




# Products and solutions for photovoltaic systems

 **Lovato**  
**electric**  
*100% electricity*





LOVATO Electric S.p.A. - Bergamo - Italy

## Tradition and Innovation



### Since 1922

The first LOVATO Electric headquarters founded in Bergamo in 1922: the starting point of the grand industrial adventure.



### Italian design

Highly-qualified design, technical and research staff fully develop and design innovative and reliable products in the Bergamo offices, using state-of-the-art software.



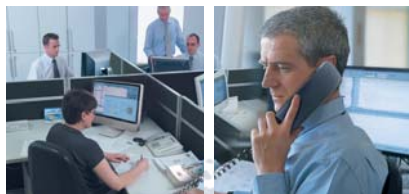
### Most advanced manufacturing facilities

LOVATO Electric manufactures its products with cutting-edge technology.



### Quality and certifications

LOVATO Electric products comply with the major international quality standard requirements.










### Customer care service

The Customer Service team offers prompt and professional assistance for products and applications.

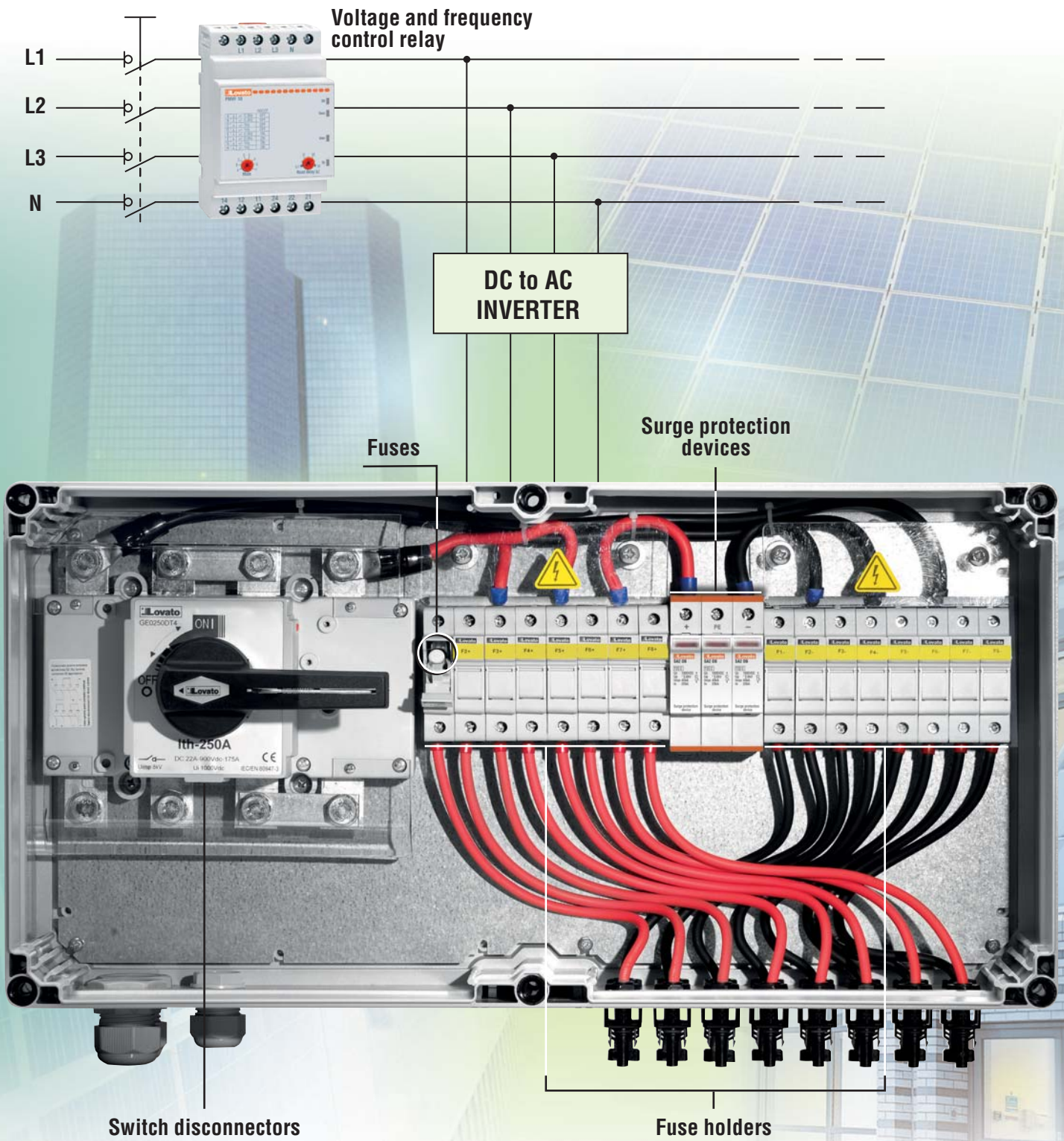


### International presence in over 100 countries

Eight foreign branches and widespread official sales affiliates assure product assistance and availability in over 100 countries worldwide.

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|---|---|---|---|
| <br><b>United Kingdom</b><br>LOVATO ELECTRIC LTD | <br><b>Germany</b><br>DELTEC LOVATO GmbH | <br><b>Spain</b><br>LOVATO ELECTRIC S.L.U.       | <br><b>Poland</b><br>LOVATO ELECTRIC SP. Z O.O.              |
| <br><b>Czech Republic</b><br>LOVATO SPOL. S.R.O. | <br><b>USA</b><br>LOVATO ELECTRIC INC    | <br><b>Canada</b><br>LOVATO ELECTRIC CORPORATION | <br><b>Mexico</b><br>LOVATO ELECTRIC DE MEXICO, S.A. DE C.V. |

# PRODUCTS AND SOLUTIONS



# SOLUTIONS FOR PHOTO

## SWITCH DISCONNECTORS

- ▶ Versions for systems up to 850A at 1000VDC
- ▶ Connection configuration with 3 - 4 - 6 - 8 poles in series
- ▶ Versions: direct operating, door coupling and in housing
- ▶ Wide range of accessories that consent to realize 6-8 poles combinations
- ▶ DC21B utilisation category.



