DA05-1 Integrator

DA05-1 is a 5A output rogowski coil integrator,its power supply is 24V DC ，≤15W,

and it complies with standard clamping-track installation.

What does Integrator do?

• Rogowski coil output is weak voltage mV signal,DA05-1 has ability to amplify and convert it to standard signal which could be catched by multi-meter and scope.

• Rogowski coil output is proportional to the frequency of the measured current, the signal equalization ensure a linear response on a wide frequency range. DA05-1 allows to use coils on different electrical network frequencies, keeping the same output level over the frequencies.

• An integrator is essential to equalize 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

a.   DA05-1 can be combined with any model and size of Y-FCT, NRC or ZRC,MRC Rogowski coils.

b.   The available values are:0~5A AC.

c.   High bandwidth from 30 to 5kHz

d.   On request the input value can be customized according to the application.

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

Advantages

• High read accuracy 0.5%
• High bandwidth for measurement 30 to 5kHz
• Output 5A rms

Related Products

• Y-FCT,ZRC,NRC,MRC

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 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.
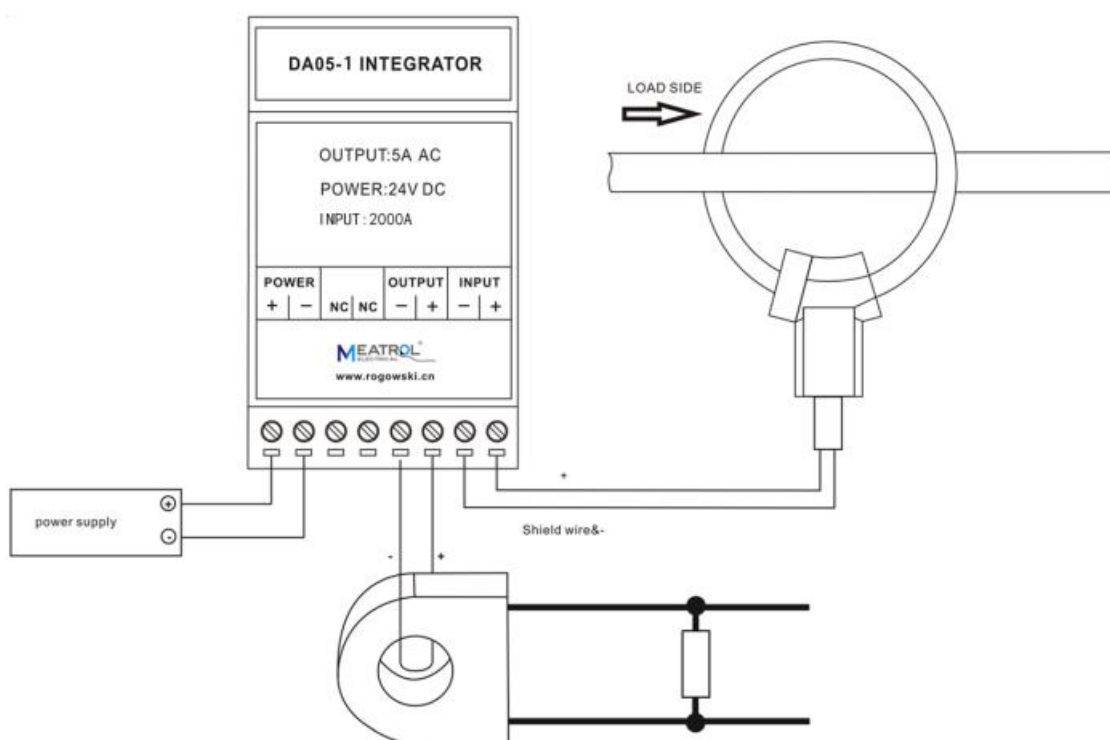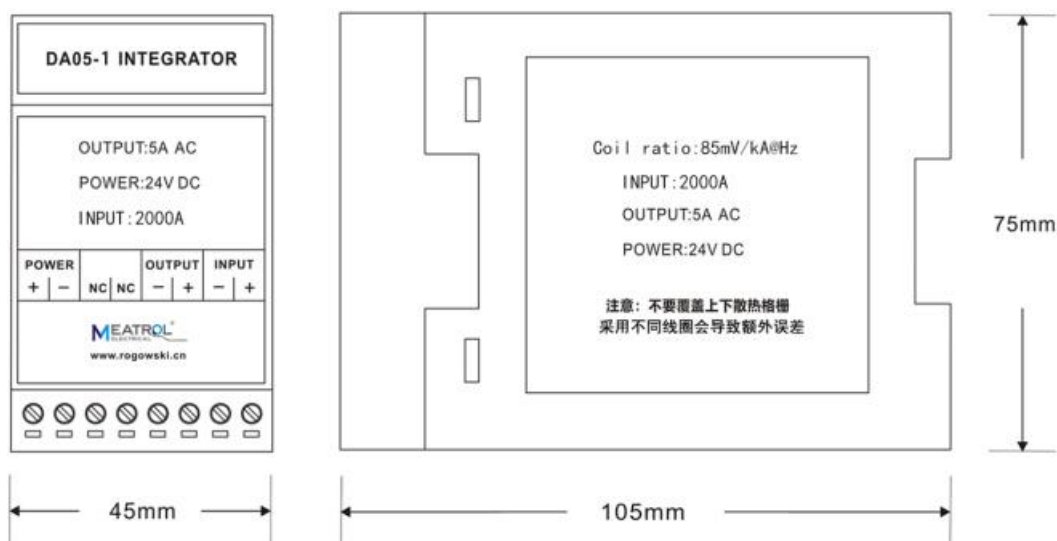By using precision winding techniques, especially developed for the purpose, the coils are manufactured so that their output is not influenced by the position of the conductor within the toroid, and to reject interference from external magnetic fields caused, for example, from nearby conductors.

