

ARH SERIES

Rogowski coil for the electronic measurement of AC current



Installation guide

In order to guarantee safe operation of the transducer and to be able to make proper use of all features and functions, please read these instructions carefully!

Safety and warning notes

Safe operation can only be guaranteed if the transducer is used for the purpose it has been designed for and within the limits of the technical specifications. Ensure you get up-to-date technical information that can be found in the latest associated datasheet under www.lem.com.

⚠ Caution! Risk of danger

Ignoring the warnings can lead to serious injury and/or cause damage! The electric measuring transducer may only be installed and put into operation by qualified personnel that have received an appropriate training. The corresponding national regulations shall be observed during installations and operation of the transducer and any electrical conductor. The transducer shall be used in electric/electronic equipment with respect to applicable standards and safety requirements and in accordance with all the related systems and components manufacturers' operation instructions.

👉 Do not use outdoors!



Caution! Risk of electrical shock



Caution! Avoid fitting or removing uninsulated conductors that conduct dangerous voltages - they can cause electrical shocks, electrical burns or flashover.

When operating the transducer, certain parts of the system may carry hazardous live voltage (e.g. primary conductor). The user shall ensure to take all measures necessary to protect against electrical shock. The transducer is a build-in device containing conducting parts that shall not be accessible after installation. A protective enclosure or additional insulation barrier may be necessary. Installation and maintenance shall be done with the main power supply disconnected except if there are no hazardous live parts in or in close proximity to the system and if the applicable national regulations are fully observed. Safe and trouble-free operation of this transducer can only be guaranteed if transport, storage and installation are carried out correctly and operation and maintenance are carried out with care.



Equipment protected throughout by double insulation or reinforced insulation

Safety and warning notes

👉 When using a bare bus bar, please make sure that all sharp edges have necessary mechanical protections in order not to damage insulation of the ARH coil.

In order not to degrade the accuracy, do not stress the coil applying any kind of mechanical constraint (twisting, pressing, punching, strong bending...)

- To open the ARH Rogowski coil, turn the bayonet catch (1) to the left (anti-clockwise) and draw the coil cable out of the enclosure (2).
- Make sure that the arrow on the ARH label (4) is pointing towards the load
- Guide the Rogowski coil around the power cable (3) (Fig. 1).

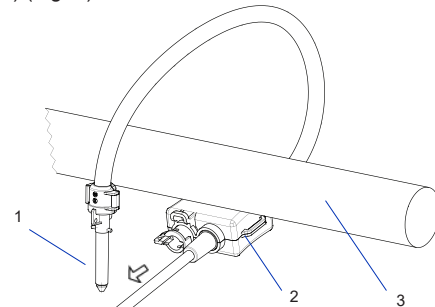


Figure 1

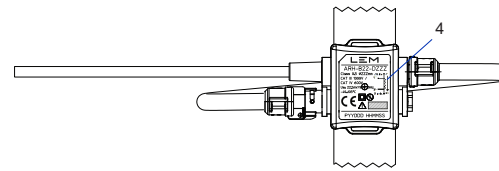


Figure 2

👉 **Arrow indicating current direction (4) must be outside the loop when closed.**

- Slide the coil cable into the enclosure (2). (Fig. 3)
- Turn the bayonet (1) catch to the right until the end of the measuring coil audibly latches (Fig.4)
- The bayonet fastening (1) can be sealed with the housing (2) and then becomes tamper-proof.

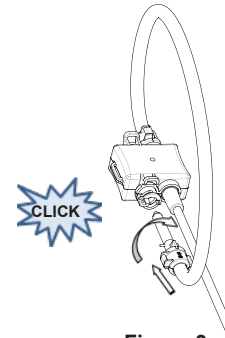


Figure 3

- Due to low positioning error, the ARH does not need to be physically fastened around the primary conductor. Should the device be secured, make sure no mechanical stress is applied to the coil itself.
- To do so, guide a cable tie through the intended fixture on the enclosure of the ARH.

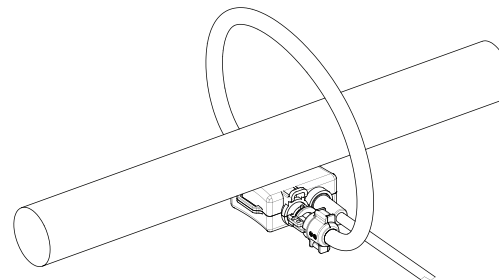
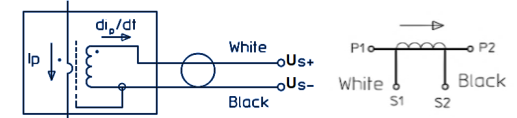


Figure 4

- Connect the secondary cable of the ARH Rogowski coil to the input terminals of your electronics.



Insulation characteristics

Rated insulation RMS voltage, reinforced insulation acc. to IEC61010-1	1000 V
Cat III	
Rated insulation RMS voltage, reinforced insulation acc. to IEC61010-1	600 V
Cat IV	
RMS voltage for AC insulation test	7.4 kV
50Hz / 1 min	
Impulse withstand voltage 1.2/50 μs	12 kV
Case material according to UL94	V0
Protection degree	IP57
Compliant with IEC 61869-10 and UL 61010-1	

Specification

The Rogowski coil can measure any primary current as there is no saturation effect.

Secondary voltage @ 50 Hz	22.5 mV/1kA
Rated transformation ratio @ 50 Hz	44.44 kA/V
Phase displacement	none
Ratio error (centered)	0.5 %
Class 0.5-A1 acc. to IEC 61869-10	
Positioning error	0.4 %
Ambient operating temperature	-40 ... 105 °C
Temperature of the primary conductor	< 125 °C
Relative humidity	90%
Altitude above sea level	2000 m

At the heart of power electronics

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For more information: www.lem.com.
 LEM INTERNATIONAL SA;
 8 chemin des Aulx
 CH-1228 Plan-les-Quates
 Switzerland