

EEM-XM377 - Measuring device



1674501

<https://www.phoenixcontact.com/gb/products/1674501>

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3-phase energy meter with direct measurement up to 100 A AC, Modbus/TCP interface, operating temperature up to +70°C, certified in accordance with Measuring Instruments Directive (MID)

Your advantages

- Direct current measurement up to 100 A AC over the full temperature range of -40°C to +70°C
- Compliance with accuracy class C in accordance with EN 50470-3 and 0.5 in accordance with IEC 62053-21
- Easy, intuitive operation and reading via the backlit LCD display
- Simple bus and network connection via Modbus/RTU or Modbus/TCP interface
- Modbus registers based on EMpro multifunctional energy measuring devices

Commercial data

Item number	1674501
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CMMC11
Product key	CMMC11
GTIN	4067923225121
Weight per piece (including packing)	370.7 g
Weight per piece (excluding packing)	315 g
Customs tariff number	90283019
Country of origin	CN

Technical data

Product properties

Product type	Energy meter
Product family	EMpro
Number (Ethernet ports)	1
Calibration validity period	8 Years
Meter type	Bidirectional meter (delivery and consumption) incl. 4-quadrant measurement

Insulation characteristics

Protection class	II
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Insulation characteristics

Overvoltage category	III
Pollution degree	2

Display

Display type	LCD with white backlighting and maximum display range of 999999.99 kWh/kVArh
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Electrical properties

Rated surge voltage	6 kV
Accuracy class	C (EN 50470-3)
	0.5 (IEC 62053-21)
Mains type	1-phase (2-conductor)
	3-phase (3-conductor)
	3-phase (4-conductor)

Supply

Supply voltage range	Supply from the measuring circuit
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Electrical isolation

Measuring category	CAT III 300 V
Utilization category	UC 2 (EN 62052-31)

Input data

Measurement

Nominal voltage	3x 230 V AC (400 V AC)
Input voltage range	100 V AC ... 277 V AC (Phase/neutral conductor)
	173 V AC ... 480 V AC (Phase/Phase)
Input current range	100 A AC (Direct measurement)
Power consumption	10 VA (2 W)
Frequency range	±2 % (50/60 Hz reference frequency f_N)
Power factor (cos phi)	0.5 (inductive)
	0.8 (capacitive)

Startup current I_{st}	0.04 A
Minimum current I_{min}	0.3 A
Limiting current I_{max}	100 A
Transient current I_{tr}	1 A
Reference current I_{ref}	10 A
Current carrying capacity	≤ 100 A (Neutral conductor)
Overload capacity	30 x I_{max} for 0.01 s
Active energy (EN 50470-3)	Class C
Real energy (IEC 62053-21)	Class 0.5
Reactive power (IEC 62053-23)	Class 2
Scanning rate	4096 Hz

Output data

Pulse output

Pulse LED	400 imp/kWh (Metrological LED)
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Connection data

Measurement connection

Designation	Measurement connection
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Conductor connection

Connection method	Screw connection
rigid	1.5 mm² ... 25 mm²
flexible	1.5 mm² ... 25 mm²
AWG	14 ... 4 (rigid/flexible)
Stripping length	15 mm
Tightening torque	2.5 Nm

Interfaces

Communication:

Communication protocol	Modbus/TCP
Communication standard	Ethernet
Connection method	RJ45
Transmission speed range	100 Mbps
Data update rate	100 ms (Real power) 1 s (Energy values)

Dimensions

Item dimensions

Width	72 mm
Height	100 mm
Depth	71 mm

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Depth (NS 35/7,5)	65 mm (Snapped onto DIN rail NS 35/7,5 in accordance with EN 60715)
Horizontal pitch	4 Div.

Material specifications

Color (Upper housing part)	light gray (RAL 7035)
Color (Lower housing part)	gray (RAL 7042)
Flammability rating according to UL 94	V0

Environmental and real-life conditions

Ambient conditions

Degree of protection (Front)	IP51 (Front)
Degree of protection (Connections)	IP20 (Connections)
Ambient temperature (operation)	-40 °C ... 70 °C
	-40 °F ... 158 °F (MID)
	0 °C ... 55 °C (Display)
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Altitude	≤ 2000 m
Permissible humidity (operation)	0 % ... 90 % (non-condensing)
Shock (storage/transport)	30g _n (300 m/s ²), 18 ms (IEC 60068-2-27)
Vibration (storage/transport)	10 Hz ... 150 Hz, 1g (EN 60068-2-6)
Mechanical environment	M1
EMC environment	E2

Approvals

CE

Certificate	CE-compliant
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MID

Certificate	MID-compliant
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EMC data

