Regowski Coils

Description

STP with an integrator that outputs a three-way Rochecoil signal through an RJ45 port or an eight-core

Highlights

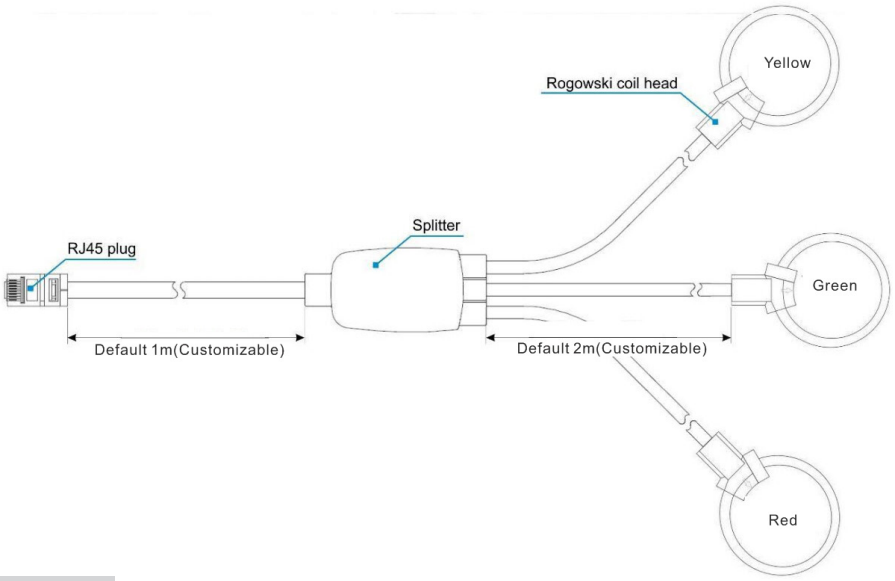
- Portable mini easy to install
- High linearity from 1A to 100 kA
- Wide dynamic range
- Very usefull with large size or awkward shaped conductors or in places with limited access
- No danger from open-circuited secondary
- Not damaged by large overloads
- Non-intrusive,no power draw from the mai
- Measurement uniformity at any position of the conductor inside the coil
- Excellent degreen of rejection to the external current conductor

Specifications

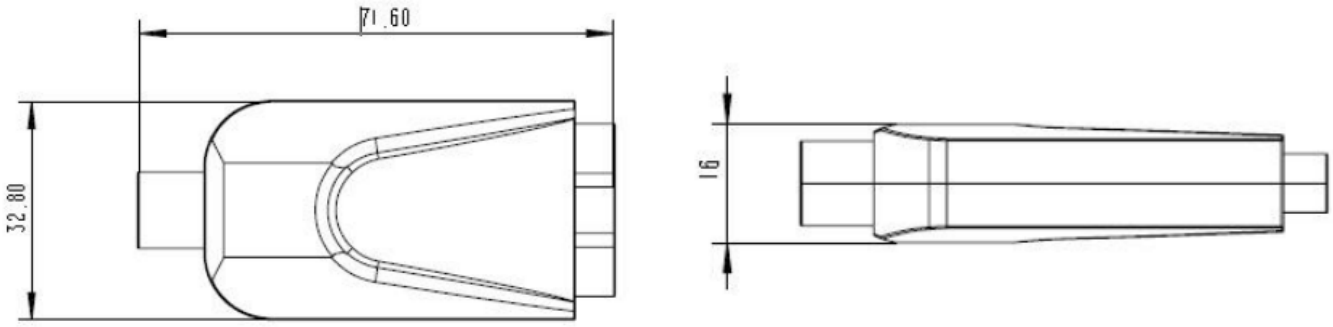
Coil length		200mm
Window size		50mm
Reference Rated Current		600A
Ratio	Calibrated(default)	85mV/kA@50Hz/100mV/kA@50Hz
	Uncalibrated	105mV/kA@50Hz
Read Accuracy		Calibrated<0.5%(central position,25°C)
		Uncalibrated<0.5%tolerance(central position,25°C)
Maximum current measurable		100kA
Coil Resistance		from 100-250Ω
Coil Section		8mm
Lead lenght		2meter
Temperature		Uncalibrated 200ppm/C
		Calibrated 300ppm/C
Position Error		±1% maximum
Output on 0 A(zero drift)		≤0.1mA
Phase error		≤0.5°
Linearity		±0.2% of reading
Bandwidth		1Hz to 100kHz (-3dB)
Operating Temperature		-30°C to 80°C
Storage Temperature		-40°C to 90°C

Other requirements , please contact us to OEM.

