

® **Lovato**
electric

ENERGY AND AUTOMATION





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MOTOR CONTROL AND PROTECTION



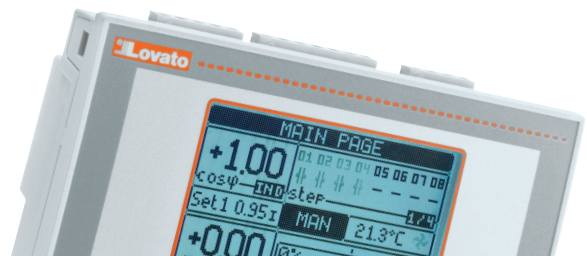
CONTROL AND SIGNALLING



CIRCUIT PROTECTION AND ISOLATION



AUTOMATION AND CONTROL



ENERGY MANAGEMENT



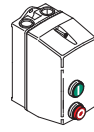
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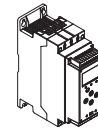
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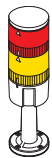
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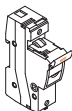
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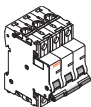
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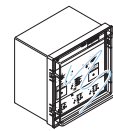
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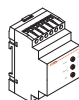
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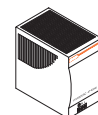
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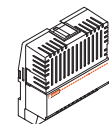
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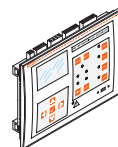
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MOTOR PROTECTION CIRCUIT BREAKERS UP TO 100A

Available versions with rotary actuator and push button actuator, magnetic release for starters only and fuse control function. 45mm wide up to 40A rated current. Accessories include front-mount and side-mount auxiliary contacts, trip signalling contacts, supply connection busbars and a wide variety of enclosures.



40–80A CONTACTORS IN AC3

The new contactors have a small footprint: 55mm for the three-pole versions and 73mm for the four-pole versions. Rated thermal current (I_{th}) from 70 to 115A, power terminals with double lug clamp and 4-terminal coil. Available with two types of coil, AC or AC/DC with electronic control and wide supply voltage range (e.g. a single coil covers 100–250VAC/DC), low power consumption, only closes at correct supply voltage, with built-in noise filter. Also available in specific versions for DC load switching.



40–50kvar CONTACTORS FOR POWER FACTOR CORRECTION

Specific new contactors for controlling PFC capacitors are available with 40kvar, 45kvar or 50kvar ratings at 400V and a very small footprint (55mm wide). The double lug clamp terminals enable easy connection of cables even when multiple connections are required.



ADLX SERIES SOFT STARTERS

This new series complements the soft starter range with two-phase control starters from 30 to 320A, featuring integrated bypass and a very small footprint. Equipped with icon display and NFC connectivity for easy and immediate configuration, they are suitable for simple applications thanks to the installation wizard, or for applications requiring maximum performance in terms of motor control and protection. Available in 400 and 600V versions.



VLB SERIES VARIABLE SPEED DRIVES

Three-phase power input 400–480VAC, power ratings from 0.4kW to 30kW, small footprint with “book” format: the VLB series is ideal for lifting systems and pump/fan management, owing to specific integrated features such as S-curve, PID and quadratic torque control. Programming, monitoring and diagnostics from PC via USB or Wi-Fi. A RS485 communication port with integrated Modbus-RTU and supplied EMC filter are also standard equipment. Modules are available to equip the drive with the most common fieldbus systems, including PROFIBUS and CANopen.



SIGNAL TOWERS Ø45mm AND MULTICOLOURED Ø70mm

The Ø45 mm towers are supplied fully assembled with the possibility of up to three light modules and a sound module. Perfect for mounting on small machines, their high brightness LED circuit ensures long-life illumination and low power consumption. The new Ø70mm multicoloured light modules are supplied up to three different colours per model. In the event of two or more alarms, the multicoloured module lights up in alternating colours corresponding to the event.



PLATINUM SERIES NEW COMPONENTS AND ACCESSORIES

The Platinum series also includes the following products:

- continuous or pulse-tone monoblock buzzers
- monoblock potentiometers
- USB and RJ45 communication interfaces
- monoblock LED pilot lights with IP66, IP67 or IP69K protection (Nema 4X)
- adapter for DIN rail mounting
- protective shrouds.



GX SERIES ROTARY CAM SWITCHES

Our range of cam switches has been further expanded to include 20A AC1 ON/OFF switches with panel mounting by means of a threaded ring (with Ø22mm drilled hole) and snap-on fitting. Quick and easy installation are the main benefits of these switches. The switch is available with knob or key control.



