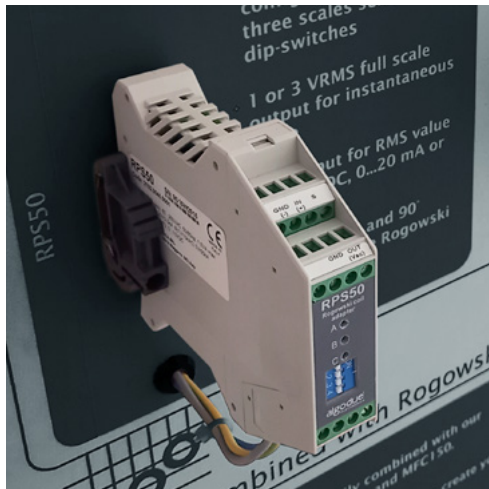


mountin
rent full scale
including



**ROGOWSKI
COILS
CATALOGUE**



ALGODUE ROGOWSKI COILS



WHAT IS A ROGOWSKI COIL?

Rogowski coils are flexible sensors that have been used for the detection and measurement of electric currents for decades.

The absence of an internal metal core allows the coil to have a flexible and lightweight structure so that it can be hung on the measured conductor. This feature, moreover, allows to accurately measure the AC component, avoiding the\its saturation.

HOW DOES THE ROGOWSKI COIL WORK?

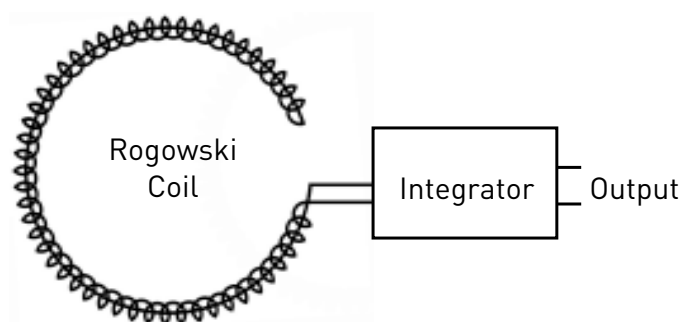
It is based on a simple principle: an “air-cored” coil is placed around the conductor in a toroidal fashion; the magnetic field produced by the current induces a voltage in the coil.

The voltage output is proportional to the rate of change of current. This voltage is integrated, thus producing an output proportional to the current.

The output voltage is proportional to the change in current, and after an operational amplifier integrator, is proportional to the value of the current itself.

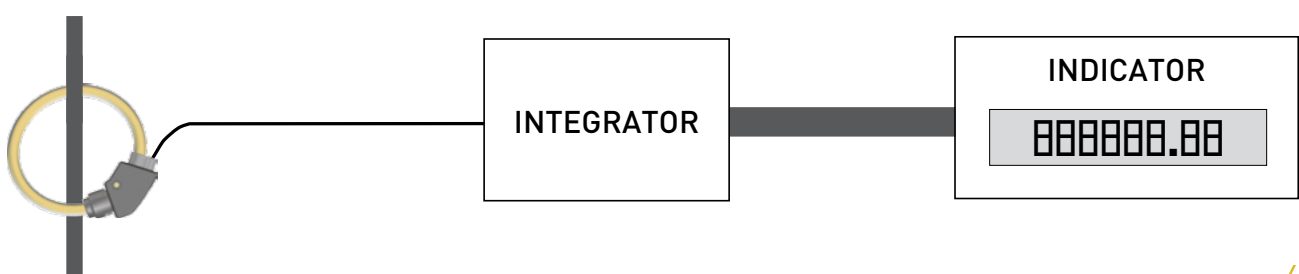
HOW TO INTEGRATE A ROGOWSKI COIL INTO THE SYSTEM?

A current measurement system based on a Rogowski coil consists of its combination with an electronic conditioner.



Current measurement system

EXAMPLE OF CONNECTION



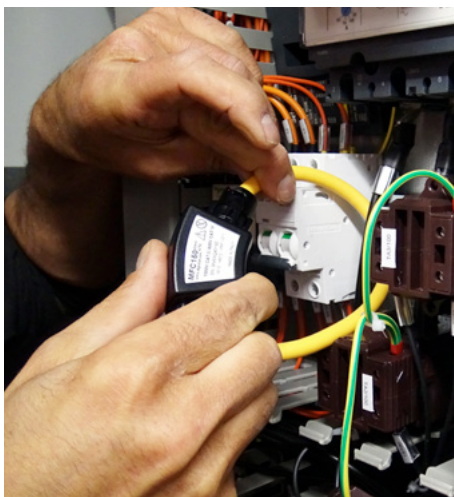
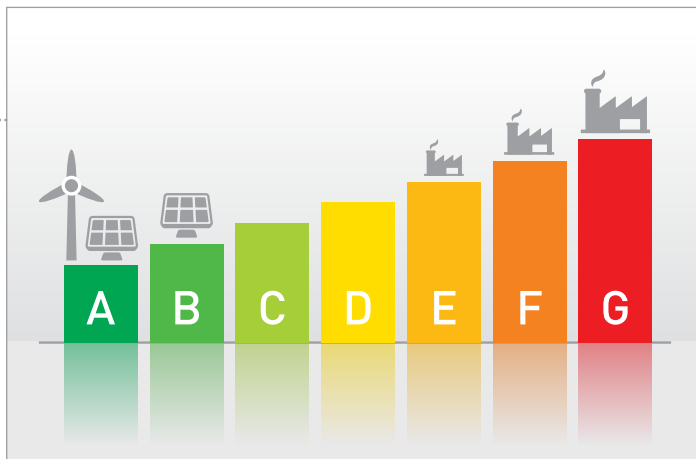
APPLICATIONS



ENERGY AUDITS

The energy service companies, starting from the energy diagnosis, identify the best possible interventions to optimize consumption.

