



**Head office |**

Via Don E. Mazza, 12  
24020 Gorle, Bergamo, Italy  
Tel. +39 035 4282111  
info@LovatoElectric.com

**Sales department |**

Tel. +39 035 4282354  
sales@LovatoElectric.com

**Technical support |**

Tel. +39 035 4282422  
service@LovatoElectric.com



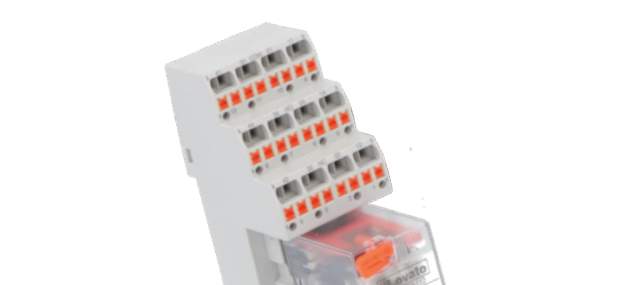
**MOTOR PROTECTION AND CONTROL**



**CONTROL AND SIGNALLING**



**CIRCUIT PROTECTION AND ISOLATION**



**AUTOMATION AND CONTROL**



**ENERGY MANAGEMENT**



**01**  
Motor protection circuit breakers



**02**  
Contactors



**03**  
Motor protection relays



**04**  
Electromechanical starters and enclosures



**05**  
Soft starters



**06**  
Variable speed drives



**07**  
Pushbuttons and selector switches



**08**  
Signal towers and beacons



**09**  
Limit, micro and foot switches



**10**  
Safety modules  
**new**



**11**  
Rotary cam switches



**12**  
Switch disconnectors



**13**  
Fuse holders and fuses



**14**  
Miniature and residual circuit breakers



**15**  
Surge protection devices



**16**  
Modular contactors and other modular devices



**17**  
Earth leakage relays



**18**  
Time relays



**19**  
Monitoring relays



**20**  
Level controls



**21**  
General purpose relays



**22**  
Micro PLCs and HMI



**23**  
Switching power supplies



**24**  
Automatic battery chargers



**25**  
Metering instruments and CTs



**26**  
Power factor controllers and thyristor modules



**27**  
Automatic transfer switch controllers



**28**  
Engine and generator controllers



**29**  
Fire pump controllers



**30**  
Software and applications



**31**  
Expansion modules and accessories

# NEW PRODUCTS 2021/2022

## UL CERTIFICATION FOR TYPE F STARTERS

Our entire range of SM...R motor protection circuit breakers (from 0.1 to 100A) has obtained Type F UL certification for combined installation with contactors. The combination of motor protection breaker and contactor, tested for its coordination in short circuit, covers the main functions demanded of a starter, i.e. short circuit protection, overload protection and motor control.

**PAGE 1-4**



## 160 TO 230A CONTACTORS IN AC3 BF SERIES

These are very compact units: 105mm wide for the three-pole versions and 140mm for the four-pole versions; motor current at 400V from 160 to 230A and Ith thermal current from 250 to 350A. The control coil operates in both AC and DC with electronic control and a wide supply voltage range. The AC/DC coil also features low power consumption, only closes at the correct supply voltage, and has a built-in surge suppressor filter. A wide range of accessories is available, including front- and side-mounting auxiliary contacts, mechanical interlocks, power terminal protection and a connection kit for configuration as star-delta starters or remote switches.

**PAGE 2-4**



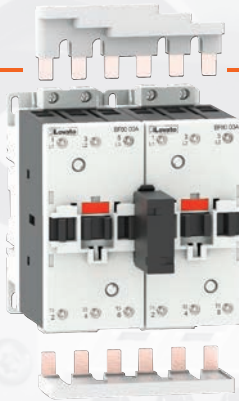
## CONNECTIONS FOR STARTER AND CHANGEOVER CONTACTOR

LOVATO Electric's range of connections for starter and changeover contactor has been greatly expanded. These accessories offer fast cabling, prevent errors, and make the starters both compact and attractive. They are made as a single unit, with the live components completely isolated.

Kits are available for reversing contactors, star-delta starters and changeover contactors in both 3- and 4-pole versions.

The reversing contactor connections are available for contactors up to 230A AC-3 400V, the star-delta connections enable configuring motor starters up to 400A AC-3 400V, while changeover connections are available for contactors up to 350A in category AC-1.

**PAGE 2-23**

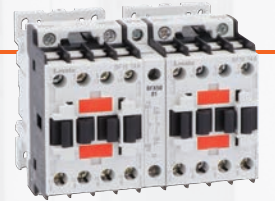


## REVERSING AND CHANGEOVER CONTACTORS ASSEMBLIES

Ready for use, these units are ideal for quickly configuring power grid switching panels for nominal currents from 32A to 165A in category AC-1.

They are equipped with a mechanical interlock with 2 NC contacts which implement the electrical interlock.

**PAGE 4-5**



## SOFT STARTERS ADXN SERIES

Simple and quick to configure, these units are equipped with an extended power range, from 208 to 600VAC, control two phases and feature an integrated bypass relay.

Their extremely compact footprint (45mm wide) makes them ideal for installation in restricted spaces. They have many applications, including pump, compressor, fan, mixer and belt conveyor control.

The range covers nominal currents from 6 to 45A, and includes 3 variants: a basic version with potentiometer regulation, a programmable version featuring NFC technology and an advanced version with both potentiometers and NFC plus integrated current thermal protection. The advanced version can also be equipped with an optional RS485 communications port module.

