

COUNTIS E2x

Active energy meters for electrical distribution
three-phase - direct 80 A



COUNTIS E24 - MID

Function

The **COUNTIS E2x** is a modular electrical power meter. It shows kWh, kVAh and kVa readings and other measurements on its backlit LCD. These devices are intended for three-phase networks and accommodate a direct connection up to 80 A.

The COUNTIS E2x is fully integrated into the SOCOMEC monitoring ecosystem (Webview, screens, gateways, configuration software, etc.).

Advantages

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

COUNTIS E2x units have either one pulse output or one RS485 (MODBUS), M-Bus or Ethernet Modbus TCP communication output.

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.

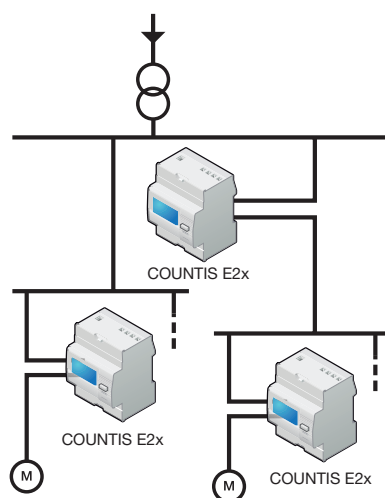
B+D module, MID-certified

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.

Socomec monitoring ecosystem: user software, remote displays

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

Functional diagram



count_224_a_1_x_cat.eps

Common characteristics

- Measurement accuracy: 1%.
- Displayed on backlit screen.
- Multiple measurements on-screen.

Models	Specific features
E21	Dual-tariff + pulse output
E22	Dual-tariff + pulse output + MID
E23	Dual-tariff + pulse output + communication via RS485 MODBUS
E24	Dual-tariff + pulse output + communication via RS485 MODBUS + MID
E25	Dual-tariff + pulse output + communication via M-BUS
E26	Dual-tariff + pulse output + communication via M-BUS + MID
E27	Dual-tariff + pulse output + Ethernet
E28	Dual-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
- > Multi-tariff
- > B+D module, MID-certified
- > Socomec monitoring ecosystem: user software, remote displays

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 62052-11
- > EN 50470-1
- > EN 50470-3

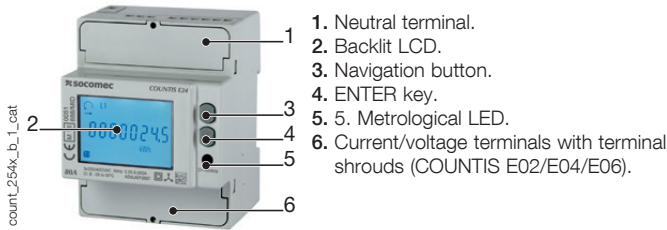


Associated current transformers

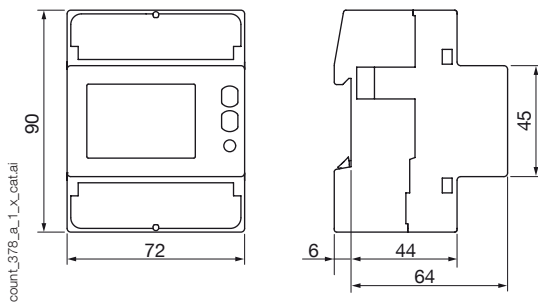


See "Current transformers".

Front panel



Dimensions (mm)



