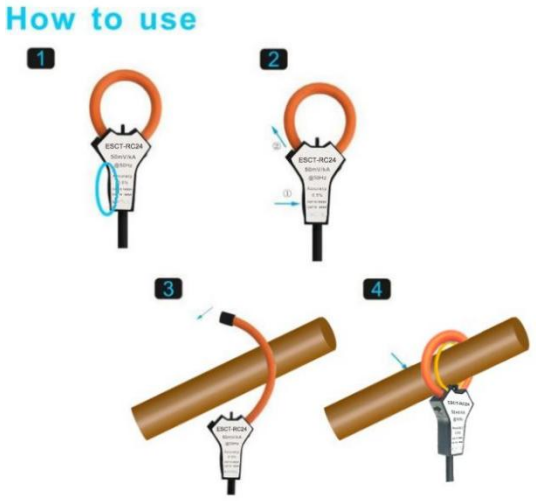


ESCT-RC16/24/36

Ø6 Flexible Rogowski coil fixed by cable ties

- High linearity from 1A to 100kA/500kA
- 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

The ESCT-RC Series flexible current transducer has been designed for accurate non-intrusive measurement of alternating current (AC), high-speed current pulses or distorted waveforms where traditional rigid core CTs are unsuitable.

ESCT-RC Series coils can be customized in different sizes. The ESCT-RC Series window size is as small as 16 mm, coil section only 6mm, which is the smallest Rogowski coil in the world for electric power applications. The ESCT-RC Series can also be fixed to the conductor by cable ties. Therefore, flexible Rogowski coil is an extremely comfortable solution for current measurement and can be used in all applications where traditional CTs are not suitable due to their size and/or weight.

The Rogowski coil does not require power supply, but must be connected to the integrator to achieve 90° phase-shift compensation and frequency equalization.

We also provide Rogowski coil related integrator and meter solutions. Our meter can be connected directly to the Rogowski coil without the need for an external integrator. This is an advantage because there is no external box or any power supply, so it is easy to use.

Advantage

- Calibrated to 0.5%
- 6mm section make more stable
- Easy to fixed on bus-bar or cable by cable ties
- Very competitive price

Applications

- Measuring devices, lab instrumentation
- Power monitoring & control systems
- DC ripple measurement
- Harmonics and transients monitoring
- Power Meter, Power Analyze 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 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	ESCT-RC16	ESCT-RC24	ESCT-RC36
Coil length	80mm	97mm	130mm
Window size A:	22mm	27.5mm	36mm
Window size B:	16mm	24mm	37mm
Reference Rated current	100A	300A	600A
Coil Resistance	55 (+/-10) Ω	65 (+/-10) Ω	80 (+/-10) Ω
Weight	Approx. 100g	Approx. 102g	Approx. 105g
Maximum current measurable	100kA		
Coil Section	6mm		
Lead length	2 meter		
Output (di/dt)	Uncalibrated	60mV/kA@50Hz 72mV/kA@60Hz	
	Calibrated	50mV/kA@50Hz 60mV/kA@60Hz	
Read Accuracy	Calibrated <0.5% (central position, 25℃) Uncalibrated < 5% tolerance (central position, 25℃)		
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℃		
For other requirements, please contact us for customization.			

Position sensitivity

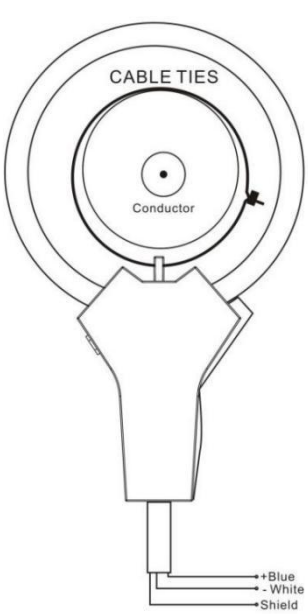
Conductor Position	Typical Error (%)
Adjacent to the clip together mechanism	＜0.5%
Adjacent to the opposite clip	＜1%

