

# EEM-SB371-C - Measuring device

1158947

<https://www.phoenixcontact.com/in/products/1158947>



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Multi-functional energy measuring device without display, with direct Rogowski connection and integrated Ethernet and Proficloud.io 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	1158947
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CK4
Product key	CMMC21
GTIN	4063151166014
Weight per piece (including packing)	312.29 g
Weight per piece (excluding packing)	408 g
Customs tariff number	90303100
Country of origin	DE

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## Technical data

### Product properties

Product type	Energy measuring device
Product family	EMpro

### System properties

IoT capability: PROFICLOUD

IoT platform	PROFICLOUD
Supports cloud computing	yes
Protocol / IP-Port	MQTT / 8883 HTTPS / 443
Smart Services	Device Management Service Time Series Data Service EMMA Service

### 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
Insulation	Reinforced insulation

#### 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 61010-2-030

Standards/regulations	IEC 61010-2-030
Measuring category	III (300 V AC) II (600 V AC)
Insulation	Reinforced insulation

#### Electrical isolation Digital I/Os

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Insulation	Functional insulation
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## Electrical isolation Communication interface

Insulation	Functional insulation
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## 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
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)
Protective circuit	Protection against incorrect DC connection (max. 30 V)

### 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	$\leq 400$ A (Measurement level 1)
	$\leq 4000$ A (Measurement level 2)
	Transmission factor: 100 mV/1000 A when using a Phoenix Contact coil
Input measuring range voltage	500 $\mu$ V ... 400 mV
Response threshold from measuring range nominal value	5 A
Operate threshold	500 $\mu$ V (5 A)
Precision	0.5 %

### Measurement: Power

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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)
Protective circuit	Protection against incorrect DC connection (max. 30 V)

## Connection data

### Current / voltage / supply

Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross section rigid	0.2 mm² ... 6 mm²
Conductor cross section flexible	0.2 mm² ... 4 mm²
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 mm² ... 2.5 mm²
Conductor cross section flexible	0.14 mm² ... 1.5 mm²
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

### Data: Network interface

Communication protocol	MQTT for Proficloud.io
Connection method	RJ45
Number of connections	2

## Dimensions

Width	90 mm
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Height	80 mm
Depth	82 mm

## Material specifications

Color	gray (RAL 7042)
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## Environmental and real-life conditions

### Ambient conditions

Degree of protection (Housing)	IP20 (Housing)
Ambient temperature (operation)	-10 °C ... 55 °C
Ambient temperature (storage/transport)	-40 °C ... 70 °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
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### UL, USA/Canada

Identification	UL/C-UL Listed UL 61010-1
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### UL data

Operating mode	Indoor use
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## Standards and regulations

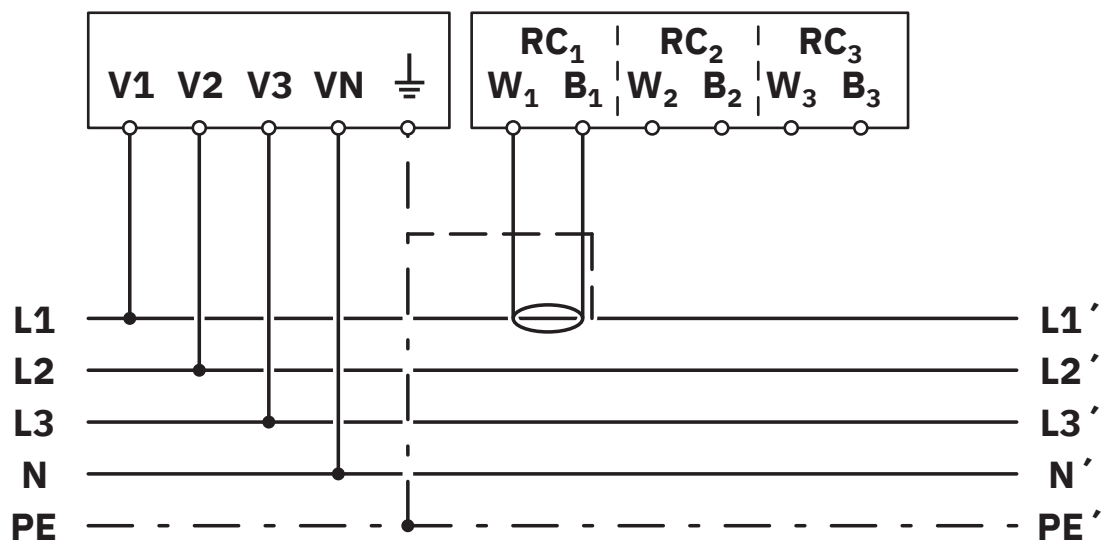
Standards/regulations	IEC 61010-1
	IEC 61326-1
	IEC 61557-12