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.
• High linearity.
• 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.

DA05-1 INTEGRATOR

OUTPUT:5A AC
POWER:24V DC
INPUT : 2000A

POWER				OUTPUT		INPUT	
+	−	NC	NC	−	+	−	+

MEATROL
www.rogowski.cn

Coil ratio:85mV/kA@Hz
INPUT : 2000A
OUTPUT:5A AC
POWER:24V DC

注意：不要覆盖上下散热格栅
采用不同线圈会导致额外误差

75mm

45mm

105mm

DA05-1 INTEGRATOR

OUTPUT:5A AC
POWER:24V DC
INPUT : 2000A

POWER				OUTPUT		INPUT	
+	−	NC	NC	−	+	−	+

MEATROL
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LOAD SIDE

power supply ⊕ ⊖

Shield wire&-

Note: Do not cover the upper and lower heat dissipation grille, the exhaust fan must be installed upward!

Specification

Model	DA05-1
Rated output	5A AC rms
Maximum Output(overload)	5.5A AC rms(for short term)
Rated ratio	100A 150A 1000A 3000A 6000A ....
Read Accuracy	0.5% typical at 1%(≥10A) to 110% of rated Current @25℃
Phase error	≤0.5°
Linearity	±0.2% of reading(10% to 120% of range)
Bandwidth	30Hz to 5kHz
Maximum Burden	0.2Ω(each phase)
Measurement	Secondary CT to measure output of integrator
Power consumption	≤15W
Output on 0A （zero drift）	≤0.5A@1000A
Temperature drift	50ppm/℃
Weight	220g
Dimension	105*75*45mm
Power supply	24V DC
Operating temperature	-20℃ to 70℃
Storage temperature	-30℃ to 90℃
Relative humidity	80% max.without condensation
Protection degree	IP20
Other requirements,please contact us to OEM.	

Safety and warning notes

In order to guarantee safe operation of the transducer and to be able to make proper use of all features and functions,please read these instructions thoroughly!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-danger.

