

EEM-MA371 - Measuring instrument



2908307

<https://www.phoenixcontact.com/us/products/2908307>

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Multi-functional energy measuring device with direct Rogowski connection and integrated Modbus/TCP interface for measuring electrical parameters in low-voltage installations up to 690 V. ([phoenixcontact.com/empro-help](https://www.phoenixcontact.com/empro-help))

Commercial data

| | |
|--------------------------------------|---------------------|
| Item number | 2908307 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | C446 |
| Product key | CK4C21 |
| Catalog page | Page 203 (C-5-2019) |
| GTIN | 4055626471983 |
| Weight per piece (including packing) | 409.9 g |
| Weight per piece (excluding packing) | 253 g |
| Customs tariff number | 90303100 |
| Country of origin | DE |

Technical data

Product properties

| | |
|----------------|-------------------------|
| Product type | Energy measuring device |
| Product family | EMpro |

Electrical properties

| | |
|---|---|
| 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) |

Electrical isolation

| | |
|------------------|-----------------------|
| Test voltage | 4 kV AC (50 Hz, 60 s) |
| Pollution degree | 2 |

Electrical isolation Housing against all potentials IEC 61010-1

| | |
|-----------------------|---------------------------------|
| Standards/regulations | IEC 61010-1 |
| Overvoltage category | III (300 V AC) II (600 V AC) |
| Insulation | Reinforced insulation |

Electrical isolation Supply against all other potentials IEC 61010-1

| | |
|-----------------------|---------------------------------|
| Standards/regulations | IEC 61010-1 |
| Overvoltage category | III (300 V AC) II (600 V AC) |
| Insulation | Reinforced insulation |

Electrical isolation Voltage measurement input against all other potentials IEC 61010-1

| | |
|-----------------------|---------------------------------|
| Standards/regulations | IEC 61010-1 |
| Measuring category | III (300 V AC) II (600 V AC) |
| Insulation | Reinforced insulation |

Electrical isolation Digital I/Os

| | |
|------------|-----------------------|
| Insulation | Functional insulation |
|------------|-----------------------|

Electrical isolation Communication interface

| | |
|------------|-----------------------|
| Insulation | Functional insulation |
|------------|-----------------------|

Supply

| | |
|----------------------|--|
| Supply voltage range | 100 V AC ... 230 V AC ($\pm 20\%$) 150 V DC ... 250 V DC ($\pm 20\%$) |
| Power consumption | ≤ 4 W |
| Nominal frequency | 50 Hz ... 60 Hz (AC sine) |

Input data

General

| | |
|--------------------------|--|
| Measuring principle | True r.m.s. value measurement |
| Measured value | AC sine (50 Hz/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 % |
| Power consumption | < 2 VA |

Measurement: Current

| | |
|---|---|
| Input name | Current measurement RC1, RC2, RC3 |
| Input current | ≤ 400 A (Measurement level 1) ≤ 4000 A (Measurement level 2) |
| Input measuring range voltage | 500 µV ... 400 mV (1000 A) |
| Response threshold from measuring range nominal value | 5 A |
| Operate threshold | 500 µV (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 | ≤ 100 mA |
| Voltage output signal | 24 V DC |
| Protection | 250 mA (fast-blow) |

Connection data

Current / voltage / supply

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| | |
|----------------------------------|---|
| Connection method | Screw connection |
| Stripping length | 8 mm |
| Screw thread | M3 |
| Conductor cross section rigid | 0.2 mm ² ... 6 mm ² |
| Conductor cross section flexible | 0.2 mm ² ... 4 mm ² |
| 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 ² ... 2.5 mm ² |
| Conductor cross section flexible | 0.14 mm ² ... 1.5 mm ² |
| Conductor cross section AWG | 26 ... 14 |
| Tightening torque | 0.5 Nm ... 0.6 Nm |

Interfaces

Data: Network interface

| | |
|------------------------|--------------------|
| Communication protocol | Modbus/TCP REST |
| Connection method | RJ45 |

Dimensions

| | |
|--------|---------|
| Width | 90 mm |
| Height | 90 mm |
| Depth | 71.9 mm |

Material specifications

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|-------|-----------------|
| Color | gray (RAL 7042) |
|-------|-----------------|

Environmental and real-life conditions

Ambient conditions

| | |
|--|-------------------------|
| Degree of protection (Housing) | IP20 (Housing) |
| Degree of protection (Display) | IP40 (Display) |
| Ambient temperature (operation) | -25 °C ... 70 °C |
| Ambient temperature (storage/transport) | -30 °C ... 80 °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 |
|-------------|----------------|

UL, USA/Canada

| | |
|----------------|---------------------------|
| Identification | UL/C-UL Listed UL 61010-1 |
|----------------|---------------------------|

UL data

| | |
|----------------|------------|
| Operating mode | Indoor use |
|----------------|------------|

UL data

| | |
|----------------|------------|
| Operating mode | Indoor use |
|----------------|------------|

Mounting

| | |
|-------------------|---------------------|
| Mounting type | DIN rail mounting |
| Mounting position | Horizontal DIN rail |

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-11.0 | 27142330 |
| ECLASS-12.0 | 27142330 |
| ECLASS-13.0 | 27142330 |

ETIM

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| ETIM 9.0 | EC002301 |
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UNSPSC

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| UNSPSC 21.0 | 41113600 |
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Environmental product compliance

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|------------|--|
| 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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