## Mounting

Mounting type	DIN rail mounting
Mounting position	Horizontal DIN rail

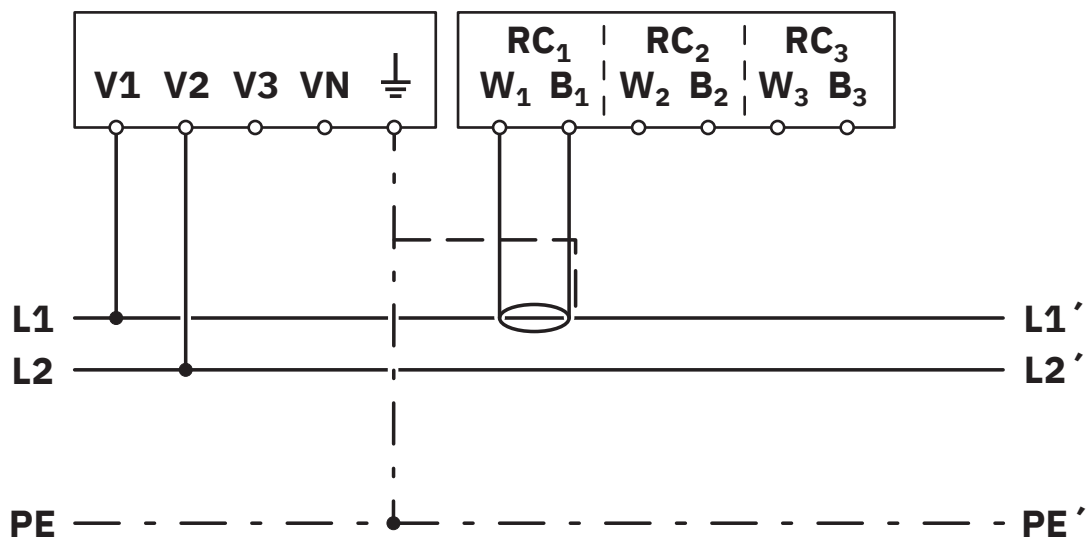
## Drawings

Connection diagram



