

Flexible current transformers

Rogowski coil – thinner, lighter flex converter for simple installation

The Rogowski coil is used for current measurement of AC currents and is primarily employed for retrospective installation in existing systems - optionally on power rails or power cables.



- Frequency bandwidth 50/60 Hz, up to 700 kHz without load (no-load operation)
- Accuracy per class 0.5, in accordance with IEC 61869
- Operating temperature -40°C bis $+80^{\circ}\text{C}$
- Rated insulation voltage 1 kV CAT III
- Rogowski coil from 10 to 10000 A_{RMS} – in combination with Janitza measurement transducer RogoTrans up to 4000 A_{RMS}
- Sealing possible
- CE certified (2014/30/EU), in accordance with the European Directive 2014/35/EU and tested in accordance with the standard IEC 61010-1
- Retrospective clip-on system without disconnecting the phase conductor
- Device for fixing to the primary conductor with a cable tie
- Internal screening
- High linearity, no saturation, no current upper limit of the Rogowski coil

Description	Item no.	Diameter	Length	Weight
Rogowski current transformer \varnothing 70 mm	15.03.609	70 mm	3 m	192 g
Rogowski current transformer \varnothing 175 mm	15.03.610	175 mm	3 m	206 g
Rogowski current transformer \varnothing 300 mm	15.03.611	300 mm	3 m	222 g

Note: in order to ensure smooth operation of the Rogowski coils, a combination of the coil and the Janitza measurement transducer "RogoTrans" (15.03.613) is always necessary! Additionally a 24 V DC power supply is needed.

Technical data			
Item no.	15.03.609	15.03.610	15.03.611
Max. output voltage	30 V	30 V	30 V
Primary current ^{*1}	up to 10000 A ^{*1}	up to 10000 A ^{*1}	up to 10000 A ^{*1}
Rated transformation ratio (@ 50 Hz)	44,44 kA/V	44,44 kA/V	44,44 kA/V
Rated frequency	50/60 Hz	50/60 Hz	50/60 Hz
Secondary voltage	22,5 mV (at 1000 A / 50 Hz)	22,5 mV (at 1000 A / 50 Hz)	22,5 mV (at 1000 A / 50 Hz)
Mutual inductance	71,98 nH	72,314 nH	72,84 nH
Temperature coefficient of M	± 30 ppm/K	± 30 ppm/K	± 30 ppm/K
Frequency bandwidth (cable length 1,5 m) ^{*2}	420 kHz ^{*2}	350 kHz ^{*2}	300 kHz ^{*2}
Phase displacement	0,004 ^{*3}	0,004 ^{*3}	0,004 ^{*3}
Coil inductance	180 μH	343 μH	566 μH
Coil resistance	56 Ω	105 Ω	170 Ω
Ratio error (centred)	- 0,5 ... 0,5 % class 0,5 Accuracy per IEC 61869-2	- 0,5 ... 0,5 % class 0,5 Accuracy per IEC 61869-2	- 0,5 ... 0,5 % class 0,5 Accuracy per IEC 61869-2
Ration error (all positions) ^{*4}	- 0,75 ... 0,75 ^{*4} incl. positioning errors	- 0,75 ... 0,75 ^{*4} incl. positioning errors	- 0,75 ... 0,75 ^{*4} incl. positioning errors
Linearity error	none	none	none
Influence of external current ^{*5}	$\pm 0,2$ ^{*5}	$\pm 0,2$ ^{*5}	$\pm 0,2$ ^{*5}

*1 In combination with Janitza measurement transducer RogoTrans up to 4000 A.

*2 On request, the frequency bandwidth and phase shifting model can be made available.

*3 With installation at a right angle to the phase conductor.

*4 Under consideration that the Janitza Rogowski current transformer is installed perpendicular to a primary conductor of min. \varnothing 15 mm.

*5 Under consideration that a further phase conductor of min. \varnothing 15 mm is installed at the same height and at a right angle to the Janitza Rogowski current transformer.

Basic Information for the use of current transformer can be found in chapter 10.