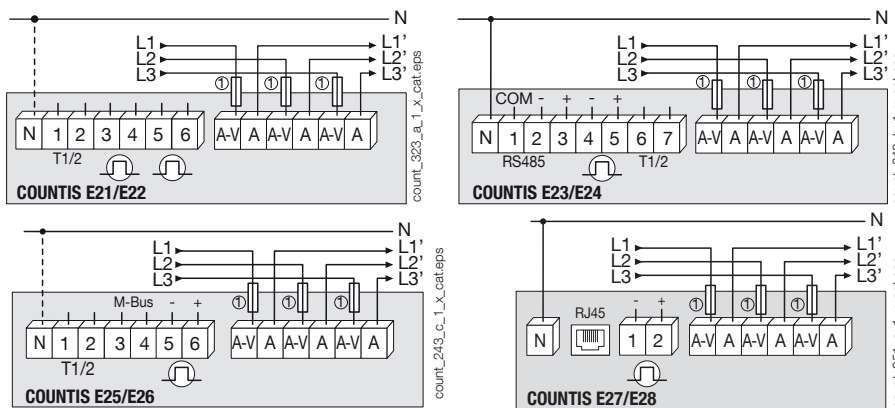
Type	Modular
Number of modules	4
Dimensions W x H x D	72 x 90 x 64 mm
Casing protection degree	IP 20
Front panel protection degree	IP 51 ⁽¹⁾
Display type	Backlit LCD, 8 digits
Cross-section of rigid connecting cable	1.5 to 35 mm ²
Cross-section of flexible connecting cable	1.5 to 35 mm ²
Weight	440 g

(1) Cabinet installations require a protection degree of at least IP51.

Electrical characteristics

Measurement of currents			
Type	Three-phase - direct 80 A		
Input consumption	0.5 VA max. per phase		
Inrush current (I _{cfst} /c _f)	20 mA		
Minimum current (I _{min})	0.25 A		
Transient current (I _{cftr} /c _f)	0.5 A		
Reference current (I _{ref})	5 A		
Permanent overload (I _{max})	80 A		
Transient overload	30 I _{max} over 10 ms		
Voltage measurement			
Measurement range	230 to 240 V ±20%		
Consumption (VA)	7.5 VA max. (0.5 W) per phase E21/E22/E25/E26 3.5 VA max. (1 W) per phase E23/E24/E27/E28		
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 B		
Reactive (according to IEC 62053-22)	Class 2		
Power supply			
Self-powered	Yes		
Frequency	50/60 Hz		
Output (pulses)			
Type of optical coupler (IEC 62053-31)	250 V AC/DC - 100 mA (E21/E22) 27 V DC - 27 mA (E23 to E28)		
Number	2 (E21/E22) 1 (E23 to E28)		
Fixed pulse	100 Wh		
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			
	COUNTIS E23/24	COUNTIS E25/E26	COUNTIS E27/E28
Link	RS485	Wired	RJ45
Type	2 half duplex 2 to 3 half duplex (E23/E24)		Bi-directional mode (full duplex)
Protocol	MODBUS in RTU mode	M-BUS	MODBUS TCP, HTTP, NTP, DHCP
Baudrate	1200 to 115200 bauds	300 to 9600 bauds	10/100 Mbps

Connections



IMPORTANT: Neutral connection is mandatory on COUNTIS E23 / E24 / E27 / E28 (neutral is represented by the solid line in the image opposite).

Neutral is optional on COUNTIS E21 / E22 / E25 / E26 (neutral is represented by the dashed line in the image opposite).

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

References

Type	COUNTIS E21 Reference	COUNTIS E22 Reference	COUNTIS E23 Reference	COUNTIS E24 Reference	COUNTIS E25 Reference	COUNTIS E26 Reference	COUNTIS E27 Reference	COUNTIS E28 Reference
Direct 80 A - Dual-tariff	4850 3062							
Direct 80 A - Dual-tariff + MID		4850 3049						
Direct 80 A - Dual-tariff + MODBUS communication via RS485			4850 3050					
Direct 80 A - Dual-tariff + MODBUS communication via RS485 + MID				4850 3051				
Direct 80 A - Dual-tariff + communication via M-BUS					4850 3052			
Direct 80 A - Dual-tariff + communication via M-BUS + MID						4850 3053		
Direct 80 A - Dual-tariff + communication via Ethernet Modbus TCP							4850 3054	
Direct 80 A - Dual-tariff + Ethernet Modbus TCP + MID								4850 3055
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						5703 5003	
gG 22x58 80 A fuses	10						6032 0080	