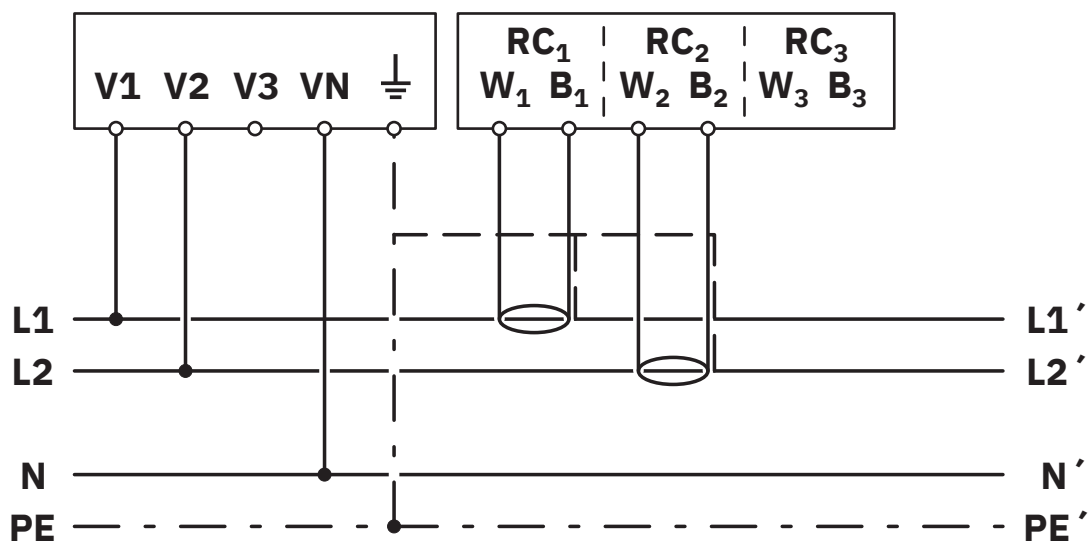
Network type: 3PH-4W-1RC

Connection diagram



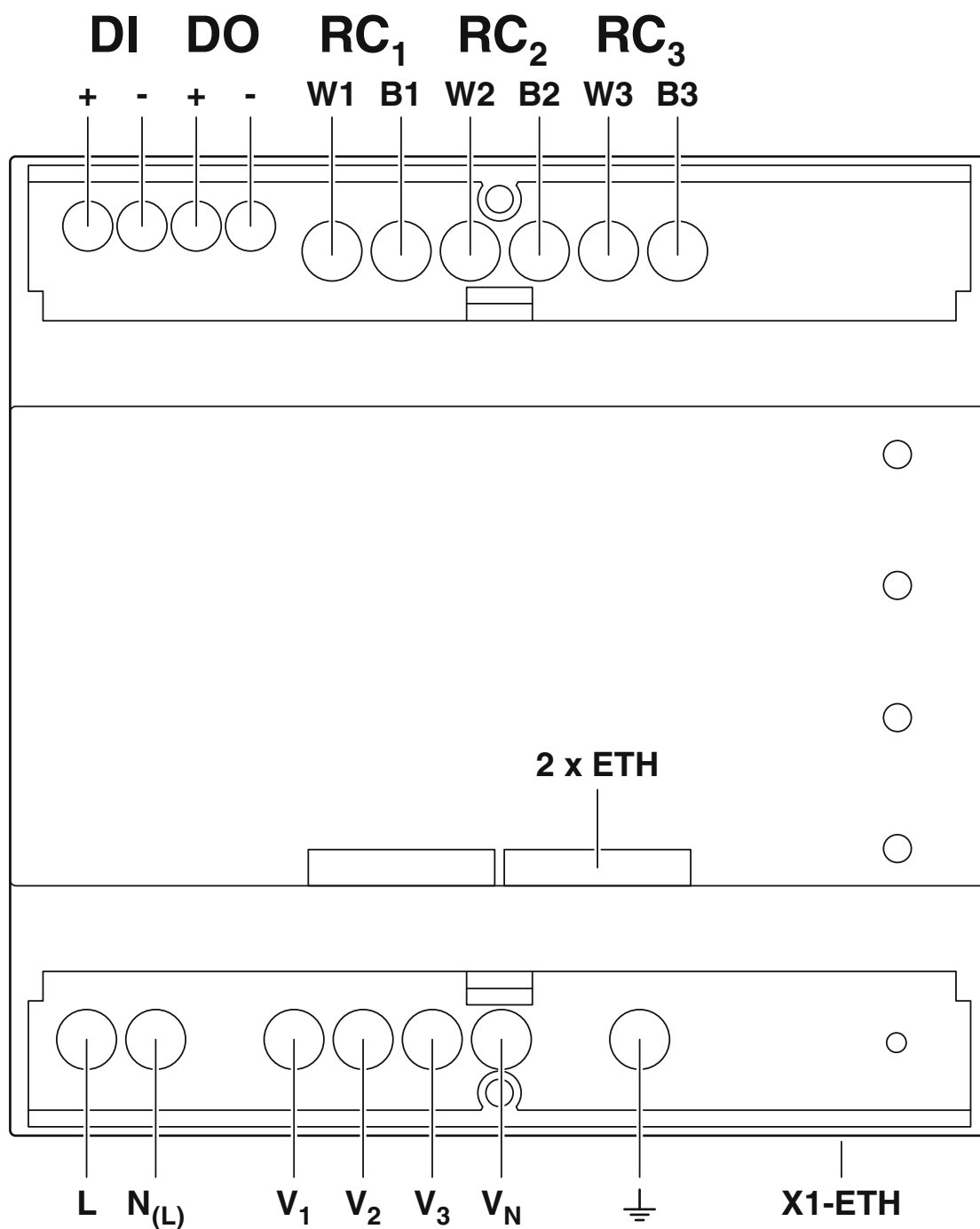