Wiring Diagram

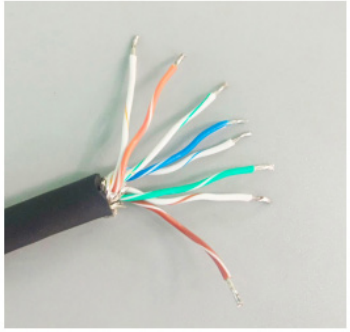


Dimensions

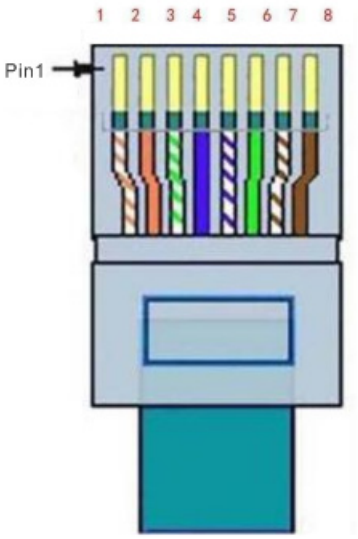


Definition of RJ45 Joint

RJ45Plug



Eight Core Output



With Integratr

Pin1(Orange and White)	Output1(-)
Pin2(Orange)	Output1(+)
Pin3(Green and White)	G
Pin4(Blue)	Output2(-)
Pin5(Blue and White)	Output2(+)
Pin6(Green)	V+
Pin7(Brown and White)	Output3(-)
Pin8(Brown)	Output3(+)

Safety Instructions

The coil can be safe only if it is used within the proper parameter range. Please read the following instructions carefully

Warning!

Ignoring this warning can result in serious danger!
The installation and operation of Rogowski coil can only be carried out by professionals who have received relevant training and obtained qualification certificate, and the installation or operation process shall comply with the corresponding countries
Safety regulations and relevant manufacturer's operating instructions are used in electrical or electronic equipment meeting the parameter standards and safety requirements.

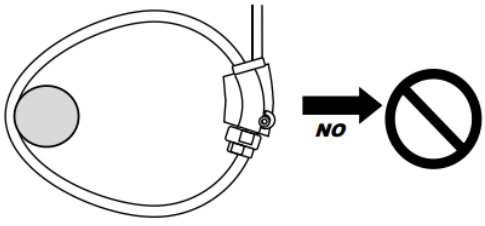
Electric shock warning!

When operating the Rogowski coil, some parts of the module may carry dangerous voltage. The user shall ensure that all necessary measures are taken to prevent electric shock.
The Rogowski coil is a built-in device that contains conductive parts that cannot be touched after installation. A protective cover or additional insulation barrier may be required.
When the equipment fails and needs to be repaired, the maintenance shall be carried out after the main power supply is disconnected unless it is confirmed that there is no dangerous live module in or near the power system Etc
The safe and trouble free operation of the coil can be guaranteed only under the condition of correct transportation, storage, installation, careful operation and maintenance

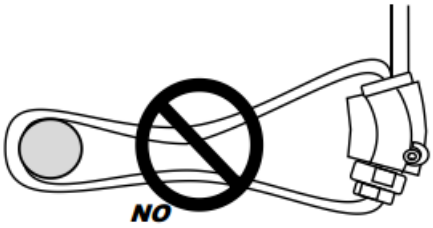
Notices!

