

# EEM-MA250 - Measuring device



2901363

<https://www.phoenixcontact.com/us/products/2901363>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



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

## Your advantages

- RS-485 interface (JBUS/MODBUS)
- Pulse output

## Commercial data

Item number	2901363
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	C446
Product key	CMMC11
GTIN	4046356585811
Weight per piece (including packing)	319.8 g
Weight per piece (excluding packing)	317.5 g
Customs tariff number	90303100
Country of origin	FR

# EEM-MA250 - Measuring device



2901363

<https://www.phoenixcontact.com/us/products/2901363>

## Technical data

### Notes

#### Utilization restriction

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

### Product properties

Product type	Energy measuring device
--------------	-------------------------

### Electrical properties

Electrical isolation	EN 61010-1 (Safe isolation)
	EN 61010-1 (Safe isolation)
	EN 61010-1 (Safe isolation)
	EN 61010-1 (Safe isolation)
	EN 61010-1 (Safe isolation)
	EN 61010-1 (Safe isolation)
	EN 61010-1 (Safe isolation)
	EN 61010-1 (Basic insulation)
	EN 61010-1 (Basic insulation)
	EN 61010-1 (Basic insulation)
	EN 61010-1 (Safe isolation)
	EN 61010-1 (Safe isolation)
	EN 61010-1 (Safe isolation)
	EN 61010-1 (Basic insulation)
EN 61010-1 (Basic insulation)	
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 ... 277 V AC -10 % ... +15 %
Nominal power consumption	5 VA

### Input data

#### Measuring data acquisition

Measuring principle	True r.m.s. value measurement
Measured value	AC sine (50 Hz/60 Hz)

# EEM-MA250 - Measuring device



2901363

<https://www.phoenixcontact.com/us/products/2901363>

Acquisition of harmonics	up to 51st harmonic
--------------------------	---------------------

## Measurement: Voltage

Input name	Voltage measuring input V1, V2, V3
Input voltage range	50 V AC ... 519 V AC (Phase/Phase) 28 V AC ... 300 V AC (Phase/neutral conductor)
Precision	0.2 %

## Measurement: Current

Input name	Current measurement I1, I2, I3
Input current range	via external transformers
Input current	9999 A (primary) 5 A (secondary)
Overload capacity	6 A (Permanent)
Response threshold from measuring range nominal value	5 mA
Precision	0.2 %

## Measurement: Power

Messbereich_Leistung	0 kW ... 9999 kW 0 kvar ... 9999 kvar 0 kVA ... 9999 kVA
Precision	0.5 %
Active energy (IEC 62053-22)	Class 0.5 S
Reactive power (IEC 62053-23)	Class 2

## Digital

Description of the input	Digital input
Number	1
Voltage input signal	230 V AC $\pm$ 10 % (Tariff switchover: e.g., day/nighttime tariff)

## Output data

Output description	Transistor output, active
Number	1
Maximum switching voltage	30 V DC
Current carrying capacity	27 mA

## Connection data

Connection method	Screw connection
Stripping length	6 mm
Note	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	0.6 Nm ... 0.6 Nm
Stripping length	6 mm
Note	Current and voltage connection

# EEM-MA250 - Measuring device



2901363

<https://www.phoenixcontact.com/us/products/2901363>

Conductor cross-section rigid	0.5 mm <sup>2</sup> ... 4 mm <sup>2</sup>
Conductor cross-section flexible	0.5 mm <sup>2</sup> ... 4 mm <sup>2</sup>
Conductor cross-section AWG	20 ... 10

## Interfaces

Data: Modbus RTU/JBUS

Interface	RS-485
Serial transmission speed	2,4 ... 38.4 kbps
Connection method	Screw terminal blocks

Data

Communication protocol	Modbus RTU/JBUS
Communication standard	RS-485
Connection method	Screw terminal blocks
Transmission speed range	2.4 kbps ... 38.4 bps (Serial)

## Dimensions

Width	72 mm
Height	90 mm
Depth	64 mm

## Material specifications

Color	black (RAL 9005)
-------	------------------

## Environmental and real-life conditions

Ambient conditions

Degree of protection	(Front) IP20 (Back side)
Ambient temperature (operation)	-10 °C ... 55 °C (14 °F ... 131 °F)
Ambient temperature (storage/transport)	-20 °C ... 70 °C (-4 °F ... 158 °F)
Max. permissible relative humidity (operation)	≤ 95 %
Max. salt spray content	≤ 2.5 %

## Approvals

CE

Certificate	CE-compliant
-------------	--------------

UL, USA/Canada

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

UL data

Nominal supply voltage range	110 V AC ... 277 V AC -10 % ... +15 %
------------------------------	---------------------------------------

# EEM-MA250 - Measuring device



2901363

<https://www.phoenixcontact.com/us/products/2901363>

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)	5 °C ... 40 °C
Max. permissible relative humidity (operation)	80 % (up to 31 °C)
	50 % (at 40 °C)

## UL data

Nominal supply voltage range	110 V AC ... 277 V AC -10 % ... +15 %
Altitude	≤ 2000 m
Operating mode	Indoor use
Ambient temperature (operation)	5 °C ... 40 °C
Max. permissible relative humidity (operation)	80 % (up to 31 °C)
	50 % (at 40 °C)
Surge voltages	transient overvoltage according to installation classes
Overvoltage category	I, II, III
Overvoltage category of the supply	Min. II

## Mounting

Mounting type	DIN rail mounting
Mounting position	Horizontal DIN rail

# EEM-MA250 - Measuring device



2901363

<https://www.phoenixcontact.com/us/products/2901363>

## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
---	--------------------

### 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%
-------------------------------------	----------------------------

Phoenix Contact 2026 © - all rights reserved  
<https://www.phoenixcontact.com>

Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)