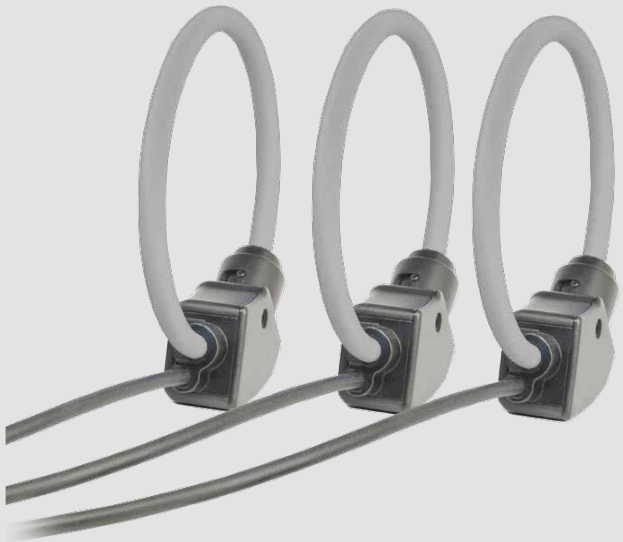
Smart Energy & Power Quality Solutions



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ROGOWSKI COILS

# MFC150 series

Data sheet

Janitza®

# ROGOWSKI COILS

## MFC150 series

### General description

MFC150 is a flexible current transducer based on the Rogowski principle.

Due to its design, the flexible Rogowski coil proves to be the optimum solution for current measurement in environments with high demands on flexibility and adaptability. It can be used in a number of cases where traditional current transducers are less suitable.

The MFC150 coil is provided with a shield against the influence of external magnetic fields, therefore it grants a stable measurement from low currents to several kA.

Depending on the version (see part numbers), the MFC150 coil is equipped with a mini-DIN plug for direct connection to the RCM 201-ROGO residual current monitoring device.

Certification

### Flexible Rogowski coil MFC150

- Suitable for current measurement in the range from mA up to several kA.
- High linearity over the measuring range
- Uniform measurement almost independent of the positioning of the conductor in the coil
- Delivered already calibrated
- Bayonet connector
- Thin coil diameter: approx. 8 mm (0.33 in)
- Useful in conjunction with large or awkwardly shaped ladders or in places that are difficult to access
- No danger from voltage peaks with open secondary circuit
- Not damaged by overloads
- Non-intrusive, no power drawn from the main
- Easy handling of the coil in the event of replacement
- Totally shielded

# TECHNICAL DATA

## Rogowski Coil

| Environmental conditions | |
|---|---|
| Protection degree | IP67 (UL Recognized UL 61010-1) |
| Altitude | Up to 2000 m (1.24 mi) over sea-level |
| Operating temperature | -30 ... +80°C (-22 ... +176°F) |
| Storage temperature | -40 ... +80°C (-40 ... +176°F) |
| Relative humidity | 0 ... 95% |
| Installation and use | Indoor |

| Coil | |
|---|---|
| Coil length | approx. 35 ... 180 cm (13.78 in ... 70.87 in) - see part numbers on page 4 |
| Sensor internal diameter | approx. 9 ... 55 cm (3.54 in ... 21.65 in) - see part numbers on page 4 |
| Coil diameter | 8,3 mm ± 0,2 mm (0.33 in ± 0.008 in) - see part numbers on page 4 |
| Jacket material | Thermoplastic polyurethane UL94-V0 |
| Fastening | Bayonet holder |
| Weight | 150 ... 500 g (0.33 ... 1.10 lb) |

| Electrical characteristic | |
|---|---|
| Nominal output rate | 100 mV / kA @ 50 Hz (RMS values) |
| Max measurable current | 100 kA |
| Coil resistance | 70 ... 900 Ω |
| Accuracy class | Class 1-A1 according to IEC 61869-10 |
| Positioning error | Better than ±1% of reading |
| Frequency | 50/60 Hz |
| Overvoltage category | 1000 V CAT III, 600 V CAT IV |
| Pollution degree | 2 |
| Insulation test voltage | 7400 VRMS / 5 seconds |

| Connection cable | |
|---|---|
| Type | 2 x 22 AWG shielded |
| Length | 3 m (118.1 in) |

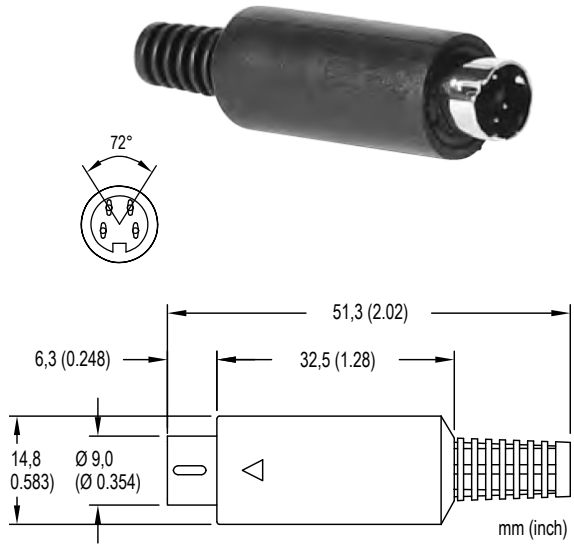
| Standard compliance | |
|---|---|
| Standards | EN 61010-1, EN 61010-2-032, EN IEC 63000 |

