Phasergy

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EW-100

Wireless Energy Meter

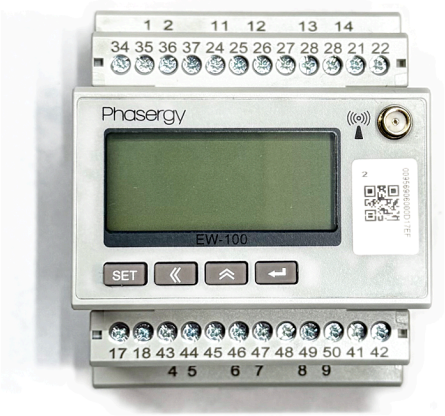
Three-phase energy metering, wired or wireless, for any load size

- EW-100-1P (100 A) · EW-100-5A · EW-100-RW Rogowski up to 10 000 A
- RS485 Modbus RTU · LoRa 915 MHz · LoRaWAN AU915 · WiFi MQTT
- Class 0.5S (IEC 62053-22) / Class 1 (IEC 62053-21)
- Power quality: THD and harmonics up to the 31st, per phase

IEC 62053-22 | Modbus RTU | LoRa / LoRaWAN | WiFi · MQTT | DIN 35 mm

Technical datasheet

The Phasergy EW-100 is a compact three-phase energy meter for individual loads and tenants. One meter platform covers any load size through three current-input versions (EW-100-1P up to 100 A, EW-100-5A for x/5 A CTs and EW-100-RW with flexible Rogowski coils) and four communication options: RS485 Modbus RTU, LoRa 915 MHz or LoRaWAN AU915 where running cable is not practical, and WiFi with MQTT for sites without a local controller.



01 VERSIONS BY CURRENT INPUT

Choose the version by the size of the load and the space in the board. All versions share the same meter body, display, functions and communication options.

EW-100-1P

Loads up to 100 A

For small split-core sensors (Ø16 mm window, mA output). Input 3 × 20(100) A. Class 0.5S (IEC 62053-22).

EW-100-5A

Loads 100 A to 3000 A

Input 3 × 1(6) A for standard x/5 A split-core CTs (see CT table). Class 1 (IEC 62053-21).

EW-100-RW

Large loads, over 5000 A

Flexible Rogowski coils from 1000 A up to 10 000 A (BR series). Installed around busbars and cable bundles without dismantling.

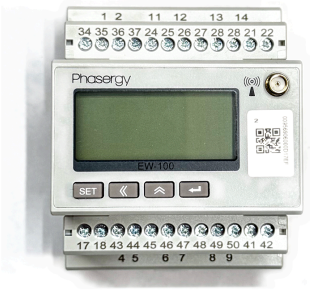
02 COMMUNICATION OPTIONS

Communication	Interface	Use
RS485	Modbus RTU · shielded twisted pair	Wired bus to the site controller, BMS or data logger
LoRa	915 MHz · external antenna	Point-to-point wireless to a LoRa–Modbus gateway; the site controller reads the meter directly over Modbus
LoRaWAN	AU915 (915–928 MHz) · external antenna	Wireless to any LoRaWAN network (gateway + network server)
WiFi	MQTT · JSON payload	Sites without a local controller: the meter publishes its data directly to an MQTT broker / cloud platform

Wireless: LoRa, LoRaWAN or WiFi, as required by the site. Every version also includes an infrared port for local reading and configuration.