In order to carry out a diagnosis they need measuring instruments such as Algodue Rogowski coils.



RETROFITTING

Algodue Rogowski coils are often used in modifications / extension / upgrades of existing electrical installations as they are the best solution in different situations:

- their compactness makes them ideal for limited or defined spaces as in electrical panels.
- lightness and flexibility allow installation and suspension directly to the conductor, even in cases where these are irregular, bulky, or multiple.
- installation cuts installation time down to 1/6 vs. compared to that of traditional current transformers.



ENERGY MONITORING

Through the measurement and analysis of electrical parameters it is possible to control and manage energy consumption and relative costs, obtaining an effective and concrete result in terms of yield and savings.

Algodue Rogowski coils combined with a measurement instrument are the ideal solution for industrial environments (e.g., control systems supervision, individual machinery loading, very high current monitoring), and renewable energy innovation.



FEATURES



QUICK AND EASY INSTALLATION

To install a Rogowski coil, simply place it around the conductor and perform the bayonet closure, with a simple click and in just few seconds, regardless of the size or shape of the conductor.



CONTINUITY AND SECURITY

Non-intrusive solution since it does not draw power from the main power circuit. The robustness of the bayonet ensures its optimal closure with an excellent effect on the performance.



LIGHT STRUCTURE

The absence of a magnetic core makes the coil flexible and space-saving, thus suitable even for limited spaces. Its lightness allows it to be suspended around the conductor that is measuring.



COMPACTNESS AND SCALABILITY

Great flexibility of installation even in limited space due to its compactness. Unlike conventional transformers, the value of the current to be measured does not affect neither the size nor the weight of the coil, making it suitable to meet any need.



WIDER MEASURING RANGE

With the same coil, it is possible to detect current values from a few Amps up to several kAmps. The absence of an internal core prevents the coil from saturation. The result is a high linearity even at high currents, and a valid and universal solution.



EXCELLENT COST-PERFORMANCE RATIO

The Rogowski coil is a unique solution, capable of meeting different needs, as it allows savings in purchasing costs, transportation and warehouse storage, with consequent optimization of the overall business.



ALGODUE BENEFITS



HIGH PRECISION

Accuracy and positioning error of 0,5% even close to the junction point. Junction point insensible both to the positioning of the internal conductor and to currents carried by external conductors. Coil and cable totally shielded.



UNIFORMITY OF MEASUREMENT & CALIBRATION

Calibration improves the coil performance: this is why every Algodue coil is tested and calibrated.

Very low positioning error in both perpendicular (A1 - IEC 61869-10) and diagonal (A3 - IEC 61869-10) positions.



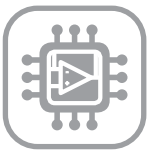
WIDE RANGE OF MODELS

Various models available depending on the application needs: minimum diameter from 4cm, rope lengths of even more meters and cable length up to 15m and more (on request).



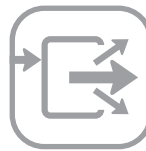
UL CERTIFICATION

Algodue Rogowski coils are UL certified, according to different standards depending on the model, to meet the market security needs.



COMBINABILITY AND INTEGRATION

The built-in integrator available on selected models ("F" Models) allows the direct connection of Algodue coils to market instruments with 333mV standard input without the use of an external integrator with consequent savings in space, time and money.



MULTISCALES INTEGRATORS

Algodue integrators are suitable for easily implementing Rogowski coils in an existing system. Available in different versions, the result is a system with maximum flexibility and conforming to your needs.



A WIDE RANGE



THE ROGOWSKI COILS RANGE WITH THE BEST VERSATILITY AND INNOVATION ON THE MARKET

Algodue flexible Rogowski Coils can measure from a few Amps to several kAmps by using the same coil. They can be combined with integrators or dedicated meters for a compact measuring system.

MFC140 suitable for small conductors

MODEL	Coil detail			Standard cable length	Nominal output values (RMS values)	With built-in integrator	Outdoor	Operating temperature	UL Certification
	Coil length	Internal diameter (Ø)	Cord diameter						
MFC140	15...50 cm	4...15 cm	7.2 ±0.2 mm	3 m*	100mV/kA @ 50Hz		•	-40...+75°C	
MFC140/F	15...50 cm	4...15 cm	7.2 ±0.2 mm	3 m*	333mV/FS	•	•	-40...+75°C	
MFC140-UI/O	15...50 cm	4...15 cm	7.2 ±0.2 mm	3 m*	100mV/kA @ 50Hz		•	-35...+75°C	UL 2808
MFC140-UI/OF	15...50 cm	4...15 cm	7.2 ±0.2 mm	3 m*	333mV/FS	•	•	-35...+75°C	UL 2808

MFC150 the best selection for measuring a wide range of current

MODEL	Coil detail			Standard cable length	Nominal output values (RMS values)	With built-in integrator	Outdoor	Operating temperature	UL Certification
	Coil length	Internal diameter (Ø)	Cord diameter						
MFC150	25...300 cm	5...94 cm	8.3 ±0.2 mm	3 m*	100mV/kA @ 50Hz			-30...+80°C	UL 61010-1
MFC150/F	25...300 cm	5...94 cm	8.3 ±0.2 mm	3 m*	333mV/FS	•		-30...+80°C	UL 61010-1
MFC150-UI	30...300 cm	7...94 cm	8.3 ±0.2 mm	3 m*	100mV/kA @ 50Hz			-35...+75°C	UL 2808
MFC150-UI/O	30...300 cm	7...94 cm	8.3 ±0.2 mm	3 m*	100mV/kA @ 50Hz		•	-35...+75°C	UL 2808
MFC150-UI/F	30...300 cm	7...94 cm	8.3 ±0.2 mm	3 m*	333mV/FS	•		-35...+75°C	UL 2808
MFC150-UI/OF	30...300 cm	7...94 cm	8.3 ±0.2 mm	3 m*	333mV/FS	•	•	-35...+75°C	UL 2808

