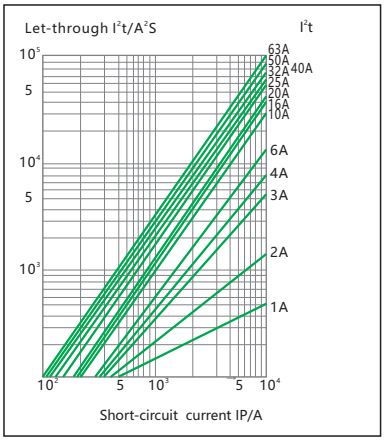
2. Technical data

2.1 curves









2.2

	Standard		IEC/EN 60898-1	
Electrical features	Rated current In	A	1, 2, 3, 4, 6, 10, 16,20, 25, 32, 40, 50, 63	
	Poles		1P, 1P+N, 2P, 3P, 3P+N, 4P	
	Rated voltage Ue	V	230/400~240/415	
	Insulation voltage Ui	V	500	
	Rated frequency		50/60Hz	
	Rated breaking capacity	A	10000	
	Energy limiting class		3	
	Rated impulse withstand voltage(1.2/50) Uimp	V	6000	
	Dielectric test voltage at ind. Freq. for 1 min	kV	2	
	Pollution degree		2	
	Power loss per pole		Rated current (A)	Max power loss per pole (W)
			1, 2, 3, 4, 5, 6, 10	2
			13, 16, 20, 25, 32	3.5
			40, 50, 63	5
	Thermo-magnetic release characteristic		B, C, D	
Mechanical features	Electrical life		4, 000	
	Mechanical life		20, 000	
	Contact position indicator		Yes	
	Protection degree		IP20	
	Reference temperature for setting of thermal element	℃	30	
	Ambient temperature (with daily average≤35℃)	℃	-35 ~ + 70	
	Storage temperation	℃	-35...+70	
Installation	Terminal connection type		Cable/U-type busbar/Pin-type busbar	
	Terminal size top/bottom for cable	mm^2	25	
		AWG	18-4	
	Terminal size top/bottom for busbar	mm^2	10	
		AWG	18-8	
	Tightening torque	N·m	2.0	
		In-lbs.	22	
	Mounting		On DIN rail EN 60715 (35mm) by means of fast clip device	
	Connection		From top and bottom	
Combination with accessories	Auxiliary contact		Yes	
	Shunt release		Yes	
	Under voltage release		Yes	
	Alarm contant		Yes	

2.3 Selectivity

	In (A)	Power supply side: RT36-00 (fuse)								
		20	25	36	50	63	80	100	125	160
		Is (kA)								
Load side: NB1-63, NB1-63H Curve B, C	2	1.2	4	> 12	> 12	> 12	> 12	> 12	> 12	> 12
	3	0.7	1.2	3.8	5.3	6	6	6	6	6
	4	0.6	0.9	2.5	3.8	6	6	6	6	6
	6	0.5	0.8	1.9	2.5	4.5	5	6	6	6
	10		0.7	1.4	2.2	3.2	3.6	6	6	6
	16			1.2	1.8	2.6	3	5.6	6	6
	20				1.5	2.2	2.5	4.6	6	6
	25				1.3	2	2.2	4.1	5.5	6
	32					1.7	1.9	3.8	4.5	6
	40						1.7	3	4	5
	50						1.5	2.6	3.5	4.5
	63							2.4	3.3	4.5

	In (A)	Power supply side: NM8-100S/H/R								
		16	20	25	32	40	50	63	80	100
		Is (kA)								
Load side: NB1-63, NB1-63H Curve B, C	≤10	0.19	0.19	0.3	0.4	0.5	0.5	0.5	0.63	0.8
	16			0.3	0.4	0.5	0.5	0.5	0.63	0.8
	20					0.5	0.5	0.5	0.63	0.8
	25						0.5	0.5	0.63	0.8
	32							0.5	0.63	0.8
	40								0.63	0.8
	50									0.8
	63									

2.4 Backup protection

	In (A)	Power supply side: RT16 series						
		40	50	63	80	100	125	160
		Is (kA)						
Load side: NB1-63, NB1-63H Curve B, C	1~6	40	40	40	40	40	40	40
	8~10	40	40	40	40	40	40	40
	13	40	40	40	40	35	35	35
	16	40	40	40	40	30	30	30
	20	40	40	40	40	30	30	30
	25	40	40	40	40	30	30	30
	32	40	40	40	40	30	30	30
	40	40	40	40	40	30	30	30
	50	30	30	30	30	30	30	30
	63	20	20	20	20	15	15	15

	In (A)	Power supply side: NM8					
		NM8-125S	NM8-125H	NM8-125R	NM8-250S	NM8-250H	NM8-250R
		Is (kA)					
Load side: NB1-63, NB1-63H Curve B, C	1~6	15	18	18	15	15	15
	10~20	12	15	15	12	12	12
	32~40	12	15	15	12	12	12
	50~60	12	15	15	12	12	12

2.5 Temperature derating

The maximum permissible current in a circuit breaker depends on the ambient temperature where the circuit breaker is placed. Ambient temperature is the temperature inside the enclosure or switchboard in which the circuit breakers are installed.

The reference temperature is 30℃

Ambient temperature → / Rated current(A) ↓	-35	-30	-20	-10	0	10	20	30	40	50	60	70
1	1. 3	1.26	1.23	1.19	1.15	1.11	1.05	1	0.96	0.93	0.88	0. 83
2	2. 6	2.52	2.46	2.38	2.28	2.2	2.08	2	1.92	1.86	1.76	1. 66
3	3. 9	3.78	3.69	3.57	3.42	3.3	3.12	3	2.88	2.79	2.64	2. 49
4	5. 2	5.04	4.92	4.76	4.56	4.4	4.16	4	3.84	3.76	3.52	3.32
6	7. 80	7.56	7.38	7.14	6.84	6.6	6.24	6	5.76	5.64	5.28	4. 98
10	13. 20	12.7	12.5	12	11.5	11.1	10.6	10	9.6	9.3	8.9	8. 40
16	21. 12	20.48	20	19.2	18.4	17.76	16.96	16	15.36	14.88	14.24	10. 92
20	26. 40	25.6	25	24	23	22.2	21.2	20	19.2	18.6	17.8	16. 80
25	33	32	31.25	30	28.75	27.75	26.5	25	24	23.25	22.25	21
32	42. 56	41.28	40	38.72	37.12	35.52	33.92	32	30.72	29.76	28.16	26. 88
40	53. 20	51.2	50	48	46.4	44.8	42.4	40	38.4	37.2	35.6	33. 60
50	67	65.5	63	60.5	58	56	53	50	48	46.5	44	41. 50
63	83. 79	81.9	80.01	76.86	73.71	70.56	66.78	63	60.48	58.9	55.44	52. 29

When several simultaneously operating circuit breakers are mounted side by side in a small enclosure, the temperature rise inside the enclosure causes a reduction in current rating.
You must then assign the rating (already derated if necessary according to ambient temperatuer) a downrating factor of 0.8.

3. Overall and mounting dimensions (mm)

NB1-63DC
DC Circuit Breaker

1. General

1.1 Certificates: CCC,CE,CB,TUV;

1.2 Standard: IEC/EN 60947-2 ,RoHS;

1.3 Rated voltage up to 1000V, Rated current up to 63A;

1.4 Protection of circuits against overload currents;

1.5 Protection of circuits against short-circuit currents;

1.6 NB1-63 DC circuit-breakers are used in communication systems and PV DC systems.

2. Features

2.1 Excellent breaking capacity

2.2 Double connection function of lead wire and bus bar

2.3 Stored energy operation, fast closing, long service life

2.4 Convenient installation, disassembly

2.5 Contact on-off indication, higher security

2.6 Green environmental protection and energy saving

3. Type designation

N B 1 - 63 DC

- DC — Direct Current
- 63 — Frame size rated current
- 1 — Designed sequence number
- B — MCB
- N — Company code

4. Operating conditions

4.1 Ambient temperature:-35℃~+70℃(Refer to 5.3)

4.2 The atmosphere condition:≤95%

4.3 Pollution degree:Ⅱ

4.4 Altitude:≤2000m(if exceed 2000m,Refer to 5.4)

5. Technical data

5.1 Classification

5.1.1 Rate Current In:
1A,2A,3A,4A,6A,10A,13A,16A,20A,25A,32A,40A,50A,63A

5.1.2 Number of poles: 1P,2P,4P

5.1.3 Tripping curves: C Type,(7~10)In

5.2 Parameters

5.2.1 Rated breaking capacity Icu

Rated current In (A)	Number of poles	Rated voltage Ue (V)	Rated breaking capacity Icu (A)
1~63	1	250	6000
	2	500	6000
	4	1000	6000

5.2.2 Electrical and mechancial life

a. Electrical life: > 1500

b. Mechancial life: > 20,000

5.2.3 Rated impulse withstand voltage Uimp:4KV

5.2.4 (28-32)℃ ambient temperature over-current protection features.

Test	Test current	Initial state	Time limit for tripping or not tripping	Expected result	Remarks
a	1.05In	Cold state	t≤1h	Not tripping	
b	1.30In	Right after test number a	t < 1h	Tripping	The current is rising within 5s
c	7In	Cold state	t ≤0.2s	Not tripping	
d	10In	Cold state	t < 0.1s	Tripping	

Note: The terminology" Cold state" means that the test is performed at the base calibration temperature with no load prior to the test.

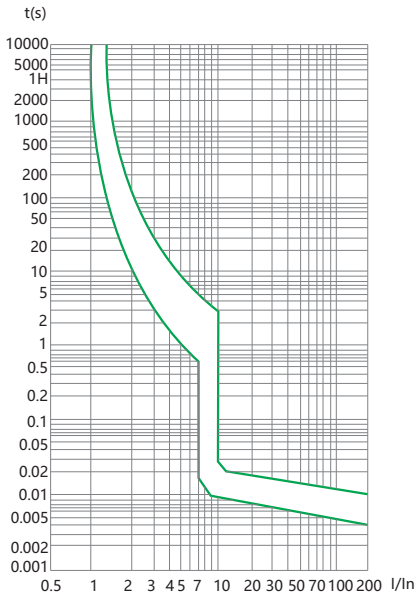
5.3 Temperature derating

Rated current (A)	Temperature compensation coefficient under various operational temperature.											
	-35℃	-30℃	-20℃	-10℃	0℃	10℃	20℃	30℃	40℃	50℃	60℃	70℃
1	1.3	1.26	1.23	1.19	1.15	1.11	1.05	1	0.96	0.93	0.88	0.83
2	2.6	2.52	2.46	2.38	2.28	2.2	2.08	2	1.92	1.86	1.76	1.66
3	3.9	3.78	3.69	3.57	3.42	3.3	3.12	3	2.88	2.79	2.64	2.49
4	5.2	5.04	4.92	4.76	4.56	4.4	4.16	4	3.84	3.76	3.52	3.32
6	7.8	7.56	7.38	7.14	6.84	6.6	6.24	6	5.76	5.64	5.28	4.98
10	13.2	12.7	12.5	12	11.5	11.1	10.6	10	9.6	9.3	8.9	8.4
13	17.16	16.51	16.25	15.6	14.95	14.43	13.78	13	12.48	12.09	11.57	10.92
16	21.12	20.48	20	19.2	18.4	17.76	16.96	16	15.36	14.88	14.24	13.44
20	26.4	25.6	25	24	23	22.2	21.2	20	19.2	18.6	17.8	16.8
25	33	32	31.25	30	28.75	27.75	26.5	25	24	23.25	22.25	21
32	42.56	41.28	40	38.72	37.12	35.52	33.93	32	30.72	29.76	28.16	26.88
40	53.2	51.2	50	48	46.4	44.8	42.4	40	38.4	37.2	35.6	33.6
50	67	65.5	63	60.5	58	56	53	50	48	46.5	44	41.5
63	83.79	81.9	80.01	76.86	73.71	70.56	66.78	63	60.48	58.9	55.44	52.29

5.4 Altitude derating

Tripping type	Rated current In (A)	Current correction factor			For example
		≤2000	2000~3000m	≥3000m	
C	1,2,3,4,6,10, 13,16,20,32, 40,50,63	1	0.9	0.8	Rated current of 10A products rated current derating 2500m:0.9×10=9A

5.5 Curves shown in Figure 1



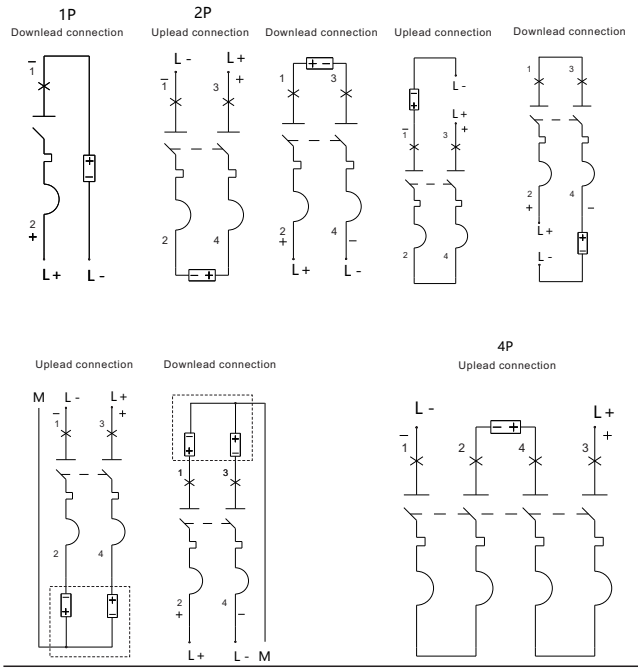
5.6 Wiring: Apply to 25 mm^2 wire connection terminals
Tightening torque 2.5N·m

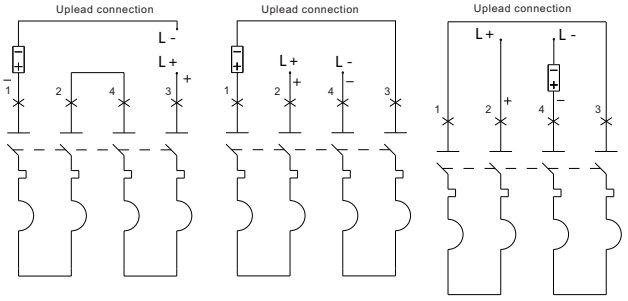
Rated current In (A)	Copper wire nominal cross sectional area(mm^2)
1~6	1
10	1.5
13,16,20	2.5
25	4
32	6
40,50	10
63	16

5.7 Each pole power consumption of the circuit breaker

Rated current In (A)	Each pole maximum power consumption(W)
1~10	2
13~32	3.5
40~63	5

5.8 DC application wiring diagram shown in Figure 2





Wiring diagram description:

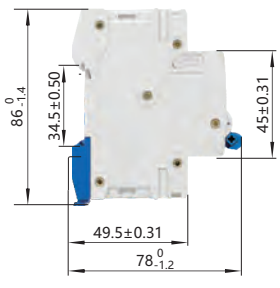
1.L+:Positive pole of power supply,L-:Negative pole of power supply;

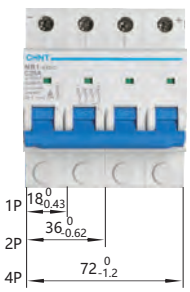
2.+:Positive pole of circuit breaker,-:Negative pole of circuit breaker;

3. :Load;

4.The DC power supply is usually 'L-'grounded.The neutral pole 'M' of the positive and negative power supply system is grounded.

6. Overall and mounting dimensions (mm)





I

DZ158 Moulded Case Circuit Breaker

1. General

1.1 Function

protection of circuits against short-circuit currents,
protection of circuits against overload currents,
switch, isolation.

1.2 Selection

Technical data of the network at the point considered:
the earthing systems (TNS, TNC),
short-circuit current at the circuit-breaker installation point,
which must always be less than the breaking capacity of this device, network normal voltage.

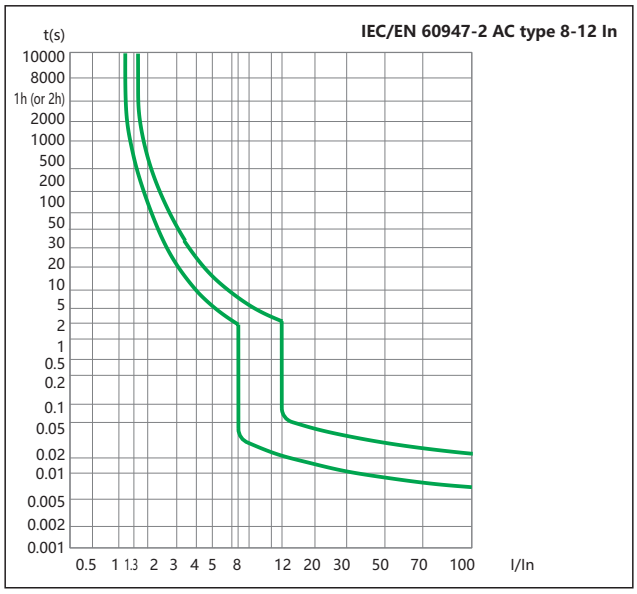
1.3 Approvals and certificates

Detailed information, please refer to Certificates Table on the last page.

CE RCC SAA

2. Technical data

2.1 Curves



2.2

	Standard		IEC/EN 60947-2
Electrical features	Rated current In	A	63, 80, 100, 125
	Poles		1P, 2P, 3P, 4P
	Rated voltage Ue	V	230/400~240/415
	Insulation voltage Ui	V	500
	Rated frequency	Hz	50/60
	Rated breaking capacity	kA	6/10
	Rated impulse withstand voltage(1.2/50) Uimp	kV	4
	Dielectric test voltage at ind. Freq. for 1 min	kV	1.89
	Pollution degree		3
	Thermo-magnetic release characteristic		8-12In
Mechanical features	Electrical life		1,500 (In=63A, 80A, 100A) 1,000 (In=125A)
	Mechanical life		8,500 (In=63A, 80A, 100A) 7,000 (In=125A)
	Contact position indicator		Yes
	Protection degree		IP20
	Reference temperature for setting of thermal element	℃	30
	Ambient temperature (with daily average≤35℃)	℃	-5...+40
	Storage temperation	℃	-25...+70
Installation	Terminal connection type		Cable
	Terminal size top/bottom for cable	mm^2	16~50
		AWG	6-0
	Tightening torque		3.5
			31
	Mounting	N·m	On DIN rail EN 60715 (35mm) by means of fast clip device
	Connection	In-lbs.	From top and bottom
Combination with accessories	Auxiliary contact		Yes

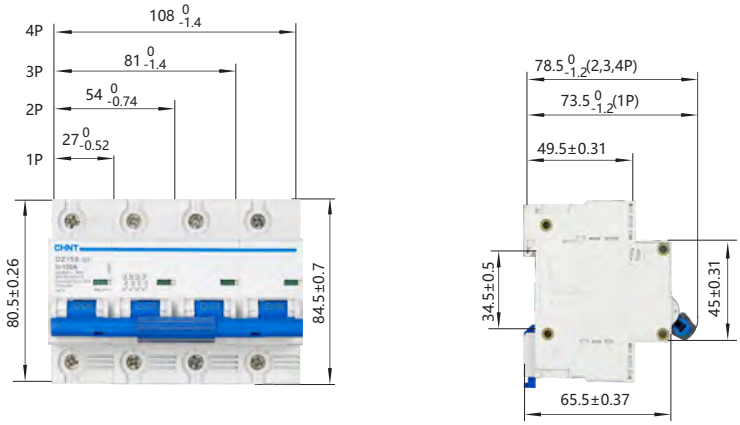
2.3 Temperature derating

The maximum permissible current in a circuit breaker depends on the ambient temperature where the circuit breaker is placed. Ambient temperature is the temperature inside the enclosure or switchboard in which the circuit breakers are installed.

The reference temperature is 30℃

Rated current In (A)	Temperature compensation coefficient under various operational temperature							
	-10℃	0℃	10℃	20℃	30℃	40℃	50℃	60℃
63	1.275	1.215	1.15	1.075	1.00	0.915	0.825	0.735
80	1.27	1.205	1.135	1.07	1.00	0.925	0.845	0.755
100	1.275	1.21	1.135	1.075	1.00	0.925	0.845	0.755
125	1.25	1.19	1.125	1.08	1.00	0.93	0.86	0.78

3. Overall and mounting dimensions (mm)



NL1 Residual Current Operated Circuit Breaker without over-current protection (Magnetic)

1. General

1.1 Function

Control electric circuits.

Protect people against indirect contacts and additional protection against direct contacts.

Protect installations against fire hazard due to insulation faults.

Residual current circuit breakers are used in housing, tertiary sector and industry.

1.2 Selection

Detectable wave form

AC class

Tripping is ensured for slowly increasing sinusoidal AC residual currents.

A class

Tripping is ensured for sinusoidal AC residual currents and for pulsed DC residual currents, whether applied suddenly or increasing slowly.

S, G/SI class

Tripping is ensured not only for sinusoidal AC residual currents but also for pulsed DC residual currents whether applied suddenly or increasing slowly. S, G/SI type with filters against spurious tripping caused by harmonics and transient surges. With the impact of 8/20us surge 3000A, this high immunity RCCB will still be in stable status.

Tripping sensitivity

10mA - precision instrument leakage protection and bathroom use.

30mA - additional protection against direct contact.

100mA - co-ordinated with the earth system according to the formula IΔn < 50/R, to provide protection against indirect contacts;

300mA/500mA - protection against indirect contacts, as well as fire hazard.

Tripping time

Instantaneous

It ensures instantaneous tripping (without time-delay).

Short time delay G/SI

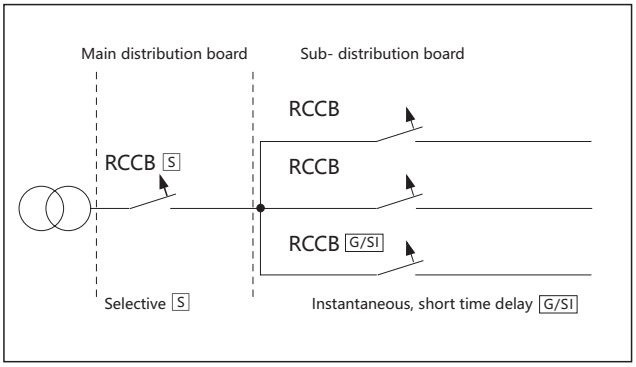
It ensures any tripping at least 10ms.

Selective S

It ensures total discrimination with a nonselective RCD placed downstream.

1.3 Approvals and certificates

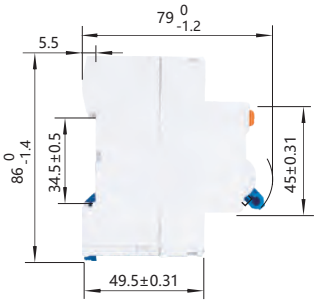
Detailed information, please refer to Certificates Table on the last page.



2. Technical data

	Standard		IEC/EN 61008-1
Electrical features	Type (wave form of the earth leakage sensed)		AC, A, AC-G, A-G, AC-S, A-S, A-SI
	Rated current In	A	25, 40, 63, 80, 100
	Poles		1P+N, 3P+N
	Rated voltage Ue	V	230/400~240/415
	Rated sensitivity I△n	A	0.01for1P+N 25A, 0.03, 0.1, 0.3, 0.5
	Insulation voltage Ui	V	500
	Rated residual making and breaking capacity I△m	A	500 (In=25A/40A), 800(In=80A/100A)
			630 (In=63A)
	Short-circuit current Inc=IΔc	A	6000/10000
	SCPD fuse	A	10000
	break time under I△n	s	≤0.1(Normal type), 10ms~300ms(G type). 150ms~500ms(S type)
	Rated frequency	Hz	50/60
	Rated impulse withstand voltage(1.2/50) Uimp	V	6000
	Dielectric test voltage at ind. Freq. for 1 min	kV	2
	Pollution degree		2
Mechanical features	Electrical life		2, 000
	Mechanical life		2, 000
	Fault current indicator		Yes
	Protection degree		IP20
	Ambient temperature (with daily average≤35℃)	℃	-5...+40
	Storage temperation	℃	-25...+70
Installation	Terminal connection type		Cable/U-type busbar/Pin-type busbar
	Terminal size top/bottom for cable	mm^2	25/35
		AWG	18-3/18-2
	Terminal size top/bottom for busbar	mm^2	10/16
		AWG	18-8/18-5
	Tightening torque	N·m	2.5
		In-lbs.	22
	Mounting		On DIN rail EN 60715 (35mm) by means of fast clip device
	Connection		From top and bottom

3. Overall and mounting dimensions (mm)



NL210 Residual Current Operated Circuit Breaker without over-current protection

1. General

1.1 Function

Control electric circuits.
Protect people against indirect contacts and additional protection against direct contacts.
Protect installations against fire hazard due to insulation faults.
Residual current circuit breakers are used in housing, tertiary sector and industry.

1.2 Selection

Detectable wave form

Type B

Tripping is ensured for sinusoidal AC residual currents pulsed DC residual currents, alternating residual sinusoidal currents up to 1000Hz, pulsating direct residual currents and for smooth direct residual currents, whether applied suddenly or increasing slowly.

Tripping sensitivity

30mA - additional protection against direct contact.
100mA - co-ordinated with the earth system according to the formula IΔn < 50/R, to provide protection against indirect contacts;
300mA - protection against indirect contacts, as well as fire hazard.

Tripping time

Instantaneous

It ensures instantaneous tripping (without time-delay).

1.3 Approvals and certificates

CE, KEMA

1.4 Add-on devices

AX-5 auxiliary contacts
TC-1 terminal cover

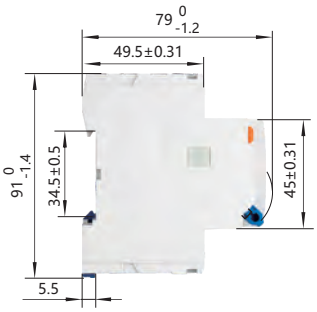
2. Technical data

	Standard		IEC/EN 62423 & IEC/EN 61008-1
Electrical features	Type (wave form of the earth leakage sensed)		B
	Rated current In	A	25, 40, 63
	Poles		1P+N, 3P+N
	Rated voltage Ue	V	1P+N: 230/240 V~; 3P+N: 400/415 V~;
	Rated sensitivity I△n	A	0.03, 0.1, 0.3
	Insulation voltage Ui	V	500
	Rated residual making and breaking capacity I△m	A	500 (In=25A/40A)
			630 (In=63A)
	Short-circuit current Inc=I△c	A	10,000
	SCPD fuse	A	10000
	break time under I△n	s	≤0.1
	Rated frequency	Hz	50
	Rated impulse withstand voltage(1.2/50) Uimp	V	4,000
	Dielectric test voltage at ind. Freq. for 1 min	kV	2
	Pollution degree		2
Mechanical features	Electrical life		2, 000
	Mechanical life		10,000
	Fault current indicator		Yes
	Protection degree		IP20
	Ambient temperature (with daily average≤35℃)	℃	-25...+40
	Storage temperation	℃	-25...+70
Installation	Terminal connection type		Cable/U-type busbar/Pin-type busbar
	Terminal size top/bottom for cable	mm^2	25/35
		AWG	18-3/18-2
	Terminal size top/bottom for busbar	mm^2	10/16
		AWG	18-8/18-5
	Tightening torque	N·m	2.5
		In-lbs.	22
	Mounting		On DIN rail EN 60715 (35mm) by means of fast clip device
	Connection		From top and bottom

3. Overall and mounting dimensions (mm)

1P+N

3P+N



NB1L Residual Current Operated Circuit Breaker with over-current protection (Magnetic)

1. General

1.1 Function

Personnel and fire protection: Cable and line protection against
overload and short-circuits.

1.2 Selection

Rated residual operating current

IΔn ≤30 mA: additional protection in the case of direct contact.

IΔn ≤300 mA: preventative fire protection in the case of ground fault currents.

Tripping class

AC class

Tripping is ensured for sinusoidal,
alternating currents, whether they be quickly applied or slowly increase.

A class

Tripping is ensured for sinusoidal, alternating residual currents as well as for pulsed DC residual currents, whether they be quickly applied or slowly increase.

Tripping curve

B curve (3-5 In) protection and control of the circuits against overloads and short-circuits; protection for
people and big length cables in TN and IT systems.

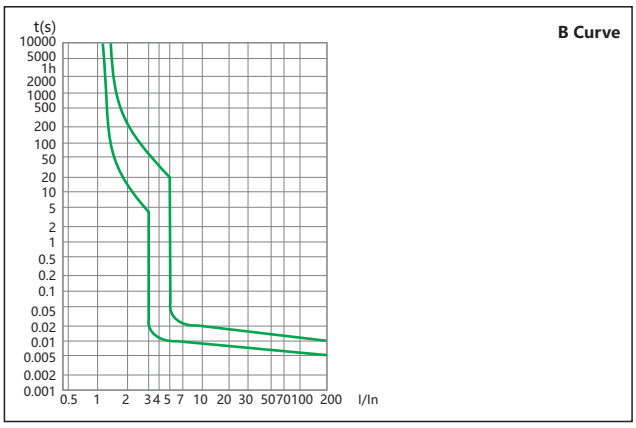
C curve (5-10 In) protection and control of the circuits against overloads and short-circuits; protection for resistive and inductive loads with low inrush current.

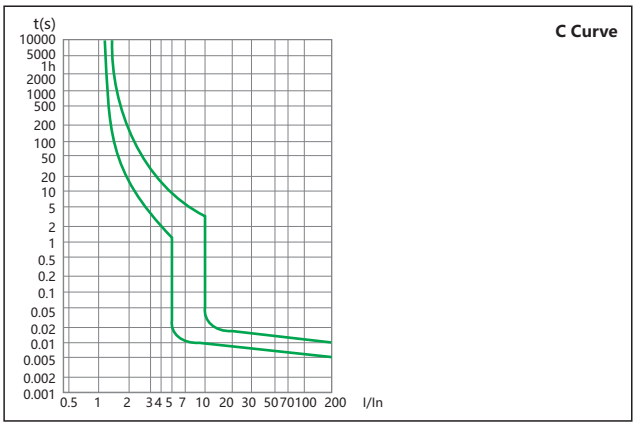
1.3 Approvals and certificates

Detailed information, please refer to Certificates Table on the last page.

2. Technical data

2.1 Curves





2.2

	Standard		IEC/EN 61009-1		
Electrical features	Type (wave form of the earth leakage sensed)		A	AC, A	A
	Thermo-magnetic release characteristic		B, C	B, C	B, C
	Rated current In	A	1, 2, 3, 4, 6, 10, 13, 16, 20, 25	2, 4, 6, 10, 13, 16, 20, 25, 32, 40	6, 10, 13, 16, 20, 25, 32, 40
	Poles		1P+N(N left)	1P+N(N right)	2P
	Rated voltage Ue	V	220/230/240~	220/230/240~	220/230/240~
	Rated sensitivity I△n	A	0.03	0.03, 0.1, 0.3	0.03
	Rated residual making and breaking capacity I△m	A	500	3,000	500
	Rated short-circuit capacity Icn	A	6,000	6,000/10,000	10,000
	Break time under I△n	s	≤0.1		
	Rated frequency	Hz	50/60		
	Rated impulse withstand voltage (1.2/50)Uimp	V	6,000		
	Dielectric TEST voltage at ind. Freq. for 1min	kV	2		
	Insulation voltage Ui	V	500		
	Pollution degree		2		
Mechanical features	Electrical life		2,000		
	Mechanical life		20,000		
	Contact position indicator		Yes		
	Protection degree		IP20		
	Ambient temperature (with daily average≤35℃)	℃	-5...+40		
	Storage temperature	℃	-25...+70		
Installation	Terminal connection type		Cable/U-type busbar/Pin-type busbar		
	Terminal size top/bottom for cable	mm^2	25		
		AWG	18-3		
	Terminal size top/bottom for busbar	mm^2	10		
		AWG	18-8		
	Tightening torque	N·m	2		
		In-lbs.	18		
	Mounting		On DIN rail EN 60715 (35mm) by means of fast clip device		
	Connection		From top and bottom		

2.3 Temperature derating

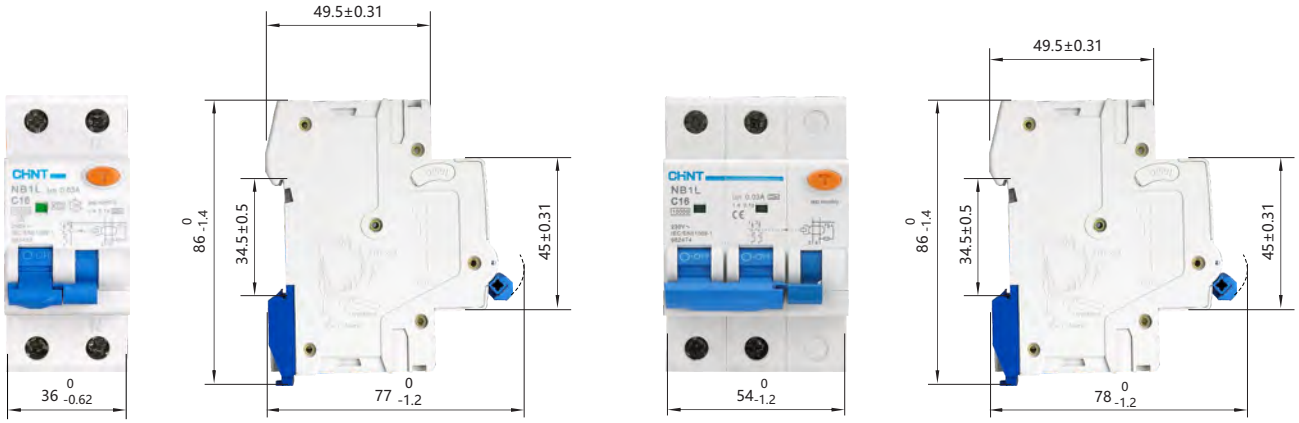
The maximum permissible current in a circuit breaker depends on the ambient temperature where the circuit breaker is placed. Ambient temperature is the temperature inside the enclosure or switchboard in which the circuit breakers are installed.

The reference temperature is 30℃

Temperature	-10℃	0℃	10℃	20℃	30℃	40℃	50℃	60℃
Temperature compensation coefficient of rated current	1.20	1.15	1.10	1.05	1.00	0.95	0.90	0.85

3. Overall and mounting dimensions (mm)

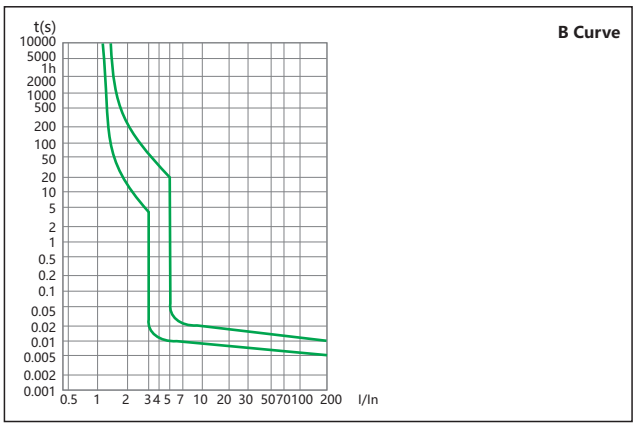
Combined

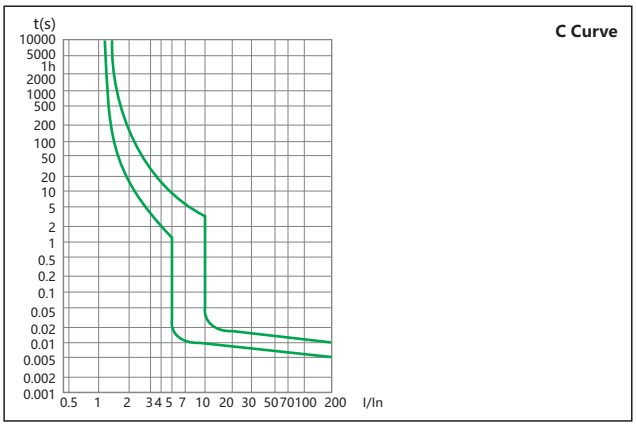


1P+N 2P

2. Technical data

2.1 Curves





2.2

	Standard		IEC/EN 61009-1	
Electrical features	Type (wave form of the earth leakage sensed)		AC, A for NB1L-40 | AC for NB1L-63	
	Thermo-magnetic release characteristic		B, C	
	Rated current In	A	NB1L-40	1, 2, 3, 4, 6, 8, 10, 13, 16, 20, 25, 32, 40
			NB1L-63	50, 63
	Poles		NB1L-40/NB1L-63	1P+N, 2P, 3P, 3P+N, 4P
	Rated voltage Ue	V	230/400~240/415	
	Rated sensitivity I△n	A	0.03, 0.1, 0.3	
	Rated residual making and breaking capacity I△m	A	500 (In≤40A)	
			630 (In > 40A)	
	Rated short-circuit capacity Icn	A	6,000/10,000	
	Break time under I△n	S	≤0.1	
	Rated frequency	Hz	50/60	
	Rated impulse withstand voltage (1.2/50)Uimp	V	6,000	
	Dielectric TEST voltage at ind. Freq. for 1min	kV	2	
	Insulation voltage Ui		500	
	Pollution degree		2	
Mechanical features	Electrical life		2,000	
	Mechanical life		20,000	
	Contact position indicator		Yes	
	Protection degree		IP20	
	Ambient temperature (with daily average≤35℃)	℃	-5...+40	
	Storage temperature	℃	-25...+70	
Installation	Terminal connection type		Cable/U-type busbar/Pin-type busbar	
	Terminal size top/bottom for cable	mm^2	25	
		AWG	18-3	
	Terminal size top/bottom for busbar	mm^2	10	
		AWG	18-8	
	Tightening torque	N·m	2	
		In-lbs.	18	
	Mounting		On DIN rail EN 60715 (35mm) by means of fast clip device	
	Connection		From top and bottom (for combined type)	
			From top (MCB+add-on RCCB block)	

2.3 Temperature derating

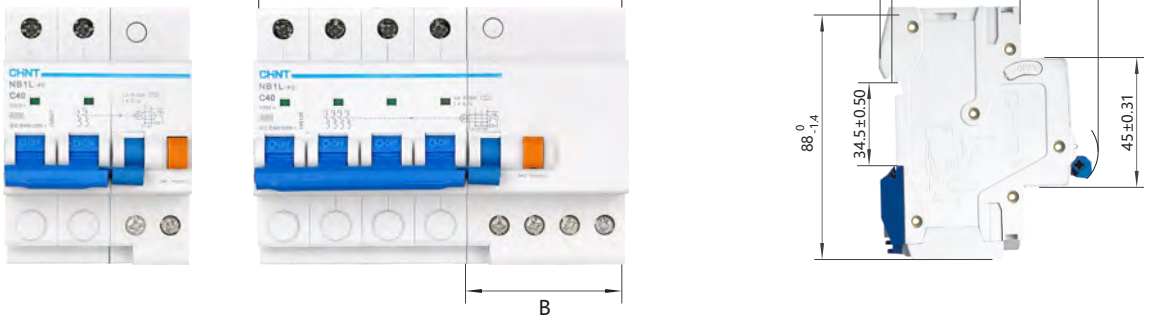
The maximum permissible current in a circuit breaker depends on the ambient temperature where the circuit breaker is placed. Ambient temperature is the temperature inside the enclosure or switchboard in which the circuit breakers are installed.

The reference temperature is 30℃

Temperature	-10℃	0℃	10℃	20℃	30℃	40℃	50℃	60℃
Temperature compensation coefficient of rated current	1.20	1.15	1.10	1.05	1.00	0.95	0.90	0.85

3. Overall and mounting dimensions (mm)

MCB+add-on RCCB block



Number of poles	Overall dimensions A (mm)	
	1~40A	50~63A
1P+N	$45^{0}_{-0.62}$	$54^{0}_{-0.74}$
2P	$63^{0}_{-0.74}$	$72^{0}_{-0.74}$
3P	$108^{0}_{-1.4}$	$117^{0}_{-1.4}$
3P+N	$108^{0}_{-1.4}$	$117^{0}_{-1.4}$
4P	$126^{0}_{-1.6}$	$135^{0}_{-1.6}$
B(mm)		
1P+N	$27^{0}_{-0.52}$	$36^{0}_{-0.62}$
2P	$27^{0}_{-0.52}$	$36^{0}_{-0.62}$
3P	$54^{0}_{-1.20}$	$63^{0}_{-1.2}$
3P+N	$54^{0}_{-1.20}$	$63^{0}_{-1.2}$
4P	$54^{0}_{-1.20}$	$63^{0}_{-1.2}$

DZ158LE
Circuit-Break Incorporating Residual Current Protection

1. General

1.1 Function

Personnel and fire protection
Cable and line protection against overload and short-circuits.

1.2 Selection

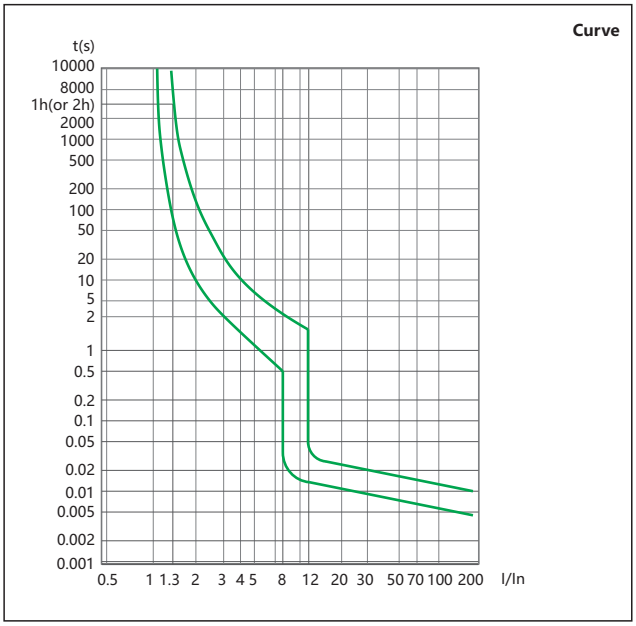
IΔn ≤ 30 mA: additional protection in the case of direct contact.
IΔn ≤300 mA: preventative fire protection in the case of ground fault currents.
AC class – Tripping is ensured for sinusoidal, alternating currents, whether they be quickly applied or slowly increase.

1.3 Approvals and certificates

Detailed information, please refer to Certificates Table on the last page.

2. Technical data

2.1 Curves



2.2

	Standard		IEC/EN 60947-2
Electrical features	Type (wave form of the earth leakage sensed)		AC
	Thermo-magnetic release characteristic		8-12In
	Rated current In	A	63, 80, 100
	Poles		1P+N, 2P, 3P, 3P+N, 4P
	Rated voltage Ue	V	230/400
	Rated sensitivity IΔn	A	0.03, 0.1, 0.3
	Rated residual making and breaking capacity IΔm	A	2,000
	Rated short-circuit capacity Icn	kA	6
	Break time under IΔn	S	≤0.1
	Rated frequency	Hz	50
	Rated impulse withstand voltage (1.2/50)Uimp	kV	4
	Dielectric TEST voltage at ind. Freq. for 1min	kV	1.89
	Insulation voltage Ui	V	500
	Pollution degree		3
Mechanical features	Electrical life		1,500
	Mechanical life		8,500
	Contact position indicator		Yes
	Protection degree		IP20
	Ambient temperature (with daily average≤35℃)	℃	-5...+40
	Storage temperature	℃	-25...+70
Installation	Terminal connection type		Cable
			16~35
	Tightening torque	N·m In-lbs.	3.5 31
	Mounting Connection		On DIN rail EN 60715 (35mm) by means of fast clip device From top

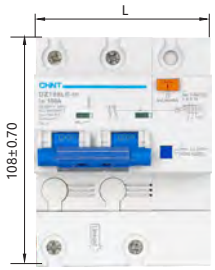
Rated current In (A)	Temperature compensation coefficient under various operational temperature							
	-10℃	0℃	10℃	20℃	30℃	40℃	50℃	60℃
63	1.275	1.215	1.15	1.075	1.00	0.915	0.825	0.735
80	1.27	1.205	1.135	1.27	1.00	0.925	0.845	0.755
100	1.275	1.21	1.135	1.075	1.00	0.925	0.845	0.755

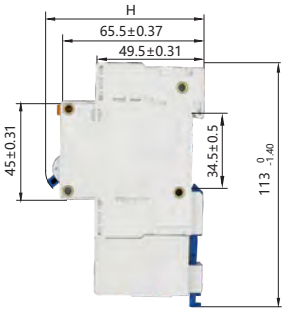
2.3 Temperature derating

The maximum permissible current in a circuit breaker depends on the ambient temperature where the circuit breaker is placed. Ambient temperature is the temperature inside the enclosure or switchboard in which the circuit breakers are installed.

The reference temperature is 30℃

3. Overall and mounting dimensions (mm)





Number of poles	1P+N	2P	3P	3P+N	4P
L (mm)	$54^{0}_{-0.74}$	$81^{0}_{-0.87}$	$108^{0}_{-1.40}$	$108^{0}_{-1.40}$	$135^{0}_{-1.60}$
H (mm)	$73.5^{0}_{-1.2}$	$78.5^{0}_{-1.2}$	$78.5^{0}_{-1.2}$	$78.5^{0}_{-1.2}$	$78.5^{0}_{-1.2}$

NB2LE Residual Current Operated Circuit Breaker

1. General

The NB2LE residual current operated circuit breakers are suitable for lines with AC 50/60Hz, rated voltage 240V, rated current up to 40A and for purposes of residual current protection, overload and short circuit protection. When any personal electric shock occurs or the circuit leakage current exceeds the predetermined value, the residual current operated circuit breaker can automatically cut off the power supply in a very short period of time, so that the safety of persons and electrical equipment can be protected. The residual current operated circuit breaker can be used for infrequent conversion of lines under normal conditions, and applied under occasions such as industrial, and commercial, high-rise buildings and residential houses.

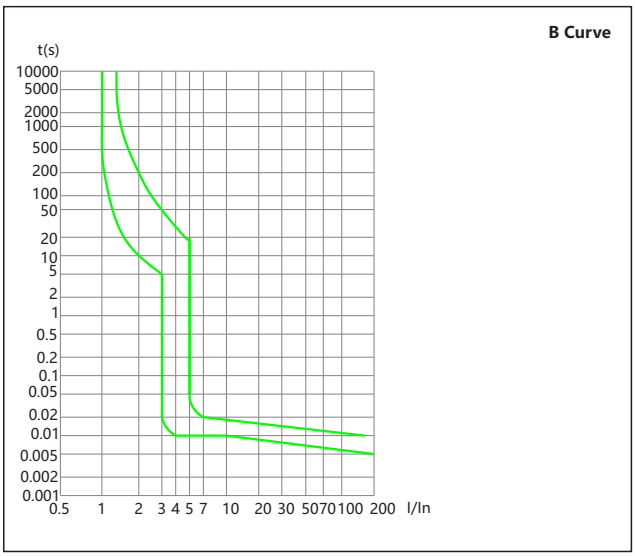
2. Type designation

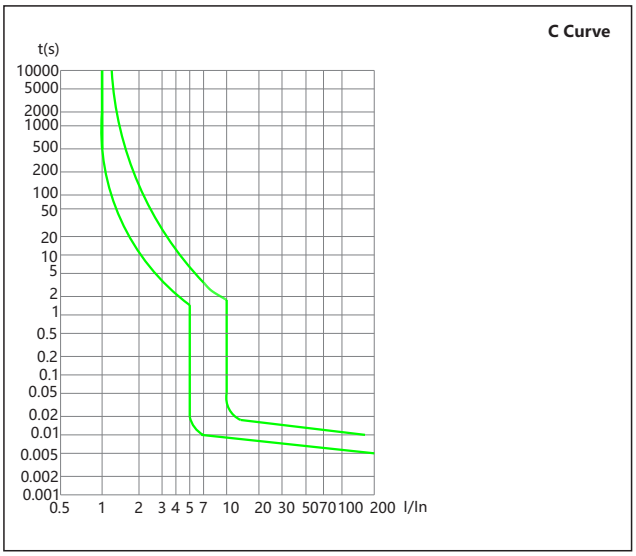
N B 2 LE / □-□

- Rated residual operating current
- Instantaneous trip type and rated current (A)
- Function Code (electronic residual current)
- Design sequence No.
- Miniature Circuit Breaker
- Company Code

3. Technical data

3.1 The tripping characteristic curves are as shown in Fig. 1.





3.2

	Standard		IEC/EN 61009-1
Main Specifications	Rated current In	A	6, 10, 16, 20, 25, 32, 40
	Classified by Type of Instantaneous Tripping		Type B: (3 ~ 5) In,Type C: (5 ~ 10) In
	Poles		1P + N
	Type(wave form of the earth leakage sensed)		Type AC, Type A
Technical Parameters	Rated voltage Ue	V	AC230/240
	Frame size rated current Inm	A	40
	Rated residual operating current I Δ n	A	0.03
	Rated residual non-operating current I Δ no	A	0.015
	Rated short-circuit breaking capacity Icn	A	6000
	Rated residual making and breaking capacity I Δ m	A	3000
	Electrical life		2,000
	Mechanical life		2,000
	Rated impuse withstand voltage Uimp	V	6,000
	Connection		From top and bottom

3.3 The residual current breaking times

In(A)	IΔn(A)	Breaking time when the residual current assumes the following values (s)				
		IΔn	2 IΔn	5 IΔn	5A,10A,20A,50A,100A,200A,500A[a]	IΔt[b]
6~40	0.03	0.1	0.05	0.04	0.04	0.04

a. For tests of 5A,10A,20A,50A,100A,200A and 500A, the current values beyond the lower limit of over-current instantaneous tripping are not tested.
b. Tests are done when I△t is equal to the lower limit current of over-current instantaneous tripping of type B and type C.

3.4 The over-current protection characteristics

No.	Rated current In (A)	Initial state	Test current (A)	Specified time (t)	Expected result	Remarks
a	6~40	Cold state	1.13In	t≥1h	Non-tripping	
b		Immediately after sequence a	1.45In	t < h	Tripping	Increase to the specified current within 5s after test item a.
c		Cold state	2.55In	1s < t < 60s	Tripping	
d		Cold state	3In	t≥0.1s	Non-tripping	Type B
			5In	t < 0.1s	Tripping	
			5In	t≥0.1s	Non-tripping	Type C
			10In	t < 0.1s	Tripping	

4. Overall and mounting dimensions (mm)

The product shall be mounted using mounting rail of 35-7.5 section steel.
The overall and mounting dimensions are as shown in Fig. 2 and Fig. 3.

Fig. 2 Overall and installation dimensions

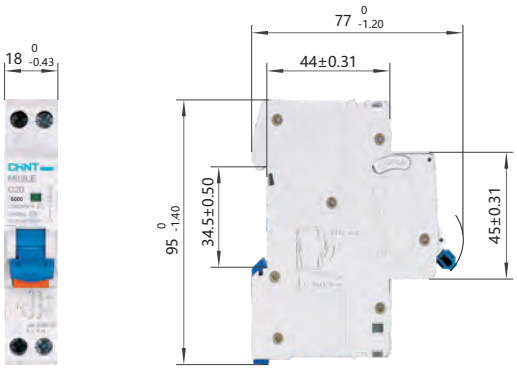
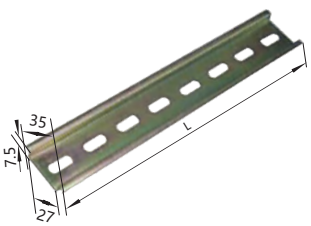


Fig. 3 Mounting rail size



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5. Ordering information

5.1 When ordering, the following information must be indicated:

a. Product type and description, such as: NB2LE residual current operated circuit breaker;
b. Rated current, such as: 25A;
c. Instantaneous tripping type, such as: Type C;
d. Rated residual operating current, such as: 0.03A
e. Operating conditions when containing DC component, such as: Type A;
f. Ordering quantity, such as: 90 units.

5.2 Ordering examples: NB2LE residual current operated circuit breaker C25, 0.03A, A type, 90 units.

NB310L Residual Current Operated Circuit Breaker with over-current protection (Magnetic)

1. General

1.1 Function

Personnel and fire protection: Cable and line protection against overload and short-circuits.

1.2 Selection

Rated residual operating current

IΔn = 30mA,300mA: additional protection in the case of direct contact.

Tripping class

A and AC class

A class tripping is ensured for sinusoidal, alternating residual currents as well as for pulsed DC residual currents, whether they be quickly or slowly increase.

AC class tripping is ensured for sinusoidal, alternating residual currents, whether they be quickly or slowly increase.

Tripping curve

B curve (3 In-5 In) protection and control of the circuits against overloads and short-circuits; protection for people and big length cables in TN and IT systems.

C curve (5 In-10 In) protection and control of the circuits against overloads and short-circuits; protection for resistive and inductive loads with low inrush current.

1.3 Approvals and certificates

CE/CB/KEMA

1.4 Add-on devices

XF9 auxiliary contacts

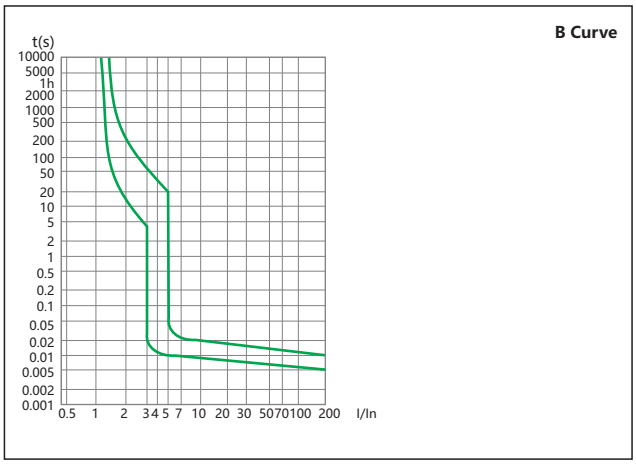
S9 shunt release

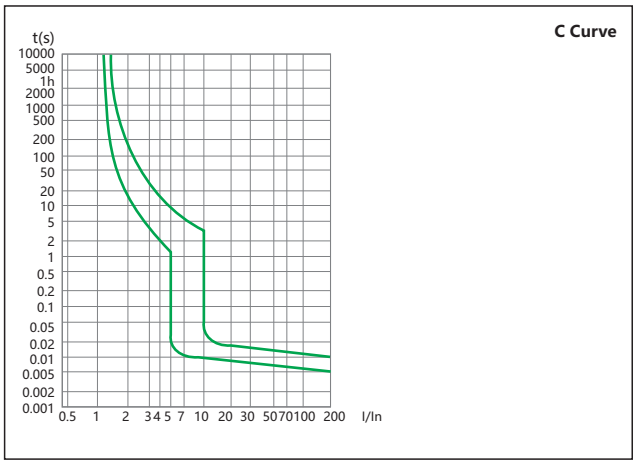
V9 under voltage release

OVT-1 over voltage release

2. Technical data

2.1 Curves





2.2

	Standard		IEC/EN 61009-1	
Electrical features	Type (wave form of the earth leakage sensed)		A	A, AC
	Thermo-magnetic release characteristic		B, C	
	Rated current In	A	6, 10, 13, 16, 20, 25, 32	6, 10, 13, 16, 20, 25, 32, 40
	Poles		2P	3P+N
	Rated voltage Ue	V	230/240	230/400
	Rated sensitivity IΔn	A	0.03	0.03,0.3
	Rated residual making and breaking capacity IΔm	A	3,000	
	Rated short-circuit capacity Icn	A	6,000	
	Break time under IΔn	s	≤0.1	
	Rated frequency	Hz	50/60	
	Rated impulse withstand voltage (1.2/50)Uimp	V	4,000	4,000
	Dielectric TEST voltage at ind. Freq. for 1min	kV	2	
	Insulation voltage Ui	V	500	
	Pollution degree		2	
Mechanical features	Electrical life		2,000	
	Mechanical life		20,000	10,000
	Contact position indicator		Yes	
	Protection degree		IP20	
	Ambient temperature (with daily average≤35℃)	℃	-25...+40	
	Storage temperature	℃	-25...+70	
Installation	Terminal connection type		Cable/U-type busbar/Pin-type busbar	
	Terminal size top/bottom for cable	mm^2	25	
		AWG	18-3	
	Terminal size top/bottom for busbar	mm^2	10	
		AWG	18-8	
	Tightening torque	N·m	2	
		In-lbs.	18	
	Mounting		On DIN rail EN 60715 (35mm) by means of fast clip device	
	Connection		From top and bottom	

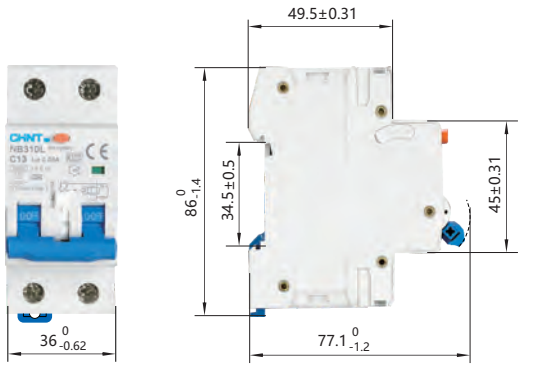
2.3 Temperature derating

The maximum permissible current in a circuit breaker depends on the ambient temperature where the circuit breaker is placed. Ambient temperature is the temperature inside the enclosure or switchboard in which the circuit breakers are installed.

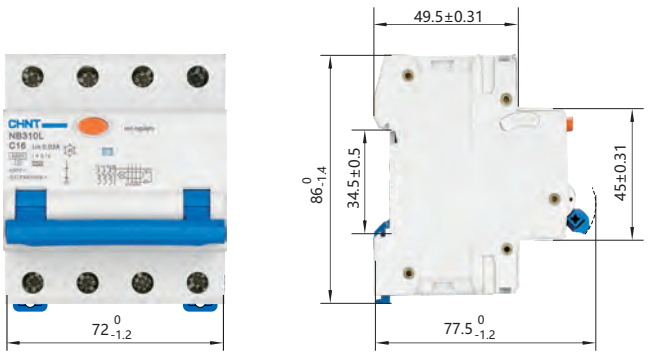
The reference temperature is 30℃

Temperature	-10℃	0℃	10℃	20℃	30℃	40℃	50℃	60℃
Temperature compensation coefficient of rated current	1.20	1.15	1.10	1.05	1.00	0.95	0.90	0.85

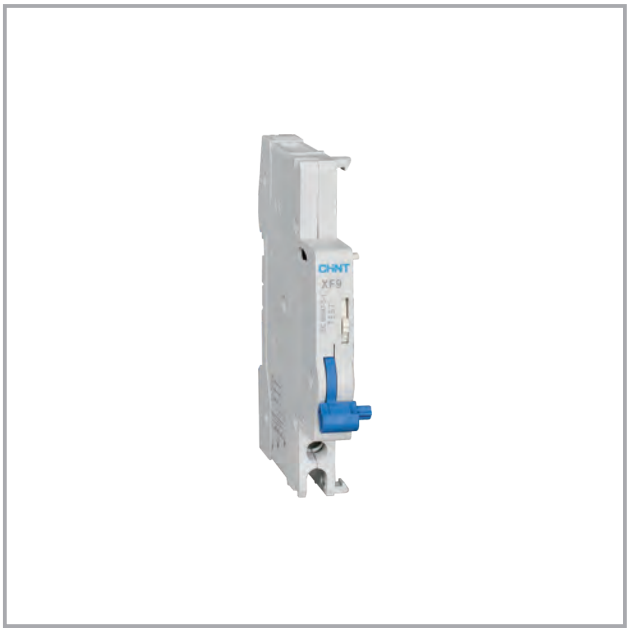
3. Overall and mounting dimensions (mm)



2P



3P+N



XF9 (Auxiliary Contact for NB1, NBH8, NB1L, NBH8LE)

1. General

Indication of the position of the device's contacts.
To be mounted on the left side of the MCBs/RCBOs thanks to the special pin.

CE

2. Technical data

	Standard		IEC/EN 60947-5-1	
Electrical features	Rated value		UN (V)	In (A)
			AC415 50/60Hz	3
			AC240 50/60Hz	6
			DC130	1
			DC48	2
			DC24	6
	Configurations		1N/O+1N/C	
	Rated impulse withstand voltage (1.2/50)Uimp	V	4,000	
	Dielectric TEST voltage at ind. Freq. for 1min	kV	2	
	Insulation voltage Ui	V	500	
	Pollution degree		2	
Mechanical features	Electrical life		6,050	
	Mechanical life		10,000	
	Protection degree		IP20	
	Ambient temperature (with daily average≤35℃)	℃	-5...+40	
	Storage temperature	℃	-25...+70	
Installation	Terminal connection type		Cable	
	Terminal size top/bottom for cable	mm^2	2.5	
		AWG	18-14	
	Tightening torque	N·m	0.8	
		In-lbs.	7	

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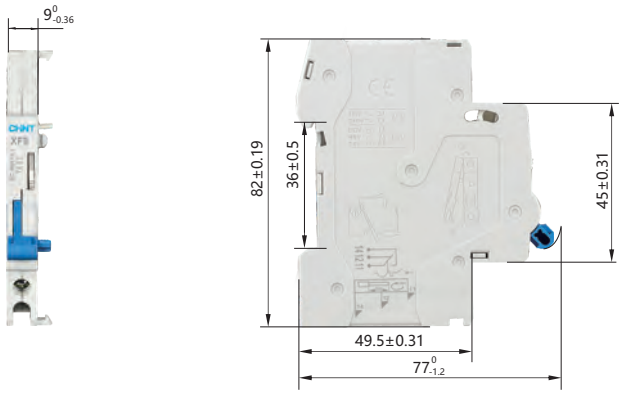
3. Overall and mounting dimensions (mm)



XF9J (Alarm Auxiliary Contact for NB1, NBH8, NB1L, NBH8LE)

1. General

1.1 Indication of the position of the device's contacts only after the automatic release of the MCBs and RCBOs due to an overload or a short-circuit.

1.2 To be mounted on the left side of the MCBs/RCBOs thanks to the special pin.

CE

2. Technical data

	Standard		IEC/EN 60947-5-1	
Electrical features	Rated value		UN (V)	In (A)
			AC415 50/60Hz	3
			AC240 50/60Hz	6
			DC130	1
			DC48	2
			DC24	6
	Configurations		1N/O+1N/C	
	Rated impulse withstand voltage (1.2/50)Uimp	V	4,000	
	Dielectric TEST voltage at ind. Freq. for 1min	kV	2	
	Insulation voltage Ui	V	500	
	Pollution degree		2	
Mechanical features	Electrical life		6,050	
	Mechanical life		10,000	
	Protection degree		IP20	
	Ambient temperature (with daily average≤35℃)	℃	-5...+40	
	Storage temperature	℃	-25...+70	
Installation	Terminal connection type		Cable	
	Terminal size top/bottom for cable	mm^2	2.5	
		AWG	18-14	
	Tightening torque	N·m	0.8	
		In-lbs.	7	

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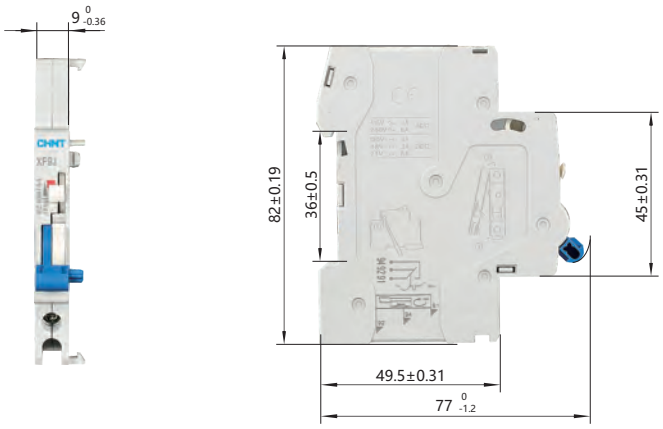
3. Overall and mounting dimensions (mm)



S9
(Shunt Release for NB1, NBH8, NB1L, NBH8LE)

1. General

1.1 Remote opening of the device when a voltage is applied.

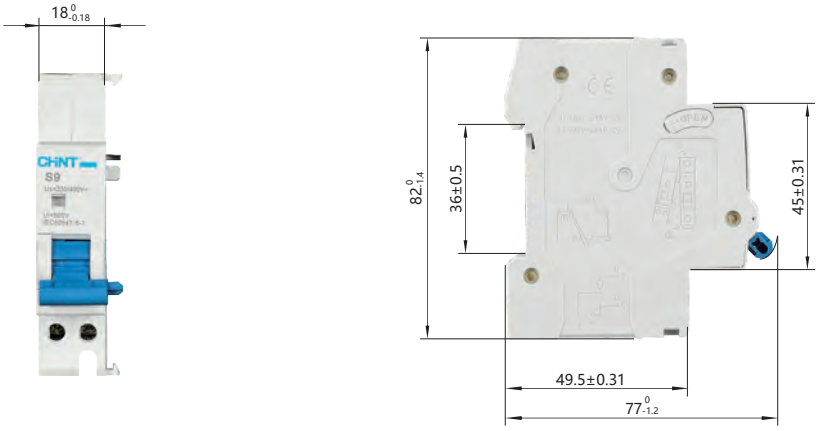
1.2 To be mounted on the left side of the MCBs/RCBOs thanks to the special pin.