**PAGE 5-2**



## SINGLE-PHASE VARIABLE SPEED DRIVES VT1 SERIES

These new units round out our range of variable speed drives with single-phase 200 to 240VAC power rated 0.2 to 2.2kW, a compact footprint and integrated RS485 port.

Simple and versatile, VT1 drives can be used for many applications including control of pumps, fans, air conditioning systems, belt conveyors and packaging machinery, to name just a few. Their compact footprint makes them ideal for installation in enclosures with limited space. Their integrated RS485 ports enable them to be controlled remotely and monitored by a supervision system.

They are programmable with the front-panel keyboard, or using a PC with the dedicated software and a USB connection.

**PAGE 6-4**



## PLATINUM SERIES Ø22MM METAL PUSH BUTTONS (LPS)



The Platinum series has been expanded with new Ø22mm metal buttons and switches. The system has a very high IP protection rating against the ingress of dust and water: IP66, IP67, IP69K. The operating temperature range reaches as high as +70°C. And the new metal construction is compatible with all plastic Platinum accessories (electrical contacts, lamp holders, caps, label holders, protections, disks, etc.). The range is composed of spring-return and push-push button actuators, spring-return mechanical button actuators, mushroom head button actuators, double- and triple-touch spring-return button actuators, lever, knob and key selector switch actuators, pilot light heads, USB and RJ45 interfaces and lever manipulators.

**PAGE 7-2**

## PLATINUM SERIES FLUSH-MOUNTED Ø30MM METAL PUSH BUTTONS (LPF)



The Platinum series has been expanded with the new Ø30mm flush mounted metal series with protection ratings IP66, IP67 and IP69K. The spring-return button actuators are available in flush (including illuminated) and protruding (including illuminated) versions, and with extended guards. The push-push button actuators are available in flush (including illuminated) and protruding (including illuminated) versions. The selector switch actuators are available in the lever version (including illuminated) as well as key and knob versions. The pilot light heads are available in green, red, yellow, blue and transparent. Finally, both USB and RJ45 communications interfaces are available.

**PAGE 7-2**

## ASSEMBLED BUTTON PANELS



Platinum series assembled button panels are built of a wide range of actuators, plastic housings and contacts. The actuators are pre-assembled to the cover with a threaded collar. The contacts are snap-mounted to the base of the panel to enable quick cabling and reduce labour should they need to be replaced or upgraded. Further to the catalogue models, we also offer custom versions with the client's choice of actuators, panel and contacts.

**PAGE 7-53**

## PALM SWITCHES



LP9 mushroom head buttons, designed for machine stop and immediate control applications, have an ergonomic design with a large surface for easy actuation with the hand, elbow or foot. The button's large area ensures immediate actuation of machinery and equipment even if the operator already has his hands full. The range is divided into two versions: one with a rocker shaft with jog button, and one with an axial shaft and latching button which releases when pulled out.

**PAGE 7-59**

## LTN SERIES Ø50MM AND Ø70MM SIGNAL TOWERS



LTN series signal towers are available in both Ø50mm and Ø70mm versions. Designed for signalling system status with lights and sounds, they can be assembled from up to 5 modules.

The lamp modules can emit flashing or steady on signals, and are available in green, yellow, red, blue, amber/orange and white. There are also 2 types of sound module with different sound levels. The cabling modules are available for 3 power voltages: 12V, 24V and 110 - 230V.

A variety of mounting options are available, with plastic and metal bases and up to 400mm extension tubes.

**PAGE 8-3**

# NEW PRODUCTS 2021/2022

## SAFETY MODULES

The new LOVATO Electric series of safety modules is designed for applications up to Cat. 4 and performance level PL<sub>e</sub>. Conforming with Machinery Directive EN ISO 13849-1, they are used to monitor and safely control safety circuits in applications with emergency stops, safety gates, magnetic safety switches, safety limit switches, electromechanical interlocks and safety barriers. We also offer a multifunction model which integrates all functions into a single unit, which can be configured with a front-mounted selector.

**CHAPTER 10**



## ROTARY CAM SWITCHES GF SERIES

The new GF series of cam switches is the most compact we offer, and requires very little space for installation and connection: the IP20 rated terminals are mounted on the top and bottom of the switch, so that modules can be mounted side-by-side in a very compact layout. The switches have been developed to satisfy the requirements of manufacturers of small machines in applications up to 20A.

**CHAPTER 11**



## ROTARY CAM SWITCHES 4G SERIES

The 4G series of cam switches is dedicated to high power applications, and is available in 200A to 315A versions. For even heavier duty applications, we offer custom 4G series models rated up to 2000A. Layouts are available up to 12 positions and 12 contact elements (24 contacts).

**CHAPTER 11**



## ROTARY CAM SWITCHES GNA20 TYPE

The GNA20 switch is designed for applications with limited clearance behind the mounting panel and switching layouts with a large number of contacts. The stand out feature of this 20A switches is the option to install up to 4 contacts per contact element, thus offering a maximum configuration of 48 contacts, making it ideally suited for special executions.

**CHAPTER 11**



## SWITCH DISCONNECTORS WITH YELLOW/RED FRONT PLATE GA SERIES

Our GA... series of DIN rail disconnectors now features a new version with yellow/red front plate, typically used for emergency switches. This new type of switch disconnecter is available for currents from 16A to 160A.

**PAGE 12-9**



## 63A AND 160A DOOR MOUNTING SWITCH DISCONNECTORS SERIES

The GA... series of switch disconnectors for door mounting has been expanded with the introduction of two new ratings: 63A and 160A lth thermal current. These new sizes are also available with a fourth simultaneous closing pole for four-pole configurations.

