

# EEM-MA400 - Measuring device



2901364

<https://www.phoenixcontact.com/us/products/2901364>

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Energy measurement device to measure electrical parameters in low voltage installations up to 500 V, acquisition of total harmonic oscillations - can be extended with RS-485 communication module

## Your advantages

- Can be extended with RS-485 communication module (JBUS/MODBUS)
- Acquisition of total harmonics up to 51st harmonic

## Commercial data

Item number	2901364
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	C446
Product key	CMMC11
GTIN	4046356585804
Weight per piece (including packing)	721.8 g
Weight per piece (excluding packing)	704.2 g
Customs tariff number	90303100
Country of origin	TN

## Technical data

### Notes

#### Utilization restriction

EMC note	EMC: class A product, see manufacturer's declaration in the download area
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### Product properties

Product type	Energy measuring device
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### Electrical properties

Electrical isolation	EN 61010-1 (Safe isolation)
	EN 61010-1 (Safe isolation)
	EN 61010-1 (Basic insulation)
	See extension module
	See extension module
Test voltage	3.5 kV AC (50 Hz, 1 min.)
	2.2 kV AC (50 Hz, 1 min.)
Mains type	3-phase (3 or 4-conductor), 2-phase (2-conductor), and single-phase (1-conductor)

#### Electrical isolation

Rated insulation voltage	300 V AC (EN 61010-1)
Overvoltage category	III
Pollution degree	2

#### Supply

Supply voltage range	110 V AC ... 400 V AC $\pm 10\%$
	120 V DC ... 350 V DC ( $\pm 20\%$ )
Nominal power consumption	5 VA
Power consumption	10 VA (with max. number of extension modules)

### Input data

#### Measuring data acquisition

Measuring principle	True r.m.s. value measurement
Measured value	AC sine (50 Hz/60 Hz)
Acquisition of harmonics	up to 51st harmonic

#### Measurement: Voltage

Input name	Voltage measuring input V1, V2, V3
Input voltage range	50 V AC ... 500 V AC (Phase/Phase)
	28 V AC ... 289 V AC (Phase/neutral conductor)
Precision	0.2 %

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## Measurement: Current

Input name	Current measurement I1, I2, I3
Input current range	via external transformers
Input current	9999 A (primary) 5 A (secondary)
Measuring range	0 A ... 9999 A
Overload capacity	6 A (Permanent)
Response threshold from measuring range nominal value	5 mA
Precision	0.2 %
Current overload	10 x I <sub>N</sub> for 1 s

## Measurement: Power

Messbereich_Leistung	0 MW ... 11 MW 0 Mvar ... 11 Mvar 0 MVA ... 11 MVA
Precision	0.5 %
Active energy (IEC 62053-22)	Class 0.5 S
Reactive power (IEC 62053-23)	Class 2

## Output data

Output description	Via function module
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## Connection data

Connection method	COMBICON plug-in screw terminal block
Stripping length	6 mm
Note	Voltage and other connections
Conductor cross-section rigid	0.5 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section flexible	0.5 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section AWG	20 ... 14
Tightening torque	0.4 Nm ... 0.4 Nm
Connection method	Screw connection
Stripping length	7 mm
Note	Current connection
Conductor cross-section rigid	0.5 mm <sup>2</sup> ... 6 mm <sup>2</sup>
Conductor cross-section flexible	0.5 mm <sup>2</sup> ... 6 mm <sup>2</sup>
Conductor cross-section AWG	20 ... 8

## Dimensions

Width	96 mm
Height	96 mm
Depth	82 mm 80 mm (Installation depth with extension module) 60 mm (Installation depth without extension module)

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## Material specifications

Color	black (RAL 9005)
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## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP52 (Front) IP30 (Back side)
Ambient temperature (operation)	-10 °C ... 55 °C (14 °F ... 131 °F)
Ambient temperature (storage/transport)	-20 °C ... 85 °C (-4 °F ... 185 °F)
Max. permissible relative humidity (operation)	≤ 95 %
Max. salt spray content	≤ 2.5 %

## Approvals

### CE

Certificate	CE-compliant
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### UL, USA/Canada

Identification	UL 61010-1 CSA-C22.2 No. 61010-1 cULus
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### UL data

Supply voltage	300 V AC
Nominal supply voltage range	110 V AC ... 240 V AC ±10 % 120 V DC ... 250 V DC ±10 %
Power consumption	10 VA
Altitude	≤ 2000 m
Operating mode	Indoor use
Surge voltages	transient overvoltage according to installation classes
Overvoltage category	I, II, III
Overvoltage category of the supply	Min. II
Ambient temperature (operation)	0 °C ... 40 °C
Max. permissible relative humidity (operation)	80 % (up to 31 °C) 50 % (at 40 °C)

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## Mounting

Mounting position	Front panel installation, horizontal
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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### China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

### EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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