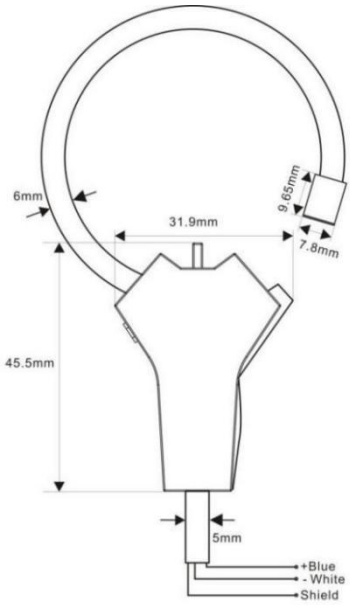
Materials

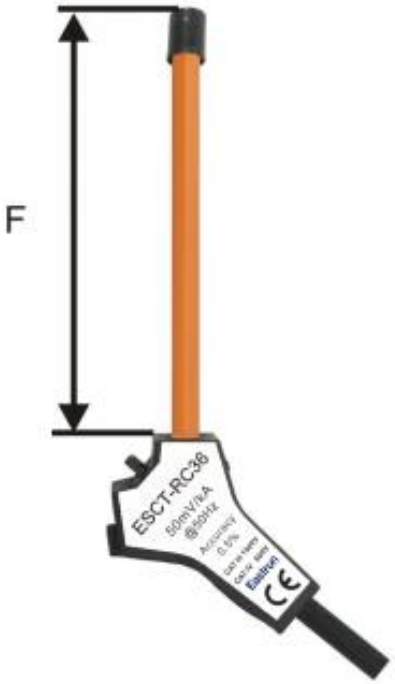
Coil & cable	Thermoplastic rubber flame retardant UL 94 V-0 rated
Couplings	PC UL 94 V-O rated
Color(coil)	Orange
Shielded	100% coil, 100% output cable

Safety

Certifications	CE certification
	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







Dimension's tolerance:

A,B,C,F:±1mm, D:±0.2mm,E:±10mm

Dimensions(mm)	ESCT-RC16	ESCT-RC24	ESCT-RC36
A. Window size A	22	27.5	36
B. Window size B	16	24	37
C. Coil O.D.	24	39.5	48
D. Coil section Diameter	6		
E. Lead Cable Total Length	2000		
F. Coil length	80	97	130

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-date technical information that can be found in the latest associated datasheet under www.eastrongroup.com.

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.

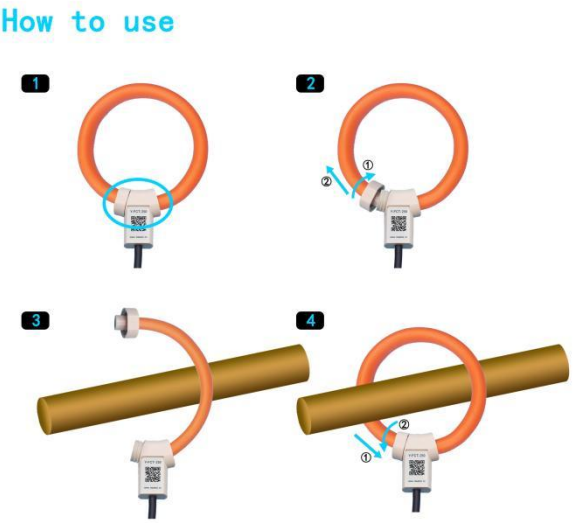
Safe and trouble-free operation of this transducer can only be guaranteed if transport, storage and installation are carried out correctly and operation and maintenance are carried out with care.

Caution! Risk of electrical shock

Do not apply around or remove from uninsulated hazardous live conductors which may result in electric shock, electric burn or arc flash.

WARING!

Do not stress the coil by applying any kind of mechanical force (transport, storage pressure, tight bending.) which will dramatically degrade the device's accuracy.



ESCT-RC60/105/240

Ø8 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

ESCT-RC Series is a flexible current transducer based on Rogowski principle, particularly suitable for measurement in combination with portable devices. ESCT-RC Series 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.

ESCT-RC Series 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 Analyze 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		ESCT-RC60	ESCT-RC105	ESCT-RC240
Coil length		200mm	350mm	800mm
Window size A:		60mm	105mm	245mm
Window size B:		50mm	100mm	240mm
Reference Rated current		600A	1000A	6000A
Coil Resistance		140 (+/-10) Ω	210 (+/-10) Ω	430 (+/-10) Ω
Weight		140g	150g	180g
Ratio	Calibrated	85mV/kA@50Hz		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