CE

2. Technical data

	Standard		IEC/EN 60947-5-1
Electrical features	Rated voltage Us	V	AC230/400 50/60Hz
			AC/DC24
			AC/DC48
	Rated impulse withstand voltage (1.2/50)Uimp	V	4,000
	Dielectric TEST voltage at ind. Freq. for 1min	kV	2
	Insulation voltage Ui	V	500
	Pollution degree		2
Mechanical features	Electrical life		4,000
	Mechanical life		4,000
	Protection degree		IP20
	Ambient temperature (with daily average≤35℃)	℃	-5...+40
	Storage temperature	℃	-25...+70
Installation	Terminal connection type		Cable
	Terminal size top/bottom for cable	mm^2	2.5
		AWG	18-14
	Tightening torque	N·m	0.8
		In-lbs.	7

3. Overall and mounting dimensions (mm)



V9
(Under Voltage Release for NB1, NBH8, NB1L,NBH8LE)

1. General

1.1 Protection of the load in the event of a voltage drop (between 70% and 35% of its rated value)

1.2 Positive safety (device's tripping when the voltage is disconnected) emergency stop by means of a button.

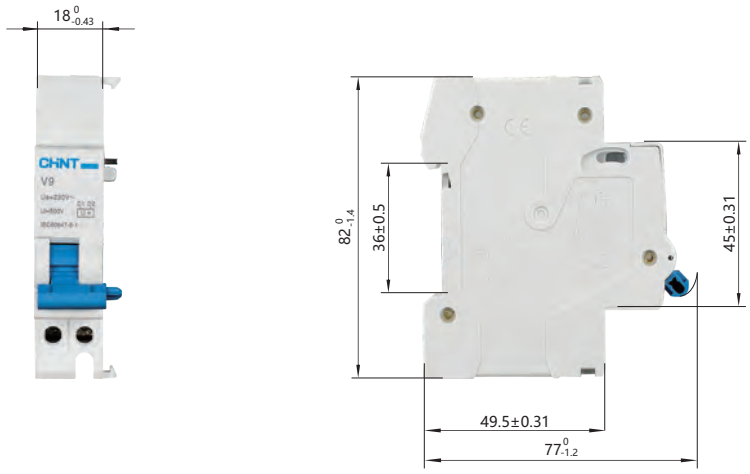
1.3 To be mounted on the left side of the MCBs/RCBOs thanks to the special pin.

CE

2. Technical data

	Standard		IEC/EN 60947-5-1
Electrical features	Rated voltage Us	V	AC230 50/60Hz
	Optional voltage of release		70-35%Ue, reliable operation
			< 35%Ue, prevent breaker from making
			85~110%Ue, reliable operation
	Rated impulse withstand voltage (1.2/50)Uimp	V	4,000
	Dielectric TEST voltage at ind. Freq. for 1min	kV	2
	Insulation voltage Ui	V	500
	Pollution degree		2
Mechanical features	Electrical life		4,000
	Mechanical life		4,000
	Protection degree		IP20
	Ambient temperature (with daily average≤35℃)	℃	-5...+40
	Storage temperature	℃	-25...+70
Installation	Terminal connection type		Cable
	Terminal size top/bottom for cable	mm^2	2.5
		AWG	18-14
	Tightening torque	N·m	0.8
		In-lbs.	7

3. Overall and mounting dimensions (mm)



AX-1 (Auxiliary Contact for DZ158, DZ158LE)

1. General

1.1 Indication of the position of the device's contacts.

1.2 To be mounted on the left side of the MCBs/RCBOs thanks to the special pin.

CE

2. Technical data

	Standard		IEC/EN 60947-5-1	
Electrical features	Rated voltage Us	V	Un (V)	In (A)
			AC415 50/60Hz	3
			DC125	1
	Configurations		1N/O+1N/C	
	Rated impulse withstand voltage (1.2/50)Uimp	V	4,000	
	Dielectric TEST voltage at ind. Freq. for 1min	kV	2	
	Insulation voltage Ui	V	500	
	Pollution degree		2	
Mechanical features	Electrical life		6,050	
	Mechanical life		10,000	
	Protection degree		IP20	
	Ambient temperature (with daily average≤35℃)	℃	-5...+40	
	Storage temperature	℃	-25...+70	
Installation	Terminal connection type		Cable	
	Terminal size top/bottom for cable	mm^2	2.5	
		AWG	18-14	
	Tightening torque	N·m	0.8	
		In-lbs.	7	

3. Ordering information

Model	Order Code
AX-1	985483

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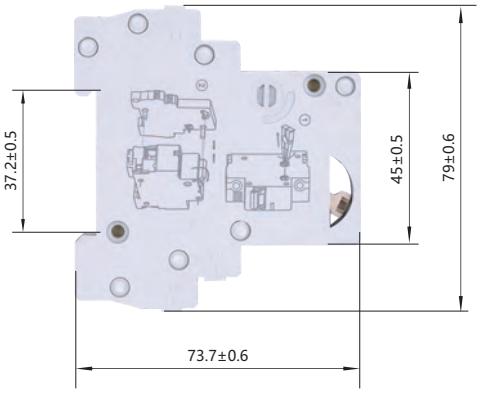
4. Overall and mounting dimensions (mm)



AX-5
Auxiliary Contact

1. Scope of Application

AX-5 auxiliary contact is mainly used in the circuit of AC 50/60Hz, rated heating current 6A, rated voltage AC 415V or DC 130V; assembled with NL1, it is used for distant circuit breaker on/off signal indication.

Conforming standard: GB/T 14048.5 , IEC 60947-5-1, accredited through CE certification.

2. Model and Meanings

AX - 5

Design No

Auxiliary contact

CE

3. Main Parameters and Technical Performance

3.1 Rated working current under different rated voltages

AC-12: AC415V/3A, AC240V/6A

DC-12: DC130V/1A, DC48V/2A, DC24V/6A

3.2 Life

The working life of auxiliary contact is not lower than 10,000 operations.

4. Main Parameters and Technical Performance

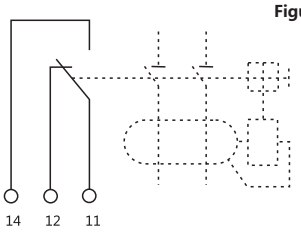
4.1Ambient temperature:-35 ºC ~+70 ºC

4.2 The atmosphere condition:≤95%

4.3 Pollution degree: II

4.4 Altitude: ≤2000m

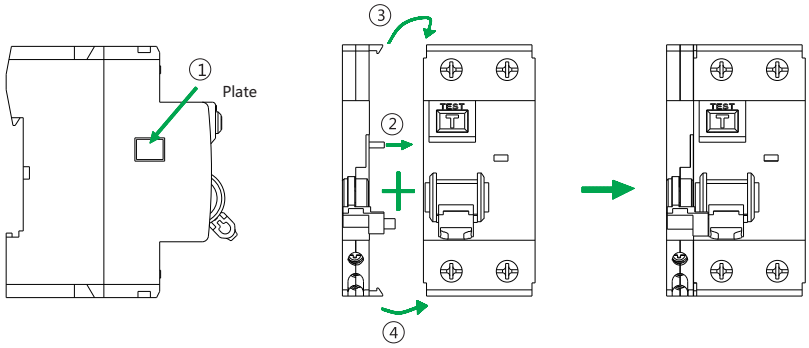
Figure 1 wiring diagram



5. Product assembly and installation

5.1 AX-5 auxiliary contact is a kind of accessories, and can only function after being assembled with the NL1. The assembly and disassembly diagrams are shown below.

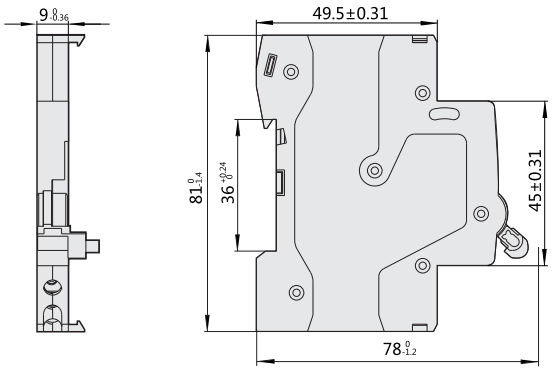
Figure 2



5.2 Remove left cover plate of circuit breaker

6. overall and mounting Dimensions (mm)

Figure 3



7. Ordering information

7.2 Types and names of product, for example， AX-5 auxiliary contact.

7.2 Quantity on order，for example，50u nits.

7.3 Example for ordering: AX-5 auxiliary contact, 50units

NH2 Switch Disconnector

1. General

1. 1 In the open position, It complies with the requirements of the isolating function.

1.2 It is designed match DZ series MCBs/RCBOs.

1.3 Approvals and certificates
Detailed information, please refer to Certificates Table on the last page.

2. Technical data

	Standard		IEC/EN 60947-3
Electrical features	Rated voltage Ue	V	230/400
	Rated current Ie	A	32, 63, 100,125
	Rated frequency	Hz	50/60
	Rated impulse withstand voltage (1.2/50)Uimp	V	4,000
	Rated short-time withstand current Icw		12Ie, 1s
	Rated making and breaking capacity		3Ie, 1.05Ue, cosΦ=0.65
	Rated short circuit making capacity		20Ie, t=0.1s
	Dielectric test voltage at ind. Freq. for 5s	kV	1.89
	Insulation voltage Ui	V	500
	Pollution degree		2
	Uilization category		AC-22A
Mechanical features	Electrical life		1,500
	Mechanical life		8,500
	Protection degree		IP20
	Ambient temperature (with daily average≤35℃)	℃	-5...+40
	Storage temperature	℃	-25...+70
Installation	Terminal connection type		Cable/Pin-type busbar
	Terminal size top/bottom for cable	mm^2	50
		AWG	18-2
	Terminal size top/bottom for busbar	mm^2	25
		AWG	18-3
	Tightening torque	N·m	2.5
		In-lbs.	22
	Connection		From top and bottom

Rated current	Screw size	Tightening torque	Copper cross-sectional area
32A, 63A	M5	2.0 N.m	32A: $6mm^2$; 63A: 16 mm^2
100A, 125A	M7	3.5N.m	100A: $35mm^2$; 125A: 50 mm^2

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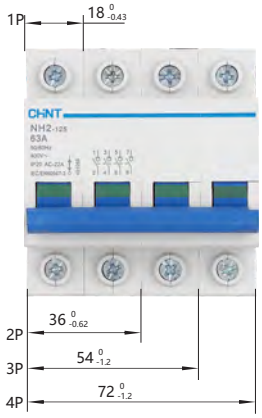
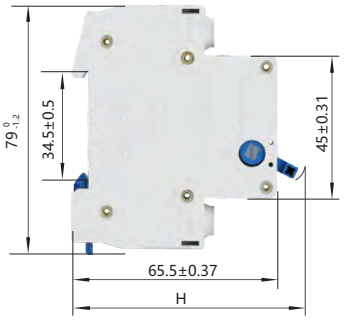
3. Overall and mounting dimensions (mm)





Poles	1P	2P~4P
H (mm)	74 0 -1.2	77 0 -1.2

NH4 Switch Disconnector

1. General

1.1 In the open position, It complies with the requirements of the isolating function.

1.2 It is designed match NB series MCBs/RCBOs.

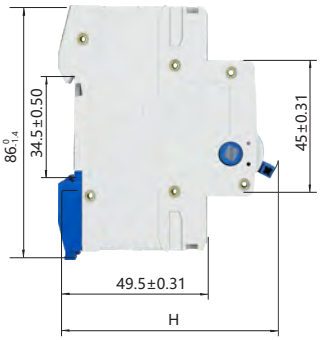
1.3 Approvals and certificates
Detailed information, please refer to Certificates Table on the last page.

2. Technical data

	Standard		IEC/EN 60947-3
Electrical features	Rated voltage Ue	V	240/415
	Rated current Ie	A	32, 40, 63, 80, 100, 125
	Rated frequency	Hz	50/60
	Rated impulse withstand voltage (1.2/50)Uimp	V	4,000
	Rated short-time withstand current Icw		12Ie, 1s
	Rated making and breaking capacity		3Ie, 1.05Ue, cosΦ=0.65
	Rated short circuit making capacity		20Ie, t=0.1s
	Dielectric test voltage at ind. Freq. for 5s	kV	1.89
	Insulation voltage Ui	V	500
	Pollution degree		2
	Uilization category		AC-22A
Mechanical features	Electrical life		1,500
	Mechanical life		8,500
	Protection degree		IP20
	Ambient temperature (with daily average≤35℃)	℃	-5...+40
	Storage temperature	℃	-25...+70
Installation	Terminal connection type		Cable/Pin-type busbar/U-type busbar
	Terminal size top/bottom for cable	mm^2	50
		AWG	18-1/0
	Terminal size top/bottom for busbar	mm^2	35
		AWG	18-2
	Tightening torque	N·m	2.5
		In-lbs.	22
	Connection		From top and bottom

I

3. Overall and mounting dimensions (mm)



Number of poles	1P	2P~4P
H (mm)	74 0 -1.2	77 0 -1.2

NZK1-32 Change-over Switch

1. General

1.1 Certificates: KEMA;

1.2 Electric ratings: AC 50/60Hz;
rated voltage up to 250V, rated current 32A;

1.3 Standard: IEC60669-1

2. Operating conditions

2.1 Temperature:-5℃~+40℃;
the average value shall not exceed +35℃

2.2 Altitude: ≤2000m;

2.3 Air conditions:
At mounting site, relative humidity not exceed 50% at the max temperature of +40℃, higher relative humidity is allowable under lower temperature. For example, RH could be 90% at +20℃, special measures should be taken to occurrence of dews.

2.4 Mounting conditions:
Inclination between the mounting plane and the vertical plane should not exceed ±5°

2.5 Assemble with TH35-7.5 steel mounting rail

3. Type designation

NZK1-32

- Rated current of frame size (A)
- Design SN (1: Three-way switch)
- Change-over Switch
- Corporate Characteristic Code

4. Technicall data

4.1 Poles: 1P, 2P

4.2 Rated frequency: 50Hz/60Hz;

4.3 Rated operating current Ie: 32A;

4.4 Rated voltage Ue: 250V;

4.5 Rated making and breaking capacity:
1.1Ue; 1.25Ie; COS =0.3±0.05; 200 times

4.6 Operational performance:
$Ue_0^{+5\%}$; Ie; COS =0.6±0.05; 10000 times

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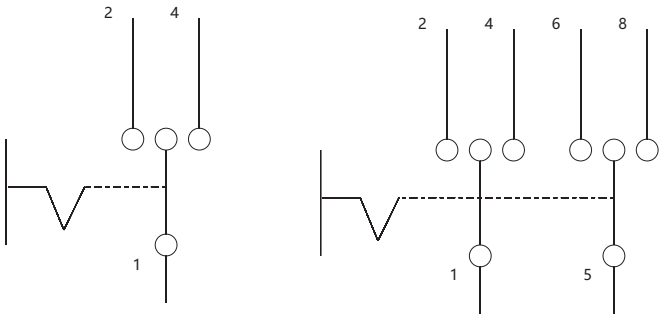
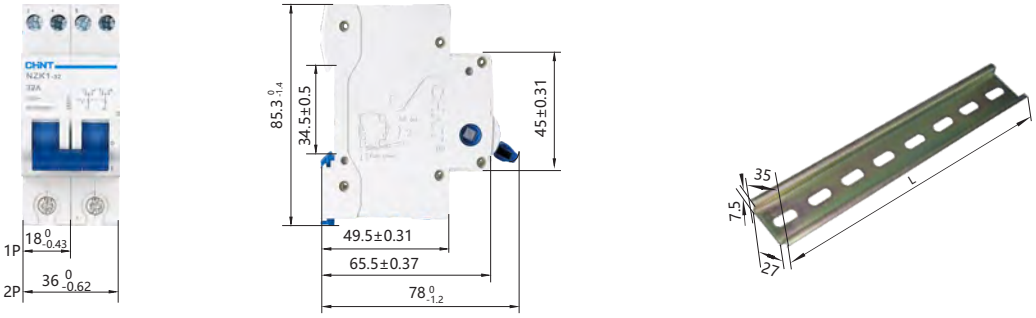
5. Circuit diagram



NZK1-32/1 NZK1-32/2

6. Overall and mounting dimensions (mm)

Mounting Rail Dimensions



7. Installation and usage

7.1 Prior to installation, check whether the switch symbol complies with the operating conditions.

7.2 As shown, snap into the mounting rail.
Contact 1-2 is closed when the handle is at position I, and contact 1-2, 1-4 are opened when the handle is at position "O", contact 1-4 is closed when the handle is at position Ⅱ.

7.3 Before turning the power ON,
operate the switch several times to ensure that it is flexible and reliable, without any delay.

7.4 The switch must be protected against rain during usage, storage and transportation, etc.

8. Ordering information

8.1 Indicate the following order information:
a) Product model and name, e.g. Change-over switch NZK1-32
b) Number of poles, e.g. 2P
c) Quantity of order, e.g. 100 units

8.2 Example:
e.g. Change-over switch NZK1-32/2 100 units

NZK2-32 Change-over Switch

1. General

1.1 Certificates: KEMA;

1.2 Electric ratings: AC 50/60Hz;
rated voltage up to 250V, rated current 32A;

1.3 Standard: IEC60669-1

2. Operating conditions

2.1 Temperature:-5℃~+40℃;
the average value shall not exceed +35℃

2.2 Altitude: ≤2000m;

2.3 Air conditions:
At mounting site, relative humidity not exceed 50% at the max temperature of +40℃, higher relative humidity is allowable under lower temperature. For example, RH could be 90% at +20℃, special measures should be taken to occurrence of dews.

2.4 Mounting conditions:
Inclination between the mounting plane and the vertical plane should not exceed ±5°

2.5 Assemble with TH35-7.5 steel mounting rail

3. Type designation

NZK2-32

- Rated current of frame size (A)
- Design SN (2: Two-way switch)
- Change-over Switch
- Corporate Characteristic Code

4. Technicall data

4.1 Poles: 1P, 2P

4.2 Rated frequency: 50Hz/60Hz;

4.3 Rated operating current Ie: 32A;

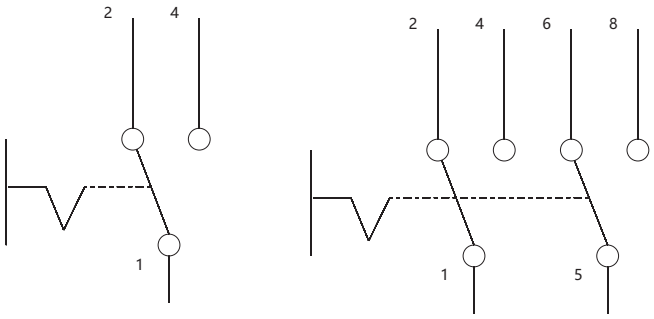
4.4 Rated voltage Ue: 250V;

4.5 Rated making and breaking capacity:
1.1Ue; 1.25Ie; COSΦ=0.3±0.05; 200 times

4.6 Operational performance:
$Ue_0^{+5\%}$; Ie; COSΦ=0.6±0.05; 10000 times

I

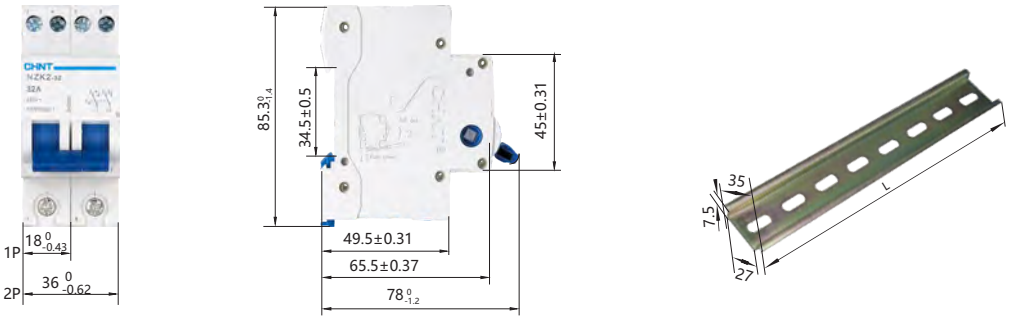
5. Circuit diagram



NZK2-32/1 NZK2-32/2

6. Overall and mounting dimensions (mm)

Mounting Rail Dimensions



7. Installation and usage

7.1 Prior to installation, check whether the switch symbol complies with the operating conditions.

7.2 As shown, snap into the mounting rail.
Contact 1-2 is closed when the handle is at position I, and contact 1-4 is opened, contact 1-4 is closed when the handle is at position Ⅱ, and contact 1-2 is opened.

7.3 Before turning the power ON, operate the switch several times to ensure that it is flexible and reliable, without any delay.

7.4 The switch must be protected against rain during usage, storage and transportation, etc.

8. Ordering information

8.1 Indicate the following order information:
a) Product model and name, e.g. Change-over switch NZK2-32
b) Number of poles, e.g. 2P
c) Quantity of order, e.g. 100 units

8.2 Example:
e.g. Change-over switch NZK2-32/2 100 units

NU6-Ⅱ
Low-voltage Surge Arrester

1. General

1.1 Certificates: international certificates are under proceeding;

1.2 Number of poles: 1, 2,3, 4;

1.3 Electric ratings: 230/400V, AC50Hz;

1.4 Application: Protect electric system and on-loading electrical apparatus from thunder and instantaneous over-voltage;

1.5 Standard: IEC 61643-1, EN 61643-11

CE

2. Technical data

Model	Max. continuous operational voltage Uc (V~)	Level of protection Up (kV)	Maximum discharge current Imax (8/20μs) (kA)	Nominal discharge current In (8/20μs) (kA)	Mounting category of protected apparatus
NU6-Ⅱ	385	1.8	40	15	Ⅱ, Ⅲ
	460	2.0			Ⅱ, Ⅲ
NU6-Ⅱ	385	1.8	60	25	Ⅱ, Ⅲ
	460	2.0			Ⅱ, Ⅲ
NU6-Ⅱ	385	1.8	100	40	Ⅱ, Ⅲ
	460	2.0			Ⅲ

Auxiliary	Configurations	Rated voltage Un(V)	Rated current In(A)
contact	INO+INC	AC125	3

3. How to select surge protectors

a. The voltage should be ≤Uc;
b. Up < maximum impulse withstands;
c. Different protectors should be selected
according to various grounding system and protection mode.

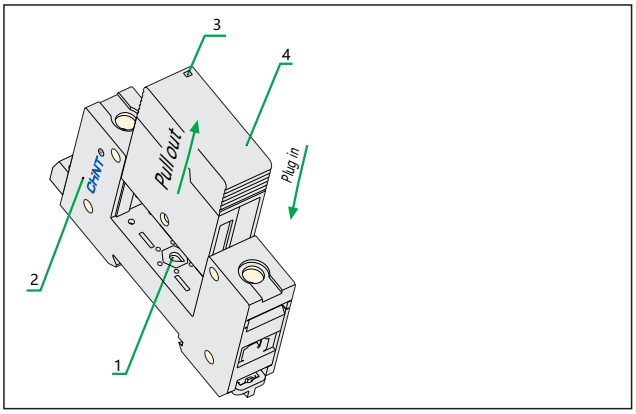
Model	Max. continuous operational voltage Uc (V~)	Applicable grounding system	Protection mode	Circuits	Number of poles
NU6-Ⅱ	385	TN-S	L-PE, N-PE	1 phase, 3 phase 5 wire	1,2,3,4
		TN-C	L-PE	1 phase, 3 phase 4 wire	1,2,3
		TT	L-PE, N-PE	1 phase, 3 phase 4 wire	1,2,3,4
	460	TN-S	L-PE, N-PE	1 phase, 3 phase 5 wire	1,2,3,4
		TN-C	L-PE	1 phase, 3 phase 4 wire	1,2,3
		IT	L-PE	1 phase, 3 phase 3 /4 wire	1,2,3,4
		TT	L-PE, N-PE	1 phase, 3 phase 4 wire	1,2,3,4

4. Functions

4.1 The product is composed of two independent components: removable protective module 4 and base 2;

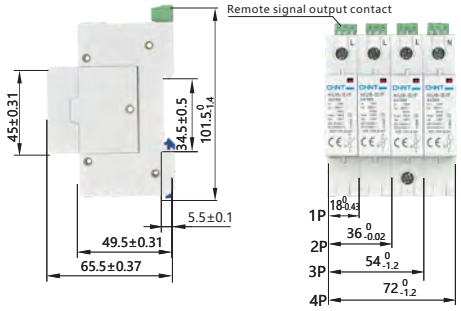
4.2 When the product is damaged, the part 3 will indicate; please replace the removable protective module 4 at once and there is no need to cutoff the circuits;

4.3 The part 1 is for maximum continuous operational voltage indication as well as avoiding replacement with wrong module.

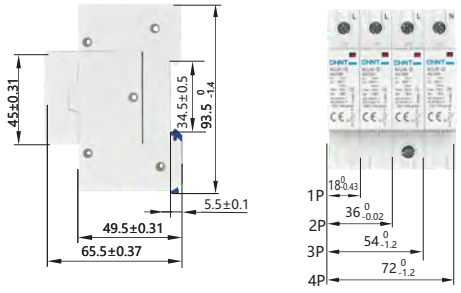


NU6-Ⅱ/F (40, 60kA) with remote signal output contact

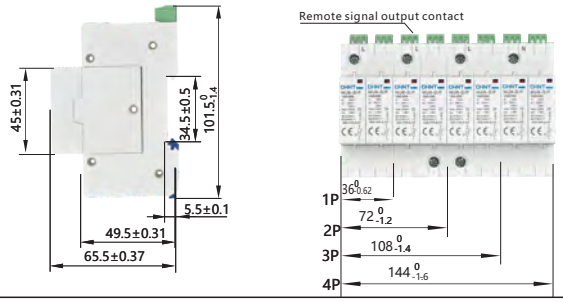
5. Overall and mounting dimensions (mm)



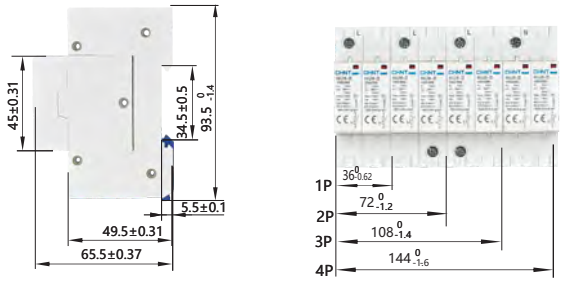
NU6-Ⅱ (40, 60kA) without remote signal output contact



NU6-Ⅱ/F (100kA) with remote signal output contact



NU6-Ⅱ (100kA) without remote signal output contact



NP9 Pushbutton

1. General

1.1 Electric ratings: 230V, AC50/60Hz;

1.2 Utilization category: AC-14;

1.3 Rated conventional heating current Ith: 16A;

1.4 Rated operational current Ie: 6A;

1.5 Rated insulation voltage Ui: 500V;

1.6 Protection grade: IP20;

1.7 Standard: IEC/EN 60947-5-1;

CE

2. Operating conditions

2.1 Ambient temperature: -5℃~+40℃,
average temperature in 24 hours not exceed +35℃;

2.2 Altitude: ≤ 2000m;

2.3 Air conditions:
At mounting site, relative humidity
not exceed 50% at the max temperature of +40℃,
higher relative humidity is allowable under lower
temperature. For example, RH could be 90% at +20℃.
Special measures should be taken to occurrence of dews;

2.4 Mounting category: Ⅱ, Ⅲ;

2.5 Pollution grade: Ⅱ;

2.6 Mounting mode: TH35-7.5 standard rail,
inclination between mounting and vertical plane
not exceed 5°.

3. Technical data

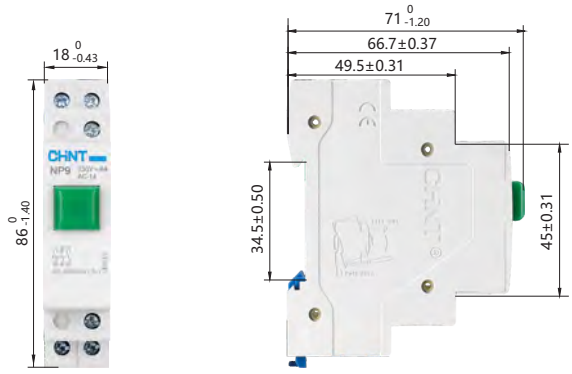
3.1 Life (operations):
a. Electric life : 100,000
b. Mechanical life : 250,000

3.2 Assembly of contact:
1NO,2NO,3NO,4NO,1NO+1NC,1NO+2NC,2NO+1NC,2NO+2NC,3NO+1NC, (Not available for illuminated type)

3.3 Technical data of signal lamp
a. Rated operational voltage: AC/DC6.3V, AC/DC12V, AC/DC24V, AC/DC110V, AC/DC230V
b. Rated operational current: ≤20mA

3.4 Life: LED≥30000h

4. Overall and mounting dimensions (mm)



ND9 Indicator Light

1. General

1.1 Electric ratings: 230V, AC50/60Hz;

1.2 Rated insulation voltage Ui: 500V;

1.3 Protection grade: IP20

1.4 Rated operational current: ≤20mA

1.5 Life: LED≥30000h;

1.6 Standard: IEC/EN 60947-5-1

2. Operating Conditions

2.1 Ambient temperature: -5℃~+40℃,
average temperature in 24 hours not exceed +35℃;

2.2 Altitude: ≤ 2000m;

2.3 Air conditions:
At mounting site, relative humidity not exceed 50% at the max temperature of +40℃, higher relative humidity is allowable under lower temperature. For example, RH could be 90% at +20℃. Special measures should be taken to occurrence of dews;

2.4 Mounting category: Ⅱ, Ⅲ;

2.5 Pollution grade: Ⅱ;

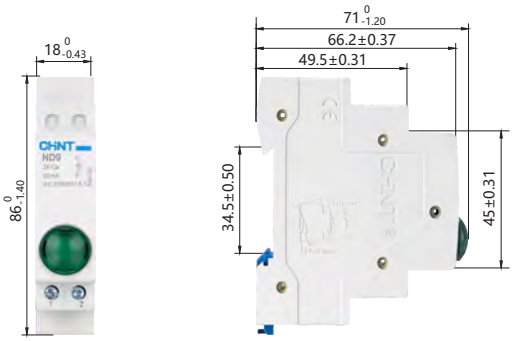
2.6 Mounting mode: TH35-7.5 standard rail, inclination between mounting and vertical plane not exceed 5°

3. Wirng

Cross section area of the conductor is 1.0mm^2, and tightening torque should be 0.8N•m

CE

4. Overall and mounting dimensions (mm)



NX8 Consumer Unit (Body)

1. General

1.1 Electric ratings: up to 100A, 230V, AC50/60Hz;

1.2 No. Of mounted units: 5, 6, 8, 12, 15, 20, 24;

1.3 On-load current (A): 100/1-phase;

1.4 Protection degree: IP30;

1.5 Standard: IEC61439-3(EN60670-24)

2. Features

2.1 The window of the consumer unit is designed with novel appearance and convenient operation. Open and close operation is flexible, and self-locking at the open status;

2.2 Inside the product, there is a neon indicator light to indicate status of power supply; having a elegant appearance and clear indication;

2.3 The interiorly mounted MCBs are all in compliance with relative IEC standards, 9mm modularized electric components are applicable, as well;

2.4 On request, various circuit combinations can be assembled; and the mounting capacity of the product units can be taken to 5~24 units;

2.5 Convenient and reliable operation, having exposed handle, and all live parts to be mounted inside the wall box ;

2.6 The consumer unit is designed with internal terminal blocks for connection of neutral line and protective grounding wire.

2.7 The enclosure of the unit is made of plastic material with metal structure.

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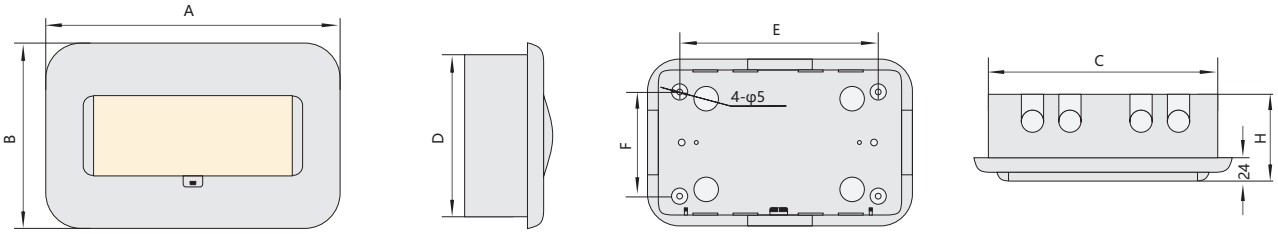
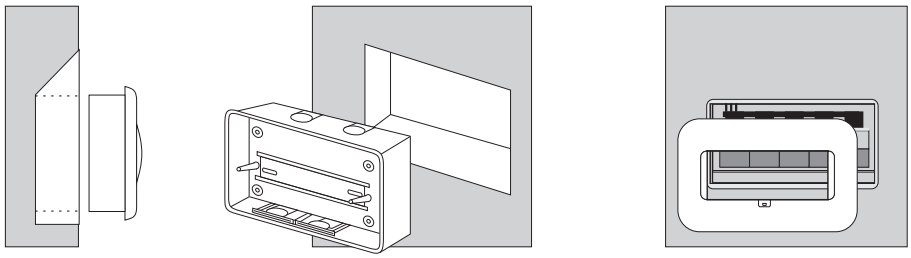
3. Overall and mounting dimensions (mm)



Model	A	B	C	D	E	F	H	Remark
NX8-5	184±1.45	200±1.45	164±1.25	180±1.45	114±1.1	130±1.25	105 $^{0}_{-2.2}$	Single-row
NX8-5J	184±1.45	200±1.45	164±1.25	180±1.45	114±1.1	130±1.25	105 $^{0}_{-2.2}$	Single-row
NX8-6J	202±1.45	200±1.45	182±1.25	180±1.45	132±1.1	130±1.25	105 $^{0}_{-2.2}$	Single-row
NX8-8	238±1.45	200±1.45	218±1.45	180±1.45	168±1.25	130±1.25	105 $^{0}_{-2.2}$	Single-row
NX8-8J	238±1.45	200±1.45	218±1.45	180±1.45	168±1.25	130±1.25	105 $^{0}_{-2.2}$	Single-row
NX8-12	310±1.6	200±1.45	290±1.6	180±1.45	240±1.45	130±1.25	105 $^{0}_{-2.2}$	Single-row
NX8-12J	310±1.6	200±1.45	290±1.6	180±1.45	240±1.45	130±1.25	105 $^{0}_{-2.2}$	Single-row
NX8-15	364±1.8	200±1.45	344±1.8	180±1.45	294±1.6	130±1.25	105 $^{0}_{-2.2}$	Single-row
NX8-15J	364±1.8	200±1.45	344±1.8	180±1.45	294±1.6	130±1.25	105 $^{0}_{-2.2}$	Single-row
NX8-20	274±1.6	350±1.8	254±1.6	330±1.8	204±1.45	280±1.6	105 $^{0}_{-2.2}$	Double-rows
NX8-20J	274±1.6	350±1.8	254±1.6	330±1.8	204±1.45	280±1.6	105 $^{0}_{-2.2}$	Double-rows
NX8-24	310±1.6	350±1.8	290±1.6	330±1.8	240±1.45	280±1.6	105 $^{0}_{-2.2}$	Double-rows
NX8-24J	310±1.6	350±1.8	290±1.6	330±1.8	240±1.45	280±1.6	105 $^{0}_{-2.2}$	Double-rows



NX2 Consumer Unit (Body)

1. General

1.1 Electric ratings: up to 100A, 230V, AC50/60Hz;

1.2 No. Of mounted units: 8, 10, 14, 18, 28, 36;

1.3 On-load current (A): 100/1-phase;

1.4 Protection degree: IP30(after installation);

1.5 Standard: IEC61439-3(EN60670-24)

2. Features

2.1 The product has appearance patent.
In addition to the standard mounting rail, a front panel for fixing is supplied.
The shape fixing bolts are easy for fastening and loosening.

2.2 The interiorly mounted MCBs are in compliance with relative IEC standards, 9mm modularized electric components are available, as well.

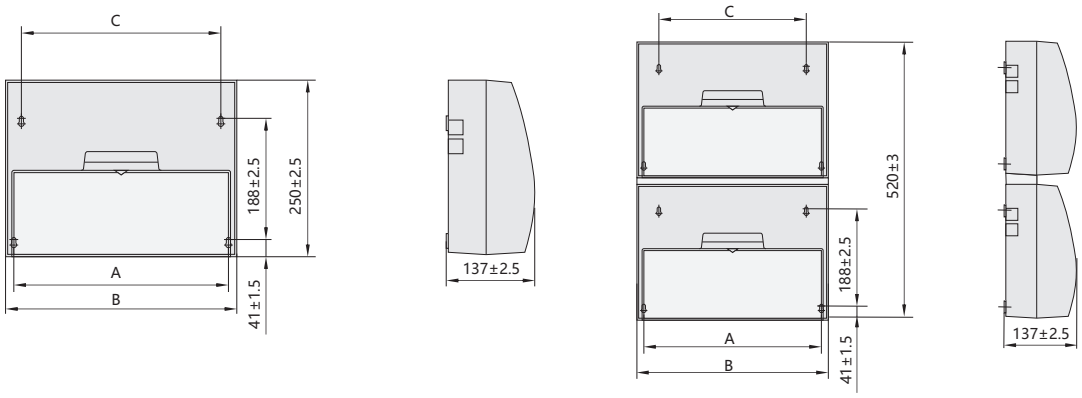
2.3 On request, various circuits combinations can be assembled; and the mounting capacity of the product units can be taken to 8~36 units.

2.4 Convenient and reliable operation, having exposed handle, and all live parts to be mounted inside the wall box.

2.5 The consumer unit is designed with internal terminal blocks for connection of neutral line and protective grounding wire.

2.6 The enclosure of the unit is made of plastic material.

3. Overall and mounting dimensions (mm)



Model	A	B	C	Remark
NX2-8	194 2.5	218 2.5	144 2.5	Single-row
NX2-10	230 2.5	254 2.5	180 2.5	
NX2-14	302 2.5	326 2.5	252 2.5	
NX2-18	374 2.5	398 2.5	324 2.5	
NX2-28	302 2.5	326 2.5	252 2.5	Double-rows
NX2-36	374 2.5	398 2.5	324 2.5	

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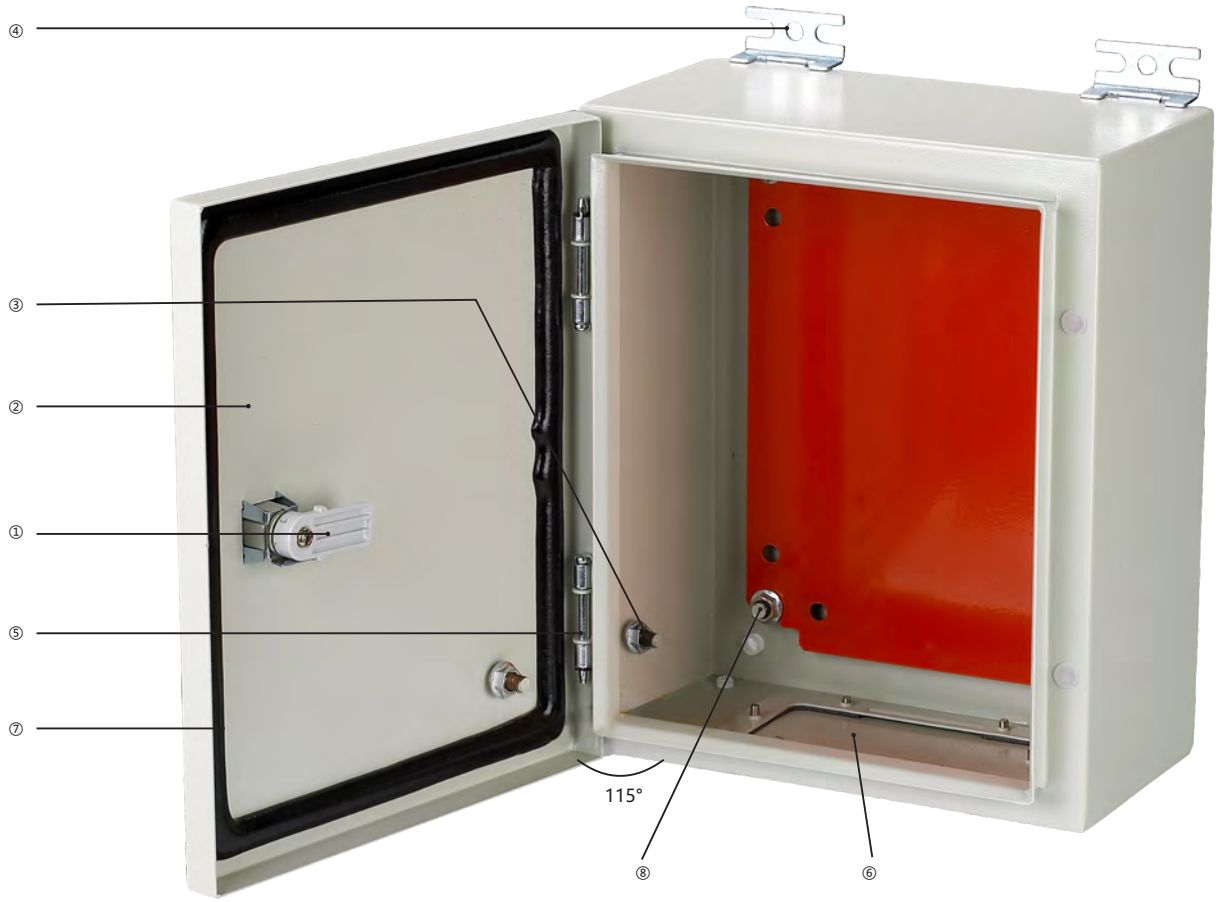
NXW5 Wall Mounting Enclosure



① ---- Door lock: The operated lock for preventing unwanted operation.
② ---- Panel: Zinc-plated steel panel
③ ---- Earthing studs: Earthing connection between body and door.
④ ---- Wall fixing brackets: For easy surface installation.
⑤ ---- Hinges: Hinged connection provide better operating.
⑥ ---- Flanged panel: With sealing gasket that increased cable entry capacity.
⑦ ---- Sealing rubber gasket: Make high protection degree.
⑧ ---- Studs: For additional panel.

CHINT ELECTRIC

Moulded Case Circuit Breakers

MCCB

NM8, NM8S
Moulded Case
Circuit Breakers

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II

NM8, NM8S
Moulded Case Circuit Breaker

1. General

1.1 Certificates: CE, DNV, KEMA, UKrSEPRO, EAC, RCC;
1.2 Electric ratings: AC50/60Hz, AC220V~690V
16A~1600A;
1.3 Standard: IEC/EN 60947-2.

2. Operating conditions

2.1 Temperature: -5℃~+40℃; the average value within 24h shall not exceed +35℃; for the circuit breaker with thermo-magnetic release, +40℃ is set to be the standard temperature for ratings. Special utilization,please refer to coefficients indicated on page 21 for temperature compensation correction;

2.2 Altitude: ≤2000m;

2.3 Pollution grade: Grade 3;

2.4 IP grade: IP40

2.5 Air conditions:
At mounting site, relative humidity not exceed 50% at the max temperature of +40℃, higher relative humidity is allowable under lower temperature.
For example, RH could be 90% at +20℃, special measures should be taken to occurrence of dews.

3. Type designation

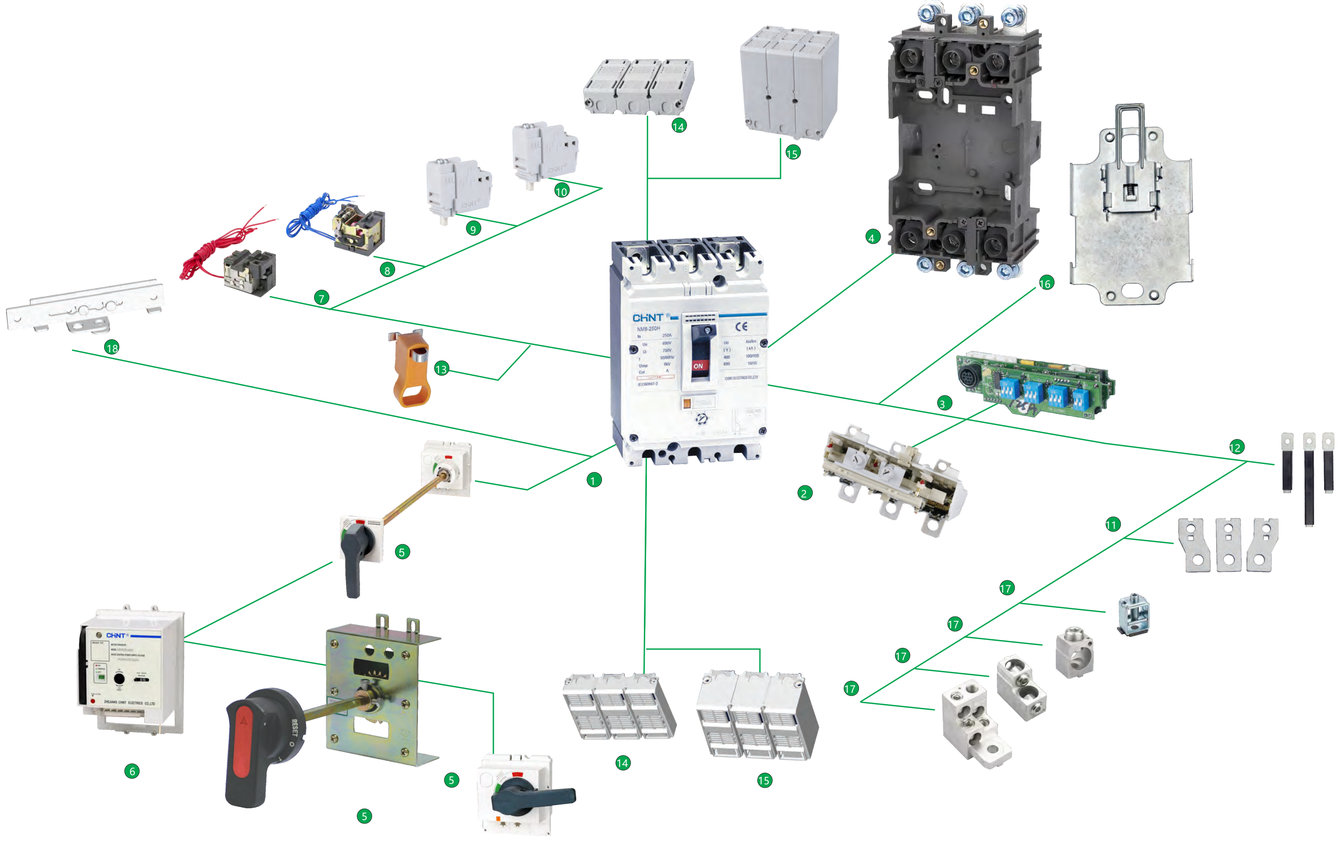
NM 8 □- □ □/□/ □/□

- Application code
  Blank: for power distribution;
  M: for motor protection
- Number of poles: 1: 1-pole 2: 2-pole
  3: 3-pole 4: 4-pole
- With current release components,
  N-pole makes and breaks with other three poles, N-pole first makes then breaks, N-pole operating value is 1.0In of other three poles
- Rated current :
  125: 16, 20, 25, 32, 40, 50, 63, 80, 100, 125
  250: 100, 125, 160,180, 200, 225, 250
  400: 250, 315, 350, 400
  630: 250, 315, 350, 400, 500, 630 (for thermo-magnetic breaker, the rated operational current be up to 500A)
  800: 630, 700, 800
  1250:630, 700, 800, 1000, 1250
  1600: 1000,1250,1600 (Only electronic products)
- Breaking capacity code:
  C: Economy type; (current limiting technology utilised)
  S: Standard type; (current limiting technology utilised)
  H: Higher type; (current limiting technology utilised)
  R: Current limiting type (current limiting technology utilised)
- Frame size rated current: 125, 250, 400, 630, 800, 1250, 1600
- Release type code:
  Blank: thermal-magnetic release;
  S: Electronic release;
- Design sequence number
- MCCB
- Company code

4. Product overview

NM8 Moulded Case Circuit Breaker

1. Body
2. Thermo magnetic release
3. Electronic release
4. Plug-in base
5. Rotary manual operating handle
6. Motor driven operating mechanism
7. Under-voltage release
8. Shunt release
9. Alarm contact
10. Auxiliary contact
11. Front connection plate
12. Rear connection plate
13. Locking system(padlock)
14. Short terminal cover
15. Extended terminal cover
16. DIN rail adaptor
17. Cage clamp terminal
18. Mechanical interlock



II

5. Technical data

5. 1 Parameters

NM8 circuit breaker Thermal-magnetic type		NM8-125				NM8-250			NM8-400			NM8-630			NM8-800		NM8-1250	
4 Frames		Frame 1				Frame 2			Frame 3						Frame 4			
Electric characteristics as per IEC 60947-2 and EN60947-2																		
Rated current(A)	In	16, 20, 25, 32, 40, 50, 63, 80, 100, 125				100, 125, 160, 180, 200, 225, 250			250, 315, 350, 400			250, 315, 350, 400, 500			630, 700, 800		630, 700, 800, 1000, 1250	
Rated insulation voltage (V)	Ui	800				800			800			800			800		800	
Rated impulse withstand voltage (kV)	Uimp	8				8			8			8			8		8	
Rated operational voltage (V) Ue	AC 50/60Hz	690				690			690			690			690		690	
	DC	-				-			-			-			-		-	
Number of poles		1 ①	2	3	4	2	3	4	3	4		3	4		3	4	3	4
																		
Breaking capacity code		-	H	C	S	H	R	C	S	H	H	C	S	H	R	C	S	H	C	S	H	R	C	S	H	C	S	H	R	C	S	H	S	H	R	S	H	S	H	R	S	H
Rated ultimate short-circuit breaking capacity (kA RMS) Icu	AC 380V/400V/415V	-	100	35	50	100	150	35	50	100	100	35	50	100	150	35	50	100	50	70	100	150	50	70	100	50	70	100	50	70	–	50	70	50	70	–	50	70	50	70	–	50	70
	AC 660V/690V	-	8	6	8	8	8	6	8	8	10	6	10	10	10	6	10	10	15	15	15	15	15	15	15	15	15	15	10	20	–	10	20	10	20	–	10	20	–	–	–	–	–
Rated service breaking capacity Ics= (%Icu)		100				100			100 ②			100 ②			50		50	
Suitability for isolation		■				■			■			■			■		■	
Utilization category		A				A			A			A			A		A	
Safety of insulation		■				■			■			■			■		■	
Life(CO recycle)	Mechanical	20,000				20,000			15,000			15,000			10,000		10,000	
	Electrical	10,000				10,000			6,000			6,000			6,000		6,000	
Protection		Thermo-magnetic				Thermo-magnetic			Thermo-magnetic			Thermo-magnetic			Thermo-magnetic		Thermo-magnetic	
Release units		■				■			■			■			■		■	
Over-load protection		■				■			■			■			■		■	
Short-circuit protection		■				■			■			■			■		■	
Residual current protection	Added on residual current protection module	–				–			–			–			–		–	
Mounting and connection																		
Fixed	Front connection	■				■			■			■			■		■	
	Rear connection	■				■			■			■			–		–	
DIN rail	Front connection	■				■			–			–			–		–	
Plug-in	Front connection	■				■			■			■			–		–	
	Rear connection	■				■			■			■			–		–	
Manual	Handle	■				■			■			■			–		–	
	Direct or extended rotary handle	■				■			■			■			■		■	
Motor-driven mechanism		■				■			■			■			■		■	
Manual, remote operated automatic source changeover systems		■				■			■			■			■		■	
Shunt and under-voltage release		■				■			■			■			■		■	
Auxiliary and alarm contact		■				■			■			■			■		■	
Pad locking system		■				■			■			■			–		–	
Mounting and connection accessories																		
Connection terminal		■				■			■			■			■		■	
Front connection plate		■				■			■			■			■		■	
Rear connection plate		■				■			■			■			–		–	
DIN rail adaptor		■				■			–			–			–		–	
Plug-in type connection accessories		■				■			■			■			–		–	
Terminal covers		■				■			■			■			■		■	
Interphase barrier		■				■			■			■			■		■	
Dimension and weight																		
Dimension(mm)W×H×L	Fixed type-front connection	62×140×79		90×140×79	120×140×79	70×157×88		105×157×88	140×157×88			140×255×113		185×255×113	140×255×113	185×255×113	210×370×196	280×370×196	210×370×196	280×370×196
Weight(kg)	Fixed type-front connection	0.85		1.2	1.6	1.5		2.1	2.8			7.5		10	7.5	10	17.5	23	17.5	23

Note:
① For 1 pole product, Ics=100%Icu=45kA @AC220V/ 240V
② When Ue is ≥660V, Ics=50% Icu.

NM8S circuit breaker Electronic type		NM8S-125		NM8S-250		NM8S-400		NM8S-630③		NM8S-800		NM8S-1250		NM8S-1600	
3 Frames		Frame 1				Frame 2				Frame 3					
Electric characteristics as per IEC 60947-2 and EN60947-2															
Rated current(A)	In	40, 50, 63, 80, 100, 125		100, 125, 160, 180, 200, 225, 250		250, 315, 350, 400		250, 315, 350, 400, 500, 630		630, 700, 800		630, 700, 800, 1000, 1250		1000, 1250, 1600	
Rated insulation voltage (V)	Ui	800				800				800		800		800	
Rated impulse withstand voltage (kV)	Uimp	8				8				8		8		8	
Rated operational voltage (V) Ue	AC 50/60Hz	690				690				690		690		415	
	DC	-				-				-		-		-	
Number of poles		3	4			3	4	3	4	3	4	3	4	3	4
															
Breaking capacity code		S	H	S	H	S	H	R	S	H	S	H	R	S	H	S	H	R	S	H	S	H	R	S	H	S	H	R	S	H
Rated ultimate short-circuit breaking capacity (kA RMS) Icu	AC 380V/400V/415V	70	100	70	100	70	100	150	70	100	70	100	150	70	100	50	70	–	50	70	50	70	–	50	70	50	70	–	50	70
	AC 660V/690V	10	10	10	10	15	15	15	15	15	15	15	15	15	15	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Rated service breaking capacity Ics= (%Icu)		100				100 ②				100 ②				50		50					50									
Suitability for isolation		■				■				■				■		■					■									
Utilization category		A				A				A				A		A					A									
Safety of insulation		■				■				■				■		■					■									
Life(CO recycle)	Mechanical	20,000				15,000				15,000				10,000		10,000					10,000									
	Electrical	20,000				6,000				4,000				4,000		4,000					4,000									
Protection		Electronic				Electronic				Electronic				Electronic		Electronic					Electronic									
Release units		■				■				■				■		■					■									
Over-load protection		■				■				■				■		■					■									
Short-circuit protection		■				■				■				■		■					■									
Residual current protection	Added on residual current protection module	–				–				–				–		–					–									
Mounting and connection																														
Fixed	Front connection	■				■				■				■		■					■									
	Rear connection	■				■				■				–		–					–									
DIN rail	Front connection	■				–				–				–		–					–									
Plug-in	Front connection	■				■				■				–		–					–									
	Rear connection	■				■				■				–		–					–									
Manual	Handle	■				■				■				–		–					–									
	Direct or extended rotary handle	■				■				■				■		■					■									
Motor-driven mechanism		■				■				■				■		■					■									
Manual, remote operated automatic source changeover systems		■				■				■				■		■					■									
Shunt and under-voltage release		■				■				■				■		■					■									
Auxiliary and alarm contact		■				■				■				■		■					■									
Pad locking system		■				■				■				–		–					–									
Mounting and connection accessories																														
Connection terminal		■				■				■				■		■					■									
Front connection plate		■				■				■				■		■					■									
Rear connection plate		■				■				■				–		–					–									
DIN rail adaptor		■				■				–				–		–					–									
Plug-in type connection accessories		■				■				■				–		–					–									
Terminal covers		■				■				■				■		■					■									
Interphase barrier		■				■				■				■		■					■									
Dimension and weight																														
Dimension(mm)W×L×H	Fixed type-front connection	105×157×88		140×157×88		140×255×113		185×255×113		140×255×113		185×255×113		210×370×196		280×370×196					210×370×196		280×370×196				210×370×201		280×370×201	
Weight(kg)	Fixed type-front connection	2.1		2.8		8		11		8		11		17.5		23					17.5		23				23		30	

Note: ① The rated current of NM8S-630 plug-in type up to 570A.

5.2 The following table shows which connection diagram to use according to the number of poles to be connected in series to obtain the required breaking capacity, in relation to the type of distribution network:

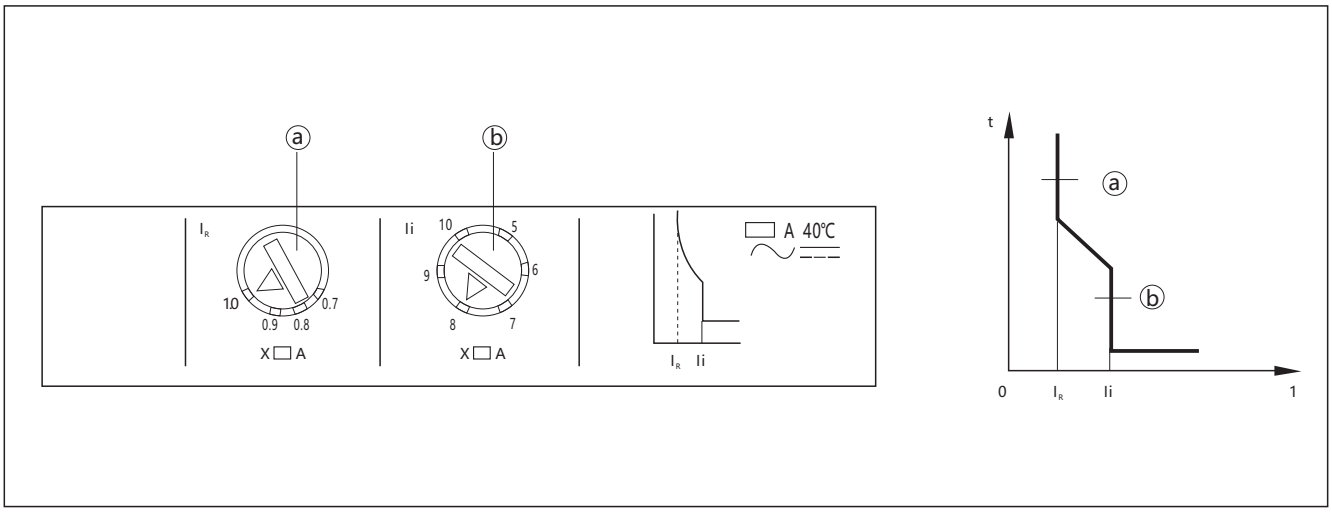
Rated voltage V	protection function	Isolation	Earth-insulated network	Network with one polarity[1] earthed	Network with a middle point earthed
≤250	■	■	A	A	A
	■	-	-	-	-
≤500	■	■	A	B	A
	■	-	-	C	-

Note:
a. The risk of double earth fault is nil, therefore the fault current only involves a part of the interruption poles.
b. For connection with four poles in series, circuit-breakers with neutral at 100% of the phase settings must be used.

6. Release

6.1 Thermo-magnetic release

6.1.1 Thermo-magnetic release of NM8-250, 400, 630, 800 and 1250 breakers can be set to meet protection requirements



Adjustable setting of over-load protection ⓐ
Adjustable setting of short-circuit protection or fixed ⓑ

Thermo-magnetic release	NM8-125	NM8-250	NM8-400	NM8-630	NM8-800	NM8-1250
Rated value (A) In 40℃	16, 20, 25, 32, 40, 50, 63, 80, 100, 125	100, 125, 160, 180, 200, 225, 250	250,315, 350, 400	250, 315, 350, 400, 500	630, 700, 800	630, 700, 800, 1000, 1250
Over-load protection	Thermo protection					
Tripping current IR (A)	Adjustable range (0.8~1)XIn	Adjustable range (0.8~1)XIn [1)]	Adjustable range (0.8~1)XIn[1)]	Adjustable range (0.8~1)XIn[1)]	Adjustable range (0.8~1)XIn	Adjustable range (0.8~1)XIn
N-pole protection (A) 4A, 4B 4C, 4D	Without protection 1.0XIr	Without protection 1.0XIr	Without protection 1.0XIr	Without protection 1.0XIr	Without protection 1.0XIr	Without protection 1.0XIr
Short-circuit protection	Magnetic protection					
Tripping current Ii (A)	10In (for power distribution protection) 12In (for motor protection)	Adjustable range (5~10) XIn (8~12)In(for motor protection)	Adjustable range (5~10) XIn (8~12)In(for motor protection)	Adjustable range (5~10) XIn (8~12)In(for motor protection)	Adjustable range (5~10) XIn	Adjustable range (5~10)XIn

1)
Note:
(0.7~1) XIn is optional, please note that ordering code is different with (0.8~1) XIn

NM8-250, (100~180)A: adjustable magnetic protection value=(6~10)In, (200~250)A: adjustable magnetic protection value=(5~10)In

6.1.2 Characteristic of thermo protection operation of thermo-magnetic release for power distribution

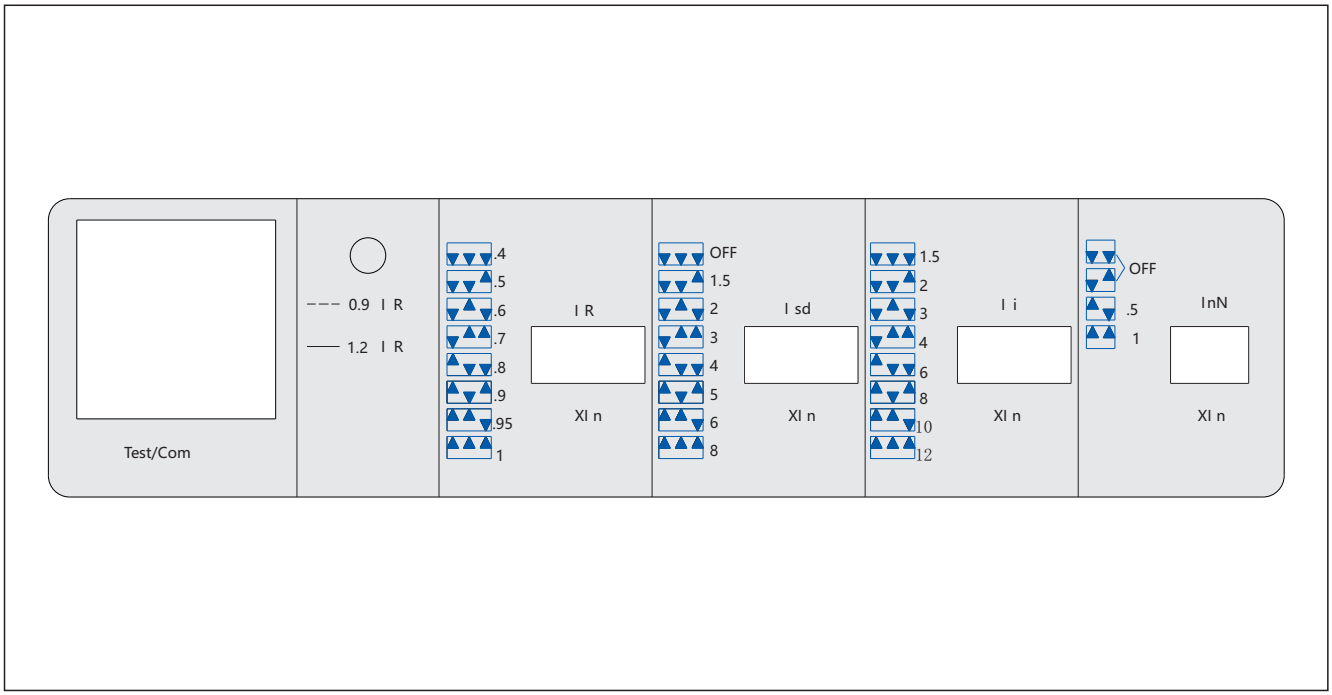
Serial No.	Test current	I/In	Conventional time	Initial status
1	Conventional non-tripping current	1.05	> 1h (In≤63A) > 2h (In > 63A)	Cold status
2	Conventional tripping current	1.3	≤1h (In≤63A) ≤2h (In > 63A)	Right after test 1

6.1.3 Characteristic of thermo protection operation of thermo-magnetic release for motor protection

Serial No.	Test current	I/In	Conventional time	Initial status
1	Conventional non-tripping current	1.0	> 2h	Cold status
2	Conventional tripping current	1.2 1.5 7.2	≤2h ≤4min 4s≤T≤10s	Right after test 1

6.2 Electronic Release

6.2.1 NM8S-125, 250 electronic release is an universal module.
It is of 11 current specifications: 40A, 50A, 63A, 80A, 100A,125A, 160A, 180A, 200A, 225A and 250A to adjust setting values and to meet protection requirements.