03 TYPICAL APPLICATIONS

- Tenant and concession submetering
- HVAC units and rooftops
- Refrigeration racks and cold rooms
- Lighting and signage circuits
- Sub-panels far from the main switchboard
- Retrofit where new cabling is costly



EW-100 · version with external antenna (LoRa / LoRaWAN)

04 TECHNICAL SPECIFICATIONS

Electrical	
Rated voltage	3 × 220/380 V · 3 × 380/660 V AC
Frequency	50 / 60 Hz
Current input	1P: 3 × 20(100) A · 5A: 3 × 1(6) A · RW: Rogowski coil, 1000 A to 10 000 A
Burden	Voltage < 0.5 VA per phase · current < 1 VA per phase
Auxiliary supply	AC 85–265 V · < 2 W
Measurement	
Accuracy (active energy)	1P: class 0.5S (IEC 62053-22) · 5A: class 1 (IEC 62053-21)
Starting current	1‰ Ib (0.5S) · 4‰ Ib (1)
Display	LCD with keys
Pulse output	Active energy, 80 ± 20 ms
Communication and I/O	
RS485	Modbus RTU
LoRa	915 MHz, point-to-point to LoRa–Modbus gateway
LoRaWAN	AU915 (915–928 MHz)
WiFi	MQTT client, JSON payload
Infrared port	1200 baud
Digital I/O	4 DI / 2 DO (relay)
Environment and installation	
Operating temperature	-20 °C … +55 °C
Storage temperature	-40 °C … +70 °C
Humidity	≤ 95 %, non-condensing
Altitude	< 2000 m
Mounting	35 mm DIN rail (4 modules)
Dimensions (W × H × D)	72 × 87.8 × 71.5 mm

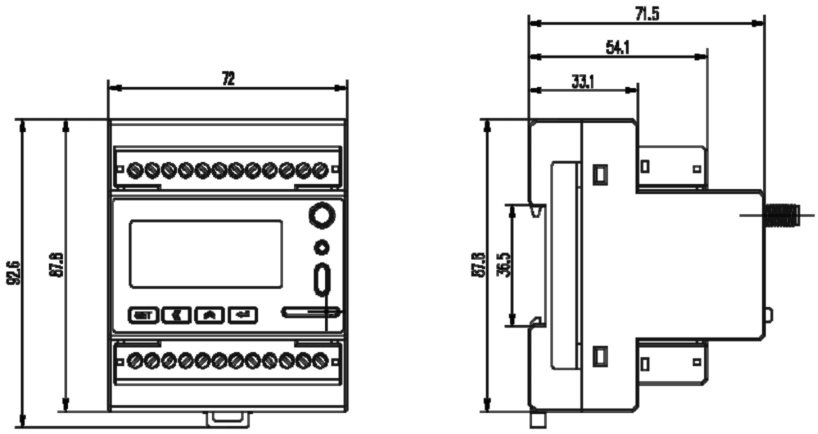
Measured parameters

- Active energy (import / export), per phase and total
- Reactive energy (import / export) and apparent energy
- Active, reactive and apparent power, per phase and total
- Phase-to-neutral and phase-to-phase voltage
- Current per phase
- Power factor, per phase and total · Frequency
- THD of voltage and current · Harmonics 2nd to 31st
- Voltage and current unbalance

Power quality **Harmonics up to the 31st**

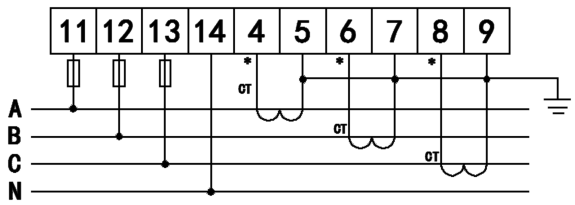
- THD of voltage and current, per phase
- Individual harmonics from the 2nd to the 31st, voltage and current, per phase
- Voltage and current unbalance

05 DIMENSIONS

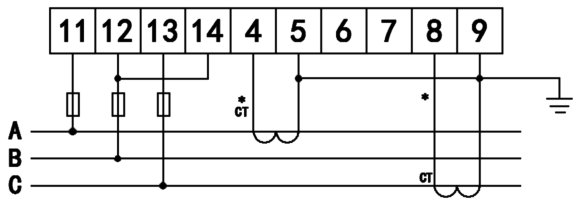


EW-100 · 72 × 87.8 × 71.5 mm · 4 DIN modules

06 WIRING



Three-phase 4-wire



Three-phase 3-wire

Terminals	Function
1 · 2	Auxiliary supply L / N (AC 85–265 V)
4 … 9	Current inputs (sensor, CT or coil per phase)
11 … 14	Voltage inputs A · B · C · N
17 · 18	Active energy pulse output
21 · 22	RS485 A / B
24 … 28	DI1 … DI4 · COM
34 … 37	DO1 · DO2 (relay)

EW-100-1P and EW-100-RW: the sensor / coil leads are not grounded. EW-100-5A: ground the CT secondaries as usual.