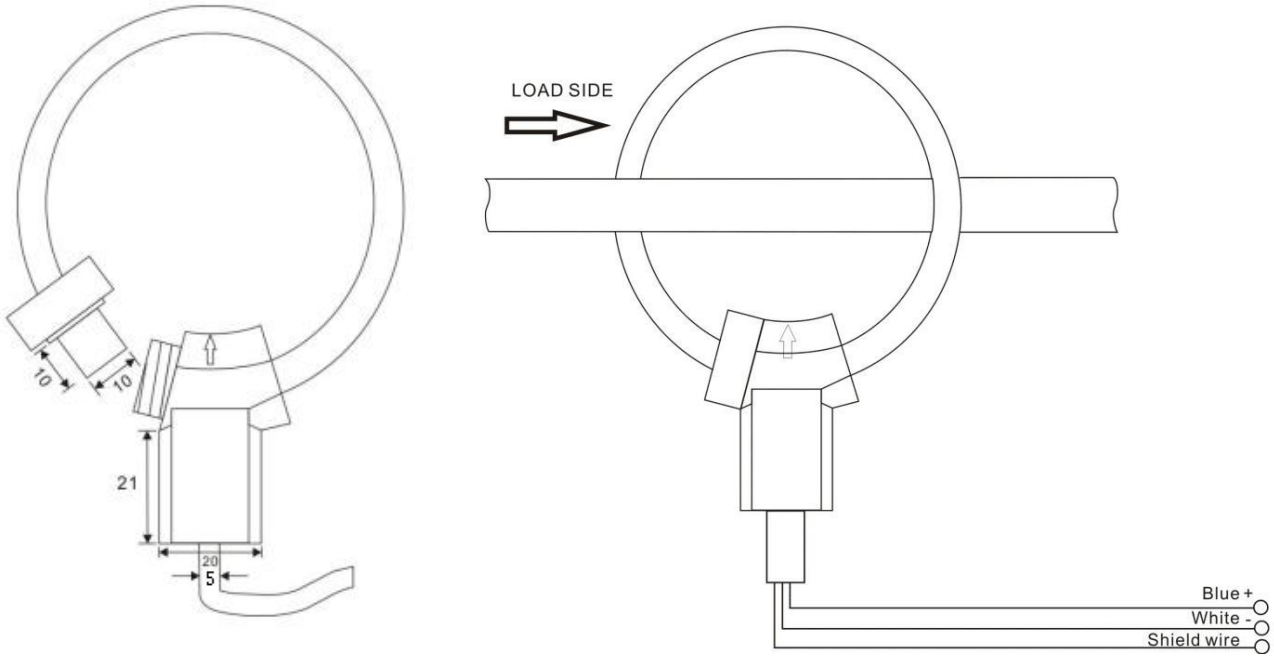
Conductor Position	Typical Error(%)
Adjacent to the center of coil	0.2%
Adjacent to the inside coil	＜1%

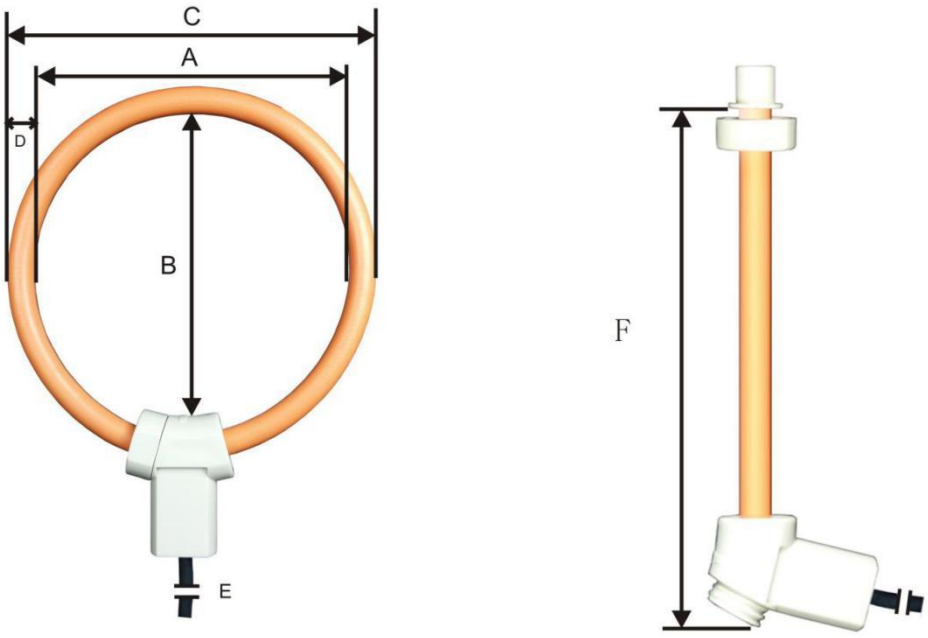
Materials

Coil & cable	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)	ESCT-RC60	ESCT-RC105	ESCT-RC240
A.Windows size A	60	105	245
B.Windows size B	50	100	240
C.Coil O.D.	66	121	261
D.Coil section	8		
E.Lead Cable Total Length	2000		
F:Coil length	200	350	800