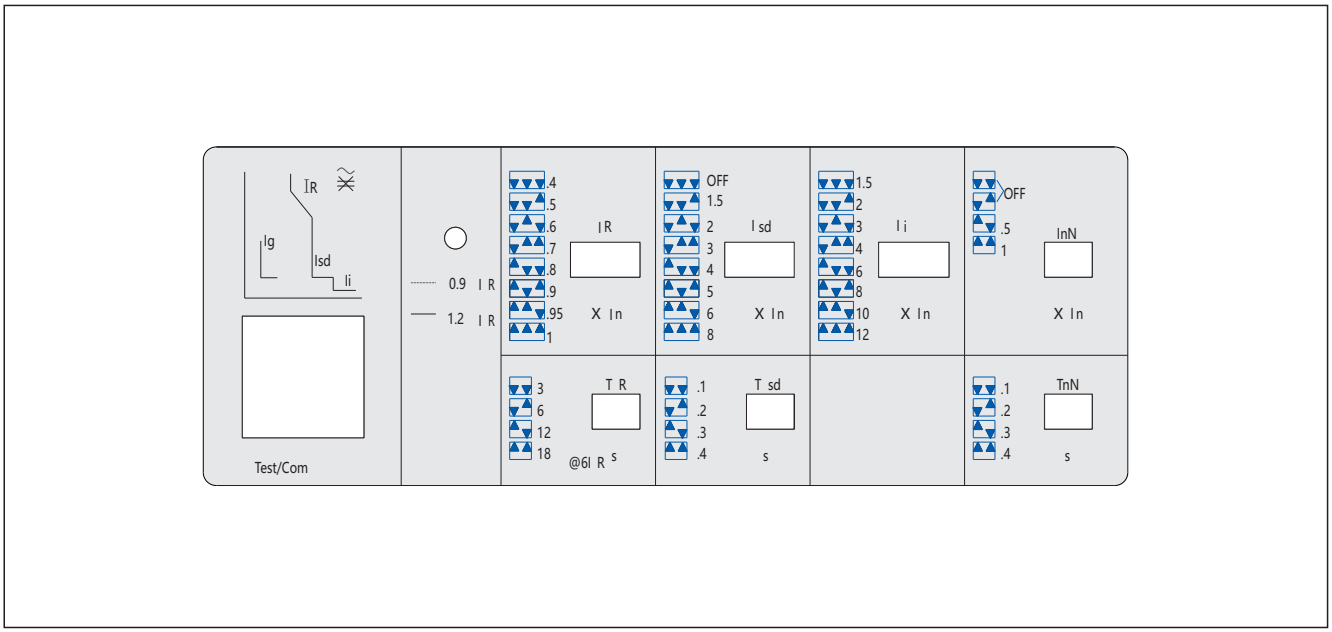


The indicator light flashes, when single-phase operational current is ≤90% IR.
The indicator light is always lit, when single-phase operational current is ≥115% IR.

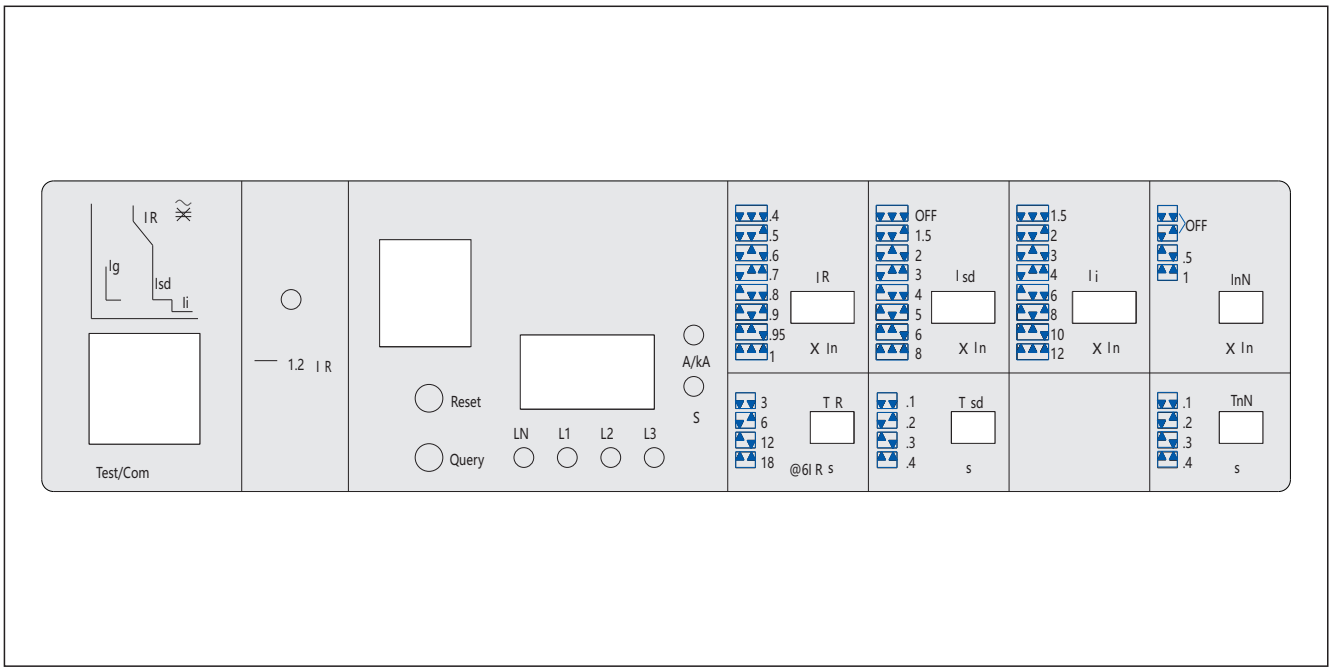
Electronic release	NM8S-125	NM8S-250
Rated value In (A) 20~70℃	40, 50, 63, 80, 100, 125	100, 125, 160, 180, 200, 225, 250
Over-load protection	Thermal protection	
Tripping current I_R	Adjustable range 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 0.95, 1XIn	Adjustable range 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 0.95, 1XIn
Tripping time 1.05_{IR} $1.3\ I_R$ $1.5\ I_R$ $6I_R$	>2h non tripping ≤1h 96s 6s	>2h non tripping ≤1h 96s 6s
N-line protection tripping current InN	Adjustable rage OFF, 0.5, 1XIn	Adjustable rage OFF, 0.5, 1XIn
Tripping current Ii	Adjustable range 1.5, 2, 3, 4, 6, 8, 10, 12XIn	Adjustable range 1.5, 2, 3, 4, 6, 8, 10, 12XIn
Short time-delay short current protection tripping current Isd	Adjustable range OFF, 1.5, 2, 3, 4, 6, 8XIn	Adjustable range OFF, 1.5, 2, 3, 4, 6, 8XIn

6.2.2 NM8S-400, 630 electronic release is an universal module.

It is of 6 current specifications: 250A, 315A, 350A, 400A, 500A, and 630A to adjust setting values and to meet protection requirements. The release is of wide setting range and multi-functional modules can be selected. NM8S-400, 630 electronic release.



6.2.3 NM8S-800, 1250, 1600electronic release is an universal module. It is of 6 current specifications: 630A, 700A, 800A, 1000A, 1250A and 1600A to adjust setting values and to meet protection requirements.
The release is of wide setting range and multi-functional modules can be selected.



Tripping current I_R, I_{sd}, I_i should be set with three-digit switch or rotary knob as per current.

- I_R setting of over-load protection
  IR could be adjusted as per customers' requirements,
  and TR, tripping time at the status of 6IR can be set as per customers' requirements.

Model	1.05 I_R	1.3 I_R	1.5 I_R (s)	2.0 I_R (s)	6 I_R (s)
NM8S-400, 630	> 2h non-tripping	< 1h tripping	48,96, 192, 288	27, 54, 108, 162	3, 6, 12, 18
NM8S-800,1250,1600	> 2h non-tripping	< 1h tripping	48, 96, 192, 288	27, 54, 108, 162	3, 6, 12, 18

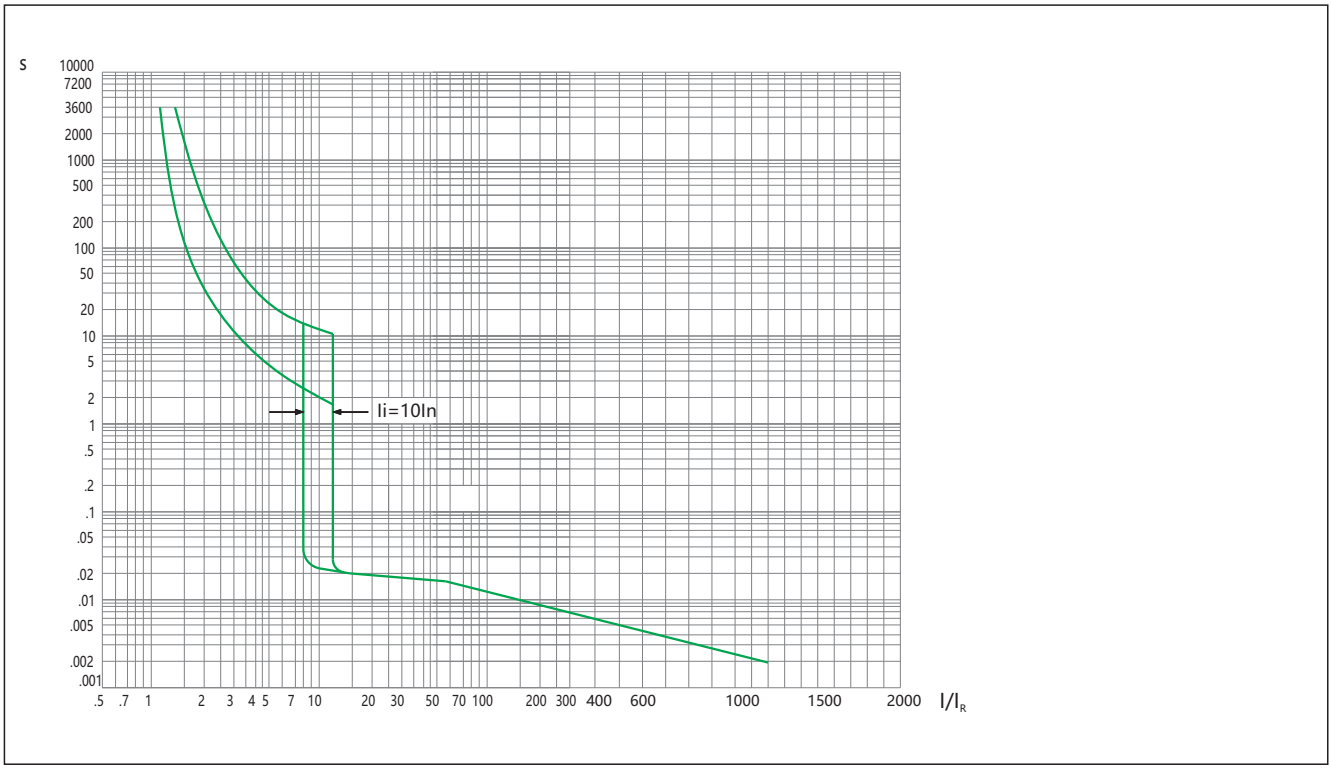
- I_r indicator light for over-load status indication
  The indicator light flashes, when single-phase operational current is < 90% I_R
  The indicator light is always lit, when single-phase operational current is ≥115% I_R
- I_{sd} setting of short-circuit protection and tripping time
  Setting value of current Isd could be adjusted as per customers' requirements and OFF stands for status without ST protection;
  T_{sd} the tripping time could be adjusted as per customers' requirements.
- I_i setting of short-circuit protection
  Value of setting current could be adjusted as per customers' requirements
- I_{nN} setting of protection operations
  As a 4P circuit breaker with N-line protection, setting value of current Ig could be adjusted as per customers' requirements and OFF stands for status without protection of N-pole; T_{nN} the operating time of N-pole could be adjusted as per customers' requirements.

Electronic release	NM8S-400	NM8S-630	NM8S-800	NM8S-1250	NM8S-1600
Rated value A In 20~70℃	250, 315, 350, 400	250, 315, 350, 400, 500, 630	630, 700, 800	630, 700, 800, 1000, 1250	1000, 1250, 1600
long time-delay over-load protection (thermal protection)					
Tripping current I_R (A)	Adjustable range 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 0.95, 1XIn	Adjustable range 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 0.95, 1XIn	Adjustable range 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 0.95, 1XIn	Adjustable range 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 0.95, 1XIn	Adjustable range 0.4, 0.6, 0.7, 0.8, 0.9, 0.95, 1`In
Tripping time $6I_R$ (s)	Adjustable range 3, 6, 12, 18	Adjustable range 3, 6, 12, 18	Adjustable range 3, 6, 12, 18	Adjustable range 3, 6, 12, 18	Adjustable range 3, 6, 12, 18
short time-delay short-circuit protection					
Tripping current I_{sd} (A)	Adjustable range OFF, 1.5, 2, 3, 4, 5, 6, 8XIn	Adjustable range OFF, 1.5, 2, 3, 4, 5, 6, 8XIn	Adjustable range OFF, 1.5, 2, 3, 4, 5, 6, 8XIn	Adjustable range OFF, 1.5, 2, 3, 4, 5, 6, 8XIn	Adjustable range OFF, 1.5, 2, 3, 4, 5, 6, 8`In
Tripping time T_{sd} (s)	Adjustable range 0.1, 0.2, 0.3, 0.4	Adjustable range 0.1, 0.2, 0.3, 0.4	Adjustable range 0.1, 0.2, 0.3, 0.4	Adjustable range 0.1, 0.2, 0.3, 0.4	Adjustable range 0.1, 0.2, 0.3, 0.4
(Instantaneous) short-circuit protection					
Tripping current I_i (A)	Adjustable range 1.5, 2, 3, 4, 6, 8, 10, 12XIn 12In(for motor protection)	Adjustable range 1.5, 2, 3, 4, 6, 8, 10, 12XIn 12In(for motor protection)	Adjustable range 1.5, 2, 3, 4, 6, 8, 10, 12XIn 12In(for motor protection)	Adjustable range 1.5, 2, 3, 4, 6, 8, 10, 12XIn 12In(for motor protection)	Adjustable range 1.5, 2, 3, 4, 6, 8, 10, 12XIn 12In(for motor protection)
(N-line) protection					
Tripping current I_{nN} (A)	Adjustable range OFF, 0.5, 1XIn	Adjustable range OFF, 0.5, 1XIn	Adjustable range OFF, 0.5, 1XIn	Adjustable range OFF, 0.5, 1XIn	Adjustable range OFF, 0.5, 1XIn
Tripping time T_{nN} (s)	Adjustable range 0.1,0.2, 0.3, 0.4	Adjustable range 0.1,0.2, 0.3, 0.4	Adjustable range 0.1,0.2, 0.3, 0.4	Adjustable range 0.1,0.2, 0.3, 0.4	Adjustable range 0.1,0.2, 0.3, 0.4

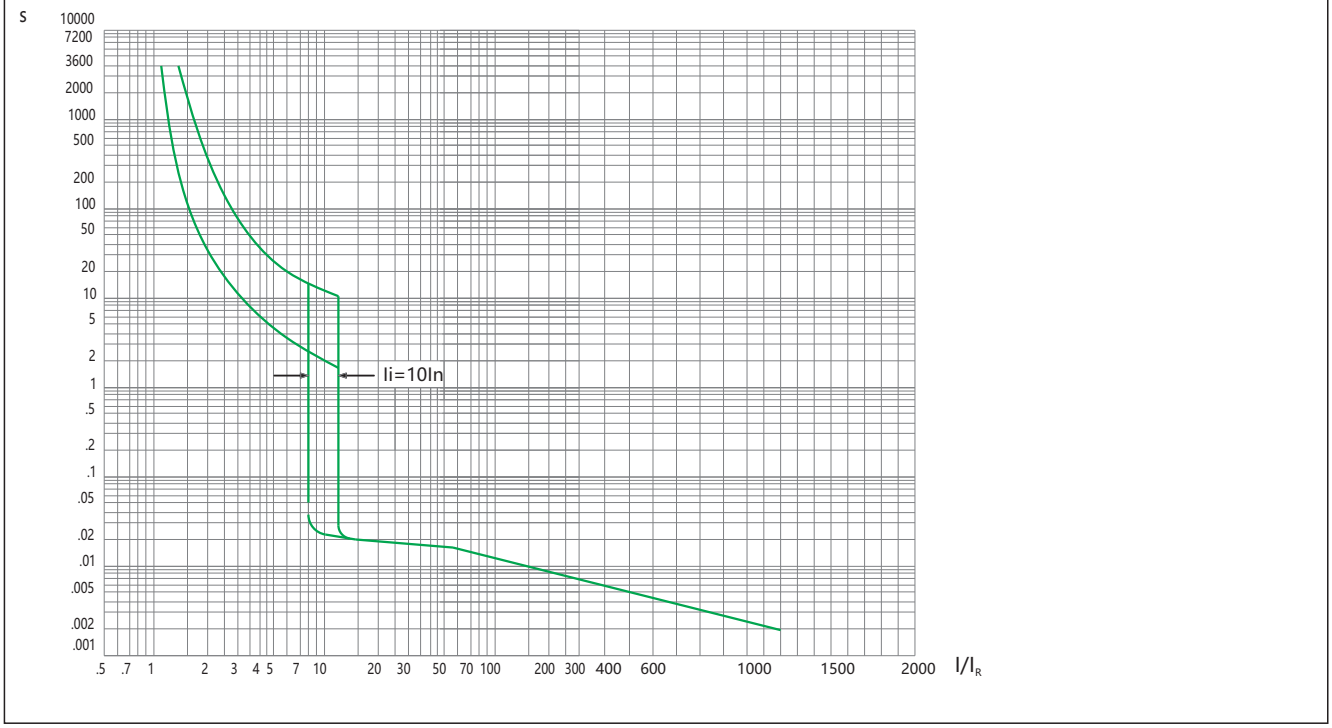
7. Curves

7.1 Tripping curve (ambient temperature +40℃)

NM8-125(16A, 20A)

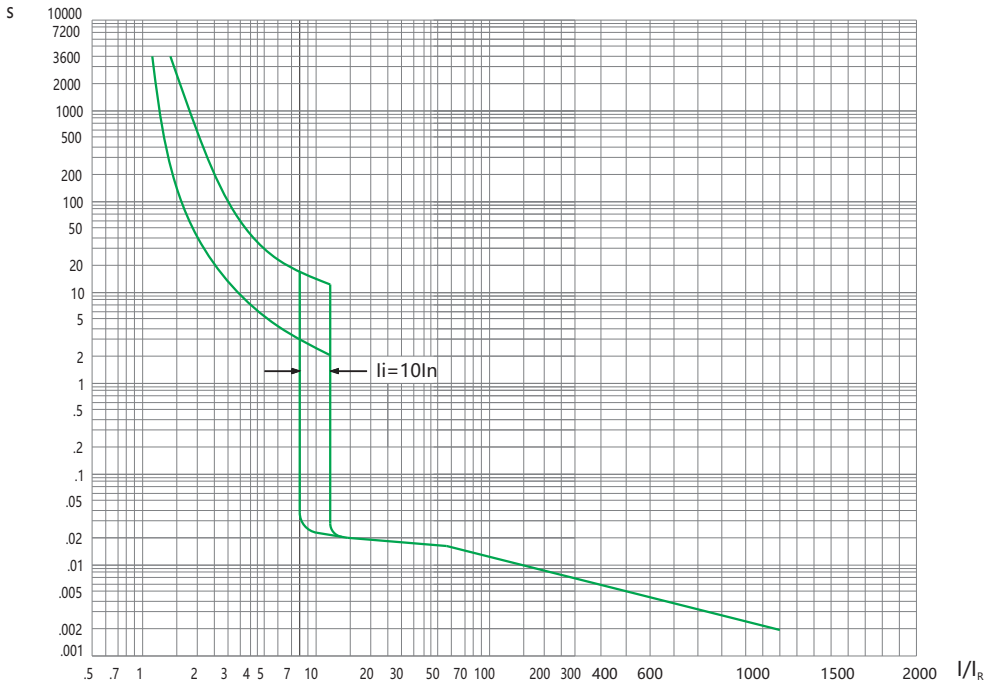


NM8-125(25A, 32A)

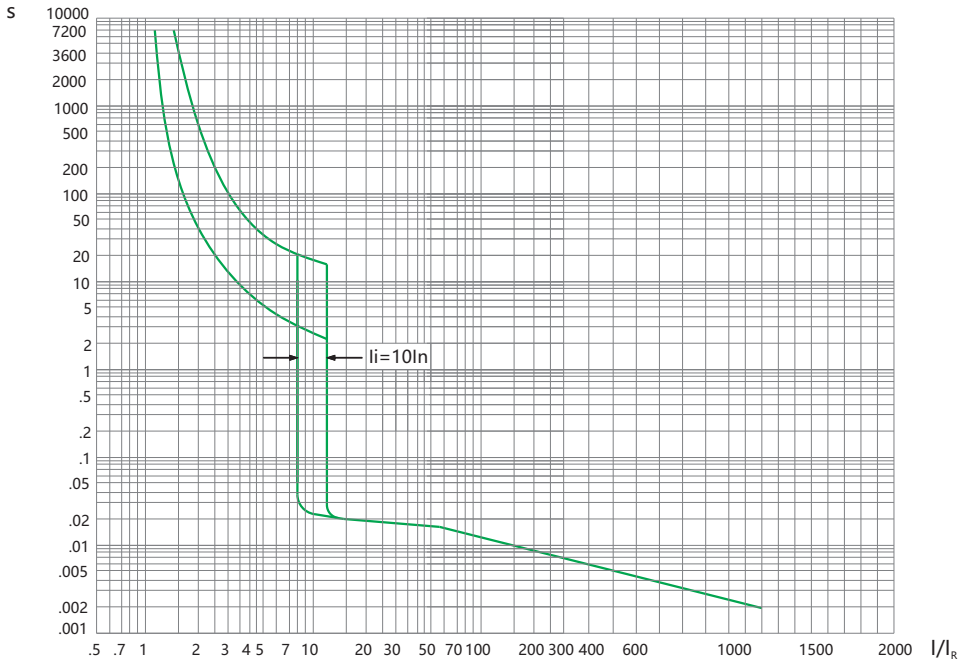


II

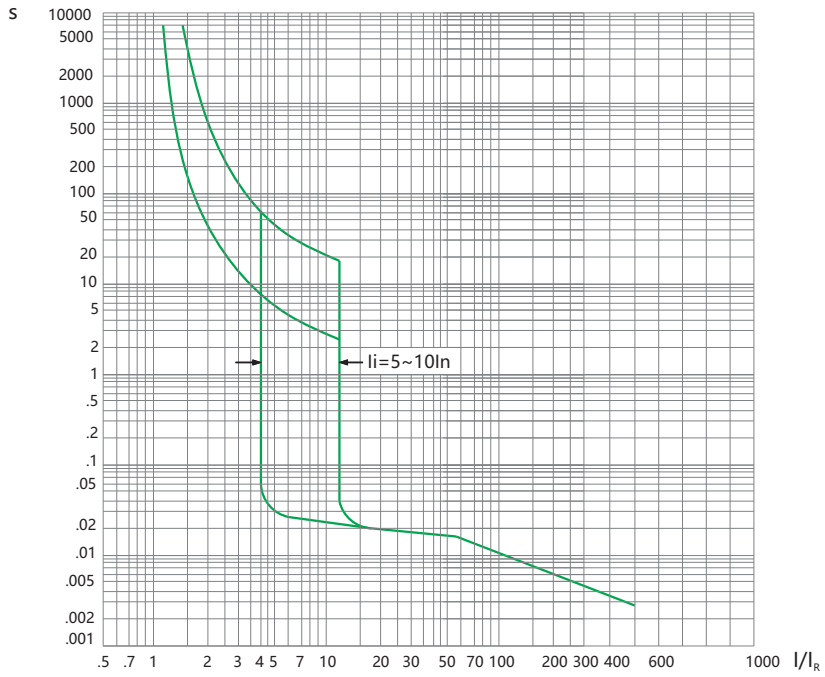
NM8-125(40A, 50A)



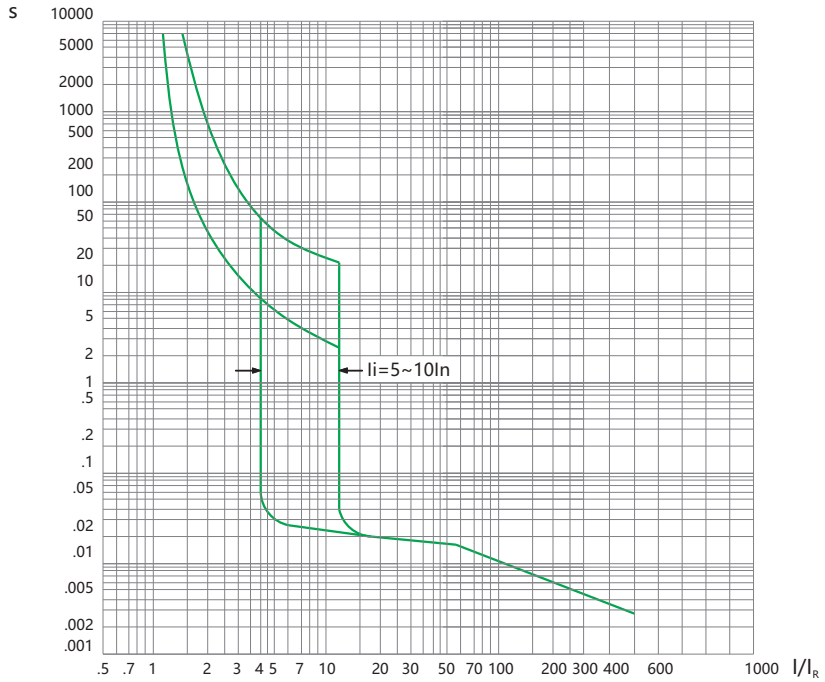
NM8-125(63A, 80A, 100A, 125A)



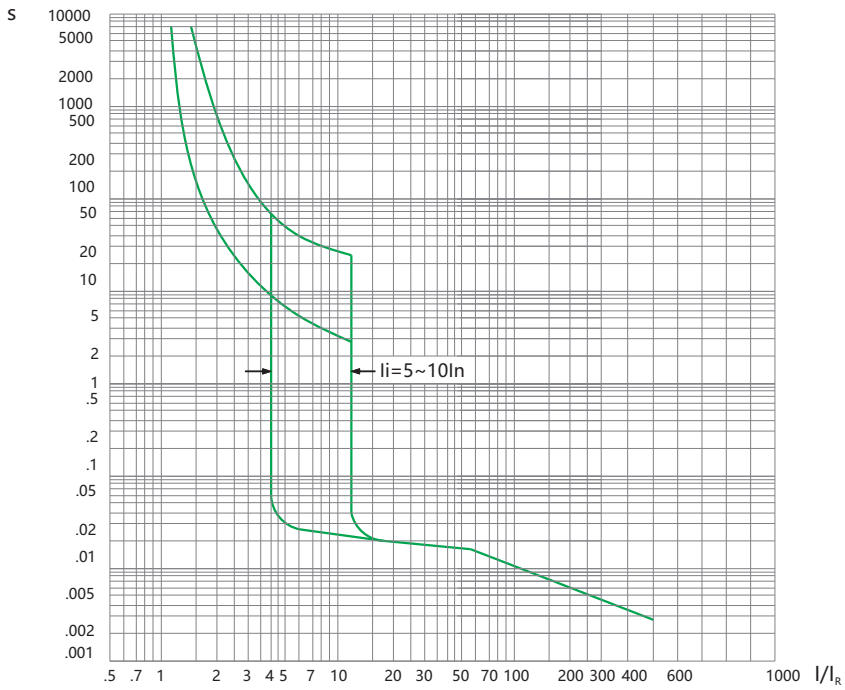
NM8-250(100A, 125A)



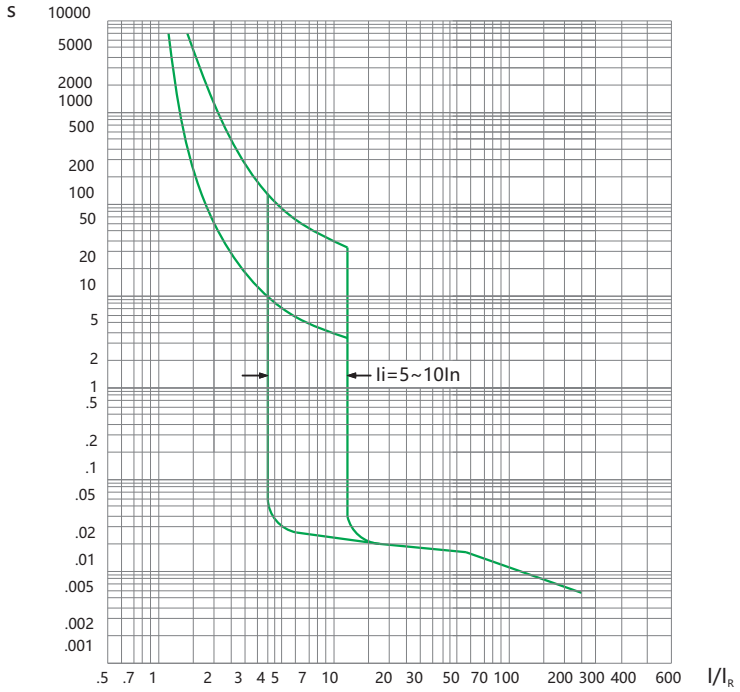
NM8-250(160A, 180A)



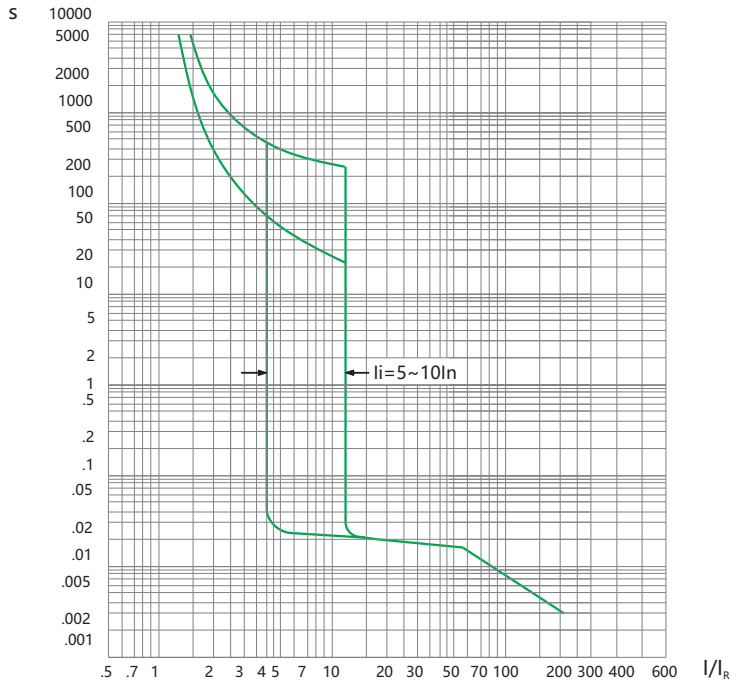
NM8-250(200A, 225A, 250A)



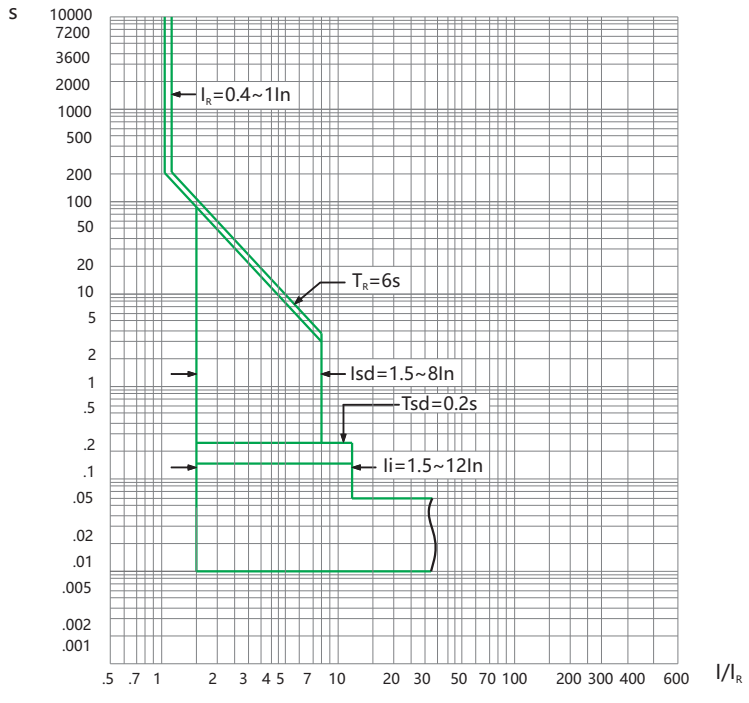
NM8-400, 630(250A~500A)



NM8-800(630~800A)
NM8-1250(630A~1250A)

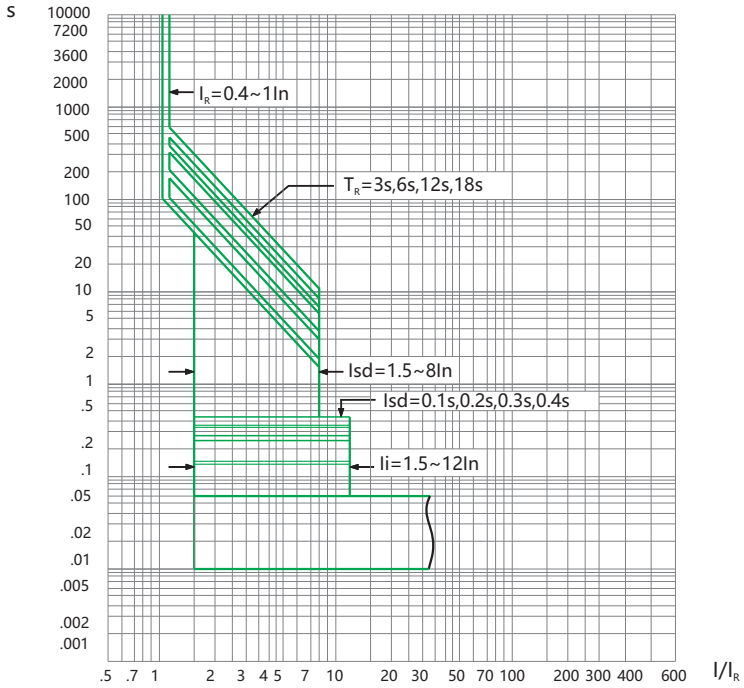


NM8S-125, 250(40A~250A)

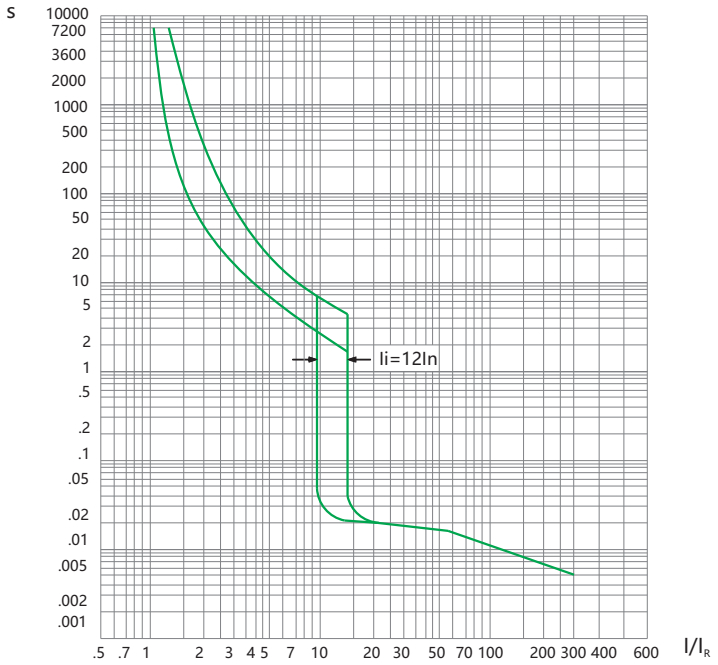


II

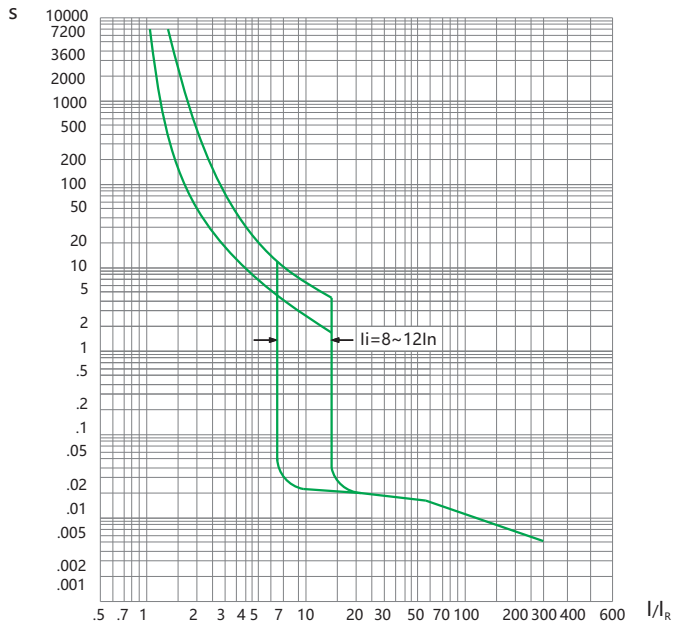
NM8S-400,630(250A~630A)
NM8S-800,1250(630A~1250A)
NM8S-1600(1000A~1600A)



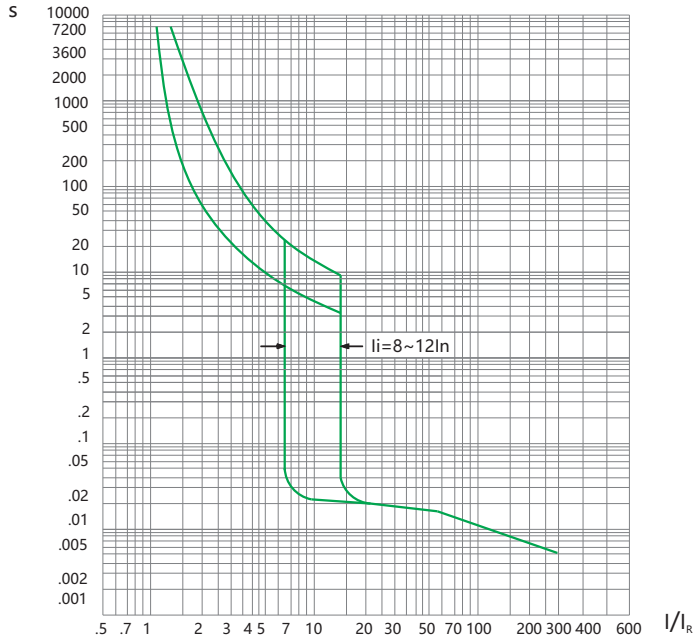
Motor protection release
NM8-125(16A~125A)



NM8-250(100A ~ 250A)



NM8-400,630(250A~500A)



7.2 Temperature compensation

When the ambient temperature slightly changes, tripping characteristics will change as well, please refer to the table below for temperature compensation correction.

7.2.1 Temperature compensation coefficient of breaker with thermo-magnetic release as follows.

Ambient temperature	0℃	5℃	10℃	15℃	20℃	25℃	30℃	35℃	40℃	45℃	50℃	55℃	60℃	65℃	70℃
Temperature compensation coefficient	1.2	1.175	1.15	1.125	1.1	1.075	1.05	1.025	1.0	0.975	0.95	0.925	0.90	0.875	0.85

Note: For reference only

7.2.2 Temperature compensation coefficient of breaker with electronic release as follows

Frame Level rated current	0℃	5℃	10℃	15℃	20℃	25℃	30℃	35℃	40℃	45℃	50℃	55℃	60℃	65℃	70℃
NM8S-125S/H(40~125)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
NM8S-250S/H(125~160)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
NM8S-250S/H(200~250)	1	1	1	1	1	1	1	1	1	1	1	0.95	0.95	0.90	0.90
NM8S-630S/H/R(250~400)	1	1	1	1	1	1	1	1	1	1	1	0.98	0.95	0.93	0.90
NM8S-630S/H/R(500~630)	1	1	1	1	1	1	1	1	1	0.98	0.95	0.93	0.90	0.88	0.85
NM8S-800S/H/R(630~800)	1	1	1	1	1	1	1	1	1	0.975	0.975	0.95	0.95	0.925	0.925
NM8S-1250S/H/R(1000~1250)	1	1	1	1	1	1	1	1	1	0.95	0.9	0.875	0.80	0.80	0.80
NM8S-1600S/H/R(1000~1600)	1	1	1	1	1	1	1	1	1	0.95	0.9	0.875	0.80	0.80	0.80

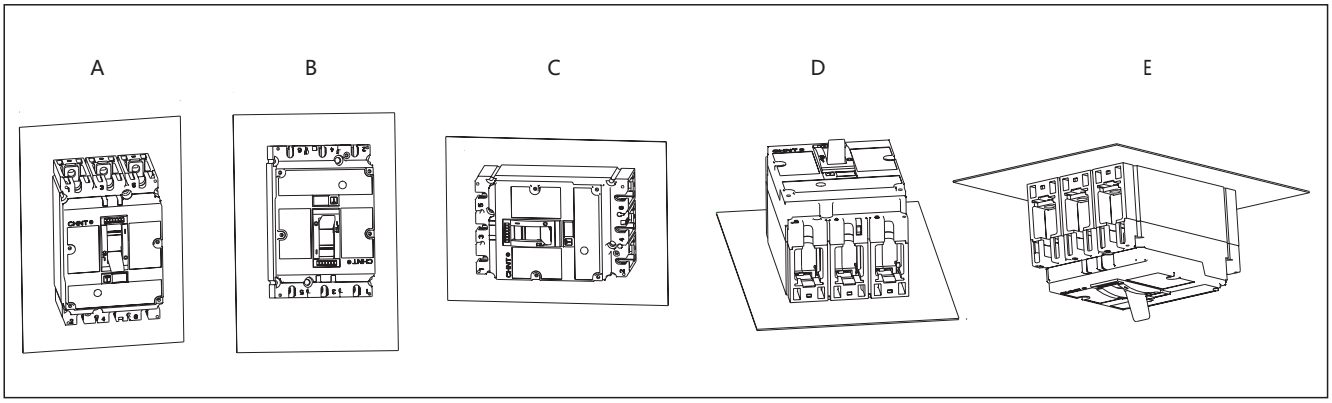
8. Mounting of circuit breaker

8.1 Modes of down-lead

Two modes of upper and lower down-lead are available; adoption of different down-lead modes will not affect normal operation of breaker, in addition, it is no need for derating.

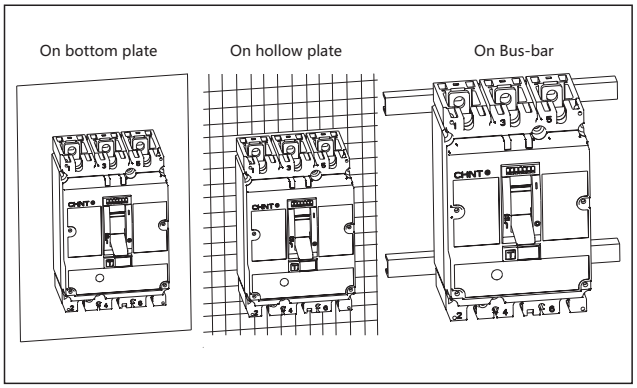
8.2 Modes of mounting

Mounting modes following are available for fixed and plug-in type breakers.

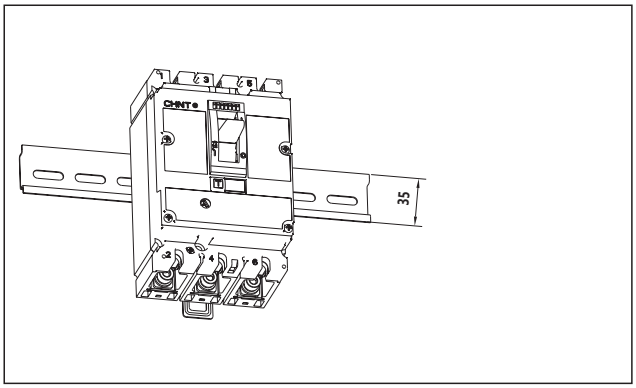


8.3 Modes of fixing

8.3.1 Fixing modes following are available for fixed and plug-in type breakers.

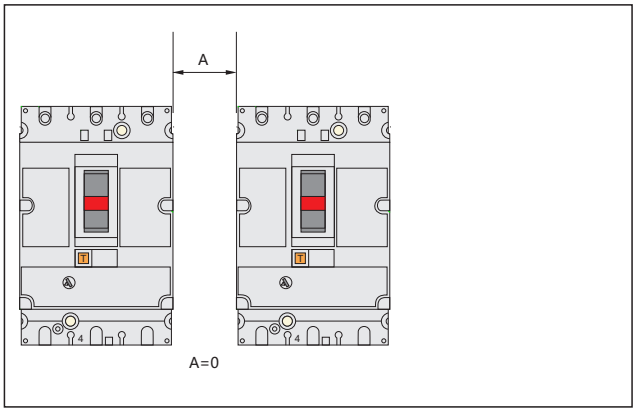


8.3.2 Fixing mode following is available for NM8(S)-125, 250 for fixed type breakers, which adopts DIN rail adaptor of front connection.

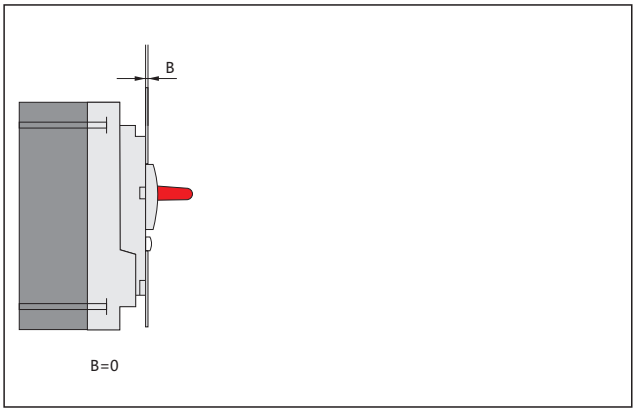


8.4 Secured distance

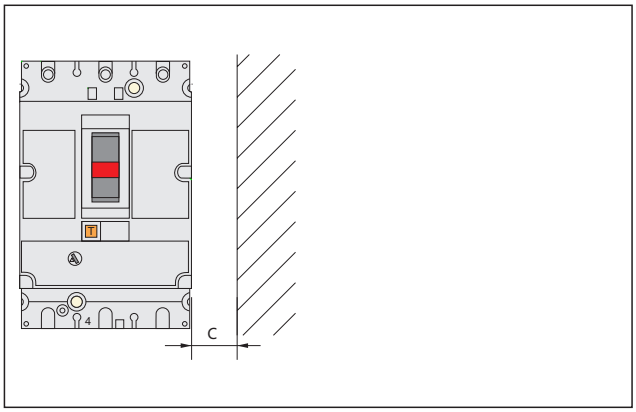
8.4.1 Min. Distance between breakers



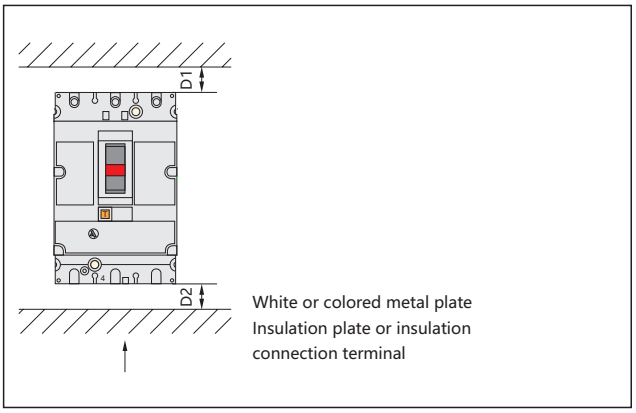
8.4.2 Min. distance between breaker and surface of switchgear where the operation handle is exposed.



8.4.3 Min. distance between breaker and side of switchgear



8.4.4 Min. distance between top and bottom of breaker



NM8 Breaker	Ue	C	Insulation plate or insulation connection terminal(mm)		White or colored metal plate(mm)	
			D1	D2	D1	D2
NM8-125 NM8S-125	Ue≤440V	10	30	30	35	35
	Ue<600V	20	30	30	35	35
	Ue≥600V	30	30	30	35	35
NM8-250 NM8S-250	Ue≤440V	10	30	30	35	35
	Ue<600V	20	30	30	35	35
	Ue≥600V	30	30	30	35	35
NM8-400, 630, NM8S-400, 630	Ue≤440V	10	30	30	60	60
	Ue<600V	20	30	30	60	60
	Ue≥600V	30	30	30	100	100
NM8-800, 1250, NM8S-800, 1250, 1600	Ue≤690V	50	130	100	70	70

Note: when voltage is ≥500V, extended terminal cover should be mounted

8.5 Modes of connection

8.5.1 Cable connection plug and Copper busbar

a. Screw is used to connect with copper (aluminum) cable connection plug or copper busbar

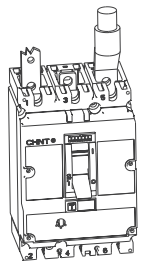
Size of connection screw

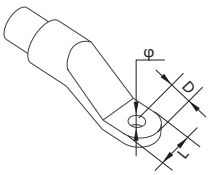
NM8-125: M6

NM8S-125, NM8-250, NM8S-250: M8

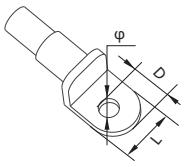
NM8-400, 630, NM8S-400, 630: M10

NM8-800, 1250, NM8S-800, 1250: M10

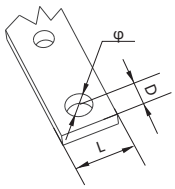




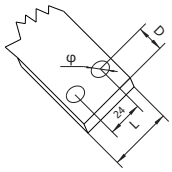
Copper cable connection plug



Aluminum cable connection plug



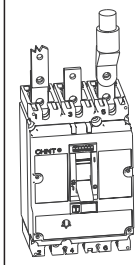
Copper busbar



Copper busbar [NM8(S)-1250]

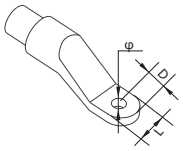
Dimension	NM8-125	NM8S-125 NM8-250 NM8S-250	NM8-400, 630 NM8S-400, 630	NM8-800, 1250 NM8S-800, 1250, 1600
Distance between different poles(mm)	30	35	45	70
L(mm)	≤15	≤25	≤32	≤50
D(mm)	≤7	≤10	≤16	≤16
Φ(mm)	> 6	> 8	> 10	> 11

b. With front connection and use screw to connect
with copper (aluminum) cable connection plate or copper busbar
Size of connection screw
NM8-125: M6
NM8S-125, NM8-250, NM8S-250: M8
NM8-400, 630, NM8S-400, 630: M12
NM8-800, 1250, NM8S-800,1250,1600: M10

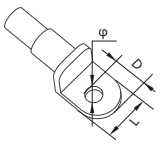


Front connection plate

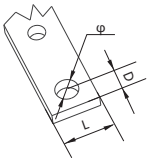
Front connection plate



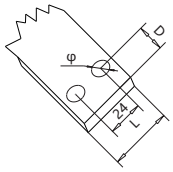
Copper cable connection plug



Aluminum cable connection plug



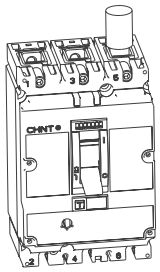
Copper busbar

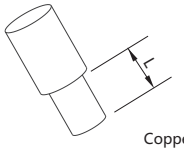


Copper busbar [NM8(S)-1250]

Dimension	NM8-125	NM8S-125 NM8-250 NM8S-250	NM8-400, 630 NM8S-400, 630		NM8-800, 1250 NM8S-800, 1250, 1600
Distance between different poles(mm)	30	35	52.5	70	70
L(mm)	≤15	≤25	≤40	≤60	≤50
D(mm)	≤7	≤10	≤16	≤16	≤16
Φ(mm)	> 6	> 8	> 12	> 12	> 11

8.5.2 Connection of bare cable





Copper or aluminum cable

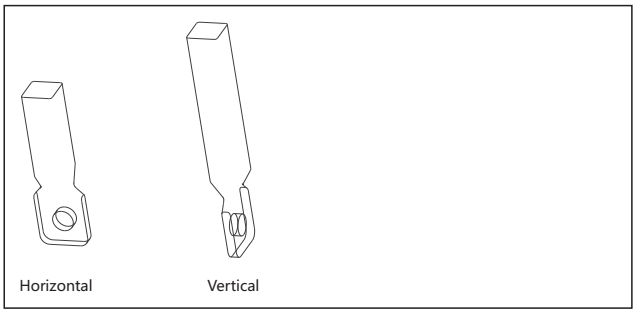
Dimension	NM8-125	NM8S-125 NM8-250 NM8S-250
L(mm)	16	20
CSA(mm^2)	2.5~50	2.5~185

Dimension	NM8-400, 630 NM8S-400, 630		
Number of cable	1	2	4
L(mm)	26	30, 60	30
CSA(mm^2)	35~370	35~185	35~125

8.5.3 Rear connection

For rear connection, cable connection plug should be used for connection with copper busbar.

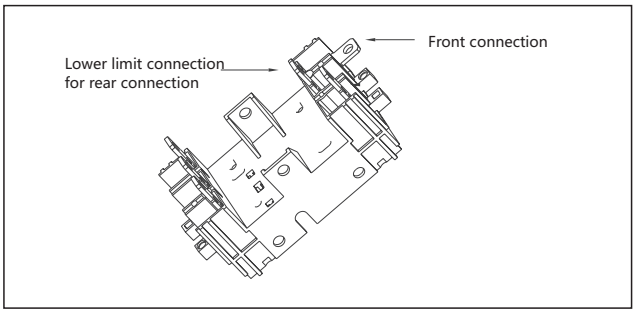
Rear connection



8.5.4 Plug-in type connection

Two modes of front and rear connection are available; for rear connection, upper limit or lower limit connection is used.

Plug-in type



8.5.5 Standard CSA of copper cable or busbar used for connection

Rated current(A)		16	20	25	32	40	50	63	80	100	125	160	200	250	315	350	400	500	630	700	800	1000	1250	1600
Cross section area (mm^2)	Copper cable	2.5	2.5	4.0	6.0	10	10	16	25	35	50	70	95	120	185	185	240	2×150	2×185	2×240	2×240	-	-	-
	Copper busbar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2×30×5	2×40×5	2×50×5	2×50×5	2×60×5	2×80×5	2×80×5

8.5.6 Usual cross sections for conductors according intensity

In(A)	Copper conductors	Copper bar
	Cross Section Area (mm^2)	Dimensions Area (mm^2)
10	1.5	—
16	2.5	—
20	2.5	—
25	4	—
32	6	—
40	10	—
63	16	—
80	25	—
100	35	—
125	50	—
160	70	—
200	95	—
250	120	—
315	185	—
400	240	—
500	2×150	2×30×5
630	2×185	2×40×5
800	2×240	2×50×5
1000	—	2×60×5
1250	—	2×80×5
1600	—	2×80×5

8.6 Overall and Mounting Dimensions

8.6.1 Overall and mounting dimensions of fixed type for front connection

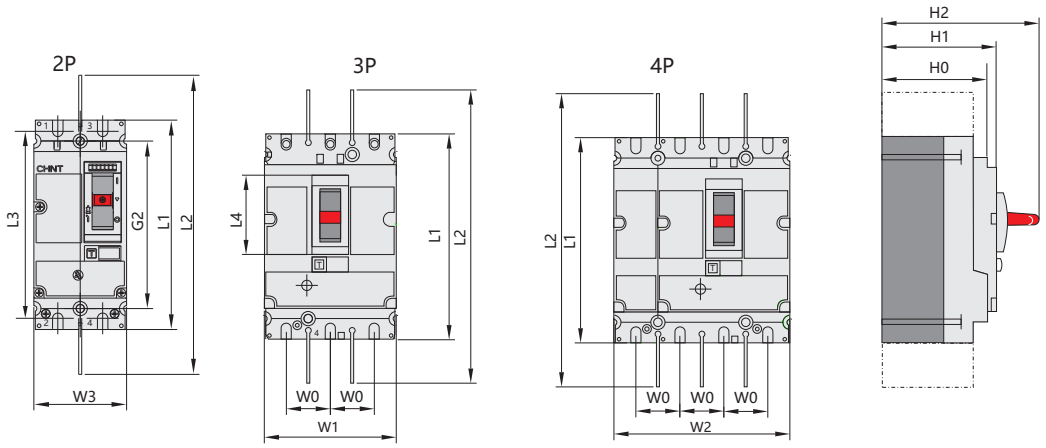
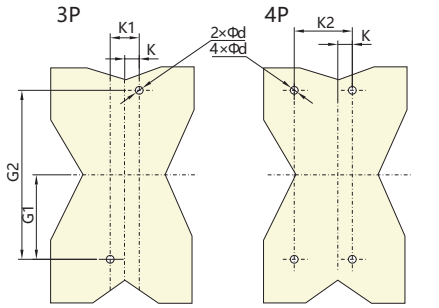
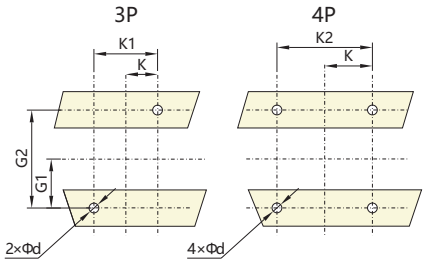


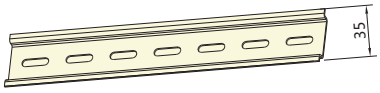
Plate mount



Bar mount



DIN rail mount[NM8(S)-125,250]

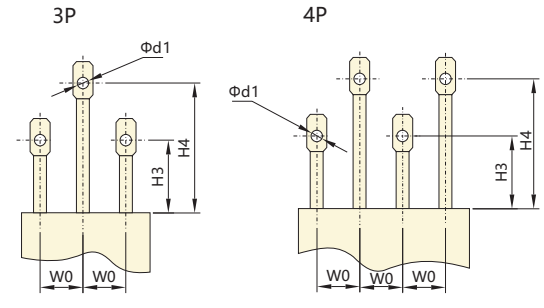


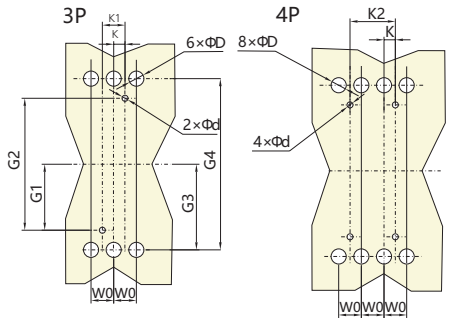
(mm)

Model	L1	L2	L3	L4	H0	H1	H2	K	K1	K2	G1	G2	W0	W1	W2	W3	d
NM8-125	140	243	126	54	72	79	108	15	30	60	56	112	30	90	120	62	5.5
NM8S-125/NM8-250/NM8S-250	157	273	140	60	82	88	126	17.5	35	70	62.5	125	35	105	140	70	5.5
NM8-400, 630/NM8S-400, 630	255	482	227	114	109	113	168	22.5	45	90	100	201.5	45	140	185	-	5.5
NM8-800, 1250/NM8S-800, 1250	370	565	265	134.5	141	145	206	35	70	140	120	240	70	210	280	-	7
NM8S-1600	370	565	341.5	124	137	151	211	35	70	140	120	240	70	210	280	-	7

8.6.2 Overall and mounting dimensions of fixed type for rear connection

Plate mount





(mm)

Model	H3	H4	W0	K	K1	K2	G1	G2	G3	G4	d	d1	D
NM8-125	47	87	30	15	30	60	56	112	63	126	5.5	6.5	15
NM8S-125/NM8-250/NM8S-250	47	87	35	17.5	35	70	62.5	125	70	140	5.5	8	20
NM8-400,630/NM8S-400,630	50	100	45	22.5	45	90	100	200	113.5	227	6	13	32

8.6.3 Overall and mounting dimension of plug-in type

Plate mount

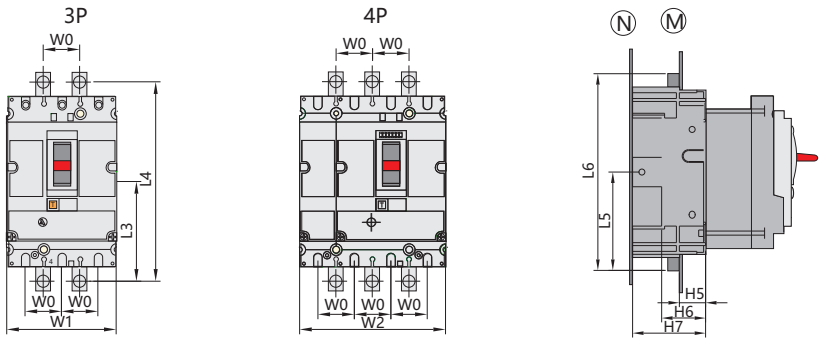


Plate mount Ⓜ

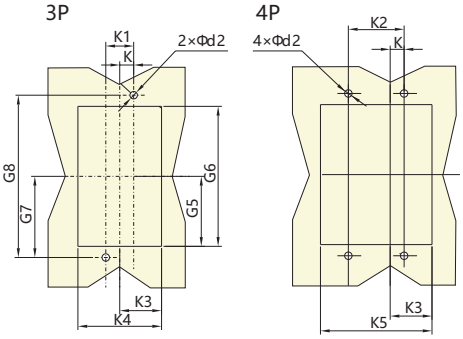
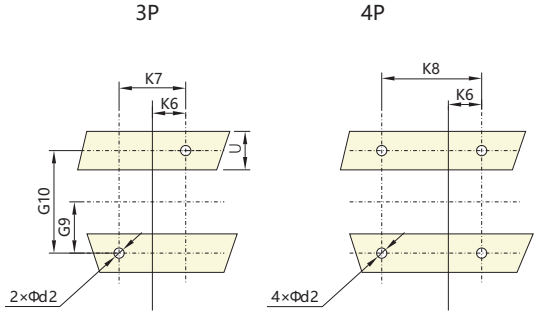
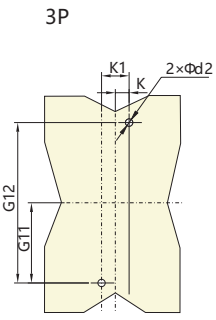


Plate mount Ⓝ front connection
Insulation barrier must be mounted
between mounting plate and breaker base

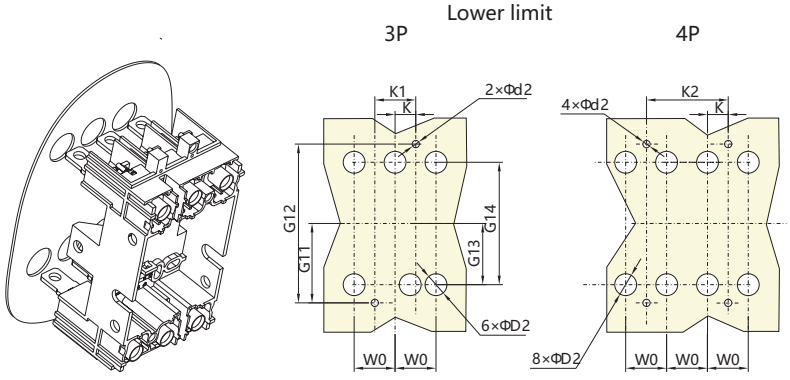
Bar mount



(standard configuration)
Plate mount Ⓝ rear connection
Mounting plate and breaker base must be used with insulation material

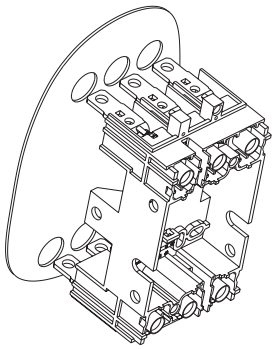


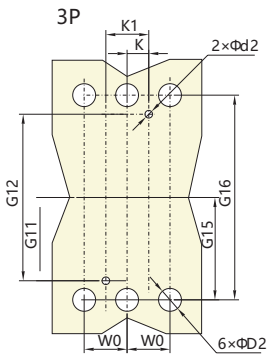
Lower limit

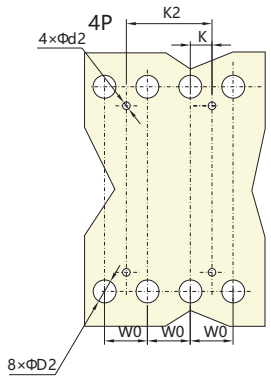


Note: Plug-in type rear connection, use insulated mounting base plate

Upper limit





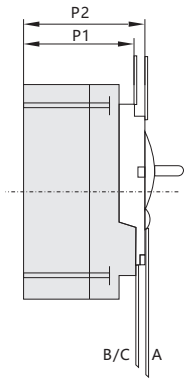


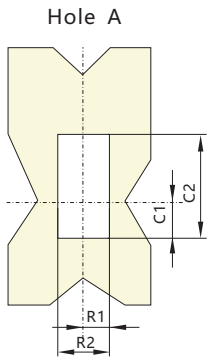
(mm)

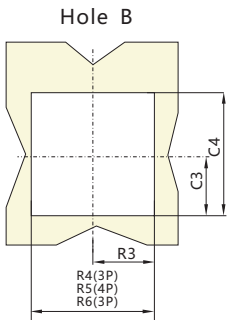
Model	W0	W1	W2	L4	L5	L6	H5	H6	H7	K	K1	K2	K3	K4	K5	K6	K7
NM8-125	30	90	120	170.5	90	180	24	40	67	15	30	60	47	94	124	30	60
NM8S-125/NM8-250/NM8S-250	35	105	140	190	102.5	205	27	45	75	17.5	35	70	54.5	109	144	35	70
NM8-400, 630/NM8S-400, 630	45	140	185	300	157.5	315	27	45	100	22.5	45	90	71.5	143	188	45	90

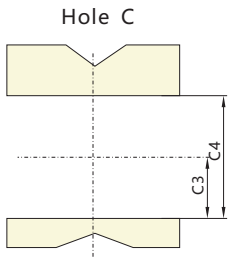
Model	K8	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14	G15	G16	d2	D2	U
NM8-125	90	77	154	85.2	170.4	32.5	65	68	136	54.5	109	70.5	141	6	20	≤32
NM8S-125/NM8-250/NM8S-250	105	87	174	95	190	37.5	75	77.5	155	61	122	79	158	6	25	≤32
NM8-400, 630/NM8S-400, 630	140	137	274	150	300	75	150	125	250	101	202	126	252	6	35	≤32

8.6.4 Flush type (for fixed or plug-in type)









(mm)

Model	P1	P2	R1	R2	R3	R4	R5	R6	C1	C2	C3	C4
NM8-125	73	80	13	26	46.5	93	123	65	26	68	50.5	101
NM8S-125/NM8-250/NM8S-250	83	90	14.5	29	54	108	143	73	33	78	56.5	113
NM8-400, 630/NM8S-400, 630	109	114	26.5	53	71.5	143	188	-	41.5	116	108	205
NM8-1250/NM8S-1250	103	145	41	82	107	214	284	-	90	131	125	250

9. Accessories

9.1 Inner accessories

9.1.1 Shunt release

Us=70~110%Us, circuit breaker reliably operates

Long-time electrification is prohibited

Time of response: pulsive type≥20ms, ≤60ms

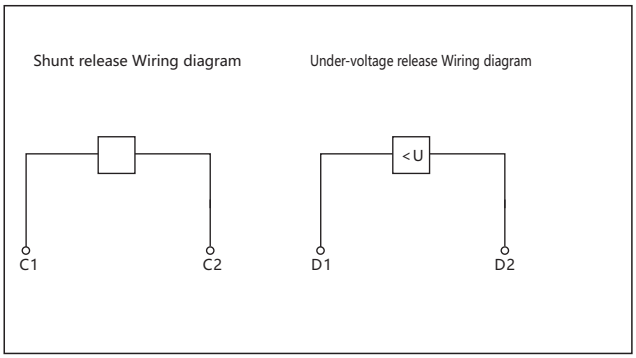
9.1.2 Under-voltage release

Us=35~70%Ue, circuit breaker reliably breaks

Us≥85%Ue, circuit breaker reliably closes

Us < 35%Ue, prevent circuit breaker from making

Note: With under-voltage release, Us≥85%Ue, circuit breaker normally makes and breaks

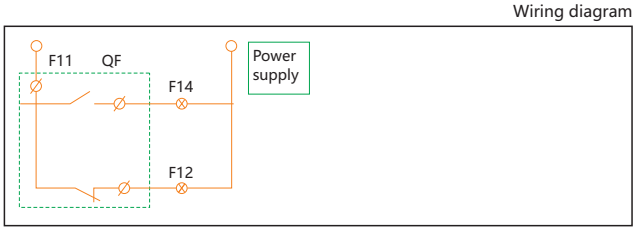


9.1.3 Auxiliary contact

Function: Indication of contacting status

Circuit breaker is at making status	F12, F14 — F11
Circuit breaker is at breaking status	F12 — F11, F14

Wiring diagram



9.1.4 Alarm contact

Function: indication of reason for circuit breaker releasing;

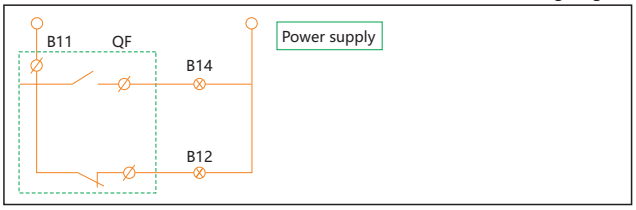
* Over-load
* Short-circuit
* Grounding fault
* Operation of under-voltage releasing or free tripping

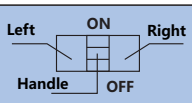
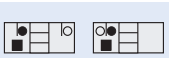
When circuit breaker normally makes and breaks, alarm contact not operates.

