

# EEM-MA370-R - Measuring instrument



2907980

<https://www.phoenixcontact.com/us/products/2907980>

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.



Multi-functional energy measuring device with integrated Modbus RTU/TCP interface for measuring electrical parameters in low-voltage installations up to 690 V. (phoenixcontact.com/empro-help)

## Commercial data

Item number	2907980
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C446
Product key	CK4C21
Catalog page	Page 203 (C-5-2019)
GTIN	4055626260570
Weight per piece (including packing)	450.5 g
Weight per piece (excluding packing)	441 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 (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, 60 s)
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 range	100 V AC ... 230 V AC ( $\pm 20\%$ )
	150 V DC ... 250 V DC ( $\pm 20\%$ )
Power consumption	$\leq 4$ W
Nominal frequency	50 Hz ... 60 Hz (AC sine)

### Input data

#### General

Measuring principle	True r.m.s. value measurement (TRMS)
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)

# EEM-MA370-R - Measuring instrument



2907980

<https://www.phoenixcontact.com/us/products/2907980>

	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 I1, I2, I3
Input current	1 A (secondary) 5 A (secondary)
Current measuring range	1 A ... 20000 A (primary)
Overload capacity	6 A ( $I_{max}$ )
Response threshold from measuring range nominal value	10 mA (1 A) 50 mA (5 A)
Precision	0.2 %
Current overload	50 A for 1 s
Power consumption	< 0.5 VA

## Measurement: Power

Precision	0.5 %
Active energy (IEC 62053-22)	Class 0.5 S
Reactive power (IEC 62053-23)	Class 2
ANSI C12.20	Class 0.5 S

## 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>

# EEM-MA370-R - Measuring instrument



2907980

<https://www.phoenixcontact.com/us/products/2907980>

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

## RS-485

Connection method	Screw connection
Stripping length	7 mm
Screw thread	M3
Conductor cross section rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 12
Tightening torque	0.5 Nm ... 0.6 Nm

## Interfaces

### Data: Network interface

Communication protocol	Modbus/TCP REST
Connection method	RJ45

### Data: Network interface

Communication protocol	Modbus/RTU
Communication standard	RS-485
Connection method	Screw connection
Transmission speed range	2.4 kbps ... 115.2 kbps
Resistance	120 Ω (integrated)

## Dimensions

Width	90 mm
Height	80 mm
Depth	64 mm

## 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
-------------	--------------

# EEM-MA370-R - Measuring instrument



2907980

<https://www.phoenixcontact.com/us/products/2907980>

## 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

# EEM-MA370-R - Measuring instrument



2907980

<https://www.phoenixcontact.com/us/products/2907980>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2907980>



**EAC**

Approval ID: RU\*DE\*08.B.00734/19



**UL Listed**

Approval ID: FILE E 357804



**cUL Listed**

Approval ID: FILE E 357804

**cULus Listed**

# EEM-MA370-R - Measuring instrument



2907980

<https://www.phoenixcontact.com/us/products/2907980>

## Classifications

### ECLASS

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

### ETIM

ETIM 9.0	EC002301
----------	----------

### UNSPSC

UNSPSC 21.0	41113600
-------------	----------

# EEM-MA370-R - Measuring instrument



2907980

<https://www.phoenixcontact.com/us/products/2907980>

## Environmental product compliance

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"



# EEM-MA370-R - Measuring instrument



2907980

<https://www.phoenixcontact.com/us/products/2907980>

## Accessories

### PACT MCR-V1-21-44 - Current transformer

2277268

<https://www.phoenixcontact.com/us/products/2277268>



Bus-bar current transformer, primary current can be selected between 50...500 A AC; secondary current can be selected as 1 A AC or 5 A AC; accuracy class can be selected as 0.5 or 1; rated power can be selected

---

### PACT MCR-V2- 3015- 60 - Current transformer

2277271

<https://www.phoenixcontact.com/us/products/2277271>



Window-type current transformer, primary current can be selected between 50...750 A AC; secondary current can be selected as 1 A AC or 5 A AC; accuracy class can be selected as 0.5 or 1; rated power can be selected