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 have received an appropriate training,The corresponding national regulations shall be observed during 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 manufacturers' 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 ensure to 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.

WARING!

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

Order code

Coil:

Coil Model	Coil diameter (mm)	Output ratio and tolerance	Signal cable length
Code:Y-FCT	**Code:**200(Typical rated 500A) **Code:**350(Typical rated 1500A) **Code:**510(Typical rated 3kA) **Code:**800(Typical rated 10kA) **Y-FCT code is length.**	**Code:110** 110mV/kA@50Hz±5% **Code:100** 100mV/kA@50Hz±0.5% **Code:85** 85mV/kA@50Hz±0.5% **Code:50** 50mV/kA@50Hz±0.5%	**Code:-2m** **Code:-5m** **Code:-10m** **Code:-20m**
Code:NRC	**Code:**100(Typical rated 1kA) **Code:**150(Typical rated 3kA) **Code:**200(Typical rated 6kA)		
Code:MRC	**Code:**16(Typical rated 100A) **Code:**24(Typical rated 300A) **Code:**36(Typical rated 600A)	**Code:60** 60mV/kA@50Hz±5% **Code:50** 50mV/kA@50Hz±0.5%	
Code:SRC	**Code:50** **Code:100** **Code:150**	**Code:360** 360mV/kA@50Hz±5% **Code:333** 333mV/kA@50Hz±0.5% **Code:100** 100mV/kA@50Hz±0.5% **Code:85** 85mV/kA@50Hz±0.5% **Code:50** 50mV/kA@50Hz±0.5%	
Other requirement could be OEM			

Final Code=Coil model+Coil length+Output ratio tolerance+Signal cable length

For example:

Y-FCT-350-100-2m is Y shape connector,coil length 350mm,output 100mV/kA@50Hz 0.5% tolerance,signal cable length is 2meter.

Integrator:

Integrator	Output form	Output value	Rated current	Power supply
Code:D1 (DIN-RAIL integrator)	**Code: .1**(AC voltage output) **Code: .2**(DC voltage output)	**Code: -333**(333mV) **Code: -1**(1V) **Code: -5**(5V)		**Code: -12**(12V DC) **Code: -24**(24V DC)
	Code: .3(4-20mA output)	N/A		
Code:S9 (mini integrator)	**Code: .1**(AC voltage output) **Code: .2**(DC voltage output)	**Code: -333**(333mV) **Code: -1**(1V) **Code: -3**(3V)		**Code: -12**(6-12V DC) **Code: -24**(24V DC)
Code:S1 (high accuracy integrator)	**Code: .1**(AC voltage output) **Code: .2**(DC voltage output)	**Code: -333**(333mV) **Code: -5**(5V) **Code: -10**(10V)	**Code: -600A** **Code: -1kA** **Code: -3kA** **Code: -6kA**	**Code: -12**(4-12V DC) **Code: -24**(24V DC)
	Code: .3(4-20mA output)	N/A		
Code:ATP-01 (1A output three phase integrator)	**N/A**(0-1A)	N/A		**Code: -12**(12V DC) **Code: -24**(24V DC)
Code:A01 (1A output integrator)	**N/A**(0-1A)	N/A		N/A(85-265V AC DC)
Code:A05 (5A output integrator)	**N/A**(0-5A)	N/A		N/A(85-265V AC DC)
Code:HF (high frequency integrator)	**N/A**(0-10VAC peak)	N/A	**Code: -1kA**(1kA/1V) **Code: -10kA**(10kA/1V)	N/A(4-12V DC)
Other requirement could be OEM				

Final Code=Integrator+Output form+Output value+Rated current+Power supply

For example:

D1.1-1-500A-12 is D1 integrator,AC voltage output,500A rated,output 1V,power supply 12V DC

A01-1kA is A01 integrator,rated 1kA,output 1A,power supply 85-265V AC DC