07 DATA INTEGRATION

Over RS485 the EW-100 is read as a Modbus RTU slave. With LoRa, a LoRa–Modbus gateway on site lets the controller read each meter directly over Modbus. With LoRaWAN, it joins any AU915 network through a standard LoRaWAN gateway and the data can be delivered to a BMS, SCADA or cloud platform. With WiFi, it publishes its measurements to an MQTT broker with no local controller. Register map, LoRaWAN payload and MQTT topics available on request.

08 ORDERING GUIDE

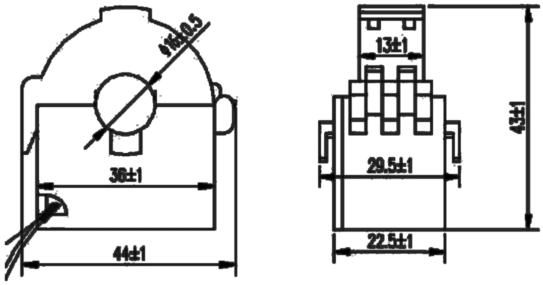
Load	Board	Version
Up to 100 A	Any	**EW-100-1P**
100 A – 3000 A	Room for split-core CTs	**EW-100-5A**
Over 3000 A, up to 10 000 A	Busbars, parallel cables, tight space	**EW-100-RW**

Each version is available with RS485, LoRa 915 MHz, LoRaWAN AU915 or WiFi (MQTT) communication.

09 CURRENT SENSORS

EW-100-1P · split-core sensor up to 100 A

Parameter	Value
Rated current	Up to 100 A per phase
Output	mA (matched to the meter)
Window	Ø16 ± 0.5 mm
Outline	44 × 43 mm · depth 22.5 mm (29.5 mm with clip)
Tolerance	± 1 mm
Leads	Red / white, connected by color



Dimensions (mm)

mA-output sensor for the EW-100-1P; standard 5 A CTs are not used with this version.

10 EW-100-5A · SPLIT-CORE CTS X/5 A

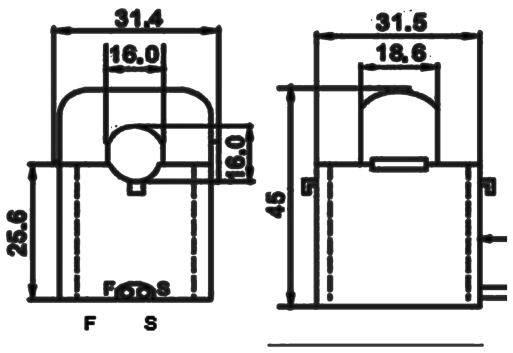
Split-core CTs open around the conductor, so they are installed without disconnecting the feeder.

Characteristic	Value
Rated voltage	0.66 kV
Insulation voltage	2 kV
Frequency	50 / 60 Hz
Secondary	5 A
Flame retardant	UL94-V0
Operating temperature	-30 … +70 °C (CT-16: -20 … +75 °C)