Noise immunity	EN 62052-11
Impulse withstand voltage	4 kV

Standards and regulations

Standards/regulations	EN 50470-1
	EN 50470-3

Mounting

Mounting type	DIN rail mounting
Mounting position	Horizontal DIN rail

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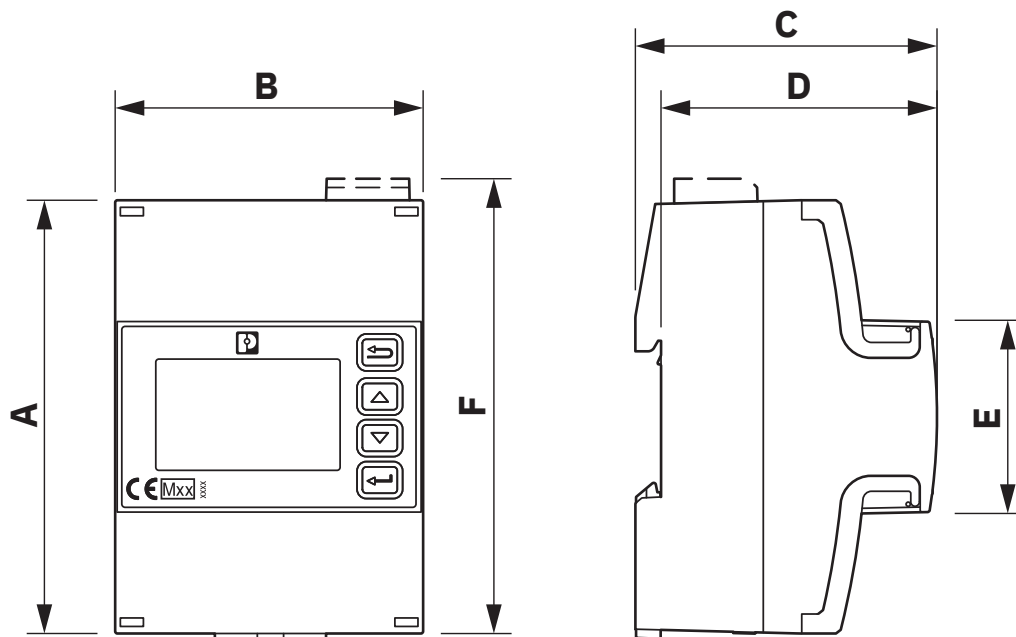
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Drawings

Dimensional drawing



A = 100 mm; B = 72 mm; C = 71 mm; D = 65 mm; E = 45 mm; F = 105,5 mm

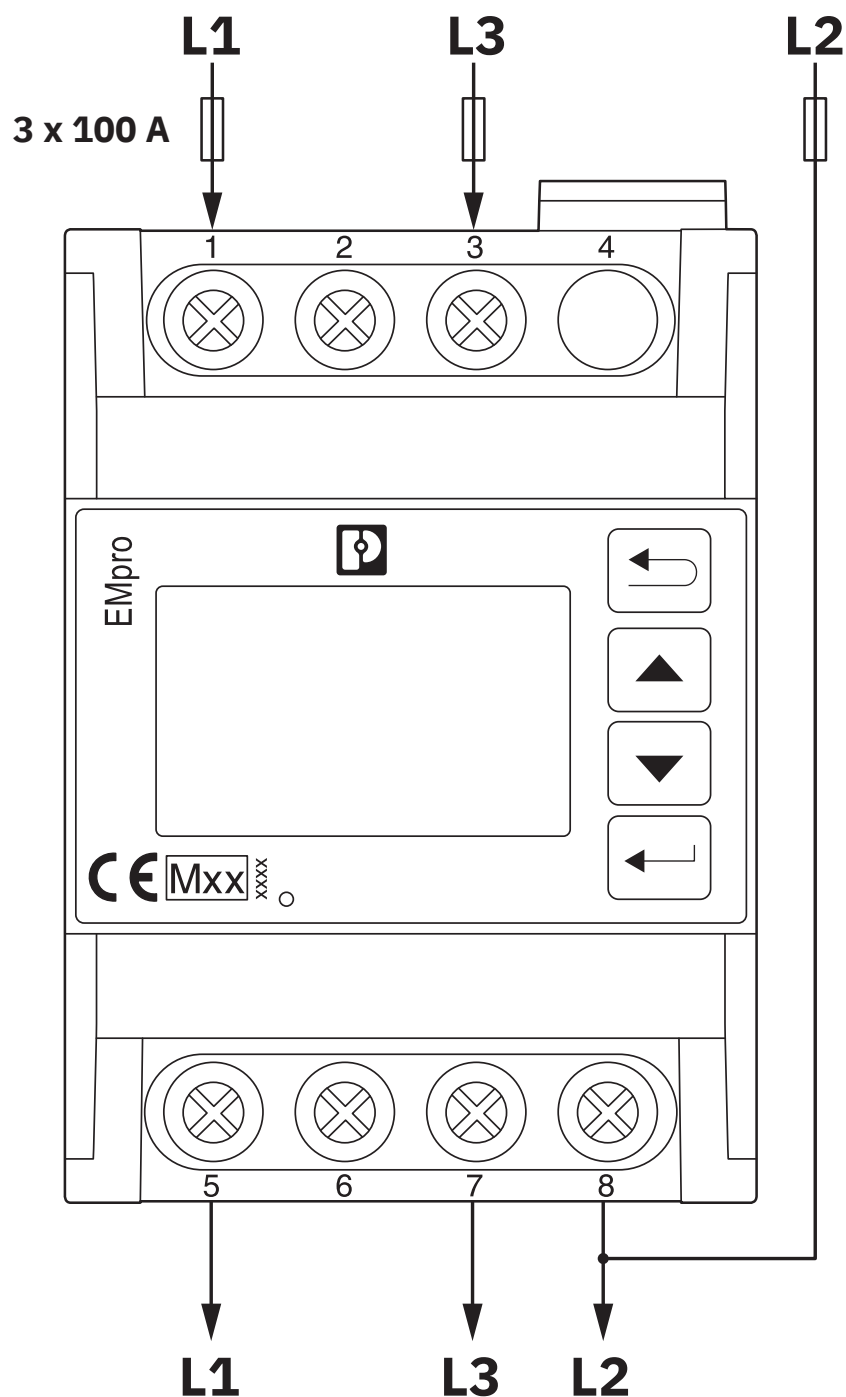
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Connection diagram