# EEM-MA370-R - Measuring instrument

2907980

<https://www.phoenixcontact.com/us/products/2907980>



## PACT MCR-V2-3015-60-PT - Current transformer

2907413

<https://www.phoenixcontact.com/us/products/2907413>



Window-type current transformer with screw and Push-in connection technology, conductor connection for Push-in: from directly above, no tools required. The following can be selected: primary current (50 ... 750) A AC, secondary current (1 or 5) A AC, accuracy class 0.5 or 1, VA power

---

## PACT MCR-V2- 4012- 70 - Current transformer

2277284

<https://www.phoenixcontact.com/us/products/2277284>



Window-type current transformer, primary current can be selected between 75... 1000 A AC; secondary current can be selected as 1 A AC or 5 A AC; accuracy class can be selected as 0.5 or 1; rated power can be selected

# EEM-MA370-R - Measuring instrument

2907980

<https://www.phoenixcontact.com/us/products/2907980>



## PACT MCR-V2-4012-70-PT - Current transformer

2907414

<https://www.phoenixcontact.com/us/products/2907414>



Window-type current transformer with screw and Push-in connection technology, conductor connection for Push-in: from directly above, no tools required. The following can be selected: primary current (100 ... 1000) A AC, secondary current (1 or 5) A AC, accuracy class 0.5 or 1, VA power

---

## PACT MCR-V2- 5012- 85 - Current transformer

2277297

<https://www.phoenixcontact.com/us/products/2277297>



Window-type current transformer, primary current can be selected between 100..1500 A AC; secondary current can be selected as 1 A AC or 5 A AC; accuracy class can be selected as 0.5 or 1; rated power can be selected

# EEM-MA370-R - Measuring instrument

2907980

<https://www.phoenixcontact.com/us/products/2907980>



## PACT MCR-V2-5012-85-PT - Current transformer

2907416

<https://www.phoenixcontact.com/us/products/2907416>



Window-type current transformer with screw and Push-in connection technology, conductor connection for Push-in: from directly above, no tools required. The following can be selected: primary current (100 ... 1500) A AC, secondary current (1 or 5) A AC, accuracy class 0.5 or 1, VA power

---

## PACT MCR-V2- 6015- 85 - Current transformer

2277336

<https://www.phoenixcontact.com/us/products/2277336>



Window-type current transformer, primary current can be selected between 200 . . . 1,250 A AC; secondary current can be selected as 1 A AC or 5 A AC; accuracy class can be selected as 0.5 or 1; rated power can be selected

# EEM-MA370-R - Measuring instrument

2907980

<https://www.phoenixcontact.com/us/products/2907980>



## PACT MCR-V2-6015-85-PT - Current transformer

2907417

<https://www.phoenixcontact.com/us/products/2907417>



Window-type current transformer with screw and Push-in connection technology, conductor connection for Push-in: from directly above, no tools required. The following can be selected: primary current (200 ... 1600) A AC, secondary current (1 or 5) A AC, accuracy class 0.5 or 1, VA power

---

## PACT MCR-V2-10020-129 - Current transformer

2277378

<https://www.phoenixcontact.com/us/products/2277378>



Window-type current transformer, primary current can be selected between 800 and 4,000 A AC, secondary current can be selected 1 A AC or 5 A AC, accuracy class can be selected 0.5 or 1, rated power can be selected

# EEM-MA370-R - Measuring instrument

2907980

<https://www.phoenixcontact.com/us/products/2907980>



## PACT MCR-V3-60 - Current transformer

2277417

<https://www.phoenixcontact.com/us/products/2277417>



Winding current transformer, primary current can be selected between 1...40 A AC; secondary current can be selected as 1 A AC or 5 A AC; accuracy class can be selected as 0.5 or 1; rated power can be selected

---

Phoenix Contact 2023 © - 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)