**PAGE 12-10**



## ASSEMBLED SWITCH DISCONNECTORS AND CHANGEOVER SWITCHES GA SERIES

The GA series of disconnectors has been expanded with the introduction of the pre-assembled version of the changeover switches. Available in 6 ratings from 25A to 160A, this type is ideal for three-pole (GA...ET6) and four-pole (GA...ET8) applications.

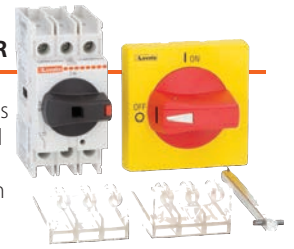
**PAGE 12-17**



## SWITCH DISCONNECTORS GA SERIES: KIT WITH ROD, HANDLE AND TERMINAL COVER

GA series switch disconnectors are now available as a kit including the disconnector itself with terminal covers, a 300mm rod and door lock handle. 3 ratings are available, at 25A, 40A and 63A, in both three- and four-pole versions. The kit handle is the GAX63, with a protruding yellow/red selector, which mounts to a Ø22mm hole with a threaded collar.

**PAGE 12-17**



## SWITCH DISCONNECTORS AND CHANGEOVER SWITCHES GL SERIES

The GL series of switch disconnectors is now available for applications up to 630A. The power contact command technology now enables use of these devices in category AC23A with a 630A 400V load. UL98 (400A) and UL1008 (400A) type approved versions are also available.

The handles, which feature the highest protection rating on the market (IP66, IP69K and NEMA 4X), make it possible to configure a direct control version, or a door interlock version with the addition of an extension.

The range includes terminal mounts, auxiliary contacts, contact covers, phase separators and nut supports.

**PAGE 12-26**

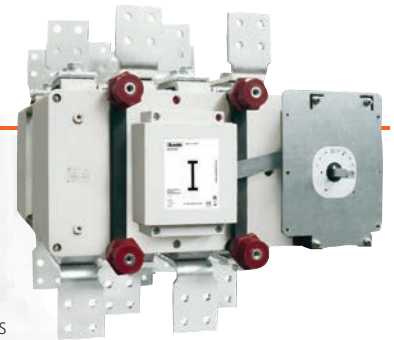


## CHANGEOVER SWITCH DISCONNECTORS GE SERIES

The GE series of changeover switch disconnectors has been expanded with the three new ratings of 2000A, 2500A and 3150A.

Available in both three- and four-pole versions, these disconnectors enable switching of very high power loads.

**PAGE 12-38**



## SWITCH DISCONNECTORS FOR PHOTOVOLTAIC APPLICATIONS GD SERIES

The GD series of switch disconnectors for photovoltaic applications has been expanded with the introduction of 3 new codes covering applications up to 25A 1500VDC and 40A 1000VDC.

The 3 new codes have maximum ratings of 25A / 1000VDC, 25A / 1200VDC and 32A / 1000VDC.

**PAGE 12-46**



## FUSE HOLDERS AND FUSES FOR PHOTOVOLTAIC APPLICATIONS UP TO 1500VDC

LOVATO Electric's range of fuse holders has been expanded to cover photovoltaic applications up to 1500VDC.

There is also a new version with a pilot light to indicate when the fuse has tripped. The fuse holders are designed for 35mm DIN rail mounting.

gPV class fuses can be used in applications up to 20A (10x85mm) and 32A (14x85mm).

**PAGE 13-4**



# NEW PRODUCTS 2021/2022

## MODULAR SWITCH DISCONNECTORS

These disconnectors have the typical form factor of lever actuated modular switches. They are fully compatible with products mounted in electrical enclosures with modular windows like miniature circuit breakers, residual current operated circuit breakers with overload protection and residual current operated circuit breakers. The new modular disconnectors have current ratings from 32A to 125A and are available in 1, 2, 3 and 4 pole versions. They can also be equipped with auxiliary contacts.

**PAGE 14-13**



## RESIDUAL CURRENT OPERATED CIRCUIT BREAKERS

The introduction of the new P1RD type enable installation of auxiliary contacts and connection of both residual current operated and miniature circuit breakers on a single power bar. They are available up to 63A, in 2 and 4 pole versions with AC or A class tripping, and for residual currents of 30mA and 300mA. A device to padlock the lever is also available.

**PAGE 14-14**



## RESIDUAL CURRENT OPERATED CIRCUIT BREAKERS WITH OVERLOAD PROTECTION

The new P1RE type offers the option of installing auxiliary contacts and features a double actuator lever to differentiate residual current operation from overload protection. They also feature a new isolating barrier on the connection terminals. This means that the protection rating of IP20 covers not just the front of the product but also the connection terminals, which maintain the protection rating whatever cable cross-section is used. They are available up to 40A in the 1P+N version with AC or A class tripping, for residual currents of 30mA and 300mA and a type C thermal trip curve.

**PAGE 14-15**



## TYPE 2 AND TYPE 1, 2 SPD FOR PHOTOVOLTAIC APPLICATIONS

LOVATO Electric's SPD range has been expanded with the introduction of new type 2 SG2DG models for rated voltages of Un 600VDC and SA2EDG for Un 1100VDC respectively, and type 1, 2 SG2EDG for Un 1100VDC.

**PAGE 15-7**



## BELLS AND MODULAR TRANSFORMERS

This range of products is particularly suited to third party service and residential applications. The sound modules have either a classic bell or buzzer sound, with noise level up to 84dB. The transformers are available in versions for intermittent duty, for bells and buzzers, as well as continuous duty versions. They are rated for 15VA to 63VA with output voltages of 12V and 24V. All transformers have integrated overload and short circuit protection (PTC).

**PAGE 16-5**



## ZERO CROSSING STAIRCASE TIME RELAY

These are used in residential and third party service applications for timed stairwell light actuation.

