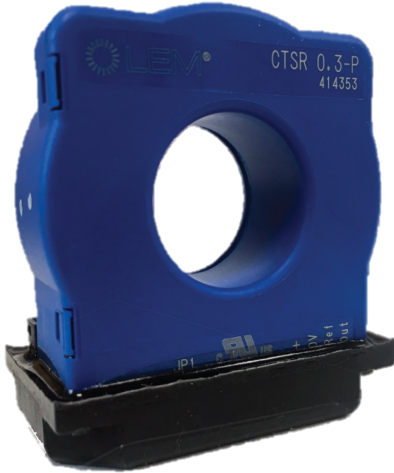
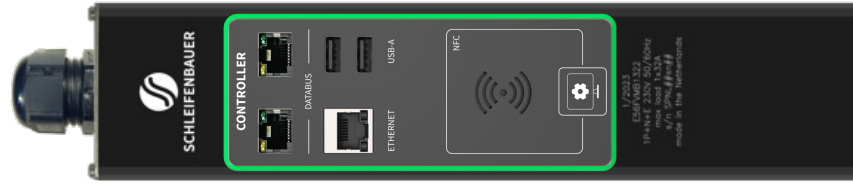


RCS

Residual Current Sensor



SUMMARY

High-Precision Residual Current Sensor (RCS)

- AC, DC and Pulsed DC measurement
- Closed-loop fluxgate technology
- Class B detection (EN 62020-1)
- Integrated self-test and auto degaussing
- Optimised for data centre power distribution units (PDUs)

PRODUCT DESCRIPTION

Residual Current Monitoring (RCM) is an increasingly important solution in environments where traditional Residual Current Devices (RCDs) are not desirable or even prohibited. In high-availability infrastructures such as data centres, RCDs can disrupt power supply by automatically disconnecting the circuit upon detecting leakage current above a certain threshold. This behaviour although safety-driven is incompatible with the continuous uptime requirements of modern IT infrastructure.

Residual currents occur when current flows unintentionally to protective earth. This can be due to faulty equipment, but also to normal capacitive leakage from switch-mode power supplies (SMPS) commonly found in servers and IT equipment. Therefore, the mere presence of residual current is not necessarily indicative of a fault, but an increase or deviation may be.

To identify potential hazards without sacrificing continuity, continuous monitoring using Residual Current Sensors (RCS) is preferred. These sensors allow for early warning and preventive maintenance without unexpected shutdowns.

GRANULAR MONITORING: SAFETY THROUGH LOCALISATION

Monitoring residual current at the overall input level of a data centre is insufficient to detect and isolate faults efficiently. To distinguish between a harmless sum of small leakages and a single dangerous leakage current, granular monitoring is required.

By integrating one or more RCS devices per PDU, facility managers gain the ability to isolate residual current anomalies to a specific rack or power segment. This significantly improves response time and enhances personnel and equipment safety. A dangerous leakage current may not trip overcurrent protection but can still cause electrocution or fire hazards due to overheating or sparking within faulty hardware.

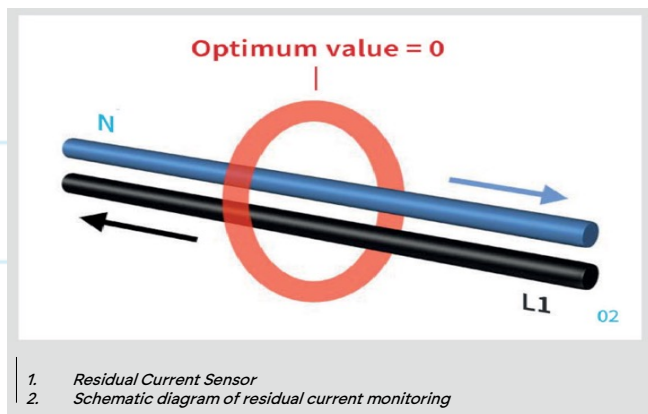
MEASUREMENT CAPABILITY

The Schleifenbauer Residual Current Sensor (RCS) is based on closed-loop fluxgate technology, ensuring high precision and low noise across a wide frequency range. The sensor is suitable for AC, DC and pulsed DC measurement and meets Class B requirements under EN 62020-1. It features periodic self-testing and automatic degaussing for reliable long-term operation without user intervention.



TECHNICAL INFORMATION

Property	Value
Maximum Primary Current	Single phase: 32A, Three phase: 3 x 32A
Measurement Technology	Closed-loop fluxgate (LEM-powered)
Measurement Type	AC, DC, and pulsed DC (True RMS) up to 1 kHz
Residual Current Range (RMS)	5 - 500 mA (DC, AC, or combined)
Accuracy [5 - 500 mA, 0 - 1000 Hz]	$\pm(5\% + 5 \text{ mA})$
Accuracy [5 - 300 mA, 50 - 60 Hz]	$\pm(2\% + 2 \text{ mA})$
Self Test and Degauss	Every 6 hours
Operating Temperature	0 - 60°C
Altitude Range	-30 - 2000m
Relative Humidity	10 - 90% (non-condensing)
Form Factor	Embedded in Schleifenbauer PDU
Compliance	Class B (EN 62020-1), CE, RoHS



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