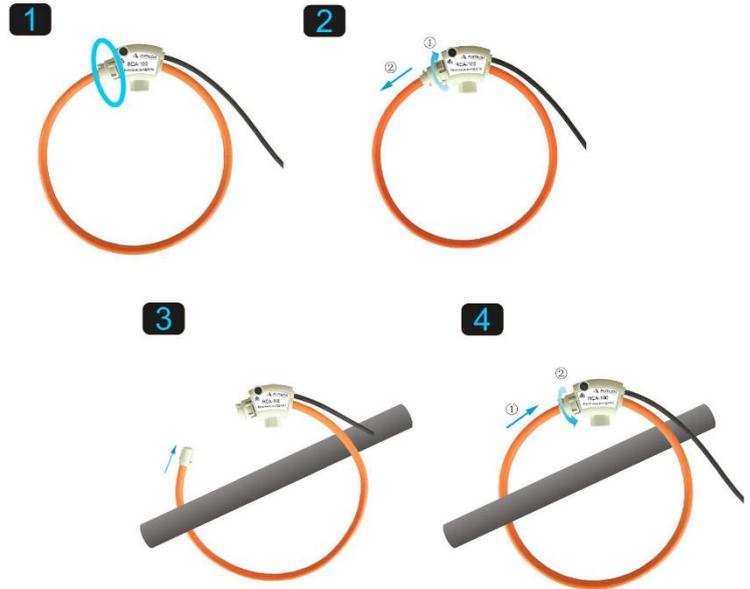


How to use



RCA

Ø8 Flexible Rogowski coil fixed by cable ties

- High linearity from 1A to 100kA
- 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
- Measurement uniformity at any position of the conductor inside the coil
- Excellent degree of rejection to the external current conductor

Feature

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

RCA coils are available in different sizes and can be supplied according to the customer's requirement, therefore they can be used in all those applications, in which traditional transducers cannot be used due to size and/or weight.

The RCA coil is 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 equalisation.

Advantage

- Calibrated to 0.5%
- 8mm section easy to install
- Easy to fix on bus-bar and cable by cable ties
- Lower zero drift down to 0.1mV

Applications

- Measuring devices, lab instrumentation
- Power monitoring & control systems
- DC ripple measurement
- Harmonics and transients monitoring
- Power meter, power analyser

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.

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.

They can be used in similar circumstances to current transformers but for many applications, they have considerable advantages:

- Wide dynamic range.
- High linearity.
- Very useful with large size or awkward shaped conductors or in places with limited access. Thanks to the flexible structure, the coil can be easily installed according to the application or to the available space.
- Unlike traditional current transducers, there is no danger from open-circuited secondaries.
- They cannot be damaged by large overloads.
- They are non-intrusive. They draw no power from the main circuit carrying the current to be measured.
- They are also light weighted and in some applications are light enough to be suspended on the conductor being measured.

The transducer does not measure direct currents, unlike a current transformer, it can carry out accurate measurements of AC component even if there is a large, superimposed DC component since there is no iron core causing saturation. This feature is particularly useful for measuring ripple currents for example in battery charging systems.

Specification

MODEL	RCA-100	RCA-150	RCA-200
Coil length	395	525	665
Window size	100mm	150mm	200mm
Reference Rated current	1000A	3000A	6000A
Weight	Approx. 100-120g		
Ratio	85mV/kA@50Hz (Calibrated)		
Read Accuracy	Calibrated <0.5% (central position, 25°C)		
Maximum current measurable	100kA		
Coil Resistance	from 100 to 250 Ω or 1.5k Ω		
Coil Section	8mm		
Lead length	2 meters		
Position Error	$\pm 1\%$ maximum		
Output on 0A (Zero drift)	$\leq 0.1\text{mV}$		
Phase error	$\leq 0.5^\circ$		
Linearity	$\pm 0.2\%$ of reading		
Bandwidth	1Hz to 100kHz(-3dB)		
Operating temperature	-30°C to 80°C		
Storage temperature	-40°C to 90°C		
Contact us for special requirement.			