Do not damage the coil. The accuracy and service life of the equipment will be greatly reduced by twisting, puncturing, over extruding and bending

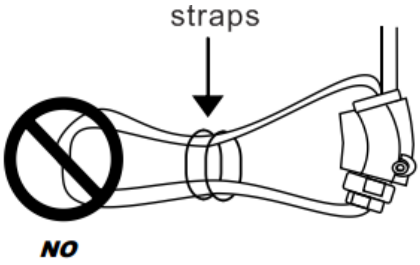
Please do not pull by force



Please do not bend by force



Please do not pack in a bent



Coil

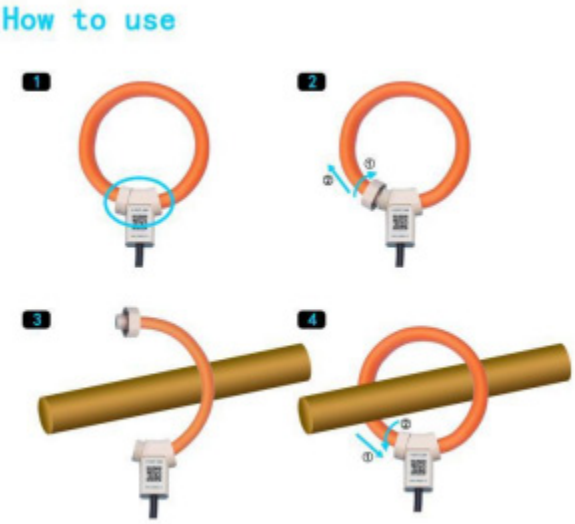
Coil Model	Coildiameter(mm)	Output ratio and tolerance	Signal cable-length
Code:Y-FCT	Code:200(Typical rated 500A)Code:350(Typical rated1500A) Code:510(Typical rated3kA) Code:800(Typical rated10kA) Y-FCT code is length.	Code:110 110mV/ kA@50Hz±5% Code:100 100mV/ kA@50Hz±0.5% Code:85 85mV/ kA@50Hz±0.5% Code:50 50mV/kA@50Hz±0.5%	Code:-2m Code:-5m Code:-10m Code:-20m
Code:NRC	Code:100(Typical rated1kA) Code:150(Typical rated3kA) Code:200(Typical rated6kA)		
Code:MRC	Code:16(Typical rated100A) Code:24(Typical rated300A) Code:36(Typical rated600A)	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%	

Final Code=Coil model+Coil length(MRC NR Cisdiameter)+Output ratio tolerance+Signal cable length For example:Y-FCT-350-100-2m is Y shape connector,coil length 350mm,output100mV/kA@50Hz0.5%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:-600A Code:-1kA Code:-3kA Code:-6kA	Code:-12(12VDC) Code:-24(24VDC)
	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(6-12VDC) Code:-24(24VDC)
Code:S1 (high accuracy integrator)	Code:.1 (ACvoltageoutput) Code:.2 (DCvoltageoutput)	Code:-333(333mV) Code:-5(5V) Code:-10(10V)		Code:-12(4-12VDC) Code:-24(24VDC)
	Code:.3 (4-20mAoutput)	N/A		
Code:ATP-01 (1A output three phaseintegrator)	N/A(0-1A)	N/A		Code:-12(12VDC) Code:-24(24VDC)
Code:A01 (1Aout put integrator)	N/A(0-1A)	N/A		N/A(85-265VACDC)
Code:A05 (5A output integrator)	N/A(0-5A)	N/A		N/A(85-265VACDC)
Code:HF (high frequency integrator)	N/A(0-10VAC-peak)	N/A	Code:-1kA(1kA/1V) Code:-10kA(10kA/1V	N/A(4-12VDC)

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 supply12VDCA01-1kA is A01integrator,rated1kA,output 1A,power supply 85-265V AC DC



Flexible Rogowski coil

- 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

Y-FCT is a flexible current transducer based on Rogowski principle, particularly suitable for measurement in combination with portable devices. Y-FCT 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 confortable solution for current measurement and can be used in a number of cases where traditional current transducer is not the adequate solution. Y-FCT 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 equalization. Our DIN-RAIL and panel meters can interface Rogowski coils directly without the need of the external integrators. This is an advantage because there is no external boxes or any power supply with consequent ease of use. 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.

