algodue ELETTRONICA
Flexible Rogowski Coil

algodue Flexible Rogowski Coil User Manual

Contents

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Specifications

- **Model:** MFC150
- **Integrator:** Built-in

Product Information

The MFC150 is a flexible Rogowski coil designed for measuring electrical current safely and efficiently. It is suitable for use by qualified technicians who are trained to work with electrical installations and wear appropriate Personal Protective Equipment.

Product Usage Instructions

Installation:
The Rogowski coil must be installed in an environment that meets the maximum operating conditions specified for the coil.

Connection and Installation:

- The connection and installation of the Rogowski coil should only be done by qualified technicians who are aware of the risks associated with voltage and current presence.
- Before any operation, ensure that bare conductor wires are not powered and that there are no neighboring bare conductors under power.

INTRODUCTION

The manual is intended only for qualified, professional, and skilled technicians, authorized to act by the safety standards provided for the electrical installations. This person must have appropriate training and wear suitable Personal Protective Equipment.

WARNING! It is strictly forbidden for anyone who does not have the above-mentioned requirements to install or use the coil.

It is forbidden to use the coil for purposes other than intended ones, specified in this manual. The symbols on the product are following described:

- **Attention!** Refer to the user manual.
- Protected throughout by DOUBLE INSULATION or REINFORCED INSULATION.
- Do not apply around or remove from HAZARDOUS LIVE conductors without additional protective means.
- Complies with the relevant European standards.
- Underwriters' Laboratory Inc. recognized component.

AVAILABLE MODELS

MODEL	Built-in INTEGRATOR
MFC150	
MFC150/F	•

SAFETY INSTRUCTIONS

The Rogowski coil must be installed in an environment that is according to the maximum operation conditions of the coil itself.

WARNING! The connection and installation of the Rogowski coil must be carried out only by qualified technicians aware of the risks involved in the presence of voltage and current.
Before carrying out an operation, check if:

1. bare conductor wires are not powered, 2. there are no neighbor bare conductors not powered

NOTE: The Rogowski coil complies with UL 61010-1 and UL 61010-2-032 standards and following amendments. The installation must be carried out according to the standards in force, the instructions of this user manual, and the coil insulation value to avoid any danger to people.

The Rogowski coil is a sensor for accurate measurement so it must be handled with care. Before use, read the following instructions carefully.

- Do not use the product if damaged.
- Always wear protective clothing and gloves when required.
- Avoid strongly twisting, blowing, and pulling load on the product: the measurement accuracy may be impaired.
- Do not paint the product.
- Do not put metallic labels or other objects on the product: the insulation may be impaired.
- It is forbidden to useproductst different from the manufacturer's specifications.

MOUNTING

WARNING! Before installing the coil around a conductor not insulated, check that it is not powered otherwise switch the circuit OFF.

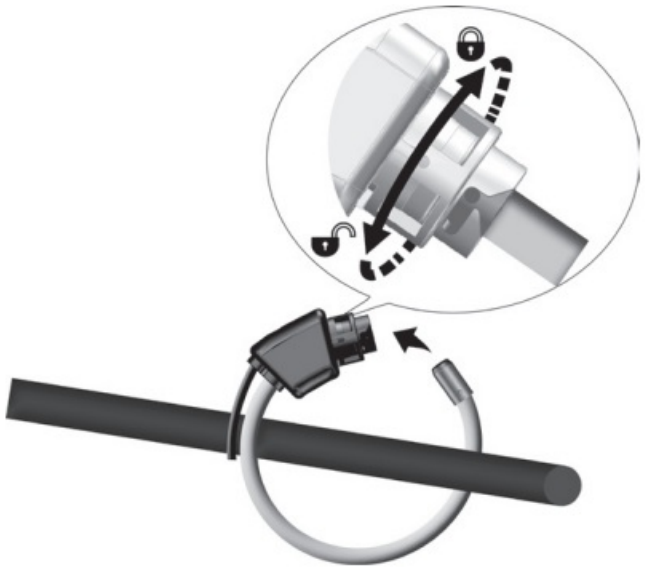
WARNING! Check if the coil is properly installed: a bad locking can affect measurement accuracy and the coil will become sensitive to adjacent conductors or other sources of electromagnetic fields.