Network type: 2PH-2W-1RC

Connection diagram



Network type: 2PH-3W-2RC

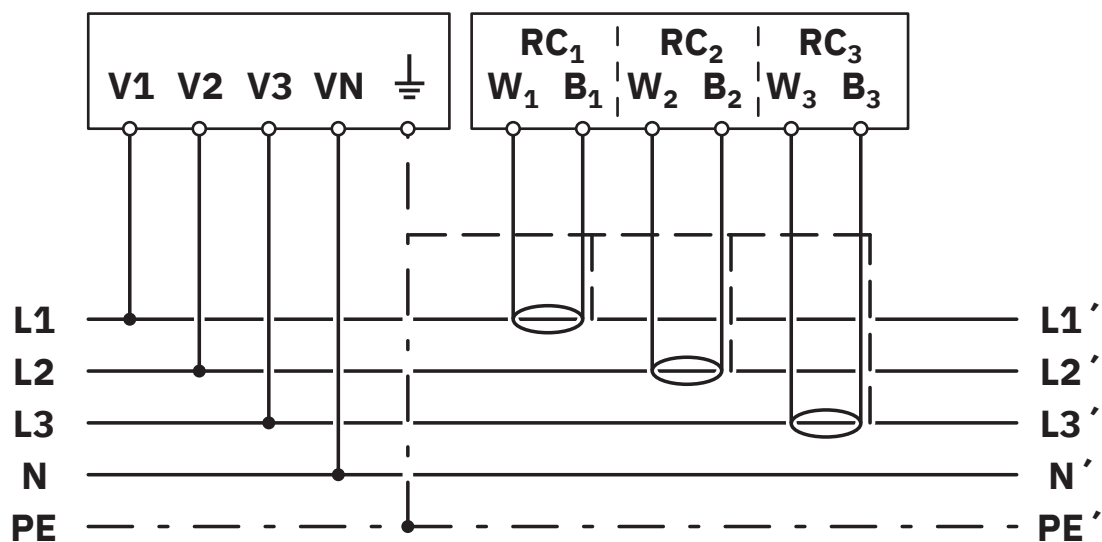
Connection diagram



Pin assignment