3P3W

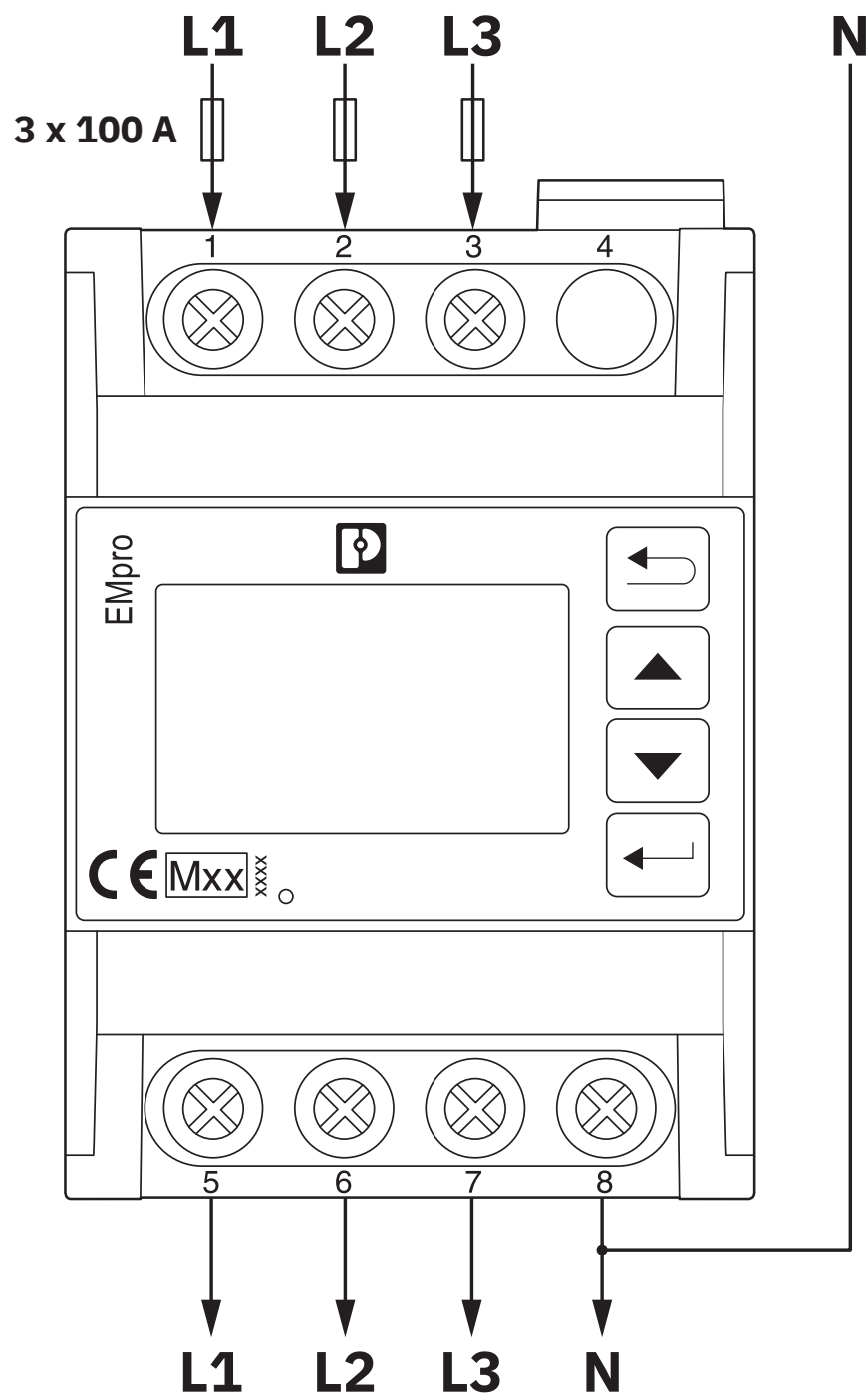
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Connection diagram