After free tripping(or tripping due to failure), alarm contact operates and after the circuit breaker again normally operates, alarm contact recovers original status.

Circuit breaker is at breaking or making status	B12, B14 — B12
Circuit breaker is at free release (or alarming)status	B12 — B11, B14

Wiring diagram



Accessory	Code	Mounting and wiring mode 		
		NM8-125, 250 NM8S-125, 250	NM8-400, 630 NM8S-400, 630	NM8-800, 1250 NM8S-800, 1250,1600
		3P, 4P	3P, 4P	3P, 4P
No accessory				
Alarm contact	AL			
Shunt release	SM: AC220V, SQ: AC380V SB: DC24V			
Auxiliary contact	AX			
Under-voltage release	UM: AC220V UQ: AC380V			
Shunt release Auxiliary contact	SM: AC220V, SQ: AC380V, SB: DC24V AX			
Two groups of auxiliary contact	AX, AX			
Auxiliary contact Under-voltage release	AX UM: AC220V, UQ: AC380V			
Shunt release Alarm contact	SM: AC220V, SQ: AC380V, SB: DC24V AL			
Auxiliary contact Alarm contact	AX AL			
Under-voltage release Alarm contact	AL			
Shunt release Auxiliary contact, alarm	SM: AC220V, SQ: AC380V, SB: DC24V AX, AL			
Two groups of auxiliary contact	AX, AX AL			
Alarm contact Auxiliary contact, alarm contact Under-voltage release	AX, AL (UM: AC220V, UQ: AC380V)			

-Shunt release -Under-voltage release -Auxiliary contact -Alarm contact

Note: 1: For NM8-125, 250, 400, 630, NM8S-125, 250, 400, 630, under-voltage and shunt release couldn't be simultaneously equipped on one breaker.

2: For NM8-800, 1250, NM8S-800, 1250, 1600, at most three auxiliary contacts could be equipped, under-voltage and shunt release could be simultaneously equipped on one breaker, in addition, their positions could be exchanged.

9.2 External accessories

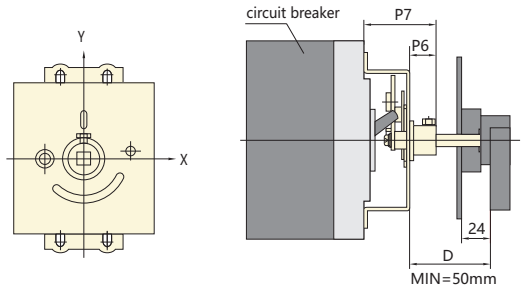
9.2.1 Economic extended rotary handle

Protection degree: IP30

Functions: Isolation function indication;

0(breaking), 1(making)and free tripping indication;

At "OFF" status, the breaker can be fitted with 1-3 padlocks with a diameter of 5-8mm(by customer), This prevents the door of switchgear being opened unwantedly.

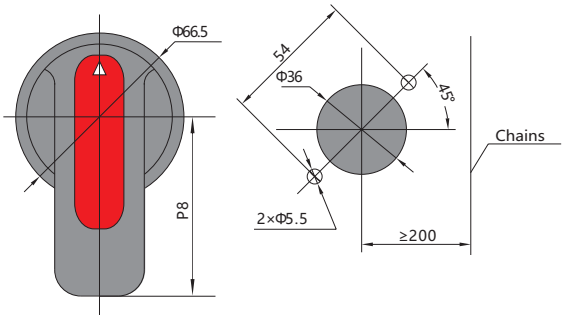


(mm)

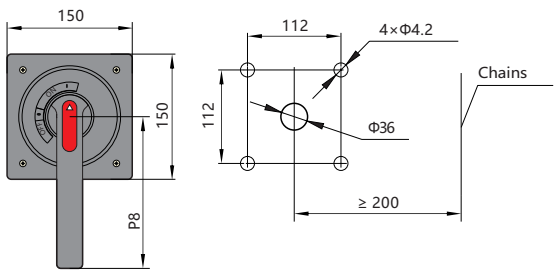
Dimension	NM8-125	NM8S-125, NM8-250, NM8S-250	NM8-400, NM8S-400	NM8-630, NM8S-630	NM8(S)-800	NM8(S)-1250,1600
P6	18	18	18	18	18	18
P7	55	55	72	72	95.5	95.5
P8	65	65	126	126	170	170

Handle mounting (mm)

NM8(S)-125,250,400,630



NM8(S)-800,1250,1600



9.2.2 Direct rotary handle

Protection degree：IP40

Functions:

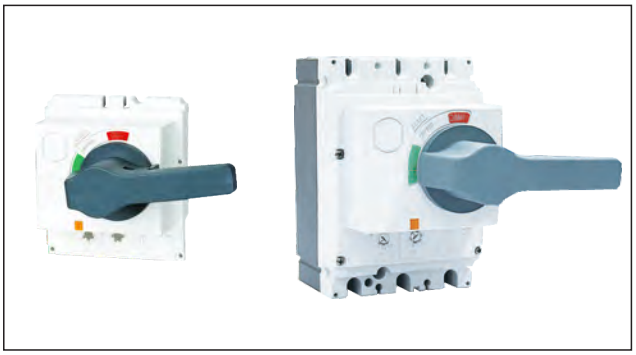
Reliable insulation;

Isolation function indication;

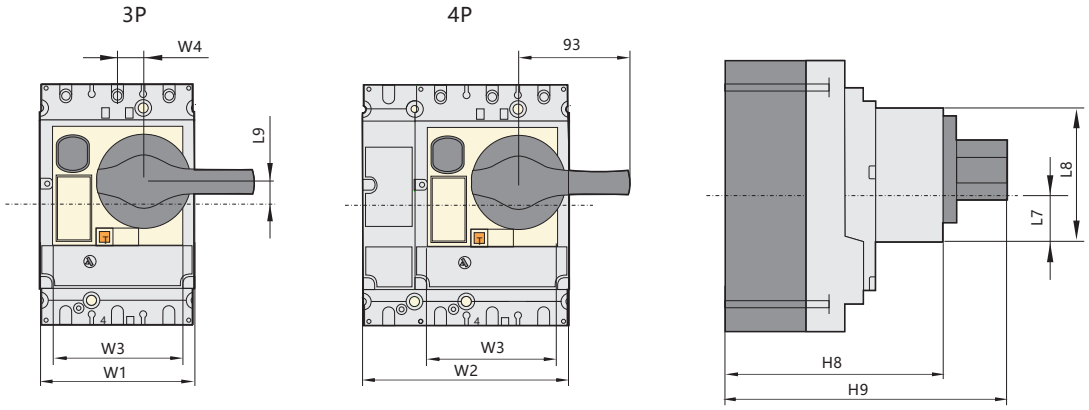
0(breaking), 1(making) and free tripping indication;

Realize free tripping of circuit breaker;

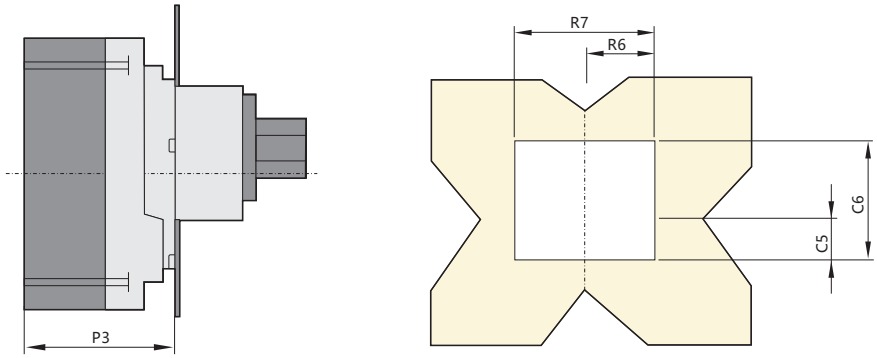
At "OFF" status, the breaker can be fitted with 1-3 padlocks with a diameter of 5~8mm (by customer).



Direct rotary handle



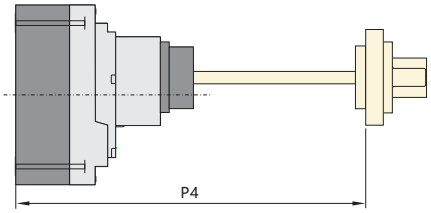
Front boring(fixed or plgu-in circuit breaker)(mm)

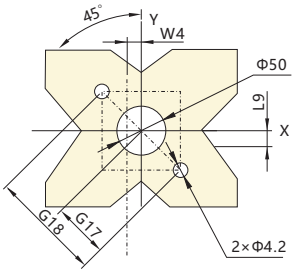


9.2.3 Extended rotary handle

Protection degree: IP55
Functions:
Reliable insulation;
Isolation function indication;
0(breaking), 1(making) and free tripping indication;
When the door is open, the release can be set and the breaker will not make;
At "OFF" status, the breaker can be fitted with 1~3 padlocks with a diameter of 5~8mm (by customer). Then door of the switchgear can be opened.

Front boring(fixed or plug-in circuit breaker)(mm)





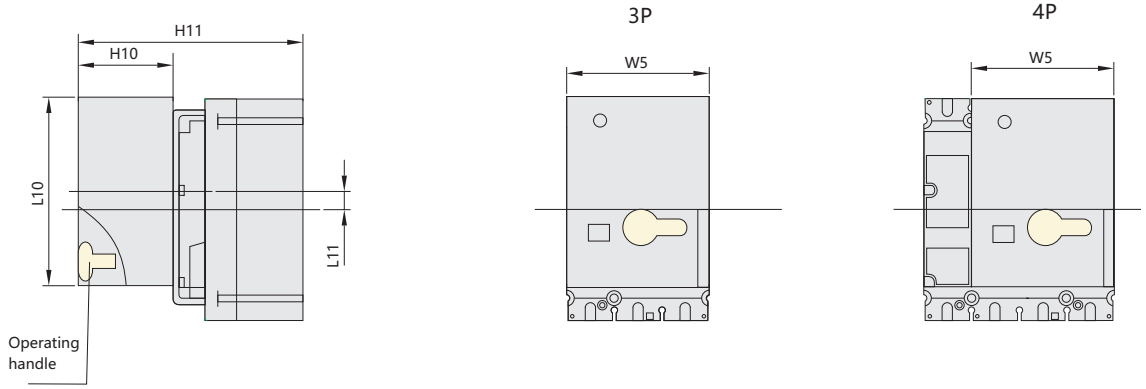
(mm)

	W1	W2	W3	W4	L7	L8	L9	H8	H9	P3	P4	R6	R7	C5	C6	G17	G18
NM8-125	90	120	76	15.25	37	70	13.3	115	163	80	≥175 ≤600	38	76	38	70	37	74
NM8S-125 NM8-250 NM8S-250	105	140	93.5	15.5	39	77.5	9	126	174	90	≥175 ≤600	46.5	93	40.5	76.5	37	74
NM8-400,630/ NM8S-400,630	140	185	122	18	69	121.5	24.5	152	200	115	≥175 ≤600	61	122	70.5	121	37	74

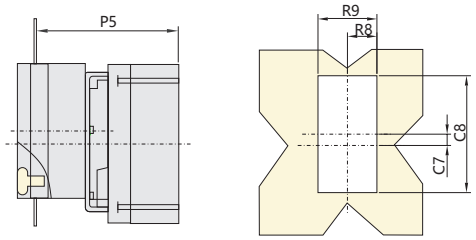
9.2.4 Motor-driven mechanism

Protection degree: IP40
Functions:
Reliable insulation;
Isolation function indication;
0(breaking), 1(making) and free tripping indication;
Free releasing of circuit breaker;
Making and breaking the breaker manually or automatically
Manual operation
Turn "manual/auto" switch to "auto" position and then turn the handle to make and break the breaker.
Automatic operation:
Turn "manual/auto" switch to "manual" position and then push the button to make and break the breaker remotely. The make/break operation is carried out via pulse or self-retaining type signal control.
Operational range: 85%Un~110%Un.

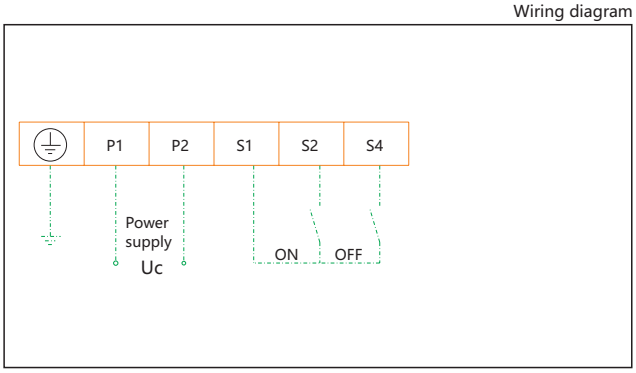
NM8 circuit breaker	Rated control voltage	Electrical life	Operational current	Power consumption
NM8-125	AC/DC 110V DC 220V AC 380V	10,000 operations	≥0.5 A	200W 300W
NM8S-125 NM8-250 NM8S-250	AC230/DC 220V AC 380V AC/DC 110V	10,000 operations	≥0.5 A	200W 300W
NM8-400 NM8S-400 NM8-630 NM8S-630	AC/DC 110V AC230/DC 220V AC 380V	5,000 operations	≥2 A	350W
NM8-800 NM8S-800 NM8-1250 NM8S-1250	AC/DC 110V AC230/DC 220V AC 380V	3,000 operations	≥7.5 A	400W



Front boring(fixed or plug-in circuit breaker)



Wiring diagram



(mm)

Model	W5	H10	H11	L10	L11	R8	R9	P5	C7	C8
NM8-125	90	77	164	117	17.3	46.5	93	144	17.3	120
NM8S-125, NM8-250, NM8S-250	90	77	175	117	14.5	46.5	93	155	14.5	120
NM8(S)-400, 630	130	115	250	175	19	65	130	225	19	180
NM8(S)-800, 1250	130	115	295	175	47.5	65	130	270	47.5	180

9.3 Locking system

Locking the breaker at status of making or breaking.

The system can be fitted with 1~3 padlocks with a diameter of 5~8mm (by customer).

9.4 Terminal cover

Protection degree: IP40

Protect from being contacted with main circuit.

Selection of terminal cover:

Fixed breaker (front connection): Long terminal cover; Fixed breaker (rear connection): Short terminal cover;

Plug-in breaker: short terminal cover; When voltage is ≥500V, terminal cover selected for definite connection mode

Locking system

Long terminal cover

Short terminal cover

10. COMA-2 communication module

10.1 General

COMA-2 communication module is the interface module for our intelligent MCCB and bus communication system, suitable for NM8S series of intelligent MCCB, operating communication level conversion and relay control output.

Combined with the Modbus-RTU communication protocol, the communication module can easily connect with Fieldbus master device to realize telemeter, and the remote control function.

10.2 Technical parameter

Rated voltage: AC230V, AC400V or DC24V (range of error 15%)

Communication type: RS485 (Modbus protocol)

Contact capacity: AC250V /15A

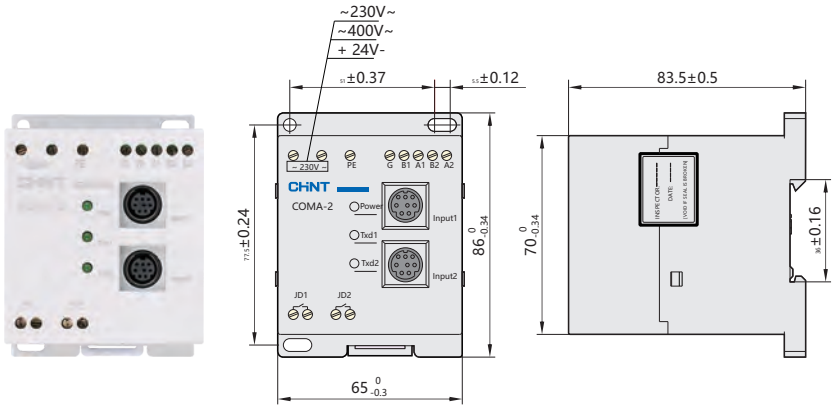
Transmission medium: shielded twisted pair line

Transmission distance: 12km (using A level of shielded twisted pair line)

Working state instructions: LED instructions

Station number: 2 stations

10.3 Dimensions of product and installation



10.4 Solutions for communication

Solution	Function	Product and accessories	Remark
Solution 1	Telemetering	NM8S MCCB COMA-2	Read phase current
Solution 2	Telemetering+Telesignalisation	NM8S MCCB COMA-2 Auxiliary contact	Read phase current Indicate the status of MCCB
Solution 3	Telemetering+Telesignalisation+Telecommand	NM8S MCCB COMA-2 Auxiliary contact Motor-driven mechanism	Read phase current Indicate the status of MCCB Remote control Mccb switch on and off

11. Complementary technical information

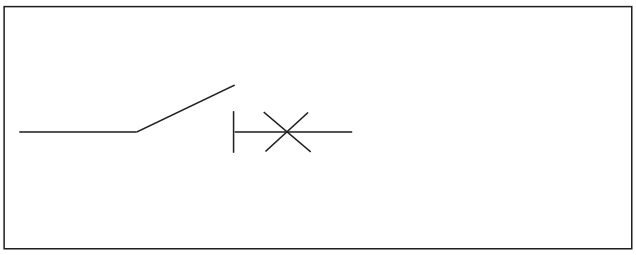
11.1 Isolation function

Isolation functions of all the circuit breakers as per IEC60947/EN60947-2; Isolating position of contactors is at 0 (OFF) status. The operating handle will correctly indicate the status of 0(OFF), only if the contactor breaks.

Padlocks could be mounted after the contacts breaks;

Operation of isolation functions will realize following points:

- Contacts operation correctly indicates: operating reliability of interior mechanism;
- No residual current;
- Higher impulse withstands voltage for terminals at the power supply side and on-load side.



11.2 Current-limiting

11.2.1 Current-limiting capacity

The current-limiting capacity of a circuit breaker is its aptitude to limit short-circuits current. By occurring of short-circuit, the breaker is able to limit I^2t in time so as to protect circuits and switchgear at downstream.

The exceptional limiting capacity of NM8 series is due to the rotating double-break technique, which is characterized by very rapid natural repulsion of contacts and the appearance of two arc voltages in series with a very steep wave front.

a. Exceptional current-limiting capacity is able to greatly reduce power caused by fault current so as to enhance breaking capacity of breaker to Ics=100%Icu;

b .The capacity has greatly released damages, which short-circuit current lay to apparatus;

c .The capacity has greatly lowered temperature-rise so as to lengthen service life of the cable;

d. The capacity has greatly reduced power so as to lessen distortion of contacts and bus bar;

e. The capacity has greatly decreased interruptions to apparatus nearby.

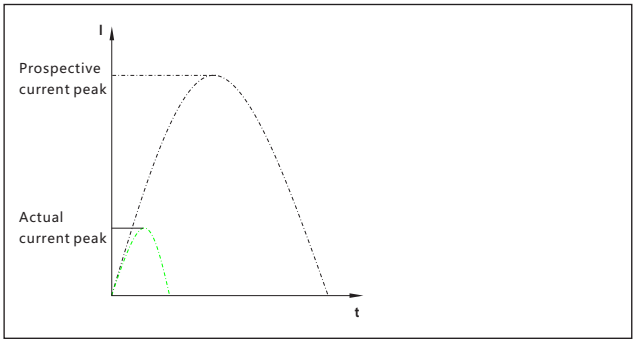
11.2.2 Current-limiting curves

The current-limiting capacity of a circuit breaker is expressed by two curves which are the prospective current and the actual short-circuit current.

Thermal stress (A^2S), i.e. the energy dissipated by the short-circuit current in a conductor with a resistance of 1Ω.

The table below indicates the maximum permissible thermal stresses for cables depending on their insulation, conductor (Cu or Al) and cross section area (CSA).

CSA values are given in mm^2 and thermal stresses in A^2S.



CSA(mm^2)		1.5	2.5	4	6	10	16	25	35
PVC	Cu K=115	2.97×10^4	8.26×10^4	2.12×10^5	4.76×10^5	1.32×10^6	3.40×10^6	8.26×10^6	1.62×10^7
	Al K=76	1.30×10^4	3.61×10^4	9.26×10^5	2.08×10^5	5.78×10^6	1.48×10^6	3.16×10^6	7.08×10^7
Butyl	Cu K=131	3.86×10^4	1.07×10^5	2.75×10^4	6.18×10^4	1.72×10^4	4.39×10^4	1.07×10^4	2.10×10^4
	Al K=87	1.70×10^4	4.73×10^4	1.21×10^4	2.72×10^4	7.57×10^4	1.94×10^4	4.73×10^4	9.27×10^4
EPR	Cu K=143	4.60×10^4	1.28×10^4	3.27×10^4	7.36×10^4	2.04×10^4	5.23×10^4	1.28×10^4	2.51×10^4
	Al K=94	1.99×10^4	5.52×10^4	1.41×10^4	3.18×10^4	8.84×10^4	2.26×10^4	5.52×10^4	1.08×10^4

CSA(mm^2)		50	70	95	120	150	185	240
PVC	Cu K=115	3.31×10^4	6.48×10^4	1.19×10^5	1.90×10^5	2.98×10^6	4.53×10^6	7.62×10^6
	Al K=76	1.44×10^4	2.83×10^4	5.21×10^5	8.32×10^5	1.30×10^6	1.98×10^6	3.33×10^6
Butyl	Cu K=131	4.29×10^4	8.41×10^5	1.55×10^4	2.47×10^4	3.86×10^4	5.87×10^4	9.88×10^4
	Al K=87	1.89×10^4	3.71×10^4	6.83×10^4	1.09×10^4	1.70×10^4	2.59×10^4	4.36×10^4
EPR	Cu K=143	5.11×10^4	1.00×10^4	1.85×10^4	2.94×10^4	4.60×10^4	7.00×10^4	1.18×10^4
	Al K=94	2.21×10^4	4.33×10^4	7.97×10^4	1.27×10^4	1.99×10^4	3.02×10^4	5.09×10^4

K is quoted from GB-50054 code for design of low voltage electrical installations.

Example:

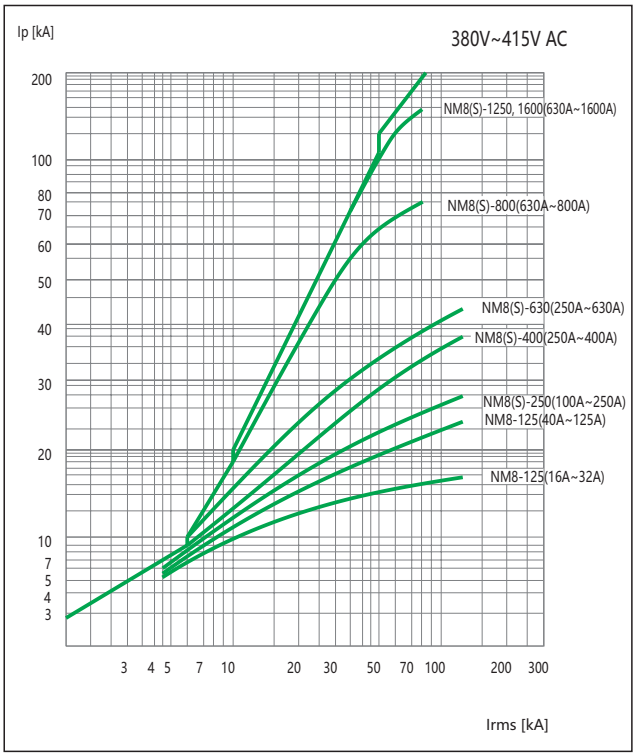
a.What is the actual current when a prospective short-circuit current of 125kA rms (peak value=275kA) comes through the current-limiting operation circuit breaker at upstream of NM8-125R

Answer: the peak value=23kA; (for details, refer to current-limiting curves)

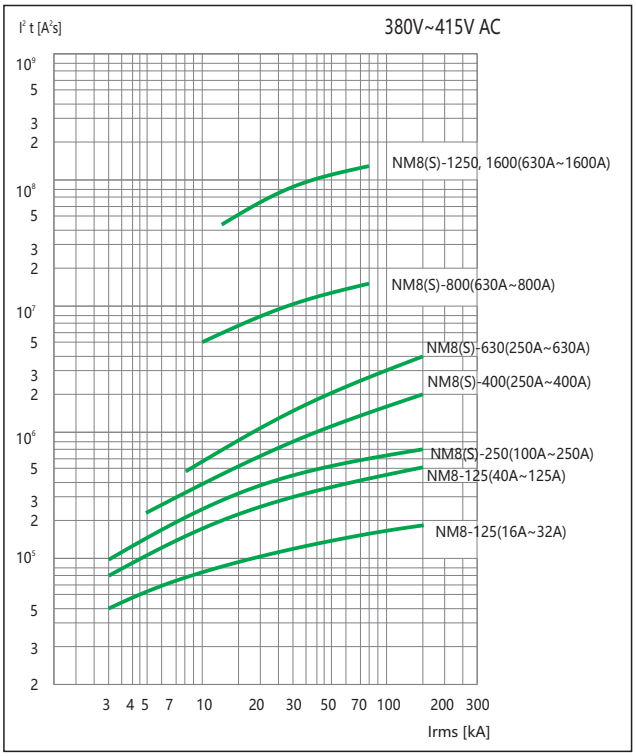
b.Is a Cu/PVC cable with a CSA of 10mm^2 adequately protected by a NM8-125S circuit breaker

Answer: the table above indicates that the permissible thermal stress is 1.32×10^6 A^{2}S at the point where a NM8-125S (Icu=50kA) is installed, and the short-circuit current is limited within the range of 1.32×106 A^{2}S, therefore the cable could be protected.

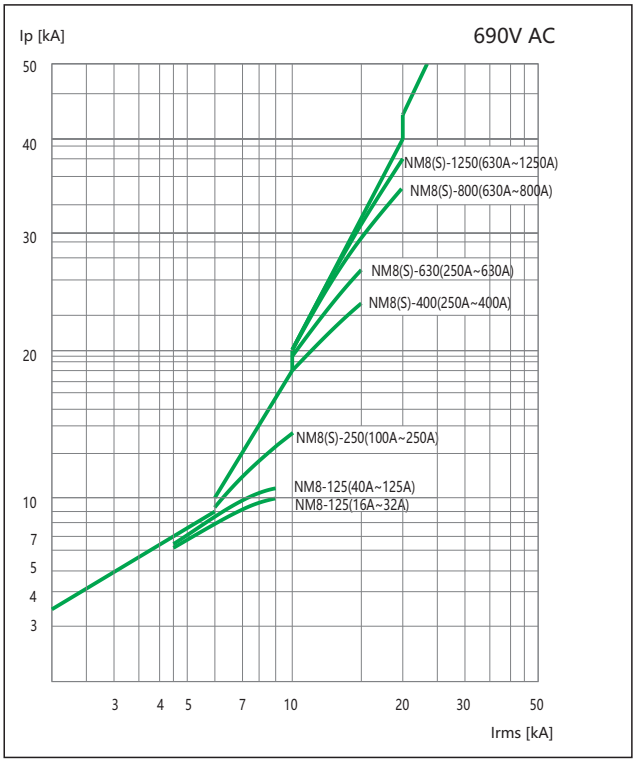
I^2 t Curve



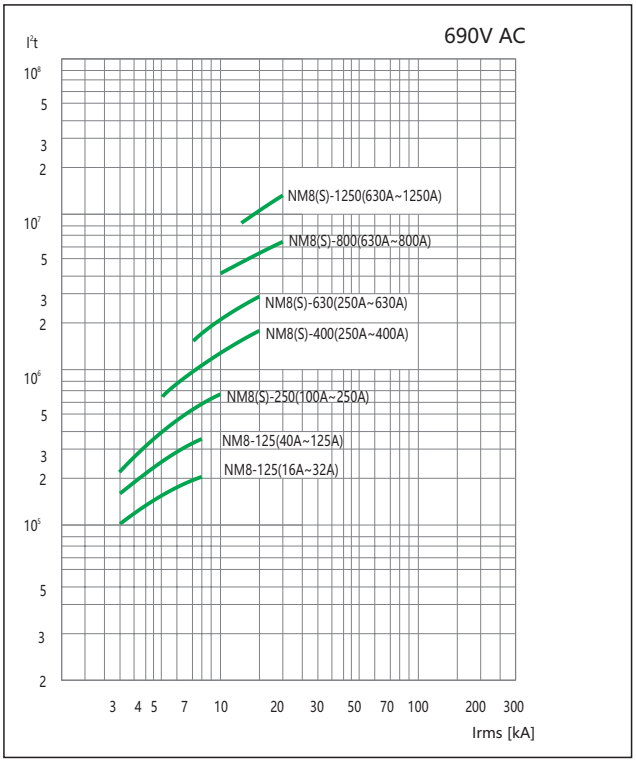
A^{2}s curve



I^2 t Curve



A^{2}s curve



11.3 Power loss per pole

Resistance/ power loss mΩ/W	NM8-125	NM8S-125	NM8-250	NM8S-250	NM8-400	NM8S-400
16	7.1/1.8					
20	6.2/2.5					
25	4.8/3					
32	3.7/3.8					
40	2.6/4.2	0.85/1.4				
50	2.7/6.8	0.7/1.8				
63	1.7/6.7	0.7/2.8				
80	1.3/8.3	0.7/4.5				
100	0.85/8.5	0.5/5	1.0/10	0.5/5		
125	0.71/11.1	0.5/7.8	1.0/15.6	0.5/7.8		
160			0.55/14	0.36/9.2		
180			0.55/17.8	0.36/11.7		
200			0.55/22	0.36/14.4		
225			0.55/27.8	0.28/14.2		
250			0.55/34.4	0.28/17.5	0.3/18.8	0.15/9.4
315					0.28/27.8	0.15/14.9
350					0.28/34.3	0.15/18.4
400					0.24/38.4	0.15/24
500						
630						
700						
800						
1000						
1250, 1600						

11.4 Influences which altitude lay to tripping characteristics

To tripping characteristics of circuit breaker, it is no obvious influence, when the altitude does not exceed 2000m. Once the altitude exceeds the level of 2000m, factors of dielectric stress lowering and cooled air should be taken into consideration.

Altitude (m)	2000	3000	4000	5000
Dielectric stress (V)	3000	2500	2100	1800
Max. operational voltage (V)	690	550	480	420
Ratings at 40℃ (A)	1In	0.96In	0.93In	0.9In

NM8-630	NM8S-630	NM8-800	NM8S-800	NM8-1250	NM8S-1250,1600
0.3/18.8	0.13/8.1				
0.28/27.8	0.13/12.9				
0.28/34.3	0.13/15.9				
0.24/38.4	0.13/20.8				
0.2/50	0.13/32.5				
	0.13/51.6	0.04/15.9	0.04/15.9	0.04/15.9	0.04/15.9
		0.04/19.6	0.04/19.6	0.04/19.6	0.04/19.6
		0.04/25.6	0.04/25.6	0.04/25.6	0.04/25.6
				0.04/40	0.04/40
				0.04/62.5	0.04/62.5

11.5 Cascading

Definition of Cascading

Current-limiting technique has been adopted for cascading to install downstream circuit breaker with lower breaking capacity (cheaper circuit breakers) at the given point of circuit, and upstream NM8(S) circuit breaker operates to limit short-circuit current. Under the operation of cascading network, circuit breaker with lower breaking capacity compared with prospective short-circuit current at the given point could operate under normal short-circuit status. As the short-circuit current will be limited by upstream circuit breaker with current-limiting operation, cascading network is applicable to all the power distribution apparatus protection at downstream.

In addition, cascading operation is not restricted to operation of two switches in serial, but is applicable in various electric networks, as well.

Application of cascading

Through the application of cascading, connected apparatuses could be installed in different switchgears to realize normal operation. Therefore, cascading, in common, refers to various combination of circuit breakers installed at the given point of which the breaking capacity is lower than prospective short-circuit current. And breaking capacity of upstream circuit breakers should be equal to or higher than prospective short-circuit current at the installed point to protect apparatus at downstream. Cascading application is in conformity with IEC60947-2 standards.

Cascading (220/230/240V)
Upstream: NM8-125~1250
Downstream: DZ47, eB, UB, DZ158, DZ267, NB1, NBH8, NM8 (S)-125~1250

Upstream → Breaking capacity (kA rms)	**NM8-125S 85**	**NM8-125H 100**	**NM8-125R 150**	**NM8-250S 85**	**NM8-250H 100**	**NM8-250R 150**	**NM8-400S 85**
Downstream ↓	Breaking capacity (kA rms)						
DZ267	30	80	80	30	40	40	
DZ47, eB, UB	30	80	80	30	40	40	
NBH8	30	80	80	30	40	40	
NB1(Icn=6000A)	40	100	100	40	50	50	
NB1-63(Icn=10000A)	50	100	100	50	65	65	
DZ158-100	50	100	100	50	65	65	50
NM8-125S		100	150		100	150	
NM8-125H			150			150	
NM8-250S					100	150	
NM8-250H						150	
NM8-400S							
NM8-400H							
NM8-630S							
NM8-630H							
NM8-800S							
NM8-800H							
NM8-1250S							
NM8-1250H							
NM8S-125S		100	150		100	150	
NM8S-125H			150			150	
NM8S-250S					100	150	
NM8S-250H						150	
NM8S-400S							
NM8S-400H							
NM8S-630S							
NM8S-630H							
NM8S-800S							
NM8S-800H							
NM8S-1250S							
NM8S-1250H							

	NM8-400H 100	NM8-400R 150	NM8-630S 85	NM8-630H 100	NM8-630R 150	NM8-800S 65	NM8-800H 100	NM8-1250S 65	NM8-1250H 100
	65	65							
	100	150		100	150		100		100
		150			150				
	100	150		100	150		100		100
		150			150				
	100	150		100	150		100		100
		150			150				
				100	150		100		100
					150				
							100		100
							100		100
	100	150		100	150		100		100
		150			150				
	100	150		100	150		100		100
		150			150				
	100	150		100	150		100		100
		150			150				
				100	150		100		100
					150				
							100		100
							100		100

Upstream: NM8S-125~1600
Downstream: DZ267, DZ47, eB, UB, NBH8, NB1, DZ158, NM8(S)-125~1600

Upstream → Breaking capacity (kA rms)	NM8S-125S 85	NM8S-125H 100	NM8S-250S 85	NM8S-250H 100	NM8S-400S 85	NM8S-400H 100	NM8S-400R 150
Downstream ↓	Breaking capacity (kA rms)						
DZ267	30	80	30	40			
DZ47, eB, UB	30	80	30	40			
NBH8	30	80	30	40			
NB1(Icn=6000A)	40	100	40	50			
NB1(Icn=10000A)	50	100	50	65			
DZ158-100	50	100	50	65	50	65	65
NM8-125S		100		100		100	150
NM8-125H							150
NM8-250S				100		100	150
NM8-250H							150
NM8-400S						100	150
NM8-400H							150
NM8-630S							
NM8-630H							
NM8-800S							
NM8-800H							
NM8-1250S							
NM8-1250H							
NM8S-125S		100		100		100	150
NM8S-125H							150
NM8S-250S				100		100	150
NM8S-250H							150
NM8S-400S						100	150
NM8S-400H							150
NM8S-630S							
NM8S-630H							
NM8S-800S							
NM8S-800H							
NM8S-1250S							
NM8S-1250H							
NM8S-1600H							

NM8S-630S 85	NM8S-630H 100	NM8S-630R 150	NM8S-800S 65	NM8S-800H 100	NM8S-1250S 65	NM8S-1250H 100	NM8S-1600H 100
	100	150		100		100	100
		150					
	100	150		100		100	100
		150					
	100	150		100		100	100
		150					
	100	150		100		100	100
		150					
				100		100	100
				100		100	100
	100	150		100		100	100
		150					
	100	150		100		100	100
		150					
	100	150		100		100	100
		150					
	100	150		100		100	100
		150					
				100		100	100
				100		100	100
						100	100

Cascading (380/400/415V)
Upstream: NM8-125~1250;
Downstream: DZ47,eB, UB, DZ158, DZ267, NB1, NBH8, NM8(S)-125~1250

Upstream → Breaking capacity (kA rms)	NM8-125S 50	NM8-125H 100	NM8-125R 150	NM8-250S 50	NM8-250H 100	NM8-250R 150	NM8-400S 70
Downstream ↓	Breaking capacity (kA rms)						
DZ47, eB, UB	15	20	20	15	20	20	
NB1(Icn=6000A)	25	30	30	25	30	30	
NB1-63(Icn=10000A)	25	40	40	25	40	40	
DZ158-100	25	40	40	25	40	40	25
NM8-125S		100	150		100	150	70
NM8-125H			150			150	
NM8-250S					100	150	70
NM8-250H						150	
NM8-400S							
NM8-400H							
NM8-630S							
NM8-630H							
NM8-800S							
NM8-800H							
NM8-1250S							
NM8-1250H							
NM8S-125S		100	150		100	150	70
NM8S-125H			150			150	
NM8S-250S					100	150	70
NM8S-250H						150	
NM8S-400S							
NM8S-400H							
NM8S-630S							
NM8S-630H							
NM8S-800S							
NM8S-800H							
NM8S-1250S							
NM8S-1250H							

NM8-400H 100	NM8-400R 150	NM8-630S 70	NM8-630H 100	NM8-630R 150	NM8-800S 50	NM8-800H 70	NM8-1250S 50	NM8-1250H 70
40	40							
100	150							
	150	70	100	150		70		70
100	150			150				
	150	70	100	150		70		70
100	150			150				
	150		100	150		70		70
				150				
			100	150		70		70
				150				
						70		70
						70		70
100	150							
	150	70	100	150		70		70
100	150			150				
	150	70	100	150		70		70
100	150			150				
	150		100	150		70		70
				150				
			100	150		70		70
				150				
						70		70
						70		70

Upstream: NM8S-125~1250
Downstream: DZ267, DZ47, eB, UB, NBH8, NB1, DZ158, NM8 (S) -125~1250

Upstream → Breaking capacity (kA rms)	NM8S-125S 50	NM8S-125H 100	NM8S-250S 50	NM8S-250H 100	NM8S-400S 70	NM8S-400H 100	NM8S-400R 150
Downstream ↓	Breaking capacity (kA rms)						
DZ47, eB, UB	15	20	15	20			
NB1(Icn=6000A)	25	30	25	30			
NB1-63(Icn=10000A)	25	40	25	40			
DZ158	25	40	25	40	25	40	40
NM8-125S		100		100		100	150
NM8-125H				100		100	150
NM8-250S				100		100	150
NM8-250H						100	150
NM8-400S						100	150
NM8-400H							150
NM8-630S							
NM8-630H							
NM8-800S							
NM8-800H							
NM8-1250S							
NM8-1250H							
NM8S-125S		100		100		100	150
NM8S-125H				100		100	150
NM8S-250S				100		100	150
NM8S-250H						100	150
NM8S-400S						100	150
NM8S-400H							150
NM8S-630S							
NM8S-630H							
NM8S-800S							
NM8S-800H							
NM8S-1250S							
NM8S-1250H							
NM8S-1600H							

NM8S-630S 70	NM8S-630H 100	NM8S-630R 150	NM8S-800S 50	NM8S-800H 70	NM8S-1250S 50	NM8S-1250H 70	NM8S-1600H 70
	100	150		70		70	70
	100	150		70		70	70
	100	150		70		70	70
	100	150		70		70	70
	100	150		70		70	70
	100	150		70		70	70
	100	150		70		70	70
		150		70		70	70
				70		70	70
				70		70	70
				70		70	70
				70		70	70
	100	150		70		70	70
	100	150		70		70	70
	100	150		70		70	70
	100	150		70		70	70
	100	150		70		70	70
	100	150		70		70	70
	100	150		70		70	70
		150		70		70	70
				70		70	70
				70		70	70
				70		70	70
				70		70	70
				70		70	70

11.6 Protection discrimination(selectivity)

Protection discrimination is a must factor in low-voltage power distribution design so as to ensure reliability and continuity for users' electricity utilization.

Whenever there is fault occurring in the electric network, the upstream breaker where the fault is occurring breaks.

Protection discrimination could be clarified into 3 kinds: Total protection discrimination, partial protection discrimination and no protection discrimination(refer to fig aside):

Total protection discrimination: For all kinds of current where the faults occurred, including the overload current and nonresistance current, breaker D2 breaks and breaker D1 keeps making status.

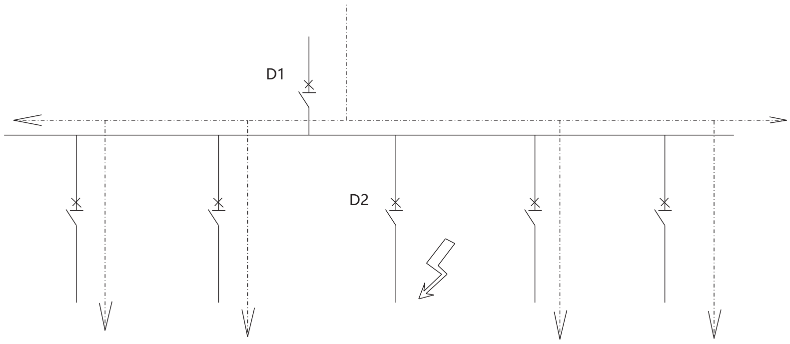
Partial protection discrimination: For a much lower current compared with where the fault occurred (the limit value of protection discrimination), breaker D2 breaks and breaker D1 keeps making status (total protection discrimination).

When the fault current is lower than limit value of protection discrimination, the upstream and downstream breakers are applicable to protection discrimination; when the fault current exceeds limit value of protection discrimination, the upstream and downstream breakers are not applicable to protection discrimination (no protection discrimination). And both of the breakers of D1 and D2 break.

Upstream: NM8-125~1250

Downstream: DZ267, DZ47, eB, UB, NBH8, NB1, DZ158

Upstream → / Downstream In (A) / Ii (kA)		NM8-125 S/H/R										NM8-250 S/H/R			
		16	20	25	32	40	50	63	80	100	125	100	160	200	250
DZ267 C Curves	≤10	0.19	0.25	0.3	0.4	0.5	0.5	0.5	0.63	0.8	1.0	T	T	T	T
	16			0.3	0.4	0.5	0.5	0.5	0.63	0.8	1.0	T	T	T	T
	20					0.5	0.5	0.5	0.63	0.8	1.0	T	T	T	T
	25						0.5	0.5	0.63	0.8	1.0	T	T	T	T
	32							0.5	0.63	0.8	1.0	T	T	T	T
DZ47, eB, UB C Curves	≤10	0.19	0.25	0.3	0.4	0.5	0.5	0.5	0.63	0.8	1.0	T	T	T	T
	16			0.3	0.4	0.5	0.5	0.5	0.63	0.8	1.0	T	T	T	T
	20					0.5	0.5	0.5	0.63	0.8	1.0	T	T	T	T
	25						0.5	0.5	0.63	0.8	1.0	T	T	T	T
	32							0.5	0.63	0.8	1.0	T	T	T	T
	40								0.63	0.8	1.0	T	T	T	T
	50									0.8	1.0	T	T	T	T
	60										1.0	T	T	T	T
NBH8 B C Curves	≤10	0.19	0.25	0.3	0.4	0.5	0.5	0.5	0.63	0.8	1.0	T	T	T	T
	16			0.3	0.4	0.5	0.5	0.5	0.63	0.8	1.0	T	T	T	T
	20					0.5	0.5	0.5	0.63	0.8	1.0	T	T	T	T
	25						0.5	0.5	0.63	0.8	1.0	T	T	T	T
	32							0.5	0.63	0.8	1.0	T	T	T	T
	40								0.63	0.8	1.0	T	T	T	T
NB1 B C D Curves	≤10	0.19	0.25	0.3	0.4	0.5	0.5	0.5	0.63	0.8	1.0	T	T	T	T
	16			0.3	0.4	0.5	0.5	0.5	0.63	0.8	1.0	T	T	T	T
	20					0.5	0.5	0.5	0.63	0.8	1.0	T	T	T	T
	25						0.5	0.5	0.63	0.8	1.0	T	T	T	T
	32							0.5	0.63	0.8	1.0	T	T	T	T
	40								0.63	0.8	1.0	T	T	T	T
	50									0.8	1.0	T	T	T	T
	63									0.8	1.0	T	T	T	T
DZ158	63									0.8	1.0	T	T	T	T
	80										1.0	T	T	T	T
	100												T	T	T



	NM8-400 S/H/R				NM8-630 S/H/R					NM8-800 S/H			NM8-1250 S/H			
	250	315	350	400	250	315	350	400	500	630	700	800	630	700	800	1000	1250
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
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	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
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	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T

Upstream: NM8S-125~1250
Downstream: DZ267, DZ47, eB, UB, NBH8, NB1, DZ158

Upstream / Downstream In (A) / Ii (kA)		NM8S-125 S/H			NM8S-250 S/H				NM8S-400 S/H/R			
		40	100	125	100	160	200	250	250	315	350	400
DZ267 C Curves	≤10	0.5	0.8	1.0	T	T	T	T	T	T	T	T
	16	0.5	0.8	1.0	T	T	T	T	T	T	T	T
	20	0.5	0.8	1.0	T	T	T	T	T	T	T	T
	25		0.8	1.0	T	T	T	T	T	T	T	T
	32		0.8	1.0	T	T	T	T	T	T	T	T
DZ47, eB, UB C Curves	≤10	0.5	0.8	1.0	T	T	T	T	T	T	T	T
	16	0.5	0.8	1.0	T	T	T	T	T	T	T	T
	20	0.5	0.8	1.0	T	T	T	T	T	T	T	T
	25		0.8	1.0	T	T	T	T	T	T	T	T
	32		0.8	1.0	T	T	T	T	T	T	T	T
	40		0.8	1.0	T	T	T	T	T	T	T	T
	50		0.8	1.0	T	T	T	T	T	T	T	T
	60			1.0	T	T	T	T	T	T	T	T
NBH8 B C Curves	≤10	0.5	0.8	1.0	T	T	T	T	T	T	T	T
	16	0.5	0.8	1.0	T	T	T	T	T	T	T	T
	20	0.5	0.8	1.0	T	T	T	T	T	T	T	T
	25		0.8	1.0	T	T	T	T	T	T	T	T
	32		0.8	1.0	T	T	T	T	T	T	T	T
	40		0.8	1.0	T	T	T	T	T	T	T	T
NB1 B C D Curves	≤10	0.5	0.8	1.0	T	T	T	T	T	T	T	T
	16	0.5	0.8	1.0	T	T	T	T	T	T	T	T
	20	0.5	0.8	1.0	T	T	T	T	T	T	T	T
	25		0.8	1.0	T	T	T	T	T	T	T	T
	32		0.8	1.0	T	T	T	T	T	T	T	T
	40		0.8	1.0	T	T	T	T	T	T	T	T
	50		0.8	1.0	T	T	T	T	T	T	T	T
	63		0.8	1.0	T	T	T	T	T	T	T	T
	63		0.8	1.0	T	T	T	T	T	T	T	T
	80			1.0	T	T	T	T	T	T	T	T
	100					T	T	T	T	T	T	T
	63		0.8	1.0	T	T	T	T	T	T	T	T
DZ158	80			1.0	T	T	T	T	T	T	T	T
	100					T	T	T	T	T	T	T
	125					T	T	T	T	T	T	T

NM8S-630 S/H/R						NM8S-800 S/H			NM8S-1250 S/H					NM8S-1600 S/H		
250	315	350	400	500	630	630	700	800	630	700	800	1000	1250	1000	1250	1600
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
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T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
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T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T

II

Upstream: NM8-125~1250
Downstream: NM8(S)-125~1250

Upstream / Downstream In (A) / Ii (kA)		NM8-125 S/H/R										NM8-250 S/H/R			
		16	20	25	32	40	50	63	80	100	125	100	160	200	250
NM8-125 S	16				0.4	0.5	0.5	0.5	0.63	0.8	1.0	2.0	T	T	T
	20					0.5	0.5	0.5	0.63	0.8	1.0	2.0	T	T	T
	25						0.5	0.5	0.63	0.8	1.0	2.0	T	T	T
	32							0.5	0.63	0.8	1.0	2.0	T	T	T
	40								0.63	0.8	1.0	2.0	T	T	T
	50									0.8	1.0	2.0	T	T	T
	63										1.0	2.0	T	T	T
	80												1.25	T	T
	100												1.25	T	T
	125														T
NM8-125 H/R	16				0.4	0.5	0.5	0.5	0.63	0.8	1.0	2.0	T	T	T
	20					0.5	0.5	0.5	0.63	0.8	1.0	2.0	T	T	T
	25						0.5	0.5	0.63	0.8	1.0	2.0	T	T	T
	32							0.5	0.63	0.8	1.0	2.0	T	T	T
	40								0.63	0.8	1.0	2.0	3.6	3.6	3.6
	50									0.8	1.0	2.0	3.6	3.6	3.6
	63										1.0	2.0	3.6	3.6	3.6
	80												3.6	3.6	3.6
	100												3.6	3.6	3.6
	125														3.6
NM8S-125 S/H	40								0.63	0.8	1.0	1.25	T	T	T
	100												1.25	T	T
	125														2.5
NM8-250 S	100														3
	160														
	200														
	250														
NM8-250 H/R	100														3
	160														
	200														
	250														
NM8S-250 S/H	100												1.6	2	2.5
	160														2.5
	200														
	250														
NM8-400 S/H/R	250														
	315														
	350														
	400														
NM8S-400 S/H/R	250														
	315														
	350														
	400														
NM8-630 S/H/R	250														
	315														
	350														
	400														
	500														

	NM8-400 S/H/R				NM8-630 S/H/R					NM8-800 S/H			NM8-1250 S/H					
	250	315	350	400	250	315	350	400	500	630	700	800	630	700	800	1000	1250
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	50	50	50	50	50	50	T	T
	T	T	T	T	T	T	T	T	T	50	50	50	50	50	50	T	T
	T	T	T	T	T	T	T	T	T	50	50	50	50	50	50	T	T
	T	T	T	T	T	T	T	T	T	50	50	50	50	50	50	T	T
	T	T	T	T	T	T	T	T	T	50	50	50	50	50	50	T	T
	T	T	T	T	T	T	T	T	T	50	50	50	50	50	50	T	T
	T	T	T	T	T	T	T	T	T	50	50	50	50	50	50	T	T
	T	T	T	T	T	T	T	T	T	50	50	50	50	50	50	T	T
	T	T	T	T	T	T	T	T	T	50	50	50	50	50	50	T	T
	T	T	T	T	T	T	T	T	T	50	50	50	50	50	50	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	5	T	T	T	3	T	T	T	T	T	T	T	T	T	T	T	T
		5	T	T		5	T	T	T	T	T	T	T	T	T	T	T
			5	T			5	T	T	T	T	T	T	T	T	T	T
				5				5	T	T	T	T	T	T	T	T	T
	5		T	T	3	T	T	T	T	40	40	40	40	40	40	T	T
			T	T		5	T	T	T	40	40	40	40	40	40	T	T
			5	T			5	T	T	40	40	40	40	40	40	T	T
				5				5	T	40	40	40	40	40	40	T	T
	5		5	5	T	T	T	T	T	T	T	T	T	T	T	T	T
	5		5	5	T	T	T	T	T	T	T	T	T	T	T	T	T
			5	5				T	T	T	T	T	T	T	T	T	T
				5					T	T	T	T	T	T	T	T	T
								8	8	30	30	30	30	30	30	T	T
									8	30	30	30	30	30	30	T	T
										30	30	30	30	30	30	T	T
										30	30	30	30	30	30	T	T
								8	8	12	12	12	12	12	12	15	15
									8	12	12	12	12	12	12	15	15
										12	12	12	12	12	12	15	15
										12	12	12	12	12	12	15	15
								8	8	30	30	30	30	30	30	T	T
									8	30	30	30	30	30	30	T	T
										30	30	30	30	30	30	T	T
										30	30	30	30	30	30	T	T
											30	30	30	30	30	T	T

II

Upstream / Downstream In (A) / Ii (kA)		NM8-125 S/H/R										NM8-250 S/H/R			
		16	20	25	32	40	50	63	80	100	125	100	160	200	250
NM8S-630 S/H/R	250														
	315														
	350														
	400														
	500														
	630														
NM8-800 S/H	630														
	700														
	800														
NM8S-800 S/H	630														
	700														
	800														
NM8-1250 S/H	630														
	700														
	800														
	1000														
	1250														
NM8S-1250 S/H	630														
	700														
	800														
	1000														
	1250														
NM8S-1600 S/H	1000														
	1250														
	1600														

Upstream: NM8S-125~1250
Downstream: NM8(S)-125~1250

Upstream / Downstream In (A) / Ii (kA)		NM8S-125 S/H			NM8S-250 S/H				NM8S-400 S/H/R			
		40	100	125	100	160	200	250	250	315	350	400
NM8-125 S	16		1.2	1.2	1.2	T	T	T	T	T	T	T
	20		1.2	1.2	1.2	T	T	T	T	T	T	T
	25		1.2	1.2	1.2	T	T	T	T	T	T	T
	32		1.2	1.2	1.2	T	T	T	T	T	T	T
	40		1.2	1.2	1.2	T	T	T	T	T	T	T
	50		1.2	1.2	1.2	T	T	T	T	T	T	T
	63			1.2	1.2	T	T	T	T	T	T	T
	80					T	T	T	T	T	T	T
	100						T	T	T	T	T	T
	125							T	T	T	T	T
NM8-125 H/R	16		1.2	1.2	1.2	T	T	T	T	T	T	T
	20		1.2	1.2	1.2	T	T	T	T	T	T	T
	25		1.2	1.2	1.2	T	T	T	T	T	T	T
	32		1.2	1.2	1.2	T	T	T	T	T	T	T
	40		1.2	1.2	1.2	T	T	T	T	T	T	T
	50		1.2	1.2	1.2	2	36	36	T	T	T	T
	63			1.2	1.2	2	36	36	T	T	T	T
	80					2	36	36	T	T	T	T
	100							36	T	T	T	T
	125							36	T	T	T	T
NM8S-125 S/H	40		1.2	1.2	2	2	T	T	T	T	T	T
	100					2	T	T	T	T	T	T
	125							T	T	T	T	T

	NM8-400 S/H/R				NM8-630 S/H/R					NM8-800 S/H			NM8-1250 S/H				
	250	315	350	400	250	315	350	400	500	630	700	800	630	700	800	1000	1250
								8	8	12	12	12	12	12	12	15	15
									8	12	12	12	12	12	12	15	15
										12	12	12	12	12	12	15	15
										12	12	12	12	12	12	15	15
											12	12	12	12	12	15	15
												12			12	15	15
																15	15
																15	15
																15	15

	NM8S-630 S/H/R						NM8S-800 S/H			NM8S-1250,1600 S/H				
	250	315	350	400	500	630	630	700	800	630	700	800	1000	1250
	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	50	50	50	50	50	50	T	T
	T	T	T	T	T	T	50	50	50	50	50	50	T	T
	T	T	T	T	T	T	50	50	50	50	50	50	T	T
	T	T	T	T	T	T	50	50	50	50	50	50	T	T
	T	T	T	T	T	T	50	50	50	50	50	50	T	T
	T	T	T	T	T	T	50	50	50	50	50	50	T	T
	T	T	T	T	T	T	50	50	50	50	50	50	T	T
	T	T	T	T	T	T	50	50	50	50	50	50	T	T
	T	T	T	T	T	T	50	50	50	50	50	50	T	T
	T	T	T	T	T	T	50	50	50	50	50	50	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	T	T	T	T	T	T	T	T	T	T	T	T	T	T

Upstream / Downstream In (A) / Ii (kA)		NM8S-125 S/H			NM8S-250 S/H				NM8S-400 S/H/R			
		40	100	125	100	160	200	250	250	315	350	400
	40		1.2	1.2	2	2	T	T	T	T	T	T
	100					2	T	T	T	T	T	T
	125							T	T	T	T	T
NM8-250 S	100							3	5	5	5	5
	160										5	5
	200											
	250											
NM8-250 H/R	100							3	5	5	5	5
	160										5	5
	200											
	250											
NM8S-250 S/H	100							5	5	5	5	5
	160							5	5	5	5	5
	200										5	5
	250											5
NM8-400 S/H/R	250											
	315											
	350											
	400											
NM8S-400 S/H/R	250											
	315											
	350											
	400											
NM8-630 S/H/R	250											
	315											
	350											
	400											
	500											
NM8S-630 S/H/R	250											
	315											
	350											
	400											
	500											
	630											
NM8-800 S/H	630											
	700											
	800											
NM8S-800 S/H	630											
	700											
	800											
NM8-1250 S/H	630											
	700											
	800											
	1000											
	1250											
NM8S-1250 S/H	630											
	700											
	800											
	1000											
	1250											
NM8S-1600 S/H	1000											
	1250											
	1600											

Note:

a. The area with T indication clarifies total protection discrimination between upstream and downstream circuit breakers;

b. The area with numbers clarifies partial protection discrimination between upstream and downstream circuit breakers;

c. For partial protection discrimination, the Max. fault current values to ensure time discrimination performance are given in the table; when fault current exceeds this value, upstream and downstream circuit breakers may operate at the same time.

NM8S-630 S/H/R						NM8S-800 S/H			NM8S-1250 S/H					NM8S-1600 S/H		
250	315	350	400	500	630	630	700	800	630	700	800	1000	1250	1000	1250	1600
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
			T	T	T	T	T	T	T	T	T	T	T	T	T	T
				T	T	T	T	T	T	T	T	T	T	T	T	T
					T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	40	40	40	40	40	40	T	T	T	T	T
			T	T	T	40	40	40	40	40	40	T	T	T	T	T
				T	T	40	40	40	40	40	40	T	T	T	T	T
					T	40	40	40	40	40	40	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
			T	T	T	T	T	T	T	T	T	T	T	T	T	T
				T	T	T	T	T	T	T	T	T	T	T	T	T
			8	8	8	30	30	30	30	30	30	T	T	T	T	T
				8	8	30	30	30	30	30	30	T	T	T	T	T
					8	30	30	30	30	30	30	T	T	T	T	T
					8	30	30	30	30	30	30	T	T	T	T	T
			8	8	8	12	12	12	12	12	12	15	15	15	15	15
				8	8	12	12	12	12	12	12	15	15	15	15	15
					8	12	12	12	12	12	12	15	15	15	15	15
					8	12	12	12	12	12	12	15	15	15	15	15
				8	8	30	30	30	30	30	30	T	T	T	T	T
				8	8	30	30	30	30	30	30	T	T	T	T	T
					8	30	30	30	30	30	30	T	T	T	T	T
					8	30	30	30	30	30	30	T	T	T	T	T
							30	30		30	30	T	T	T	T	T
				8	8	12	12	12	12	12	12	15	15	15	15	15
				8	8	12	12	12	12	12	12	15	15	15	15	15
					8	12	12	12	12	12	12	15	15	15	15	15
					8	12	12	12	12	12	12	15	15	15	15	15
							12	12	12	12	12	15	15	15	15	15
								12			12	15	15	15	15	15
												20	20	20	20	20
												15	15	15	15	15
												20	20	20	20	20
												15	15	15	15	15

11.7 Selection table of components for motor control or protection

400V, 50kA, type2, MCCB normal load start-up

Motor parameters		Circuit breaker parameters		Contactor parameters		Thermal relay parameters	
Rated power (kW)	Rated current (A)	Model	Setting of magnetic protection (A)	Model	Rated heating current (A)	Model	Rated current (A)
5.5	10.9	NM8-125S/16M	192	NC1-12	20	NR2-25	9~13
7.5	14.4	NM8-125S/20M	240	NC1-18	32	NR2-25	12~18
11	20.9	NM8-125S/25M	300	NC1-25	40	NR2-25	17~25
15	28	NM8-125S/32M	384	NC1-32	50	NR2-36	23~32
18.5	34.1	NM8-125S/40M	480	NC1-40	60	NR2-36	28~36
22	39.4	NM8-125S/50M	600	NC1-50	80	NR2-93	30~40
30	53.4	NM8-125S/63M	756	NC1-65	80	NR2-93	48~65
37	67.9	NM8-125S/80M	960	NC1-80	110	NR2-93	55~70
45	80.5	NM8-125S/100M	1200	NC1-95	110	NR2-93	80~93
55	98.5	NM8-125S/125M	1500	NC2-115	200	NR2-200	80~125
75	133	NM8-250S/160M	1920	NC2-150	200	NR2-200	100~160
90	158.7	NM8-250S/200M	2400	NC2-185	275	NR2-200	100~160
110	192	NM8-250S/250M	3000	NC2-225	275	NR2-200	125~200
132	229	NM8-400S/315M	3780	NC2-265	315	NR2-630	160~250
160	275	NM8-400S/350M	4200	NC2-330	380	NR2-630	200~315
200	343	NM8-400S/400M	4800	NC2-400	450	NR2-630	250~400
250	445	NM8-630S/500M	6000	NC2-500	630	NR2-630	315~500
290	520	NM8S-630S/630M	7560	NC2-630	800	NR2-630	400~630
315	560	NM8S-630S/630M	7560	NC2-630	800	NR2-630	400~630

Note:

1. NM8 and NM8S breakers can replace each other with the same capacity in the table above .
2. NRE8 electronic relays and NR2 thermal relays can replace each other with the same capacity in the table above.

400V, 50kA, type2, MCCB heavy-load start-up

Motor parameters		Circuit breaker parameters		Contactor parameters		Thermal relay parameters	
Rated power (kW)	Rated current (A)	Model	Setting of magnetic protection (A)	Model	Rated heating current (A)	Model	Rated current (A)
5.5	10.9	NM8-125S/16M	192	NC1-18	32	NR2-25	9~13
7.5	14.4	NM8-125S/20M	240	NC1-25	40	NR2-25	12~18
11	20.9	NM8-125S/25M	300	NC1-32	50	NR2-25	17~25
15	28	NM8-125S/32M	384	NC1-40	60	NR2-36	23~32
18.5	34.1	NM8-125S/40M	480	NC1-50	80	NR2-36	28~36
22	39.4	NM8-125S/50M	600	NC1-65	80	NR2-93	30~40
30	53.4	NM8-125S/63M	756	NC1-80	110	NR2-93	48~65
37	67.9	NM8-125S/80M	960	NC1-95	110	NR2-93	55~70
45	80.5	NM8-125S/100M	1200	NC2-115	200	NR2-93	80~93
55	98.5	NM8-125S/125M	1500	NC2-150	200	NR2-200	80~125
75	133	NM8-250S/160M	1920	NC2-185	275	NR2-200	100~160
90	158.7	NM8-250S/200M	2400	NC2-225	275	NR2-200	100~160
110	192	NM8-250S/250M	3000	NC2-265	315	NR2-200	125~200
132	229	NM8-400S/315M	3780	NC2-330	380	NR2-630	160~250
160	275	NM8-400S/350M	4200	NC2-400	450	NR2-630	200~315
200	343	NM8-400S/400M	4800	NC2-500	630	NR2-630	250~400
250	445	NM8-630S/500M	6000	NC2-630	800	NR2-630	315~500
290	520	NM8S-630S/630M	7560	NC2-630	800	NR2-630	400~630

Note:

1. NM8 and NM8S breakers can replace each other with the same capacity in the table above .
2. NRE8 electronic relays and NR2 thermal relays can replace each other with the same capacity in the table above.