MFC190 for higher measurement resolution

MODEL	Coil detail			Standard cable length	Nominal output values (RMS values)	With built-in integrator	Outdoor	Operating temperature	UL Certification
	Coil length	Internal diameter (Ø)	Cord diameter						
MFC190	30...300 cm	8.3...94.2 cm	12.4 ±0.2 mm	3 m*	333mV/kA @ 50Hz			-30...+80°C	UL 61010-1

* Optional cable length: 5, 7, 10, 15 m

MULTISCALE INTEGRATORS FOR ROGOWSKI COILS to get the right signal for the application needs

MODEL	Power supply	Selectable scales			OUTPUT		Operating temperature
		Option 1	Option 2	Option 3	Output 1	Output 2 (optional)	
RPS51 °	80...265 VCA	100-500-1000-5000 A			1 A RMS		-25 ... +55°C
RPS50 **	80...265 VCA	0,5-2,5-10 kA	2,5-10-50 kA	10-50-250 kA	1V RMS ^ 3V RMS ^	0...10 VCC	-10°C...+50°C
FCA3000 **	80...265 VCA	3000 A	10000 A		0...20 mA ^ 4...20 mA ^ 0...10 VCC ^		-10°C...+50°C

** to be combined with MFC150

° to be combined with MFC140 or MFC150

^ to be selected at the time of order



ROGOWSKI COILS



COIL CROSS SECTION
7 or 8 mm



COIL CROSS SECTION
12 mm



WITH/O BUILT-IN
INTEGRATOR



OUTPUT VALUE:
0,3 V/kA



MEASUREMENT FROM
mA TO VARIOUS kA



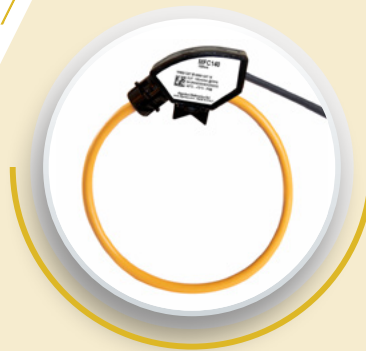
UL 61010-1
UL 2808



COMPLETELY
SHIELDED



IEC 61869-10



MFC140



MFC140-UI



MFC150



MFC150-UI



MFC190

FEATURES

- UL lister or recognized
- Already calibrated
- Reduced cord diameter
up to 7mm for MFC140
up to 8mm for MFC150
up to 12mm for MFC190
- Uniformity of measurement with the conductor placed in every position inside the sensor
- High insensibility to external current carrying conductors

APPLICATIONS

- Retrofitting
- Energy audits
- Energy monitoring and control systems
- Load monitoring of single machines
- Power peak control
- Control panels, generators, motor control, etc.
- Load supervision of single machines
- Measuring devices, lab instruments
- Harmonics and transients monitoring
- Very high current monitoring



MFC140

Ø7 mm flexible Rogowski coil

- Two available models: with or without integrator
- For outdoor use
- Suitable to measure currents from A to several kA
- High linearity
- Very useful with large size or awkward shaped conductors or in places with limited access
- 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
- Delivered already calibrated
- Very thin coil diameter: down to 7 mm
- Provided with an accessory to secure the coil to the busbar
- Measurement uniformity at any position of the conductor inside the coil
- Excellent degree of rejection to the external current conductor
- Possibility to seal the locking of the coil



SPECIFICATIONS

COIL	
Coil length:	15...50 cm
Sensor internal diameter:	4...15 cm
Cord diameter:	7.2 ±0.2 mm
Jacket material:	Polyphenylene and thermoplastic elastomer
Fastening:	Bayonet holder
Weight:	150...500 g

ELECTRICAL CHARACTERISTICS FOR MODEL WITHOUT INTEGRATOR	
Nominal output rate:	100 mV/kA @ 50 Hz (RMS values)
Max measurable current:	600 A with 15...28 cm coil length 2500 A with 29...41 cm coil length 5000 A with 42...50 cm coil length
Coil resistance:	170...690 Ω
Accuracy:	Class 1-A1 according to IEC 61869-10
Frequency:	50/60 Hz
Overvoltage category:	1000 V CAT III, 600 V CAT IV
Pollution degree:	3
Insulation test voltage:	7400 V _{RMS} / 5 s

ELECTRICAL CHARACTERISTICS FOR MODEL WITH INTEGRATOR	
Power voltage:	4...26 VCC
Max consumption:	5 mACC
Nominal output rate:	333 mV / FS (RMS values) FS changes according to the model: 200, 250, 600, 1000 A
Positioning error:	Better than ±1% of reading
Frequency:	50/60 Hz
Overvoltage category:	1000 V CAT III, 600 V CAT IV
Pollution degree:	3
Insulation test voltage:	7400 V _{RMS} / 5 s

CONNECTION CABLE FOR MODEL WITHOUT INTEGRATOR

Type:	3 x 24 AWG shielded
Length:	3 m. Other lengths on request: 5, 7, 10, 15 m

CONNECTION CABLE FOR MODEL WITH INTEGRATOR

Type:	5 x 24 AWG shielded
Length:	3 m. Other lengths on request: 5, 7, 10, 15 m

ENVIRONMENTAL CONDITIONS

Protection degree:	IP68
Altitude:	Up to 2000 m over sea-level
Operating temperature:	-40 ... +75°C up to 2500 A with 15 ... 41 cm coil length -40 ... +60°C up to 5000 A with 42 ... 50 cm coil length
Storage temperature:	-40...+90°C
Relative humidity:	0...95%
Installation and use:	Outdoor