3P4W

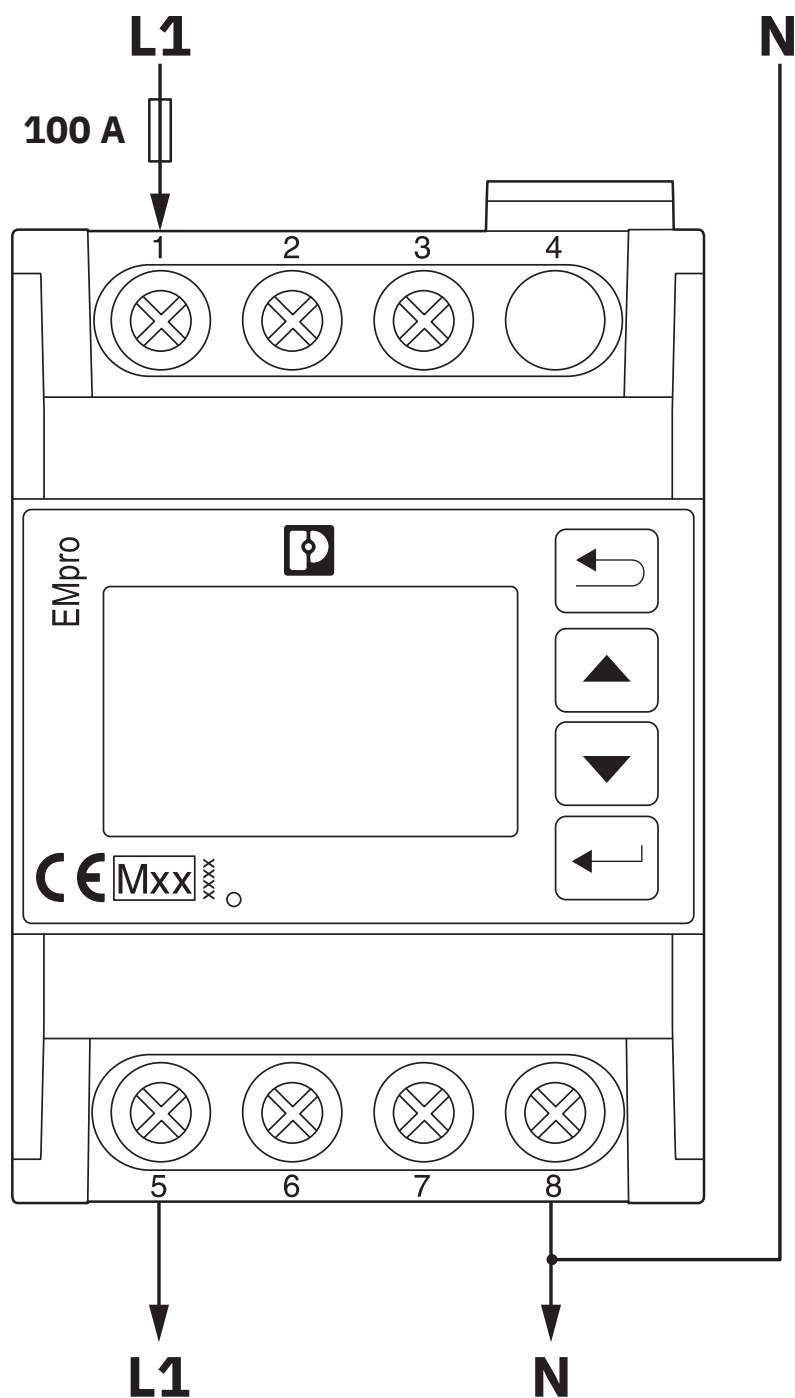
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Connection diagram



1P2W

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Approvals

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cULus Listed

Approval ID: E552445-20260213

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Classifications

ECLASS

ECLASS-13.0	27142330
ECLASS-15.0	27142330

ETIM

ETIM 10.0	EC002301
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UNSPSC

UNSPSC 21.0	26111500
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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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