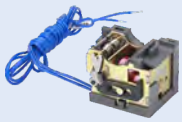
400V, 50kA, type2, MCCB star-delta start-up

Motor parameters		Circuit breaker parameters		Contactor parameters			Thermal relay parameters	
Rated power (kW)	Rated current (A)	Model	Setting of magnetic protection (A)	Feedback contactor	Delta contactor	Star contactor	Model	Rated current (A)
5.5	10.9	NM8-125S/16M	192	NC1-09	NC1-09	NC1-09	NR2-11.5	5.5~8
7.5	14.4	NM8-125S/20M	240	NC1-12	NC1-12	NC1-09	NR2-11.5	7~10
11	20.9	NM8-125S/25M	300	NC1-18	NC1-18	NC1-09	NR2-25	9~13
15	28	NM8-125S/32M	384	NC1-25	NC1-25	NC1-12	NR2-25	12~18
18.5	34.1	NM8-125S/40M	480	NC1-25	NC1-25	NC1-18	NR2-25	17~25
22	39.4	NM8-125S/50M	600	NC1-32	NC1-32	NC1-18	NR2-36	23~32
30	53.4	NM8-125S/63M	756	NC1-40	NC1-40	NC1-25	NR2-36	28~36
37	67.9	NM8-125S/80M	960	NC1-50	NC1-50	NC1-32	NR2-93	30~40
45	80.5	NM8-125S/100M	1200	NC1-65	NC1-65	NC1-32	NR2-93	37~50
55	98.5	NM8-125S/125M	1500	NC1-80	NC1-80	NC1-40	NR2-93	48~65
75	133	NM8-250S/160M	1920	NC1-95	NC1-95	NC1-50	NR2-93	63~80
90	158.7	NM8-250S/200M	2400	NC2-115	NC2-115	NC2-65	NR2-93	80~93
110	192	NM8-250S/250M	3000	NC2-150	NC2-150	NC2-80	NR2-200	80~125
132	229	NM8-400S/315M	3780	NC2-150	NC2-150	NC2-95	NR2-200	80~125
160	275	NM8-400S/350M	4200	NC2-185	NC2-185	NC2-115	NR2-200	100~160
200	343	NM8-400S/400M	4800	NC2-225	NC2-225	NC2-150	NR2-200	125~200
250	445	NM8-630S/500M	6000	NC2-330	NC2-330	NC2-185	NR2-630	200~315
290	520	NM8S-630S/630M	7560	NC2-400	NC2-400	NC2-185	NR2-630	200~315
315	560	NM8S-630S/630M	7560	NC2-400	NC2-400	NC2-225	NR2-630	250~400

Note:

1. NM8 and NM8S breakers can replace each other with the same capacity in the table above.
2. NRE8 electronic relays and NR2 thermal relays can replace each other with the same capacity in the table above.
3. Breaker is at the power supply side
4. In the delta connection circuit of thermal relay, the setting value is 0.58Ie;
5. The max. start-up time is 20s;
6. When Star type connection is changed into delta connection, the following connection modes of motor are recommended: L1, U1 to V2; L2, V1 to W2; L3, W1 to U2 to lower the impulse current;
7. The interval of star type connection changing into delta connection is 0.1s.

12. NM8 series accessories description form

Name of accessory	Code	Frame	Pole	Remark
Auxiliary contact 	AX-8/M8	NM8(S)-125,250,400,630 NM8(S)-800,1250	2P/3P/4P	
Alarm contact 	AL-8/M8	NM8(S)-125,250,400,630	2P/3P/4P	
Alarm contact 	AL-8/M8-1250	NM8(S)-800,1250	3P/4P	
Shunt release 	SM6:AC220V	NM8-125	2P/3P/4P	
	SQ6:AC380V			
	SH6:AC110V			
	SB1:DC24V			
	SB4:DC110V			
	SM5:AC220V	NM8S-125 NM8(S)-250,400,630	2P/3P/4P	
	SQ5:AC380V			
	SH5:AC110V			
	SB0:DC24V			
	SB5:DC110V			
	SM7:AC220V	NM8(S)-800,1250	3P/4P	
	SQ7:AC380V			
	SH7:AC110V			
	SB3:DC24V			
	SB7:DC110V			
	SB2:DC220V			
Under voltage release 	UM6:AC220V	NM8-125	2P/3P/4P	
	UQ6:AC380V			
	UM5:AC220V	NM8S-125 NM8(S)-250,400,630	2P/3P/4P	
	UQ5:AC380V			
	UB0:DC24V			
	UB5:DC110V			
	UM7:AC220V	NM8(S)-800,1250	3P/4P	
	UQ7:AC380V			
	UB3:DC24V			
Motor driven operating mechanism 	MO10:AC/DC110V	NM8-125	3P/4P	
	MO12:AC230/DC220			
	MO13:AC380			
	MO22:AC230/DC220	NM8S-125 NM8(S)-250		
	MO23:AC380			
	MO30:AC/DC110V	NM8(S)-400,630		
	MO32:AC230/DC220			
	MO33:AC380			
	MO40:AC/DC110V	NM8(S)-800,1250		
	MO41:AC230/DC220			
	MO42:AC380			
Plug-in base 	PL13	NM8-125	3P	
	PL14		4P	
	PL23	NM8S-125 NM8(S)-250	3P	
	PL24		4P	
	PL33	NM8(S)-400,630	3P	
	PL34		4P	
Economical extended rotary manual operating handle 	RH11	NM8-125	3P	
	RH14		4P	
	RH21	NM8S-125 NM8(S)-250	3P	
	RH24		4P	
	RH31	NM8(S)-400,630	3P/4P	
	RH41	NM8(S)-800,1250	3P/4P	
Normal direct rotary manual operating handle 	RH12	NM8-125	3P/4P	
	RH22	NM8-250	3P/4P	
	RH25	NM8S-125/250	3P/4P	
	RH32	NM8-400,630	3P/4P	
	RH35	NM8S-400,630	3P/4P	

II

Continued form 1

Name of accessory	Code	Frame	Pole	Remark
Normal extended rotary manual operating handle 	RH13	NM8-125	3P/4P	
	RH23	NM8-250	3P/4P	
	RH26	NM8S-125/250	3P/4P	
	RH33	NM8-400,630	3P/4P	
	RH36	NM8S-400,630	3P/4P	
Locking system 	PD1	NM8-125	3P/4P	
	PD2	NM8S-125,NM8(S)-250	3P/4P	
	PD3	NM8(S)-400,630	3P/4P	
	PD4	NM8(S)-800,1250	3P/4P	
	COMA-2/AC230V	NM8(S)-125 NM8(S)-250 NM8(S)-400,630 NM8(S)-800,1250		
	COMA-2/AC400V			
	COMA-2/DC24V			
Mechanical Interlock 	MI13	NM8-125	3P	
	MI14		4P	
	MI23	NM8S-125 NM8(S)-250	3P	
	MI24		4P	
	MI33	NM8(S)-400,630	3P	
	MI34		4P	
DIN rail adaptor 	DIN13	NM8-125	3P	
	DIN14		4P	
	DIN23	NM8S-125 NM8(S)-250	3P	
	DIN24		4P	
Rear connection plate 	BM12	NM8-125	2P	
	BM13		3P	
	BM14		4P	
	BM22	NM8S-125 NM8(S)-250	2P	
	BM23		3P	
	BM24		4P	
	BM33	NM8(S)-400,630	3P	
	BM34		4P	
Short terminal cover 	ST13	NM8-125	3P	
	ST14		4P	
	ST23	NM8S-125 NM8(S)-250	3P	
	ST24		4P	
	ST33	NM8(S)-400,630	3P	
	ST34		4P	
	ST43	NM8(S)-800,1250	3P	
	ST44		4P	
Extended terminal cover 	LT13	NM8-125	3P	
	LT14		4P	
	LT23	NM8S-125 NM8(S)-250	3P	
	LT24		4P	
	LT33	NM8(S)-400,630	3P	
	LT34		4P	
	LT43	NM8(S)-800,1250	3P	
	LT44		4P	
Front connection plate 	FM12	NM8-125	2P	
	FM13		3P	
	FM14		4P	
	FM22	NM8S-125 NM8(S)-250	2P	
	FM23		3P	
	FM24		4P	
	FM33	NM8(S)-400,630	3P	
	FM34		4P	
	FM43	NM8(S)-800,1250	3P	
	FM44		4P	

Continued form 1

Name of accessory		Code	Frame	Pole	Remark
Cage clamp terminal		CT12	NM8-125	2P	
		CT13		3P	
		CT14		4P	
		CT22	NM8S-125 NM8(S)-250	2P	
		CT23		3P	
		CT24		4P	
		CT33	NM8(S)-400,630	3P	
		CT34		4P	
Exterior clamp terminal		ET12 C1	NM8-125	2P	1×95
		ET13 C1		3P	1×95
		ET14 C1		4P	1×95
		ET22 C1	NM8S-125 NM8(S)-250	2P	1×240
		ET23 C1		3P	1×240
		ET24 C1		4P	1×240
		ET22 C2		2P	2×120
		ET23 C2		3P	2×120
		ET24 C2		4P	2×120
		ET22 C6		2P	6×35
		ET23 C6		3P	6×35
		ET24 C6		4P	6×35
		ET33 C2	NM8(S)-400,630	3P	2×240
		ET34 C2		4P	2×240
		ET33 C4		3P	4×95
		ET34 C4		4P	4×95
		ET43 C3	NM8(S)-800,1250	3P	3×240
		ET44 C3		4P	3×240
		ET43 C4		3P	4×240
		ET44 C4		4P	4×240

13. Model definition and description for NM8 series product

NM8S - 250 H / 160 / 4C / M

Product code	Frame current	Breaking capacity code	Rated current	Poles	Usage code
NM8: Thermal magnetic MCCB NM8S: Electronic MCCB	125 250 400 630 800 1250 1600	C S H R	16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160, 180, 200, 225, 250, 315, 350, 400, 500, 630, 700, 800, 1000, 1250 1600	2:2 poles 3:3 poles 4:4 poles 4A: there is no over current release installed at pole N and N pole will always connect, which will not operate with the other three poles. 4B: there is no over current release installed at pole N and N pole will operate with the other three poles. 4C: there is over current release installed at pole N and N pole will operate with the other three poles. 4D: there is over current release installed at pole N and N pole will always connect.	M: motor protection No code: distribution protection

14. Model definition and description for NM8 accesorries

BM23 / RH12 / UM5 / AX-8/M8

Connection Accessories	Control mechanism Accessories		Internal Accessories	
FM12,FM13,FM14: Front connection plate (NM8-125) FM22,FM23,FM24: Front connection plate (NM8S-125 NM8(S)-250) FM33,FM34: Front connection plate (NM8(S)-400,630) FM43,FM44: Front connection plate (NM8(S)-800,1250) BM12,BM13,BM14: Rear connection plate (NM8-125) BM22,BM23,BM24: Rear connection plate (NM8S-125 NM8(S)-250) BM33,BM34: Rear connection plate (NM8(S)-400,630) PL13,PL14: Plug-in base (NM8-125) PL23,PL24: Plug-in base (NM8S-125 NM8(S)-250) PL33,PL34: Plug-in base (NM8(S)-400,630) DIN13,DIN14: DIN rail adaptor (NM8-125) DIN23,DIN24: DIN rail adaptor (NM8S-125 NM8(S)-250) CT12, CT13, CT14: Cage clamp terminal (NM8-125) CT22, CT23, CT24: Cage clamp terminal (NM8S-125 NM8(S)-250) CT33, CT34: Cage clamp terminal (NM8(S)-400,630) LT13,LT14: Extended terminal cover (NM8-125) LT23,LT24: Extended terminal cover (NM8S-125 NM8(S)-250) LT33,LT34: Extended terminal cover (NM8(S)-400,630) LT43,LT44: Extended terminal cover (NM8(S)-800,1250) ST13,ST14: Short terminal cover (NM8-125) ST23,ST24: Short terminal cover (NM8S-125 NM8(S)-250) ST33,ST34: Short terminal cover (NM8(S)-400,630) ST43,ST44: Short terminal cover (NM8(S)-800,1250)	RH11,RH14: Economical extended rotary manual operating handle (NM8-125) RH21,RH24: Economical extended rotary manual operating handle (NM8S-125 NM8(S)-250) RH31: Economical extended rotary manual operating handle (NM8(S)-400,630) RH41: Economical extended rotary manual operating handle (NM8(S)-800,1250) RH13: Normal extended rotary manual operating handle(NM8-125) RH23, RH26: Normal extended rotary manual operating handle (NM8-250,NM8S-125,250) RH33, RH36: Normal extended rotary manual operating handle (NM8-400,630,NM8S-400,630) RH12: Normal direct rotary manual operating handle(NM8-125) RH22,RH25: Normal direct rotary manual operating handle (NM8-250,NM8S-125,250) RH32, RH35: Normal direct rotary manual operating handle (NM8-400,630,NM8S-400,630) MO10, MO12, MO13: Motor driven operating mechanism(NM8-125) MO20，MO22, MO23: Motor driven operating mechanism(NM8S-125 NM8(S)-250) MO30, MO32, MO33: Motor driven operating mechanism(NM8(S)-400,630) MO40, MO41, MO42: Motor driven operating mechanism(NM8(S)-800,1250) PD1: Locking system(NM8-125) PD2: Locking system (NM8S-125 NM8(S)-250) PD3: Locking system (NM8(S)-400,630) PD4: Locking system (NM8(S)-800,1250) Communication model (NM8S-125,250,400,630,800,1250)	Shunt release SM6:AC220V SH6:AC110V SQ6:AC380V SB1:DC24V SB4:DC110V (NM8-125) SM5:AC220V SH5:AC110V SQ5:AC380V SB0:DC24V SB5:DC110V (NM8S-125, NM8(S)-250, 400,630) SM7:AC220V SH7:AC110V SQ7:AC380V SB3:DC24V SB7:DC110V SB2:DC220V (NM8(S)-800, 1250)	Under voltage release UM6:AC220V UQ6:AC380V (NM8-100) UM5:AC220V UQ5:AC380V UB0:DC24V UB5:DC110V (NM8S-125, NM8(S)-250,400,630) UM7:AC220V UQ7:AC380V UB3:DC24V (NM8(S)-800,1250)	Auxiliary contact (NM8(S)-125, NM8(S)-250,400,630, NM8(S)-800,1250) Alarm contact AL-8/M8 (NM8(S)-125, NM8(S)-250,400,630) AL-8/M8-1250 (NM8(S)-800,1250)

II

CHINT ELECTRIC

Contactors, Relays, Starters

Contactors

NC6
AC Contactor
06~09A

Page P-001

NC1
AC Contactor
09~95A

Page P-004

NC2
AC Contactor
115~800A

Page P-017

NCH8
Modular AC
Contactor
20-63A

Page P-027

Relays

NR2
Thermal
Overload Relay

Page P-030

Starters

NS2
Manual Motor
Starter

Page P-038

NQ2
Direct On-line
Starter

Page P-049

NQ3
DOL
Electromagnetic
Starter

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NC6 AC Contactor, 6~9A

1. General

1.1 Certificates: CE, VDE, UKrSEPRO, EAC, UL;

1.2 Electric ratings: AC50/60Hz, up to 690V, up to 9A;

1.3 Application: remotely makes and breaks circuit, protect circuit from overload assembling with proper thermal relay;

1.4 Utilization category: AC-1, AC-3, AC-4;

1.5 Ambient temperature: -5℃~+40℃;

1.6 Altitude: ≤2000m;

1.7 Mounting category: Ⅲ

1.8 Mounting conditions: inclination between mounting plane and vertical plane not exceed ±30°

1.9 Standard: IEC/EN 60947-4-1

1.10 IP00

2. Type designation

N C 6 – □□ □□–□

- Blank: Screw-clamp connection
  K: With solder "pins" for direct connection to printed circuit boards.
- Number of contacts
  10: 3N/O main contacts, 1N/O auxiliary contact
  01: 3N/O main contacts. 1N/C auxiliary contact
  04: 4N/O main contacts
  08: 2N/O+2N/C main contacts
- Rated operational current (AC-3, 380V)
- Design sequence No.
- Contactor
- Company code

Ⅲ

3. Technical data

3.1 Contactor

★ 3P contactor AC coil operation

Items	Model		NC6-06	NC6-06-K	NC6-09	NC6-09-K
						
Rated cinventional heating current (A)	AC-1		20		20	
Rated operational current (A)	AC-3/AC-4	380/400V	6		9	
		660/690V	3.8		5	
Power of motor	kW (AC-3)	220/230V	1.5		2.2	
		380/400V	2.2		4	
		660/690V	3		4	
	hp	240V	2		2	
		400V	3		3	
		600V	3		3	
Operating cycles (operations/h)	Electrical	AC-3	1,200		1,200	
		AC-4	300		300	
	Mechanical		3,600		3,600	
Electrical life (×10³ operations)		AC-3	1,200		1,200	
		AC-4	25		25	
Mechanical life (×10⁶ operations)			10		10	
Matching fuse model			RT16-16		RT16-20	

★ 4P contactor AC operation

Items	Model		NC6-06	NC6-09
				
Rated operational current (A)	AC-1		20	20
	AC-3/AC-4	380/400V	6	9
		660/690V	3.8	5
Power of motor	kW (AC-3)	220V/230V/240V	1.5	2.2
		380/400V	2.2	4
		660/690V	3	4
	hp	240V	-	2
		400V	-	3
		600V	-	3
Operating cycles (operations/h)	Electrical	AC-3	1,200	1,200
		AC-4	300	300
	Mechanical		3,600	3,600
Electrical life (×10³ operations)		AC-3	1,200	1,200
		AC-4	25	25
Mechanical life (×10⁶ operations)			10	10
Matching fuse model			RT16-16	RT16-20

3.2 AC coil specifications

Items	Model	NC6-06	NC6-09
Rated control voltage (V AC)		24, 36, 48, 110, 127, 220, 230, 380, 400	
Coil power (VA)	In-rush	30	30
	Sealed	4.5	4.5

4. Terminal connection

Model	Number of piece	Conductor (mm^2)	Screw size	Tightening torque (N·m)
NC6-06	1	2.5	M3	0.5
NC6-09	1	2.5	M3	0.5

5. Accessories

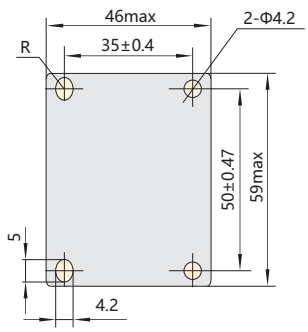
5.1 Auxiliary contact

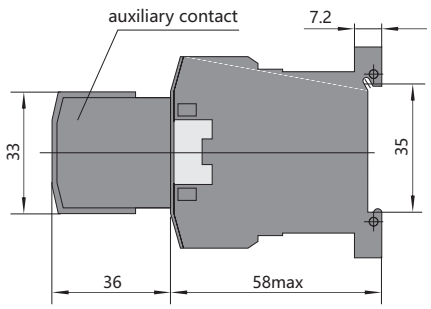
Model	Auxiliary contact		
	Model of assembled contact	Conventional heating current (A)	Control capacity
NC6-06	NCF6-20; NCF6-02 NCF6-11; NCF6-40 NCF6-31; NCF6-22 NCF6-13; NCF6-04 	10	AC-15: 380/400V/0.95A DC-13: 220/250V/0.15A
NC6-09	NCF6-20; NCF6-02 NCF6-11; NCF6-40 NCF6-31; NCF6-22 NCF6-13; NCF6-04	10	AC-15: 380/400V/0.95A DC-13: 220/250V/0.15A

5.2 Assembly with thermal over-load relay

Model of contactor	Assembled thermal over-load relay			
	Model	Rated current (A)	Recommended fuse type	
			aM	gG
		0.1~0.16	0.25	2
		0.16~0.25	0.5	2
		0.25~0.4	1	2
		0.4~0.63	1	2
		0.63~1	2	4
		1~1.6	2	4
		1.25~2	4	6
		1.6~2.5	4	6
		2.5~4	6	10
		4~6	8	16
		5.5~8	12	20
NC6-09	NR2-11.5	7~10	12	20
		9~13	16	25

6. Overall and mounting dimensions (mm)





Nc1 AC Contactor, 09~95A

1. General

1.1 Certificates: CE, KEMA, VDE, EK, EAC, RCC, UL;

1.2 Electric ratings: AC50Hz (or 60Hz), 690V, up to 95A;

1.3 Application: remote making & breaking circuits;
protect circuit from over-load when assembling with thermal over-load relay;
Frequent start-up and control of AC contactor;

1.4 Utilization category: AC-3, AC-4;

1.5 Altitude: ≤2000m;

1.6 Ambient temperature: -5℃~+40℃;

1.7 Mounting category: Ⅲ

1.8 Mounting conditions:
inclination between the mounting plane and the vertical plane should not exceed ±5°

1.9 Standard: IEC/EN 60947-4-1

2.0 IP10

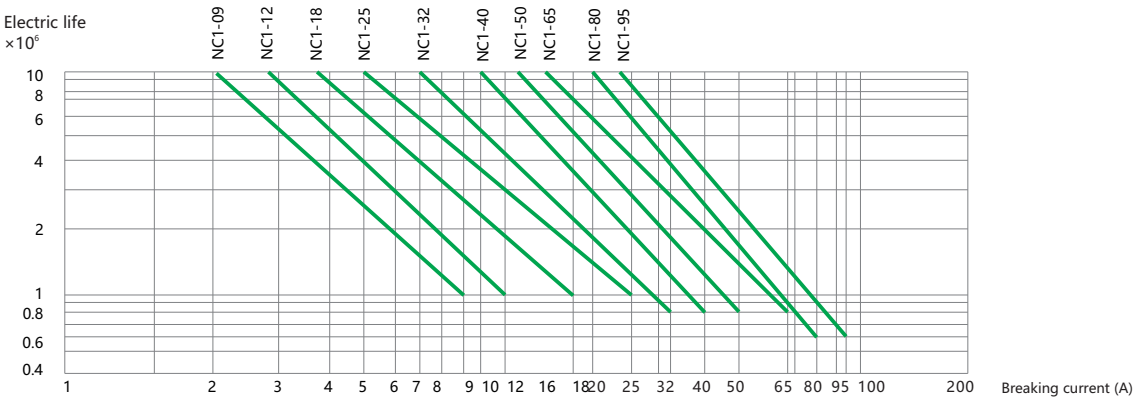
2. Type designation

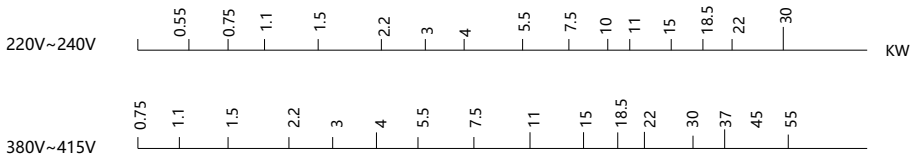
N C 1-□□ □□-□

- Company code
- Contactor
- Design sequence No.
- Basic specification, expressed with the rated operational current 400(380)V, AC-3
- Number of contacts
  - 10: 3 N/O main contacts+1 N/O auxiliary contact (9A,12A,18A,25A,32A)
  - 01: 3 N/O main contacts+1 N/C auxiliary contact (9A,12A,18A,25A,32A)
  - 11: 3 N/O main contacts+1 N/O and 1N/C auxiliary contact (40A,50A,65A,80A,95A)
  - 04: 4 N/O main contacts (9A,12A,25A,40A,50A,65A,80A,95A)
  - 08: 2 N/O and 2N/C main contacts (9A,12A,25A,40A,50A,65A,80A,95A)
- Z: DC coil
  N:Reversing/change-over type contactor (There is no such type as NC1-**Z (DC coil) and NC1-**08 (2N/O+2N/C)).

3. Curves

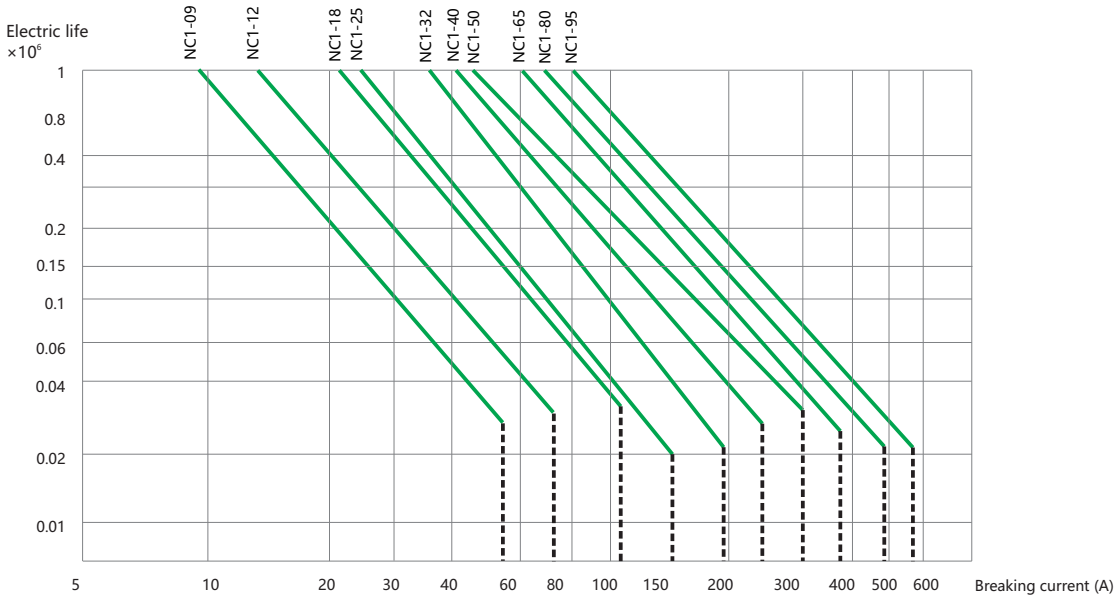
Electric life curves (AC-3)





Rated outputs of three-phase motors (50Hz AC-3)

Electric life curves (AC-4)



Example:
Request to control the start of three-phase motors
main technical parameter of three-phase motors: P=5.5kW, Ue=400V(380V), Ie=11A, Ic6×Ie=66A
The electric life span of request: 2,00,000 operations
the contactor should be NC1-32 according to the curves above

4. Technical data

4.1 AC coil contactor

★ AC coil operation

Items / Model			NC1-09	NC1-12	NC1-18	NC1-25
Frame			Frame 1 (3P, 4P)		Frame 2 (3P)	Frame 3 (3P, 4P)
						
Rated conventional heating current (A) AC-1			25	25	32	45
Rated operational current (A)	400(380)V	AC-3	9	12	18	25
		AC-4	3.5	5	7.7	8.5
	690(660)V	AC-3	6.6	8.9	12	18
		AC-4	1.5	2	3.8	4.4
Rated insulation voltage (V AC)			690	690	690	690
Power of controlled 3-phase cage motor (AC-3)	kW	230(220)V AC	2.2	3	4	5.5
		400(380)V AC	4	5.5	7.5	11
		690(660)V AC	5.5	7.5	10	15
	hp	200V AC	3	5	7.5	7.5
		240V AC	3	5	7.5	10
		460V AC	5	7.5	10	15
		600V AC	5	7.5	10	15
Operating frequency (operations/h)	Electrical	AC-3	1,200	1,200	1,200	1,200
		AC-4	300	300	300	300
	Mechanical		3,600	3,600	3,600	3,600
Electrical life ($\times 10^3$ operations)	AC-3		1,000	1,000	1,000	1,000
	AC-4		200	200	200	200
Mechanical life ($\times 10^6$ operations)			10	10	10	10
Matched fuse type			RT16-20	RT16-20	RT16-32	RT16-40

★ AC coil operation, reversing type

Items / Model			NC1-09N	NC1-12N	NC1-18N	NC1-25N
Frame			Frame 1 (3P, 4P)		Frame 2 (3P)	Frame 3 (3P, 4P)
Rated conventional heating current (A) AC-1			25	25	32	45
AC-4	Ie(A)	380/400V	3.5	5	7.7	8.5
		660/690V	1.5	2	3.8	4.4
	Pe(kW)	380/400V	1.5	2.2	3	4
		660/690V	1.1	1.5	3.7	4
Power of controlled 3-phase cage motor (AC-3)	hp	200V	3	5	7.5	7.5
		240V	3	5	7.5	10
		460V	5	7.5	10	15
		600V	5	7.5	10	15

★ AC coil operation, change-over type

Items / Model			NC1-09N	NC1-12N	NC1-25N
Frame			Frame 1 (4P)	Frame 2 (4P)	Frame 3 (4P)
Rated conventional heating current (A) AC-1			25	25	45
AC-4	Ie(A)	380/400V	3.5	5	8.5
		660/690V	1.5	2	4.4
	Pe(kW)	380/400V	1.5	2.2	4
		660/690V	1.1	1.5	4
Power of controlled 3-phase cage motor (AC-3)	hp	200V	3	5	7.5
		240V	3	5	10
		460V	5	7.5	15
		600V	5	7.5	15

	NC1-32	NC1-40	NC1-50	NC1-65	NC1-80	NC1-95
	Frame 4 (3P)	Frame 5 (3P, 4P)			Frame 6 (3P, 4P)	
						
	50	60	80	80	110(Can be customized for 125)	110(Can be customized for 125)
	32	40	50	65	80	95
	12	18.5	24	28	37	44
	21	34	39	42	49	49
	7.5	9	12	14	17.3	21.3
	690	690	690	690	690	690
	7.5	11	15	18.5	22	25
	15	18.5	22	30	37	45
	18.5	30	37	37	45	45
	10	15	15	20	25	30
	15	20	20	25	30	30
	20	25	30	40	40	50
	20	25	30	40	40	50
	600	600	600	600	600	600
	300	300	300	300	300	300
	3,600	3,600	3,600	3,600	3,600	3,600
	800	800	600	600	600	600
	200	150	150	150	100	100
	8	8	8	8	6	6
	RT16-50	RT16-63	RT16-80	RT16-80	RT16-100	RT16-125

	NC1-32N	NC1-40N	NC1-50N	NC1-65N	NC1-80N	NC1-95N
	Frame 4 (3P)	Frame 5 (3P, 4P)			Frame 6 (3P, 4P)	
	50	60	80	80	110(Can be customized for 125)	110(Can be customized for 125)
	12	18.5	24	28	37	44
	7.5	9	12	14	17.3	21.3
	5.5	7.5	11	15	18.5	22
	5.5	7.5	11	11	15	18.5
	10	15	15	20	25	30
	15	20	20	25	30	30
	20	25	30	40	40	50
	20	25	30	40	40	50

	NC1-40N	NC1-50N	NC1-65N	NC1-80N	NC1-95N
	Frame 4 (4P)	Frame 5 (4P)		Frame 6 (4P)	
	60	80	80	110(Can be customized for 125)	110(Can be customized for 125)
	18.5	24	28	37	44
	9	12	14	17.3	21.3
	7.5	11	15	18.5	22
	7.5	11	11	15	18.5
	15	15	20	25	30
	20	20	25	30	30
	25	30	40	40	50
	25	30	40	40	50

4.2 DC coil contactor

★ DC coil operation(24V,110V,220V)

Items / Model			NC1-09Z	NC1-12Z	NC1-18Z	NC1-25Z
Frame			**Frame 1 (3P, 4P)**		**Frame 2 (3P)**	**Frame 3 (3P, 4P)**
						
Rated conventional heating current (A) AC-1			25	25	32	45
Rated operational current (A)	400(380)V	AC-3	9	12	18	25
		AC-4	3.5	5	7.7	8.5
	690(660)V	AC-3	6.6	8.9	12	18
		AC-4	1.5	2	3.8	4.4
Conventional heating current (A)			25	25	32	45
Rated insulation voltage (V AC)			690	690	690	690
Power of controlled 3-phase cage motor (AC-3)	kW	230(220)V AC	2.2	3	4	5.5
		400(380)V AC	4	5.5	7.5	11
		690(660)V AC	5.5	7.5	10	15
Operating frequency (operations/h)	Electrical	AC-3	1,200	1,200	1,200	1,200
		AC-4	300	300	300	300
	Mechanical		3,600	3,600	3,600	3,600
Electrical life ($\times 10^3$ operations)	AC-3		1,000	1,000	1,000	1,000
	AC-4		200	200	200	200
Mechanical life ($\times 10^6$ operations)			10	10	10	10
Matched fuse type			RT16-20	RT16-20	RT16-32	RT16-40

	NC1-32Z	NC1-40Z	NC1-50Z	NC1-65Z	NC1-80Z	NC1-95Z
	Frame 4 (3P)	Frame 5 (3P, 4P)			Frame 6 (3P, 4P)	
						
	50	60	80	80	110(Can be customized for 125)	110(Can be customized for 125)
	32	40	50	65	80	95
	12	18.5	24	28	37	44
	21	34	39	42	49	49
	7.5	9	12	14	17.3	21.3
	50	60	80	80	110(Can be customized for 125)	110(Can be customized for 125)
	690	690	690	690	690	690
	7.5	11	15	18.5	22	25
	15	18.5	22	30	37	45
	18.5	30	37	37	45	45
	600	600	600	600	600	600
	300	300	300	300	300	300
	3,600	3,600	3,600	3,600	3,600	3,600
	800	800	600	600	600	600
	200	150	150	150	100	100
	8	8	8	8	6	6
	RT16-50	RT16-63	RT16-80	RT16-80	RT16-100	RT16-125

III

5. Accessories

5.1 Accessories

Items		Model	NC1-09	NC1-12	NC1-18	NC1-25
AC coil	Coil power	In-rush (VA)	70	70	70	110
		Sealed (VA)	9	9	9.5	14
		Power (W)	1.8~2.7	1.8~2.7	3~4	3~4
	Operation range	Operation voltage	(85%~110%) Us			
		Drop-out voltage	(20%~75%) Us			
	Coil voltage(50Hz,60Hz, 50/60Hz)(V)		24,36,48,110,127,220,230,240,380,415,440,480,500,600,660			
DC coil	Coil power(W)		9	9	11	11
	Operation range	Pick-up voltage	(85%~110%) Us			
		Drop-out voltage	(10%~75%) Us			
	Coil voltage (V)		24,36,48,110,220			

F4 auxiliary contact

F4 - □ □

- Number of N/C auxiliary contact
- Number of N/O auxiliary contact
- Auxiliary contact assembly

F5 auxiliary contact

F5 - □ □

- 0: time-delay range, 0.1s~3s
  2: time-delay range, 0.1s~30s
  4: time-delay range, 10s~180s
- T: making time-delay; D: breaking time-delay
- Time-delay module

NCF1-11C lateral side auxiliary contact

NC F1 - 1 1 C

- Lateral side
- 1 N/C contact
- 1 N/O contact
- Design sequence No.
- Auxiliary contact assembly
- Contactor
- Company code

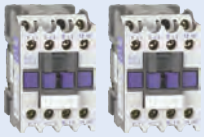
	NC1-32	NC1-40	NC1-50	NC1-65	NC1-80	NC1-95
	110	300	300	300	300	300
	14	57	57	57	57	57
	3~4	6~10	6~10	6~10	6~10	6~10
	(85%~110%) Us					
	(20%~75%) Us					
	24,36,48,110,127,220,230,240,380,415,440,480,500,600					
	11	20	20	20	20	20
	(85%~110%) Us					
	(10%~75%) Us					

Picture	Model	Configuration of contacts	
		Number of N/O contact	Number of N/C contact
	F4-20	2	0
	F4-11	1	1
	F4-02	0	2
	F4-40	4	0
	F4-31	3	1
	F4-22	2	2
	F4-13	1	3
	F4-04	0	4

Picture	Model	Time-delay range	Number of time-delay contacts
	F5-T0	0.1s~3s	N/O+N/C
	F5-T2	0.1s~30s	N/O+N/C
	F5-T4	10s~180s	N/O+N/C
	F5-D0	0.1s~3s	N/O+N/C
	F5-D2	0.1s~30s	N/O+N/C
	F5-D4	10s~180s	N/O+N/C
	NCF1-11C NC1-40Z-95Z (DC coil) cannot be installed with such accessory	1	1

 SR2-A Surge suppressor	Suppression voltage range	AC 24V~48V	SR2-A 24V~48V	Able to be used for the products of 9A~38A or lower
		AC 100V~250V	SR2-A 100V~250V	
		AC 380V~440V	SR2-A 380V~440V	
 SR2-C Surge suppressor		AC 24V~48V	SR2-C 24V~48V	Able to be used for the products of 40A~95A or lower
		AC 100V~250V	SR2-C 100V~250V	
		AC 380V~440V	SR2-C 380V~440V	

5.2 Derived products when the contactor is assembled with following accessory module

Derived products	Contactor	Accessorial modular	Picture
Time-delay contactor	 +	 Time-delay block →	
Reversing contactor	 +	 Mechanical interlock →	
Magnetic starter	 +	 Thermal relay →	
AC contactor for capacitor switching	 +	 Current-limiting contact assembly →	
Star-delta starter	 +	 Time-delay block +  Auxiliary contact assembly →	

Note: NC1-09Z-95Z cannot form the reversing contactor.

5.3 Assembly with thermal over-load relay

Model of contactor	Assembled thermal over-load relay			
	Model	Rated current (A)	Recommended fuse type	
			aM	gG
NC1-09 NC1-12 NC1-18 NC1-25 NC1-32	 NR2-25	0.1~0.16	0.25	2
		0.16~0.25	0.5	2
		0.25~0.4	1	2
		0.4~0.63	1	2
		0.63~1	2	4
		1~1.6	2	4
		1.25~2	4	6
		1.6~2.5	4	6
		2.5~4	6	10
		4~6	8	16
		5.5~8	12	20
		7~10	12	20
		9~13	16	25
		12~18	20	35
		17~25	25	50
NC1-32	 NR2-36	23~32	40	63
		28~36	40	80
NC1-40 NC1-50 NC1-65 NC1-80 NC1-95	 NR2-93	23~32	40	63
		30~40	40	100
		37~50	63	100
		48~65	63	100
		55~70	80	125
		63~80	80	125
		80~93	100	160

III

5.4 Assembly with electronic overload relay

Model of contactor	Model	Rated	Range of setting	Recommended
		Assembled thermal current (A)	Over-load relay current (A)	Fuse type
NC1-09		1.2	0.6~1.2	RT36-4 (NT00-4)
		2.4	1.2~2.4	RT36-6 (NT00-6)
		4	2~4	RT36-10 (NT00-10)
		8	4~8	RT36-16 (NT00-16)
NC1-12		10	5~10	RT36-20 (NT00-20)
		12	7~12	RT36-25 (NT00-25)
NC1-18		20	10~20	RT36-40 (NT00-40)
NC1-25	NRE8-25	25	20~25	RT36-50 (NT00-50)
NC1-32		32	22~32	RT36-80 (NT00-80)
NC1-40		4	2~4	RT36-10 (NT00-10)
		8	4~8	RT36-16 (NT00-16)
		10	5~10	RT36-20 (NT00-20)
		20	10~20	RT36-40 (NT00-40)
	NRE8-40	40	20~40	RT36-80 (NT00-80)
NC1-40		65	30~65	RT36-160 (NT00-160)
NC1-50				
NC1-65				
NC1-80		100	50~100	RT36-200 (NT1-200)
NC1-95	NRE8-100			

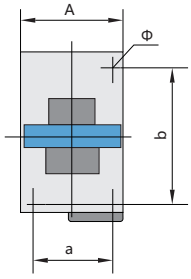
6. Technical information

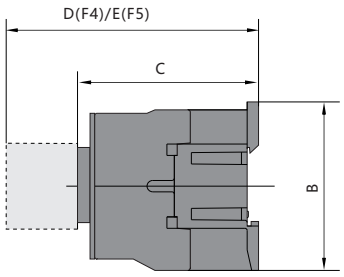
6.1 Terminal connection

Model	Cabling cross section(Cu)				Screw size	Tightening torque (N·m)
	Number of piece	Flexible cable with cold-pressed socket (mm^2)	Flexible cable without cold-pressed socket (mm^2)	Inflexible cable (mm^2)		
NC1-09	1	1/2.5	1/4	1/4	M3.5	0.8
	2	1/2.5	1/2.5	1/4	M3.5	0.8
NC1-12	1	1/2.5	1/4	1/4	M3.5	0.8
	2	1/2.5	/	1/4	M3.5	0.8
NC1-18	1	1.5/4	1.5/6	1.5/6	M3.5	0.8
	2	1.5/4	1.5/4	1.5/6	M3.5	0.8
NC1-25	1	1.5/4	1.5/10	1.5/6	M4	1.2
	2	1.5/4	1.5/6	1.5/6	M4	1.2
NC1-32	1	2.5/6	2.5/10	2.5/10	M4	1.2
	2	2.5/6	2.5/6	2.5/10	M4	1.2
NC1-40	1	6/25	6/25	6/25	M8	6
	2	4/10	4/10	4/10	M8	6
NC1-50	1	6/25	6/25	6/25	M8	6
	2	4/10	4/10	4/10	M8	6
NC1-65	1	6/25	6/25	6/25	M8	6
	2	4/10	4/10	4/10	M8	6
NC1-80	1	10/35	10/35	10/35	M10	ⓘ 6 ◎ 10
	2	6/16	6/16	6/16	M10	ⓘ 6 ◎ 10
NC1-95	1	10/35(50)	10/35(50)	10/35(50)	M10	ⓘ 6 ◎ 10
	2	6/16	6/16	6/16	M10	ⓘ 6 ◎ 10

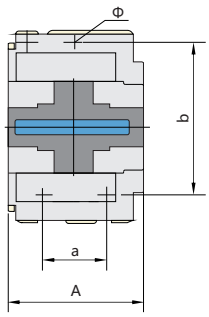
7. Overall and mounting dimensions (mm)

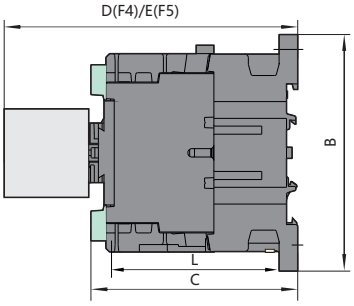
NC1-09~32



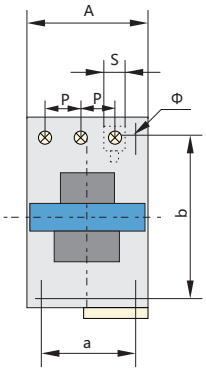


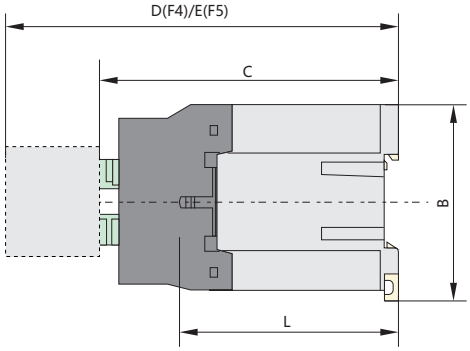
NC1-40~95



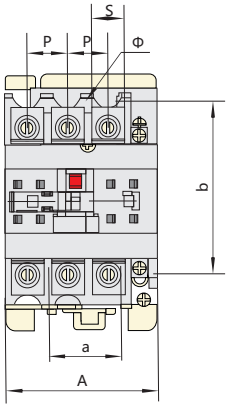


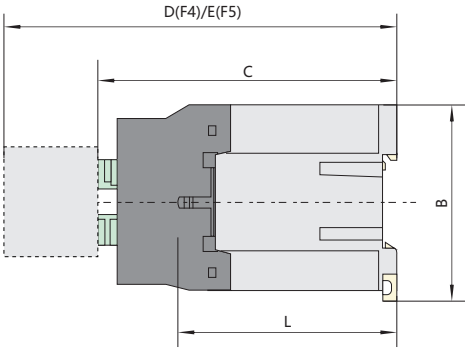
NC1-09Z~32Z





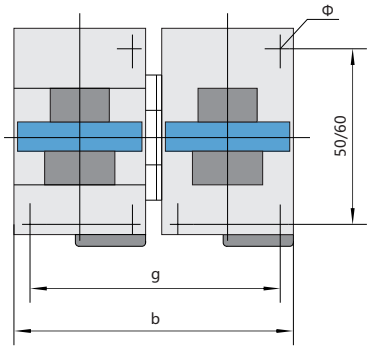
NC1-40Z~95Z

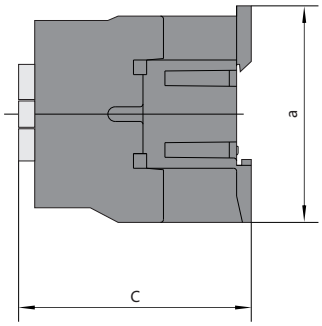




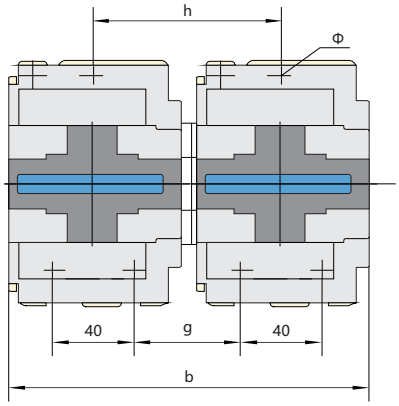
Model	A max	B max	C max	D max	E max	a	b	Φ	L	P	S
NC1-09(Z)~12(Z)	47	76	82(116)	120.5(154.5)	140.5(174.5)	34/35	50/60	4.5	60(95)	10.5	8.6
NC1-18(Z)	47	76	87(122)	125.5(160.5)	145.5(180.5)	34/35	50/60	4.5	61(96)	11.3	10.4
NC1-25(Z)	57	86	95(131)	133.5(169.5)	153.5(189.5)	40	48	4.5	70(107)	13.2	11.7
NC1-32(Z)	57	86	100(138)	138.5(176.5)	158.5(196.5)	40	48	4.5	71.6(120)	14.5	13
NC1-4011(Z)~6511(Z)	77	129	116(173)	154.5(211.5)	174.5(231.5)	40	105	6.5	78(135)	20	8.6
NC1-4004~6504	84	129	116	154.5	174.5	40	105	6.5	78(135)	20	8.6
NC1-4008~6508	84	129	127	154.5	174.5	40	105	6.5	78	20	8.6
NC1-8011(Z)~9511(Z)	87	129	127(188)	165.5(226.5)	185.5(246.5)	40	105	6.5	83(140)	23.5	12
NC1-8004~9504	96	129	122	160.5	180.5	40	105	6.5	83	23.5	12
NC1-8008~9508	96	129	135	160.5	180.5	40	105	6.5	83	23.5	12

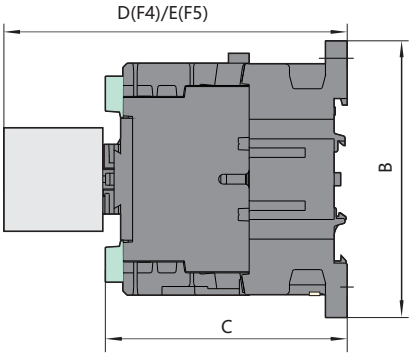
NC1-09~32N





NC1-40~95N





Contactor model	a	b	c	g	h	Φ
NC1-09N~12N	86	109	82	95	--	4.5
NC1-18N	86	109	87	95	--	4.5
NC1-25N	93	131	95	111	--	4.5
NC1-32N	93	131	100	111	--	4.5
NC1-40N~65N(3P)	129	165	116	50	90	6.5
NC1-80N~95N(3P)	129	187	127	57	96	6.5
NC1-40N~65N(4P)	129	180	116	50	90	6.5
NC1-80N~95N(4P)	129	205	127	57	96	6.5

Note:

1. L: in main circuit, the distance between terminals and plate;
2. P: in main circuit, the distance between two phases;
3. S: in main circuit, the width of contacting plate.

NC2 AC Contactor, 115~800A

1. General

1.1 Certificates: NC2-115~800

CE, VDE, UKrSEPRO, EAC, RCC, UL;

1.2 Electric ratings: AC50/60Hz, up to 690V, up to 800A;

1.3 Application: remote making & breaking circuits;

protect circuit from overload when assembling

with thermal over-load relay;

1.4 Ambient temperature: -5℃~+40℃;

1.5 Altitude: ≤2000m;

1.6 Mounting category: Ⅲ

1.7 Mounting conditions:inclination between the mounting plane and the vertical plane not exceed±5°

1.8 Standard: IEC/EN 60947-4-1

1.9 IP00(IP20 front face with shrouds SHD)

2. Type designation

N C 2- □□□ □/□

- Number of poles: 4P; Blank:3P
- Derivation code:
  N: Reversing/chang-over type contactor
  (Ns: horizontal mounting;
  Nc: vertical mounting)
  Z: DC control
- Rated operational current (A), AC-3 380/400V
- Design sequence No.
- Contactor
- Company code

3. Technical data

3.1 Clearance between active and static contacts

Models	Distance between contacts
NC2-115N/150N	≥5mm
NC2-185N/225N	≥5mm
NC2-265N/330N	≥6mm
NC2-400N/500N	≥6.5mm
NC2-630N	≥7mm
NC2-800N	≥7mm

3.2 Mechanical life

a. NJLC-FF and NJLS-FF: 3×10^6 operations

b. Other model: 2×10^6 operations

(a) 3×10^6	NJLc-FF, NJLs-FF
(b) 2×10^6	NJLs-FF, NJLs-GG, NJLs-HH, NJLs-KK, NJLs-LL, NJLc-FF, NJLc-FG, NJLc-FH, NJLc-FK, NJLc-FL, NJLc-GG, NJLc-GH, NJLc-GK, NJLc-GL, NJLc-HH, NJLc-HK, NJLc-HL, NJLc-KK, NJLc-KL, NJLc-LL

3.3 Terminal connection

Model	The connection capability			Screw size	Tightening torque (N·m)
	Number of piece	Cable Cross section (mm^2)	Cu busbar Cross section (mm^2)		
NC2-115	1	70~95	-	M6	3
NC2-150	1	70~95	-	M8	6
NC2-185	1	95~150	-	M8	6
NC2-225	1	95~150	-	M10	10
NC2-265	1	120~185	-	M10	10
NC2-330	1	185~240	-	M10	10
NC2-400	1(2)	240(150)	30×5	M10	10
NC2-500	2	150~185	40×5	M10	10
NC2-630	2	185~240	50×5	M12	14
NC2-800	2	185~240	50×5	M12	14

4. Technical data

★ 3P contactors AC coil operation

Model			NC2-115(Z)	NC2-150(Z)	NC2-185(Z)	NC2-225(Z)
Frame			Frame 1		Frame 2	
Rated Conventional heating current (A) AC-1			200	200	275	275
Rated operational current (A)	AC-3	380/400V AC	115	150	185	225
	AC-4	660/690V AC	86	108	118	137
Power of controlled 3-phase cage motor (AC-3)	kW	380/400V AC	55	75	90	110
		660/690V AC	80	100	110	129
	hp	240V AC	40	50	60	75
		415V AC	60	75	100	125
		480V AC	75	100	100	125
		600V AC	75	100	100	125
Operating cycles (operations /h) AC-3			1,200	1,200	600	600
Electrical life ($\times 10^6$ operations) AC-3			1.2	1.2	1	1
Mechanical life ($\times 10^6$ operations)			10	10	6	6
Matched fuse	Model		RT36-1	RT36-1	RT36-2	RT36-2
type	Rated current A		250	250	315	315

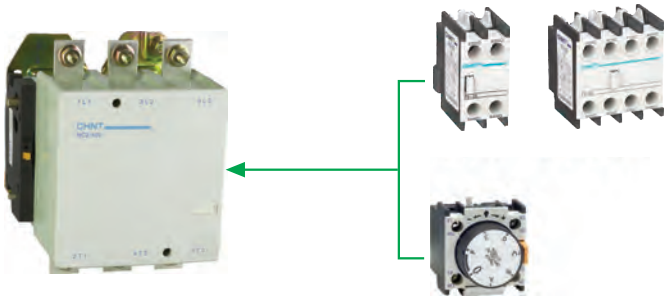
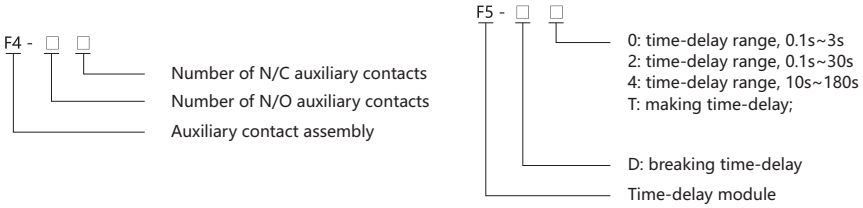
★ 4P contactors AC coil operation

Model			NC2-115/4	NC2-150/4	NC2-185/4	NC2-225/4
Frame			Frame 1		Frame 2	
Conventional heating current (A) AC-1			200	200	275	275
Rated operational current (A)	AC-3 AC-4	380/400V AC	115	150	185	225
		660/690V AC	86	108	118	137
Power of controlled 3-phase cage motor (AC-3)	kW	380/400V AC	55	75	90	110
		660/690V AC	80	100	110	129
	hp	240V AC	40	50	60	75
		415V AC	60	75	100	125
		480V AC	75	100	100	125
		600V AC	75	100	100	125
Operating cycles (operations /h) AC-3			1,200	1,200	600	600
Electrical life ($\times 10^6$ operations) AC-3			1.2	1.2	1	1
Mechanical life ($\times 10^6$ operations)			10	10	6	6
Matched fuse	Model		RT36-1	RT36-1	RT36-2	RT36-2
type	Rated current (A)		250	250	315	315

NC2-265(Z)	NC2-330(Z)	NC2-400(Z)	NC2-500	NC2-630	NC2-800	
Frame 3	**Frame 4**	**Frame 5**	**Frame 6**		**Frame 7**	
315	380	450	630	800	800	
265	330	400	500	630	AC-3	AC-4
170	235	303	353	462	800	630
					486	462
132	160	200	250	335	450	
160	220	280	335	450	475	
100	125	150	200	250	350	
150	150	200	250	350	600	
150	200	250	350	400	600	
150	200	300	350	500	650	
600	600	600	600	600	600	
0.8	0.8	0.8	0.8	0.8	0.6	
6	6	6	6	6	3	
RT36-3	RT36-3	RT36-3	RT36-4	RT36-4	RT36-4	
355	500	630	800	1000	1000	

NC2-265/4	NC2-330/4	NC2-400/4	NC2-630/4
Frame 3	**Frame 4**	**Frame 5**	**Frame 6**
315	380	450	800
265	330	400	630
170	235	303	462
132	160	200	335
160	220	280	450
100	125	150	250
150	150	200	350
150	200	250	400
150	200	300	500
600	600	600	600
0.8	0.8	0.8	0.8
6	6	6	6
RT36-3	RT36-3	RT16-3	RT36-4
355	500	630	1000

5. Accessories

Items	Model		NC2-115(Z)	NC2-150(Z)	NC2-185(Z)	NC2-225(Z)
AC coil	Coil power	AC: In-rush (VA)	1500		1800	
		AC: Sealed (VA)	20		20	
		DC: In-rush (W)	1500		1800	
		DC: Sealed (W)	20		20	
	Operation range	Operation voltage	(85%~110%) Us			
		Drop-out voltage	Common products; 20%~75%; electricity-saving products: 10%~75%Us			
	Coil code (XXX=coil voltage)	3P	FF XXX (DC)		FG XXX (DC)	
		4P	FF XXX		FG XXX	
Coil voltage			AC: 110-127, 220-240, 380-415 DC: 48, 110, 220			
F4 auxiliary contact						
F5 auxiliary contact						

NC2-265(Z)	NC2-330(Z)	NC2-400(Z)	NC2-500	NC2-630	NC2-800
1,500	1,500	1,500	1,500	1,700	1,700
10	10	20	25	25	34.2
1500	1500	1700			
8	8	10			
(85%~110%) Us					
Common products; 20%~75%; electricity-saving products: 10%~75%Us					
FH XXX (DC)	FI XXX (DC)	FJ XXX (DC)	FK XXX	FL XXX	FM XXX
FH XXX	FI XXX	FJ XXX	-	FL XXX/4	-
AC: 110,127,220,230,380,400 DC: 110,220(NC2-265Z/330Z/400Z)					AC/DC: 110-127，220-240，380-415

Picture	Model	Configuration of contacts	
		Number of NO contact	Number of NC contact
	F4-20	2	0
	F4-11	1	1
	F4-02	0	2
	F4-40	4	0
	F4-31	3	1
	F4-22	2	2
	F4-13	1	3
	F4-04	0	4

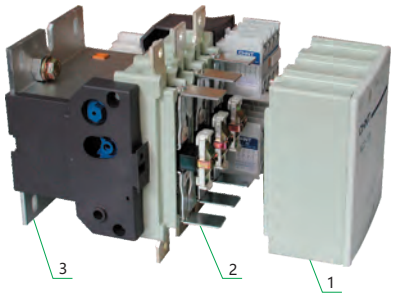
Picture	Model	Time-delay range	Configuration of time-delay contacts
	F5-T0	0.1s~3s	N/O+N/C
	F5-T2	0.1s~30s	N/O+N/C
	F5-T4	10s~180s	N/O+N/C
	F5-D0	0.1s~3s	N/O+N/C
	F5-D2	0.1s~30s	N/O+N/C
	F5-D4	10s~180s	N/O+N/C

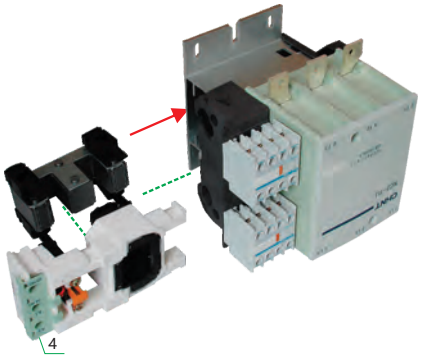
Model of mechanical interlock		Applicable assembly with contactors
NJLs-FF		NC2-115+NC2-115; NC2-150+NC2-150; NC2-115+NC2-150
NJLs-GG		NC2-185+NC2-185; NC2-225+NC2-225; NC2-185+NC2-225
NJLs-HH	(Horizontal)	NC2-265+NC2-265; NC2-330+NC2-330; NC2-265+NC2-330
NJLs-KK		NC2-400+NC2-400; NC2-500+NC2-500; NC2-400+NC2-500
NJLs-LL		NC2-630+NC2-630; NC2-800+NC2-800
NJLc-FF		NC2-115+NC2-115; NC2-150+NC2-150; NC2-115+NC2-150
NJLc-FG		NC2-115+NC2-185; NC2-150+NC2-185; NC2-115+NC2-225; NC2-150+NC2-225
NJLc-FH		NC2-115+NC2-265; NC2-115+NC2-330; NC2-150+NC2-265; NC2-150+NC2-330
NJLc-FK		NC2-115+NC2-400; NC2-115+NC2-500; NC2-150+NC2-400; NC2-150+NC2-500
NJLc-FL		NC2-115+NC2-800; NC2-115+NC2-630; NC2-150+NC2-630; NC2-150+NC2-800
NJLc-GG		NC2-185+NC2-185; NC2-225+NC2-225; NC2-185+NC2-225
NJLc-GH		NC2-185+NC2-265; NC2-185+NC2-330; NC2-225+NC2-265; NC2-225+NC2-330
NJLc-GK	(Vertical)	NC2-185+NC2-400; NC2-225+NC2-500; NC2-225+NC2-400; NC2-225+NC2-500
NJLc-GL		NC2-185+NC2-800; NC2-185+NC2-630; NC2-225+NC2-630; NC2-225+NC2-800
NJLc-HH		NC2-265+NC2-265; NC2-330+NC2-330; NC2-265+NC2-330
NJLc-HK		NC2-265+NC2-400; NC2-330+NC2-400; NC2-265+NC2-500; NC2-330+NC2-500
NJLc-HL		NC2-265+NC2-265; NC2-265+NC2-630; NC2-330+NC2-630; NC2-330+NC2-800
NJLc-KK		NC2-400+NC2-400; NC2-500+NC2-500; NC2-400+NC2-500; NC2-400+NC2-800
NJLc-KL		NC2-400+NC2-630; NC2-500+NC2-630; NC2-500+NC2-800
NJLc-LL		NC2-630+NC2-630; NC2-630+NC2-800
NJLc-MM		NC2-800+NC2-800

6. Structure features

6.1 The contactor is composed of arc-extinguishing system, contact system, base frame and magnetic system (including iron core, coil)
The contact system of the contactor is of direct action type and double-breaking points allocation.
The lower base-frame of the contactor is made of shaped aluminum alloy and the coil is of plastic enclosed structure.
The coil is assembled with the amarture to be an integrated one. They can be directly taken out from or inserted into the contactor.
It is convenient for user's service and maintenance.

Scheme of NC2-115~265 structure



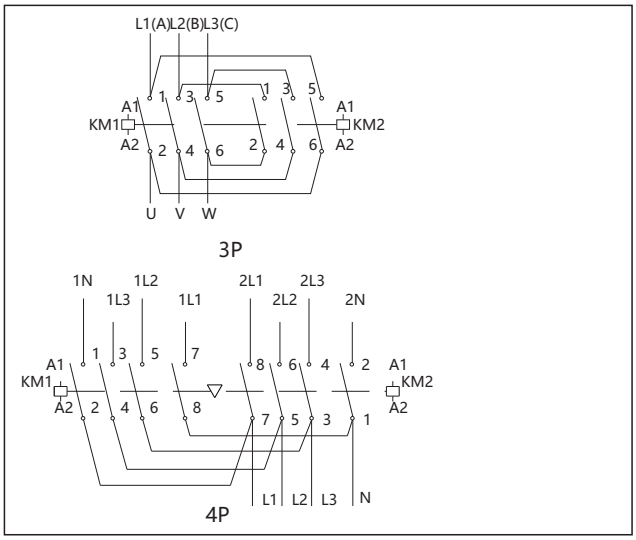


1: arc-extinguishing system 2: contact system 3: base frame 4: magnetic system

NC2 series contactor is of short arcing distance. For example,
the arcing distance of NC2-115~330 contactor is only 10mm (200~500V), which is about one sixth that of the previous contactor of the same capacity. It is an excellent complementary element used for an electric control device and it occupies smaller space in a complete set of equipment. The mechanical interlock can be added to the contactor in both horizontal direction and vertical direction. Three sets of contactor can be interlocked in the vertical direction.

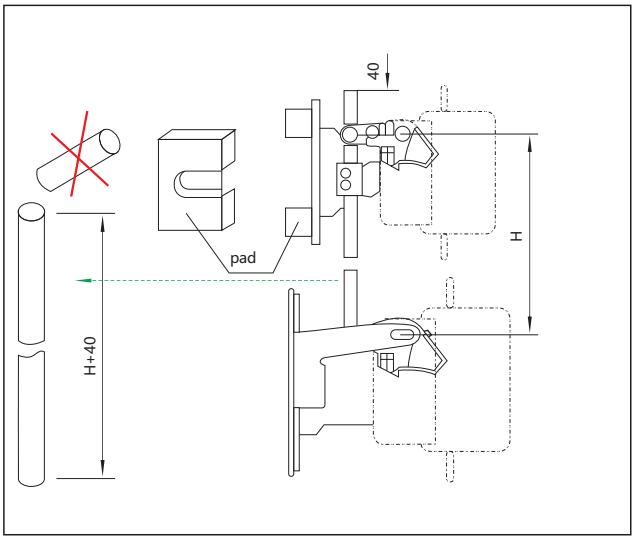
6.2 Refer to fig below for connection mode of connection plate, the interlocked contactors could be mounted horizontally or vertically. For vertical mounting, contactors with lower current mounted at the upper position.

Connection of connection plate



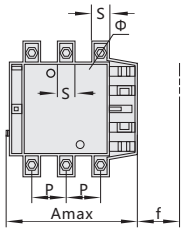
6.3 For reversing type contactors assembled with NC2-115~225 and NC2-265~630, which will be mounted vertically, a padding plate should be added at the bottom of NC2-115~225.