STANDARD COMPLIANCE

IEC standards:	IEC 61010-1, IEC 61010-2-032, IEC 60529
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ORDER CODE	COIL DETAIL		CABLE DETAIL	COLOUR	CALIBRATED
	Length [cm]	Internal diameter [cm]	3 m	Yellow	Yes

MFC140 (100mV/1kA@50Hz OUTPUT VALUE)

3801.0001.0001	15	~4 (4x5)	•	•	•
3801.0002.0001	28	~8	•	•	•
3801.0003.0001	40	~12	•	•	•
3801.0004.0001	50	~15	•	•	•

MFC140/F with BUILT-IN INTEGRATOR - (333mV/200A OUTPUT VALUE)

3802.0001.0001	15	~4 (4x5)	•	•	•
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MFC140/F with BUILT-IN INTEGRATOR - (333mV/250A OUTPUT VALUE)

3802.0002.0001	28	~8	•	•	•
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MFC140/F with BUILT-IN INTEGRATOR - (333mV/600A OUTPUT VALUE)

3802.0003.0001	40	~12	•	•	•
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MFC140/F with BUILT-IN INTEGRATOR - (333mV/1kA OUTPUT VALUE)

3802.0004.0001	50	~15	•	•	•
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OPTIONS AVAILABLE ONLY ON REQUEST (SUBJECT TO MOQ)

	ALL MODELS	ONLY MODEL WITHOUT INTEGRATOR
Cable length different from standard (3m): 5, 7, 10, 15 m	•	
Calibrated for customer device (input impedance value of device to be specified)		•
Different coil colour	•	

To be indicated together with the selected order code from the list above.



MFC140-UI

UL 2808 Ø7 mm flexible Rogowski coil

- Two available models: with or without integrator
- For outdoor use
- Suitable to measure currents from A to several kA
- High linearity
- Very useful with large size or awkward shaped conductors or in places with limited access
- 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
- UL 2808 certified
- Provided with an accessory to secure the coil to the busbar
- Possibility to seal the locking of the coil



SPECIFICATIONS

COIL	
Coil length:	15...50 cm
Sensor internal diameter:	4...15 cm
Cord diameter:	7.2 ±0.2 mm
Jacket material:	Polyphenylene and thermoplastic elastomer
Fastening:	Bayonet holder
Weight:	150...500 g

ELECTRICAL CHARACTERISTICS FOR MODEL WITHOUT INTEGRATOR	
Nominal output rate:	120 mV/kA @ 60 Hz (RMS values) 100 mV/kA @ 50 Hz (RMS values)
Max measurable current:	600 A with 15 ... 28 cm coil length 2500 A with 29 ... 41 cm coil length 5000 A with 42 ... 50 cm coil length
Coil resistance:	170...690 Ω
Accuracy:	Class 1-A1 according to IEC 61869-10
Frequency:	50/60 Hz
Maximum primary voltage:	600 V CAT IV, Service Entrance
Pollution degree:	3, Uncontrolled Environment
Insulation test voltage:	7400 V _{RMS} / 5 s

ELECTRICAL CHARACTERISTICS FOR MODEL WITH INTEGRATOR	
Power voltage:	4...26 VCC
Max consumption:	5 mACC
Nominal output rate:	333 mV / FS (RMS values) FS changes according to the model: 200, 250, 600, 1000 A
Positioning error:	Better than ±1% of reading
Frequency:	50/60 Hz
Maximum primary voltage:	600 V CAT IV, Service Entrance
Pollution degree:	3, Uncontrolled Environment
Insulation test voltage:	7400 V _{RMS} / 5 s

CONNECTION CABLE FOR MODEL WITHOUT INTEGRATOR

Type:	3 x 24 AWG shielded
Length:	3 m. Other lengths on request: 5, 7, 10, 15 m

CONNECTION CABLE FOR MODEL WITH INTEGRATOR

Type:	5 x 24 AWG shielded
Length:	3 m. Other lengths on request: 5, 7, 10, 15 m

ENVIRONMENTAL CONDITIONS

Protection degree:	IP68
Altitude:	Up to 2000 m over sea-level
Operating temperature:	-35 ... +75°C up to 2500 A with 15 ... 41 cm coil length -35 ... +60°C up to 5000 A with 42 ... 50 cm coil length
Storage temperature:	-40...+90°C
Relative humidity:	0...95%
Installation and use:	Uncontrolled Environment, outdoor use

STANDARD COMPLIANCE

IEC, UL standards:	ANSI/CAN/UL 2808, CSA C22.2 NO. 61010-1-12, IEC 61010-2-032, IEC 61010-1 Ed3, IEC 60529
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ORDER CODE	COIL DETAIL		CABLE DETAIL	COLOUR	CALIBRATED
	Length [cm]	Internal diameter [cm]	3 m	Yellow	Yes
MFC140-UI/O (120mV/1kA@60Hz OUTPUT VALUE)					
3701.0001.0001	15	~4 (4x5)	•	•	•
3701.0002.0001	28	~8	•	•	•
3701.0003.0001	40	~12	•	•	•
3701.0004.0001	50	~15	•	•	•
MFC140-UI/OF with BUILT-IN INTEGRATOR - (333mV/200A OUTPUT VALUE)					
3702.0001.0001	15	~4 (4x5)	•	•	•
MFC140-UI/OF with BUILT-IN INTEGRATOR - (333mV/250A OUTPUT VALUE)					
3702.0002.0001	28	~8	•	•	•
MFC140-UI/OF with BUILT-IN INTEGRATOR - (333mV/600A OUTPUT VALUE)					
3702.0003.0001	40	~12	•	•	•
MFC140-UI/OF with BUILT-IN INTEGRATOR - (333mV/1kA OUTPUT VALUE)					
3702.0004.0001	50	~15	•	•	•