Load switching uses zero crossing technology to reduce the peak load generated when the light is turned on, a very important criterion for LED lamps.

This extends the life of the lamp itself and also protects the time relay's contact against sticking. In addition to the timed light actuation function, the units also feature a stairwell cleaning function with an option to warn the user when the lamp is about to be switched off.

**PAGE 18-4**



## BACKUP POWER SUPPLIES PMVFUPS01

Standards CEI 0-21 and CEI 0-16 which set out the technical regulations for the connection of active and passive users to low and medium voltage utility company power grids provide for an auxiliary power supply system rated to enable, should the main power supply fail, operation of the interface protection system, retentive closure of the interface device and optional retripping for at least 5 seconds. LOVATO Electric offers the PMVFUPS01 backup power supply, designed and tested in combination with only our PMVF interface devices listed in the catalogue.

**PAGE 19-13**



## PMVF80 INTERFACE PROTECTION SYSTEM

LOVATO Electric has expanded its PMVF interface protection system range with the addition of the PMVF80, designed for use in cogeneration plant in conformity with the German regulations for the connection of renewable energy generators to power grids (VDE-AR-N 4105 and VDEV 0126-1-1), as applicable in Germany and Switzerland and also accepted in many other countries, including Austria, South Africa, Turkey, Greece, Belgium, France, Denmark, the Czech Republic and Poland, among others.

**PAGE 19-15**



## INDUSTRIAL RELAY HR40 TYPE

The HR40 relay expands the HR series of industrial relays and is specifically designed to enable the user to assess the wear of the contacts, thanks to their frontal positioning and the unit's transparent housing. Furthermore, the absence of a test unit makes it ideal for applications in which manual relay actuation is to be prevented.

It is available in versions with 1 16A changeover contact or 2 10A changeover contacts.

**PAGE 21-6**



## PUSH-IN SPRING LOADED SOCKET FOR INDUSTRIAL RELAY HR SERIES

LOVATO's spring loaded sockets for HR series industrial relays are now even more convenient to use. The use of push-in technology greatly simplifies and speeds up cabling. They have excellent, highly effective cable retention against shock and vibration. Even high levels of traction during cabling and service do not affect their ability to retain the cable. The terminal release button, easy to identify and operate, also makes it very easy to release the cable when needed.

**PAGE 21-6**



## ATEX CERTIFIED INDUSTRIAL RELAY HR80 TYPE

Propane gas is ever more widely used in refrigeration applications due to its high energy efficiency and eco-friendliness. However, this means that the electrical equipment installed in refrigerators containing the gas must be conforming with the ATEX regulations for potentially explosive atmospheres.

HR80 relays are designed specifically for these applications, are rated for a current of 30A and are available for 2 NO contacts or 2 changeover contacts. They are equipped with Faston terminals and suited for screw mounting to the panel.

**PAGE 21-8**





# NEW PRODUCTS 2021/2022

## COMPACT POWER SUPPLIES PSE1 SERIES

LOVATO Electric has expanded its offering of switching power supplies with the introduction of the PSE1 series single-phase units: ultra-compact, simple and competitive. Made for DIN rail mounting, they have ultra-compact housings which make them ideal for installation in enclosures with restricted space. They feature a 100...240VAC single-phase input and 24VDC output, and are available for powers from 30W to 120W.

**PAGE 23-2**



## MID AND UL TYPE APPROVED ENERGY METERS WITH EXTENDED TEMPERATURE RANGE UP TO 70°C

Our range of MID type approved single- and three-phase meters has been expanded with direct insertion models with operating temperature extended up to 70°C, ideal for applications in electric vehicle recharging stations, even when installed outdoors, and hence subject to high levels of heating in warm climates.

The following units are available:

- single-phase meter up to 40A in a single module (17.5mm), MID approved
- three-phase meter up to 80A in a just 4 modules (72mm), MID approved
- integrated RS485 communications port
- three-phase meter up to 80A in just 4 modules (72mm), cULus approved, with ANSI C12.20 compliant accuracy (class 0.5).

**PAGE 25-13**



## DMG620 MULTIMETER WITH INTEGRATED ETHERNET PORT

The requirement to monitor plant using energy monitoring software is ever more common in industrial and service applications.

The new DMG620 multimeter is equipped with an Ethernet port to facilitate integration into data networks. Its class 0.5s active energy metering accuracy enables it to satisfy all energy analysis and diagnostics requirements.

**PAGE 25-23**



## A NEW GENERATION OF METERING INSTRUMENTS DMG SERIES

Our DMG series of digital metering instruments has been renewed with new advance models with:

- a larger colour LCD graphic display
- smartphone programming option using NFC technology
- 4 versions are available with the following options:
  - integrated RS485 and Ethernet communications port
  - integrated data memory
  - webserver access to settings and measurements.