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-date technical information that can be found in the latest associated datasheet under www.eastrongroup.com.

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.

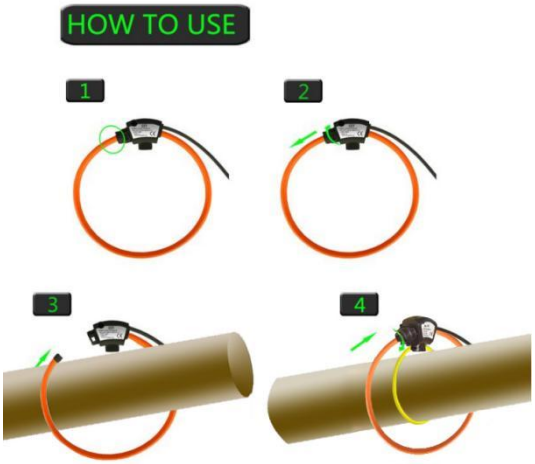
Caution!Risk of electrical shock

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.



ESCT-RC100/150/200

Ø8 Flexible Rogowski coil fixed by cable ties

- 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

ESCT-RC Series is a flexible current transducer based on Rogowski principle, particularly suitable for measurement in combination with portable devices. ESCT-RC Series 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 comfortable solution for current measurement and can be used in a number of cases where traditional current transducer is not the adequate solution.

ESCT-RC Series 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 are 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
- Easy to fixed on bus-bar and cable by cable ties
- Lower zero drift down to 0.1mV

Applications

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

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 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		ESCT-RC100	ESCT-RC150	ESCT-RC200
Coil length		395mm	525mm	665mm
Window size A:		135mm	165mm	210mm
Window size B:		100mm	150mm	200mm
Reference Rated current		1000A	3000A	6000A
Coil Resistance		260 (+/-10) Ω	320 (+/-10) Ω	390 (+/-10) Ω
Weight		Approx. 140g	Approx. 150g	Approx. 170g
Ratio	Calibrated	85mV/kA@50Hz 102mV/kA@60Hz		50mV/kA@50Hz 60mV/kA@60Hz
	Uncalibrated	110mV/kA@50Hz 132mV/kA@60Hz		
Read Accuracy		Calibrated <0.5% (central position, 25℃) Uncalibrated < 5% tolerance (central position, 25℃)		
Maximum current measurable		100kA		
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℃		
For other requirements, please contact us for customization.				

Position sensitivity

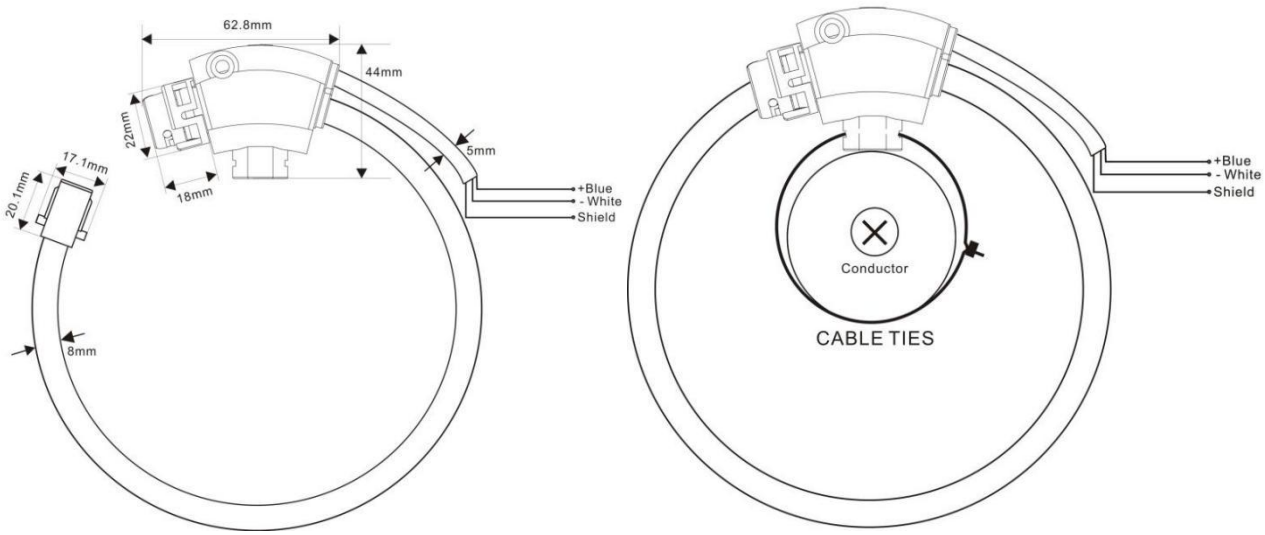
Conductor Position	Typical Error (%)
Adjacent to the center of coil	＜0.5%
Adjacent to the inside of coil	＜1%