OPTIONS AVAILABLE ONLY ON REQUEST (SUBJECT TO MOQ)	ALL MODELS	ONLY MODEL WITHOUT INTEGRATOR
Cable length different from standard (3m): 5, 7, 10, 15 m	•	
Calibrated for customer device (input impedance value of device to be specified)		•
Different coil colour	•	

To be indicated together with the selected order code from the list above.



MFC150

Ø8 mm
flexible Rogowski coil

- Two available models: with or without integrator
- Suitable to measure currents from mA 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
- Optional UL Recognized Component Mark UL 61010-1



SPECIFICATIONS

COIL

Coil length:	25...300 cm
Sensor internal diameter:	5...94 cm
Cord diameter:	8.3 ±0.2 mm
Jacket material:	Thermoplastic polyurethane UL94-V0
Fastening:	Bayonet holder
Weight:	150...500 g

ELECTRICAL CHARACTERISTICS FOR MODEL WITHOUT INTEGRATOR

Nominal output rate:	100 mV/kA @ 50 Hz (RMS values)
Max measurable current:	100 kA
Coil resistance:	70...900 Ω
Accuracy:	Class 0,5-A1 according to IEC 61869-10
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

ELECTRICAL CHARACTERISTICS FOR MODEL WITH INTEGRATOR

Power voltage:	4...26 VCC
Max consumption:	5 mACC
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 FOR MODEL WITHOUT INTEGRATOR

Type:	3 x 22 AWG shielded
Length:	3 m. Other lengths on request: 5, 7, 10, 15 m

CONNECTION CABLE FOR MODEL WITH INTEGRATOR

Type:	5 x 22 AWG shielded
Length:	3 m. Other lengths on request: 5, 7, 10, 15 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

STANDARD COMPLIANCE

IEC, UL standards:	UL 61010-1 Ed3, UL 61010-2-032, CAN/CSA-C22.2 No. 61010-1, IEC 60529
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ORDER CODE	COIL DETAIL		CABLE DETAIL		COLOUR	CALIBRATED
	Length [cm]	Internal diameter [cm]	3 m	Edges	Yellow	For Algodue device

MFC150 FOR RPS51/RPS50/FCA3000 (not included)

3101.0002.0001	25	~5 (5x7.5)	•	•	•	•
3101.0004.0001	35	~9 (9x10)	•	•	•	•
3101.0009.0001	60	~17.5	•	•	•	•
3101.0013.0001	90	~27	•	•	•	•
3101.0017.0001	120	~36	•	•	•	•
3101.0030.0001	180	~55	•	•	•	•

ORDER CODE	COIL DETAIL		CABLE DETAIL		COLOUR	CALIBRATED
	Length [cm]	Internal diameter [cm]	3 m	Edges	Yellow	Yes

MFC150 (100mV/1kA@50Hz OUTPUT VALUE)

3104.0005.0001	25	~5 (5x7.5)	•		•	•
3104.0013.0001	35	~9 (9x10)	•		•	•
3104.0021.0001	60	~17.5	•		•	•
3104.0023.0001	90	~27	•		•	•
3104.0041.0001	120	~36	•		•	•
3104.0057.0001	180	~55	•		•	•

MFC150/F with BUILT-IN INTEGRATOR - (333mV/1kA OUTPUT VALUE)

3118.0001.0001	40	~11	•		•	•
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MFC150/F with BUILT-IN INTEGRATOR - (333mV/2kA OUTPUT VALUE)

3118.0002.0001	60	~17.5	•		•	•
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MFC150/F with BUILT-IN INTEGRATOR - (333mV/5kA OUTPUT VALUE)

3118.0003.0001	90	~27	•		•	•
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OPTIONS AVAILABLE ONLY ON REQUEST (SUBJECT TO MOQ)	ALL MODELS	ONLY MODEL WITHOUT INTEGRATOR
UL Recognized Component Mark UL 61010-1	•	
Different output value: 40mV/1kA@50Hz or 85mV/1kA@50Hz		•
Other coil length than those listed above, up to 300cm	•	
Cable length different from standard (3m): 5, 7, 10, 15 m	•	
Calibrated for customer device (input impedance value of device to be specified)		•
FRB connector	•	
Different coil colour	•	
IP68 protection degree	•	

To be indicated together with the selected order code from the list above.



MFC150-UI

UL 2808 Ø8 mm flexible Rogowski coil

- Four available models: for indoor or outdoor use, with or without integrator
- Suitable to measure currents from mA to several kA
- High linearity
- Very useful with large size or awkward shaped conductors or in places with limited access
- 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
- UL 2808 certified



SPECIFICATIONS

COIL	
Coil length:	30...300 cm
Sensor internal diameter:	7...94 cm
Cord diameter:	8.3 ±0.2 mm
Jacket material:	Polyphenylene and thermoplastic elastomer
Fastening:	Bayonet holder
Weight:	150...500 g