**PAGE 25-19**

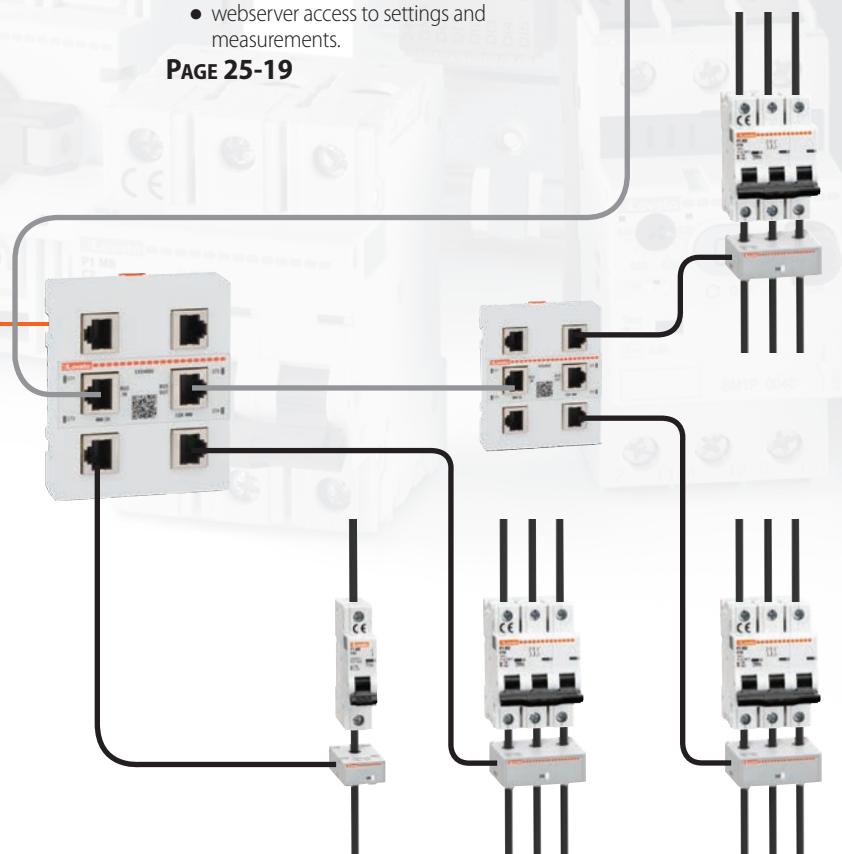


## MULTI-CIRCUIT METERING SYSTEM

With current metering modules and electronic current transformers, our new DMG series multimeters enable multi-circuit metering in power enclosures in which the voltage metering is concentrated in a single point, and current draw metering points can be configured downline of the individual outputs quickly and easily. The result is a modern energy monitoring system with numerous benefits:

- reduced installation errors
- reduced cabling requirements
- space saving on the front of the enclosure since the data are available on the display and via the communications interface of the DMG multimeter to which the multi-circuit system is connected.

**PAGE 25-20**



## WOUND PRIMARY AND SOLID CORE CTs FOR BARS

LOVATO Electric's wide range of current transformers is further expanded by the introduction of wound primary transformers and the integration of the solid core type. Wound primary technology makes it possible to read even very low currents (to 5A).

The new solid core transformers have a form factor featuring a cavity for mounting to electric bars, thus optimising their use.

**PAGE 25-32**



## AUTOMATIC TRANSFER SWITCH CONTROLLER ATL500

LOVATO Electric's offering of automatic transfer controllers has been expanded with the simple, ready to use ATL500. Dedicated to switching between two lines, it has a front mounted LED synoptic panel for system status display, and features NFC technology for configuration with a smart device (system data, password, I/O functions, etc.). It has two voltage inputs for three-phase + neutral metering, from which it also draws its own power, thus eliminating the need for an auxiliary power supply. It can also be installed in single- and two-phase systems. Its integrated outputs enable it to control contactors and motorised switches.

**PAGE 27-2**



## CONTROLLERS FOR SINGLE-PHASE FIRE PUMPS

Our electric pump controllers are now also available for single-phase motors used in systems lacking three-phase power, such as residential buildings.

**CHAPTER 29**



## Synergy SOFTWARE

Synergy now has a new graphic design, featuring:

- a new interface which adapts to the display device (PC, smartphone, tablet)
- a new user experience which makes Synergy's functions user-friendly for even novice users, leveraging the most recent web-based technologies
- completely user-configurable and manageable reporting.

**CHAPTER 30**

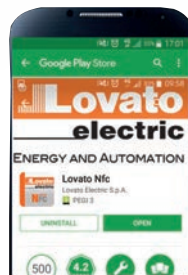
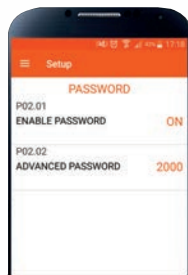
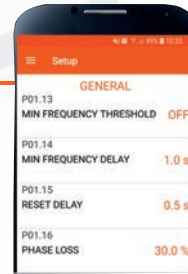
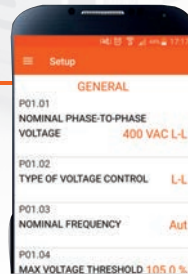
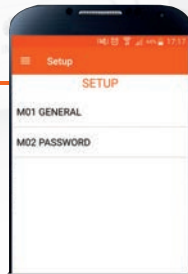


## NFC iOS AND ANDROID APP

Now also available for iOS on the App STORE, LOVATO Electric's NFC app enables device configuration with tablets and smartphones equipped with the NFC technology.

Configuration is possible even when the device is not powered on.

**CHAPTER 30**



# WORLDWIDE



## PRODUCTION **SITES**

In addition to its historic Italian head offices, the company has **two factories**: one in the **Czech Republic**, which handles the assembly and testing of electromechanical products, and one in **Croatia** which designs and manufactures cam switches.



Pisek - CZECH REPUBLIC

**United Kingdom**  
LOVATO ELECTRIC LTD  
[www.Lovato.co.uk](http://www.Lovato.co.uk)

**Germany**  
LOVATO ELECTRIC GmbH  
[www.LovatoElectric.de](http://www.LovatoElectric.de)

**France**  
LOVATO ELECTRIC SAS  
[www.LovatoElectric.fr](http://www.LovatoElectric.fr)



# INTERNATIONAL PRESENCE

Our successful business in Italy has enabled us to open 15 foreign branches (in Germany, the United Kingdom, Czech Republic, Spain, USA, Poland, Canada, Arab Emirates, Turkey, China, Romania, France, Russia, Croatia and Switzerland) and set up a network of 90 importers to assure availability of **LOVATO Electric** products in over 100 countries worldwide.

