



TPA integrator

The TPA integrator is a Three phase DIN-RAIL 1A Output Rogowski coil integrator in a plastic 1 module DIN-RAIL enclosure.

What does Integrator do?

- Rogowski coil outputs a low voltage mV signal, the integrator can amplify and convert it to standard signal which can be connected to a power meter.
- Rogowski coil output is proportional to the frequency of the measured current, the signal equalisation ensures a linear response on a wide frequency range. The integrator allows to use coils on different electrical network frequencies, keeping the same output level over the frequencies.
- An integrator is essential to equalise and shift by 90° the output signal from the Rogowski coils. It consists of an active electronic circuit with negligible offset and a good linearity.

Feature

The integrator can be combined with any model and size of RCA Rogowski Coils.

On request, the current ratio can be customised according to the application.

The integrator and Rogowski coil are a very flexible system, suitable for high power load analysis, impulsive current monitoring, DC ripple measurement, etc.

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

Advantage

- High read accuracy 0.5%
- Compact DIN-RAIL construction
- High bandwidth for measurement 30 to 5kHz
- Output 1A rms

Related Products

RCA Rogowski Coil

Applications

Measuring devices, lab instrumentation

- Power monitoring & analysis
- Harmonics and transients monitoring
- Welding machine control
- High current measurement

What is a Rogowski coil?

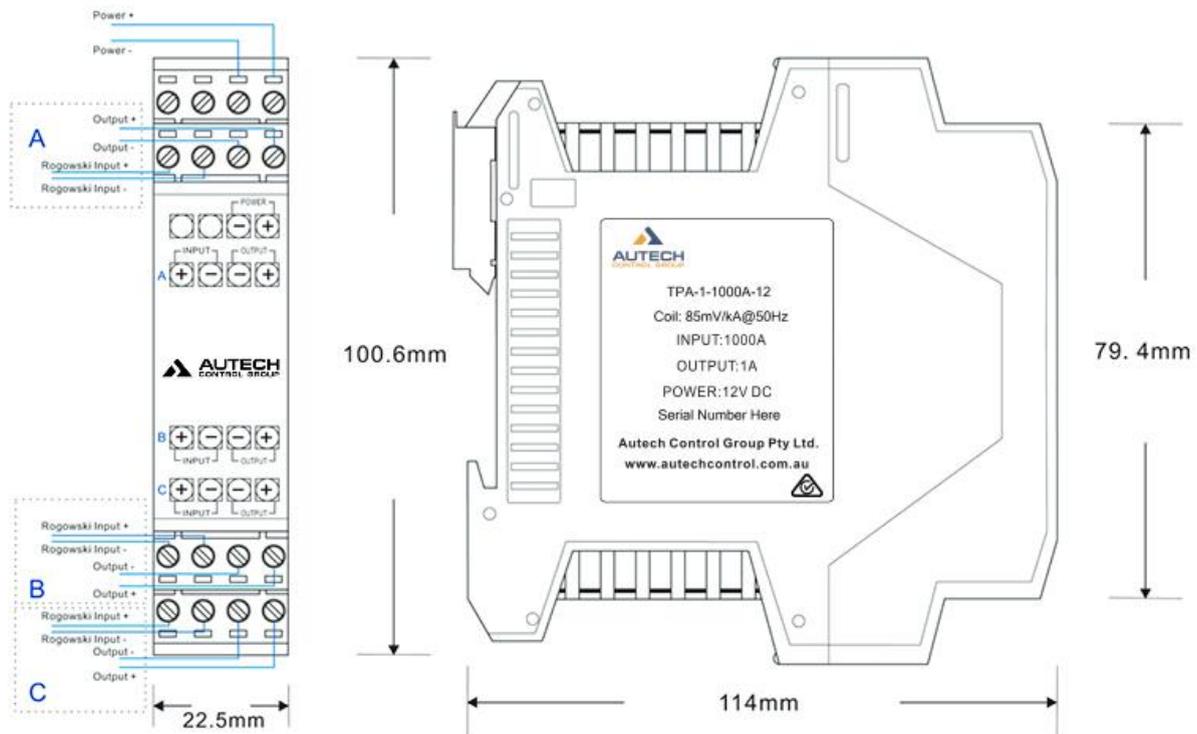
Rogowski coils have been used for the detection and measurement of electric currents for decades. They are based on a simple principle: an “air-cored” coil is placed around the conductor in a toroidal fashion and the magnetic field produced by the current induces a voltage in the coil. The voltage output 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.

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 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.



Specification

Model	TPA
Output	1A AC
Maximum Output (overload)	1.5A AC
Rated ratio	100A
	500A
	1000A
	3000A
	6000A
Read Accuracy	0.5% typical at 1%(≥10A) to 110% of rated Current @25°C
Phase error	≤0.5°
Linearity	±0.2% of reading (10% to 120% of range)
Bandwidth	30Hz to 5kHz
Maximum Burden	0.5Ω(each phase)
Measurement	Secondary CTs to measure output of integrator
Power consumption	8W
Output on 0A (zero drift)	≤0.01A
Temperature drift	200ppm/°C
Weight	20g
Dimension	114*100*22.5mm
Power supply	12V DC
Operating temperature	-20°C to 70°C
Storage temperature	-30°C to 90°C
Relative humidity	80% max. without condensation
Protection degree	IP20
Other requirements, please contact us to OEM.	

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.

TPA Integrator Wiring Diagram 3 Phase, 3 RGW