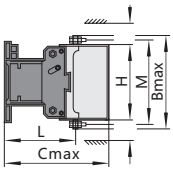
Rereising contactor mounted vertically

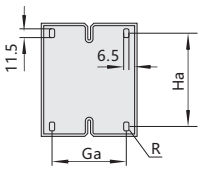


7. Overall and mounting dimensions (mm)

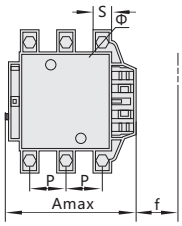
NC2-115~330

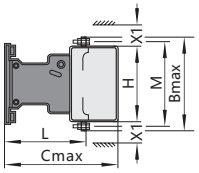


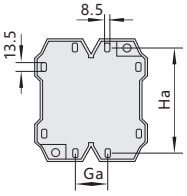




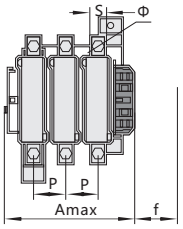
NC2-400~500

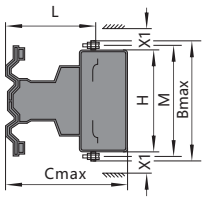


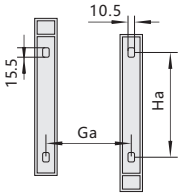




NC2-630~800





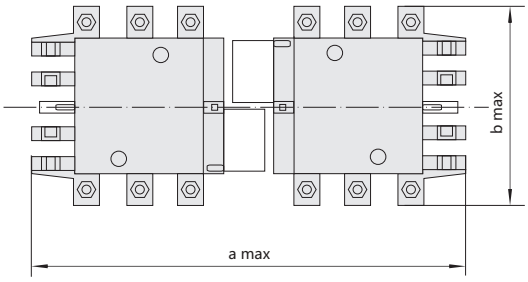


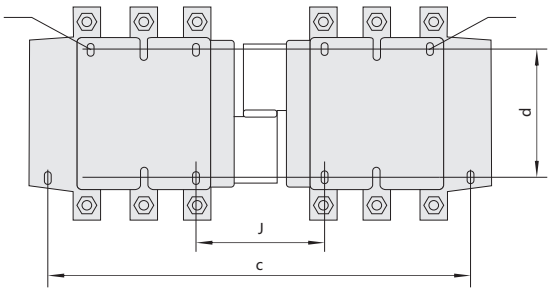
Model		A	B	C	P	S	Φ	f	M	H	L	X1 200~500V	X1 660~1000V	Ga	Ha
NC2-115	**3P**	168	163	172	37	20	M6	131	147	124	107	10	15	80	110~120
	4P	204	163	172	37	20	M6	131	147	124	107				
NC2-150	**3P**	168	171	172	40	20	M8	131	150	124	107	10	15	80	110~120
	4P	204	171	172	40	20	M8	131	150	124	107				
NC2-185	**3P**	171	175	183	40	20	M8	131	154	127	113.5	10	15	80	110~120
	4P	211	175	183	40	20	M8	131	154	127	113.5				
NC2-225	**3P**	171	198	183	48	25	M10	131	172	127	113.5	10	15	80	110~120
	4P	211	198	183	48	25	M10	131	172	127	113.5				
NC2-265	**3P**	202	204	215	48	25	M10	147	178	147	141	10	15	96	110~120
	4P	247	204	215	48	25	M10	147	178	147	141				
NC2-330	**3P**	215	208	220	48	25	M10	147	181	158	145	10	15	96	110~120
	4P	261	208	220	48	25	M10	147	181	158	145				
NC2-400	**3P**	215	208	220	48	25	M10	147	181	158	145	15	20	80	170~180
	4P	261	208	220	48	25	M10	147	181	158	145				
NC2-500	**3P**	235	238	233	55	30	M10	150	208	172	146	15	20	80	170~180
NC2-630	**3P**	312	305			40	M12	181	264	202	155	20	30	180	180~190
	4P	389	305	**256**	**80**	40	M12	181	264	202	155			240	
NC2-800	**3P**	312	305	256	80	40	M12	181	264	202	155	20	30	180	180~190

Note: a. f is the min distance needed to mount and dismount the coil.

b. X1: arcing distance is identified by operating voltage and breaking capacity.

NC2-115Ns~630Ns (Horizontal mounting)

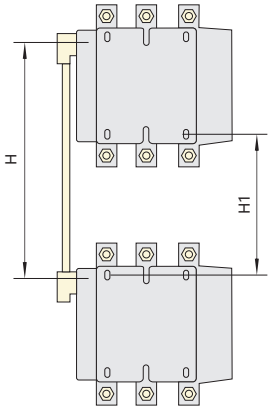




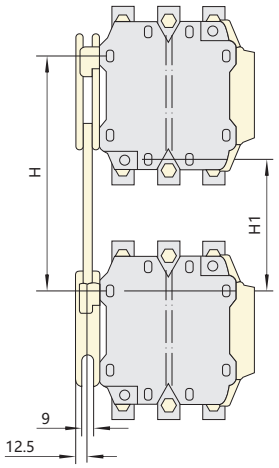
mm

Modle	pole	A max	b max	c	d	J
NC2-115Ns	3	350	163	330	110~120	71
	4	425	208	370		108
NC2-150Ns	3	350	171	330		71
	4	425	211	370		111
NC2-185Ns	3	350	174	330		78
	4	430	223	370		118
NC2-225Ns	3	350	197	330		78
	4	430	243	370		118
NC2-265Ns	3	450	203	428		109
	4	546	249	485		157
NC2-330Ns	3	450	206	428		124
	4	546	251	485		172
NC2-400Ns	3	485	206	460	170~180	157
	4	595	251	485		157
NC2-500Ns	3	485	238	460		156
NC2-630Ns	3	650	304	625	180~190	139
	4	810	364	785		139
NC2-800Ns	3	650	304	625		139

NC2-115Nc~630Nc (Vertical mounting)



a. NC2-115Nc~225Nc



b. NC2-265Nc~800Nc

Model	H		H1	
	Min	Max	Min	Max
NC2-115Nc、NC2-150Nc	200	310	80	190
NC2-185Nc、NC2-225Nc	220	310	100	190
NC2-265Nc	250	380	130	260
NC2-330Nc	260	380	60	200
NC2-400Nc	280	380	100	200
NC2-500Nc	300	380	120	200
NC2-630Nc	380	380	200	200
NC2-800Nc	380	380	200	200

8. Assembly with overload relay

8.1 Assembly with thermal overload relay

Model of contactor	Assembled thermal ocerload relay			
	Model	Rated current (A)	Recommended fuse type	
			aM	gG
NC2-115 NC2-150 NC2-185 NC2-225	 NR2-200	80~125	125	200
		100~160	160	250
		125~200	200	315
NC2-185 NC2-225 NC2-265 NC2-330 NC2-400 NC2-500 NC2-630~800	 NR2-630	160~250	250	400
		200~315	315	500
		250~400	400	630
		315~500	500	800
		400~630	630	800

NCH8 Modular AC Contactor 20~63A

1. General

1.1 Electric ratings: up to 20A, 25A, 40A, 63A, 230V, 400V AC50/60Hz;

1.2 Utilization category: AC-1, AC-7a, AC-7b, AC-3;

1.3 Standard: IEC/EN 61095, IEC 60947-4-1

2. Model and meanings

N C H 8 - □ / □ □

- Number of normally closed main contact
- Number of normally open main contact
- A rated operational current
- Design serial number
- Household
- AC contactor
- Company code

3. Features

3.1 Compact design and modularization design;

3.2 Insulation material with excellent performances has been adopted to enhance the operation security to a great extent;

3.3 Elegant appearance. A mounting instruction diagram is appended for convenient operation;

3.4 No noise during operation.

3.5 IP20

III

4. Technical data

4.1 Ratings

Model	Utilization category	Ui (V)	Ue (V~)	Conventional heating current (A)	Ie (A)	Controlled power (kW)
NCH8-20/20 NCH8-20/11 NCH8-20/02 NCH8-20/10 NCH8-20/01	AC-1/AC-7a AC-3/AC-7b	500	230	25	20 9	4 1.2
NCH8-20/40 NCH8-20/22 NCH8-20/31	AC-1/AC-7a AC-3/AC-7b	500	400	25	20 9	10 4
NCH8-25/20 NCH8-25/11 NCH8-25/02 NCH8-25/10 NCH8-25/01	AC-1/AC-7a AC-3/AC-7b	500	230	25	25 9	5 1.2
NCH8-25/40 NCH8-25/22 NCH8-25/31	AC-1/AC-7a AC-3/AC-7b	500	400	25	25 9	16 4
NCH8-40/20 NCH8-40/11 NCH8-40/02	AC-1/AC-7a AC-3/AC-7b	500	230	63	40 15	7.5 3
NCH8-63/20 NCH8-63/11 NCH8-63/02	AC-1/AC-7a AC-3/AC-7b	500	230	63	63 20	12 4
NCH8-40/40 NCH8-40/31 NCH8-40/22	AC-1/AC-7a AC-3/AC-7b	500	400	63	20	26 7.5
NCH8-63/40 NCH8-63/31 NCH8-63/22	AC-1/AC-7a AC-3/AC-7b	500	400	63	63 20	40 11

4.2 Action (operation) conditions:
When the ambient air temperature is - 5 ℃ ~ + 40 ℃, the rated control power supply voltage us is applied to the contactor suction coil, so that when it is heated to a stable state, the contactor can be reliably closed under any voltage within the range of (85% ~ 110%) us. The release voltage is neither higher than 75% us nor less than 20% us.

4.2.1 Agreed operational performance

Utilization category	Making conditions			Breaking conditions			Electrification time (s)	Interval time (s)	Operating frequency
	I/Ie	U/Ue	COSΦ	Ic/Ie	Ur/Ue	COSΦ			
AC-1	1.0	1.05	0.8	1.0	1.05	0.8	0.05	10	6000
AC-7a	1.0	1.05	0.8	1.0	1.05	0.8	0.05	10	30000
AC-3/AC-7b	6.0	1.0	0.45	1.0	0.17	0.45	0.05	10	30000

4.2.2Making and breaking capacity

Utilization category	Making and breaking conditions			Electrification time (s)	Interval time (s)	Operating frequency
	Ic/Ie	Ur/Ue	COSΦ			
AC-1/AC-7a	1.0	1.05	0.8	0.05	10	50
AC-3/AC-7b	8	1.05	0.45	0.05	10	50

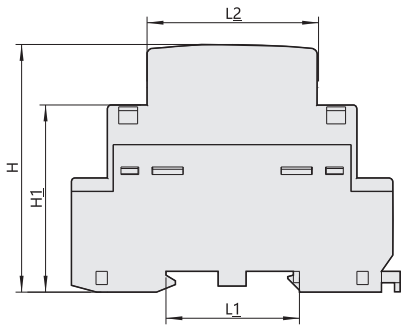
4.3 Conventional heating current under different ambient temperature

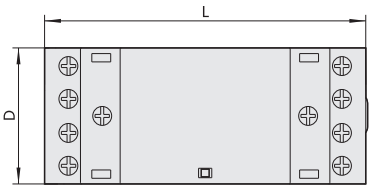
Rated current	40℃	50℃	60℃	70℃
Ie=20A	20A	18A	16A	14A
Ie=25A	25A	22A	18A	16A
Ie=40A	40A	38A	36A	32A
Ie=63A	63A	57A	50A	46A

4.4 Number of appended lamps with voltage up to 230V

Unit power	Tungsten filament and halogen 230V					
	60W	100W	200W	300W	500W	1000W
20A	20	12	6	4	2	1
25A	36	20	11	7	4	2
40A	85	50	25	17	10	5
63A	115	70	35	23	14	7

5. Overall and mounting dimensions (mm)





Model	D		L	L1	L2	H	H1
	2P	4P					
NCH8-20~25	18	36	85	35.5	45	65.5	50
NCH8-40~36	36	54	85	35.5	45	65.5	50

6. Ordering information

Model	Number of contact	Coil voltage
NCH8-20	2NO	24V,220/230V,240V 50/60Hz
NCH8-20	1NO+1NC	
NCH8-20	2NC	
NCH8-20	1NO	
NCH8-20	1NC	
NCH8-20	4NO	
NCH8-20	2NO+2NC	
NCH8-20	3NO+1NC	
NCH8-25	2NO	
NCH8-25	1NO+1NC	
NCH8-25	2NC	
NCH8-25	1NO	
NCH8-25	1NC	
NCH8-25	4NO	
NCH8-25	2NO+2NC	
NCH8-25	3NO+1NC	
NCH8-40	4NO	
NCH8-40	3NO+1NC	
NCH8-40	2NO+2NC	
NCH8-40	2NO	
NCH8-40	1NO+1NC	
NCH8-40	2NC	
NCH8-63	4NO	
NCH8-63	3NO+1NC	
NCH8-63	2NO+2NC	
NCH8-63	2NO	
NCH8-63	1NO+1NC	
NCH8-63	2NC	

NR2 Thermal Overload Relay

1. General

1.1 Certificates: CE, KEMA, UkrSEPRO, EAC, RCC, UL;

1.2 Electric ratings: AC 50/60Hz, 690V, 0.1A~630A;

1.3 Tripping class: 10A;

1.4 Mounting version:
a. Plug-in: Available for NR2-11.5, 25, 36, 93, 150;
b. Independent: Available for NR2-200, 630;

1.5 Standard: IEC/EN 60947-4-1

2. Type designation

N R 2 -□

- Current class
- Design sequence No.
- Thermal overload relay
- Company code

3. Features

3.1 3-phase bimetal

3.2 Continuously readjustable current settings

3.3 Temperature compensation

3.4 Tripping indicator

3.5 Test button

3.6 Stop button

3.7 Manual and automatic reset button

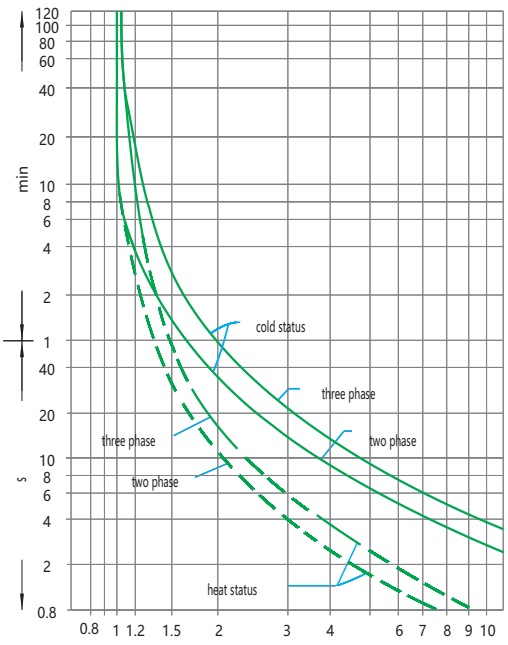
3.8 Electrically separated 1N/O plus 1N/C contact

4. Technical data

4.1 Protection properties

Item	Series No.	I/In		Operating time Tp	Test condition
Overload protection	1	1.05		>2 h	Start from cold status
	2	1.2		≤2 h	Start from heat status, right after item No.1
	3	1.5		≤2 min	Start from heat status, right after item No.1
	4	7.2		2s<Tp≤10s	Start from cold status
Phase failure protection	5	Any two phases	Another phase	>2 h	Start from cold status
		1.0	0.9		
	6	1.15	0	≤2 h	Start from heat status, right after item No.5

Curves



Multiple of rectified current

4.2 Main Technical Parameters

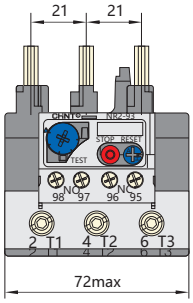
Model		NR2-11.5						
Picture								
Current class(A)		13						
Phase failure protection function		Yes						
Automatic & manual reset		Yes						
Temperature compensation		Yes						
Tripping indicator		Yes						
Test & stop pushbutton		Yes						
Mounting mode	Plug-in	Yes						
	Independent	Yes						
Auxiliary contacts	No. of contacts	1N/O+1N/C						
	Rated current (A) (AC-15 220V)	2.73						
	Rated current (A) (AC-15 380V)	1.58						
	Rated current (A) (DC-13 220V)	0.2						
		Current setting range						
Rated operational current(A)		0.1~0.16	0.16~0.25	0.25~0.40	0.40~0.63	0.63~1	1~1.6	1.25~2
Matched fuse	aM(A)	0.25	0.5	1	1	2	2	4
	gG(A)	2	2	2	2	4	4	6

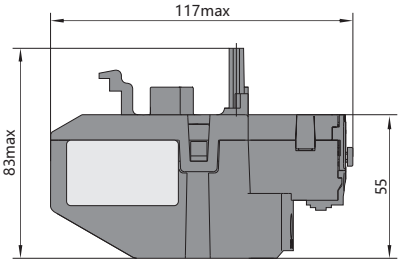
Model		NR2-93						
Picture								
Current class(A)		93						
Phase failure protection function		Yes						
Automatic & manual reset		Yes						
Temperature compensation		Yes						
Tripping indicator		Yes						
Test & stop pushbutton		Yes						
Mounting mode	Plug-in	Yes						
	Independent	Yes						
Auxiliary contacts	Configuration of contacts	1N/O+1N/C						
	Rated current (A) (AC-15 220V)	2.73						
	Rated current (A) (AC-15 380V)	1.58						
	Rated current (A) (DC-13 220V)	0.2						
		Current setting range						
Rated operational current(A)		23~32	30~40	37~50	48~65	55~70	63~80	80~93
Matched fuse	aM(A)	40	40	63	63	80	80	100
	gG(A)	63	100	100	100	125	125	160

NR2-25								NR2-36	
									
25								36	
Yes								Yes	
Yes								Yes	
Yes								Yes	
Yes								Yes	
Yes								Yes	
Yes								Yes	
Yes								Yes	
1N/O+1N/C								1N/O+1N/C	
2.73								2.73	
1.58								1.58	
0.2								0.2	
Current setting range								Current setting range	
1.6~2.5	2.5~4	4~6	5.5~8	7~10	9~13	12~18	17~25	23~32	28~36
4	6	8	12	12	16	20	25	40	40
6	10	16	20	20	25	35	50	63	80

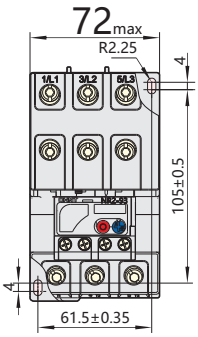
NR2-150			NR2-200			NR2-630				
 										
150			200			630				
Yes			Yes			Yes				
Yes			Yes			Yes				
Yes			Yes			Yes				
Yes			Yes			Yes				
Yes			Yes			Yes				
Yes			No			No				
No			Yes			Yes				
1N/O+1N/C			1N/O+1N/C			1N/O+1N/C				
2.73			2.73			2.73				
1.58			1.58			1.58				
0.2			0.2			0.2				
Current setting range			Current setting range			Current setting range				
80~104	95~120	110~150	80~125	100~160	125~200	160~250	200~315	250~400	315~500	400~630
125	125	160	125	160	200	250	315	400	500	630
200	224	250	200	250	315	400	500	630	800	800

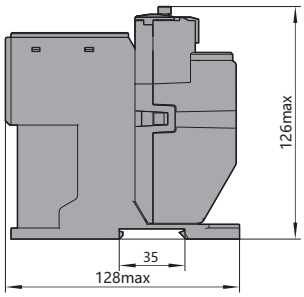
NR2-93



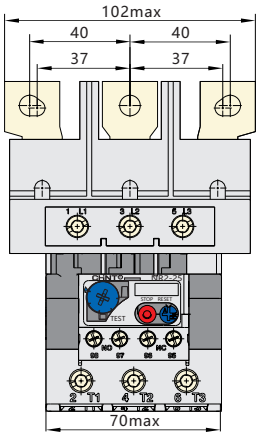


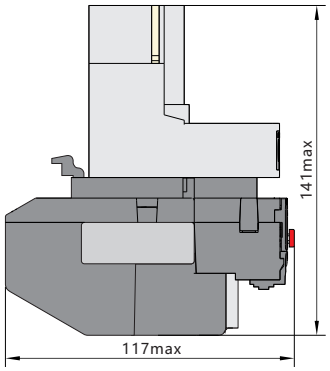
NR2-93 with MB-4



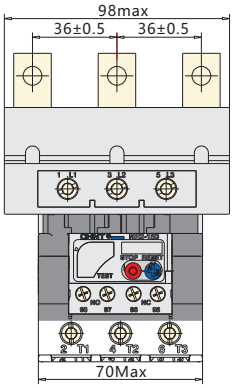


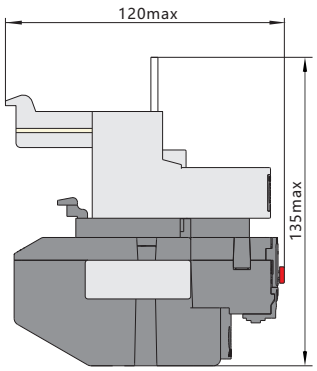
NR2-150 (matched with NC2)



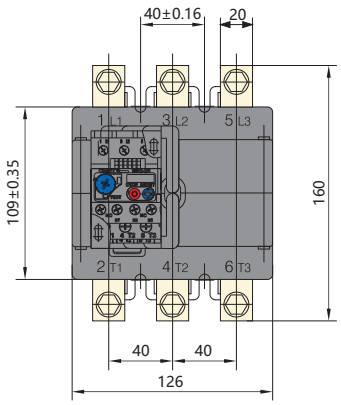


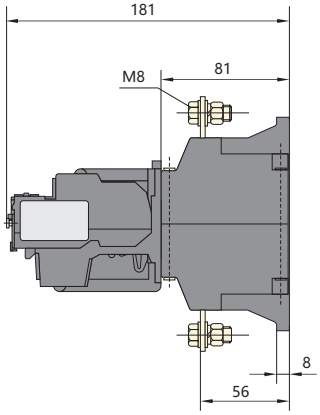
NR2-150 (matched with NC7)



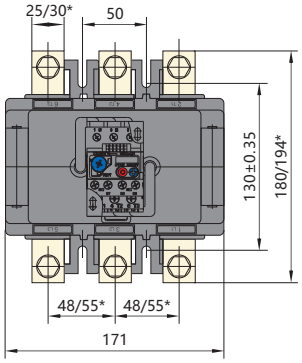


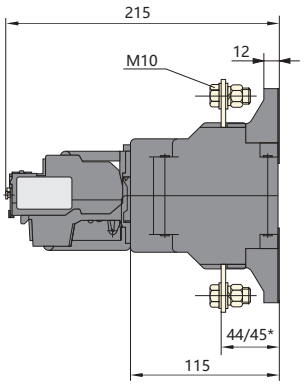
NR2-200





NR2-630





Note: Dimension with "*" for the product over 400A.

6. Wiring

Items			NR2-11.5	NR2-25	NR2-36	NR2-93	NR2-150	NR2-200	NR2-630
Cross section area of conductor mm²	Main circuit	Single core or stranded wire	1~4	1~4	4~10	4~35	25~95	25~95	70~2×240
		Wiring screw	M3.5	M4	M4	M10	M6/M8	M8	M10
	Auxiliary circuit	Single core or stranded wire	1~2.5	1~2.5	1~2.5	1~2.5	1~2.5	1~2.5	1~2.5
		Wiring screw	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5

7. Accessories

No.		Description	Application
1		MB-1	Incorporate with NR2-11.5 relay to form an independently mounted product
2		MB-2	Incorporate with NR2-25 relay to form an independently mounted product
3		MB-3	Incorporate with NR2-36 relay to form an independently mounted product
4		MB-4	Incorporate with NR2-93 relay to form an independently mounted product

8. Assembly with contactor

Model of overload relay	Rated current (A)	Recommended fuse type (RT16 is recommended)		Model of contactor
		aM	gG	
 NR2-11.5	0.1~0.16	0.25	2	NC6-09
	0.16~0.25	0.5	2	
	0.25~0.4	1	2	
	0.4~0.63	1	2	
	0.63~1	2	4	
	1~1.6	2	4	
	1.25~2	4	6	
	1.6~2.5	4	6	
	2.5~4	6	10	
	4~6	8	16	
	5.5~8	12	20	
	7~10	12	20	
	9~13	16	25	
 NR2-25	0.1~0.16	0.25	2	NC1-09 NC1-12 NC1-18 NC1-25 NC1-32 NC7-09~18 NC7-25~32
	0.16~0.25	0.5	2	
	0.25~0.4	1	2	
	0.4~0.63	1	2	
	0.63~1	2	4	
	1~1.6	2	4	
	1.25~2	4	6	
	1.6~2.5	4	6	
	2.5~4	6	10	
	4~6	8	16	
	5.5~8	12	20	
	7~10	12	20	
	9~13	16	25	
	12~18	20	35	
	17~25	25	50	

Model of overload relay	Rated current (A)	Recommended fuse type (RT16 is recommended)		Model of contactor
		aM	gG	
 NR2-36	23~32	40	63	NC1-32 NC7-32~38
	28~36	40	80	
 NR2-93	23~32	40	63	NC1-40 NC1-50 NC1-65 NC1-80 NC1-95 NC7-40~65 NC7-80~95
	30~40	40	100	
	37~50	63	100	
	48~65	63	100	
	55~70	80	125	
	63~80	80	125	
	80~93	100	160	
 NR2-150 (matched with NC2)	80~104	125	200	NC2-115 NC2-150
	95~120	125	224	
	110~150	160	250	
 NR2-150 (matched with NC7)	80~104	125	200	NC7-115 NC7-150 NC7-170
	95~120	125	224	
	110~150	160	250	
 NR2-200	80~125	125	200	NC2-115 NC2-150 NC2-185 NC2-225 NC7-115~170 NC7-205
	100~160	160	250	
	125~200	200	315	
 NR2-630	160~250	250	400	NC2-185 NC2-225 NC2-265 NC2-330 NC2-400 NC2-500 NC2-630 NC7-205~300 NC7-410~475 NC7-620
	200~315	315	500	
	250~400	400	630	
	315~500	500	800	
	400~630	630	800	

III

NS2-25、NS2-32

NS2-25X、NS2-32X

NS2-32H

NS2-80

NS2 Manual Motor Starter

1. General

1.1 Certificates: SEMKO, CE, UkrSEPRO, EAC, RCC, UL;

1.2 Electric ratings: AC690V, 25A, 32A, 80A;

1.3 Standard: IEC/EN 60947-2, IEC60947-4-1

2. Type designation

N S 2 - □ □ / □

- Rated current of release
- Code of structural modification
- Frame size rated current (A)
- Design sequence No.
- AC motor starter
- Company code

3. Operating conditions

3.1 Temperature: -5℃ ~ +40℃,
average temperature in 24 hours not exceed +35℃

3.2 Altitude: not exceed 2000m

3.3 Air conditions:
At mounting site, relative humidity not exceed 50% at the max temperature of +40℃, higher relative humidity is allowable under lower temperature,
for example, RH could be 90% at +20℃

3.4 Pollution grade: Grade Ⅲ

3.5 Trip class:
10A(NS2-25, NS2-25X, NS2-32, NS2-32X,NS2-32H)
10 (NS2-80, NS2-80B)

3.6 Rated operational system:
Continuous operational system

3.7 Mounting conditions:
The inclination between the mounting plane and the vertical plane shall not exceed 5°
The product shall be installed and operated at a place without obvious shake, impact and vibration.

4. Technical data

4.1 Protection properties

Over-load Protection Properties

Series No.	Multiple of setting current	Initial status	Time		Expected results	Ambient temperature
1	1.05	Cold status	t≥2h		Non-tripping	+20℃±2℃
2	1.20	Heat status (right after test.1)	t < 2h		Tripping	+20℃±2℃
3	1.50	Heat status (right after test.1)	Tripping class	10A t < 2min	Tripping	+20℃±2℃
				10 t < 4min		
4	7.20	Cold status	Tripping class	10A 2s < t≤10s	Tripping	+20℃±2℃
				10 4s < t≤10s		

Phase failure protection properties

Series No.	Multiple of setting current		Initial status	Time	Expected results	Ambient temperature
	Any 2 phases	The other phase				
1	1.0	0.9	Cold status	t≥2h	Non-tripping	+20℃±2℃
2	1.15	0	Heat status (right after test.1)	t < 2h	Tripping	+20℃±2℃

Temperature compensation properties

Series No.	Multiple of setting current	Initial status	Time	Expected results	Ambient temperature
1	1.0	Cold status	t≥2h	Non-tripping	+40℃±2℃
2	1.2	Heat status (right after test.1)	t < 2h	Tripping	+40℃±2℃
3	1.5	Heat status (through 1.0 times rated current ,after thermal equilibrium is reached)	t < 2min	Tripping	+40℃±2℃
4	1.05	Cold status	t≥2h	Non-tripping	-5℃±2℃
5	1.3	Heat status (right after test.3)	t < 2h	Tripping	-5℃±2℃
6	1.5	Heat status (through 1.0 times rated current ,after thermal equilibrium is reached)	t < 4min	Tripping	-5℃±2℃

4.2 Technical parameters

Type	Rated current of release In(A)	Setting current regulation range (A)	Rated ultimate short-circuit breaking Icu , Rated service short-circuit breaking capacity Ics				Arcing distance (mm)
			400/415V		690V		
			Icu	Ics	Icu	Ics	
NS2-25(X)	0.16	0.1 ~ 0.16	100	100	100	100	40
NS2-25(X)	0.25	0.16 ~ 0.25	100	100	100	100	40
NS2-25(X)	0.4	0.25 ~ 0.4	100	100	100	100	40
NS2-25(X)	0.63	0.4 ~ 0.63	100	100	100	100	40
NS2-25(X)	1	0.63 ~ 1	100	100	100	100	40
NS2-25(X)	1.6	1 ~ 1.6	100	100	100	100	40
NS2-25(X)	2.5	1.6 ~ 2.5	100	100	3	2.25	40
NS2-25(X)	4	2.5 ~ 4	100	100	3	2.25	40
NS2-25(X)	6.3	4 ~ 6.3	100	100	3	2.25	40
NS2-25(X)	10	6 ~ 10	100	100	3	2.25	40
NS2-25(X)	14	9 ~ 14	15	7.5	3	2.25	40
NS2-25(X)	18	13 ~ 18	15	7.5	3	2.25	40
NS2-25(X)	23	17 ~ 23	15	6	3	2.25	40
NS2-25(X)	25	20 ~ 25	15	6	3	2.25	40
NS2-32(X)	32	24 ~ 32	10	5	3	2.25	40
NS2-32H	0.16	0.1 ~ 0.16	100	100	100	100	40
NS2-32H	0.25	0.16 ~ 0.25	100	100	100	100	40
NS2-32H	0.4	0.25 ~ 0.4	100	100	100	100	40
NS2-32H	0.63	0.4 ~ 0.63	100	100	100	100	40
NS2-32H	1	0.63 ~ 1	100	100	100	100	40
NS2-32H	1.6	1 ~ 1.6	100	100	100	100	40
NS2-32H	2.5	1.6 ~ 2.5	100	100	4	4	40
NS2-32H	4	2.5 ~ 4	100	100	4	4	40
NS2-32H	6.3	4 ~ 6.3	100	100	4	4	40
NS2-32H	10	6 ~ 10	100	100	4	4	40
NS2-32H	14	9 ~ 14	50	25	4	4	40
NS2-32H	18	13 ~ 18	50	25	4	4	40
NS2-32H	23	17 ~ 23	50	25	4	4	40
NS2-32H	25	20 ~ 25	50	25	4	4	40
NS2-32H	32	24 ~ 32	50	25	4	4	40
NS2-80	25	20~25	50	17.5	4	2	50
NS2-80	32	23~32	50	17.5	4	2	50
NS2-80	40	30~40	50	17.5	4	2	50
NS2-80	50	37~50	50	17.5	4	2	50
NS2-80	65	48~65	50	17.5	4	2	50
NS2-80	80	63~80	50	17.5	4	2	50

4.2.1 Rated power of three phase motor controlled by starter

Type	Rated current of release In(A)	Setting current regulation range (A)	Standard rated power of three phase motor (kW)					
			AC-3，50Hz/60Hz					
			230/240V	400V	415V	440V	500V	690V
NS2-25(X)、NS2-32H	0.16	0.1-0.16	-	-	-	-	-	-
NS2-25(X)、NS2-32H	0.25	0.16-0.25	-	-	-	-	-	-
NS2-25(X)、NS2-32H	0.4	0.25-0.4	-	-	-	-	-	-
NS2-25(X)、NS2-32H	0.63	0.4-0.63	-	-	-	-	-	0.37
NS2-25(X)、NS2-32H	1	0.63-1	-	-	-	0.37	0.37	0.55
NS2-25(X)、NS2-32H	1.6	1-1.6	-	0.37	-	0.55	0.75	1.1
NS2-25(X)、NS2-32H	2.5	1.6-2.5	0.37	0.75	0.75	1.1	1.1	1.5
NS2-25(X)、NS2-32H	4	2.5-4	0.75	1.5	1.5	1.5	2.2	3
NS2-25(X)、NS2-32H	6.3	4-6.3	1.1	2.2	2.2	3	3.7	4
NS2-25(X)、NS2-32H	10	6-10	2.2	4	4	4	5.5	7.5
NS2-25(X)、NS2-32H	14	9-14	3	5.5	5.5	7.5	7.5	9
NS2-25(X)、NS2-32H	18	13-18	4	7.5	9	9	9	11
NS2-25(X)、NS2-32H	23	17-23	5.5	11	11	11	11	15
NS2-25(X)、NS2-32H	25	20-25	5.5	11	11	11	15	18.5
NS2-32(X)、NS2-32H	32	24-32	7.5	15	15	15	18.5	25

4.3 Setting value of instantaneous electromagnetic tripping current of starter

Type	Rated current of release In(A)	Regulating range of setting current of thermal element(A)	Current setting value of instantaneous electromagnetic release Ir(A)
NS2-25(X) NS2-32H	0.16	0.1-0.16	1.5
	0.25	0.16-0.25	2.4
	0.4	0.25-0.4	5
	0.63	0.4-0.63	8
	1	0.63-1	13
	1.6	1-1.6	22.5
	2.5	1.6-2.5	33.5
	4	2.5-4	51
	6.3	4-6.3	78
	10	6-10	138
	14	9-14	170
	18	13-18	223
	23	17-23	327
	25	20-25	327
NS2-32(X)、NS2-32H	32	24-32	416
NS2-80	25	20-25	350
	32	23-32	448
	40	30-40	560
	50	37-50	700
	65	48-65	910
	80	63-80	1120

4.3.1 Action characteristics of instantaneous electromagnetic trip of starter

Test current	Initial state	Set time	Expected results	Ambient air temperature
0.8Ir	Cold state	t≥0.2s	No trip	+20℃±5℃
1.2Ir	Cold state	t＜0.2s	Trip	+20℃±5℃

4.4 Selection of backup fuse

When the expected short-circuit current of the installation site is greater than the rated limit short-circuit breaking capacity of the starter, the type and melt current specification of the backup short-circuit protection fuse shall be provided. For example, gG type fuse can be selected.

Type	Rated current of release In(A)	Setting current regulation range (A)	Current rating of fuse-link of back-up fuse,which Icc > Icu									
			230/240V		400/415V		440V		500V		690V	
			aM A	gL/gG A	aM A	gL/gG A	aM A	gL/gG A	aM A	gL/gG A	aM A	gL/gG A
NS2-25(X)	0.16	0.1-0.16	★	★	★	★	★	★	★	★	★	★
NS2-25(X)	0.25	0.16-0.25	★	★	★	★	★	★	★	★	★	★
NS2-25(X)	0.4	0.25-0.4	★	★	★	★	★	★	★	★	★	★
NS2-25(X)	0.63	0.4-0.63	★	★	★	★	★	★	★	★	★	★
NS2-25(X)	1	0.63-1	★	★	★	★	★	★	★	★	★	★
NS2-25(X)	1.6	1-1.6	★	★	★	★	★	★	★	★	★	★
NS2-25(X)	2.5	1.6-2.5	★	★	★	★	★	★	★	★	16	20
NS2-25(X)	4	2.5-4	★	★	★	★	★	★	★	★	25	32
NS2-25(X)	6.3	4-6.3	★	★	★	★	50	63	50	63	32	40
NS2-25(X)	10	6-10	★	★	★	★	50	63	50	63	32	40
NS2-25(X)	14	9-14	★	★	63	80	50	63	50	63	40	50
NS2-25(X)	18	13-18	★	★	63	80	50	63	50	63	40	50
NS2-25(X)	23	17-23	80	100	80	100	63	80	50	63	40	50
NS2-25(X)	25	20-25	80	100	80	100	63	80	50	63	40	50
NS2-32(X)	32	24-32	80	100	80	100	63	80	50	63	40	50
NS2-32H	0.16	0.1-0.16	★	★	★	★	★	★	★	★	★	★
NS2-32H	0.25	0.16-0.25	★	★	★	★	★	★	★	★	★	★
NS2-32H	0.4	0.25-0.4	★	★	★	★	★	★	★	★	★	★
NS2-32H	0.63	0.4-0.63	★	★	★	★	★	★	★	★	★	★
NS2-32H	1	0.63-1	★	★	★	★	★	★	★	★	★	★
NS2-32H	1.6	1-1.6	★	★	★	★	★	★	★	★	★	★
NS2-32H	2.5	1.6-2.5	★	★	★	★	★	★	★	★	20	25
NS2-32H	4	2.5-4	★	★	★	★	★	★	★	★	25	32
NS2-32H	6.3	4-6.3	★	★	★	★	★	★	★	★	40	50
NS2-32H	10	6-10	★	★	★	★	★	★	50	63	40	50
NS2-32H	14	9-14	★	★	★	★	50	63	50	63	50	63
NS2-32H	18	13-18	★	★	100	125	63	80	50	63	50	63
NS2-32H	23	17-23	★	★	100	125	80	100	50	63	50	63
NS2-32H	25	20-25	★	★	100	125	80	100	50	63	50	63
NS2-32H	32	24-32	★	★	100	125	80	100	50	63	50	63
NS2-80	25	20-25	-	-	250	315	-	-	-	-	160	200
NS2-80	32	23-32	-	-	250	315	-	-	-	-	160	200
NS2-80	40	30-40	-	-	250	315	-	-	-	-	160	200
NS2-80	50	37-50	-	-	315	400	-	-	-	-	200	250
NS2-80	65	48-65	-	-	315	400	-	-	-	-	200	250
NS2-80	80	63-80	-	-	315	400	-	-	-	-	200	250

III

5. Other

5.1 Starters accessories

5.1.1 Type, model and specifications of accessories (see Table 10).

Description of accessories	Accessories Model				Accessories Specifications
	NS2-25, NS2-32 applies	NS2-25X, NS2-32X applies	NS2-32H applies	NS2-80 applies	
Undervoltage release	NS2-UV110	NS2-UV110	NS2-UV110	NS2-UV110	110~115V, 50Hz；127V,60Hz
	NS2-UV220	NS2-UV220	NS2-UV220	NS2-UV220	220~240V, 50Hz
	NS2-UV380	NS2-UV380	NS2-UV380	NS2-UV380	380~400V, 50Hz；440V,60Hz
Shunt release	NS2-SH110	NS2-SH110	NS2-SH110	NS2-SH110	110~115V, 50Hz；127V,60Hz
	NS2-SH220	NS2-SH220	NS2-SH220	NS2-SH220	220~240V, 50Hz
	NS2-SH380	NS2-SH380	NS2-SH380	NS2-SH380	380~400V, 50Hz；440V,60Hz
Instantaneous auxiliary contact (front hanging)	NS2-AE20	NS2-AE20	NS2-AE20	NS2-AE20	2NO
	NS2-AE11	NS2-AE11	NS2-AE11	NS2-AE11	1NO+1NC
Instantaneous auxiliary contact (side hanging)	NS2-AU20	NS2-AU20	NS2-AU20	NS2-AU20(NS2-80)	2NO
	NS2-AU11	NS2-AU11	NS2-AU11	NS2-AU11(NS2-80)	1NO+1NC
Fault signal contact and instantaneous auxiliary contact	NS2-FA0110	NS2-FA0110	NS2-FA0110	-	1NC+1NO
	NS2-FA0101	NS2-FA0101	NS2-FA0101	-	1NC+1NC
	NS2-FA1010	NS2-FA1010	NS2-FA1010	-	1NO+1NO
	NS2-FA1001	NS2-FA1001	NS2-FA1001	-	1NO+1NC
Waterproof mounting box	NS2-MC	WPB-1	-	-	-
Mounting box with emergency stop button	NS2-MC01	-	-	-	-

5.1.2 Undervoltage trip device

NS2-UV110, UV220, UV380'S, performance:

a. Rated insulation voltage Ui (V): 690.

b. Operating characteristics: When the voltage drops to 70% and 35% of the rated voltage range, undervoltage trip device shall act;

Undervoltage trip device in the power supply voltage is less than 35% of the rated voltage of the trip device, the undervoltage trip device should be able to prevent the starter from closing;

when the power supply voltage is equal to or greater than 85% of the rated voltage of the trip device, the undervoltage trip device should guarantee closure of the starter.

5.1.3 The characteristics of the shunt trip

NS2-SH110, SH220, SH380:

a. Rated insulation voltage Ui (V): 690.

b. Operating characteristics: the operating voltage range of the shunt trip device is rated working voltage of 70% ~ 110%.

5.1.4 Characteristics of the instantaneous auxiliary contact NS2-Ae20, AE11 (front hanging)

a. rated insulation voltage Ui (V): 250;

b. agreed thermal current Ith (A): 2.5;

c. type , rated voltage and rated operating current (see Table 11) of instantaneous auxiliary contacts.

NS2-UV

NS2-SH

NS2-AE

Table 11

Utilization category	AC-15				DC-13		
Rated operating voltage Ue (V)	24	48	110/127	230/240	24	48	60
Rated operating current Ie (A)	2	1.25	1	0.5	1	0.3	0.15
Normal operating power P (W)	48	60	127	120	24	15	9

5.1.5 Instantaneous auxiliary contact NS2-AU20, AU11 performance (side hanging):

a. rated insulation voltage Ui (V): 690;

b. agreed thermal current Ith (A): 6;

c. type, rated voltage and rated operating current of the instantaneous auxiliary contacts(see Table 12).

NS2-AU

Utilization category	AC-15							DC-13				
Rated operating voltage Ue (V)	48	110/127	230/240	380/415	440	500	690	24	48	60	110	220
Rated operating current Ie (A)	6	4.5	3.3	2.2	1.5	1	0.6	6	5	3	1.3	0.5
Normal operating power P (W)	300	500	720	850	650	500	400	140	240	180	140	120

5.1.6 Characteristics of the fault signal contact and instantaneous auxiliary contact NS2-FA:

Fault signal contact and instantaneous auxiliary contact NS2-FA, consist of the fault signal contact and instantaneous auxiliary contact. They have different use types and characteristics.

a. rated insulation voltage Ui (V): 690;

b. agreed thermal currents of instantaneous auxiliary contacts: 6, agreed thermal current of fault signal contacts Ith (A): 2.5;

c. the use type, rated voltage and rated work current (see Table 12) of the instantaneous auxiliary contact same as the NS2-AU instantaneous auxiliary contact; the use type, rated voltage and rated operating current (see Table 13) of the fault signal contacts.

NS2-FA

Utilization category	AC-14				DC-13		
Rated operating voltage Ue (V)	24	48	110/127	230/240	24	48	60
Rated operating current Ie (A)	1.5	1	0.5	0.3	1	0.3	0.15
Normal operating power P (W)	36	48	72	72	24	15	9
Operating performance (time)	1000	1000	1000	1000	1000	1000	1000

5.1.7 Non-normal making and breaking capacity (see Table 14) of fault signal contact and instantaneous auxiliary contact.

Use type	Connection		Disconnection				On-off operation cycles and operating frequency		
	I/Ie	U/Ue	CosΦ or T0.95	I/Ie	U/Ue	CosΦ or T0.95	Operating cycles	Operating cycles per minutes	Energize Time
AC-14	6	1.1	0.7	6	1.1	0.7	10	2	0.05
AC-15	10	1.1	0.3	10	1.1	0.3	10	2	0.05
DC-13	1.1	1.1	6Pe	1.1	1.1	6Pe	10	2	0.05

Note: Pe≥50W, T0.95 upper limit≈6Pe≤300ms.

5.1.8 Mounting box （NS2-MC、NS2-MC01）

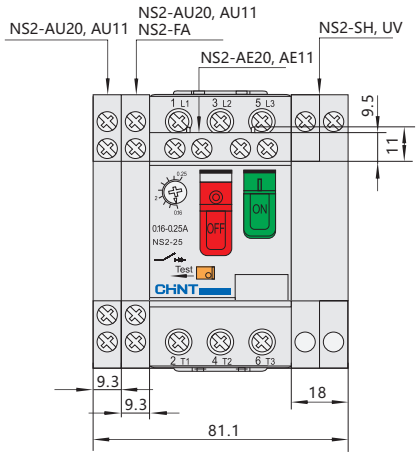
NS2-MC Waterproof installation box IP55

NS2-MC01 Installation box with emergency stop button IP55

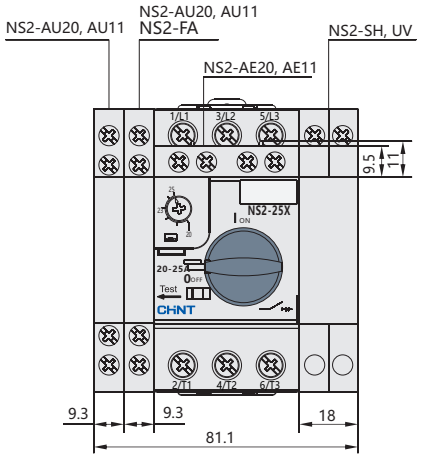
WPB-1 Waterproof installation box IP55

6. Overall and mounting dimension (mm)

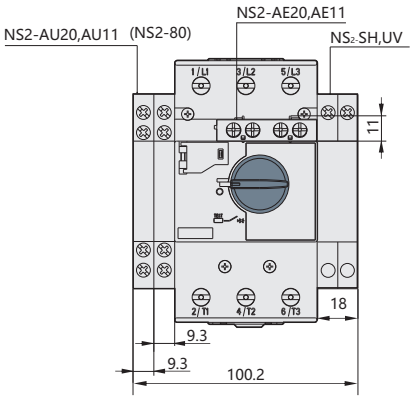
NS2-25, NS2-32



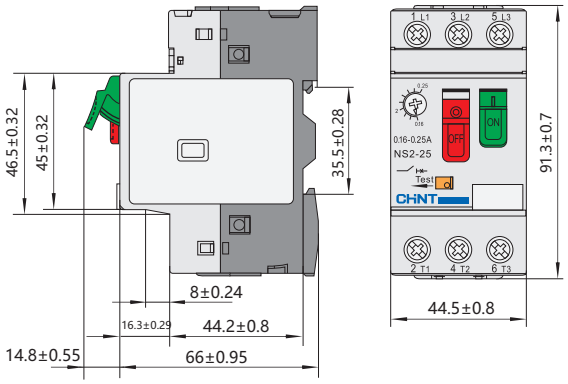
NS2-25X, NS2-32X, NS2-32H



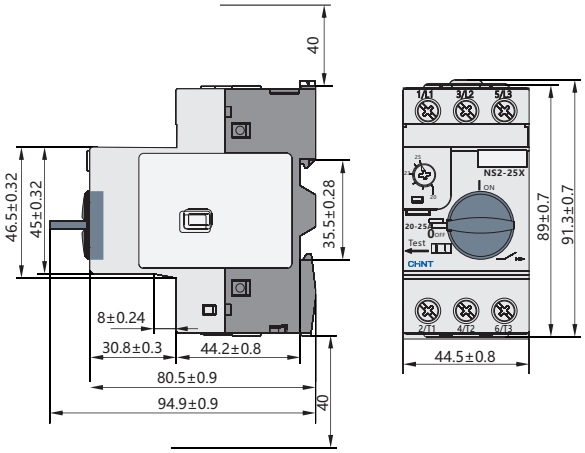
NS2-80



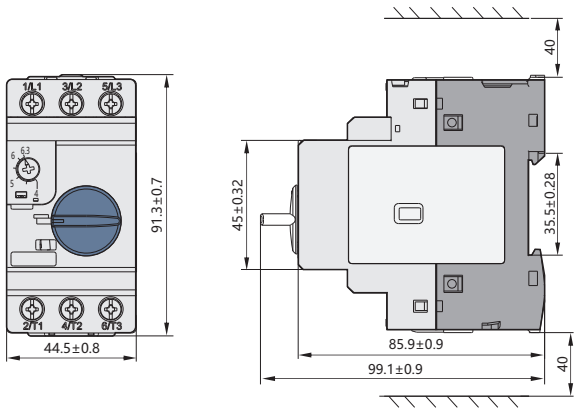
NS2-25, NS2-32



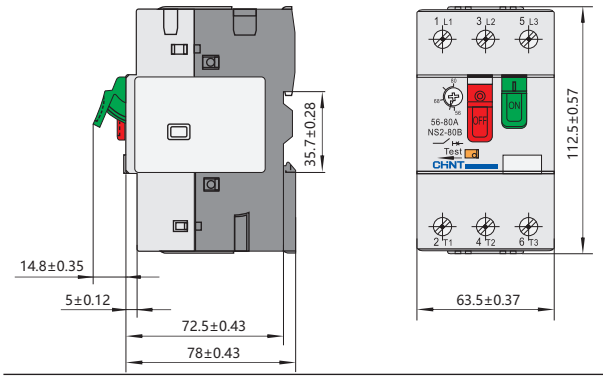
NS2-25X, NS2-32X



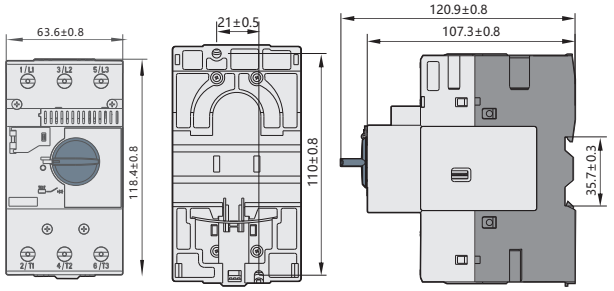
NS2-32H



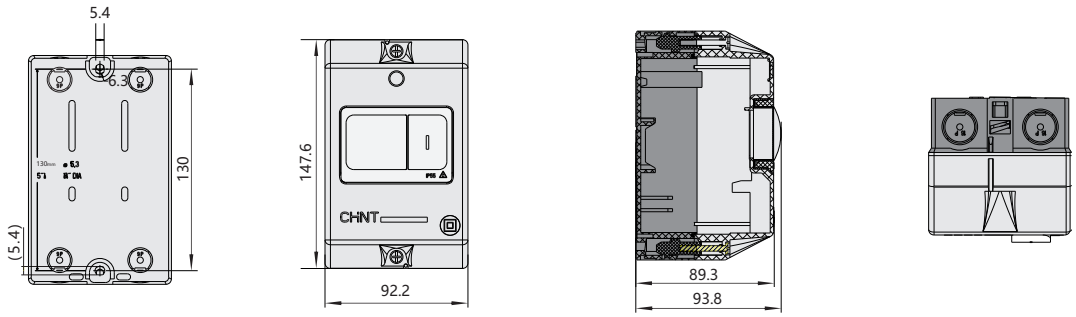
NS2-80B



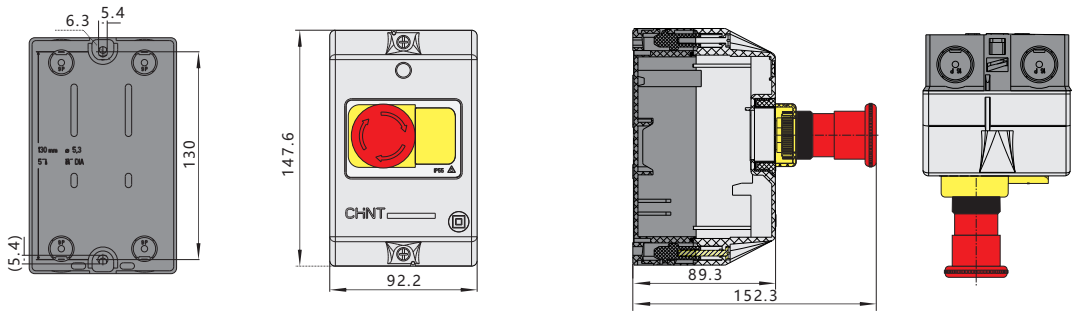
NS2-80



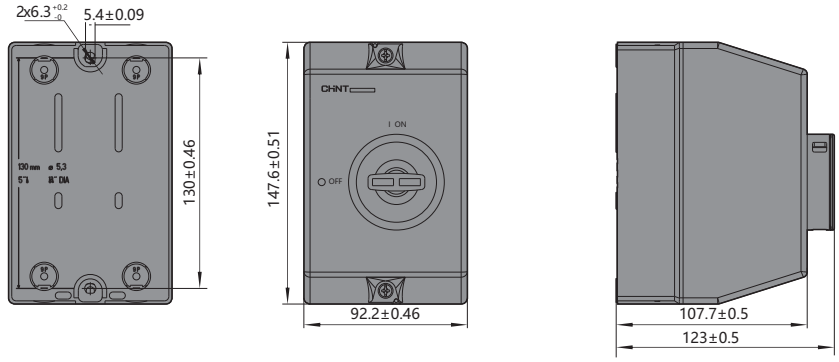
NS2-MC



NS2-MC01



WPB-1



NQ2 Direct On-Line Electromagnetic Starter (metal cover)

1. General

1.1 NQ2 series electromagnetic starter ("starter" for short hereinafter) applies mainly to circuit with AC current of 50Hz (or 60Hz), rated operational voltage of 660V and rated controlled power up to 33kW (current up to 68A) for using to control the direct start and halt of the electromotor to protect the motor from overload and phase failure.

1.2 The starter conforms to standards IEC/EN60947-4-1

2. Type designation

N Q 2-□ □/□

- Rated control power code (AC-3, 380V): 1~4
- Structure code:
  Blank: non- reversing type without pushbutton
  P: with pushbutton
  N: reversing type
  NB: reversing type without thermal relay
- Frame level power code
- Design sequence No.
- Starter
- Company code

III

3. Technical data

3.1 NQ2-15, 33

Model	Conventional heating current Ith (A)	Rated operational current Ie (A)	Rated power (AC-3) (kW)			Model of matched contactor	Model of matched relay	Range of setting current (A)
			660V	380V	220V			
NQ2-15/1	13	12	7.5	5.5	3	NC1-1210	NR2-25	0.1~0.16
								0.16~0.25
								0.25~0.4
								0.4~0.63
								0.63~1
								1~1.6
								1.25~2
								1.6~2.5
								2.5~4
								4~6
								5.5~8
								7~10
								9~13
NQ2-15/2	18	18	10	7.5	4	NC1-1810		12~18
NQ2-15/3	25	25	15	11	5.5	NC1-2510		17~25
NQ2-15/4	36	32	18.5	15	7.5	NC1-3210	NR2-36	23~32
								28~36
NQ2-33/1	52	52	33	25	15	NC1-6511	NR2-93	23~32
								30~40
								37~50
								48~65
NQ2-33/2	68	68	37	33	25	NC1-9511		55~70
								63~80
								80~93

3.2 NQ2-15P, 33P

Model	Conventional heating current Ith (A)	Rated operational current Ie (A)	Rated power (AC-3) (kW)			Model of matched contactor	Model of matched relay	Model of matched pushbutton	Range of setting current (A)
			660V	380V	220V				
NQ2-15P/1	13	12	7.5	5.5	3	NC1-1210	NR2-25	Start: NP2-EA31 Stop: NP2-EA42	0.1~0.16
									0.16~0.25
									0.25~0.4
									0.4~0.63
									0.63~1
									1~1.6
									1.25~2
									1.6~2.5
									2.5~4
									4~6
									5.5~8
									7~10
									9~13
NQ2-15P/2	18	18	10	7.5	4	NC1-1810			12~18
NQ2-15P/3	25	25	15	11	5.5	NC1-2510			17~25
NQ2-15P/4	36	32	18.5	15	7.5	NC1-3210	NR2-36		23~32
									28~36
NQ2-33P/1	52	52	33	25	15	NC1-6511	NR2-93		23~32
									30~40
									37~50
									48~65
NQ2-33P/2	68	68	37	33	25	NC1-9511			55~70
									63~80
									80~93

3.3 NQ2-15 N

Model	Conventional heating current Ith (A)	Rated operational current Ie (A)	Rated power (AC-3) (kW)			Model of matched contactor	Model of matched relay	Range of setting current (A)
			660V	380V	220V			
NQ2-15N/1	13	12	7.5	5.5	3	NC1-1210	NR2-25	0.1~0.16
								0.16~0.25
								0.25~0.4
								0.4~0.63
								0.63~1
								1~1.6
								1.25~2
								1.6~2.5
								2.5~4
								4~6
								5.5~8
								7~10
								9~13
NQ2-15N/2	18	18	10	7.5	4	NC1-1810		12~18
NQ2-15N/3	25	25	15	11	5.5	NC1-2510		17~25
NQ2-15N/4	36	32	18.5	15	7.5	NC1-3210	NR2-36	23~32
								28~36

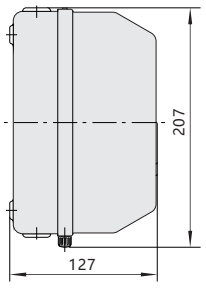
3.4 NQ2-15NB

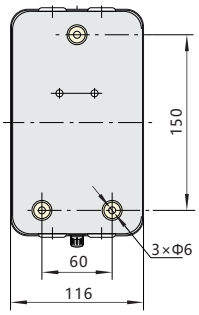
Model	Conventional heating current Ith (A)	Rated operational current Ie (A)	Rated power (AC-3) (kW)			Model of matched contactor
			660V	380V	220V	
NQ2-15NB/1	13	12	7.5	5.5	3	NC1-1201N
NQ2-15NB/2	18	18	10	7.5	4	NC1-1801N
NQ2-15NB/3	25	25	15	11	5.5	NC1-2501N
NQ2-15NB/4	36	32	18.5	15	7.5	NC1-3201N

Altitude: not exceeding 2000m; Temperature of ambient air: -5℃~+40℃
Rated control supply voltage (AC 50Hz): 24V, 36V, 48V, 110V, 127V, 220V, 380V, 415V
Mechanical life: 1,000,000 circles; Electric life: 500,000 circles; IP40

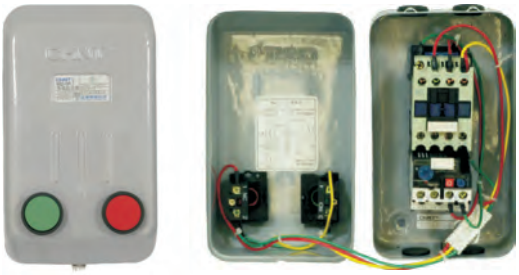
4. Overall and mounting dimensions (mm)

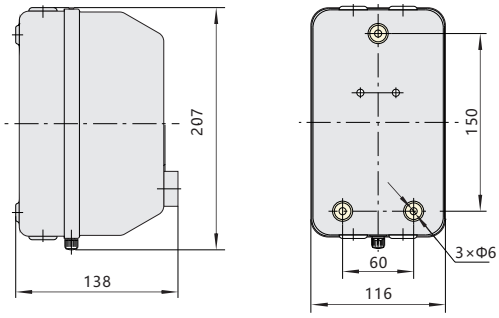
NQ2-15



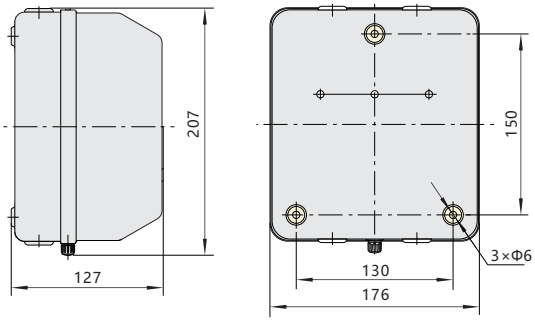


NQ2-15P

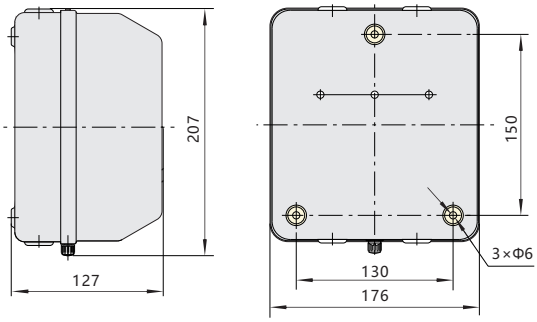




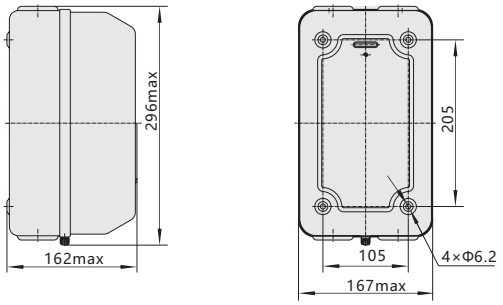
NQ2-15N



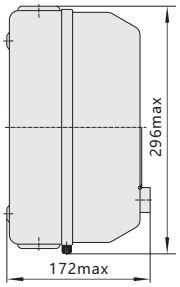
NQ2-15NB

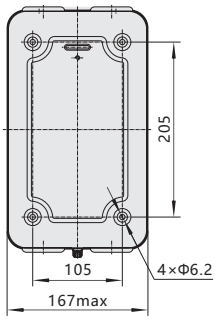


NQ2-33



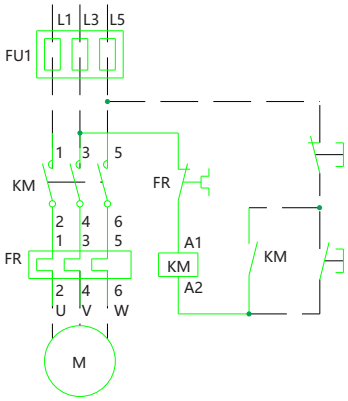
NQ2-33P



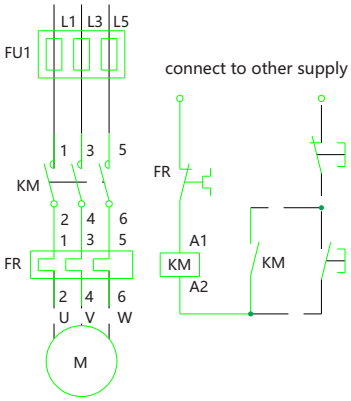


III

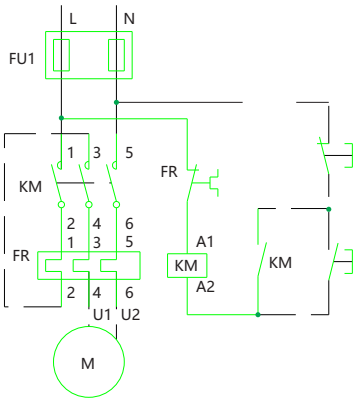
5. Wiring Diagram



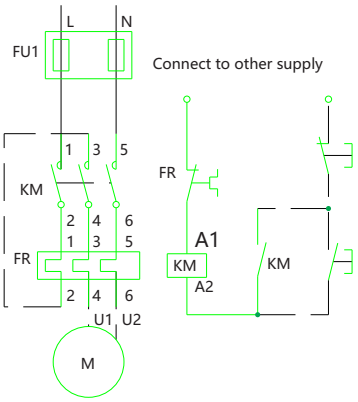
Control supply voltage is as the same as the main circuit voltage (three-phrase)



Control supply voltage is not as the same as the main circuit voltage (three-phrase)



Control supply voltage is as the same as the main circuit voltage (single-phrase)



Control supply voltage is not as the same as the main circuit voltage (single-phrase)

NQ3 Series Direct On-Line Electromagnetic Starter (plastic cover)

1. General

1.1 NQ3 series electromagnetic starter ("starter" for short hereinafter) applies mainly to circuit with AC current of 50Hz (or 60Hz), rated operational voltage of 660V and rated controlled power up to 11kW (current up to 22A) for using to control the direct start and halt of the electromotor to protect the motor from overload and phase failure.