ELECTRICAL CHARACTERISTICS FOR MODEL WITHOUT INTEGRATOR	
Nominal output rate:	120 mV/kA @ 60 Hz (RMS values) 100 mV/kA @ 50 Hz (RMS values)
Max measurable current:	2 kA @ 50/60 Hz with 30 ... 42 cm coil length 5 kA @ 50/60 Hz with 43 ... 300 cm coil length
Coil resistance:	70...900 Ω
Accuracy:	Class 0,5-A1 according to IEC 61869-10
Frequency:	50/60 Hz
Maximum primary voltage:	600 V CAT IV, Service Entrance
Pollution degree:	2, Controlled Environment for indoor use model 3, Uncontrolled Environment for outdoor use model
Insulation test voltage:	7400 V _{RMS} / 5 s

ELECTRICAL CHARACTERISTICS FOR MODEL WITH INTEGRATOR	
Power voltage:	4...26 VCC
Max consumption:	5 mACC
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:	600 V CAT IV, Service Entrance
Pollution degree:	2, Controlled Environment for indoor use model 3, Uncontrolled Environment for outdoor use model
Insulation test voltage:	7400 V _{RMS} / 5 s

CONNECTION CABLE FOR MODEL WITHOUT INTEGRATOR

Type:	3 x 24 AWG shielded
Length:	3 m. Other lengths on request: 5, 7, 10, 15 m

CONNECTION CABLE FOR MODEL WITH INTEGRATOR

Type:	5 x 24 AWG shielded
Length:	3 m. Other lengths on request: 5, 7, 10, 15 m

ENVIRONMENTAL CONDITIONS

Protection degree:	IP65 for indoor use model IP68 for outdoor use model
Altitude:	Up to 2000 m over sea-level
Operating temperature:	-35 ... +75°C up to 2 kA -35 ... +60°C from 2 to 5 kA
Storage temperature:	-40...+90°C
Relative humidity:	0...95%
Installation and use:	Controlled Environment for indoor use model Uncontrolled Environment for outdoor use model

STANDARD COMPLIANCE

IEC, UL standards:	ANSI/CAN/UL 2808, CSA C22.2 NO. 61010-1-12, IEC 61010-2-032, IEC 61010-1 Ed3, IEC 60529
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ORDER CODE	COIL DETAIL		CABLE DETAIL	COLOUR	CALIBRATED
	Length [cm]	Internal diameter [cm]	3 m	Yellow	Yes

MFC150-UI (120mV/1kA@60Hz OUTPUT VALUE)

3601.0001.0001	30	~7 (7x9)	•	•	•
3601.0002.0001	35	~9 (9x10)	•	•	•
3601.0003.0001	60	~17.5	•	•	•
3601.0004.0001	90	~27	•	•	•
3601.0005.0001	120	~36	•	•	•
3601.0006.0001	180	~55	•	•	•

MFC150-UI/F with BUILT-IN INTEGRATOR - (333mV/1kA OUTPUT VALUE)

3604.0001.0001	40	~11	•	•	•
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MFC150-UI/F with BUILT-IN INTEGRATOR - (333mV/2kA OUTPUT VALUE)

3604.0002.0001	60	~17.5	•	•	•
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MFC150-UI/F with BUILT-IN INTEGRATOR - (333mV/5kA OUTPUT VALUE)

3604.0009.0001	90	~27	•	•	•
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OPTIONS AVAILABLE ONLY ON REQUEST (SUBJECT TO MOQ)	ALL MODELS	ONLY MODEL WITHOUT INTEGRATOR
Other coil length than those listed above, up to 300cm	•	
Cable length different from standard (3m): 5, 7, 10, 15 m	•	
Calibrated for customer device (input impedance value of device to be specified)		•
Different coil colour	•	
OUTDOOR use	•	

To be indicated together with the selected order code from the list above.



MFC190

Ø12 mm
flexible Rogowski coil

- High sensitivity
- Suitable to measure currents from mA to several kA
- High output value
- High linearity
- 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 overloads
- Non-intrusive, no power drawn from the main
- Thanks to its light weight, it can be changed on the measured conductor
- Totally shielded
- Optional UL Recognized Component Mark UL 61010-1



SPECIFICATIONS

COIL	
Coil length:	30...300 cm
Sensor internal diameter:	8.3...94.2 cm
Cord diameter:	12.4 ±0.2 mm
Jacket material:	Thermoplastic polyurethane UL94-V0
Fastening:	Bayonet holder
Weight:	150...500 g

ELECTRICAL CHARACTERISTICS	
Nominal output rate:	333 mV/kA @ 50 Hz (RMS values)
Max measurable current:	65 kA
Coil resistance:	300...2000 Ω
Accuracy:	Class 0,5-A1 according to IEC 61869-10
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. Other lengths on request: 5, 7, 10, 15 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

STANDARD COMPLIANCE

IEC, UL standards:	UL 61010-1 Ed3, UL 61010-2-032, CAN/CSA-C22.2 No. 61010-1, IEC 60529
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ORDER CODE	COIL DETAIL		CABLE DETAIL	COLOUR	CALIBRATED
	Length [cm]	Internal diameter [cm]	3 m	Red	Yes

MFC190 (333mV/1kA@50Hz OUTPUT VALUE)

3301.0001.0001	30	~6	•	•	•
3301.0002.0001	35	~7	•	•	•
3301.0004.0001	60	~17	•	•	•
3301.0005.0001	90	~26	•	•	•
3301.0006.0001	120	~35	•	•	•
3301.0007.0001	180	~54	•	•	•

OPTIONS AVAILABLE ONLY ON REQUEST (SUBJECT TO MOQ)

UL Recognized Component Mark UL 61010-1

Other coil length than those listed above, up to 300cm

Cable length different from standard (3m): 5, 7, 10, 15 m

Calibrated for customer device (input impedance value of device to be specified)

FRB connector

Different coil colour

IP68 protection degree

To be indicated together with the selected order code from the list above.