## CONTACTORS

- ▶ Three-pole versions up to 630A in AC3 duty
- ▶ Four-pole versions up to 1600A in AC1 duty
- ▶ Four-pole versions 2NO+2NC or 4NC
- ▶ Versions for AC or DC control
- ▶ Low-consumption DC versions.



## FUSE HOLDERS AND FUSES

- ▶ Modular concept for 10x38 fuse sizes up to 20A at 1000VDC
- ▶ One and two pole versions with or without status indication for systems up to 1000VDC
- ▶ IP20 protection degree, finger safe and sealable cover to increase user's safety
- ▶ DC21B utilisation category
- ▶ DC cylindrical 10x38 fuses from 2A to 20A, dedicated for photovoltaic sector and comply with IEC/EN 60269-6.



## SURGE PROTECTION DEVICES

- ▶ Multi-pole versions (+, -, PE), with systems up to 1200VDC
- ▶ Modular devices with plug-in modules
- ▶ Versions with or without suppressor life status indicator
- ▶ Versions comply with UTE C 61740-51 Guide and cURus certified.



## PROTECTION RELAY

- ▶ Modular versions for 35mm DIN rail fixing
- ▶ Minimum and maximum voltage monitoring relays for single and three-phase systems, with or without neutral
- ▶ Voltage monitoring relays for asymmetry, phase loss and phase sequence control
- ▶ Minimum and maximum current monitoring relays
- ▶ Frequency monitoring relays
- ▶ Phase shift control relay
- ▶ Voltage and frequency control relay (compliant with "ENEL GUIDE Ed. 2.1-12.2010).



## SWITCHING POWER SUPPLIES

- ▶ Single-phase versions up to 480W output, two-phase up to 100W and three-phase up to 960W
- ▶ 12VDC and 24VDC versions
- ▶ Modular and DIN rail mount versions
- ▶ Output voltage adjustment by front potentiometer
- ▶ Version with configurable parallel connection.



# VOLTAIC SYSTEMS

## MEASURING INSTRUMENTS

- ▶ Digital instruments to monitor the AC network downstream the inverter (active and reactive energy counters, imported and exported energy meters, tariff functions)
- ▶ Digital voltmeters, ammeters, wattmeters, frequency meters and cosphi meters
- ▶ Digital multimeters, expandable, with graphic LCD
- ▶ Totally programmable digital inputs and outputs
- ▶ Communication interface RS485, RS232, USB, Ethernet for remote control and datalogger.



## ENERGY METERS

- ▶ 2004/22/EC (MID) approved versions
- ▶ For single and three phase systems
- ▶ Voltage, current, power, power factor and frequency measurements
- ▶ Models with direct connection or by CT with 5A secondary
- ▶ Front metrological LED
- ▶ Outputs programmable as energy pulses or as alarm indication outputs
- ▶ Data concentrator with RS485 serial port
- ▶ Active energy measurement accuracy class 1 (EN 62053-21)
- ▶ Expandable models with EXM... modules (inputs, outputs and communication interface).

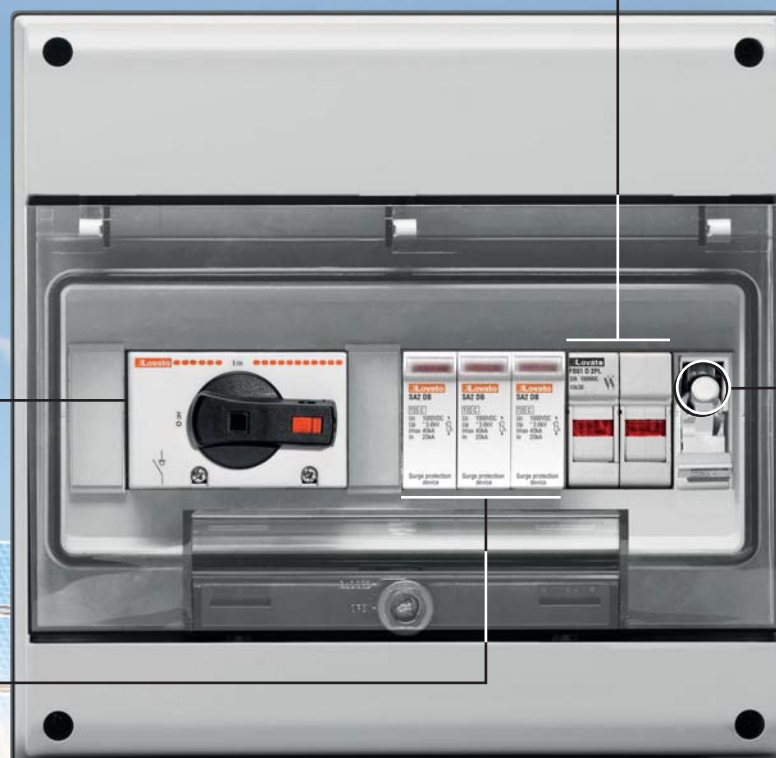


MID

## Fuse holders

Switch disconnectors

Surge protection devices



Fuses



[www.LovatoElectric.com](http://www.LovatoElectric.com)

**LOVATO ELECTRIC S.P.A.**

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