1.2 The starter conforms to standards IEC/EN60947-4-1

2. Type designation

N Q 3 - □ P

- P: Code of structure characteristic: P means with buttons
- □: Code of power grade of the bracket
- 3: Design code name
- Q: Electromagnetic starter
- N: Characteristic code of the enterprise

3. Technical data

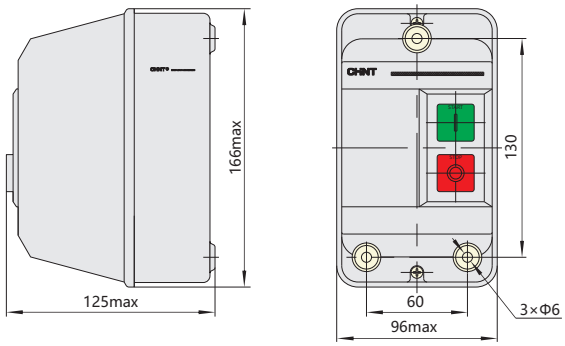
Altitude: not exceeding 2000m;
Temperature of ambient air: -5℃~+40℃
Rated control supply voltage (AC 50Hz):
24V, 36V, 48V, 110V, 127V, 220V, 380V, 415V
Mechanical life: 1,000,000 circles;
Electric life: 500,000 circles;
IP55

Table 1 Basic Model and main technical parameter of the starter

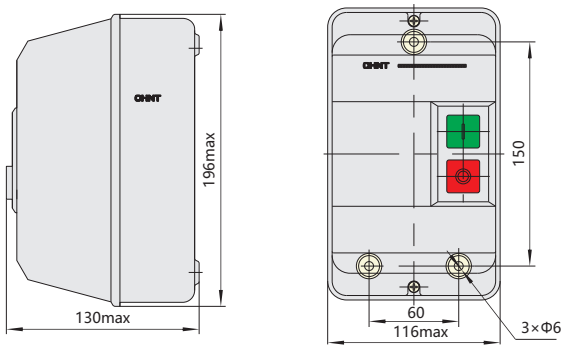
Model	Rated working current (A)	Maximum rated Power (kW)			Model of equipped AC contactor	TOR matched	Range of setting current A
		AC-3					
		660V	380V	220V			
NQ3-5.5P	12	7.5	5.5	3	NC1-1810	NR2-25	0.1~0.16
							0.16~0.25
							0.25~0.4
							0.4~0.63
							0.63~1
							1~1.6
							1.25~2
							1.6~2.5
							2.5~4
							4~6
							5.5~8
							7~10
							9~13
NQ3-11P	22	15	11	5.5	NC1-3210		12~18
							17~25

4. Overall and mounting dimension (mm)

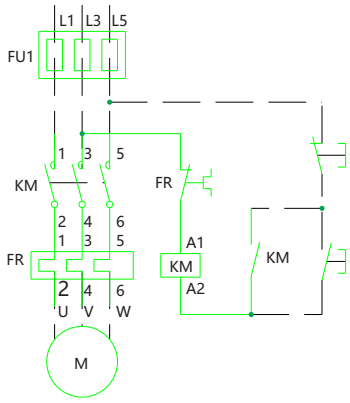
NQ3-5.5P



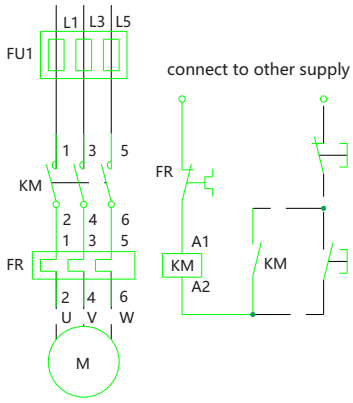
NQ3-11P



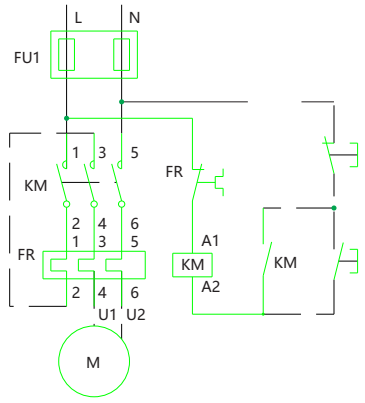
5. Wiring Diagram



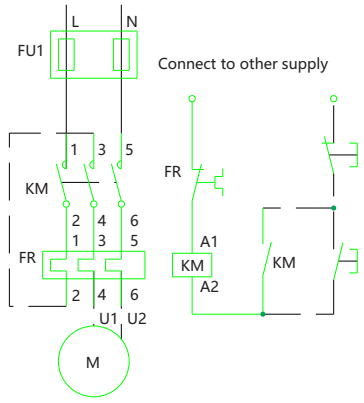
Control supply voltage is as the same as the main circuit voltage (three-phrase)



Control supply voltage is not as the same as the main circuit voltage (three-phrase)



Control supply voltage is as the same as the main circuit voltage (single-phrase)



Control supply voltage is not as the same as the main circuit voltage (single-phrase)

6. Picture

NQ3-5.5P

NQ3-11P

CHINT ELECTRIC

Pushbuttons & Indicator Lights & Buzzers

Pushbuttons

NP2

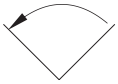
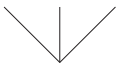
Page P-001

Indicator Lights / Buzzers

ND16

Page P-020

Drill Plan	Picture Index	Certificates	IP	Product Model
Φ22.3mm		CE KEMA EUR EAC cULus	IP40	NP2 Series
Φ16mm		CE Intertek EAC	IP65	NPH1 Pushbutton Box

Selector Switches	2 positions	 Maintained	 Momentary
	3 positions	 Maintained	 Momentary

★ Metal-headed

Flush
NP2-BA □□

E-016

Φ40mm mushroom
NP2-BC □□

E-018

Φ60mm mushroom
NP2-BR □□

E-018

Φ40mm mushroom push-pull
NP2-BT□□

E-018

Turn to release
NP2-BS □□

E-018

Selector
NP2-BD □□

E-020

Selector
NP2-BJ □□

E-020

Key switch
NP2-BG □□

E-020

Double-headed
NP2-BL8 □□□

E-018

Illuminated
NP2-BW3 □□□

E-017

Illuminated double-headed
NP2-BW8 □□□

E-019

Indicator light
NP2-BV □□

E-019

★ Plastic-headed

Flushbutton
NP2-EA □□

E-021

Φ40mm mushroom
NP2-EC □□

E-022

Φ60mm mushroom
NP2-ER □□

E-022

Turn to release
NP2-ES □□

E-024

Selector
NP2-ED □□

E-025

Selector
NP2-EJ □□

E-025

Key switch
NP2-EG □□

E-026

Double-headed
NP2-EL8 □□□

E-023

Illuminated double-headed
NP2-EW8 □□□

E-023

Indicator light
NP2-EV □□

E-024

Economic indicator light
NP2-EV16 □

E-025

Seperated modulars Head

★ Head-metal

Flush
NP2-BA □

E-027

Illuminated
NP2-BW3 □

E-027

Selector switch
NP2-BD □

E-028

Key switch
NP2-BG □

E-028

Double-headed button
NP2-BL832
E-027

NP2-BL842
E-027

Illuminated double-headed button
NP2-BW84
E-027

Indicator light
NP2-BV/□
E-027

★ Head-plastic

Flush button
NP2-EA □
E-027

Selector switch
NP2-ED □
E-028

Illuminated button
NP2-EW3□
E-027

Indicator light
NP2-EV/□
E-027

Double-headed button
NP2-EL832
E-027

Double-headed button
NP2-EL842
E-027

Illuminated double-headed button
NP2-EW84
E-027

Key switch
NP2-EG □
E-028

IV

Adaptor

Metal

NP2-BZ009
E-028

Plastic

NP2-EZ009
E-028

Base

NP2-EW6
E-029

NP2-EV6
E-029

Accessories

Bulbs

BA9s
E-029

Warning Label

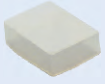
Φ60
E-029

Φ90
E-029

Water-proof enclosure

For NP2-BP
E-029

For NP2-BA
E-029



For NP2-BL832
E-029

For NP2-BL842
E-029

NP2 Series

1. General

Electric ratings: AC50/60Hz, AC380V/DC220V;
Degree of protection: IP40
Standard: IEC/EN60947-5-1

2. Operating conditions

2.1 Ambient temperature is -5℃~+40℃,the average temperature during 24 hours couldn't exceed +35℃.

2.2 Altitude: ≤2000m.

2.3 Atmosphere condition: Relative humidity of the atmosphere couldn't exceed 50% when the highest temperature is +40℃; much higher relative humidity is allowable under the condition of lower temperature, for example, when the temperature reaches +20℃, the relative humidity is up to 90%. As for dews, which contingently appear due to change of temperature,special steps should be taken.

2.4 Pollution degree: 3

2.5 Overvoltage category: Ⅱ

2.6 Tightening torque is 0.8~1.2N·m for the cable terminals. Cross section of the cable connection is 0.5~2.5mm2, and 8mm conductor length is needed.

3. Technical data

3.1 Rated insulation voltage Ui : 415V
3.2 Conventional thermal current Ith: 10A

Rated operational voltage Ue (V)	Rated operational current Ie (A)	
	AC-15	DC-13
415	1.9	-
240	3	0.27
125	-	0.55

3.3 Durability
Electric life: Flush-headed and mushroom-headed type: AC 5×10^5 operation circles, DC 2×10^5 operation circles; other type: 1×10^5 operation circles; Mechanical life: flush-headed and mushroom-headed type:
1 million operation circles, button with light:
3×10^5 operation circles;
other type: 1×10^5 operation circles.

3.4 Short-circuit protective device: NT00-16 16A

4. Data of lamps of illuminated button

Basic parameters	Direct type
	LED lamp
Rated operational current Ie	Ie≤20mA
Rated operational voltage (V)	AC/DC 6, 12, 24, 48, 110, 230
Power supply rated operational current Ie	Ie≤20mA
Rated operational voltage (V)	AC/DC 230, 380

5. Features

5.1 No-dismounting of the button from the front side thanks to anti-moving operating part of metal type button;

5.2 Reliable contacting could be ensured because of dual functions of circuit switching and self-cleaning for all contacting points;

5.3 NC and NO contacting assemblies are independent to each other, and could be freely combined for convenient replacement;

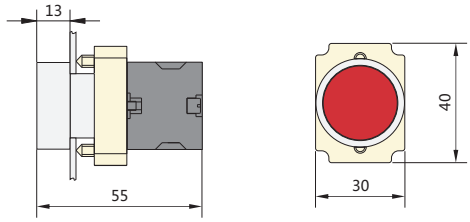
5.4 Concealed connection terminals make the operation safe and reliable. Elegant appearance due to adoption of Aluminum and Zinc alloy in metal type button operating parts and bases.

6. NP2 Series

NP2-BA □□	Model	Color		
	NP2-BA11	○	1	—
	NP2-BA21	●	1	—
	NP2-BA31	●	1	—
	NP2-BA41	●	1	—
	NP2-BA51	●	1	—
	NP2-BA61	●	1	—
	NP2-BA12	○	—	1
	NP2-BA22	●	—	1
	NP2-BA32	●	—	1
	NP2-BA42	●	—	1
	NP2-BA52	●	—	1
	NP2-BA62	●	—	1

Dimensions (mm)

NP2-BA □□



NP2-BA □□□□	Model	Color		
	NP2-BA3311		1	—
	NP2-BA2365		1	1
	NP2-BA4322		—	1
	NP2-BA2351		1	—
	NP2-BA1345		1	1

NP2-BL □□	Model	Color		
	NP2-BL42		—	1
	NP2-BL31		1	—
	NP2-BL55		1	1
	NP2-BL65		1	1
	NP2-BL15		1	1
	NP2-BL21		1	—

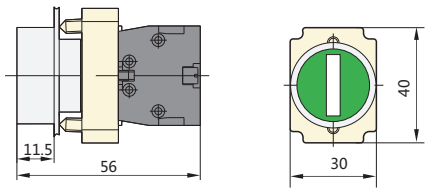
NP2-BW1□□□	Model	Color			Note
	NP2-BW1161 6V LED		1	—	Direct 6V~230V
	NP2-BW1361 6V LED		1	—	
	NP2-BW1462 6V LED		—	1	
	NP2-BW1561 6V LED		1	—	
	NP2-BW1661 6V LED		1	—	

NP2-BW4□□□	Model	Color			Note
	NP2-BW4161 6V LED		1	—	Direct 6V~230V
	NP2-BW4361 6V LED		1	—	
	NP2-BW4462 6V LED		—	1	
	NP2-BW4561 6V LED		1	—	
	NP2-BW4661 6V LED		1	—	

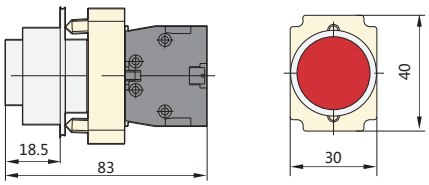
NP2-BK1 □□65	Model	Color			Note
	NP2-BK12365 6V LED		1	1	Two-position locked
	NP2-BK12465 6V LED		1	1	
	NP2-BK12565 6V LED		1	1	
	NP2-BK13365 6V LED		1	1	
	NP2-BK13465 6V LED		1	1	
	NP2-BK13565 6V LED		1	1	

NP2-BA □□	Model	Color		
	NP2-BA13		2	—
	NP2-BA23		2	—
	NP2-BA33		2	—
	NP2-BA43		2	—
	NP2-BA53		2	—
	NP2-BA63		2	—
	NP2-BA14		—	2
	NP2-BA24		—	2
	NP2-BA34		—	2
	NP2-BA44		—	2
	NP2-BA54		—	2
	NP2-BA64		—	2
	NP2-BA15		1	1
	NP2-BA25		1	1
	NP2-BA35		1	1
	NP2-BA45		1	1
	NP2-BA55		1	1
	NP2-BA65		1	1

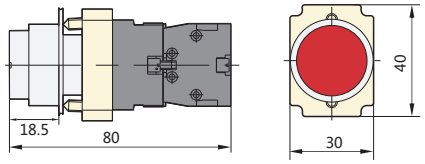
NP2-BA □□□□



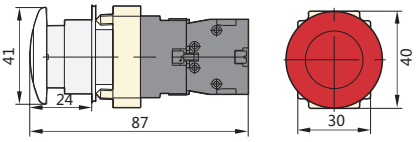
NP2-BL □□



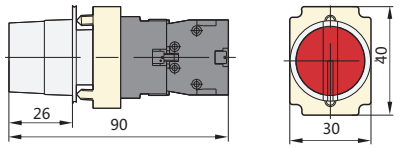
NP2-BW1 □□□



NP2-BW4 □□□



NP2-BK1 □□ 65



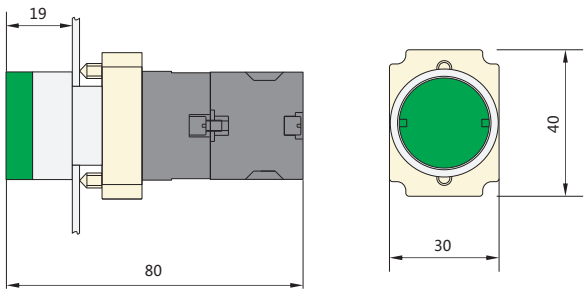
IV

★ Momentary Flush Pushbutton (Illuminated)

NP2-BW □□	Lamp-Voltage	Model	Color	⌇	⌇
	LED : AC /DC 6V, 12V, 24V, 36V, 48V, 110V, 230V	NP2-BW3161 LED	○	1	—
		NP2-BW3361 LED	●	1	—
		NP2-BW3461 LED	●	1	—
		NP2-BW3561 LED	●	1	—
		NP2-BW3661 LED	●	1	—
		NP2-BW3162 LED	○	—	1
		NP2-BW3362 LED	●	—	1
		NP2-BW3462 LED	●	—	1
		NP2-BW3562 LED	●	—	1
		NP2-BW3662 LED	●	—	1
	LED : AC /DC 6V, 12V, 24V, 36V, 48V, 110V, 230V	NP2-BW3163 LED	○	2	—
		NP2-BW3363 LED	●	2	—
		NP2-BW3463 LED	●	2	—
		NP2-BW3563 LED	●	2	—
		NP2-BW3663 LED	●	2	—
		NP2-BW3164 LED	○	—	2
		NP2-BW3364 LED	●	—	2
		NP2-BW3464 LED	●	—	2
		NP2-BW3564 LED	●	—	2
		NP2-BW3664 LED	●	—	2
	LED : AC/DC 6V, 12V, 24V, 36V, 48V, 110V, 230V	NP2-BW3165 LED	○	1	1
		NP2-BW3365 LED	●	1	1
		NP2-BW3465 LED	●	1	1
		NP2-BW3565 LED	●	1	1
		NP2-BW3665 LED	●	1	1

Dimensions (mm)

NP2-BW 3 □ 6 □



★ ϕ60 Momentary Mushroom (non-illuminated)

NP2-BR □□	Model	Color	⌇	⌇
	NP2-BR11	○	1	—
	NP2-BR21	●	1	—
	NP2-BR31	●	1	—
	NP2-BR41	●	1	—
	NP2-BR51	●	1	—
	NP2-BR61	●	1	—
	NP2-BR12	○	—	1
	NP2-BR22	●	—	1
	NP2-BR32	●	—	1
	NP2-BR42	●	—	1
	NP2-BR52	●	—	1
	NP2-BR62	●	—	1

★ ϕ40 Momentary Mushroom (non-illuminated)

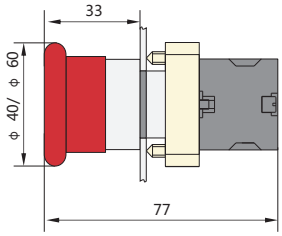
NP2-BC □□	Model	Color	⌇	⌇
	NP2-BC11	○	1	—
	NP2-BC21	●	1	—
	NP2-BC31	●	1	—
	NP2-BC41	●	1	—
	NP2-BC51	●	1	—
	NP2-BC61	●	1	—
	NP2-BC12	○	—	1
	NP2-BC22	●	—	1
	NP2-BC32	●	—	1
	NP2-BC42	●	—	1
	NP2-BC52	●	—	1
	NP2-BC62	●	—	1

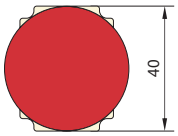
★ Φ40 Mushroom push-pull(non-illuminated)

NP2-BT □□	Model	Color		
	NP2-BT42	●	—	1

Dimensions (mm)

NP2-BC □□
NP2-BR □□
NP2-BT □□





★ Double-headed flush momentory button (Non-illuminated)

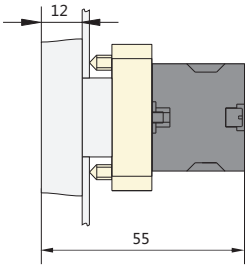
NP2-BL8 □□	Lamp-Voltage	Model	Color		
	--------	NP2-BL8325	● + ●	1	1
	--------	NP2-BL8425	● + ●	1	1

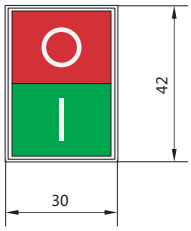
NP2-BC □□	Model	Color		
	NP2-BC13	○	2	—
	NP2-BC23	●	2	—
	NP2-BC33	●	2	—
	NP2-BC43	●	2	—
	NP2-BC53	●	2	—
	NP2-BC63	●	2	—
	NP2-BC14	○	—	2
	NP2-BC24	●	—	2
	NP2-BC34	●	—	2
	NP2-BC44		—	2
	NP2-BC54	●	—	2
	NP2-BC64	●	—	2
	NP2-BC15	○	1	1
	NP2-BC25	●	1	1
	NP2-BC35	●	1	1
	NP2-BC45	●	1	1
	NP2-BC55	●	1	1
	NP2-BC65	●	1	1

NP2-BR □□	Model	Color		
	NP2-BR13	○	2	—
	NP2-BR23	●	2	—
	NP2-BR33	●	2	—
	NP2-BR43	●	2	—
	NP2-BR53	●	2	—
	NP2-BR63	●	2	—
	NP2-BR14	○	—	2
	NP2-BR24	●	—	2
	NP2-BR34	●	—	2
	NP2-BR44	●	—	2
	NP2-BR54	●	—	2
	NP2-BR64	●	—	2
	NP2-BR15	○	1	1
	NP2-BR25	●	1	1
	NP2-BR35	●	1	1
	NP2-BR45	●	1	1
	NP2-BR55	●	1	1
	NP2-BR65	●	1	1

Dimensions (mm)

NP2-BL8325





IV

★ Double-headed flush momentory button (Illuminated)

NP2-BW8 □□	Lamp-Voltage	Model	Color		
	LED : AC/DC 6V, 12V, 24V, 36V, 48V, 110V, 230V	NP2-BW8465	● + ●	1	1

★ Mushroom button latching, turn to release(Non-illuminated)

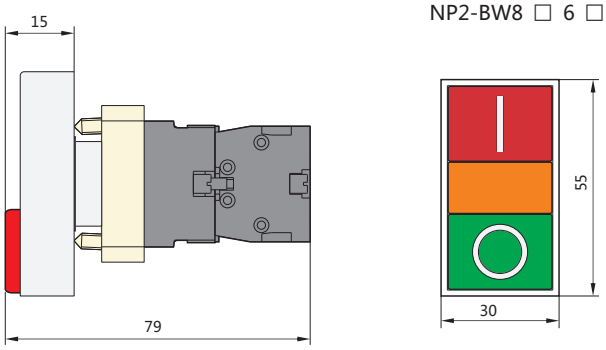
NP2-BS □□	Mushroom -Diameter	Model	Color		
	ϕ30	NP2-BS441	●	1	—
		NP2-BS442	●	—	1
	ϕ40	NP2-BS541	●	1	—
		NP2-BS542	●	—	1
	ϕ60	NP2-BS641	●	1	—
		NP2-BS642	●	—	1
	ϕ30	NP2-BS443	●	2	—
		NP2-BS444	●	—	2
		NP2-BS445	●	1	1
	ϕ40	NP2-BS543	●	2	—
		NP2-BS544	●	—	2
		NP2-BS545	●	1	1
	ϕ60	NP2-BS643	●	2	—
		NP2-BS644	●	—	2
		NP2-BS645	●	1	1

★ Indicator

NP2-BV □□	Lamp-Voltage	Model	Color
	LED: AC 6V, 12V, 24V, 36V, 48V, 110V, 230V	NP2-BV61	○
		NP2-BV63	●
		NP2-BV64	●
		NP2-BV65	●
		NP2-BV66	●

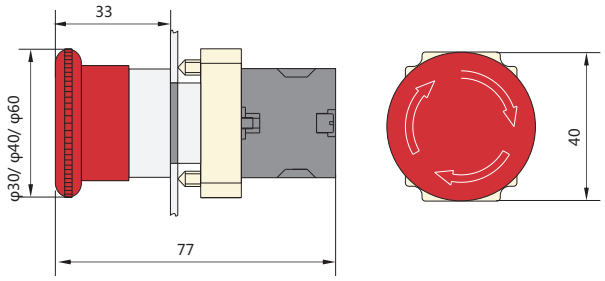
Dimensions (mm)

NP2-BW8 □ 6 □



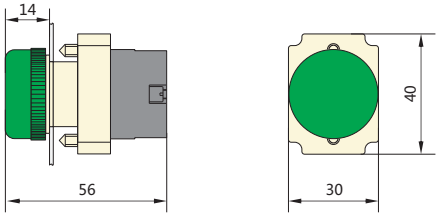
Dimensions (mm)

NP2-BS □□□

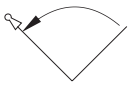


Dimensions (mm)

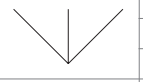
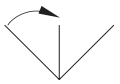
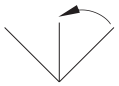
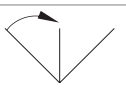
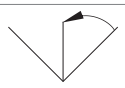
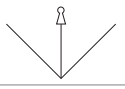
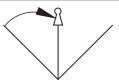
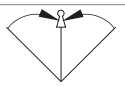
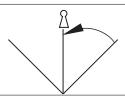
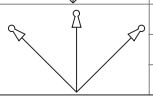
NP2-BV 6 □



★ Selector Switches (2 positions)-(Non-illuminated)

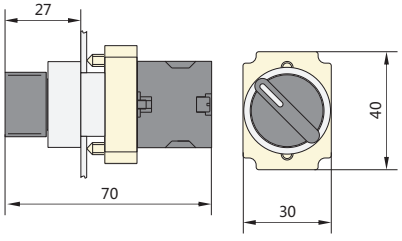
NP2-BD (J, G) □□	Metal	Selector Switches	1	2
	NP2-BD21		1	—
	NP2-BD22		—	1
	NP2-BD23		2	—
	NP2-BD24		—	2
	NP2-BD25		1	1
	NP2-BD41		1	—
	NP2-BD42		—	1
	NP2-BD43		2	—
	NP2-BD44		—	2
	NP2-BD45		1	1
	NP2-BJ21		1	—
	NP2-BJ22		—	1
	NP2-BJ23		2	—
	NP2-BJ24		—	2
	NP2-BJ25		1	1
	NP2-BJ41		1	—
	NP2-BJ42		—	1
	NP2-BJ43		2	—
	NP2-BJ44		—	2
	NP2-BJ45		1	1
	NP2-BG21		1	—
	NP2-BG22		—	1
	NP2-BG23		2	—
	NP2-BG24		—	2
	NP2-BG25		1	1
	NP2-BG21B		1	—
	NP2-BG22B		—	1
	NP2-BG23B		2	—
	NP2-BG24B		—	2
	NP2-BG25B		1	1
	NP2-BG41		1	—
	NP2-BG42		—	1
	NP2-BG43		2	—
	NP2-BG44		—	2
	NP2-BG45		1	1

★ Selector Switches (3 positions)-(Non-illuminated)

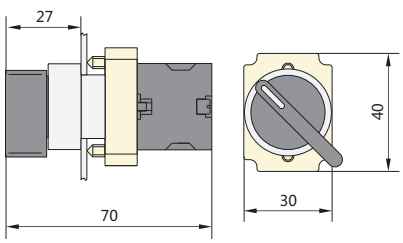
NP2-BD (J, G) □□	Metal	Selector Switches	1	2
	NP2-BD33		2	—
	NP2-BD34		—	2
	NP2-BD35		1	1
	NP2-BD73		2	—
	NP2-BD74		—	2
	NP2-BD75		1	1
	NP2-BD53		2	—
	NP2-BD54		—	2
	NP2-BD55		1	1
	NP2-BD83		2	—
	NP2-BD84		—	2
	NP2-BD85		1	1
	NP2-BJ33		2	—
	NP2-BJ34		—	2
	NP2-BJ35		1	1
	NP2-BJ73		2	—
	NP2-BJ74		—	2
	NP2-BJ75		1	1
	NP2-BJ53		2	—
	NP2-BJ54		—	2
	NP2-BJ55		1	1
	NP2-BJ83		2	—
	NP2-BJ84		—	2
	NP2-BJ85		1	1
	NP2-BG33		2	—
	NP2-BG34		—	2
	NP2-BG35		1	1
	NP2-BG73		2	—
	NP2-BG74		—	2
	NP2-BG75		1	1
	NP2-BG53		2	—
	NP2-BG54		—	2
	NP2-BG55		1	1
	NP2-BG83		2	—
	NP2-BG84		—	2
	NP2-BG85		1	1
	NP2-BG33D		2	—
	NP2-BG34D		—	2
	NP2-BG35D		1	1

Dimensions (mm)

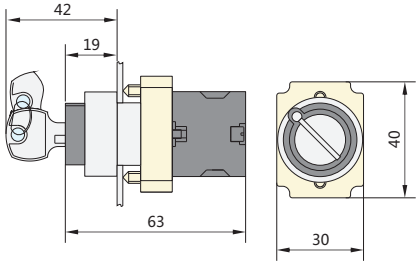
NP2-BD □□



NP2-BJ □□



NP2-BG □□



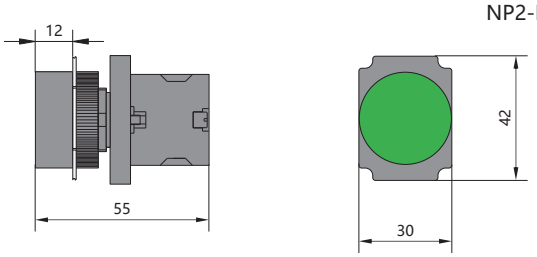
IV

★ Momentary Flush Pushbutton (Non-illuminated)

NP2-EA □□	Model	Color	⌇	⌇
	NP2-EA11	○	1	—
	NP2-EA21	●	1	—
	NP2-EA31	●	1	—
	NP2-EA41	●	1	—
	NP2-EA51	●	1	—
	NP2-EA61	●	1	—
	NP2-EA12	○	—	1
	NP2-EA22	●	—	1
	NP2-EA32	●	—	1
	NP2-EA42	●	—	1
	NP2-EA52	●	—	1
	NP2-EA62	●	—	1

Dimensions (mm)

NP2-EA □□



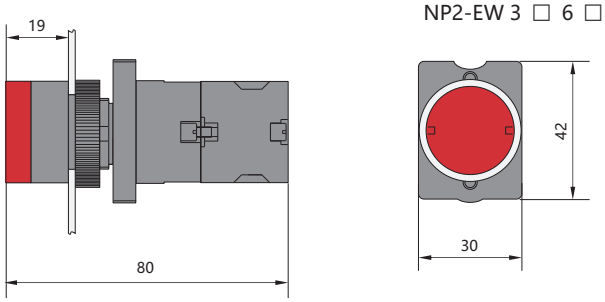
★ Momentary Flush Pushbutton (Illuminated)

NP2-EW3 □□	Lamp-Voltage	Model	Color	⌇	⌇
	LED: AC/DC 6V, 12V, 24V, 36V, 48V, 110V, 230V	NP2-EW3161	○	1	—
		NP2-EW3361	●	1	—
		NP2-EW3461	●	1	—
		NP2-EW3561	●	1	—
		NP2-EW3661	●	1	—
		NP2-EW3162	○	—	1
		NP2-EW3363	●	—	2
		NP2-EW6464	●	—	2
		NP2-EW3562	●	—	1
		NP2-EW3662	●	—	1
		NP2-EW3165	○	1	1
		NP2-EW3365	●	1	1
		NP2-EW3465	●	1	1
		NP2-EW3565	●	1	1
		NP2-EW3665	●	1	1

NP2-EA □□	Model	Color	⌇	⌇
	NP2-EA13	○	2	—
	NP2-EA23	●	2	—
	NP2-EA33	●	2	—
	NP2-EA43	●	2	—
	NP2-EA53	●	2	—
	NP2-EA63	●	2	—
	NP2-EA14	○	—	2
	NP2-EA24	●	—	2
	NP2-EA34	●	—	2
	NP2-EA44	●	—	2
	NP2-EA54	●	—	2
	NP2-EA64	●	—	2
	NP2-EA15	○	1	1
	NP2-EA25	●	1	1
	NP2-EA35	●	1	1
	NP2-EA45	●	1	1
	NP2-EA55	●	1	1
	NP2-EA65	●	1	1

Dimensions (mm)

NP2-EW 3 □ 6 □



★ Φ40 Momentary Mushroom button -(Non-illuminated)

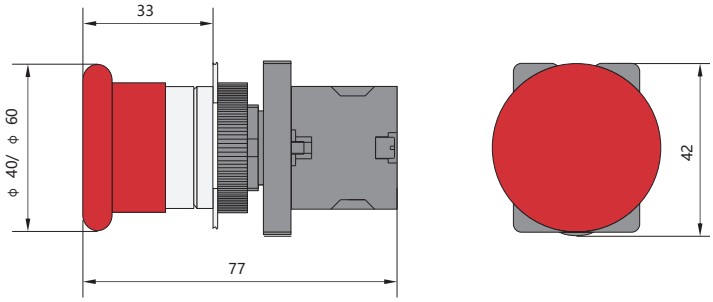
NP2-EC □□	Model	Color		
	NP2-EC11	○	1	—
	NP2-EC21	●	1	—
	NP2-EC31	●	1	—
	NP2-EC41	●	1	—
	NP2-EC51	●	1	—
	NP2-EC61	●	1	—
	NP2-EC12	○	—	1
	NP2-EC22	●	—	1
	NP2-EC32	●	—	1
	NP2-EC42	●	—	1
	NP2-EC52	●	—	1
	NP2-EC62	●	—	1
	NP2-EC13	○	2	—
	NP2-EC23	●	2	—
	NP2-EC33	●	2	—
	NP2-EC43	●	2	—
	NP2-EC53	●	2	—
	NP2-EC63	●	2	—
	NP2-EC14	○	—	2
	NP2-EC24	●	—	2
	NP2-EC34	●	—	2
	NP2-EC44	●	—	2
	NP2-EC54	●	—	2
	NP2-EC64	●	—	2
	NP2-EC15	○	1	1
	NP2-EC25	●	1	1
	NP2-EC35	●	1	1
	NP2-EC45	●	1	1
	NP2-EC55	●	1	1
	NP2-EC65	●	1	1

★ Φ60 Momentary Mushroom button -(Non-illuminated)

NP2-ER □□	Model	Color		
	NP2-ER11	○	1	—
	NP2-ER21	●	1	—
	NP2-ER31	●	1	—
	NP2-ER41	●	1	—
	NP2-ER51	●	1	—
	NP2-ER61	●	1	—
	NP2-ER12	○	—	1
	NP2-ER22	●	—	1
	NP2-ER32	●	—	1
	NP2-ER42	●	—	1
	NP2-ER52	●	—	1
	NP2-ER62	●	—	1
	NP2-ER13	○	2	—
	NP2-ER23	●	2	—
	NP2-ER33	●	2	—
	NP2-ER43	●	2	—
	NP2-ER53	●	2	—
	NP2-ER63	●	2	—
	NP2-ER14	○	—	2
	NP2-ER24	●	—	2
	NP2-ER34	●	—	2
	NP2-ER44	●	—	2
	NP2-ER54	●	—	2
	NP2-ER64	●	—	2
	NP2-ER15	○	1	1
	NP2-ER25	●	1	1
	NP2-ER35	●	1	1
	NP2-ER45	●	1	1
	NP2-ER55	●	1	1
	NP2-ER65	●	1	1

Dimensions (mm)

NP2-EC □□
NP2-ER □□



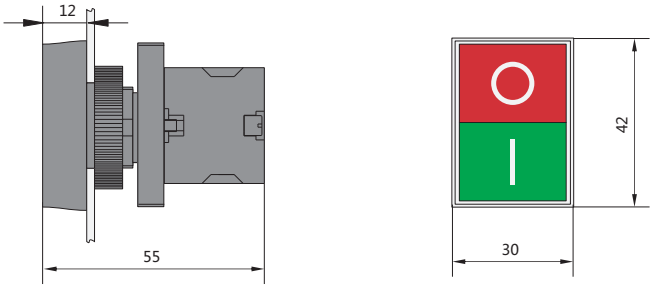
IV

★ Double-headed flush momentory button -(Non-illuminated)

NP2-EL8 □□	Lamp-Voltage	Model	Color		
	--------	NP2-EL8325	● + ●	1	1
	--------	NP2-EL8425	● + ●	1	1

Dimensions (mm)

NP2-EL8325

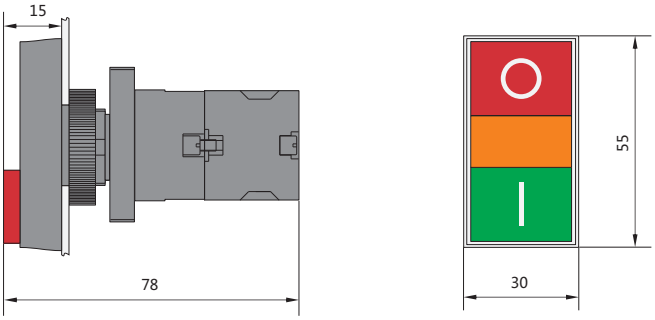


★ Double-headed flush momentory button (Illuminated)

NP2-EW8 □□	Lamp-Voltage	Model	Color		
	LED: AC/DC 6V, 12V, 24V, 36V, 48V, 110V, 230V	NP2-EW8465	● + ●	1	1

Dimensions (mm)

NP2-EW 8 □ 6 □

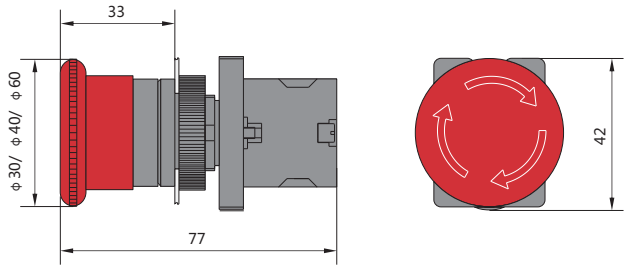


★ Mushroom button latching, turn to release (Non-illuminated)

NP2-ES □□	Mushroom-Diameter	Model	Color	1	1
	ϕ30	NP2-ES441		1	—
		NP2-ES442		—	1
	ϕ40	NP2-ES541		1	—
		NP2-ES542	●	—	1
	ϕ60	NP2-ES641		1	—
		NP2-ES642		—	1
	ϕ30	NP2-ES443		2	—
		NP2-ES444		—	2
		NP2-ES445		1	1
	ϕ40	NP2-ES543		2	—
		NP2-ES544	●	—	2
		NP2-ES545		1	1
	ϕ60	NP2-ES643		2	—
		NP2-ES644		—	2
		NP2-ES645		1	1

Dimensions (mm)

NP2-ES □□□



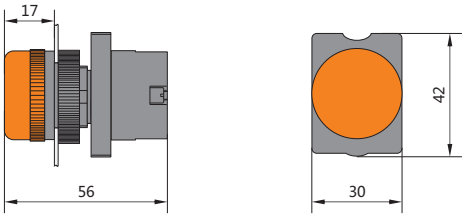
IV

★ Indicator

NP2-EV □□	Lamp-Voltage	Model	Color
	LED: AC/DC 6V, 12V, 24V, 36V, 48V, 110V, 230V	NP2-EV61	○
		NP2-EV63	●
		NP2-EV64	●
		NP2-EV65	●
		NP2-EV66	●

Dimensions (mm)

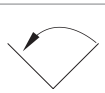
NP2-EV 6 □



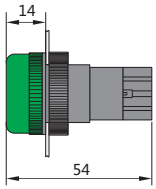
★ Indicator (compact)

NP2-EV16 □□	Lamp-Voltage	Model	Color
	LED: AC 6V, 12V, 24V, 36V, 48V, 110V, 230V	NP2-EV161	○
		NP2-EV163	●
		NP2-EV164	●
		NP2-EV165	●
		NP2-EV166	●

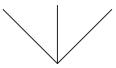
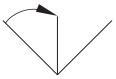
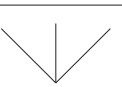
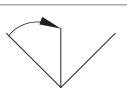
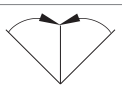
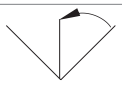
★ Selector Switches (2 positions)-(Non-illuminated)

NP2-ED (J、G) □□	Model	Selector Switches		
	NP2-ED21		1	—
	NP2-ED22		—	1
	NP2-ED23		2	—
	NP2-ED24		—	2
	NP2-ED25		1	1
	NP2-ED41		1	—
	NP2-ED42		—	1
	NP2-ED43		2	—
	NP2-ED44		—	2
	NP2-ED45		1	1
	NP2-EJ21		1	—
	NP2-EJ22		—	1
	NP2-EJ23		2	—
	NP2-EJ24		—	2
	NP2-EJ25		1	1
	NP2-EJ41		1	—
	NP2-EJ42		—	1
	NP2-EJ43		2	—
	NP2-EJ44		—	2
	NP2-EJ45		1	1

Dimensions (mm)

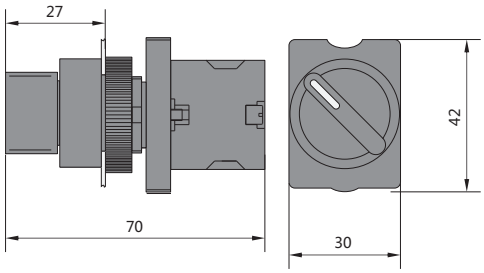


★ Selector Switches (3 positions)-(Non-illuminated)

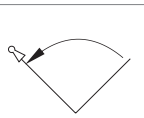
NP2-ED (J、G) □□	Model	Selector Switches		
	NP2-ED33		2	—
	NP2-ED34		—	2
	NP2-ED35		1	1
	NP2-ED73		2	—
	NP2-ED74		—	2
	NP2-ED75		1	1
	NP2-ED53		2	—
	NP2-ED54		—	2
	NP2-ED55		1	1
	NP2-ED83		2	—
	NP2-ED84		—	2
	NP2-ED85		1	1
	NP2-EJ33		2	—
	NP2-EJ34		—	2
	NP2-EJ35		1	1
	NP2-EJ73		2	—
	NP2-EJ74		—	2
	NP2-EJ75		1	1
	NP2-EJ53		2	—
	NP2-EJ54		—	2
	NP2-EJ55		1	1
	NP2-EJ83		2	—
	NP2-EJ84		—	2
	NP2-EJ85		1	1

Dimensions (mm)

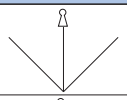
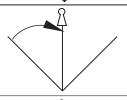
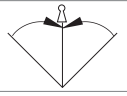
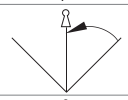
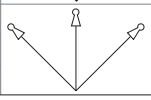
NP2-ED □□



★ Selector Switches (2 positions)-(Non-illuminated)

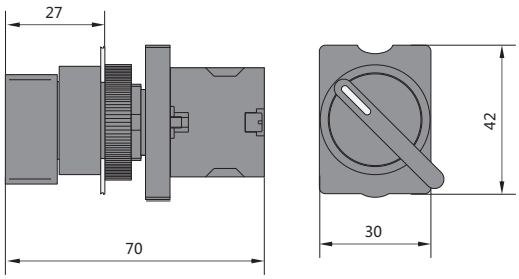
NP2-ED (J、G) □□	Model	Selector Switches		
	NP2-EG21		1	—
	NP2-EG22		—	1
	NP2-EG23		2	—
	NP2-EG24		—	2
	NP2-EG25		1	1
	NP2-EG41		1	—
	NP2-EG42		—	1
	NP2-EG43		2	—
	NP2-EG44		—	2
	NP2-EG45		1	1
	NP2-EG21B		1	—
	NP2-EG22B		—	1
	NP2-EG23B		2	—
	NP2-EG24B		—	2
	NP2-EG25B		1	1

★ Selector Switches (3 positions)-(Non-illuminated)

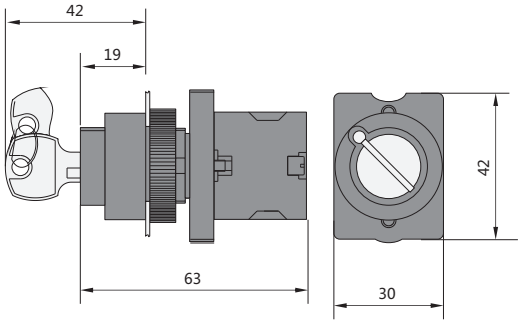
NP2-ED (J、G) □□	Model	Selector Switches		
	NP2-EG33		2	—
	NP2-EG34		—	2
	NP2-EG35		1	1
	NP2-EG73		2	—
	NP2-EG74		—	2
	NP2-EG75		1	1
	NP2-EG53		2	—
	NP2-EG54		—	2
	NP2-EG55		1	1
	NP2-EG83		2	—
	NP2-EG84		—	2
	NP2-EG85		1	1
	NP2-EG33D		2	—
	NP2-EG34D		—	2
	NP2-EG35D		1	1

Dimensions (mm)

NP2-EJ □□



NP2-EG □□



IV

Head

★ Flush Momentary button-(Non-illuminated)

NP2-BA □	Metal	Specifications
	NP2-BA1	○
	NP2-BA2	●
	NP2-BA3	●
	NP2-BA4	●
	NP2-BA5	●
	NP2-BA6	●

NP2-BA□□□	Metal	Specifications
	NP2-BA331	●
	NP2-BA236	●
	NP2-BA432	●
	NP2-BA235	●
	NP2-BA134	○
	NP2-BA637	●

★ Flush Momentary button-(Illuminated)

NP2-BW3 □	Metal	Specifications
	NP2-BW31	○
	NP2-BW33	●
	NP2-BW34	●
	NP2-BW35	●
	NP2-BW36	●

★ Double head button-(Non-illuminated)

NP2-BL □□□	Metal	Specifications
	NP2-BL832	Flush button
	NP2-BL842	Flush button + projecting button

★ Double head button-(Illuminated)

NP2-BW □□	Metal	Specifications
	NP2-BW84	Flush button + projecting button

★ Indicator light

NP2-BV/ □	Metal	Specifications
	NP2-BV/1	○
	NP2-BV/3	●
	NP2-BV/4	●
	NP2-BV/5	●
	NP2-BV/6	●

★ Emergency stop button

NP2-BS□4	Metal	Specifications
	NP2-BS44	4 : Turn restoration Φ30
	NP2-BS54	5 : Turn restoration Φ40
	NP2-BS64	6 : Turn restoration Φ60

NP2-EA □	Plastic	Specifications
	NP2-EA1	○
	NP2-EA2	●
	NP2-EA3	●
	NP2-EA4	●
	NP2-EA5	●
	NP2-EA6	●

NP2-EW3 □	Plastic	Specifications
	NP2-EW31	○
	NP2-EW33	●
	NP2-EW34	●
	NP2-EW35	●
	NP2-EW36	●

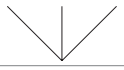
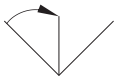
NP2-EL □□□	Plastic	Specifications
	NP2-EL832	Flush button
	NP2-EL842	Flush button + projecting button

NP2-EW □□	Plastic	Specifications
	NP2-EW84	Flush button + projecting button

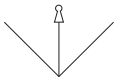
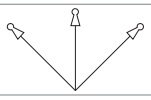
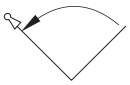
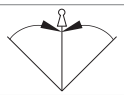
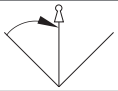
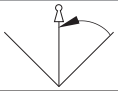
NP2-EV/ □	Plastic	Specifications
	NP2-EV/1	○
	NP2-EV/3	●
	NP2-EV/4	●
	NP2-EV/5	●
	NP2-EV/6	●

NP2-ES□4	Plastic	Specifications
	NP2-ES34	3 : Status indication turn restoration Φ40
	NP2-ES44	4 : Turn restoration Φ30
	NP2-ES54	5 : Turn restoration Φ40
	NP2-ES64	6 : Turn restoration Φ60

★ Head of Selector Switch-(Non-illuminated)

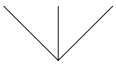
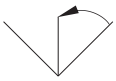
NP2-BD/ □	Metal	Specifications
	NP2-BD2	
	NP2-BD3	
	NP2-BD4	
	NP2-BD5	
	NP2-BG7	
	NP2-BG8	

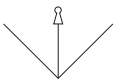
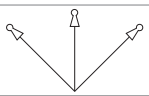
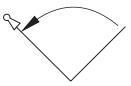
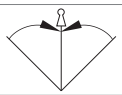
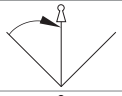
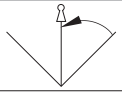
★ Head of Key Switch-(Non-illuminated)

NP2-BG □	Metal	Specifications
	NP2-BG2	
	NP2-BG2B	
	NP2-BG3	
	NP2-BG3D	
	NP2-BG4	
	NP2-BG5	
	NP2-BG7	
	NP2-BG8	

★ Adapter

NP2-BZ009	Metal	Specifications
	NP2-BZ009	For NP2-B □□

NP2-ED/ □	Plastic	Specifications
	NP2-ED2	
	NP2-ED3	
	NP2-ED4	
	NP2-ED5	
	NP2-EG7	
	NP2-EG8	

NP2-EG □	Plastic	Specifications
	NP2-EG2	
	NP2-EG2B	
	NP2-EG3	
	NP2-EG3D	
	NP2-EG4	
	NP2-EG5	
	NP2-EG7	
	NP2-EG8	

NP2-EZ009	Plastic	Specifications
	NP2-EZ009	For NP2-E □□

IV

★ Waring label

NP2-BY	Plastic	Specifications
	NP2-BY9101 NP2-BY9330	Φ60 (blank) Φ60 (printed)
	NP2-BY8101 NP2-BY8330	Φ90 (blank) Φ90 (printed)

★ Contact block

NP2-BE □□□	Metal	Specifications
	NP2-BE101	NO Contact
	NP2-BE102	NC Contact
	NP2-BE103	2NO Contact
	NP2-BE104	2NC Contact
	NP2-BE105	1NO+1NC Contact

★ Base for Illuminated (without lamp)

NP2-EW □/EV □	Metal	Specifications
	NP2-EW6/EV6	Direct type

★ Lamp (LED)

BA9s	Specifications	
	AC/DC 6V	○
	AC/DC 6V	●
	AC/DC 6V	●
	AC/DC 6V	●
	AC/DC 6V	●
	AC/DC 12V	○
	AC/DC 12V	●
	AC/DC 12V	●
	AC/DC 12V	●
	AC/DC 12V	●
	AC/DC 24V	○
	AC/DC 24V	●
	AC/DC 24V	●
	AC/DC 24V	●
	AC/DC 24V	●
	AC/DC 36V	○
	AC/DC 36V	●
	AC/DC 36V	●
	AC/DC 36V	●
	AC/DC 36V	●

NP2-BZ	Plastic	Specifications
	NP2-BZ31	30mm(H)X45mm(L)

★ Head-enclosure of Push-button- (Water proof)

	Specifications
	For NP2-BP ○ ● ● ● ● ●
	For NP2-BA(EA)

	Specifications
	For NP2-BL(EL)832
	For NP2-BL(EL)842

BA9s	Specifications	
	AC/DC 48V	○
	AC/DC 48V	●
	AC/DC 48V	●
	AC/DC 48V	●
	AC/DC 48V	●
	AC/DC 110V	○
	AC/DC 110V	●
	AC/DC 110V	●
	AC/DC 110V	●
	AC/DC 110V	●
	AC/DC 220V	○
	AC/DC 220V	●
	AC/DC 220V	●
	AC/DC 220V	●
	AC/DC 220V	●

★ Enclosure

PIC	Type code of button with box (construction code)	Meaning of the type code		
		Configure	Sign	Color of the cover
	B101H29	Gree flush button, 1NO	Scutcheon sign: START	French grey
	B102	Gree flush button, 1NO	Push button sign: I	French grey
	B103	Gree flush button, 1NO	Push button sign: START	French grey
	B111H29	Red flush button, 1NC	Scutcheon sign: STOP	French grey
	B112	Red flush button, 1NC	Push button sign: O	French grey
	B114	Red flush button, 1NC	Push button sign: STOP	French grey
	B174H29	Red Φ40 mushroom button self-locking, knob reset 1NC	Scutcheon sign: STOP	French grey
	J174 H29	Red Φ40 mushroom button self-locking, knob reset 1NC	Scutcheon sign: STOP	Yellow
	J174	Red Φ40 mushroom button self-locking, knob reset 1NC		Yellow
	B132H29	Two positons locking knob,1NO	Scutcheon sign:STOP START	French grey
	B142H29	Two positons locking key button,1NO	Scutcheon sign:STOP START	French grey
	B211H29	Green flush button 1NO Red flush button 1NC	Scutcheon sign:STOP,START	French grey
	B213	Green flush button 1NO Red flush button 1NC	Push button sign: I O	French grey
	B215	Green flush button 1NO Red flush button 1NC	Push button sign: START,STOP	French grey
	B222	White flush button 1NO Black fulsh button 1NO	Push button sign: ↑↓	French grey
	B223	White flush button 1NO Black fulsh button 1NO	Push button sign: → ←	French grey

IV

PIC	Type code of button with box (construction code)	Meaning of the type code		
		Configure	Sign	Color of the cover
	B311H29	Green flush button 1NO Red flush button 1NC Green flush button 1NO	Scutcheon sign: FORWARD STOP, REVERSE	French grey
	B321H29	Green flush button 1NO Red flush button 1NC Green flush button 1NO	Scutcheon sign: UP, STOP DOWN	French grey
	B341H29	Green flush button 1NO Red flush button 1NC Green flush button 1NO	Scutcheon sign: OPEN, STOP CLOSE	French grey
	B339	Green flush button 1NO Red flush button 1NC Black flush button 1NO	Push button sign: I O II	French grey
	B324	White flush button 1NO Red flush button 1NC Black flush button 1NO	Push button sign: ↑ O ↓	French grey
	B334	White flush button 1NO Red flush button 1NC Black flush button 1NO	Push button sign: → O ←	French grey
	B361H29	Red pilot lamp, 220V LED lamp, direct type Green flush button 1NO Red flush button 1NC	Scutcheon sign: START, STOP	French grey
	B363	Red pilot lamp, 220V LED lamp, direct type Green flush button 1NO Red flush button 1NC	Push button sign: I O	French grey
	B366	Red pilot lamp, 220V LED lamp, direct type Green flush button 1NO Red flush button 1NC	Push button sign: START, STOP	French grey
	B01,B02,B03	Empty boxes, of which there is one hole, two holes and three holes.		French grey

Enclosure: normally opened cotact, normally closed contact

ND16 Indicator Light

1. General

Degree of protection: IP65,IP40,IP20(Buzzer);
Standard: IEC/EN60947-5-1

2. Operating conditions

2.1 Ambient temperature is -5℃~+40℃, the average temperature during 24 hours couldn't exceed +35℃.

2.2 Altitude: ≤2000m.

2.3 Atmosphere condition:
Relative humidity of the atmosphere couldn't exceed 50% when the highest temperature is +40℃; much higher relative humidity is allowable under the condition of lower temperature, for example, when the temperature reaches +20℃, the relative humidity is up to 90%. As for dews, which contingently appear due to change of temperature, special steps should be taken.

2.4 Pollution degree: 3

2.5 Overvoltage category: Ⅲ

2.6 Tightening torque is 0.8~1.2N·m for the cable terminals, and 1.5~1.8N·m for the fixing nut. Cross section of the cable connection is 0.5~2.5mm^2, and 8mm conductor length is eeded.

IV

ND16-22A E-046 | ND16-22AS E-046 | ND16-22B E-047 | ND16-22BS E-047 | ND16-22C E-047~E-048 | ND16-22CS E-047~E-048 | ND16-22D E-048 | ND16-22DS E-048 | ND16-22F, ND16-22FS ND16-22L,ND16-22LC E-050 | ND16-22BK E-049

3. Technical data

Basic parameters

Rated operational voltage Ue (V)		Rated operational current (mA)	Service life (h)	Brightness (cd/m^2)	Basic color
AC	AC/DC				
400	6	Ie≤20	≥30000	≥40 ≥20(BUZZER)	
230	12				
110	24				
-	36				
-	48				
-	110				
-	230				
-	400				

Note: For AC power supply, the limit voltage range is 0.85Ue~1.1Ue between terminals;C:IP65; K2:anti-interference

4. ND16 series indicator

★ Flat Platform-Lampshape (Resistance type)

ND16-22A/2	Lamp-Voltage	Model	Color
	LED AC/DC 6V, AC/DC 12V, AC/DC 24V, AC/DC 36V, AC/DC 48V, AC/DC 110V, AC/DC 230V, AC/DC 400V	ND16-22A/2 ND16-22A/2K2	○ (W) ● (G) ● (R) ● (Y) ● (B) ● (O)

★ Flat Platform-Lampshape (Resistance type)

ND16-22AS/2	Lamp-Voltage	Model	Color
	LED AC/DC 6V, AC/DC 12V, AC/DC 24V, AC/DC 36V, AC/DC 48V,	ND16-22AS/2	○ (W) ● (G) ● (R) ● (Y) ● (B) ● (O)

★ Flat Platform-Lampshape (Capacitor type)

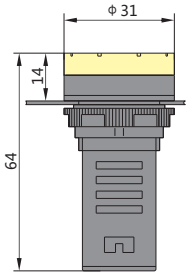
ND16-22A/4	Lamp-Voltage	Model	Color
	LED AC 110V, AC 230V, AC 400V	ND16-22A/4 ND16-22A/4K2	○ (W) ● (G) ● (R) ● (Y) ● (B) ● (O)

★ Flat Platform-Lampshape (Capacitor type)

ND16-22AS/4	Lamp-Voltage	Model	Color
	LED AC 110V, AC 230V, AC 400V	ND16-22AS/4	○ (W) ● (G) ● (R) ● (Y) ● (B) ● (O)

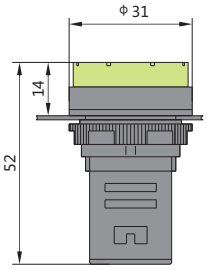
Dimensions (mm)

ND16-22A/□



Dimensions (mm)

ND16-22AS/□



★ Flat Round Platform-Lampshape (Resistance type)

ND16-22B/2	Lamp-Voltage	Model	Color
	LED AC/DC 6V, AC/DC12V, AC/DC24V, AC/DC36V, AC/DC48V, AC/DC110V, AC/DC230V, AC/DC400V	ND16-22B/2 ND16-22B/2K2 ND16-22B/2C	(W) (G) (R) (Y) (B) (O)

★ Compacted Flat Round Platform-Lampshape (Resistance type)

ND16-22BS/2	Lamp-Voltage	Model	Color
	LED AC/DC 6V, AC/DC12V, AC/DC 24V, AC/DC36V, AC/DC48V	ND16-22BS/2 ND16-22BS/2C	(W) (G) (R) (Y) (B) (O)

★ Flat Round Platform-Lampshape (Capacitance type)

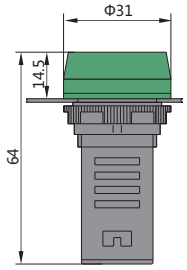
ND16-22B/4	Lamp-Voltage	Model	Color
	LED AC 110V, AC 230V, AC 400V	ND16-22B/4 ND16-22B/4K2 ND16-22B/4C	(W) (G) (R) (Y) (B) (O)

★ Compacted Flat Round Platform-Lampshape (Capacitance type)

ND16-22BS/4	Lamp-Voltage	Model	Color
	LED AC 110V, AC 230V, AC 400V	ND16-22BS/4 ND16-22BS/4C	(W) (G) (R) (Y) (B) (O)

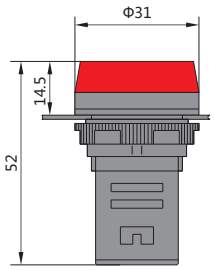
Dimensions (mm)

ND16-22B/□



Dimensions (mm)

ND16-22BS/□



★ Arc Surface ripple-Lampshape (Resistance type)

ND16-22C/2	Lamp-Voltage	Model	Color
	LED AC/DC 6V, AC/DC12V, AC/DC24V, AC/DC36V, AC/DC48V, AC/DC110V, AC/DC230V, AC/DC400V	ND16-22C/2 ND16-22C/2K2	(W) (G) (R) (Y) (B) (O)

★ Compacted Arc Surface ripple-Lampshape (Resistance type)

ND16-22CS/2	Lamp-Voltage	Model	Color
	LED AC/DC 6V, AC/DC12V, AC/DC24V, AC/DC36V, AC/DC48V,	ND16-22CS/2	(W) (G) (R) (Y) (B) (O)

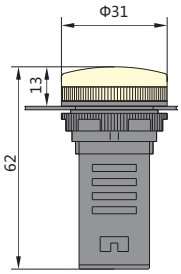
IV

★ Arc Surface ripple-Lampshape (Capacitance type)

ND16-22C/4	Lamp-Voltage	Model	Color
	LED AC 110V, AC230V, AC 400V	ND16-22C/4 ND16-22C/4K2	○ (W) ● (G) ● (R) ● (Y) ● (B) ● (O)

Dimensions (mm)

ND16-22C/□

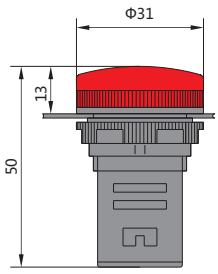


★ Compacted Arc Surface ripple-Lampshape (Capacitance type)

ND16-22CS/4	Lamp-Voltage	Model	Color
	LED AC 110V, AC230V, AC 400V	ND16-22CS/4	○ (W) ● (G) ● (R) ● (Y) ● (B) ● (O)

Dimensions (mm)

ND16-22CS/□



★ Arc Surface Round-Lampshape (Resistance type)

ND16-22D/2	Lamp-Voltage	Model	Color
	LED: AC/DC 6V, AC/DC12V, AC/DC24V, AC/DC36V, AC/DC48V, AC/DC110V, AC/DC230V, AC/DC400V	ND16-22D/2 ND16-22D/2K2 ND16-22D/2C	○ (W) ● (G) ● (R) ● (Y) ● (B) ● (O)

★ Compacted Arc Surface Round-Lampshape (Resistance type)

ND16-22DS/2	Lamp-Voltage	Model	Color
	LED: AC/DC 6V, AC/DC12V, AC/DC24V, AC/DC36V, AC/DC48V	ND16-22DS/2 ND16-22DS/2C	○ (W) ● (G) ● (R) ● (Y) ● (B) ● (O)

★ Arc Surface Round-Lampshape (Capacitance type)

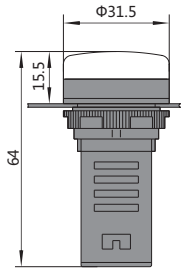
ND16-22D/4	Lamp-Voltage	Model	Color
	LED AC 110V, AC230V, AC 400V	ND16-22D/4 ND16-22D/4K2 ND16-22D/4C	○ (W) ● (G) ● (R) ● (Y) ● (B) ● (O)

★ Compacted Arc Surface Round-Lampshape (Capacitance type)

ND16-22DS/4	Lamp-Voltage	Model	Color
	LED AC 110V, AC 230V, AC 400V	ND16-22DS/4 ND16-22DS/4C	○ (W) ● (G) ● (R) ● (Y) ● (B) ● (O)

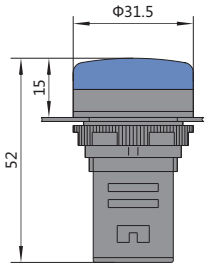
Dimensions (mm)

ND16-22D/□



Dimensions (mm)

ND16-22DS/□



★ Fast connection type (Resistance type)

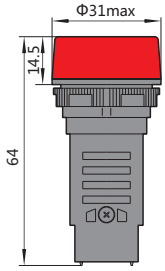
ND16-22BK/2	Lamp-Voltage	Model	Color
	LED: AC/DC 6V, AC/DC12V, AC/DC24V, AC/DC36V, AC/DC48V, AC/DC110V, AC/DC230V, AC/DC400V	ND16-22BK/2	○ (W) ● (G) ● (R) ● (Y) ● (B) ● (O)

★ Fast connection type (Capacitance type)

ND16-22BK/4	Lamp-Voltage	Model	Color
	LED: AC 110V, AC 230V, AC 400V,	ND16-22BK/4	○ (W) ● (G) ● (R) ● (Y) ● (B) ● (O)

Dimensions (mm)

ND16-22BK/□



IV

★ Interrupted type

ND16 Buzzer	Model	Color	Voltage
	ND16-22F	● ●	AC/DC 24V AC/DC 36V AC/DC 48V AC/DC 110V, AC230V, AC400V

★ Interrupted & flush type

ND16 Buzzer	Model	Color	Voltage
	ND16-22FS	●	AC/DC 24V AC/DC 36V AC/DC 48V AC/DC 110V, AC230V, AC400V

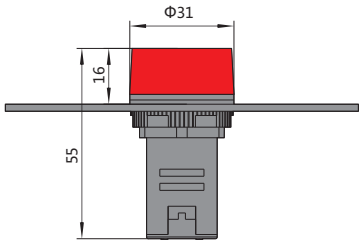
★ Continuous type

ND16 Buzzer	Model	Color	Voltage
	ND16-22L	● ●	AC/DC 24V AC/DC 36V AC/DC 48V AC/DC 110V, AC230V, AC400V

★ Continuous & lit type

ND16 Buzzer	Model	Color	Voltage
	ND16-22LC	●	AC/DC 24V AC/DC 36V AC/DC 48V AC/DC 110V, AC230V, AC400V

Dimension (mm)



ND16-22F
ND16-22FS
ND16-22L
ND16-22LC

Low Voltage CT

Current Transformers

BH-0.66 I
Current Transformers

Page P-001

SDH-0.66II
Current Transformers

Page P-006

BH-0.66 I
Current Transformers

1. General

To be used in combination with measurement instruments: ammeters, watt-hour meters, measurement units, control relays, etc.