SWITCH DISCONNECTORS FOR PHOTOVOLTAIC APPLICATIONS

The switch disconnecter range is further boosted by the introduction of compact versions (54mm wide) rated for 40A at 1000VDC and 32A at 1200V in the category DC21B. These switch disconnectors are supplied with a handle for direct control and include bridges for connecting the poles in series. There are also versions with IP65 plastic enclosure.



GA SERIES 160A SWITCH DISCONNECTORS AND 48x48mm DOOR COUPLING HANDLE

GA series switch disconnectors are now available up to 160A AC21A. At 70mm wide, its small size enables it to be fitted inside electrical panels with limited space. Available in three-pole and four-pole versions and with IP65 plastic enclosure in 0-1 and 1-0-2 configurations. The range of door coupling handles for GA series switch disconnectors now includes a version with 48x48mm front plate.



UL489 MINIATURE CIRCUIT BREAKERS (MCB)

MCBs compliant with the UL489 standard are ideal for manufacturers of electrical machinery or appliances destined for the North American market. They comply with the IEC/EN60947-2 standard and can therefore be used in global markets. The range covers rated currents from 1 to 63A and trip curves C and D. The operating voltage for appliances up to 32A is 277V for the 1-pole versions and 480Y/277V for the 2-pole and 3-pole versions. Above 32A, the operating voltage becomes 120V for the 1-pole versions and 240V for the 2-pole and 3-pole versions.



CLASS B RESIDUAL CURRENT CIRCUIT BREAKERS

In addition to tripping under the same conditions as for types AC and A, these RCCBs also trip due to high-frequency leakage currents up to 1000Hz and direct currents. They are particularly suitable in installations with variable speed drives, UPS systems and for electric vehicle charging stations.



NEW PRODUCTS | 2016 | 17

RESIDUAL CURRENT DEVICE ADD-ON BLOCKS

A new line of residual current device add-on blocks connectable to miniature circuit breakers, available in 2, 3 and 4-pole versions for 30 or 300mA residual currents. All models are type A for sinusoidal alternating currents and pulsating direct currents. The rated current is 40A or 63A. Fast and functional MCB fitting in compliance with IEC/EN60009-1 requirements.



MODULAR CONTACTORS AND SOCKETS

Two new modular contactor models with 32A current rating in two-pole or three/four-pole versions. Considerable space saving (1 module for two-pole versions and 2 modules for three/four-pole versions). Available in manually operated versions with lth rated current of 20 or 32A.

The modular sockets provide a power source near to or inside electrical panels. Suitable for 10/16A standard Schuko Italian or German plugs. Also compatible with standard French plugs without ground connection.



FLOAT SWITCHES

Available in grey water and dirty water versions. All are equipped with internal changeover contact, which is actuated based on liquid level. High quality 3x1 type cables (3 wires of 1mm² cross-section area) allow the filling and emptying function to be selected when wiring the switch. Excellent mechanical and chemical resistance and first-rate reliability. Available in versions with PVC or Neoprene cable in lengths of 3, 5, 10, 15 and 20m. The patented version for dirty water consists of two watertight chambers that are insulated from each other by closed-cell foam material, providing a further protective barrier against infiltration and high thermal insulation.



48VDC SWITCHING POWER SUPPLIES AND REDUNDANT MODULES

Our range of switching power supplies has been extensively enhanced with 48VDC versions (single-phase from 30 to 480W, two-phase 100W and three-phase from 240 to 960W) and redundant modules. The modules are used for redundant connection of two or more power supplies, to increase the reliability of the DC power supply. The redundant modules ensure perfect isolation between the various connected power supplies.



BCG SERIES AUTOMATIC COMMUNICATING BATTERY CHARGERS

The new communicating version BCG battery chargers incorporate essential features for applications where the charge state of the connected battery needs to be constantly controlled. In the event of an AC power failure, the battery chargers are able to maintain active communication by drawing power from the battery, thus ensuring constant supervision even in emergencies. They are equipped with a RS485 serial communication port and can be programmed wirelessly using NFC technology.



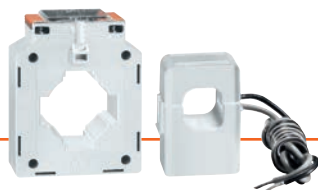
ENERGY METERS

The range of DME energy meters for three-phase systems has been extended with three new models. The CT-connection DME D330 and direct-connection DME D301 up to 63A have an onboard RS485 port that allows them to be integrated into a network of power consumption monitoring instruments by means of supervision software. The user interface of the DME D305 model features a backlight icon display for electrical measurements and scrolling text for describing configuration parameters and user-customizable alarm messages.



