



DRC61 **Insulation Monitoring Solution for fast EV Charging stations**

Controls

A New Layer of Safety for DC EV Charging

Fast DC charging stations operate at voltages up to 1000 V, where even small insulation faults can compromise safety, damage equipment, or cause unplanned downtime. Ungrounded (IT) DC systems, typical of Mode 4 EV charging architectures, require continuous, reliable insulation monitoring to detect degradation before it becomes a failure.

DRC61 is Carlo Gavazzi's new insulation monitoring device, purpose-built for unearthed DC systems up to 1000 V DC. It continuously monitors the insulation resistance between the DC lines and ground, detecting both gradual degradation and sudden faults. It is the perfect complement to the DCM1 DC energy meter within the same charging station.



Addressing Today's EV Charging Challenges

Charge point operators and OEMs face growing requirements:

- ensuring user and equipment safety on high-voltage DC systems
- minimising unplanned downtime and maintenance costs
- complying with international EV charging and insulation-monitoring standards
- supporting both CCS and CHAdeMO architectures with a single, standardised platform

Without continuous insulation supervision, faults remain hidden until they cause a shutdown or a safety incident.

DRC61 addresses this by transforming insulation resistance data into clear, actionable pre-alarm and alarm signals.

The Carlo Gavazzi Solution

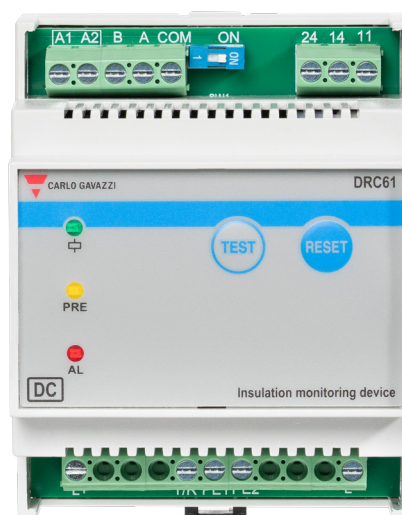
DRC61 is a flexible, single-module insulation monitoring solution designed specifically for Mode 4 DC EV charging stations. It superimposes a measuring signal across the L+/L- lines and PE, continuously comparing the result against configurable setpoints to detect insulation faults early.

Two independently configurable SPST relay outputs provide separate pre-alarm and alarm signals, enabling preventive maintenance before a critical failure occurs. Local and remote Test/Reset functions, clear LED diagnostics, and fast configuration via the free UCS software make commissioning simple and fast.

Our key products

DRC61 - Insulation monitoring device for ungrounded DC EV charging systems

- Single device from 50 up to 1000 V DC: continuous insulation monitoring in one compact module
- Enhanced system safety: early detection of insulation degradation helps prevent unexpected shutdowns and costly downtime
- Optimised for EV fast charging: designed specifically for Mode 4 DC charging stations
- Design flexibility: compatible with both CCS and CHAdeMO charging systems
- Configurable pre-alarm and alarm setpoints for preventive intervention before critical failures
- Fail-safe operation: default de-energise-on-fault logic for higher operational security
- Local & remote Test/Reset functions also via Modbus command
- Modbus password lock
- Fast configuration via the free UCS software, with real-time data view for diagnostics
- Certified compliance: IEC 61851-23, IEC 61557-8, and UL 2231-1/-2 listed



