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"



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Front panel



Dimensions (mm)



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

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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).

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Current measurement								
Туре			Three-phase on CT 1 and 5A up to 12000 A					
Input consumption		0.5 VA max, per phase						
Inrush current (Icfst/cf)			1 mA - Class C					
Minimum current (Ir	nin)		10 m/	4				
Transient current (lo	oftr/cf)		50 m/	Ą				
Reference current (I _{ref})		1 A					
Permanent overload	d (I _{max})		6 A					
Transient overload			120 A for 0.5 s					
Voltage measure	ement							
Measurement range 230 to 24			40 V ± 20%					
Consumption (VA)		Max. 7.5 Max. 3.5	VA (0.8 VA (1 \	/A (0.5 W) per phase E41/E42/E45/E46 /A (1 W) per phase E43/E44/E47/E48				
Permanent overload	d	290 V pha	ase-ne	utral / 500 V phase-j	ohase			
Power monitori	ng acc	uracy						
Active (according to IEC 62053-21)			C	Class 1				
Active (according to	EN 50)470) 		lass C				
Reactive (according	g to IEC	62053-22	!) C	ass 2				
Power supply								
Self-powered			Yes	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 ⇔ 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					
Pulse duration			$50 \pm 2 \text{ ms ON time}$ $30 \pm 2 \text{ ms OFF time}$					
Environment								
Operating temperature			-25 to +55°C					
Storage temperature			-25 to +75°C					
Relative humidity			80%	80%				
Communication	COL E42	JNTIS /E44		COUNTIS E45/E46	COUNTIS E47/E48			
Link	RS485	L-+-+		Master/Slave	R.145			
Туре	2 to 3	half duplex	:	2 half duplex	Bi-directional mode			
Protocol	MODE	US in RTU	mode	M-BUS	MODBUS CTP, HTTP, NTP, DHCP			
Baudrate	1200 to	b 115200 b	auds	300 to 9600 bauds 10/100 Mbps				



N 1 2 3 4 5 6 7 RS485 T1/2 count_ Ô COUNTIS E43/E44 1. 0.5 A gG / 0.5 A class CC fuses

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References

	COUNTIS E41	COUNTIS E42	COUNTIS E43	COUNTIS E44	COUNTIS E45	COUNTIS E46	COUNTIS E47	COUNTIS E48		
Туре	Reference	Reference	Reference	Reference	Reference	Reference	Reference	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		
(1) 4-tariff via RS485 communication.										
Accessories			Avail	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			

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gG 10x38 0.5 A fuses

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