

Measuring instrument - EEM-MA771-R



2908285

<https://www.phoenixcontact.com/pc/products/2908285>

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Multi-functional energy measuring device with direct Rogowski connection and integrated Modbus RTU/TCP interface for measuring electrical parameters in low-voltage installations up to 690 V.

Measuring instrument - EEM-MA771-R



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Commercial Data

Item number	2908285
Packing unit	1 pc
Minimum order quantity	1 pc
Product Key	CK4C21
Catalog Page	Page 202 (C-5-2019)
GTIN	4055626471952
Weight per Piece (including packing)	538.9 g
Weight per Piece (excluding packing)	525 g
Customs tariff number	90303100
Country of origin	DE

Technical Data

Product properties

Product type	Energy meter
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Insulation characteristics

Overvoltage category	III (300 V)
Pollution degree	2

Electrical properties

Electrical isolation	IEC 61010-1 (Overvoltage category III at 300 V AC Overvoltage category II at 600 V AC)
	IEC 61010-1 (Overvoltage category III at 300 V AC Overvoltage category II at 600 V AC)
	IEC 61010-1 (Measurement category III at 300 V AC Measurement category II at 600 V AC)
Test voltage	4 kV AC (50 Hz, 1 min.)
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)

Supply

Supply voltage range	100 V AC ... 400 V AC (±20 %)
	150 V DC ... 250 V DC (±20 %)
Power consumption	≤ 4 W
Nominal frequency	50 Hz ... 60 Hz (AC sine)

Input data

Measuring principle	True r.m.s. value measurement
Measured value	AC sine (50/60 Hz)
Acquisition of harmonics	up to 63rd harmonic
Description of the input	Digital input in accordance with IEC/EN 61131-2 (type 3)
Number	1
Voltage input signal	24 V DC
Voltage input signal	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
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Measurement: Current

Input name	Current measurement RC1, RC2, RC3
Input current	4000 A
Input measuring range voltage	500 μ V ... 400 mV (1000 A)
Response threshold from measuring range nominal value	5 A
Operate threshold	500 μ V (5 A)
Precision	0.5 %
Secondary current	\leq 500 mV (I_{max})

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	\leq 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 solid	0.2 mm ² ... 6 mm ²
Conductor cross section flexible	0.2 mm ² ... 4 mm ²
Conductor cross section AWG	24 ... 10
Torque	0.5 Nm ... 0.6 Nm

Current / voltage / supply

Connection method	Screw connection
Stripping length	7 mm
Screw thread	M3
Conductor cross section solid	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
Torque	0.5 Nm ... 0.6 Nm

Current / voltage / supply

Connection method	Screw connection
Stripping length	7 mm

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Screw thread	M3
Conductor cross section solid	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section AWG	24 ... 12
Torque	0.5 Nm ... 0.6 Nm

Interfaces

Data: Network interface

Communication protocol	Modbus/TCP
	REST
Connection method	RJ45

Data: Network interface

Communication protocol	Modbus/RTU
Communication standard	RS-485
Connection method	Screw connection
Transmission speed range	2.4 kbps ... 115.2 kbps
Resistance	120 Ω (integrated)

Dimensions

Width	96 mm
Height	96 mm
Depth	58 mm

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP54 (Display (+ EEM-MA-IP))
	IP20 (Housing)
Ambient temperature (operation)	-10 °C ... 55 °C
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Altitude	≤ 2000 m
Max. permissible relative humidity (operation)	≤ 95 % (non-condensing)

Approval data

CE

Certificate	CE-compliant
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CE

Certificate	UKCA-compliant
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CE

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	Panel mount
Mounting position	Front panel installation, horizontal

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Approvals



EAC

Approval ID: RU*DE*08.B.00734/19



UL Listed

Approval ID: FILE E 357804



cUL Listed

Approval ID: FILE E 357804

cULus Listed

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Classifications

ECLASS

ECLASS-9.0	27142330
ECLASS-10.0.1	27142330
ECLASS-11.0	27142330

ETIM

ETIM 8.0	EC002301
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UNSPSC

UNSPSC 21.0	41113600
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Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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Accessories

DIN rail adapter

DIN rail adapter - EEM-MKT-DRA - 2902078

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DIN rail adapter for EEM-MA770-X and EEM-MA771-X series energy measuring devices

Coil

Coil - PACT RCP-D95 - 2904890

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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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Coil

Coil - PACT RCP-D140 - 2904891

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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.



Coil

Coil - PACT RCP-D190 - 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.



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Coil

Coil - PACT RCP-D95-5M - 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.



Coil

Coil - PACT RCP-D95-10M - 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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Coil

Coil - PACT RCP-D190-10M - 2910324

<https://www.phoenixcontact.com/pc/products/2910324>

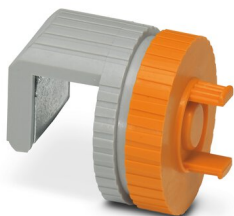
600 mm long Rogowski coil. The measuring coil diameter when installed is 190 mm. The Rogowski coil is used for AC current measurement for busbars and power lines.



Holder

Holder - PACT RCP-CLAMP - 2904895

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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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