Data sheet



DRC61

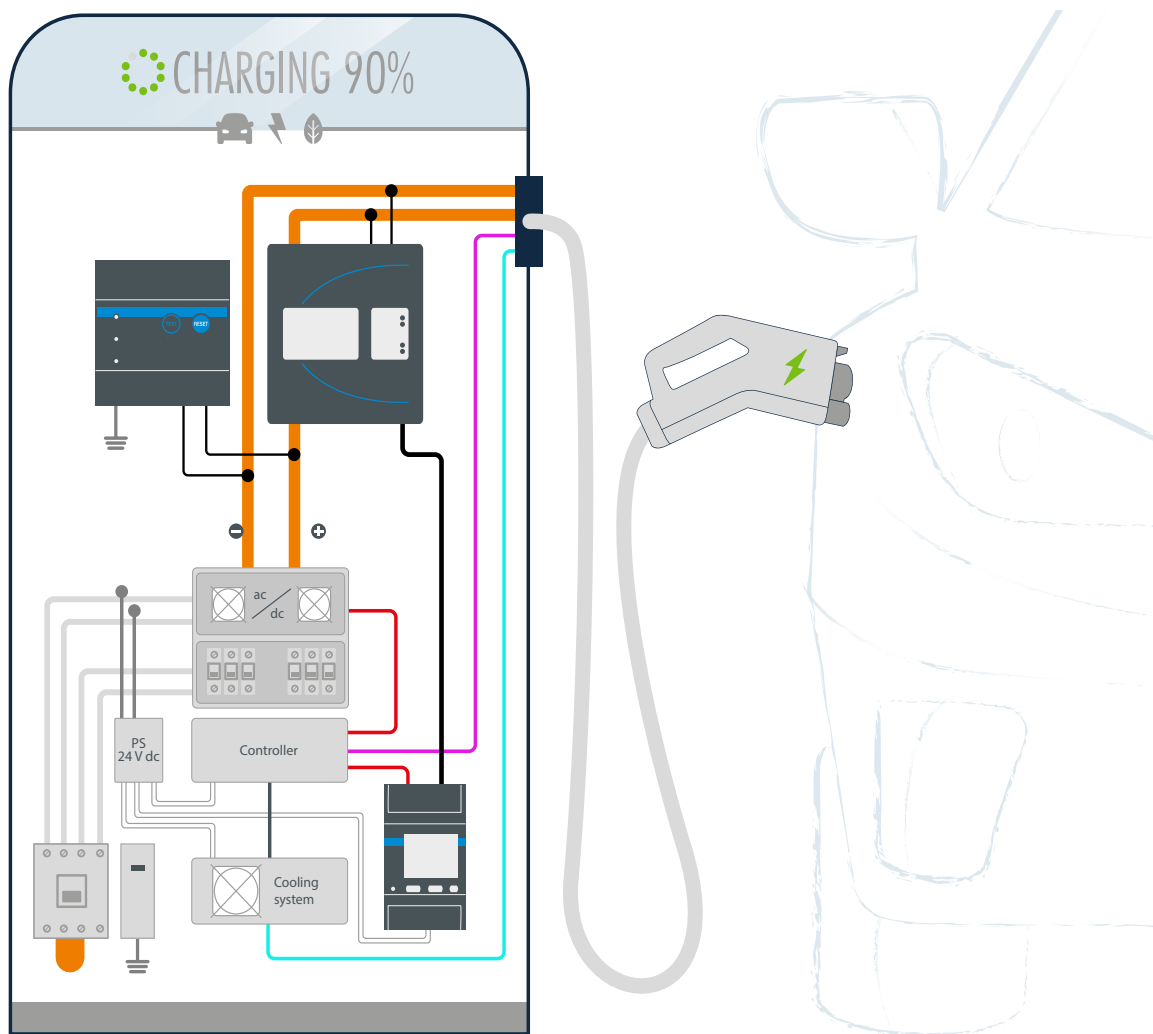
Carlo Gavazzi products

Architecture

Structure and principle of operation

DRC61 superimposes a voltage measuring signal across the L+/L- terminals and PE. In the event of an insulation fault, a measurable current flows; DRC61 continuously monitors this signal and compares it against configurable setpoints, triggering the pre-alarm or alarm relay when a setpoint is exceeded.

In CHAdeMO mode, the resistance fault is determined by the smaller of the double-pole and single-pole fault measurements, with two selectable monitoring modes available via Modbus



Fast and Intuitive Commissioning

Local Test and Reset pushbuttons, together with a remote N.O. pushbutton input, let installers verify and reset the device without opening any software. Configuration — setpoints, relay logic, voltage range, and communication parameters — is performed via Modbus. The free UCS software can be used for a guided, fast setup.

Certified for Global EV Charging Standards

DRC61 is designed to comply with IEC 61851-1 and IEC 61851-23 (electric vehicle conductive charging systems), IEC 61557-8 (insulation monitoring devices), and is UL 2231-1/UL 2231-2 listed, supporting deployment across both CCS and CHAdeMO charging architectures worldwide.

Seamless Integration Across the Carlo Gavazzi Portfolio

Made to work together

DRC61 is designed to work alongside the DCM1 DC energy meter, combining accurate DC energy measurement with continuous insulation supervision in the same charging station. Together, they give charge point operators a complete, single-vendor solution for monitoring both energy flows and system safety on high-voltage DC architectures.

Built for EV Charging Applications

DRC61 targets the fast-growing EV charging infrastructure market, wherever ungrounded DC circuits up to 1000 V require dependable insulation monitoring. Its single-module, plug-in design and Modbus-based setup simplify standardisation across charging platforms of any size.

Contact us now!

Building safer, more reliable EV charging infrastructure has never been easier. With Carlo Gavazzi's DRC61, you can ensure continuous insulation monitoring, certified compliance, and fast commissioning, while reducing maintenance costs and unplanned downtime.

Discover how DRC61 can help you build the safe DC charging infrastructure of the future!

gavazziautomation.com



DRC61

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Note

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