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

**Spain**  
LOVATO ELECTRIC S.L.U.  
[www.LovatoElectric.es](http://www.LovatoElectric.es)

**Poland**  
LOVATO ELECTRIC SP. Z O.O.  
[www.LovatoElectric.pl](http://www.LovatoElectric.pl)

**Czech Republic**  
LOVATO ELECTRIC S.R.O.  
[www.LovatoElectric.cz](http://www.LovatoElectric.cz)

**China**  
LOVATO ELECTRIC  
(SHANGHAI) CO LTD  
[www.LovatoElectric.cn](http://www.LovatoElectric.cn)

**Russia**  
OOO LOVATO ELECTRIC  
[www.LovatoElectric.ru](http://www.LovatoElectric.ru)

**Turkey**  
LOVATO ELEKTRİK LTD  
[www.LovatoElectric.com.tr](http://www.LovatoElectric.com.tr)

**USA**  
LOVATO ELECTRIC Inc.  
[www.LovatoUsa.com](http://www.LovatoUsa.com)

**Canada**  
LOVATO ELECTRIC Corp.  
[www.Lovato.ca](http://www.Lovato.ca)

**United Arab Emirates**  
LOVATO ELECTRIC ME FZE  
[www.LovatoElectric.ae](http://www.LovatoElectric.ae)

**Romania**  
LOVATO ELECTRIC SRL  
[www.LovatoElectric.ro](http://www.LovatoElectric.ro)

**Croatia**  
LOVATO KONČAR d.o.o.  
[www.LovatoElectric.hr](http://www.LovatoElectric.hr)

**Switzerland**  
LOVATO ELECTRIC AG  
[www.LovatoElectric.ch](http://www.LovatoElectric.ch)

ITALIAN DESIGN



## CERTIFICATED **TOTAL QUALITY**

For us, quality has always been the priority, and since 1992 our

– management system has been certified to **ISO 9001** - making us one of the first in Italy.

The modern concept of quality embraces a wide range of factors, and we also have the following certifications:

- **ISO 14001** for environmental management, the protection and sustainability of the environment in which we live;
- **ISO 50001** for energy management, with the objective of increasing the sustainability of our operations;
- **ISO 45001** for safety, the primary concern in any workplace.



## A LONG TRADITION OF STYLE

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 electromechanics, electronics and automation go hand in hand. **Italian design** has always been our hallmark: our designers, researchers and engineering experts work in our Bergamo offices. Our mission is to create **innovative, reliable products**, and offer services to satisfy our customer's requirements.



