

COUNTIS E4x

Active energy meters

three-phase - connection to current transformers up to 12000 A



COUNTIS E44 - MID

The solution for

- Data centre
- Healthcare
- Energy

Strong points

- RS485 (MODBUS), M-BUS, Ethernet communication or pulse outputs
- B+D module MID-certified
- Bi-directional metering
- Multi-measurement and load curve

MID certification

- COUNTIS E units meet MID standards and provide accurate and reliable metering for power-billing applications.
- The COUNTIS E MID has tamper-proof accessories to prevent fraud.



Conformity to standards

- IEC 62053-21 Class 1
- IEC 62053-23 Class 2
- IEC 62053-31
- IEC 62053-11
- EN 50470-1
- EN 50470-3



Compatible with

- Current transformers:



- Current sensors and transducer:



RGW sensors & RAC-1A integrator

Function

The **COUNTIS E4x** is a modular electrical energy meter displaying the energy (kWh, kVAh and kVA) and other measurements directly on its backlit LCD display. It is designed for three-phase load metering with connection via CT and is suitable for applications of up to 12000 A. COUNTIS E42, E44, E46 and E48 are MID certified.

Advantages

RS485 (MODBUS), M-BUS, Ethernet communication or pulse outputs

To enable power consumption to be reported remotely, COUNTIS E4x units are equipped with either one or two output(s) or a RS485 (MODBUS), M-BUS or Ethernet Modbus CTP communication output.

As well as their reporting functions, COUNTIS E4x units with RS485 can be configured remotely and deliver multi-measurement readings.

B+D module MID-certified

COUNTIS E products with MID certification provide the guaranteed accuracy required for applications in which sub-billing of the electrical energy consumed is necessary. "Module B+D" certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

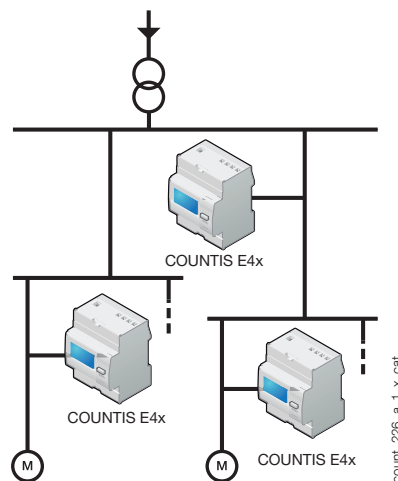
Bi-directional metering

This function is for metering energy production or energy consumption.

Multi-measurement and load curve

Display of electrical values (I, U, V, P, Q, S, PF) and load curve over a 3 day period via communication.

Application diagram



General characteristics

- Measurement accuracy: 1 % / 0,5% (MID).
- Backlit LCD display.
- Multi-measurement available on display.

Models	Specific features
E41	Dual-tariff + pulse output
E42	Dual-tariff + pulse output + MID
E43	4-tariff + pulse output + communication via RS485 MODBUS
E44	4-tariff + pulse output + communication via RS485 MODBUS + MID
E45	4-tariff + pulse output + communication via M-BUS
E46	4-tariff + pulse output + communication via M-BUS + MID
E47	4-tariff + pulse output + Ethernet
E48	4-tariff + pulse output + Ethernet + MID

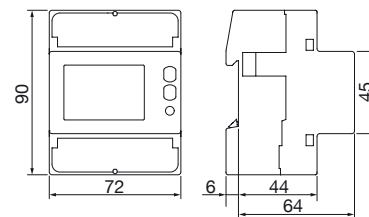
Front panel



1. Terminal shroud (COUNTIS E42, E44, E46 and E48).
2. Backlit LCD.
3. Navigation button.
4. ENTER key.
5. Metrological LED.
6. Current/voltage terminals and terminal shrouds (COUNTIS E42/E44/E46/E48).

Dimensions (mm)

Type	Modular
Number of modules	4
Dimensions W x H x D	72 x 90 x 64 mm
Casing protection degree	IP20
Front panel protection degree	IP51
Display type	Backlit LCD, 8 digits
Cross-section of rigid connecting cable	1.5 to 6 mm ²
Cross-section of flexible connecting cable	1.5 to 6 mm ²
Weight	322 g



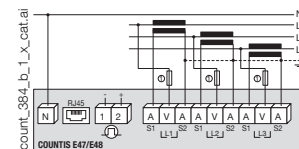
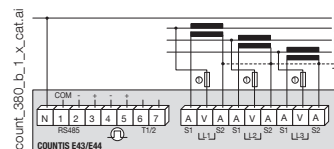
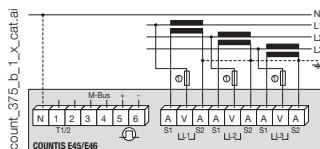
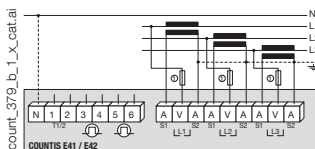
Connections

