

COUNTIS E1x

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



COUNTIS E14 - MID

Function

The **COUNTIS E1x** is a modular electrical power meter. It shows kWh, kVAh and kVA readings and other measurements on its backlit LCD. These devices are suited to single-phase power metering with a direct connection up to 80 A.

The COUNTIS E1x 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 E1x 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.

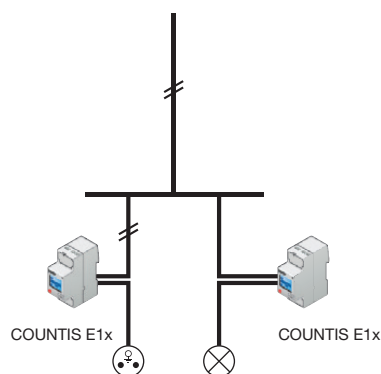
B+D module, MID-certified

COUNTIS E units meet MID standards and ensure accurate and reliable metering, all 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_223_b_1_x_cat.eps

Common characteristics

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

Models	Specific features
E11	Dual-tariff + pulse output
E12	Dual-tariff + pulse output + MID
E13	Dual-tariff + pulse output + communication via RS485 MODBUS
E14	Dual-tariff + pulse output + communication via RS485 MODBUS + MID
E15	Dual-tariff + pulse output + communication via M-BUS
E16	Dual-tariff + pulse output + communication via M-BUS + MID
E17	Dual tariff + Ethernet
E18	Dual-tariff + 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

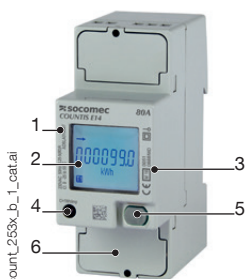


Associated current transformers



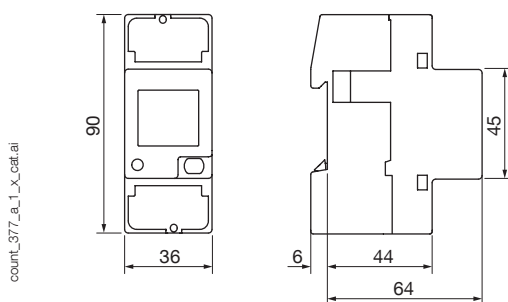
See "Current transformers".

Front panel



1. Serial number.
2. Backlit LCD.
3. MID marking (COUNTIS E12/E14/E16/E18).
4. Metrological LED.
5. Navigation button.
6. Voltage, current, neutral terminals with terminal shrouds (COUNTIS E12/E14/E16/E18).

Dimensions (mm)



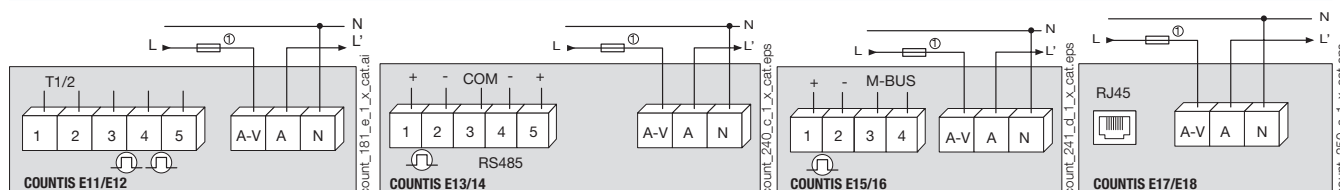
Type	Modular
Number of modules	2
Dimensions W x H x D	36 x 90 x 64 mm
Casing protection degree	IP 20
Front panel protection degree	IP 51 ⁽¹⁾
Display type	Backlit LCD
Cross-section of rigid connecting cable	1.5 to 35 mm ²
Cross-section of flexible connecting cable	1.5 to 35 mm ²
Weight	215 g E13/E14/E17/E18 205 g E11/E12/E15/E16

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

Electrical characteristics

Measurement of currents			
Type	Single-phase - direct 80 A		
Input consumption	Max. 0.5 VA		
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)	3.5 VA max. E13/E14/E17/E18 7.5 VA max. E11/E12/E15/E16		
Permanent overload	290 V phase-neutral		
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 (E11/E12) 27 V DC - 27 mA (E13/E14/E15/E16)		
Number	1		
Fixed pulses	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 E13/14	COUNTIS E15/E16	COUNTIS E17/E18
Link	RS485	Wired	RJ45
Type	2 half duplex 2-3 half duplex (E13/E14)		Bi-directional mode (full duplex)
Protocol	MODBUS [®] RTU	M-BUS	MODBUS TCP, HTTP, NTP, DHCP
Baudrate	1200 to 115200 bauds	300 to 9600 bauds	10/100 Mbps

Connections



References

Type	COUNTIS E11 Reference	COUNTIS E12 Reference	COUNTIS E13 Reference	COUNTIS E14 Reference	COUNTIS E15 Reference	COUNTIS E16 Reference	COUNTIS E17 Reference	COUNTIS E18 Reference
Direct 80 A - Dual-tariff	4850 3060							
Direct 80 A - Dual-tariff + MID		4850 3061						
Direct 80 A - Dual-tariff + MODBUS communication via RS485			4850 3043					
Direct 80 A - Dual-tariff + MODBUS communication via RS485 + MID				4850 3044				
Direct 80 A - Dual-tariff + communication via M-BUS					4850 3045			
Direct 80 A - Dual-tariff + communication via M-BUS + MID						4850 3046		
Direct 80 A - Dual-tariff + communication via Ethernet Modbus TCP							4850 3047	
Direct 80 A - Dual-tariff + communication via Ethernet Modbus TCP + MID								4850 3048

Accessories	Available for order in multiples of	Reference
10x sealing kits, 2U		4850 306U
Fuse disconnect switches for voltage input protection (RM type) 1-pole	6	5703 5001
gG 22x58 80 A fuses	10	6032 0080