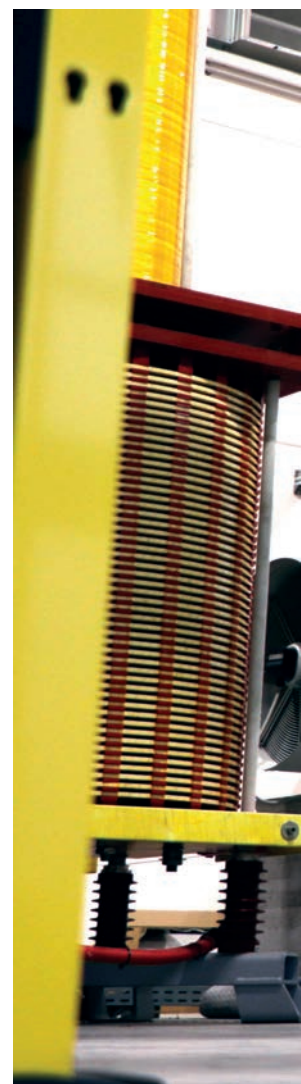
Bergamo - ITALY

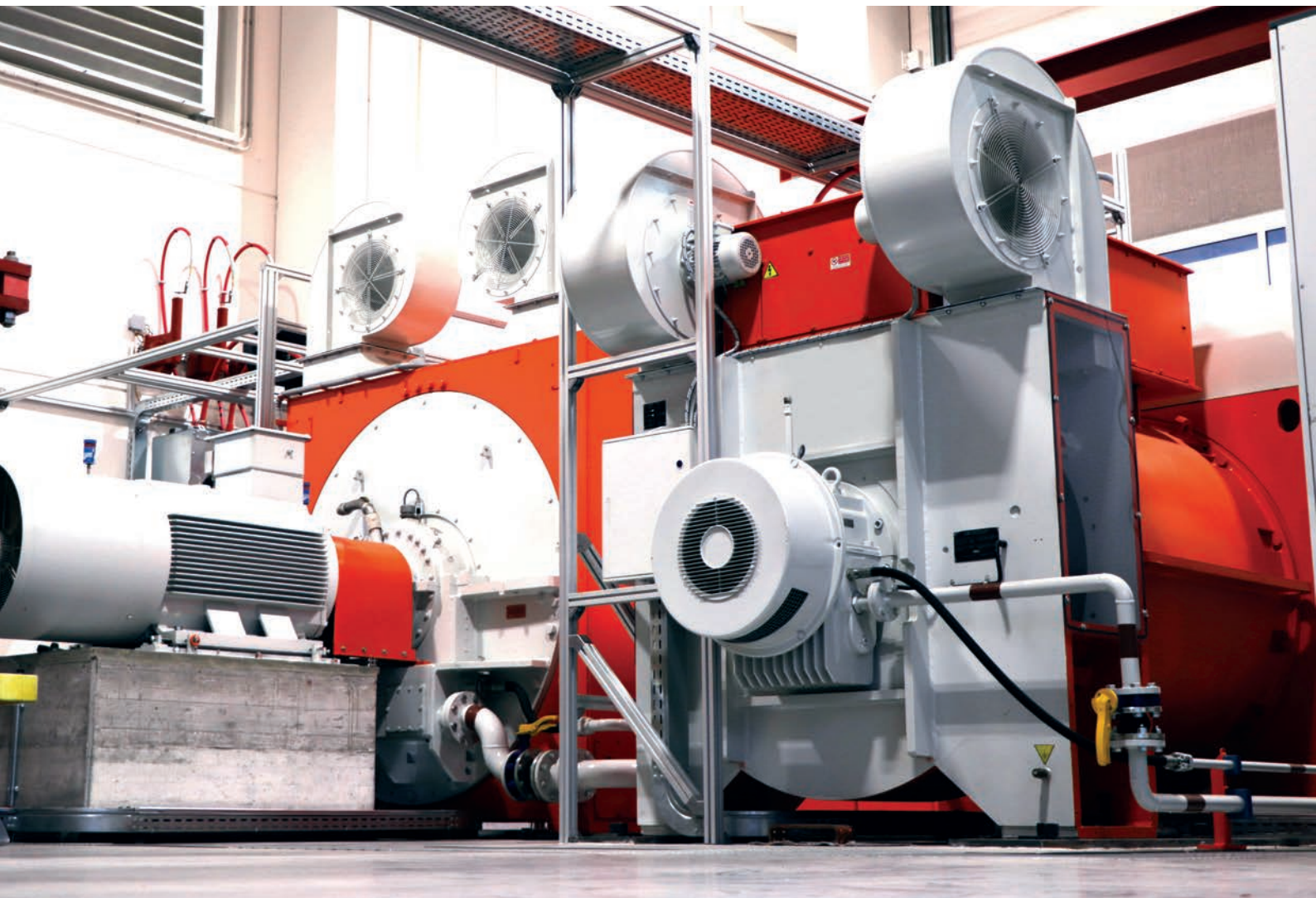
## THE COMPONENTS OF SUCCESS

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 is a solid, flexible and innovative organisation with cutting-edge production facilities, where robotics and automation ensure consistent results.

Our test laboratory is fitted out with modern equipment and works together with our design offices to reduce time to market for new products and grow our company know-how.

Certified to EN ISO/IEC 17025, LOVATO LAB is authorised to run tests according to Italian and international standards and issue **ACAE/LOVAG certificates**.





## CUTTING-EDGE **LABORATORY**

### **LOVATO LAB runs:**

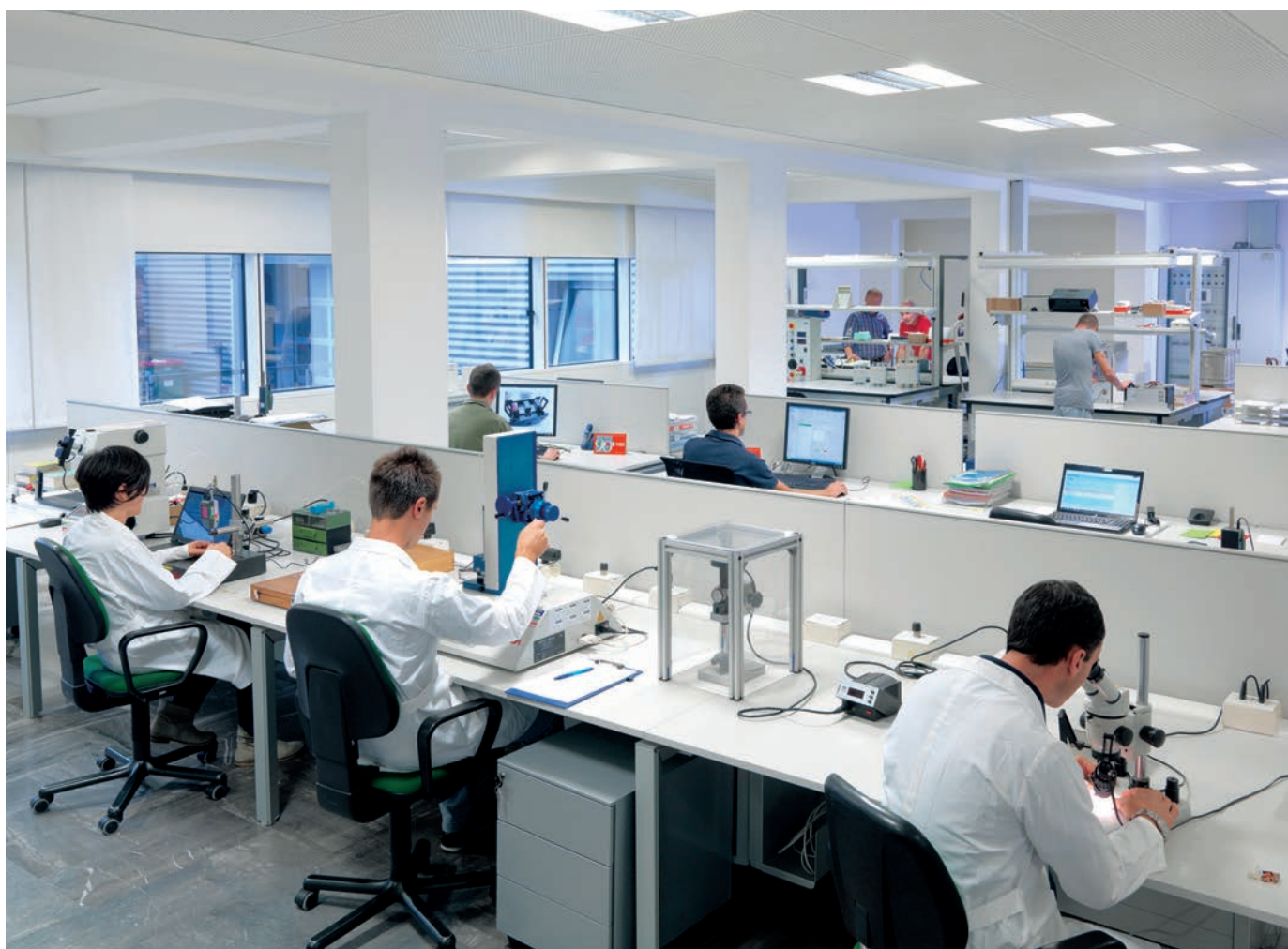
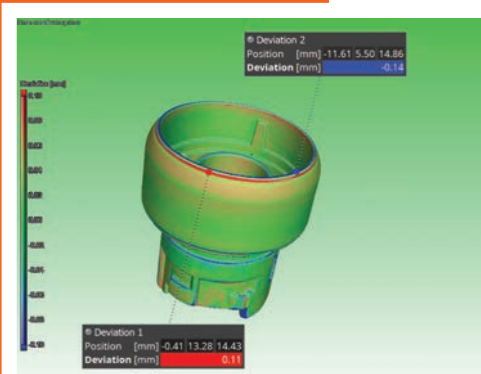
- short circuit tests per IEC and UL standards up to 30kA current at 600V;
- closure and breaking power tests (overload);
- conventional duty performance tests (endurance) up to 6300A at 690V;
- heating tests up to continuous 3000A in low voltage;
- EMC tests in a semi-anechoic chamber;
- energy metering accuracy tests using high precision current and voltage generators;
- temperature and thermal trip tests;
- synthetic short circuit system up to 65kA and programmable current generators;
- environmental tests using climatic and saline mist chambers for IP protection rating verification;
- impact and vibration tests using a vibrating table;
- studies of physical phenomena using high speed and thermal cameras;
- electrical and mechanical life tests using a large number of test benches and a low voltage synchronous alternator for the power generation up to 1800kVA;
- glow-wire testing of plastic materials using a custom chamber and several dielectric testing stations;
- there is also a 225KV tomograph for testing the most varied and stringent quality requirements, which analyses the structure of parts in their entirety, both internally and externally.