CURRENT TRANSFORMERS

Our line of current transformers has been enhanced with new solid-core and split-core types. The new solid-core transformers are available up to 3000A and are designated as precision transformers due to their 0.5S accuracy class. We have also extended our split-core transformer offering with compact models and current ratings from 100A to 500A. They are supplied pre-wired with a 1m cable.



ATL SERIES AUTOMATIC TRANSFER SWITCH CONTROLLERS

ATL 800 controls load switching between two sources, whereas ATL 900 can manage three power sources and two tie breakers and is therefore ideal for advanced applications. The current measuring inputs on ATL 900 define the switching threshold based on the absorbed power. The two models have a built-in RS485 port and can manage a third control device with tie-breaker or non-priority load management function. Closed-transition transfer switching. The integrated PLC logic enables the switching logics to be customized.

Can also be programmed wirelessly using NFC technology.



DUAL POWER SUPPLY MODULE

Automatic switching is now more reliable than ever thanks to the dual power supply module. The device has two inputs (Line 1 and Line 2) and is able to verify the applied voltages, identifying which one is more suitable for connecting to the module's output. Ideal for supplying changeover switch disconnectors and motorised circuit breakers.

The two single-phase voltage inputs are independent, insulated and each capable of supplying the internal measuring circuit. Further checks are carried out on the output voltage, enabling the correct operation of the device to be verified. In the event of a fault, the red LED will light up and voltage will be no longer available at the output terminals.



GENERATING SET CONTROLLERS

RGK4... is a compact stand-alone controller featuring an icon display with intuitive interface. The gen set can be activated locally or by remote control. When the gen set is not in operation, the controller can be switched off without physically removing the battery power supply. RGK4... is also available with a three-position key for local or remote shutdown and starting.

RGK 610 is an AMF (Automatic Mains Failure) controller that is expandable by means of EXP series modules. USB, RS232 or RS485 communication ports can be incorporated by adding an EXP expansion module.



SOFTWARE and APP: SYNERGY CLOUD, XPRESS and NFC

The Synergy software is now available in the Cloud version! Multi-channel connections, data collation in SQL database and multi-user access via Web browser to live pages or tables without having to install special software. Easy monitoring of the main electrical parameters of LOVATO Electric devices. The XPRESS software can be used to configure all recent LOVATO Electric devices equipped with a communication port, particularly using the CX 01 (USB) and CX 02 (Wi-Fi) dongles.

The NFC app enables LOVATO Electric devices to be programmed using smartphones and tablets by means of Android NFC technology.



GATEWAY AND 3G MODEM

The Internet connectivity of LOVATO Electric products is now enhanced by the availability of the RS485-Ethernet gateway (EXC CON 01) and 3G modem (EXC M3G 01). These devices enable the RS485 network over which LOVATO Electric products (such as a multimeter) are connected to interface with a LAN and a 3G wireless network respectively. This makes it possible to create a connection with a software, app or program capable of collating the measured data.



INTERNATIONAL PRESENCE |

The presence of LOVATO Electric in the major world markets is the result of its ongoing strategy of internationalisation.

LOVATO Electric Italy distributes its products worldwide to over 100 countries through its foreign subsidiaries and importer network.

GERMANY | •

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www.LovatoElectric.de

ITALY | •

LOVATO Electric S.p.A.
www.LovatoElectric.com

UK | •

LOVATO Electric LTD
www.Lovato.co.uk

FRANCE | •

LOVATO Electric SAS
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CANADA | •

LOVATO Electric Corp.
www.Lovato.ca

USA | •

LOVATO Electric Inc.
www.LovatoUsa.com



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IMPORTERS

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FOREIGN
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100 COUNTRIES

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www.LovatoElectric.es

• | TURKEY

LOVATO Elektrik LTD
www.LovatoElectric.com.tr

• | UNITED ARAB EMIRATES

LOVATO Electric ME FZE
www.LovatoElectric.ae

A LONG TRADITION OF STYLE |



1922

We have been managing energy since 1922, led by the same family for four generations, from the early days of electrical engineering



to the present day, in which electronics and automation go hand in hand.

Italian design has always been our hallmark and an ever-present requirement in the daily work of our designers, researchers and engineering experts.

Our company mission has always been the same: to create innovative and reliable products, offering services that exceed customer expectations.

innovation and reliability

Italian design





THE FOUNDATIONS ON WHICH WE ARE BUILT |

Quality is a keyword in every market, especially ours. That is why we have always made quality a top priority, such that in 1992 we were one of the first companies in Italy to certify our management system according to the ISO 9001 standard.

ISO 9001

These days, quality is a broad concept that embraces many issues. We have identified two issues that are central to our business. The first is environmental management and we have aligned our corresponding system with the ISO 14001 standard in order to protect and sustain the environment in which we live.