2. Operating conditions

2.1 Secondary current Isn: 5A

2.2 Rated voltage Ue:660 V

2.3 Frequency: 50Hz/60Hz

2.4 Operating temperature: -5°C to +40°C, humidity <80%

2.5 Altitude: ≤1000m

2.6 Standards: IEC 61869-2

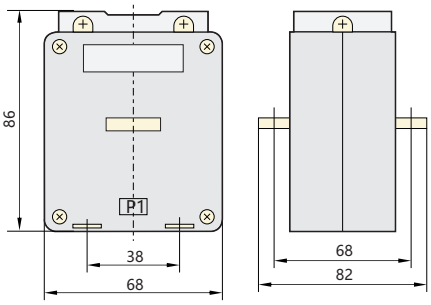
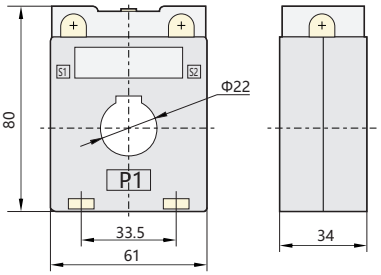
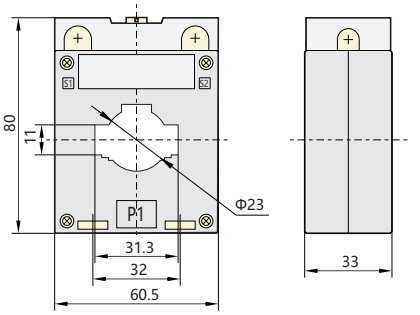
2.7 Installation type: busbar or plate fixing

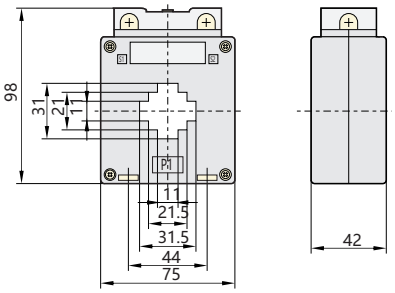
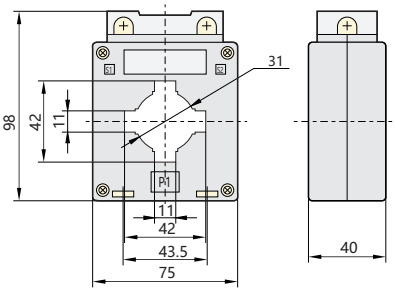
3. Type designation

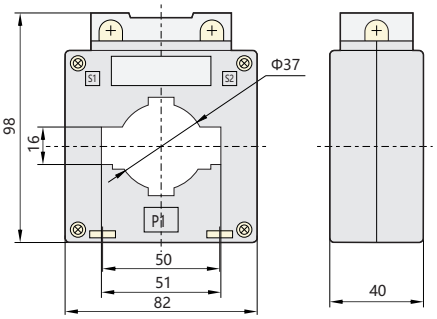
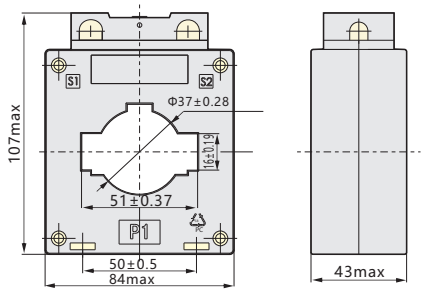
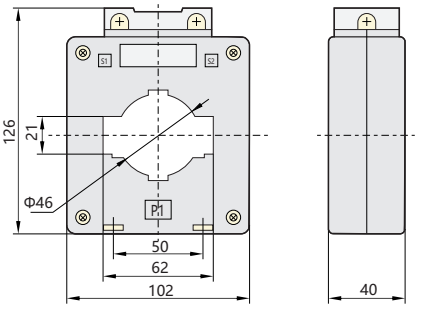
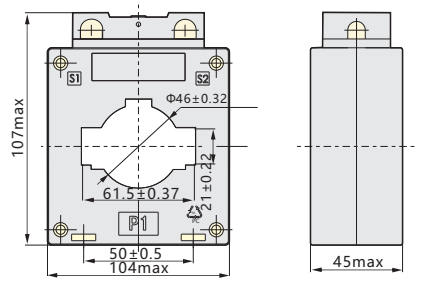
BH-0.66 -□ I

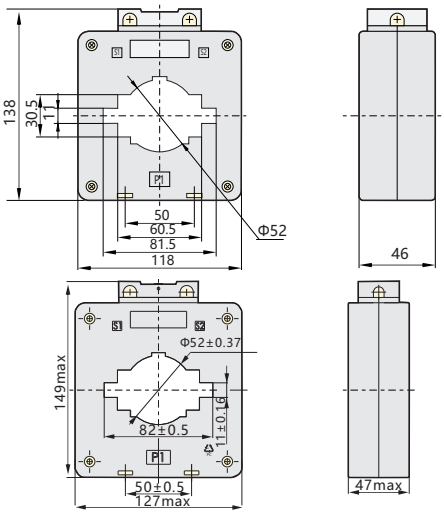
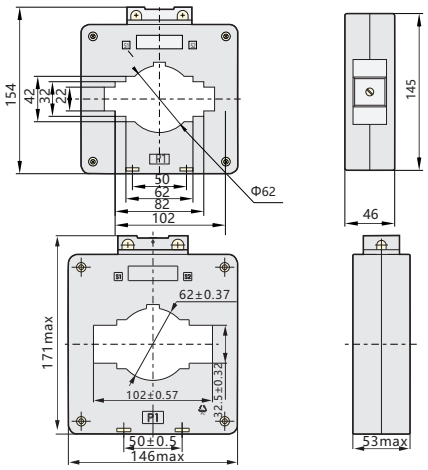
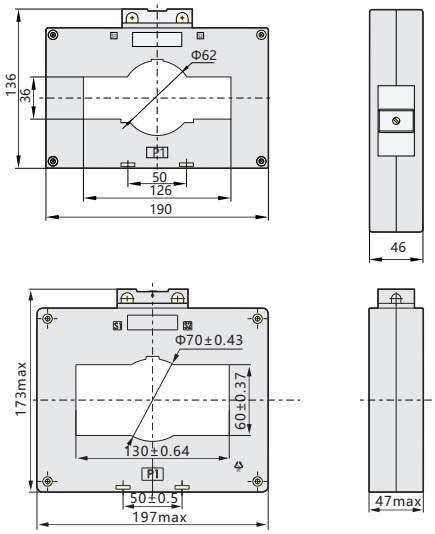
- Category number
- Width of window for bars
- Current transformers series

4. Technical data

Model	Transformation ratio(Ipn/Isn) (A)	Power(VA)		Accuracy class			Number of turns through iron core	Overall and installing dimensions (mm)
		1	0.5	0.5S	0.2	0.2S		
 BH-0.66 Solid type	5/5	2.5	2.5					
	10/5	2.5	2.5					
	15/5	2.5	2.5					
	20/5	2.5	2.5					
	25/5	2.5	2.5					
	30/5	2.5	2.5					
	40/5	2.5	2.5					
	50/5	2.5	2.5					
	75/5	2.5	2.5					
	5/1	2.5	2.5					
	10/1	2.5	2.5					
	15/1	2.5	2.5					
	20/1	2.5	2.5					
	25/1	2.5	2.5					
	30/1	2.5	2.5					
	40/1	2.5	2.5					
	50/1	2.5	2.5					
	75/1	2.5	2.5					
 BH-0.66 20I	75/5	2.5					1	
	100/5	2.5					1	
	75/1	2.5	1				1	
	100/1	2.5	1				1	
 BH-0.66 30I	30/5	2.5	2.5				5	
	50/5	2.5	2.5				3	
	75/5	2,5	2.5				2	
	100/5	2.5					1	
	100/5	5	5				2	
	150/5	2.5	2.5				1	
	200/5	5	5				1	
	250/5	5	5				1	
	300/5	5	5				1	
	400/5	5	5				1	
	30/1	2.5	2.5				5	
	50/1	2.5	2.5				3	
	75/1	2.5	2.5				2	
	100/1	2.5	1				1	
	100/1	5	5				2	
	150/1	2.5	2.5				1	
	200/1	5	5				1	
	250/1	5	5				1	
	300/1	5	5				1	

Model	Transformation ratio(Ipn/Isn) (A)	Power(VA)		Accuracy class			Number of turns through iron core	Overall and installing dimensions (mm)
		1	0.5	0.5S	0.2	0.2S		
 BH-0.66 30IB	30/5	5	2.5	2.5	2.5	2.5	5	
	50/5	5	2.5	2.5	2.5	2.5	3	
	75/5	5	2.5	2.5	2.5	2.5	2	
	75/5	5	2.5	2.5	2.5	2.5	1	
	100/5	5	2.5	2.5	2.5	2.5	1	
	100/5	5	5	5	5	5	2	
	150/5	5	2.5	2.5	2.5	2.5	1	
	200/5	5	5	5	5	5	1	
	250/5	5	5	5	5	5	1	
	300/5	5	5	5	5	5	1	
	30/1	2.5	1				5	
	50/1	2.5	1				3	
	75/1	5	2.5				2	
	100/1	5	2.5				2	
	150/1	5	2.5				1	
	200/1	5	5				1	
	250/1	5	5				1	
 BH-0.66 40I	30/5	2.5	2.5	2.5	2.5	2.5	5	
	50/5	2.5	2.5	2.5	2.5	2.5	3	
	75/5	2.5	2.5	2.5	2.5	2.5	2	
	100/5	2.5					1	
	100/5	5	5	5	5	2.5	2	
	150/5	2.5	2.5	2.5	2.5	2.5	1	
	200/5	5	5	5	5	2.5	1	
	250/5	5	5	5	5	2.5	1	
	300/5	5	5	5	5	5	1	
	400/5	5	5	5	5	5	1	
	500/5	10	10	5	5	5	1	
	600/5	10	10	5	5	5	1	
	30/1	5	2.5	5	5	5	5	
	50/1	5	2.5				3	
	75/1	5	2.5				2	
	100/1	5	5				2	
	150/1	5	2.5				1	
	200/1	5	5				1	
	250/1	5	5				1	
	300/1	5	5				1	
	400/1	5	5				1	
	500/1	10	10				1	

Model	Transformation ratio(Ipn/Isn) (A)	Power(VA) Accuracy class					Number of turns through iron core	Overall and installing dimensions (mm)
		1	0.5	0.5S	0.2	0.2S		
	150/5	2.5					1	
	200/5	5	2.5	2.5	2.5	2.5	1	
	250/5	5	5	2.5	2.5	2.5	1	
	300/5	5	5	5	5	5	1	
	400/5	5	5	5	5	5	1	
	500/5	10	10	5	5	5	1	
	600/5	10	10	5	5	5	1	
	750/5	10	10	10	10	5	1	
	800/5	10	10	10	10	5	1	
	1000/5	10	10	10	10	5	1	
	1200/5	20	20	20	20	5	1	
	150/1	2.5					1	
	200/1	5	2.5				1	
	250/1	5	5				1	
	300/1	5	5				1	
	400/1	5	5				1	
	500/1	10	10				1	
	600/1	10	10				1	
	750/1	10	10				1	
BH-0.66 50I	800/1	10	10				1	
	1000/1	10	10				1	(750/5A~1500/5A class 1 class 0.5)
	200/5	5	2.5	2.5	2.5	2.5	1	
	250/5	5	5	2.5	2.5	2.5	1	
	300/5	5	5	5	5	2.5	1	
	400/5	5	5	5	5	5	1	
	500/5	10	10	5	5	5	1	
	600/5	10	10	5	5	5	1	
	750/5	10	10	10	10	5	1	
	800/5	10	10	10	10	5	1	
	1000/5	10	10	10	10	5	1	
	1200/5	20	20	20	20	5	1	
	1500/5	20	20	20	20	10	1	
	2000/5	20	20	20	20	10	1	
	200/1	5					1	
	250/1	5	5				1	
	300/1	5	5				1	
	400/1	5	5				1	
	500/1	10	10				1	
	600/1	10	10				1	
	750/1	10	10				1	
	800/1	10	10				1	
BH-0.66 60I	1000/1	10	10				1	
	1200/1	20	20				1	(1500/5A~2000/5A class 1 class 0.5)

Model	Transformation ratio(Ipn/Isn) (A)	Power(VA) Accuracy class					Number of turns through iron core	Overall and installing dimensions (mm)
		1	0.5	0.5S	0.2	0.2S		
 BH-0.66 80I	300/5	5	5	2.5	2.5	2.5	1	 (2000/5A~2500/5A class 1 class 0.5)
	400/5	5	5	2.5	2.5	2.5	1	
	500/5	10	10	5	5	5	1	
	600/5	10	10	5	5	5	1	
	750/5	10	10	10	10	5	1	
	800/5	10	10	10	10	5	1	
	1000/5	10	10	10	10	5	1	
	1200/5	20	20	20	20	5	1	
	1500/5	20	20	20	20	10	1	
	2000/5	20	20	20	20	10	1	
	2500/5	40	40	40	40	10	1	
	300/1	5	5				1	
	400/1	5	5				1	
	500/1	10	10				1	
	600/1	10	10				1	
	750/1	10	10				1	
	800/1	10	10				1	
	1000/1	10	10				1	
	1200/1	20	20				1	
	1500/1	20	20				1	
 BH-0.66 100I	600/5	10	10	10	10	5	1	 (2500/5A~3000/5A class 1 class 0.5)
	750/5	10	10	10	10	5	1	
	800/5	10	10	10	10	5	1	
	1000/5	10	10	10	10	5	1	
	1200/5	20	20	20	20	5	1	
	1500/5	20	20	20	20	10	1	
	2000/5	20	20	20	20	10	1	
	2500/5	40	40	40	40	10		
	3000/5	40	40	40	40	10	1	
	600/1	10	10				1	
	750/1	10	10				1	
	800/1	10	10				1	
	1000/1	10	10				1	
	1200/1	20	20				1	
	1500/1	20	20				1	
	2000/1	20	20				1	
  BH-0.66 120I	1000/5	10	10	10	10	5	1	 (2500/5A~4000/5A class 1 class 0.5)
	1200/5	20	20	20	20	5	1	
	1500/5	20	20	20	20	10	1	
	2000/5	20	20	20	20	10	1	
	2500/5	40	40	40	40	10	1	
	3000/5	40	40	40	40	10	1	
	4000/5	40	40	40	40	10	1	
	1000/1	10	10				1	
	1200/1	20	20				1	
	1500/1	20	20				1	
	2000/1	20	20				1	
	2500/1	40	40				1	
	3000/1	40	40				1	

2. Operating conditions

2.1 Secondary current Isn: 5A

2.2 Rated voltage Ue: 660 V

2.3 Frequency: 50Hz/60Hz

2.4 Operating temperature: -5°C to +40°C, humidity <80%

2.5 Altitude: ≤1000m

2.6 Standards: IEC 61869-2

2.7 Installation type: Busbar or plate fixing

3. Type designation

SDH-0.66 - □ Ⅱ

- Category number
- Width of window for bars
- Current transformer series

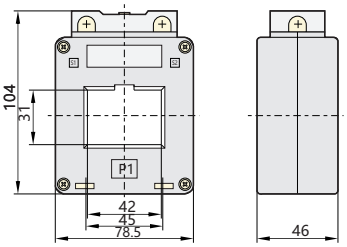
SDH-0.66 Ⅱ
Current Transformers

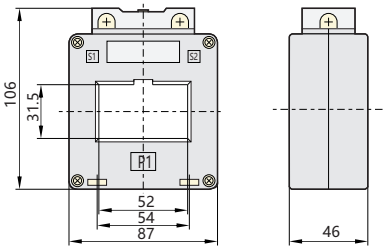
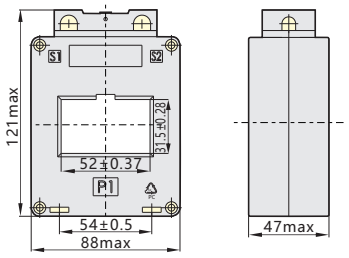
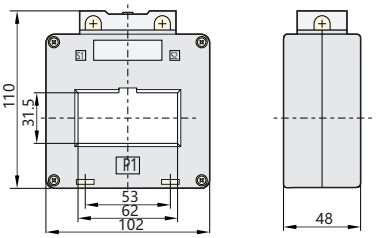
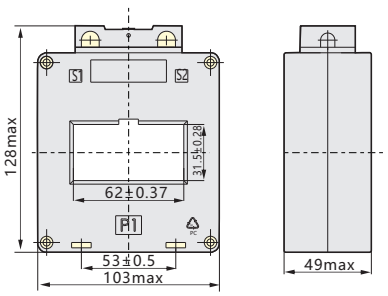
1. General

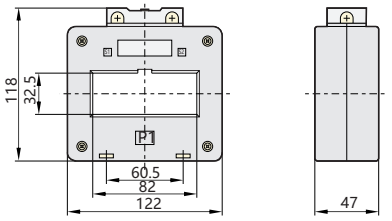
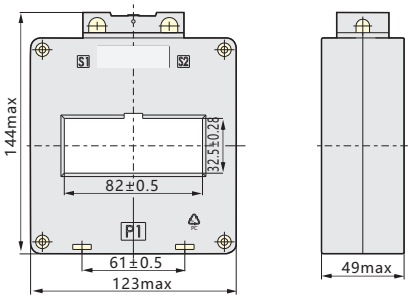
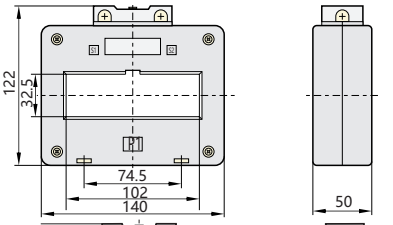
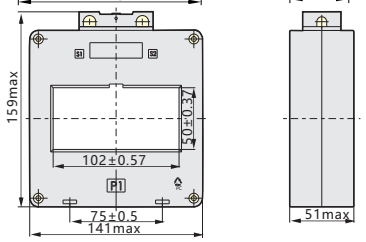
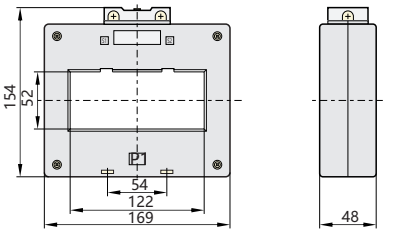
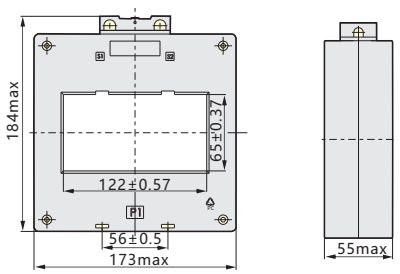
To be used in combination with measurement instruments:
ammeters, watt-hour meters,
measurement units, control relays, etc.

CE

4. Technical data

Model	Transformation ratio(Ipn/Isn) (A)	Power(VA)		Accuracy class			Number of turns through iron core	Overall and installing dimensions (mm)
		1	0.5	0.5S	0.2	0.2S		
 SDH-0.66 40 Ⅱ	150/5	2.5	2.5	2.5	2.5		1	
	200/5	5	5	5	5	5	1	
	250/5	5	5	5	5	5	1	
	300/5	5	5	5	5	5	1	
	400/5	5	5	5	5	5	1	
	500/5	10	10	5	5	5	1	
	600/5	10	10	5	5	5	1	
	750/5	10	10	10	10	5	1	
	800/5	10	10	10	10	5	1	
	150/1	5	2.5				1	
	200/1	5	5				1	
	250/1	5	5				1	
	300/1	5	5				1	
	400/1	5	5				1	
	500/1	10	10				1	
	600/1	10	10					

Model	Transformation ratio(Ipn/Isn) (A)	Power(VA)		Accuracy class			Number of turns through iron core	Overall and installing dimensions (mm)
		1	0.5	0.5S	0.2	0.2S		
 SDH-0.66 50 Ⅱ	150/5	2.5					1	  (750/5A~1500/5A class 1 class 0.5)
	200/5	5	5				1	
	250/5	5	5				1	
	300/5	5	5				1	
	400/5	5	5	5	5	5	1	
	500/5	10	10	5	5	5	1	
	600/5	10	10	5	5	5	1	
	750/5	10	10	10	10	5	1	
	800/5	10	10	10	10	5	1	
	1000/5	10	10	10	10	5	1	
	1200/5	20	20	20	20	5	1	
	1500/5	20	20	20	20	10	1	
	150/1	2.5	1				1	
	200/1	5	2.5				1	
	250/1	5	2.5				1	
	300/1	5	5				1	
	400/1	5	5				1	
	500/1	10	10				1	
	600/1	10	10				1	
	750/1	10	10				1	
	800/1	10	10				1	
	1000/1	10	10				1	
  SDH-0.66 60 Ⅱ	200/5	5	2.5				1	  (1500/5A~2000/5A class 1 class 0.5)
	250/5	5	5				1	
	300/5	5	5				1	
	400/5	5	5				1	
	500/5	10	10	5	5		1	
	600/5	10	10	5	5	5	1	
	750/5	10	10	10	10	5	1	
	800/5	10	10	10	10	5	1	
	1000/5	10	10	10	10	5	1	
	1200/5	20	20	20	20	5	1	
	1500/5	20	20	20	20	10	1	
	2000/5	20	20	20	20	10	1	
	200/1	5	5				1	
	250/1	5	5				1	
	300/1	5	5				1	
	400/1	5	5				1	
	500/1	10	10				1	
	600/1	10	10				1	
	750/1	10	10				1	
	800/1	10	10				1	
	1000/1	10	10				1	
	1200/1	20	20					

Model	Transformation ratio(Ipn/Isn) (A)	Power(VA)		Accuracy class			Number of turns through iron core	Overall and installing dimensions (mm)
		1	0.5	0.5S	0.2	0.2S		
	600/5	10	10	5	5		1	
	750/5	10	10	5	5		1	
	800/5	10	10	10	10	5	1	
	1000/5	10	10	20	20	5	1	
	1200/5	20	20	20	20	5	1	
	1500/5	20	20	20	20	10	1	
	2000/5	20	20	20	20	10	1	
	2500/5	40	40	40	40	10	1	
	600/1	10	10				1	
	750/1	10	10				1	
	800/1	10	10				1	
	1000/1	10	10				1	
	1200/1	20	20				1	
SDH-0.66 80 Ⅱ	1500/1	20	20				1	(2000/5A~2500/5A class 1 class 0.5)
	1000/5	10	10	10	10	5	1	
	1200/5	20	20	20	20	5	1	
	1500/5	20	20	20	20	10	1	
	2000/5	20	20	20	20	10	1	
	2500/5	40	40	40	40	10	1	
	3000/5	40	40	40	40	10	1	
	1000/1	10	10				1	
	1200/1	20	20				1	
	1500/1	20	20				1	
SDH-0.66 100 Ⅱ	2000/1	20	20					(2500/5A~3000/5A class 1 class 0.5)
	1000/5	10	10	10	10	5	1	
	1200/5	20	20	20	20	5	1	
	1500/5	20	20	20	20	10	1	
	2000/5	20	20	20	20	10	1	
	2500/5	30	30	30	30	10	1	
	3000/5	30	30	30	30	10	1	
	4000/5	30	30	30	30	10	1	
	1000/1	10	10				1	
	1200/1	20	20				1	
	1500/1	20	20				1	
	2000/1	20	20				1	
	2500/1	30	30				1	
SDH-0.66 120 Ⅱ	3000/1	30	30				1	(2500/5A~4000/5A class 1 class 0.5)

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Products and Ordering Codes

Date of data given in tables: May 15th 2021.
New products continuously added – ask for additional information!

NB1-63 Miniature circuit breakers 1-pole

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Circuit breaker NB1-63, 1B, 2A, 6kA	180291	NB1631NB2A	BUY NOW
Circuit breaker NB1-63, 1B, 4A, 6kA	180302	NB1631NB4A	BUY NOW
Circuit breaker NB1-63, 1B, 6A, 6kA	180311	NB1631NB6A	BUY NOW
Circuit breaker NB1-63, 1B, 10A, 6kA	180276	NB1631NB10A	BUY NOW
Circuit breaker NB1-63, 1B, 13A, 6kA	181396	NB1631NB13A	BUY NOW
Circuit breaker NB1-63, 1B, 16A, 6kA	180279	NB1631NB16A	BUY NOW
Circuit breaker NB1-63, 1B, 20A, 6kA	180285	NB1631NB20A	BUY NOW
Circuit breaker NB1-63, 1B, 25A, 6kA	180288	NB1631NB25A	BUY NOW
Circuit breaker NB1-63, 1C, 1A, 6kA	180283	NB1631NC1A	BUY NOW
Circuit breaker NB1-63, 1C, 2A, 6kA	180292	NB1631NC2A	BUY NOW
Circuit breaker NB1-63, 1C, 3A, 6kA	180297	NB1631NC3A	BUY NOW
Circuit breaker NB1-63, 1C, 4A, 6kA	180303	NB1631NC4A	BUY NOW
Circuit breaker NB1-63, 1C, 10A, 6kA	180277	NB1631NC10A	BUY NOW
Circuit breaker NB1-63, 1C, 13A, 6kA	181101	NB1631NC13A	BUY NOW
Circuit breaker NB1-63, 1C, 16A, 6kA	180280	NB1631NC16A	BUY NOW
Circuit breaker NB1-63, 1C, 20A, 6kA	180286	NB1631NC20A	BUY NOW
Circuit breaker NB1-63, 1C, 25A, 6kA	180289	NB1631NC25A	BUY NOW
Circuit breaker NB1-63, 1C, 32A, 6kA	180295	NB1631NC32A	BUY NOW
Circuit breaker NB1-63, 1C, 40A, 6kA	180300	NB1631NC40A	BUY NOW
Circuit breaker NB1-63, 1C, 50A, 6kA	180306	NB1631NC50A	BUY NOW
Circuit breaker NB1-63, 1C, 63A, 6kA	180309	NB1631NC63A	BUY NOW
Circuit breaker NB1-63, 1C, 6A, 6kA	180312	NB1631NC6A	BUY NOW
Circuit breaker NB1-63, 1D, 6A, 6kA	180313	NB1631ND6A	BUY NOW
Circuit breaker NB1-63, 1D, 10A, 6kA	180278	NB1631ND10A	BUY NOW

NB1-63 Miniature circuit breakers 2-pole

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Circuit breaker NB1-63, 2B, 2A, 6kA	180328	NB1632NB2A	BUY NOW
Circuit breaker NB1-63, 2B, 4A, 6kA	180340	NB1632NB4A	BUY NOW
Circuit breaker NB1-63, 2B, 6A, 6kA	180423	NB1632NB6A	BUY NOW
Circuit breaker NB1-63, 2B, 10A, 6kA	180314	NB1632NB10A	BUY NOW
Circuit breaker NB1-63, 2B, 16A, 6kA	180317	NB1632NB16A	BUY NOW
Circuit breaker NB1-63, 2C, 2A, 6kA	180329	NB1632NC2A	BUY NOW
Circuit breaker NB1-63, 2C, 4A, 6kA	180341	NB1632NC4A	BUY NOW
Circuit breaker NB1-63, 2C, 6A, 6kA	180349	NB1632NC6A	BUY NOW
Circuit breaker NB1-63, 2C, 10A, 6kA	180315	NB1632NC10A	BUY NOW
Circuit breaker NB1-63, 2C, 16A, 6kA	180318	NB1632NC16A	BUY NOW
Circuit breaker NB1-63, 2C, 20A, 6kA	180324	NB1632NC20A	BUY NOW
Circuit breaker NB1-63, 2C, 25A, 6kA	180326	NB1632NC25A	BUY NOW
Circuit breaker NB1-63, 2C, 32A, 6kA	180332	NB1632NC32A	BUY NOW
Circuit breaker NB1-63, 2D, 6A, 6kA	180350	NB1632ND6A	BUY NOW

NB1-63 Miniature circuit breakers 3-pole

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Circuit breaker NB1-63, 3B, 6A, 6kA	180387	NB1633NB6A	BUY NOW
Circuit breaker NB1-63, 3B, 10A, 6kA	180351	NB1633NB10A	BUY NOW
Circuit breaker NB1-63, 3B, 16A, 6kA	180354	NB1633NB16A	BUY NOW
Circuit breaker NB1-63, 3B, 20A, 6kA	180360	NB1633NB20A	BUY NOW
Circuit breaker NB1-63, 3B, 25A, 6kA	180363	NB1633NB25A	BUY NOW
Circuit breaker NB1-63, 3B, 32A, 6kA	180369	NB1633NB32A	BUY NOW
Circuit breaker NB1-63, 3B, 40A, 6kA	180375	NB1633NB40A	BUY NOW
Circuit breaker NB1-63, 3C, 2A, 6kA	180367	NB1633NC2A	BUY NOW
Circuit breaker NB1-63, 3C, 3A, 6kA	180373	NB1633NC3A	BUY NOW
Circuit breaker NB1-63, 3C, 4A, 6kA	180379	NB1633NC4A	BUY NOW
Circuit breaker NB1-63, 3C, 6A, 6kA	180388	NB1633NC6A	BUY NOW
Circuit breaker NB1-63, 3C, 10A, 6kA	180352	NB1633NC10A	BUY NOW
Circuit breaker NB1-63, 3C, 13A, 6kA	181194	NB1633NC13A	BUY NOW
Circuit breaker NB1-63, 3C, 16A, 6kA	180355	NB1633NC16A	BUY NOW
Circuit breaker NB1-63, 3C, 20A, 6kA	180361	NB1633NC20A	BUY NOW
Circuit breaker NB1-63, 3C, 25A, 6kA	180364	NB1633NC25A	BUY NOW
Circuit breaker NB1-63, 3C, 32A, 6kA	180370	NB1633NC32A	BUY NOW
Circuit breaker NB1-63, 3C, 40A, 6kA	180376	NB1633NC40A	BUY NOW
Circuit breaker NB1-63, 3C, 50A, 6kA	180382	NB1633NC50A	BUY NOW
Circuit breaker NB1-63, 3C, 63A, 6kA	180385	NB1633NC63A	BUY NOW
Circuit breaker NB1-63, 3D, 6A, 6kA	180389	NB1633ND6A	BUY NOW
Circuit breaker NB1-63, 3D, 10A, 6kA	180353	NB1633ND10A	BUY NOW
Circuit breaker NB1-63, 3D, 16A, 6kA	180356	NB1633ND16A	BUY NOW
Circuit breaker NB1-63, 3D, 20A, 6kA	180362	NB1633ND20A	BUY NOW
Circuit breaker NB1-63, 3D, 25A, 6kA	180365	NB1633ND25A	BUY NOW
Circuit breaker NB1-63, 3D, 32A, 6kA	180371	NB1633ND32A	BUY NOW
Circuit breaker NB1-63, 3D, 40A, 6kA	180377	NB1633ND40A	BUY NOW

NB1-63 Miniature circuit breakers 4-pole

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Circuit breaker NB1-63, 4C, 16A, 6kA	180394	NB1634NC16A	BUY NOW
Circuit breaker NB1-63, 4C, 20A, 6kA	180399	NB1634NC20A	BUY NOW

NB1-63G Miniature circuit breakers 1-pole

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Circuit breaker NB1-63, 1B, 6A, 6kA	183315	NB163G1NB6A	BUY NOW
Circuit breaker NB1-63, 1B, 10A, 6kA	183316	NB163G1NB10A	BUY NOW
Circuit breaker NB1-63, 1B, 13A, 6kA	183387	NB163G1NB13A	BUY NOW
Circuit breaker NB1-63, 1B, 16A, 6kA	183317	NB163G1NB16A	BUY NOW
Circuit breaker NB1-63, 1B, 20A, 6kA	183318	NB163G1NB20A	BUY NOW
Circuit breaker NB1-63, 1B, 25A, 6kA	183319	NB163G1NB25A	BUY NOW
Circuit breaker NB1-63, 1C, 6A, 6kA	183351	NB163G1NC6A	BUY NOW
Circuit breaker NB1-63, 1C, 10A, 6kA	183352	NB163G1NC10A	BUY NOW
Circuit breaker NB1-63, 1C, 13A, 6kA	NB163G1NC13A	NB163G1NC13A	BUY NOW
Circuit breaker NB1-63, 1C, 16A, 6kA	183353	NB163G1NC16A	BUY NOW
Circuit breaker NB1-63, 1C, 20A, 6kA	183354	NB163G1NC20A	BUY NOW
Circuit breaker NB1-63, 1C, 25A, 6kA	183355	NB163G1NC25A	BUY NOW
Circuit breaker NB1-63, 1C, 32A, 6kA	183356	NB163G1NC32A	BUY NOW
Circuit breaker NB1-63, 1C, 50A, 6kA	183358	NB163G1NC50A	BUY NOW
Circuit breaker NB1-63, 1C, 63A, 6kA	183359	NB163G1NC63A	BUY NOW

NB1-63G Miniature circuit breakers 2-pole

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Circuit breaker NB1-63, 2B, 10A, 6kA	183325	NB163G2NB10A	BUY NOW
Circuit breaker NB1-63, 2B, 16A, 6kA	183326	NB163G2NB16A	BUY NOW
Circuit breaker NB1-63, 2B, 20A, 6kA	183327	NB163G2NB20A	BUY NOW
Circuit breaker NB1-63, 2C, 6A, 6kA	183360	NB163G2NC6A	BUY NOW
Circuit breaker NB1-63, 2C, 10A, 6kA	183361	NB163G2NC10A	BUY NOW
Circuit breaker NB1-63, 2C, 16A, 6kA	183362	NB163G2NC16A	BUY NOW
Circuit breaker NB1-63, 2C, 20A, 6kA	183363	NB163G2NC20A	BUY NOW
Circuit breaker NB1-63, 2C, 25A, 6kA	183364	NB163G2NC25A	BUY NOW
Circuit breaker NB1-63, 2C, 32A, 6kA	183365	NB163G2NC32A	BUY NOW
Circuit breaker NB1-63, 2C, 40A, 6kA	183366	NB163G2NC40A	BUY NOW
Circuit breaker NB1-63, 2C, 50A, 6kA	183367	NB163G2NC50A	BUY NOW

NB1-63G Miniature circuit breakers 3-pole

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Circuit breaker NB1-63, 3B, 6A, 6kA	183333	NB163G3NB6A	BUY NOW
Circuit breaker NB1-63, 3B, 10A, 6kA	183334	NB163G3NB10A	BUY NOW
Circuit breaker NB1-63, 3B, 13A, 6kA	NB1-63 3B 13A 6KA	NB163G3NB13A	BUY NOW
Circuit breaker NB1-63, 3B, 16A, 6kA	183335	NB163G3NB16A	BUY NOW
Circuit breaker NB1-63, 3B, 20A, 6kA	183336	NB163G3NB20A	BUY NOW
Circuit breaker NB1-63, 3B, 25A, 6kA	183337	NB163G3NB25A	BUY NOW
Circuit breaker NB1-63, 3B, 32A, 6kA	183338	NB163G3NB32A	BUY NOW
Circuit breaker NB1-63, 3B, 40A, 6kA	183339	NB163G3NB40A	BUY NOW
Circuit breaker NB1-63, 3B, 50A, 6kA	183340	NB163G3NB50A	BUY NOW
Circuit breaker NB1-63, 3B, 63A, 6kA	183341	NB163G3NB63A	BUY NOW
Circuit breaker NB1-63, 3C, 6A, 6kA	183369	NB163G3NC6A	BUY NOW
Circuit breaker NB1-63, 3C, 10A, 6kA	183370	NB163G3NC10A	BUY NOW
Circuit breaker NB1-63, 3C, 16A, 6kA	183371	NB163G3NC16A	BUY NOW
Circuit breaker NB1-63, 3C, 20A, 6kA	183372	NB163G3NC20A	BUY NOW
Circuit breaker NB1-63, 3C, 32A, 6kA	183374	NB163G3NC32A	BUY NOW
Circuit breaker NB1-63, 3C, 40A, 6kA	183375	NB163G3NC40A	BUY NOW
Circuit breaker NB1-63, 3C, 50A, 6kA	183376	NB163G3NC50A	BUY NOW
Circuit breaker NB1-63, 3C, 63A, 6kA	183377	NB163G3NC63A	BUY NOW

NB1-63G Miniature circuit breakers 4-pole

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Circuit breaker NB1-63, 4C, 10A, 6kA	183379	NB163G4NC10A	BUY NOW
Circuit breaker NB1-63, 4C, 16A, 6kA	183380	NB163G4NC16A	BUY NOW
Circuit breaker NB1-63, 4C, 20A, 6kA	183381	NB163G4NC20A	BUY NOW
Circuit breaker NB1-63, 4C, 25A, 6kA	183382	NB163G4NC25A	BUY NOW
Circuit breaker NB1-63, 4C, 32A, 6kA	183383	NB163G4NC32A	BUY NOW

NB1-63H Miniature circuit breakers 1-pole

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Circuit breaker NB1H-63, 1B, 6A, 10kA	NB1H 10KA 1P B6 DOUBLE BUSBAR	NB1H631NB6AD	BUY NOW
Circuit breaker NB1H-63, 1B, 10A, 10kA	179768	NB1H631NB10AD	BUY NOW
Circuit breaker NB1H-63, 1B, 16A, 10kA	179770	NB1H631NB16AD	BUY NOW
Circuit breaker NB1H-63, 1C, 2A, 10kA	179785	NB1H631NC2AD	BUY NOW
Circuit breaker NB1H-63, 1C, 4A, 10kA	NB1H 10KA 1P C4 DOUBLE BUSBAR	NB1H631NC4AD	BUY NOW

Circuit breaker NB1H-63, 1C, 6A, 10kA	NB1H 10KA 1P C6 DOUBLE BUSBAR	NB1H631NC6AD	BUY NOW
Circuit breaker NB1H-63, 1C, 10A, 10kA	179782	NB1H631NC10AD	BUY NOW
Circuit breaker NB1H-63, 1C, 16A, 10kA	NB1H 10KA 1P C16 DOUBLE BUSBAR	NB1H631NC16AD	BUY NOW
Circuit breaker NB1H-63, 1C, 20A, 10kA	NB1H 10KA 1P C20 DOUBLE BUSBAR	NB1H631NC20AD	BUY NOW
Circuit breaker NB1H-63, 1C, 25A, 10kA	NB1H 10KA 1P C25 DOUBLE BUSBAR	NB1H631NC25AD	BUY NOW
Circuit breaker NB1H-63, 1C 32A 10kA	NB1H 10KA 1P C32	NB1H631NC32A	BUY NOW
Circuit breaker NB1H-63, 1C 50A 10kA	NB1H 10KA 1P C50	NB1H631NC50A	BUY NOW

NB1-63H Miniature circuit breakers 2-pole

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Circuit breaker NB1H-63, 2C, 6A, 10kA	179835	NB1H632NC6AD	BUY NOW
Circuit breaker NB1H-63, 2B, 10A, 10kA	NB1H 10KA 2P B10 DOUBLE BUSBAR	NB1H632NB10AD	BUY NOW

NB1-63H Miniature circuit breakers 3-pole

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Circuit breaker NB1H-63, 3C 16A 10kA	NB1H 10KA 1P B20	NB1H631NB20A	BUY NOW
Circuit breaker NB1H-63, 3C, 50A, 10kA	NB1H 10KA 3P C50 DOUBLE BUSBAR	NB1H633NC50AD	BUY NOW
Circuit breaker NB1H-63, 3B 10A 10kA	NB1H 10KA 3P B10	NB1H633NB10A	BUY NOW
Circuit breaker NB1H-63, 3B 13A 10kA	NB1H 10KA 3P B13	NB1H633NB13A	BUY NOW
Circuit breaker NB1H-63, 3B 16A 10kA	NB1H 10KA 3P B16	NB1H633NB16A	BUY NOW
Circuit breaker NB1H-63, 3B, 16A, 10kA	NB1H 10KA 3P B16 DOUBLE BUSBAR	NB1H633NB16AD	BUY NOW
Circuit breaker NB1H-63, 3B 20A 10kA	NB1H 10KA 3P B20	NB1H633NB20A	BUY NOW
Circuit breaker NB1H-63, 3B 25A 10kA	NB1H 10KA 3P B25	NB1H633NB25A	BUY NOW
Circuit breaker NB1H-63, 3B 32A 10kA	NB1H 10KA 3P B32	NB1H633NB32A	BUY NOW
Circuit breaker NB1H-63, 3B 40A 10kA	NB1H 10KA 3P B40	NB1H633NB40A	BUY NOW
Circuit breaker NB1H-63, 3C 10A 10kA	NB1H 10KA 3P C10	NB1H633NC10A	BUY NOW
Circuit breaker NB1H-63, 3C, 10A, 10kA	NB1H 10KA 3P C10 DOUBLE BUSBAR	NB1H633NC10AD	BUY NOW
Circuit breaker NB1H-63, 3C, 16A, 10kA	NB1H 10KA 3P C16 DOUBLE BUSBAR	NB1H633NC16AD	BUY NOW
Circuit breaker NB1H-63, 3C 20A 10kA	NB1H 10KA 3P C20	NB1H633NC20A	BUY NOW
Circuit breaker NB1H-63, 3C, 20A, 10kA	NB1H 10KA 3P C20 DOUBLE BUSBAR	NB1H633NC20AD	BUY NOW
Circuit breaker NB1H-63, 3C 25A 10kA	NB1H 10KA 3P C25	NB1H633NC25A	BUY NOW
Circuit breaker NB1H-63, 3C, 25A, 10kA	NB1H 10KA 3P C25 DOUBLE BUSBAR	NB1H633NC25AD	BUY NOW
Circuit breaker NB1H-63, 3C 32A 10kA	NB1H 10KA 3P C32	NB1H633NC32A	BUY NOW
Circuit breaker NB1H-63, 3C, 32A, 10kA	NB1H 10KA 3P C32 DOUBLE BUSBAR	NB1H633NC32AD	BUY NOW
Circuit breaker NB1H-63, 3C 40A 10kA	NB1H 10KA 3P C40	NB1H633NC40A	BUY NOW
Circuit breaker NB1H-63, 3C, 40A, 10kA	NB1H 10KA 3P C40 DOUBLE BUSBAR	NB1H633NC40AD	BUY NOW
Circuit breaker NB1H-63, 3C 50A 10kA	NB1H 10KA 3P C50	NB1H633NC50A	BUY NOW
Circuit breaker NB1H-63, 3C 63, A 10kA	NB1H 10KA 3P C63	NB1H633NC63A	BUY NOW
Circuit breaker NB1H-63, 3C, 63A, 10kA	NB1H 10KA 3P C63 DOUBLE BUSBAR	NB1H633NC63AD	BUY NOW
Circuit breaker NB1H-63, 3C, 6A, 10kA	NB1H 10KA 3P C6 DOUBLE BUSBAR	NB1H633NC6AD	BUY NOW

NB1-63DC Miniature circuit breakers 2-pole

Article Basic Description	Ordering Code
NB1-63DC 1P C20A DC250V 6kA	NB163DC1NC20A
NB1-63DC 1P C25A DC250V 6kA	NB163DC1NC25A
NB1-63DC 1P C3A DC250V 6kA	NB163DC1NC3A
NB1-63DC 1P C4A DC250V 6kA	NB163DC1NC4A
NB1-63DC 1P C6A DC250V 6kA	NB163DC1NC6A
NB1-63DC 1P C10A DC250V 6kA	NB163DC1PC10A
NB1-63DC 1P C16A DC250V 6kA	NB163DC1PC16A
NB1-63DC 1P C32A DC250V 6kA	NB163DC1PC32A
NB1-63DC 1P C40A DC250V 6kA	NB163DC1PC40A
NB1-63DC 1P C50A DC250V 6kA	NB163DC1PC50A
NB1-63DC 1P C63A DC250V 6kA	NB163DC1PC63A
NB1-63DC 2P C16A DC500V 6kA	NB163DC2PC16A
NB1-63DC 2P C25A DC500V 6kA	NB163DC2PC25A
NB1-63DC 2P C63A DC500V 6kA	NB163DC2PC63A
NB1-63DC 2P C6A DC500V 6kA	NB163DC2PC6A
NB1-63DC 4P C16A DC1000V 6kA	NB163DC4PC16A
NB1-63DC 4P C63A DC1000V 6kA	NB163DC4PC63A

DZ158 Miniature circuit breakers 1-pole

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Circuit breaker, DZ158, 1-N, 80A, 10kA	158089	DZ15810KA1P80A	BUY NOW

DZ158 Miniature circuit breakers 3-pole

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Circuit breaker, DZ158, 3-N, 80A, 10kA	158095	DZ15810KA3P80A	BUY NOW
Circuit breaker, DZ158, 3-N, 100A, 10kA	158093	DZ15810KA3P100A	BUY NOW
Circuit breaker, DZ158, 3-N, 125A, 10kA	158109	DZ15810KA3P125A	BUY NOW

NL1 Residual Current Circuit breaker

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Residual current device NL1-63, 2N, 40A, 30mA, A, 6kA, DB	200210	NL1632N30MAA40A	BUY NOW
Residual current device NL1-63, 2N, 30mA, AC, 40A, 6kA	141013	NL1632N30MAAC40A	BUY NOW
Residual current device NL1-63, 2N, 63A, 300mA	NL1 10KA 2P 63A 300MA A-TYPE	NL1632N300MAA63A	BUY NOW
Residual current device NL1-63, 4N, 40A, 30mA, A, 6kA, DB	200222	NL1634N30MAA40A	BUY NOW
Residual current device NL1-63, 4N, 40A, 30mA, AC	200224	NL1634N30MAAC40A	BUY NOW
Residual current device AUX, NL1-63, 4N, 40A, 30mA, A	200321	NL1634N30MAA40AX	BUY NOW
Residual current device NL1-63, 4N, 63A, 30mA, A	200535	NL1634N30MAA63A	BUY NOW
Residual current device NL1-63, 4N, 63A, 300mA, 10kA	NL1 10KA 4P 63A 300MA A-TYPE	NL1634N300MAA63A	BUY NOW
Residual current device AUX, NL1-63, 4N, 63A, 300mA	200402 AX	NL1634N300MAA63AX	BUY NOW

NL210 Residual Current Circuit breaker

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Residual current device NL210 1PN 40A 30mA B 10kA	782012	NL2102N30MAB40A_1	BUY NOW
Residual current device NL210 1PN 63A 30mA B 10kA	782013	NL2102N30MAB63A	BUY NOW
Residual current device NL210 3PN 40A 30mA B 10kA	782001	NL2104N30MAB40A_1	BUY NOW
Residual current device NL210 3PN 63A 30mA B 10kA	782000	NL2104N30MAB63A10K	BUY NOW

NB1L Residual Current Circuit breaker

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Circuit breaker NB1L, 1 P+N, B6, 30mA, A, 6KA	NB1L 1P+N B6 30MA A 6KA	NB1L1PN30MAA6B	BUY NOW
Circuit breaker NB1L, 1P+N, B10, 30mA, A, 6kA	NB1L 1P+N B10 30MA A 6KA	NB1L1PN30MAA10B	BUY NOW
Circuit breaker NB1L, 1P+N, B16, 30mA, A, 6kA	NB1L 1P+N B16 30MA A 6KA	NB1L1PN30MAA16B	BUY NOW
Circuit breaker NB1L, 1P+N, C4, 30mA, A, 6kA	203015	NB1L1PN30MAA4C	BUY NOW
Circuit breaker NB1L, 1P+N, C6, 30mA, A, 6kA	NB1L1PN30MAA6C	NB1L1PN30MAA6C	BUY NOW
Circuit breaker NB1L, 1P+N, C10, 30mA, A, 6kA	NB1L1PN30MAA10C	NB1L1PN30MAA10C	BUY NOW
Circuit breaker NB1L, 1P+N, C10, 30mA, A, 10kA	203057	NB1L1PN30MAA10C10K	BUY NOW
Circuit breaker NB1L, 1P+N, C13, 30mA, A, 6kA	203018	NB1L1PN30MAA13C	BUY NOW
Circuit breaker NB1L, 1P+N, C16, 30mA, A, 6kA	NB1L1PN30MAA16C	NB1L1PN30MAA16C	BUY NOW
Circuit breaker NB1L, 1P+N, C16, 30mA, A, 10kA	203059	NB1L1PN30MAA16C10K	BUY NOW
Circuit breaker NB1L, 1P+N, C25, 30mA, A, 6kA	NB1L1PN30MAA25C	NB1L1PN30MAA25C	BUY NOW

NB2LE Residual Current Circuit breaker

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Circuit breaker RCBO, NB1LE, 1P+N, B10, 30mA, A, 6kA	689016	NB2LE1PN30MAA10B	BUY NOW
Circuit breaker RCBO, NB2LE, 1P+N, B16, 30mA, A, 6kA	689017	NB2LE1PN30MAA16B	BUY NOW
Circuit breaker RCBO, NB2LE 1P+N, C10, 30mA, A, 4,5kA	689006	NB2LE1PN30MAA10C	BUY NOW
Circuit breaker RCBO, NB2LE, 1P+N, C16, 30mA, A, 6kA	689007	NB2LE1PN30MAA16C	BUY NOW
Circuit breaker RCBO, NB2LE, 1P+N, C25, 30mA, A, 4,5kA	689009	NB2LE1PN30MAA25C	BUY NOW

NB310L Residual Current Circuit breaker

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Circuit breaker RCBO, NB310L/3N, 3P+N, C10, 30mA, A	660011	NB310L3PN30MAA10C	BUY NOW
Circuit breaker RCBO, NB310L/3N, 3P+N, C16, 30mA, A	660013	NB310L3PN30MAA16C	BUY NOW
Circuit breaker RCBO, NB310L/3N, 3P+N, C25, 30mA, A, 6kA	660015	NB310L3PN30MAA25C	BUY NOW
Circuit breaker RCBO, NB310L/3N, 3P+N, C32, 30mA, A, 6kA	NB310L3PN30MAA32C	NB310L3PN30MAA32C	BUY NOW

Accessories for MCB, RCBO

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Shunt release S9, 230V, AC, NB1	S9AC230	S9AC230	BUY NOW
Auxiliary contact NB1, NB1L, 6A, 240V	184994	XF9	BUY NOW
Alarm contact NB1-63, NB1L	XF9J	XF9J	BUY NOW
Auxiliary contact for NL1-63-X residual current devices	200998	NL1AX5	BUY NOW
V9-electronic-under-voltage-releaseAC230V(R)	184974	V9	

NH2 Swich Disconnector

Article Basic Description	Manufacturers Code	Ordering Code
Main switch 3P 63A	401058	NH23P63A
(X) Main switch 4P 63A	401059	NH24P63A
Switch Disconnector 1-pole 63A	401056	NH21251N63A
Switch Disconnector 3-pole 63A	401058	NH21253N63A
Switch Disconnector 3-pole 100A	401062	NH21253N100A

NH4 Swich Disconnector

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Switch Disconnector 1P, 32A	398037	NH41001N32A	BUY NOW
Switch Disconnector 1P, 63A	NH41001N63A	NH41001N63A	BUY NOW
Switch Disconnector 2P, 32A	NH41002N32A	NH41002N32A	BUY NOW
Switch Disconnector 3P, 0-1, 32A	398043	NH41003N32A	BUY NOW
Switch Disconnector 3P, 63A	398044	NH41003N63A	BUY NOW
Switch Disconnector 3P 100A	398042	NH41003N100A	BUY NOW
Switch Disconnector 4P, 0-1, 32A	398046	NH41004N32A	BUY NOW
Switch Disconnector 4P, 0-1, 63A	398047	NH41004N63A	BUY NOW
Switch Disconnector 3P, 0-1, 125A, DB	NH43P125A	NH43P125A	BUY NOW
Switch Disconnector 4P, 125A	398035	NH44P125A	BUY NOW

NZK1 Change-overs Switch

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Module-size 1-0-2 switch 1-pole	643000	NZK1321P	BUY NOW
Module-size 1-0-2 switch 2-pole	643001	NZK1322P	BUY NOW
Module-size 1-2 change-over switch 1-pole	NZK2321P	NZK2321P	BUY NOW

NU6-II Surge Arrester

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Over-voltage protection SPD Category 2 NU6-II 40kA/385V 4P		NU6II40KA385V4P	BUY NOW
Over-voltage protection SPD Category 2 NU6-II 40kA/460V 4P	213595	NU6II40KA460V4P	BUY NOW
Over-voltage protection SPD Category 2 NU6-II 40kA/460V 4P		NU6IIF40KA460V4P	BUY NOW

NP9 Pushbuttons&Indicators

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Module-size push button 3NO green	584042	NP9301GREEN	BUY NOW

ND9 Pushbuttons& indicators

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Module-size indicator light for DIN rail ND9-1, LED, green	594108	ND91G230V	BUY NOW
Module-size indicator light for DIN rail ND9-1, LED, red	153110	ND91R230V	BUY NOW
Module-size indicator light for DIN rail ND9-1, LED, white	153125	ND91W230V	BUY NOW
Module-size indicator light for DIN rail ND9, LED, 230VAC, green and red	153135	ND92GR230V	BUY NOW
Module-size indicator light for DIN rail ND9, LED, 230VAC, white and white	594203	ND92WW230V	BUY NOW

NX8 Consumer Unit

Article Basic Description	Manufacturers Code	Ordering Code
Flushmount 1-row box 24-mod	216037	NX824
Flushmount 1-row box 12-mod	216034	NX812J
Flushmount 1-row box 12-mod	216033	NX812

NM8 Moulded Case Circuit Breakers

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Moulded-case circuit breaker, 3-N, 100A	123009	NM8125S3P100A	BUY NOW
Moulded-case circuit breaker, 3-N, 125A	150707	NM8125S3P125A	BUY NOW
Moulded-case circuit breaker, 3-N, 160A	123054	NM8250S3P160A	BUY NOW
Moulded-case circuit breaker, 3-N, 200A	123055	NM8250S3P200A	BUY NOW
Moulded-case circuit breaker, 3-N, 250A	123056	NM8250S3P250A	BUY NOW
Moulded-case circuit breaker, 3-N, 315A	150578	NM8400S3P315A	BUY NOW
Moulded-case circuit breaker, 3-N, 400A	150580	NM8400S3P400A	BUY NOW
Auxiliary contact, NM8, 150869	150869	NM8AX	BUY NOW
Under-voltage release	125703	NM8250UVR230VAC	BUY NOW

NC6 AC Contactors

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Contactor, NC6-09, 230VAC, 1NC	247473	NC60901230V50HZ	BUY NOW
Contactor, NC6-09, 24VAC, 1NC	NC6-0901 24V50HZ	NC6090124V50HZ	BUY NOW
Contactor, 9A, 230VAC, 50Hz, 1NO, 3P	247571	NC60910230V50HZ	BUY NOW
Contactor, NC6-09, 24VAC, 1NO	247577	NC6091024V50HZ	BUY NOW

NC1 AC Contactors

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Auxiliary contact 1NO + 1NC	257022	F411	BUY NOW
Auxiliary contact NC1, 2NO	257024	F420	BUY NOW
Auxiliary contact NC1, 2NO,2NC	257019	F422	BUY NOW
Auxiliary contact NC1, 4NO	257026	F440	BUY NOW
Contactor, 4kW coil 230VAC, 50Hz, 3P, 1	221033	NC1093P10	BUY NOW
Contactor, 5,5kW coil 230VAC	NC1-123P01	NC1123P01	BUY NOW
Contactor, 5,5kW coil 230VAC, 50Hz, 3P	221358	NC1123P10	BUY NOW
Contactor, 18A(7.5kW), 230VAC, 50Hz, 3P	221545	NC1183P10	BUY NOW
Contactor, 7.5kW coil 24VAC, 50Hz, 3P	NC1183P1024VAC	NC1183P1024VAC	BUY NOW
Contactor, 11kW coil 230VAC, 50Hz, 3P	NC1253P10	NC1253P10	BUY NOW
Contactor, 15kW coil 230VAC, 50Hz, 3P	NC1323P10	NC1323P10	BUY NOW
Contactor, 22kW coil 230VAC, 50Hz, 3P	NC1503P11	NC1503P11	BUY NOW
Contactor, 30kW coil 230VAC, 50Hz, 3P	222714	NC1653P11	BUY NOW
Contactor, 37kW coil 230VAC, 50Hz, 3P	222935	NC1803P11	BUY NOW
Contactor, 45kW coil 230VAC, 50Hz, 3P	NC1953P11	NC1953P11	BUY NOW

NC2 AC Contactors

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Contactor, 55kW coil 230VAC, 3P	235643	NC21153P	BUY NOW
Contactor, 75kW coil 230VAC	NC21503P	NC21503P	BUY NOW
Contactor, 90 kW, coil 230VAC	NC21853P	NC21853P	BUY NOW
NC2-150JZ/4 230V(R)	671399	NC21504P	
Contactor 90kW coil 230VAC 4P	235846	NC21854P	
Contactor 110 kW coil 220-240VAC	671400	NC22253P	
Contactor 110 kW 4P coil 230VAC	671401	NC22254P	
Contactor 132kW coil 230VAC	671402	NC22653P	
Contactor 140kW coil 230VAC 4P	236012	NC22654P	
Contactor 160 kW coil 230VAC	236059	NC23303P	
Contactor 200kW coil 230VAC 3P	236158	NC24003P	
Contactor 250kW coil 230VAC 3P	236257	NC25003P	
Contactor 335kW coil 230VAC 3P	236308	NC26303P	

NSH8 Modular AC Contactors

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Modular contactor, NCH8-20, 1NO+1NC, 20A, 230V AC	NCH8-20-11-230	NCH82011230	BUY NOW
Modular contactor, NCH8-20, 2NO, 20A, 230V AC	256054	NCH82020230	BUY NOW
Modular contactor, 2P, 24V AC	NCH8-20-20-24	NCH8202024	BUY NOW
Modular contactor, NCH8-25, 4NO, 220/230V AC	986784	NCH82540230	BUY NOW
Modular contactor, 4P, 40A, 230V AC	256099	NCH84040230	BUY NOW
Modular contactor, 4P, 63A, 230V AC	NCH 863-402-30	NCH86340230	BUY NOW

NR2 Thermal Overload Relay

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Thermal overload relay NR2, 0.63-1A, for NC6 contactor	NR2-11.5/Z 0,63-1A	NR2115ZE	BUY NOW
Thermal overload relay NR2, 1-1.6A, for NC6 contactor	NR2-11.5/Z 1-1,6A	NR2115ZF	BUY NOW
Thermal overload relay NR2, 1.25-2A, for NC6 contactor	NR2-11.5/Z 1,25-2A	NR2115ZG	BUY NOW
Thermal overload relay NR2, 1.6-2,5A, for NC6 contactor	268172	NR2115ZH	BUY NOW
Thermal overload relay NR2, 4-6A, for NC6 contactor	268174	NR2115ZJ	BUY NOW
Thermal overload relay NR2, 12.5-4A, for NC6 contactor	NR2-11.5/Z 2,5-4A	NR2115ZI	BUY NOW
Thermal overload relay NR2, 5.5-8A, for NC6 contactor	NR2-11.5/Z 5,5-8	NR2115ZK	BUY NOW
Thermal overload relay NR2, 9-13A, for NC6 contactor	NR2-11.5/Z 9-13A	NR2115ZM	BUY NOW
Thermal overload relay NR 0.1-0.16A, for NC1 contactor	NR225A 0.1-0.16A	NR225A	BUY NOW
Thermal overload relay NR 0.16-0.25A, for NC1 contactor	NR225B 0,16-0,25A	NR225B	BUY NOW
Thermal overload relay NR 0.25-0.4A, for NC1 contactor	NR2250 0.25-0.4A	NR225C	BUY NOW
Thermal overload relay NR 0.4-0.63A, for NC1 contactor	NR225D 0.4-0.63A	NR225D	BUY NOW
Thermal overload relay NR 0.63-1A, for NC1 contactor	NR225E 0.63-1A	NR225E	BUY NOW
Thermal overload relay NR 1-1.6A, for NC1 contactor	268137	NR225F	BUY NOW
Thermal overload relay NR 1.25-2A, for NC1 contactor	NR225G 1.25-2A	NR225G	BUY NOW
Thermal overload relay NR 1.6-2.5A, for NC1 contactor	NR225H 1.6-2.5A	NR225H	BUY NOW
Thermal overload relay NR 2.5-4A, for NC1 contactor	NR225I 2.5-4A	NR225I	BUY NOW
Thermal overload relay NR 4-6A, for NC1 contactor	NR225J 4-6A	NR225J	BUY NOW
Thermal overload relay NR 5.5-8A, for NC1 contactor	NR225K 5.5-8A	NR225K	BUY NOW
Thermal overload relay NR 7-10A, for NC1 contactor	NR225L 7-10A	NR225L	BUY NOW
Thermal overload relay NR 9-13A, for NC1 contactor	NR225M 9-13A	NR225M	BUY NOW
Thermal overload relay NR 12-18A, for NC1 contactor	NR225N 12-18A	NR225N	BUY NOW
Thermal overload relay NR 17-25A, for NC1 contactor	NR225O 17-25A	NR225O	BUY NOW
Thermal overload relay NR2-36 23-32A, for NC1 contactor	268143	NR236P	BUY NOW
Thermal overload relay NR2-93 30-40A, for NC1 contactor	NR2 93 30-40A	NR293S	BUY NOW
Thermal overload relay NR2-93 37-50A, for NC1 contactor	268147	NR293T	BUY NOW

NS2 Manual Motor Starter

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Motor Protection Circuit Breaker NS2-25 0.16-0.25A	NS2-25 0,16-0,25A	NS225B	BUY NOW
Motor Protection Circuit Breaker NS2-25 0.25-0.4A	NS225C 0.25-0.4A	NS225C	BUY NOW
Motor Protection Circuit Breaker NS2-25D, 0.4-0.63A	NS225D	NS225D	BUY NOW
Motor Protection Circuit Breaker NS2-25E, 0.63-1A	NS2-25 0.63-1A	NS225E	BUY NOW
Motor Protection Circuit Breaker NS2-25F, 1-1.6A	NS2-25 1-1.6A	NS225F	BUY NOW
Motor Protection Circuit Breaker NS2-25G, 1.6-2,5	NS2-25 1.6-2.5A	NS225G	BUY NOW
Motor Protection Circuit Breaker NS2-25H, 2.5-4A	NS2-25 2.5-4A	NS225H	BUY NOW
Motor Protection Circuit Breaker NS2-25I, 4-6,3A	NS2-25 4-6.3A	NS225I	BUY NOW
Motor Protection Circuit Breaker NS2-25J, 6-10A	495081	NS225J	BUY NOW
Motor Protection Circuit Breaker NS2-25K, 9-14A	NS2-25 9-14A	NS225K	BUY NOW
Motor Protection Circuit Breaker NS2-25L,13-18A	NS2-25 13-18A	NS225L	BUY NOW
Motor Protection Circuit Breaker NS2-25M, 17-23A	NS2-25 17-23A	NS225M	BUY NOW
Motor Protection Circuit Breaker NS2-25N, 20-25A	NS2-25 20-25A	NS225N	BUY NOW
Motor Protection Circuit Breaker NS2-80B, 25-40A	495087	NS280B40A	BUY NOW
Motor Protection Circuit Breaker NS2-80B, 40-63A	495088	NS280B63A	BUY NOW
Auxiliary contact, 1NO+1NC	NS280BAU11	NS280BAU11	BUY NOW
Auxiliary contact, NS2-AE11, front mount	NS2-AE11	NS2AE11	BUY NOW
Auxiliary contact, NS2-AU11, side mount	NS2-AU11	NS2AU11	BUY NOW
Auxiliary contact, NS2-FA1010	NS2FA1010	NS2FA1010	BUY NOW
Enclosure for NS2 motor-circuit switch	NS2-MC	NS2MC	BUY NOW

NQ2 Direct On-Line Starter

Article Basic Description	Manufacturers Code	Ordering Code
Contactor starter NC-12 5.5kW 230VAC	493576	NQ215P12230

NP2 Pushbuttons

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Push button, 22 mm, 1 NO, metal, black	NP2-BA21	NP2BA21	BUY NOW
Push button, 22 mm, 1 NO, metal, green	573956	NP2BA31	BUY NOW
Push button, 22 mm, 1 NO, metal, red	NP2-BA41	NP2BA41	BUY NOW
Contact 1NO	NP2-BE101	NP2BE101	BUY NOW
Contact 1NC	576842	NP2BE102	BUY NOW
Rotary switch, metal, 2-pos, 1NO, black	NP2-BJ21	NP2BJ21	BUY NOW
Rotary switch 1NO, 1NC	NP2BJ25	NP2BJ25	BUY NOW
Rotary switch, metal, 3-pos, 1NO	NP2-BJ33	NP2BJ33	BUY NOW
Emergency stop button, 1NC, red	NP2-BS542	NP2BS542	BUY NOW
Marker frame	NP2-BZ31	NP2BZ31	BUY NOW

ND16 Lights/Buzzers

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Indicator light LED, for 22mm hole, 24V, AC/DC, blue	ND1622DS224VB	ND1622DS224VB	BUY NOW
Indicator light LED, for 22mm hole, 24V, AC/DC, green	592940	ND1622DS224VG	BUY NOW
Indicator light LED, for 22mm hole, 24V, AC/DC, red	ND16-22DS24V RED	ND1622DS224VR	BUY NOW
Indicator light LED, for 22mm hole, 24V, AC/DC, white	ND16-22DS24V WHITE	ND1622DS224VW	BUY NOW
Indicator light LED, for 22mm hole, 24V, AC/DC, yellow	ND16-22DS24V YELLOW	ND1622DS224VY	BUY NOW
Indicator light LED, for 22mm hole, 110V, AC, yellow	ND1622DS4110V GREEN	ND1622DS4110VG	BUY NOW
Indicator light LED, for 22mm hole, 230V, AC, green	593071	ND1622DS4230VG	BUY NOW
Indicator light LED, for 22mm hole, 230V, AC, red	ND16-22DS4 230V RED	ND1622DS4230VR	BUY NOW
Indicator light LED, for 22mm hole, 230V, AC, white	593085	ND1622DS4230VW	BUY NOW
Indicator light LED, for 22mm hole, 230V, AC, yellow	ND16-22DS4 230V YELLOW	ND1622DS4230VY	BUY NOW

BH066I Current transformers

Article Basic Description	Manufacturers Code	Ordering Code	Product in eStore
Current transformer 1000/5, 80mm, cl0,5	824208	BH066I100058005	BUY NOW
Current transformer 100/5, 40mm, cl0,5	256456	BH066I10054005	BUY NOW
Current transformer 100/5, Ø30 cl.0.2S	256455	BH066IB10053002S	BUY NOW
Current transformer 150/5, Ø40 cl.0.2S	256457	BH066I15054002S	BUY NOW
Current transformer 150/5, 40mm, cl0,5	255277	BH066I15054005	BUY NOW
Current transformer 200/5, Ø40 cl.0.2S	256458	BH066I20054002S	BUY NOW
Current transformer 200/5, 40mm, cl0,5	255278	BH066I20054005	BUY NOW
Current transformer 250/5, Ø40 cl.0.2S	256459	BH066I25054002S	BUY NOW
Current transformer 250/5, 40mm, cl0,5	255279	BH066I25054005	BUY NOW
Current transformer 300/5, Ø40 cl.0.2S	256460	BH066I30054002S	BUY NOW
Current transformer 300/5, Ø40 cl.0.5	255280	BH066I30054005	BUY NOW
Current transformer 400/5, Ø40 cl.0.2S	256461	BH066I40054002S	BUY NOW
Current transformer 400/5, 40mm, cl0,5	255281	BH066I40054005	BUY NOW
Current transformer 500/5, Ø50 cl.0.2S	256462	BH066I50055002S	BUY NOW
Current transformer 500/5, 50mm, cl0,5	255289	BH066I50055005	BUY NOW
Current transformer 600/5, Ø60 cl.0.2S	256463	BH066I60056002S	BUY NOW
Current transformer 600/5, 60mm, cl0,5	255300	BH066I60056005	BUY NOW
Current transformer 800/5, Ø60 cl.0.2S	256464	BH066I80056002S	BUY NOW

IP Codes. Formulas. KVA to Amperes

Definition of Degrees of Protection to IEC 144

IP

PROTECTION AGAINST SOLID OBJECTS

0	No Protection
1	Protection against solid objects up to 50 mm e.g. accidental touch by hands
2	Protection against solid objects up to 12 mm e.g. fingers
3	Protection against solid objects up to 2.5 mm e.g. tools and wires
4	Protection against solid objects over 1 mm e.g. tools and small wires
5	Protection against dust (no harmful deposit)
6	Totally protected against dust

PROTECTION AGAINST LIQUIDS

0	No Protection
1	Protected against vertically falling drops of water e.g. condensation
2	Protected against direct sprays of water up 15° from the vertical
3	Protected against sprays to 60° from the vertical
4	Protected against water sprayed from all direction
5	Protected against low pressure jets of water from all directions
6	Protected against conditions on ship decks
7	Protected against immersion in water
8	Protected against long periods of immersion under pressure

Useful Formulas

$$KVA = \frac{h.p. \times 746}{1000 \times p.f. \times Efficiency}$$

$$IL = \frac{h.p. \times 746}{V_L \times 1.73 \times Efficiency \times p.f.}$$

$$KW = \frac{IL \times VL \times 1.73 \times p.f.}{1000}$$

$$h.p. = \frac{KW \times 1000 \times Efficiency}{746}$$

$$h.p. = \frac{KVA \times 1000 \times Efficiency \times p.f.}{746}$$

$$h.p. = \frac{V_L \times I_L \times 1.73 \times Efficiency \times p.f.}{746}$$

$$KVA = \frac{KW}{p.f.}$$

$$KVA = \frac{IL \times VL \times 1.73}{1000}$$

$$KW = KVA \times p.f.$$

Where:
VL = Line Voltage **IL** = Line Current and **p.f.** = Power Factor

$$\text{Power Factor} = \frac{KW \times 1000}{1.73 \times Volts \times Amps}$$

KVA TO AMPERES (415V 3PH)

KVA	A	KVA	A
45	63	453	630
58	80	575	800
72	100	719	1000
90	125	899	1250
115	160	1150	1600
144	200	1438	2000
180	250	1797	2500
226	315	2264	3150
288	400	2875	4000
359	500		