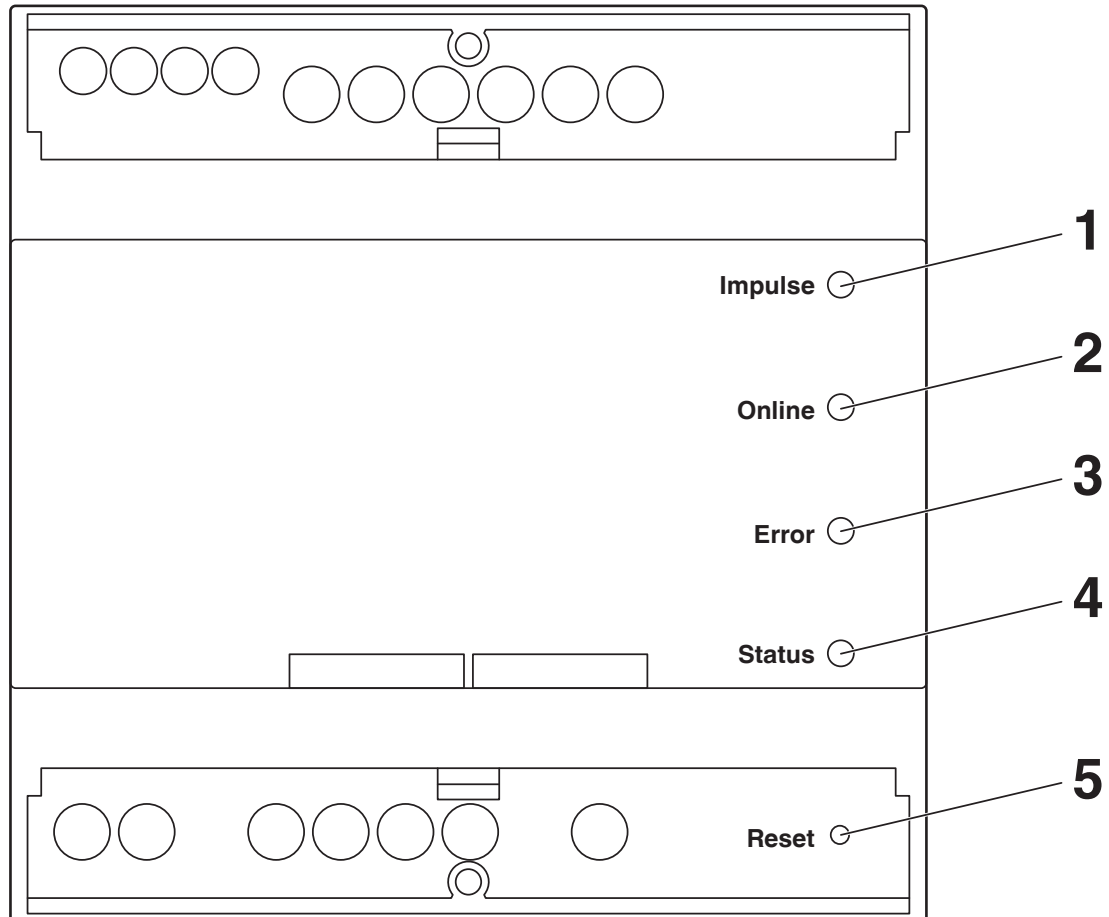


Connection diagram



Network type: 3PH-4W-3RC

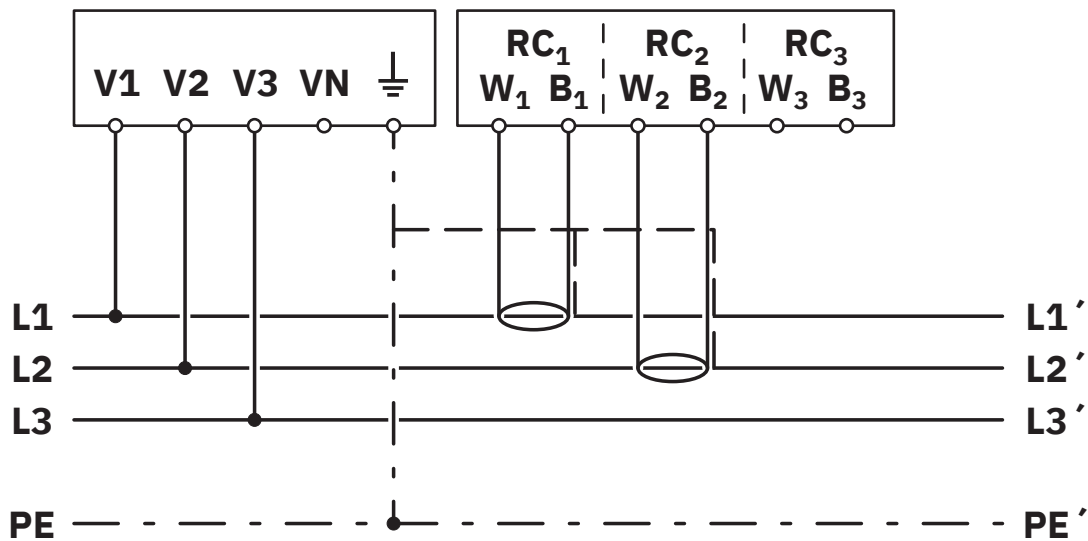
Schematic diagram



