

# SN150 ROGOWSKI COIL

## Ø8 MM FLEXIBLE ROGOWSKI COIL

### INTRODUCTION

SN150 is a flexible current transducer based on Rogowski principle, particularly suitable for measurement in combination with portable devices. SN150 coils are available in different sizes and can be supplied according to customer's design, therefore they can be used in all those applications, in which traditional transducers are not fitting due to its size and/or weight.

Due to its specific features, flexible Rogowski coil is an extremely convenient solution for current measurement and can be used in a number of cases where traditional current transducer is not the adequate solution.

SN150 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.

SN150 can be also provided with built-in integrator, without needing of external devices for 90° phase shift compensation and frequency equalization. This is an advantage because there is no external box with consequent ease of use. SN150 with built-in integrator can be connected to devices with differential input only.

The particular features of the Rogowski coils combined with the extremely flexible input programming of our portable meters, allow to carry out measurement by all applications.

### FEATURES

- Suitable for measuring currents up to several kA
- High linearity
- Very useful with large size or awkward shaped conductors or in places with limited access
- No danger from open-circuited secondary
- Not damaged by overloads
- Non-intrusive, no power drawn from the main
- Thanks to its light weight, it can be changed on the measured conductor
- Totally shielded
- Delivered already calibrated
- Very thin coil diameter: down to 8 mm
- Bayonet connector including possibility to regulate calibration
- Measurement uniformity at any position of the conductor inside the coil
- Excellent degree of rejection to the external current conductor



### APPLICATIONS

- Measuring devices, lab instrumentation
- Power monitoring & control systems
- DC ripple measurement
- Harmonics and transients monitoring
- Very high current monitoring

### APPROVALS

- Approval under multiple listing process

### BENEFITS

- Due to its structure, flexible Rogowski coil allows to embrace conductors or grouped cables, which are large and difficult to reach, without any hazard.
- The coil output gives a low voltage signal, therefore there is no danger from open-circuited secondary. This makes Rogowski transducers extremely suitable for temporary measurements, for example in combination with portable analysers.
- Unlike a traditional current transformer with magnetic core, the Rogowski coil is a non-intrusive transducer. Since it has no hard core, it draws no power from the main circuit carrying the current to be measured.
- The absence of magnetic core grants a wide frequency response. This makes SN150 particularly suitable for measurement of harmonic content and transients.

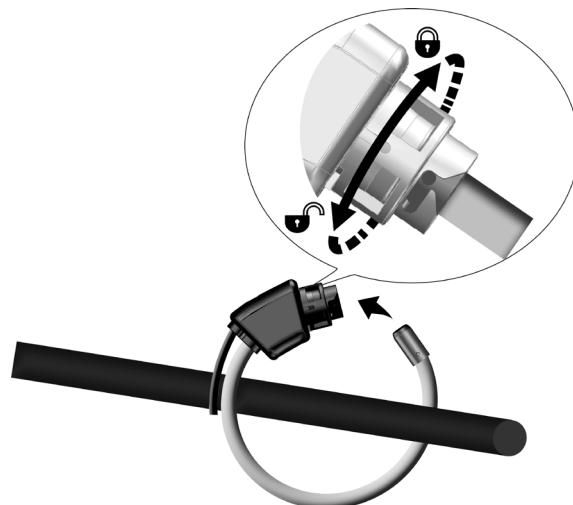
# SN150 ROGOWSKI COIL

Ø8 mm flexible Rogowski coil

## SPECIFICATIONS

Coil	
Coil length	25 ... 90 cm
Sensor internal diameter	5 ... 27 cm
Cord diameter	8.3 ±0.2 mm
Jacket material	Thermoplastic polyurethane UL94-V0
Fastening	Bayonet holder
Weight	150 ... 500 g
Electrical Characteristics	
Nominal output rate	100mV/1kA @ 50Hz
Max measurable current	500 A
Coil resistance	70 ... 420 Ω
Accuracy	Class 0,5-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 V <sub>RMS</sub> / 5 s
Connection Cable	
Type	3 x 24 AWG shielded
Length	3 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

