

EEM-MA371-24DC - Measuring instrument



1127058

<https://www.phoenixcontact.com/us/products/1127058>

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Multi-functional energy measuring device with 24 V DC supply, direct Rogowski connection, and integrated Modbus/TCP interface for measuring electrical parameters in low-voltage installations up to 690 V ([phoenixcontact.com/empro-help](https://www.phoenixcontact.com/empro-help))

Commercial data

Item number	1127058
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C446
Product key	CK4C21
GTIN	4063151055233
Weight per piece (including packing)	387.2 g
Weight per piece (excluding packing)	378.6 g
Customs tariff number	90303100
Country of origin	DE

Technical data

Product properties

Product type	Energy measuring device
Product family	EMpro

Electrical properties

Maximum power dissipation for nominal condition	10 VA
Mains type	3-phase (3 or 4-conductor), 2-phase (2-conductor), and single-phase (1-conductor)

Electrical isolation

Test voltage	4 kV AC (50 Hz, 60 s)
Pollution degree	2

Electrical isolation Housing against all potentials IEC 61010-1

Standards/regulations	IEC 61010-1
Overvoltage category	III (300 V AC) II (600 V AC)
Insulation	Reinforced insulation

Electrical isolation Supply voltage

Insulation	Functional insulation
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Electrical isolation Voltage measurement input against all other potentials IEC 61010-1

Standards/regulations	IEC 61010-1
Measuring category	III (300 V AC) II (600 V AC)
Insulation	Reinforced insulation

Electrical isolation Digital I/Os

Insulation	Functional insulation
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Electrical isolation Communication interface

Insulation	Functional insulation
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Supply

Supply voltage	24 V DC $\pm 25\%$
Supply voltage range	18 V DC ... 30 V DC
Power consumption	< 4 W

Input data

General

Measuring principle	True r.m.s. value measurement
Measured value	AC sine (50 Hz/60 Hz)
Acquisition of harmonics	up to 63rd harmonic

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Description of the input	Digital input in accordance with IEC/EN 61131-2 (type 3)
Number	1
Voltage input signal	24 V DC 0 V DC ... 30 V DC
Current input signal	2 mA ... 15 mA
Protection	250 mA (fast-blow)

Measurement: Voltage

Input name	Voltage measuring input V1, V2, V3
Input voltage range direct	35 V AC ... 690 V AC (Phase/Phase) 20 V AC ... 400 V AC (Phase/neutral conductor)
Input voltage range via external transformers	60 V AC ... 2000000 V AC (primary) 60 V AC ... 400 V AC (secondary)
Surge voltage capacity	760 V AC (Phase/Phase)
Precision	0.2 %
Power consumption	< 2 VA

Measurement: Current

Input name	Current measurement RC1, RC2, RC3
Input current	≤ 400 A (Measurement level 1) ≤ 4000 A (Measurement level 2)
Input measuring range voltage	500 µV ... 400 mV (1000 A)
Response threshold from measuring range nominal value	5 A
Operate threshold	500 µV (5 A)
Precision	0.5 %

Measurement: Power

Precision	1 %
Real energy (IEC 62053-21)	Class 1
Reactive power (IEC 62053-23)	Class 2

Output data

Output description	Digital output in accordance with IEC/EN 61131-2 (type 3)
Number	1
Current output signal	≤ 100 mA
Voltage output signal	24 V DC
Protection	250 mA (fast-blow)

Connection data

Current / voltage / supply

Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross section rigid	0.2 mm² ... 6 mm²
Conductor cross section flexible	0.2 mm² ... 4 mm²

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Conductor cross section AWG	24 ... 10
Tightening torque	0.5 Nm ... 0.6 Nm

Digital I/O / communication

Connection method	Screw connection
Stripping length	7 mm
Screw thread	M3
Conductor cross section rigid	0.14 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.14 mm ² ... 1.5 mm ²
Conductor cross section AWG	26 ... 14
Tightening torque	0.5 Nm ... 0.6 Nm

Interfaces

Data: Network interface

Communication protocol	Modbus/TCP
	REST
Connection method	RJ45
Designation	Network interface
Connection method	RJ45
Protocol	Modbus/TCP
	REST

Dimensions

Width	90 mm
Height	80 mm
Depth	64 mm

Material specifications

Color	gray (RAL 7042)
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Environmental and real-life conditions

Ambient conditions

Degree of protection (Housing)	IP20 (Housing)
Degree of protection (Display)	IP40 (Display)
Ambient temperature (operation)	-25 °C ... 70 °C
Ambient temperature (storage/transport)	-30 °C ... 80 °C
Altitude	≤ 2000 m
Max. permissible relative humidity (operation)	≤ 95 % (non-condensing)

Approvals

CE

Certificate	CE-compliant
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UKCA

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Certificate	UKCA-compliant
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UL, USA/Canada

Identification	UL/C-UL Listed UL 61010-1
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UL data

Operating mode	Indoor use
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UL data

Operating mode	Indoor use
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Mounting

Mounting type	DIN rail mounting
Mounting position	Horizontal DIN rail

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Approvals

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UL Listed
Approval ID: FILE E 357804



cUL Listed
Approval ID: FILE E 357804

cULus Listed

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Classifications

ECLASS

ECLASS-11.0	27142330
ECLASS-13.0	27142330
ECLASS-12.0	27142330

ETIM

ETIM 9.0	EC002301
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UNSPSC

UNSPSC 21.0	41113600
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Environmental product compliance

EU RoHS	
Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I
China RoHS	
Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.
EU REACH SVHC	
REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	84c609f1-846a-4e41-8f72-f6c3028dafe2

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Accessories

PACT RCP-D95 - Coil

2904890

<https://www.phoenixcontact.com/us/products/2904890>

300 mm long Rogowski coil. The measuring coil diameter when installed is 95 mm. The Rogowski coil is used for AC current measurement for busbars and power lines.



PACT RCP-D140 - Coil

2904891

<https://www.phoenixcontact.com/us/products/2904891>

450 mm long Rogowski coil. The measuring coil diameter when installed is 140 mm. The Rogowski coil is used for AC current measurement for busbars and power lines.



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PACT RCP-D190 - Coil

2904892

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600 mm long Rogowski coil. The measuring coil diameter when installed is 190 mm. The Rogowski coil is used for AC current measurement for busbars and power lines.



PACT RCP-CLAMP - Holder

2904895

<https://www.phoenixcontact.com/us/products/2904895>



The optional holding device ensures the Rogowski coil is securely seated on busbars with a thickness of 10 ... 15 mm. During installation, the coil housing is pushed onto the flange of the holding device and snaps in automatically.

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PACT RCP-D95-5M - Coil

2910322

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300 mm long Rogowski coil. The measuring coil diameter when installed is 95 mm. The Rogowski coil is used for AC current measurement for busbars and power lines.



PACT RCP-D95-10M - Coil

2910323

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300 mm long Rogowski coil. The measuring coil diameter when installed is 95 mm. The Rogowski coil is used for AC current measurement for busbars and power lines.



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PACT RCP-D190-10M - Coil

2910324

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600 mm long Rogowski coil. The measuring coil diameter when installed is 190 mm. The Rogowski coil is used for AC current measurement for busbars and power lines.



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