COUNTIS E4x

Active energy meters for electrical distribution

three-phase – connect to current transformers up to 12000 A



Function

The **COUNTIS E4x** is a modular electrical power meter. It shows kWh, kVArh and kVA readings and other measurements on its backlit LCD. These devices are intended for three-phase power metering via CT, they are suitable for applications up to 12000 A. The COUNTIS E4x is fully integrated into the SOCOMEC monitoring ecosystem (Webview, screens, gateways, configuration software, etc.). COUNTIS E42, E44, E46 and E48 are MIDcertified.

Advantages

Communication via RS485 (MODBUS), M-Bus, Ethernet or pulse outputs

COUNTIS E4x have either one or two pulse output(s), or one RS485 (MODBUS), M-BUS or Ethernet Modbus TCP communication output

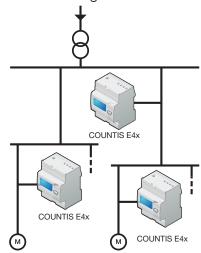
B+D module, MID-certified

COUNTIS E units meet MID standards and ensure accurate and reliable metering (crucial prerequisites of power-billing applications). The "module B+D" certification proves that an external laboratory has verified the design and production process of these devices.

Bi-directional, multi-reading and loadcurve metering

In bi-directional mode, the device can measure both consumed and generated energy at the same time. Shows electrical readings (I, U, V, P, Q, S, PF) and the load curve over a 7-day period via the communication methods.

Functional diagram



Socomec monitoring ecosystem

Inherent compatibility with energy management systems and Socomec gateways (Webview, screens, gateways, etc.).

Multi-tariff

Allows you to assign energy metering to different time slots (every hour, off-peak hours) or different sources (normal, replacement) to accurately monitor energy consumption.

General characteristics

- Measurement accuracy: 1% / 0.5% (MID).
- Backlit LCD.
- Multiple measurements on-screen.

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

The solution for

- > Data centre
- > Building
- > Industrial process



Strong points

- Communication via RS485 (MODBUS), M-Bus, Ethernet or pulse outputs
- > B+D module, MID-certified
- > Bi-directional, multi-reading and load-curve metering
- Socomec monitoring ecosystem: user software, remote displays
- > Multi-tariff

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.

Compliance with standards

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



Associated current transformers



See "Current transformers".



Three-phase on CT 1 and 5A up to 12000 A

Active energy meters for electrical distribution

0.5 VA max. per phase

1 mA - Class C

2 mA - Class 1

120 A for 0.5 s

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

290 V phase-neutral / 500 V phase-phase

Class 1

Class C

Class 2

50 / 60 Hz

2 (E41/E42)

1 (E43 to E48)

 50 ± 2 ms ON time

 30 ± 2 ms OFF time

COUNTIS

E45/E46

Master/Slave

2 half duplex

1200 to 115200 bauds 300 to 9600 bauds 10/100 Mbps

-25 to +55°C

-25 to +75°C

250 V AC/DC - 100 mA (E41/E42) 27 V DC - 27 mA (E43 to E48)

1 Wh ⇒ CT = 1 to 4 5 Wh ⇒ TC = 5 to 24 25 Wh ⇒ TC = 25 to 124 125 Wh ⇒ TC = 125 to 624 1000 Wh ⇒ CT = 625 to 3124

10000 Wh ⇒ TC = 3125 to 12000

COUNTIS

Bi-directional mode

HTTP, NTP, DHCP

E47/E48

(full duplex)

MODBUS CTP.

RJ45

10 mA

50 mA

1 A

6 A

230 to 240 V ± 20%

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

Electrical characteristics

Current measurement

Input consumption

Inrush current (lcfst/cf)

Minimum current (I_{min})

Reference current (Iref)

Permanent overload (I_m

Voltage measurement

Power monitoring accuracy

Active (according to IEC 62053-21)

Reactive (according to IEC 62053-22)

Active (according to EN 50470)

Transient overload

Measurement range

Permanent overload

Consumption (VA)

Power supply Self-powered

Type of optical coupler

Frequency
Output (pulses)

Number

Pulses

Pulse duration

Environment

Relative humidity

Link

Type

Protocol

Baudrate

Operating temperature

COUNTIS

2 to 3 half duplex

MODBUS in RTU mode M-BUS

E43/E44

RS485

Storage temperature

Communication

Transient current (lcftr/cf)

Type

Front panel



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

Dimensions (mm)



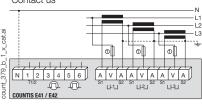


Туре	Modular
Number of modules	4
Dimensions W x H x D	72 x 90 x 64 mm
Casing protection degree	IP20
Front panel protection degree	IP51
Display type	Backlit LCD, 8 digits
Cross-section of rigid connecting cable	1.5 to 6 mm ²
Cross-section of flexible connecting cable	1.5 to 6 mm ²
Weight	322 g

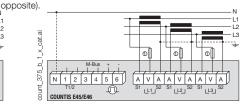
Connections

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



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g co	OUNTIS E47/E48		

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count_380_b_	N 1 2 3 4 5 6 7 RS485 T1/2	A V A	A V A	A V A 2 S1 L3 S2		
1. 0.5 A gG / 0.5 A class CC fuses.						

References

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

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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						