SIGNAL INTEGRATORS



TO BE COMBINED
WITH MFC150



DIFFERENT
SELECTABLE SCALES



DIFFERENT
OUTPUTS



DIN RAIL



SUPPLY



RPS51



RPS50



FCA3000

BENEFITS

- Single phase or three phase systems
- Linear response on a wide frequency range
- High current measurement
- RMS output value

APPLICATIONS

- Integrated part of monitoring systems
- Can be combined with PLC
- High current values (hundreds of kA)



RPS51

Multiscale Rogowski coil integrator with 1 A output

- Four selectable scales
- Equalization and 90° shifting of the Rogowski coil signal
- 1 A RMS full scale output for instantaneous value
- Compact DIN rail enclosure
- 85 ... 265 VAC power supply



GENERAL DESCRIPTION

RPS51 is a multiscale Rogowski coil integrator, in a compact DIN rail enclosure, powered directly from the mains.

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. RPS51 can be combined with any model and size of MFC series Rogowski coil. The integrator is provided with a push button for an easy scale selection. Up to four input scales are available: 100, 500, 1000, 5000 A. This provides a wide range of applications with a single coil and RPS51.

RPS51 and a Rogowski current transducer is a very flexible system, suitable for high power load analysis, impulsive current monitoring, DC ripple measurement, etc. Ideal solution for standard 1 A input PMD's. 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.

SPECIFICATIONS

POWER SUPPLY

Type:	Auxiliary
Range:	85...265 VCA, 50/60 Hz
Consumption:	6.5 VA typical 20 VA max in overload condition
Safety:	300 V CAT III

ELECTRICAL CHARACTERISTICS

Input:	100mV/kA@50Hz (RMS values) with MFC140/MFC150 Rogowski coil
AC output:	1 A RMS @ selected full scale
Crest factor:	2
Selectable scales:	Standard values: 100 A, 500 A, 1000 A, 5000 A
Bandwidth:	40 – 3200 Hz
Accuracy:	1.5% @ 5% full scale < 1% @ full scale
Phase error:	← 0.1° with 40 ... 150 Hz range ← 1° with 150 ... 1000 Hz range ← 2° with 1000 ... 3200 Hz range

ENVIRONMENTAL CONDITIONS

Operating temperature:	-25...+55°C
Storage temperature:	-25...+70°C
Relative humidity:	0...80%

MECHANICAL CHARACTERISTICS

Material:	Plastic enclosure
Protection degree:	IP20
Size and weight:	115x100x23 mm, approx. 122 g
Installation and use:	Indoor

COMPLIANCE

Directives:	2014/35/EU, 2011/65/EU
Safety:	IEC/EN 61010-1:2010-10
EMC:	IEC/EN 61326-1:2012

ORDER CODE	POWER SUPPLY	FULL SCALE VALUES	OUTPUT
	80...265 VCA	100-500-1000-5000 A	1 A RMS
FOR NO. 1 100mV/kA@50Hz MFC150 or MFC140 ROGOWSKI COIL (not included)			
2105.0001.0001	•	•	•



RPS50

Multiscale single Rogowski coil converter



- Three scales selectable by dip-switches
- Equalization and 90° shifting of the Rogowski coil signal
- 1 or 3 VRMS full scale output for instantaneous value
- DC output for rms value
- Compact DIN rail enclosure
- 80...250 VAC power supply

GENERAL DESCRIPTION

RPS50 is a multiscale Rogowski coil integrator, in a compact DIN rail enclosure, powered directly from the mains. 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. RPS50 can be combined with any model and size of MFC150 Rogowski coils.

The module is available in the standard configuration with one of the 3 following full scales:
0.5 - 2.5 - 10 kA or 2.5 - 10 - 50 kA or 10 - 50 - 250 kA.

Two different outputs are available:

- the standard output carrying out the instantaneous value, with 1 or 3 VRMS full scale.
- an optional DC output carrying out the RMS value of the measured current.

RPS50 and a Rogowski current transducer is a very flexible system, suitable for high power load analysis, impulsive current monitoring, DC ripple measurement, etc.

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.

SPECIFICATIONS

POWER SUPPLY	
Rated voltage:	80...250 VCA 50/60 Hz
Consumption:	1.5 VA max
ELECTRICAL CHARACTERISTICS	
Input:	1 for Rogowski coil
Input level (RMS) (1):	100mV/1kA@50Hz (only if purchased without MFC150 coil)
Output 1:	1 VRMS (max crest factor 4.5) 3 VRMS (max crest factor 1.5)
Output 1 load:	> 10 kOhm
Output 2:	0...10 VCC (on request: 0...20 mA, 4...20 mA)
Full scales values:	0,5 - 2,5 - 10 kA 2,5 - 10 - 50 kA 10 - 50 - 250 kA
Accuracy ² :	Better than ±1% of full scale (not guaranteed for full scale ≤10 mV)
Frequency range ³ :	8 Hz to 100 kHz@-3dB

¹ The Rogowski coil output is proportional to the rate of change of current. The calculation formula is: Ampere rms x Hertz x K x 10⁻⁶, where K depends on manufacturing. The K value is 2 for 100 mV models.

² RPS50 is delivered with the specified accuracy. Moreover, the calibration of each scale is adjustable by user to achieve the maximum accuracy in conjunction with the coil.

³ The low limit is approximate and it is determined by noise effect on very low signals.