We recommend:

- Connecting CT secondaries is strictly prohibited with IT earthing arrangements; it is, however, optional in TT/TN earthing arrangements.
- When disconnecting the COUNTIS device, it is essential to short-circuit the secondaries of each current transformer. This operation can be carried out automatically by a PTI, which can be found in the SOCOMEC catalogue. Contact us

IMPORTANT: Neutral connection is mandatory on COUNTIS E43/E44/E47/E48 (neutral is represented by the solid line in the image opposite). Neutral is optional on COUNTIS E41/E42/E45/E46 (neutral is represented by the dashed line in the image opposite).

1. 0.5 A gG / 0.5 A class CC fuses.



Electrical characteristics

Current measurement	
Type	Three-phase on CT 1 and 5A up to 12000 A
Input consumption	0.5 VA max. per phase
Inrush current (I _{cfst} /cf)	1 mA - Class C 2 mA - Class 1
Minimum current (I _{min})	10 mA
Transient current (I _{ctfr} /cf)	50 mA
Reference current (I _{ref})	1 A
Permanent overload (I _{max})	6 A
Transient overload	120 A for 0.5 s
Voltage measurement	
Measurement range	230 to 240 V ± 20%
Consumption (VA)	Max. 7.5 VA (0.5 W) per phase E41/E42/E45/E46 Max. 3.5 VA (1 W) per phase E43/E44/E47/E48
Permanent overload	290 V phase-neutral / 500 V phase-phase
Power monitoring accuracy	
Active (according to IEC 62053-21)	Class 1
Active (according to EN 50470)	Class C
Reactive (according to IEC 62053-22)	Class 2
Power supply	
Self-powered	Yes
Frequency	50 / 60 Hz

Output (pulses)	
Number	2 (E41/E42) 1 (E43 to E48)
Type of optical coupler	250 V AC/DC - 100 mA (E41/E42) 27 V DC - 27 mA (E43 to E48)
Pulses	1 Wh ⇒ TC = 1 to 4 5 Wh ⇒ TC = 5 to 24 25 Wh ⇒ TC = 25 to 124 125 Wh ⇒ TC = 125 to 624 1000 Wh ⇒ TC = 625 to 3124 10000 Wh ⇒ TC = 3125 to 12000
Pulse duration	50 ± 2 ms ON time 30 ± 2 ms OFF time
Environment	
Operating temperature	-25 to +55°C
Storage temperature	-25 to +75°C
Relative humidity	80%
Communication	
Link	COUNTIS E43/E44: RS485 COUNTIS E45/E46: Master/Slave COUNTIS E47/E48: RJ45
Type	COUNTIS E43/E44: 2 to 3 half duplex COUNTIS E45/E46: 2 half duplex COUNTIS E47/E48: Bi-directional mode (full duplex)
Protocol	COUNTIS E43/E44: MODBUS in RTU mode COUNTIS E45/E46: M-BUS COUNTIS E47/E48: MODBUS CTP, HTTP, NTP, DHCP
Baudrate	COUNTIS E43/E44: 1200 to 115200 bauds COUNTIS E45/E46: 300 to 9600 bauds COUNTIS E47/E48: 10/100 Mbps

References

Models	Type	Reference
COUNTIS E41	Via CT - Dual-tariff	4850 3063
COUNTIS E42	Via CT - Dual-tariff + MID	4850 3064
COUNTIS E43	Via CT - Dual-tariff + MODBUS communication via RS485 ⁽¹⁾	4850 3065
COUNTIS E44	Via CT - Dual-tariff + MODBUS communication via RS485 + MID ⁽¹⁾	4850 3066
COUNTIS E45	Via CT - Dual-tariff + communication via M-BUS ⁽¹⁾	4850 3067
COUNTIS E46	Via CT - Dual-tariff + communication via M-BUS + MID ⁽¹⁾	4850 3068
COUNTIS E47	Via CT - Dual-tariff + communication via Ethernet Modbus CTP ⁽¹⁾	4850 3056
COUNTIS E48	Via CT - Dual-tariff + communication via Ethernet Modbus CTP + MID ⁽¹⁾	4850 3057

(1) 4-tariff via RS485 communication.

Accessories	Available for order in multiples of	Reference
Panel mounting kit, 4 modules		192J 8015
10x sealing kits, 4U		4850 309U
Fuse disconnect switches for voltage input protection (RM type) 3-pole	2	5701 0018
gG 10x38 0.5 A fuses	10	6012 0000