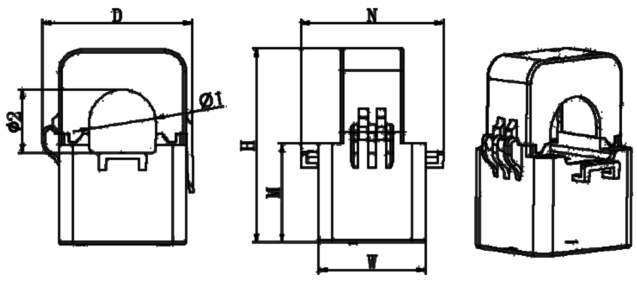
CT-16

Model	Ratio	Class
CT-16	100 A / 5 A · 200 A / 5 A	0.5

W	H	D	Window
31.4	45	31.5	Ø16



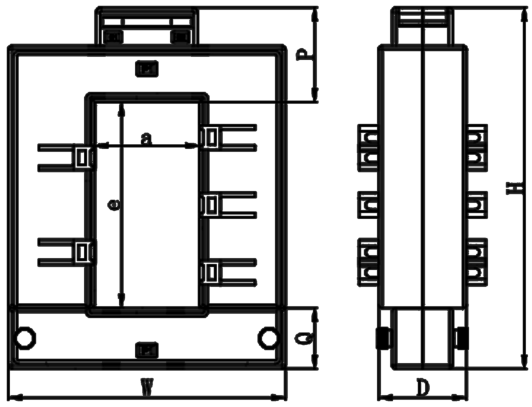
CT-16 · Dimensions in mm



CT-24 · CT-36 · CT-50 · Dimensions in mm

Model	Ratio	Class
CT-24	200 A / 5 A	1
CT-36	400 A / 5 A	0.5
CT-50	1000 A / 5 A	0.5

	W	H	D	M	N	Φ1	Φ2
CT-24	39	70.5	55	36	52	24.5	23
CT-36	42.5	81.5	67	40	56	33.5	35
CT-50	46.5	110	90	54	66.5	47	52



CT-80x50 · CT-120x60 · CT-120x80 · Dimensions in mm

Model	Ratio	Class
CT-80x50	1000 A / 5 A	0.5
CT-120x60	2000 A / 5 A	0.5
CT-120x80	3000 A / 5 A	0.5

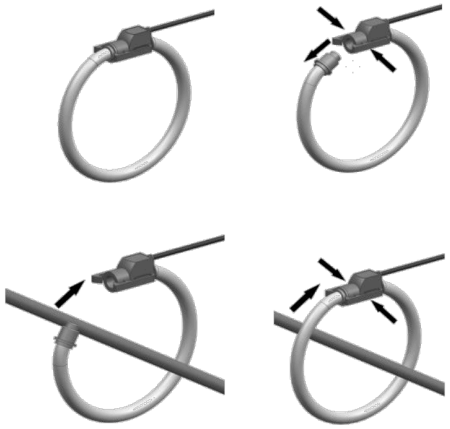
	W	H	D	a	e	P	Q
CT-80x50	114	160	36	52	82	45	33
CT-120x60	144	214	52	62	122	56	36
CT-120x80	144	200	36	82	122	45	33

11 EW-100-RW · FLEXIBLE ROGOWSKI COILS UP TO 10 000 A

Flexible, lightweight coils that open with one hand and close around busbars, parallel conductors or cable bundles. No open-circuit secondary danger and no load on the conductor: the meter is installed without dismantling the board.

Model	Perimeter (mm)	Inner diameter (mm)	Reference current
BR-60	200	60	1000 A
BR-90	300	90	1000–2000 A
BR-150	500	150	2000–5000 A
BR-200	650	200	4000–8000 A
BR-300	1000	300	5000–10 000 A

Coil specifications	
Sensitivity	100 mV/kA ± 0.5 % @ 50 Hz
Position error	± 1 % (< 0.5 % next to the connector)
Linearity · angle error	± 0.2 % · ≤ 0.5°
Zero drift	≤ 1 mV
Bandwidth	1 Hz – 10 kHz
Coil cross-section	12 mm
Signal cable	2 m standard (custom on request)
Insulation voltage	Coil 3000 V · signal cable 300 V
Shield	Coil and signal cable 100 %
Flame retardant	IEC 60332-1-2
Operating / storage temperature	-40 … +80 °C / -50 … +90 °C



Open the connector, wrap the conductor, close until it clicks