Position sensitivity

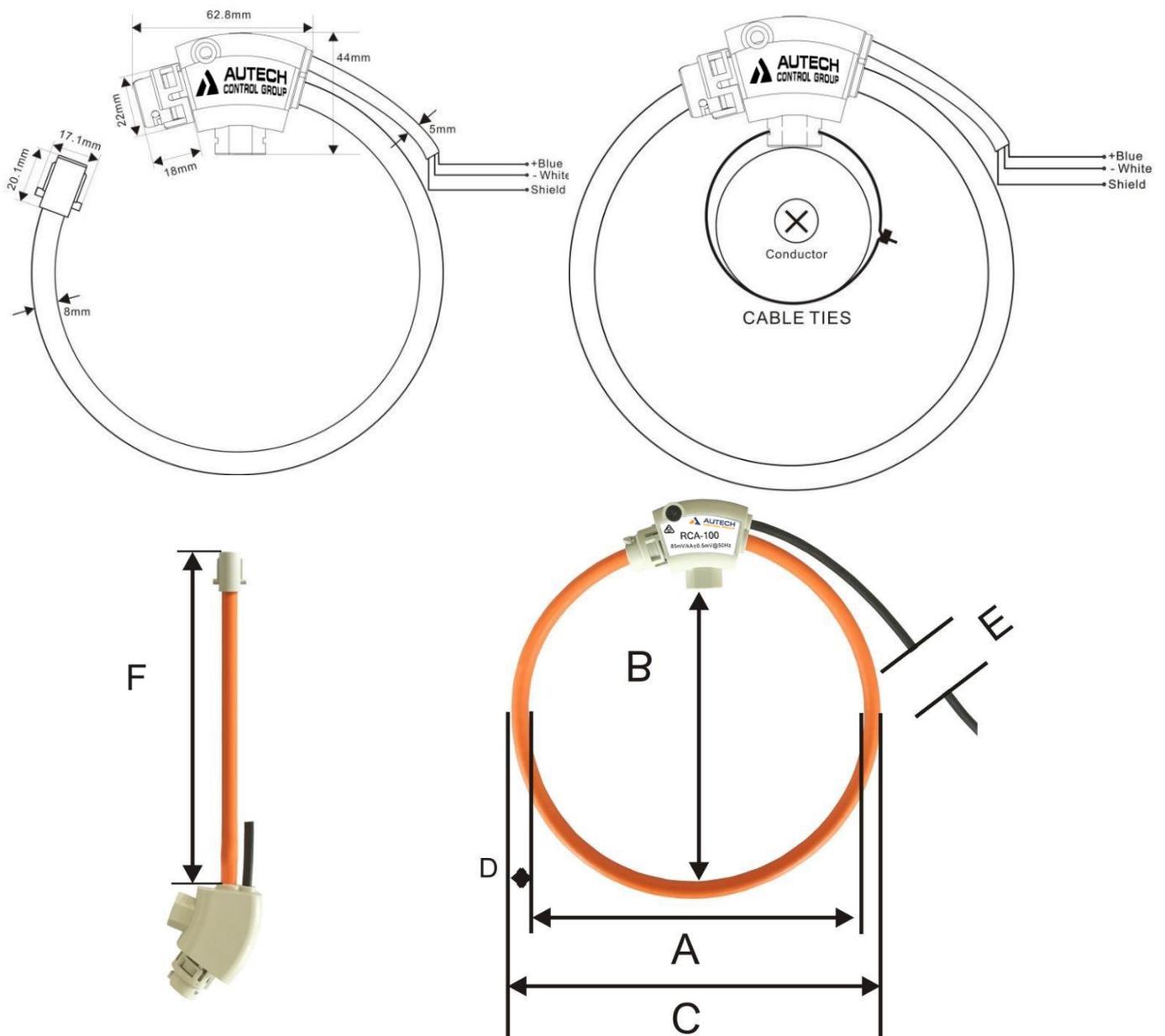
Conductor Position	Typical Error (%)
● Adjacent to the clip together mechanism	<0.5%
● Adjacent to the inside coil edge	<0.8%
● Adjacent to the opposite clip	<1%

Materials

Coil & cable	Thermoplastic rubber flame retardant UL 94 V-0 rated
Couplings	PA6 UL 94 V-O rated
Color(coil)	Black, Yellow, Red, Green, Blue
Shielded	100% coil, 100% output cable

Safety

Certifications	CE marked
	Complies with EMC EN 61326-1 2006
	IP68
Voltage insulation	Coil: 3000V
	Signal cable: 1000V
Safety	1000V CATIII ,600V CATIV



Dimensions tolerance:

A,B,C,F: $\pm 5\text{mm}$, D: $\pm 0.2\text{mm}$, E: $\pm 10\text{mm}$

Dimensions(mm)	RCA-100	RCA-150	RCA-200
A.Windows size A	135	165	210
B.Windows size B	100	150	200
C.Coil O.D.	151	181	226
D.Coil section	8		
E.Lead Cable Total Length	2000		
F:Coil length	395	525	665

Safety and warning notes

To guarantee the safe operation of the transducer and to be able to make proper use of all features and functions, please read these instructions. A 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 at www.autechcontrol.com.au

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 has received appropriate training. The corresponding national regulations shall be observed during the installation and operation of the transducer and any electrical conductor. The transducer shall be used in electric/electronic equipment the respect to applicable standards and safety requirements and in accordance with all the related systems and components manufacturer's operating instructions.

Caution! Risk of electrical shock

When operating the transducer, certain parts of the module may carry hazardous live voltage (e.g. primary conductor). The user shall 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.

WARNING

Do not stress the coil by applying any kind of mechanical force (e.g. twisting, puncturing, excessive pressure, tight bending, etc.) which will dramatically degrade the device's accuracy.