Advantage

- Calibrated to 0.5%
- 8mm section easy to install
- Two layers shielded
- 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 analyzer sensor

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.
• 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.

Specification

MODEL	**Y-FCT-200**	**Y-FCT-350**	**Y-FCT-510**	**Y-FCT-800**
Coil length	200mm	350mm	510mm	800mm
Window size	50mm	100mm	150mm	240mm
Reference Rated current	600A	1000A	3000A	6000A
Coil Resistance	140 (+/-10) Ω	210 (+/-10) Ω	290 (+/-10) Ω	430 (+/-10) Ω

Ratio	Calibrated	85mV/kA@50Hz 100mV/kA@60Hz	50mV/kA@50Hz
	Uncalibrated	110mV/kA@50Hz	
Read Accuracy		Calibrated <0.5% (central position, 25℃) Uncalibrated < 5% tolerance (central position, 25℃)	
Maximum current measurable		100kA	
Coil Resistance		from 100 to 250 Ω	
Coil Section		8mm	
Lead length		2meter	
Temperature		Uncalibrated 200ppm/C	
		Calibrated 300ppm/C	
Position Error		±1% maximum	
Output on 0A (zero drift)		≤0.05mV	
Phase error		≤0.5°	
Linearity		±0.2% of reading	
Bandwidth		1Hz to 100kHz(-3dB)	
Operating temperature		-30℃ to 80℃	
Storage temperature		-40℃ to 90℃	
Other requirements, please contact us to OEM.			

Position sensitivity

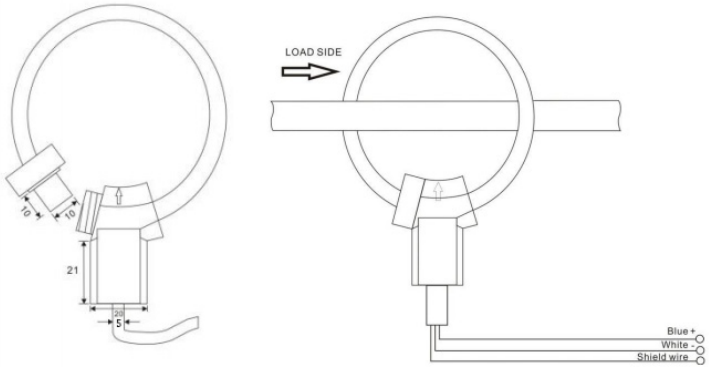
Conductor Position	Typical Error(%)
Adjacent to the center of coil	0.2%
Adjacent to the inside coil	<1%

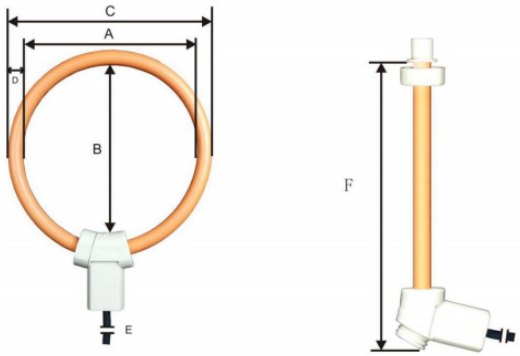
Materials

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

Safety

Certifications	CE marked
	Complies with LVD EN 61010-1:2010 EMC EN 61326-1:2013
	IP65
Voltage insulation	Coil: 2000V
	Signal cable:1000V
Safety	1000V CATIII ,600V CATIV





Dimensions tolerance:
A,B,C,F:±5mm, D:±0.2mm,E:±10mm

Dimensions(mm)	Y-FCT-200	Y-FCT-350	Y-FCT-510	Y-FCT-800
A.Windows size A	50	105	155	245
B.Windows size B	60	100	150	240
C.Coil O.D.	66	121	171	261
D.Coil section	8			
E.Lead Cable Total Length	2000			
F:Coil length	200	350	510	800