

# EEM-MA771-24DC - Measuring instrument



1127060

<https://www.phoenixcontact.com/us/products/1127060>

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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

## Commercial data

Item number	1127060
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C446
Product key	CK4C21
GTIN	4063151054779
Weight per piece (including packing)	492.7 g
Weight per piece (excluding packing)	470 g
Customs tariff number	90303100
Country of origin	DE

## Technical data

### Product properties

Product type	Energy measuring device
Product family	EMpro

### 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 (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	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 (50/60 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 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 %

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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 $\mu$ V ... 400 mV (1000 A)
Response threshold from measuring range nominal value	5 A
Operate threshold	500 $\mu$ V (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	$\leq$ 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 rigid	0.2 mm <sup>2</sup> ... 6 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>
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 <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section AWG	26 ... 14
Tightening torque	0.5 Nm ... 0.6 Nm

## Interfaces

### Data: Network interface

Communication protocol	Modbus/TCP
	REST

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Connection method	RJ45
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## Dimensions

Width	96 mm
Height	96 mm
Depth	58 mm

## Environmental and real-life conditions

### Ambient conditions

Degree of protection (Housing)	IP20 (Housing)
Degree of protection (Display)	IP54 (Display (+ EEM-MA-IP))
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)

## Approvals

### CE

Certificate	CE-compliant
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### UKCA

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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Operating mode	Indoor use
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## Mounting

Mounting type	Panel mount
Mounting position	Front panel installation, horizontal

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1127060>



**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-12.0	27142330
ECLASS-13.0	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

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## Accessories

### EEM-MKT-DRA - DIN rail adapter

2902078

<https://www.phoenixcontact.com/us/products/2902078>



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

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### 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.



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## 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

<https://www.phoenixcontact.com/us/products/2904892>

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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## 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.

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## PACT RCP-D95-10M - Coil

2910323

<https://www.phoenixcontact.com/us/products/2910323>

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

<https://www.phoenixcontact.com/us/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.



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