



RC150 or RC190

Flexible Rogowski Coil

Main features

Suitable to measure currents from tens of A to hundreds of kA

High linearity

Wide dynamic range

Very useful with large size or awkward shaped conductors or in places with limited access

No danger from open-circuited secondary

Not damaged by large overloads

Non-intrusive, no power drawn from the main

Thanks to its light weight, it can be changed on the measured conductor

Totally shielded

RC150 versions from Ø8 mm, output 100mV/1KA @ 50 Hz (yellow)

RC190 versions from Ø12 mm, output 333mV/1KA @ 50 Hz (red)

Benefits

- Due to its structure, flexible Rogowski coils allows to embrace conductors or grouped cables, which are large and difficult to reach, without any hazard.
- The coil output gives a low voltage signal, therefore there is no danger from open-circuited secondary. This makes Rogowski transducers extremely suitable for temporary measurements, for example in combination with portable analysers.
- Unlike traditional current transformer with magnetic core, the Rogowski coil is a non-intrusive transducer. Since it has no hard core, it draws no power from the main circuit carrying the current to be measured.
- The absence of magnetic core grants a wide frequency response. This make RC150 and RC190 particularly suitable for measurement of harmonic content and transients.

Applications

- Measuring devices, lab instrumentation
- Power monitoring & control systems
- DC ripple measurement
- Harmonics and transients monitoring
- Very high current monitoring

General description

RC150 and RC190 are flexible current transducers based on Rogowski principle, particularly suitable for measurement in combination with portable devices. RC150 and RC190 coils are available in different sizes and can be supplied according to customer's design, therefore they can be used in all those applications, in which traditional transducers are not fitting due to its size and/or weight.

Due to its specific features, flexible Rogowski coil is an extremely comfortable solution for current measurement and can be used in a number of cases where traditional current transducer is not the adequate solution.

RC150 and RC190 coils are provided with a shield against the influence of external magnetic fields, therefore it grants a stable measurement from low currents to hundreds of kA. The Rogowski coils must be connected to an electronic integrator for 90° phase shift compensation and frequency equalization. Our portable and panel meters can interface Rogowski coils directly without the need of the external integrators. This is an advantage because there is no external boxes or any power supply with consequent ease of use. The particular features of the Rogowski coils combined with the extremely flexible input programming of our portable meters, allow to carry out measurement by all applications.

What is a Rogowski coil?

Rogowski coils have been used for the detection and measurement of electric currents for decades. They are based on a simple principle: an "air-cored" coil is placed around the conductor in a toroidal fashion and the magnetic field produced by the current induces a voltage in the coil. The voltage output is proportional to the rate of change of current. This voltage is integrated, thus producing an output proportional to the current.

By using precision winding techniques, especially developed for the purpose, the coils are manufactured so that their output is not influenced by the position of the conductor within the toroid, and to reject interference from external magnetic fields caused, for example, from nearby conductors. Basically, a Rogowski coil current measuring system consists of a combination of a coil and conditioning electronics. Rogowski coil current transducers are used for the AC measurement.

GENERAL SPECIFICATIONS

GENERAL DATA

| | |
|-----------------------|---|
| Coil length | from 25 to 180 cm (RC150) from 30 to 180 cm (RC190) |
| Coil diameter | from 8 ±0.2 mm to 57 mm (RC150) from 12 ±0.2 mm to 57 mm (RC190) |
| Fastening | a bayonet holder |
| Weight | from 150 to 500 g |
| Material | thermoplastic UL94-V0 |
| Protection degree | IP67 |
| Operating temperature | -30°C..+80°C |

ELECTRICAL SPECIFICATIONS

| | |
|--------------------|--|
| Output level (RMS) | 100 mV / 1 kA @50Hz (standard) (RC150) 333 mV / 1 kA @50Hz (standard) (RC190) |
| Coil resistance | from 70 to 900 Ω (RC150) from 300 to 2000 Ω (RC190) |
| Accuracy | better than ±1% of reading (with 15 mm diameter cable) |
| Frequency range | approx 40 Hz a 20 kHz |
| Working voltage | 1000 VRMS CAT III, 600 VRMS CAT IV, pollution degree 2 |
| Test voltage | 7400 VRMS / 1 min |

STANDARDS

| | |
|-----------|--|
| APPROVALS | CE |
| NORMS | EN61010-1, EN61010-031, EN61010-2-031, EN61010-2-032 |

ORDER CODES

| Codes | Description |
|-------------------|--|
| Models | RC150 versions (color yellow) |
| RC150-025-100-300 | Rogowski coil with coil length 25cm and 100mV/1kA output - 300cm cable length |
| RC150-035-100-300 | Rogowski coil with coil length 35cm and 100mV/1kA output - 300cm cable length |
| RC150-040-100-300 | Rogowski coil with coil length 40cm and 100mV/1kA output - 300cm cable length |
| RC150-060-100-300 | Rogowski coil with coil length 60cm and 100mV/1kA output - 300cm cable length |
| RC150-090-100-300 | Rogowski coil with coil length 90cm and 100mV/1kA output - 300cm cable length |
| RC150-120-100-300 | Rogowski coil with coil length 120cm and 100mV/1kA output - 300cm cable length |
| RC150-180-100-300 | Rogowski coil with coil length 180cm and 100mV/1kA output - 300cm cable length |
| | RC190 versions (color red) |
| RC190-030-333-300 | Rogowski coil with coil length 30cm and 333mV/1kA output - 300cm cable length |
| RC190-035-333-300 | Rogowski coil with coil length 45cm and 333mV/1kA output - 300cm cable length |
| RC190-060-333-300 | Rogowski coil with coil length 60cm and 333mV/1kA output - 300cm cable length |
| RC190-090-333-300 | Rogowski coil with coil length 90cm and 333mV/1kA output - 300cm cable length |
| RC190-120-333-300 | Rogowski coil with coil length 120cm and 333mV/1kA output - 300cm cable length |
| RC190-180-333-300 | Rogowski coil with coil length 180cm and 333mV/1kA output - 300cm cable length |

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