# TECHNICAL DATA

## Connector

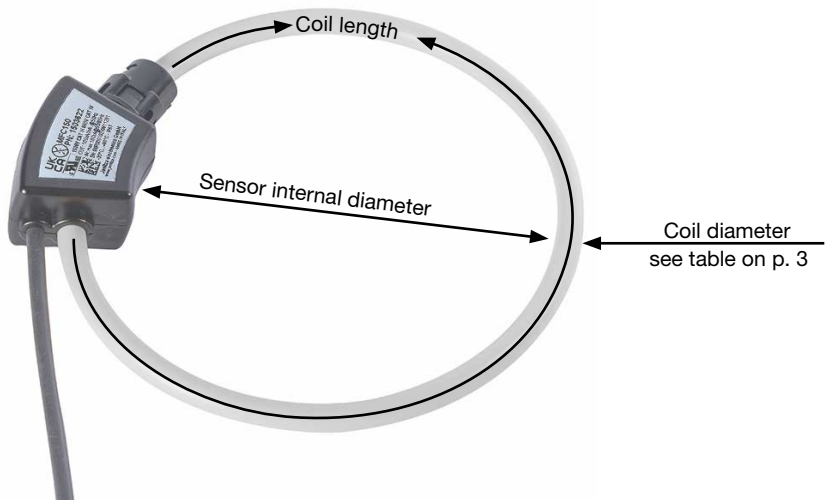
Part numbers 15.03.622 - 626

| Connector | |
|---|---|
| Type | Male mini-DIN plug, 4 pins, for direct connection to RCM 201-ROGO |
| Insulator material | PBT glass filles, rated UL94V-0 |
| Insulator color | Black |
| Contacts material | Brass |
| Shield material | Copper alloy, tin plated |
| Contact plating | Nickel on mating area, tin over copper underplate on solder area |
| Operating temperature | -25°C (-13°F) to +70°C (158 °F) |
| Operating voltage | 100V AC / 12V DC max. |
| Current rating | Mini-DIN: 1 A max. |
| Contact resistance | 20 mΩ max. initial |
| Insulation resistance | 500 MΩ min. |
| Dielectric withstanding voltage | 500V AC for 1 minute |



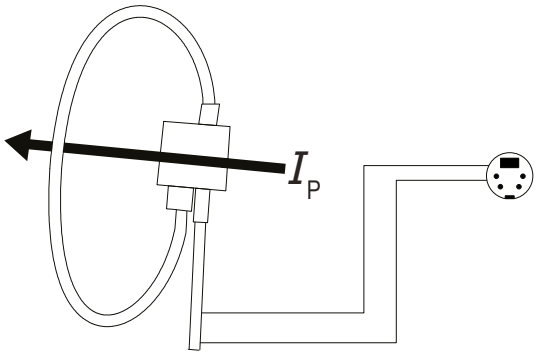

# PART NUMBERS

| Part no. | | Coil length (approx.) | Inner diameter of the sensor (approx.) |
|---|---|---|---|
| With connector | Without connector | | |
| 15.03.622 | 15.03.635 | 35 cm (13.78 in) | 9 cm (3.54 in) |
| 15.03.623 | 15.03.636 | 60 cm (23.62 in) | 17,5 cm (6.89 in) |
| 15.03.624 | 15.03.637 | 90 cm (35.43 in) | 27 cm (10.63 in) |
| 15.03.625 | 15.03.638 | 120 cm (47.24 in) | 36 cm (14.17 in) |
| 15.03.626 | 15.03.639 | 180 cm (70.87 in) | 55 cm (21.65 in) |

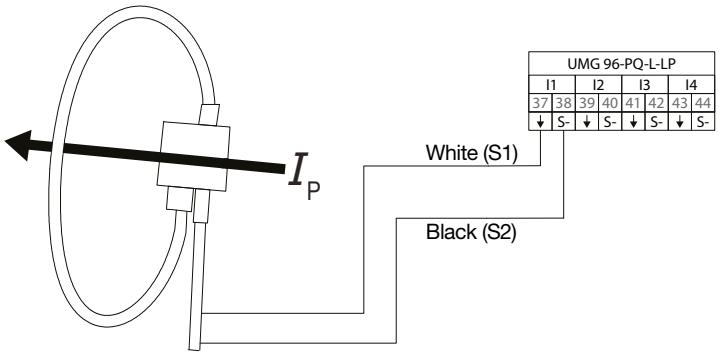


# CIRCUIT DIAGRAM

## Connection drawing with connector




## Connection drawing without connector




The connecting cable is shielded.
The shield is already connected to the blue wire and insulated with black shrink tubing. The connection cable therefore consists of a black and a white wire, which are fitted with wire end sleeves.

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