NOTE: The coil must not fit tightly around the conductor, therefore its internal diameter must exceed that of the conductor.

To carry out the installation, proceed as follows:

1. Fit the coil around the conductor, bringing the coil ends together.
2. Lock the coil by turning the ring as indicated in picture A.

A

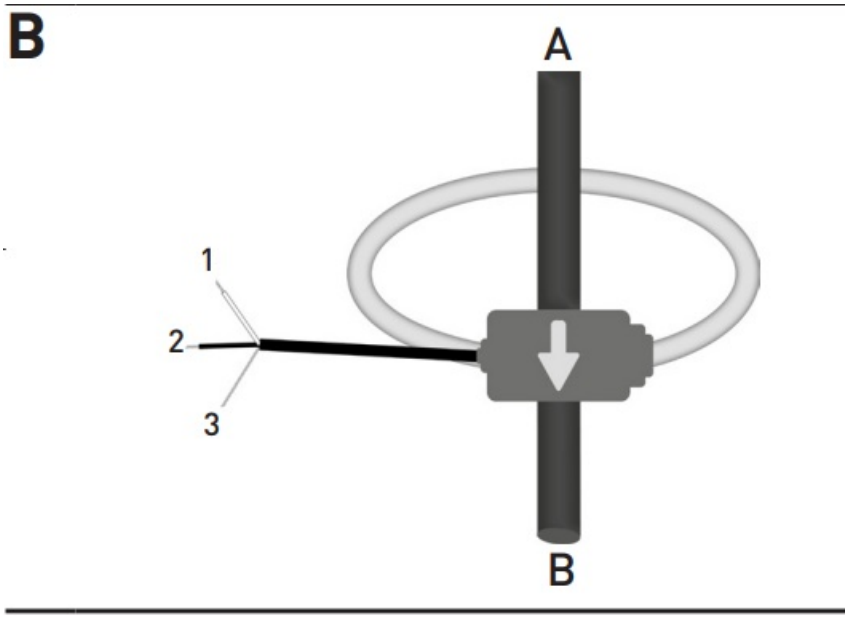


CONNECTIONS

The coil has an arrow indicating the load side.

In the case of the model WITHOUT integrator refer to picture B:

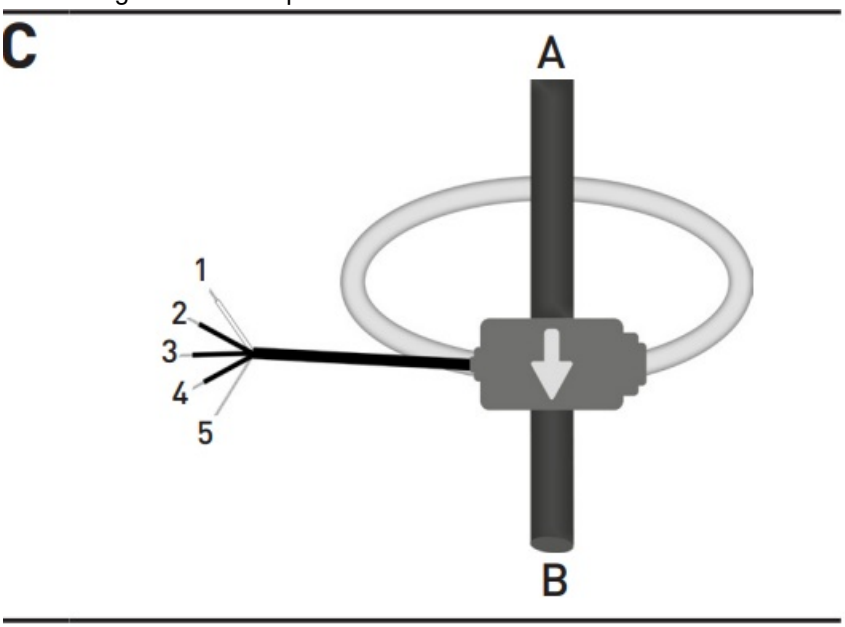
B



- **A** = SOURCE
- **B** = LOAD
    - WHITE wire, OUT+

- BLUE wire, OUT-
- SHIELD, connect to GND or OUT-If the cable is provided with crimp pins:
  - YELLOW crimp pin, OUT+
  - WHITE crimp pin, OUT-

In the case of model WITH integrator refer to picture C:



- **A =** SOURCE
- **B** = LOAD
  - WHITE wire, OUT+
  - BLACK wire, OUT-
  - RED wire, positive power, 4…26 VDC
  - BLUE wire, negative power, GND
  - SHIELD, connect to GND

    The coil is protected against the reverse polarity of the power supply.

MAINTENANCE

Refer to the following instructions carefully for product maintenance.

- Keep the product clean and free of surface contamination.
- Clean the product with a soft cloth damp with water and neutral soap. Avoid to use of corrosive chemical products, solvents, or aggressive detergents.
- Make sure the product is dry before further use.
- Do not use or leave the product in particularly dirty or dusty environments.

TECHNICAL FEATURES

NOTE: For any doubt on the installation procedure or product application, please contact our technical services or our local distributor.

COIL	
Coil length	250 … 3000 mm
Sensor internal diameter	71 … 945 mm
Coil diameter	8.3 ±0.2 mm
Jacket material	Thermoplastic polyurethane UL94-V0
Fastening	Bayonet holder
Weight	150 … 500 g

ELECTRICAL CHARACTERISTICS FOR MODEL WITHOUT INTEGRATOR

Nominal output rate	100 mV / kA @ 50 Hz (RMS values) Refer to the value indicated on the product label
Max measurable current	100 kA
Coil resistance	70 … 900 Ω
Accuracy	Class 1-A1 according to IEC 61869-10
Frequency	50/60 Hz
Overvoltage category	1000 V CAT III, 600 V CAT IV
Pollution degree	2
Insulation test voltage	7400 VRMS / 5 s

CONNECTION CABLE FOR MODEL WITHOUT INTEGRATOR

Power voltage	4 … 26 VDC
Max consumption	5 ADC
Nominal output rate	333 mV / FS (RMS values) FS changes according to the model: 1, 2, 5 kA Refer to the value indica ted on the product label
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 s

CONNECTION CABLE FOR MODEL WITH INTEGRATOR

Type	3 x 22 AWG shielded
Length	3 m. Other lengths on request: 5, 7, 10, 15 m

ENVIRONMENTAL CONDITIONS

Protection degree	IP67 or IP68 according to the model (not evaluated by UL)
Altitude	Up to 2000 m over sea level
Operating temperature	-30 … +80°C
Storage temperature	-40 … +80°C
Relative humidity	0 … 95%
Installation and use	Indoor

STANDARD COMPLIANCE

IEC, UL standards	UL 61010-1 Ed3, UL 61010-2-032, CAN/CSA-C22.2 No. 61010-1, IEC 60529

MORE INFORMATION

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FAQ

- **Q: Who can install or use the coil?**
  - A: Only qualified, professional, and skilled technicians authorized to work with electrical installations should install or use the coil.
- **Q: What should I do before connecting the Rogowski coil?**
  - A: Before connecting the Rogowski coil, make sure that bare conductor wires are not powered and that there are no neighboring bare conductors under power.

Documents / Resources

	algodue Flexible Rogowski Coil [pdf] User Manual MFC150 Flexible Rogowski Coil, MFC150, Flexible Rogowski Coil, Rogowski Coil, Coil

References

- **User Manual**