

SN150/F ROGOWSKI COIL

Ø8 MM FLEXIBLE ROGOWSKI COIL WITH BUILT-IN INTEGRATOR

INTRODUCTION

SN150/F is a flexible current transducer based on Rogowski principle, particularly suitable for measurement in combination with portable devices. SN150/F 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.

The SN150/F is offered as an all-in-one solution with a built-in integrator. This eliminates the need for any external conditioning equipment, simplifying installation and delivering significant space and cost savings. Users benefit from a compact, single-unit system that provides the required 90° phase compensation and frequency equalization.

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/F 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.

FEATURES

- All-in-one solution: built-in integrator for maximum space-saving and simplified setup
- 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
- Built-in integrator: standard 333mV/ FS output
- 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

- The built-in integrator delivers the conditioned output signal directly, eliminating the need for an external integration box. This makes the SN150/F an optimal solution for maximizing space and cutting costs.
- The flexible coil can easily wrap around large, hard-to-reach conductors and grouped cables. The low-voltage output ensures there is no hazard from an open secondary winding.
- Unlike traditional CTs, the coreless Rogowski coil is a non-intrusive transducer, drawing no power from the main circuit being measured
- The absence of a magnetic core grants an exceptionally wide frequency response, making the SN150/F highly suitable for accurate measurement of harmonics and transients.

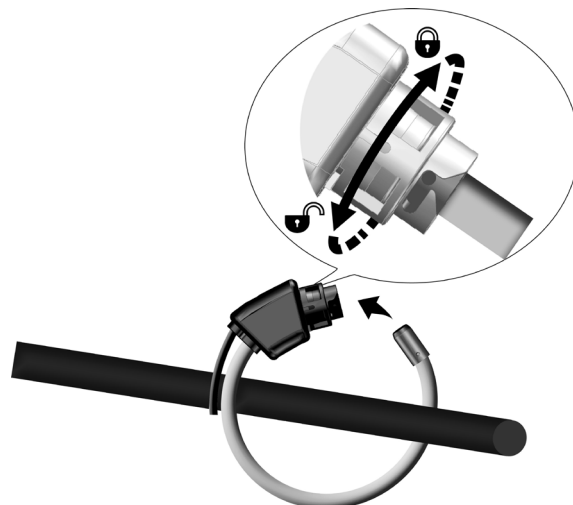
SN150/F ROGOWSKI COIL

Ø8 mm Flexible Rogowski Coil with Built-in Integrator

SPECIFICATIONS

Coil	
Coil length	40 ... 90 cm
Sensor internal diameter	1 ... 27 cm
Cord diameter	8.3 ±0.2 mm
Jacket material	Thermoplastic polyurethane UL94-V0
Fastening	Bayonet holder
Weight	150 ... 500 g
Electrical Characteristics	
Power voltage	4 ... 26 VDC
Max consumption	5 mADC
Nominal output rate	333 mV / FS (RMS values) FS changes according to the model: 1, 2, 5 kA
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 V _{RMS} / 5 s
Connection Cable	
Type	3 x 22 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



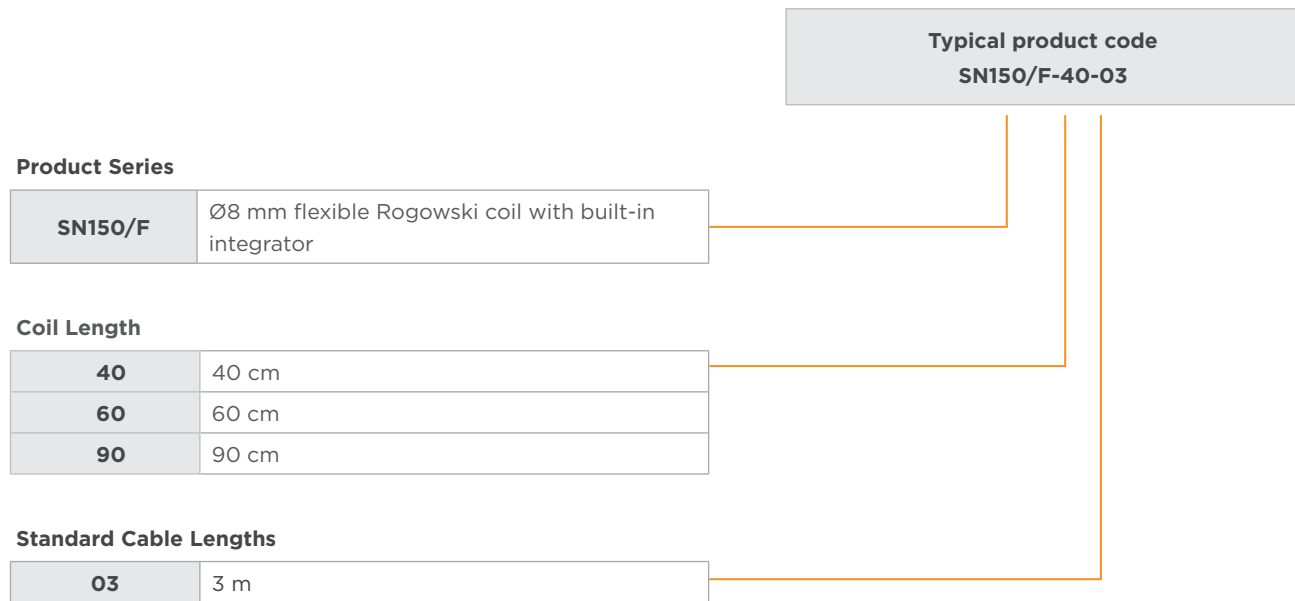
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ORDER CODE

Part Description	Coil detail		Cable Detail	Colour	Calibrated
	Length [cm]	Internal diameter [cm]	3 m	Yellow	Yes
SN150/F (333mV/1kA @ 50Hz Output Value)					
SN150/F-40-03	40	-11	•	•	•
SN150/F (333mV/2kA @ 50Hz Output Value)					
SN150/F-60-03	60	-17.5	•	•	•
SN150/F (333mV/5kA @ 50Hz Output Value)					
SN150/F-90-03	90	-27	•	•	•

PRODUCT CODE STRUCTURE



PRODUCT INFORMATION

Product Description	Output Value (mV)	Coil Length (cm)	Standard Color	Part Number
SN150/F-40-03	333mV/1kA @ 50Hz	40	Yellow	2548332-1
SN150/F-60-03	333mV/2kA @ 50Hz	60	Yellow	2548333-1
SN150/F-90-03	333mV/5kA @ 50Hz	90	Yellow	2548334-1

RELATED PRODUCTS

- SN51
- SN50
- SN3000

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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