## Operating and indication elements

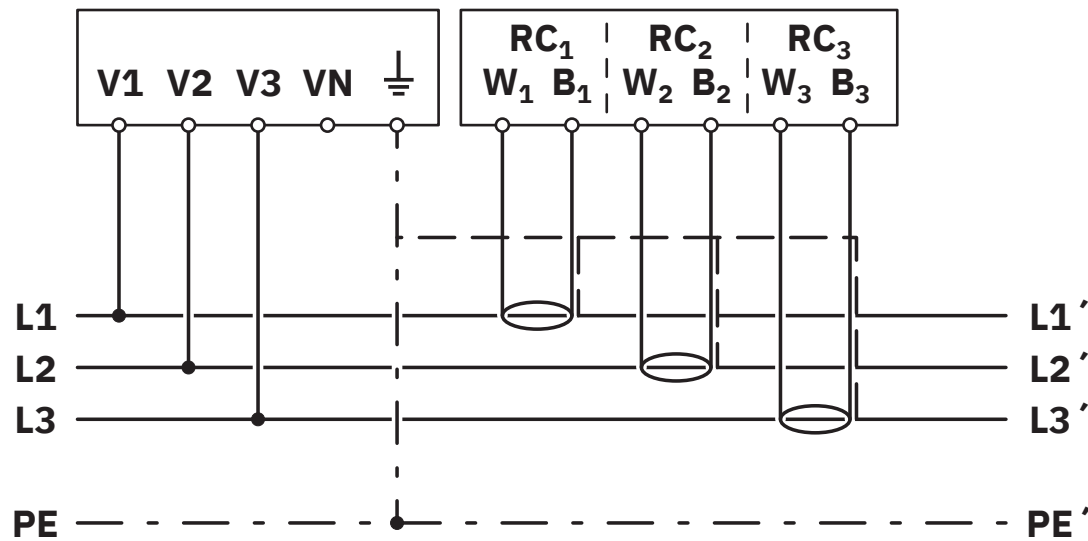
- 1 Reset button
- 2 Online LED
- 3 Error LED
- 4 Status LED
- 5 Reset button