## MOUNTING



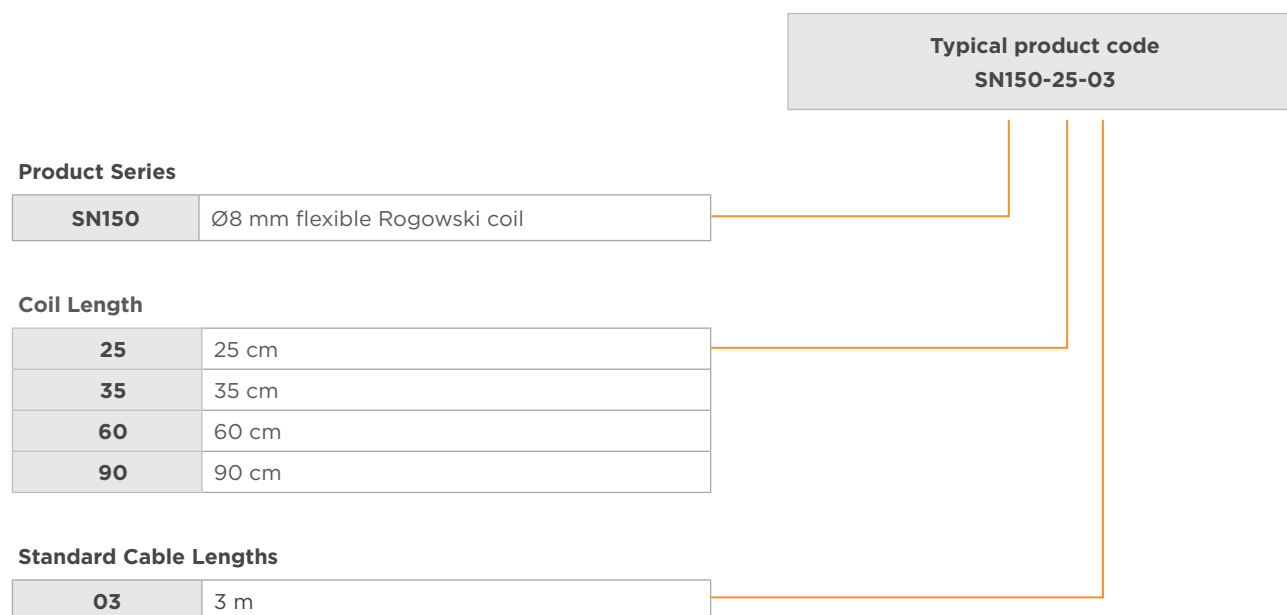
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## ORDER CODE

Part Description	Coil detail		Cable Detail	Colour	Calibrated
	Length [cm]	Internal diameter [cm]	3 m	Yellow	Yes
SN150 (100mV/1kA @ 50Hz Output Value)					
SN150-25-03	25	-5 (5x7.5)	•	•	•
SN150-35-03	35	-9 (9x10)	•	•	•
SN150-60-03	60	-17.5	•	•	•
SN150-90-03	90	-27	•	•	•

## PRODUCT CODE STRUCTURE



## PRODUCT INFORMATION

Product Description	Output Value (mV)	Coil Length (cm)	Standard Color	Part Number
SN150-25-03	100mV/1kA @ 50Hz	25	Yellow	<a href="#">2548324-1</a>
SN150-35-03	100mV/1kA @ 50Hz	35	Yellow	<a href="#">2548325-1</a>
SN150-60-03	100mV/1kA @ 50Hz	60	Yellow	<a href="#">2548326-1</a>
SN150-90-03	100mV/1kA @ 50Hz	90	Yellow	<a href="#">2548328-1</a>

## RELATED PRODUCTS

- SN51
- SN50
- SN3000

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## 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. Basically, 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. The same coil can be used to measure currents from mA to several kA, it is enough to change the RC value in the integrator.
- High linearity. According to the manufacturing (size, inductance value, ...) the maximum measurable frequency can range up to hundreds of kHz and in some special models also MHz.
- Very useful with large size or awkward shaped conductors or in places with limited access. Thanks to the structure without hard core, the coil can be easily manufactured 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 but, 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.

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