INSULATION MONITORING DEVICES FOR DC CHARGING STATIONS **PMIC** TYPE

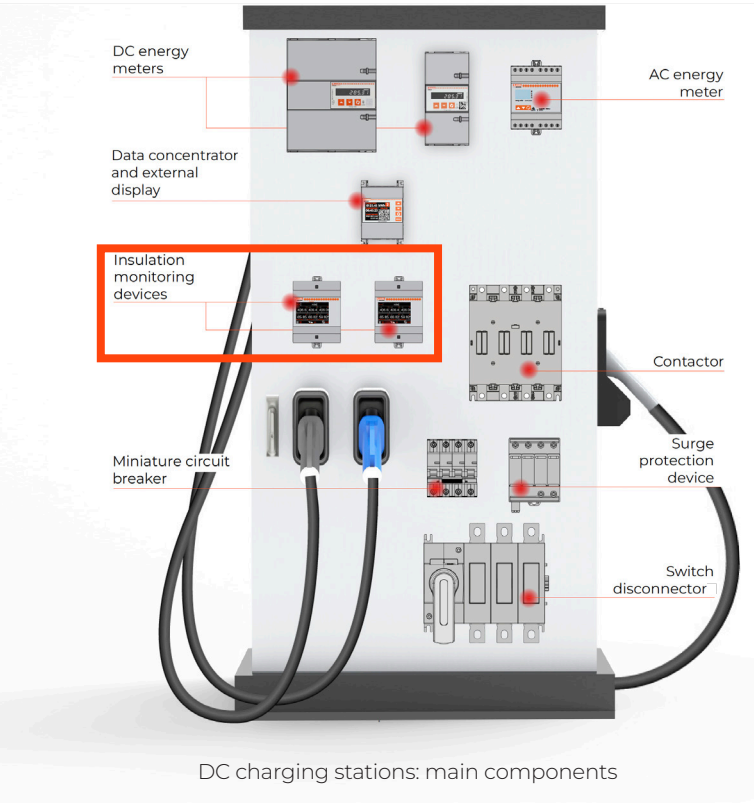
Lovato electric

ENERGY AND AUTOMATION

INSULATION MONITORING DEVICES PMIC TYPE

Insulation monitoring devices **PMIC** type are designed for **continuous supervision of the insulation resistance** of ungrounded DC systems (IT), used in electric vehicle charging stations.
These devices **detect insulation partial loss or developing faults**, that could lead to electric shock or fire hazards, enabling **preventive maintenance** and ensuring high system **reliability** and operational **safety**.

A fault in the insulation can't be seen. Until it's too late!



DC charging stations: main components

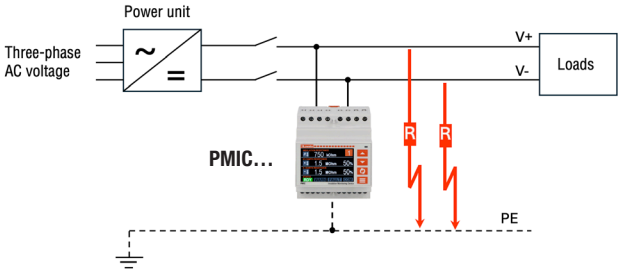
Insulation degradation is silent and progressive: in IT systems, a first fault stays invisible — a second can be severe, even lethal.

Main causes

- **Thermal stress**: heat from high current hardens and cracks cable insulation
- **Environmental factors**: humidity, salt spray and temperature fluctuations penetrate connectors
- **Mechanical wear**: bending, handling and vehicle crushing damage charging cables
- **Chemical contamination**: dust, oils and pollutants create conductive paths on PCB surfaces and power modules.

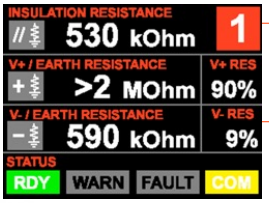
The solution? Insulation monitoring device!

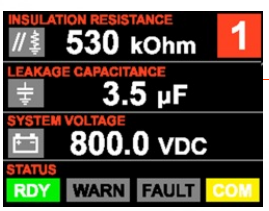
The PMIC continuously monitors insulation resistance, triggering a warning and a trip alarm when it drops below set thresholds.



VERSIONS WITH COLOR DISPLAY

- 7 languages: English, Italian, Spanish, French, German, Portuguese, Polish
- Keypad for parameter settings
- Clear view of measures and status





Channel number

PMIC...

Measures
- Insulation resistance
- V+/earth resistance
- V-/earth resistance
- Leakage capacitance
- System voltage

BLIND VERSIONS WITH NFC CONNECTIVITY

- 4 status LEDs
- NFC connectivity for programming with Android and iOS smart devices
- Protection with password

PMIC...B

Status LEDs
- ON: presence of auxiliary supply voltage
- READY: charger ready to operate
- WARNING: insulation resistance under the warning value
- FAULT: insulation resistance under the fault value

NFC connectivity

Download the LOVATO NFC App!

GET IT ON Google Play

Download on the App Store

SINGLE OR DUAL CHANNEL

For the monitoring of 1 or 2 charging sockets with just one device.

BUILT-IN RS485 PORT

For monitoring, supervision, or parameter settings via Modbus-RTU protocol.

COMPACT DIMENSIONS

- **Only 4-module** wide housing (71.6x90x63mm)
- **All-in-one:**
  - DC voltage measurement inputs
  - Auxiliary supply voltage 12-24VDC
  - 3 SSR signalling outputs per channel (ready, warning, fault)
  - 1 digital input with test/reset/inhibition function (2 inputs for PMIC2...)
  - RS485 port.

MCS READY

- Versions with operating voltage up to 1200VDC or **1500VDC** for Megawatt Charging Systems.
- Active balancing helper function for version 1500VDC

CERTIFICATIONS

- **cURus** certification (pending) for north American market
- **Compliant with standards** (with TUV test report)
  - IEC/EN 61557-8, reference standard for IMD
  - IEC/EN 61557-18 draft, reference standard for IMD for DC charging stations, planned for 2027
  - IEC 61851-23, standard for charging stations.

WIDE TEMPERATURE RANGE

Operating temperature **-40...+70°C,** designed to withstand even the most demanding environments.

SELECTION GUIDE

	PMIC10K00B	PMIC13K00B	PMIC13K00	PMIC13K50	PMIC23K00
Display	-	-	●	●	●
NFC	●	●	-	-	-
Built-in RS485 port	-	●	●	●	●
Number of monitored channels	1	1	1	1	2
Maximum monitored voltage	1200VDC	1200VDC	1200VDC	1500VDC	1200VDC
Destination use	CCS	CCS	CCS	MCS	CCS

Accessory: PMICXC1 (cable kit molex connector for auxiliary supply voltage, digital inputs and RS485 port).

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