ENVIRONMENTAL CONDITIONS

Operating temperature:	From -10°C a +50°C
Storage temperature:	From -25°C a +70°C
Relative humidity:	80% max without condensation

MECHANICAL CHARACTERISTICS

Material:	Plastic enclosure
Protection degree:	IP20
Size / weight:	115x100x23 mm / approx 117 g

STANDARDS COMPLIANCE

Safety:	73/23/EEC and 93/68/EEC directives, EN61010.1 safety standard
EMC:	89/366/EEC directive and following modifications 93/31/EEC and 93/68/EEC, EN50081-2, EN50082-2, EN61326/A1

ORDER CODE	POWER SUPPLY	FULL SCALE VALUES			OUTPUT 1		OUTPUT 2
	80...250 VCA	0,5-2,5-10 kA	2,5-10-50 kA	10-50-250 kA	1V RMS	3V RMS	0...10 VCC

FOR NO. 1 MFC150 ROGOWSKI COIL (not included)

2102.0002.0001	•	•			•		
2102.0004.0001	•		•		•		
2102.0006.0001	•			•	•		
2102.0008.0001	•	•				•	
2102.0010.0001	•		•			•	
2102.0012.0001	•			•		•	
2102.0038.0001	•	•			•		•
2102.0040.0001	•		•		•		•
2102.0042.0001	•			•	•		•
2102.0044.0001	•	•				•	•
2102.0046.0001	•		•			•	•
2102.0048.0001	•			•		•	•

OPTIONS AVAILABLE ONLY ON REQUEST (subject to minimum order quantity: 10 pieces)

Custom full scale values (value/s to be specified)

100mV/1kA@50Hz input sensitivity (only if purchased without MFC150 coil)

Different values on Output 2: 0...20mA, 4...20mA

To be indicated together with the selected order code from the list above.

LEGEND

1V RMS: Max crest factor 4,5. • 3V RMS: Max crest factor 1,5.



FCA3000

Three phase Rogowski coil converter

- Three Rogowski coils input channels
- Three true RMS DC outputs
- One DC output for channels sum
- 0...20 mA, 4...20 mA or 0...10 VDC output
- Response time selectable by jumpers
- Suitable for three-phase systems
- 3000 A standard full scale value
- Customizable full scale up to hundreds kA
- Compact 9 DIN modules size



GENERAL DESCRIPTION

FCA3000 is a three-channel current converter with DC outputs. It converts the values measured by a Rogowski coil into true RMS value.

FCA3000 can be used with any model or size of MFC150 Rogowski coils, according to the application. The coils can be connected directly to FCA3000 without any adapter, as FCA3000 integrates the input signal, shifting it by 90°.

FCA3000 has three independent input channels, suitable for three transducers, and four DC outputs. The first three outputs correspond to each transducer, the fourth gives the sum of the three current channels.

FCA3000 enclosure is a 9 module DIN rail for fast installation. FCA3000 can be used as current measurement interface with industrial devices such as PLC, SCADA systems, protection systems, control systems, metering equipments etc.

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 transducers are not the adequate solution.

SPECIFICATIONS

POWER SUPPLY	
Rated voltage:	80...260 VCA [45...65 Hz]
Consumption:	3 VA max
MEASURING INPUTS	
Number:	3
Type:	For Rogowski coil with signal equalization
Sensitivity:	100mV/1kA@50Hz (only if purchased without MFC150 coil)
Full scale:	3000 A 10000 A Other values on request (from 300 A to 300 kA)
ANALOG OUTPUTS	
Number:	4
Type:	0...20 mA 4...20 mA 0...10 VCC
Response time:	150 ms (standard) - selectable by jumpers from 50 to 150 ms approx.
Typical accuracy:	± 1% reading ± 0,3% full scale
ENVIRONMENTAL CONDITIONS	
Operating temperature:	From -10°C to +50°C
Storage temperature:	From -25°C to +60°C
Relative humidity:	75% max without condensation

CASE FEATURES

Material:	Plastic enclosure - noryl UL94-V0
Protection degree:	IP51 (front panel); IP20 (terminals)
Terminals:	Conductors 2,5 mm ²
Size / weight:	158x94x58 mm, 250 g approx

STANDARDS COMPLIANCE

Safety:	73/23/EEC and 93/68/EEC directives, EN61010.1 safety standard
EMC:	89/336/EEC directive and following modifications 93/31/EEC and 93/68/EEC, EN50081-2, EN50082-2, EN61326/A1

ORDER CODE	POWER SUPPLY	FULL SCALE VALUES		OUTPUTS		
	80...260 VCA	3000 A	10000 A	0...20 mA	4...20 mA	0...10 VCC

FOR NO. 3 MFC150 ROGOWSKI COILS (not included)

2101.0002.0001	•	•		•		
2101.0004.0001	•		•	•		
2101.0006.0001	•	•			•	
2101.0008.0001	•		•		•	
2101.0010.0001	•	•				•
2101.0012.0001	•		•			•

OPTIONS AVAILABLE ONLY ON REQUEST (subject to minimum order quantity: 10 pieces)

Custom full scale values (value/s to be specified)

100mV/1kA@50Hz input sensitivity (only if purchased without MFC150 coil)

To be indicated together with the selected order code from the list above.

[BACK TO SIGNAL INTEGRATORS RANGE](#)



CUSTOMIZATIONS



All ALGODUE products are adapted, customized and developed according to specific project or market requirements.

We can support you from the first feasibility study, through the development of your type of customization, up to its production and delivery, ensuring high standards of quality and flexibility.

STANDARD BRAND LABELLING

Examples of customizations:

- Integrators front panel with customized specifications (logo, color, buttons)
- Coil customizations (color of the cord, coil length and diameter)
- Output value
- Calibration
- Packaging label
- Multilingual user manual
+ Quick Start Guide in 4 Languages

ADVANCED BRAND LABELLING

Examples of customizations:

- Designing customized plastic parts (custom molds)
- Designing customized electronic parts (custom integrators)
- Custom coil winding



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