

# EEM-MA250 - Measuring device



2901363

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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 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

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## 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)
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	EN 61010-1 (Safe isolation)
	EN 61010-1 (Safe isolation)
	EN 61010-1 (Basic insulation)
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	EN 61010-1 (Basic insulation)
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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)

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Acquisition of harmonics	up to 51st harmonic
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## 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

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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)
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## 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
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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 %
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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

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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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