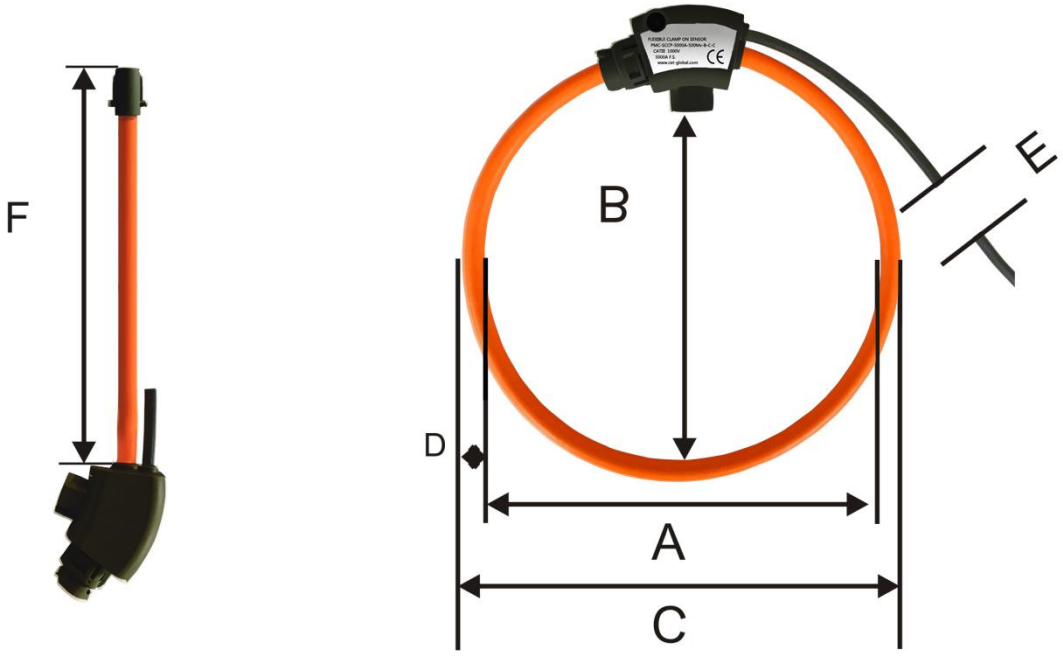
Materials

Coil & cable	Thermoplastic rubber flame retardant UL 94 V-0 rated
Couplings	PC, ABS UL 94 V-0 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
	IP67
Voltage insulation	Coil: 2000V
	Signal cable:1000V
Safety	1000V CATIII ,600V CATIV





Dimension's tolerance:

A,B,C,F:±5mm, D:±0.2mm,E:±10mm

Dimensions(mm)	ESCT-RC100	ESCT-RC150	ESCT-RC200
A. Windows size A	135	165	210
B. Windows size B	100	150	200
C. Coil O.D.	151	181	226
D. Coil section	8		
E. Lead Cable Total Length	2000		
F. Coil length	395	525	665

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-date technical information that can be found in the latest associated datasheet under www.eastrongroup.com.

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Do not apply around or remove from uninsulated hazardous live conductors which may result in electric shock, electric burn or arc flash.

WARING!

Do not stress the coil by applying any kind of mechanical force (transport, storage pressure, tight bending.) which will dramatically degrade the device's accuracy.