# QUALITY CONTROL

LOVATO Electric, with a view to continuous improvement, invests in the professional growth of its employees and in advanced quality control instrumentation and software.

We have modern measurement system capable of satisfying the most varied and stringent quality control requirements, and employ product validation (PPAP), risk analysis (FMEA) and problem solving (8D) methods to guarantee reliability and continuously improve our processes and products.

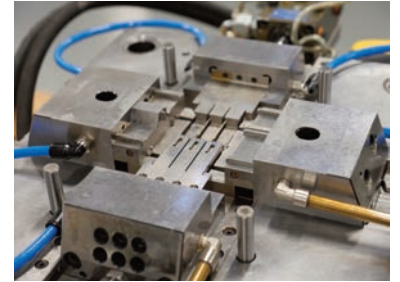


# PRODUCTION



## MOULD CONSTRUCTION

Our tooling department designs and fabricates the moulds we use to make our plastic components. The department, with its highly experienced and qualified staff and working together with the design office, makes numerous new moulds every year.



## PLASTIC MOULDING

The moulding department has always been one of the company's strategic resources. We have numerous presses, from 50 to 300 tons (both electric bi-component), working 3 eight hour shifts around the clock.



## ASSEMBLY

Our assembly department is housed in a large area. It features the most advanced assembly and testing lines. The machines are connected to the company computer system to enable continuous performance monitoring, production programming in line with the Industry 4.0 philosophy, and registration of test and tracking data for each individual product.



# TRAINING



LOVATO ACADEMY runs our client training programme. Located at our Bergamo offices, the classroom is equipped with the most recent audiovisual aids and **interactive training benches**, and is the ideal place to learn about the use of our products and their programming and monitoring software.

LOVATO Electric's technical training uses various methods for delivering content in a blended learning approach, combining conventional methods with the teacher in front of the class with remote synchronous training and online tutorials.

Our training programme includes classroom courses, mainly focussed on practical work with the product, live webinars to keep our clients up to date with emerging standards and technologies, and video tutorials, published on our YouTube channel, as an aid to installing and programming our products directly on the client's PC or smartphone.

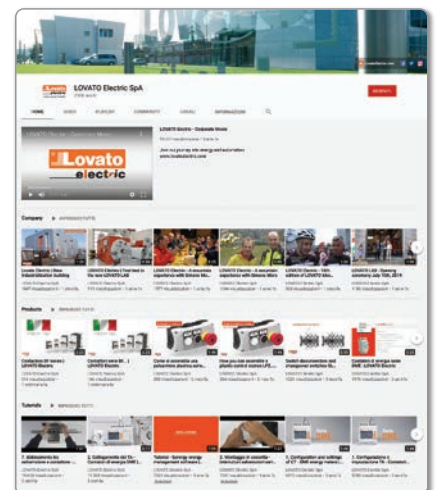
For more details on our training programme, go to [academy.LovatoElectric.com](https://academy.LovatoElectric.com).



# EXPERIENCE AND EXPERTISE

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

The offering includes, among others, courses on: micro PLCs and HMIs, **energy management**, electric motor starting and control, and surge arrestors.



Register with our YouTube channel to see the latest video tutorials and videos about our company.