ISO 14001

The second issue is safety, a primary consideration in any workplace, which is why we are certified to OHSAS 18001.

OHSAS 18001

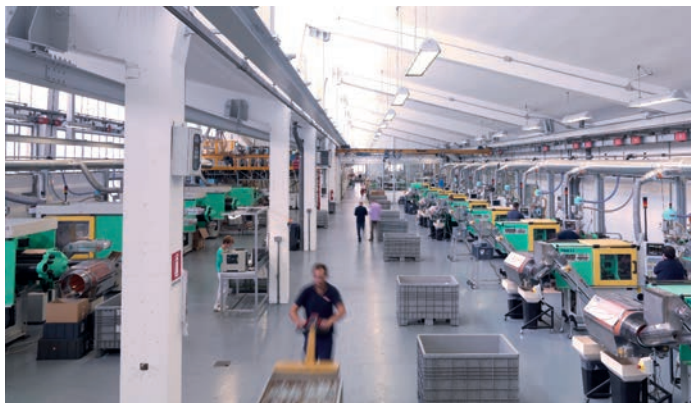




KEY COMPONENTS OF OUR SUCCESS |

Products that are designed for the most diverse applications and installed all over the world need to meet high standards of reliability.

Behind our products there is a solid, flexible and innovative organisation with cutting-edge production facilities, where robotics and automation ensure that we can consistently replicate the desired results. Our testing laboratory is authorised to issue ACAE/LOVAG certificates, accredited to EN ISO/IEC 17025 and qualified to conduct tests according to national and international standards. Our technical support service helps customers to select the right products and commission them, in addition to offering after-sales advice.



LOVAG certified
laboratory

technical support

CUTTING-EDGE LABORATORY |



MAIN TESTS PERFORMED:

- Making and breaking capacities
- Short-circuit with comparator system
- Temperature rise
- Thermal protection functionality
- Verification of dielectric properties
- Verification of terminals mechanical properties
- Verification of IK code degree of protection (impact withstand)
- Verification of IP code degree of protection (ingress protection against water jets)
- Shock and vibration withstand
- Electrical and mechanical durability
- Low current-low voltage contact functionality
- Ambient simulation in climatic chamber
- Glow-wire ignitability of insulating parts
- Immunity to conducted and radiated emission fields
- Immunity to surges, fast transients / bursts and electrostatic discharges.



EXPERIENCE AND EXPERTISE |



To meet the growing demand for technical training of industrial automation and energy management professionals, LOVATO Electric provides a high-profile programme of courses through the LOVATO Academy.

The curriculum includes courses on micro PLCs, energy management and motor starting and control technologies.

energy management

LOVATO Academy





A training area equipped with the latest audiovisual technology and interactive training benches provides the perfect setting for understanding the true potential of our products and software during both function programming and simulation phases. Training is also available over the Internet:

LOVATO Academy offers free live seminars that are streamed worldwide and simply require an Internet connection to participate. There is even a LOVATO Electric channel on YouTube, complete with video tutorials that demonstrate how to configure and use our products by means of practical examples.

interactive training benches

free live seminars

video tutorials



Page 1-4

SM1P...

- Motor protection
- Push button control
- Ranges 0.1...40A (16 choices)
- IEC breaking capacity Icu at 400V: from 100 to 10kA
- Suitable for mounting in modular panels.



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SM1R...

- Motor protection
- Rotary knob type
- Ranges 0.1...40A (16 choices)
- IEC breaking capacity Icu at 400V: from 100 to 20kA
- Thermal and magnetic trip indicator
- UL 508 Type E via accessory (certification obtained for range from 0.1 to 6.5A; pending for all the other ratings).



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SM1RM...

- Starter protection (magnetic only)
- Rotary knob type
- Rated current from 0.16 to 40A
- IEC breaking capacity Icu at 400V: from 100 to 20kA.



Page 1-5

SM2R...

- Motor protection
- Rotary knob type
- Ranges 34...63A (2 choices)
- IEC breaking capacity Icu at 400V: 50kA
- UL 508 Type E.



Page 1-5

SM3R...

- Motor protection
- Rotary knob type
- Ranges 55...100A (3 choices)
- IEC breaking capacity Icu at 400V: 50kA
- Thermal and magnetic trip indicator
- UL 508 Type E via accessory.



Page 1-5

SM1PF...

- Fuse monitoring function
- Push button control
- Fixed thermal protection: 0.2A
- Magnetic trip threshold: 1.2A.



LOVATO Electric motor protection circuit breakers are suitable for new motors with high IE3 efficiency values

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