Connection diagram



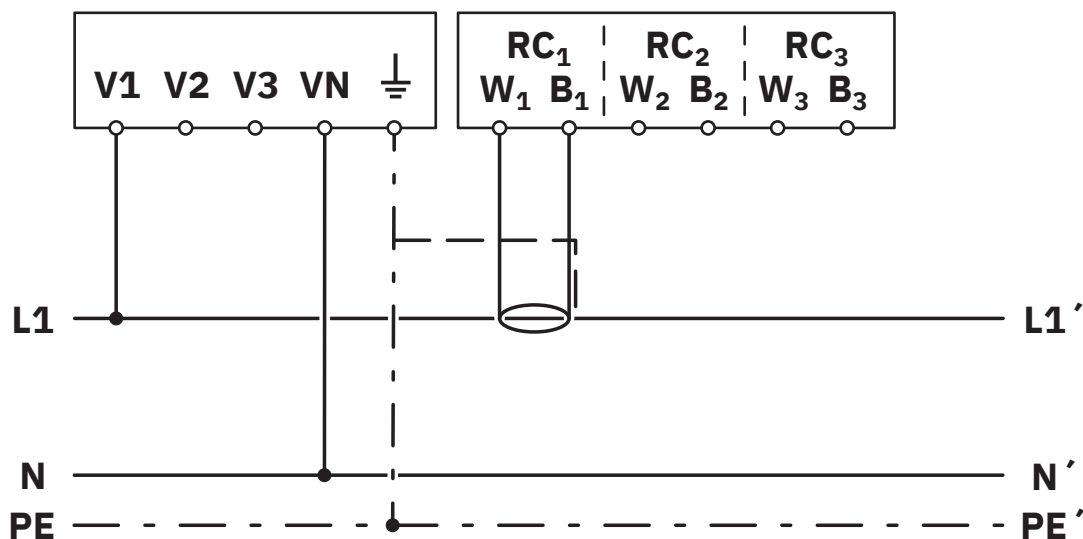
Network type: 3PH-3W-2RC

Connection diagram



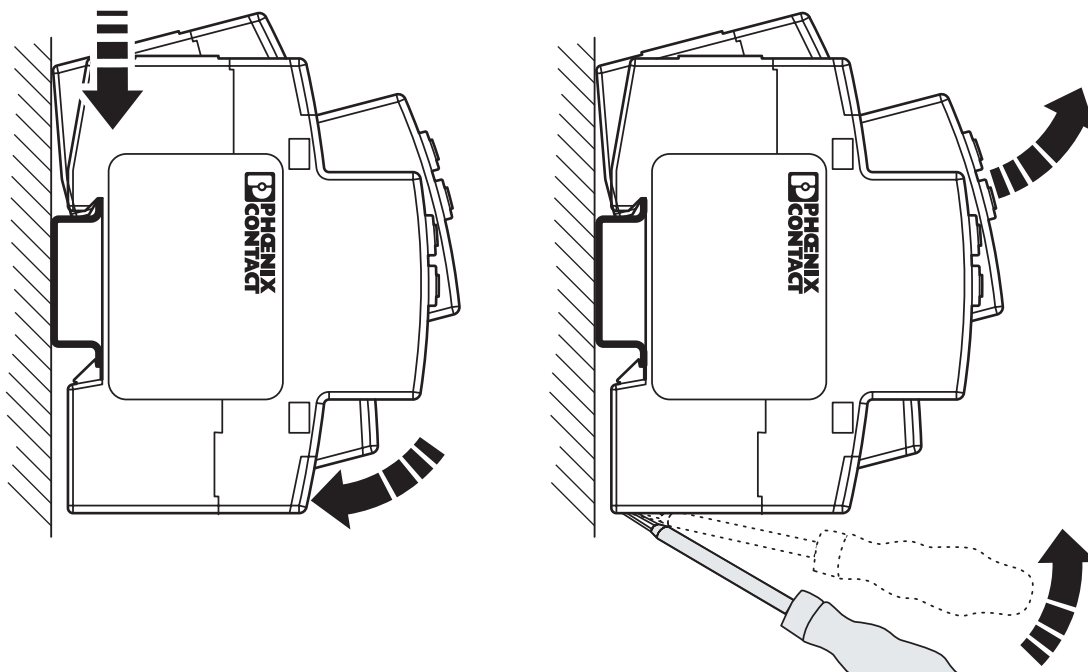
Network type: 3PH-3W-3RC

Connection diagram



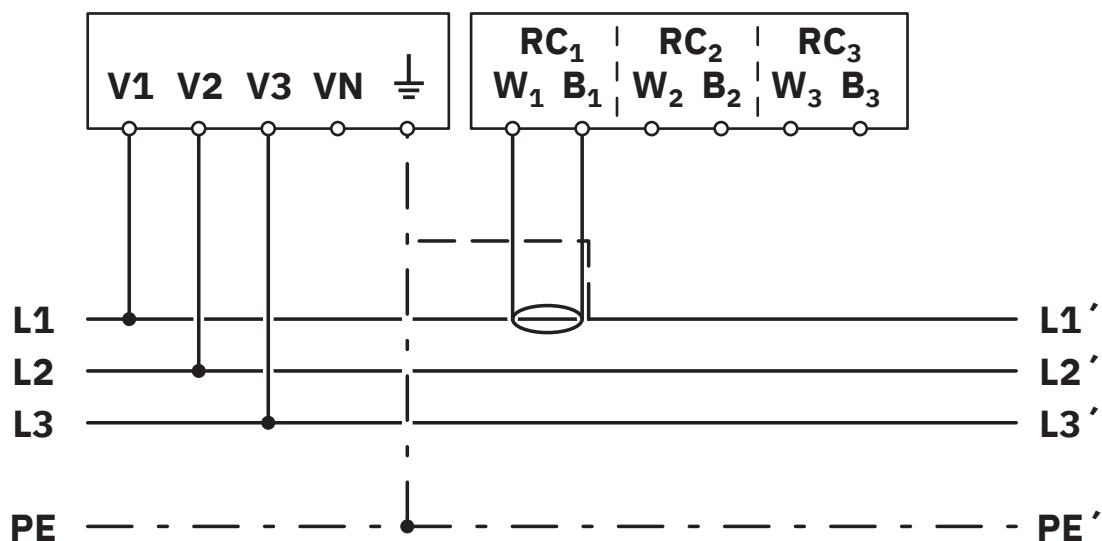
Network type: 1PH-2W-1RC

Schematic diagram



Mounting

Connection diagram



Network type: 3PH-3W-1RC

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## Approvals


To download certificates, visit the product detail page: <https://www.phoenixcontact.com/in/products/1158947>



**UL Listed**  
Approval ID: E357804



**cUL Listed**  
Approval ID: E357804



**cULus Listed**  
Approval ID: E357804

**cULus Listed**

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## Classifications

### ECLASS

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

### ETIM

ETIM 9.0	EC002301
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### UNSPSC

UNSPSC 21.0	41113600
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## Environmental product compliance

## EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

## China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

## EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	7a24eda0-1b14-4624-89bf-32244e5b2234



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## Accessories

### PACT RCP-D95 - Coil

2904890

<https://www.phoenixcontact.com/in/products/2904890>

300 mm long Rogowski coil. The measuring coil diameter when installed is 95 mm. The Rogowski coil is used for AC current measurement for busbars and power lines.



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### PACT RCP-D140 - Coil

2904891

<https://www.phoenixcontact.com/in/products/2904891>

450 mm long Rogowski coil. The measuring coil diameter when installed is 140 mm. The Rogowski coil is used for AC current measurement for busbars and power lines.



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## PACT RCP-D190 - Coil

2904892

<https://www.phoenixcontact.com/in/products/2904892>

600 mm long Rogowski coil. The measuring coil diameter when installed is 190 mm. The Rogowski coil is used for AC current measurement for busbars and power lines.



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## PACT RCP-CLAMP - Holder

2904895

<https://www.phoenixcontact.com/in/products/2904895>



The optional holding device ensures the Rogowski coil is securely seated on busbars with a thickness of 10 ... 15 mm. During installation, the coil housing is pushed onto the flange of the holding device and snaps in automatically.

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## PACT RCP-D95-5M - Coil

2910322

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300 mm long Rogowski coil. The measuring coil diameter when installed is 95 mm. The Rogowski coil is used for AC current measurement for busbars and power lines.



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## PACT RCP-D95-10M - Coil

2910323

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300 mm long Rogowski coil. The measuring coil diameter when installed is 95 mm. The Rogowski coil is used for AC current measurement for busbars and power lines.



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## PACT RCP-D190-10M - Coil

2910324

<https://www.phoenixcontact.com/in/products/2910324>

600 mm long Rogowski coil. The measuring coil diameter when installed is 190 mm. The Rogowski coil is used for AC current measurement for busbars and power lines.



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