



COUNTIS E1x

Active energy meters

single-phase - direct 63/80 A

new



COUNTIS E12 - MID



COUNTIS E13

The solution for

- > Marinas
- > Shopping centres
- > Data centres



Strong points

- > RS485 communication (MODBUS or M-BUS) or pulse output
- > Dual-tariff metering
- > MID certified B+D module

MID certification

- > COUNTIS E comply with the MID directive, guaranteeing accuracy and reliability when metering, an indispensable function for energy billing applications.
- > COUNTIS E MID feature tamper-proof components to prevent fraud.



Conformity to standards

- > IEC 62053-21 class 1
- > IEC 62053-31
- > IEC 62052-11
- > EN 50470-1
- > EN 50470-3



Function

The **COUNTIS E1x** is a modular active electrical energy meter displaying the energy and power consumed (kWh and kW) directly on its backlit LCD display. It is designed for single-phase load metering and is used for direct connections of up to 63 or 80 A depending on the model).

COUNTIS E12, E14 and E16 have MID certification.

Common characteristics

- Measurement accuracy: 1 %
- Backlit LCD display (only E10/E11/E12).

Advantages

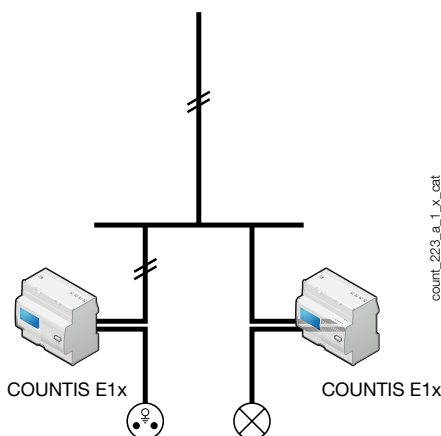
RS485 communication (MODBUS or M-BUS) or pulse output

To enable the remote reporting of energy consumption, COUNTIS E1x are provided with either a pulse output or an RS485 communication output, with MODBUS or M-BUS protocol. In addition to their reporting functions, COUNTIS E1x with RS485 can be configured remotely and enable access to multi-measurement values.

Dual-tariff metering

Two tariffs are available and can be easily accessed through the meter's display. Each tariff can be utilised to assign energy metering to different time slots (high and low demand hours) or different sources (normal/backup).

Principle diagram

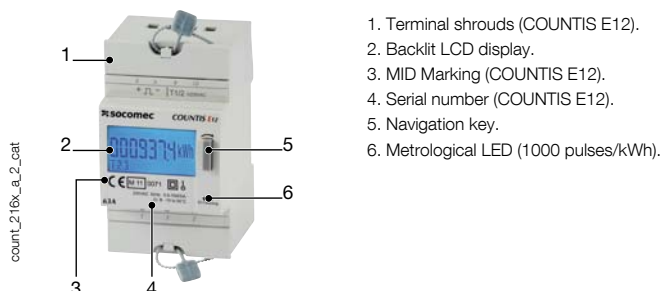


MID certified B+D module

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.

Models	Key functions
E10	Pulse output
E11	Dual tariff (2 partial counters) + Pulse output
E12	Dual tariff + MID (Reset impossible) + Pulse output
E13	Dual tariff + MODBUS RS485 communication
E14	Dual tariff + MODBUS RS485 communication + MID (Reset impossible)
E15	Dual tariff + M-BUS communication
E16	Dual tariff + M-BUS communication + MID (Reset impossible)

Front panel



Electrical characteristics

Current measurement	COUNTIS E10...E12	COUNTIS E13...E16
Type	single-phase direct 80 A	single-phase direct 80 A
Input consumption	0.8 VA max.	0.8 VA max.
Startup current (I_{st})	40 mA	20 mA
Minimum current (I_{min})	0.5 A ⁽¹⁾	0.25 A
Transition current (I_{tr})	1 A ⁽²⁾	0.5 A
Reference current (I_{ref})	10 A ⁽³⁾	5 A
Permanent overload (I_{max})	63 A	80 A
Intermittent overload	1890 A max for 10 ms	2400 A max for 10 ms
Voltage measurement		
Range of measurement	230 V +/- 20 %	230 V +/- 20 %
Consumption (VA)	0.5 VA max.	0.5 VA max.
Permanent overload	280 V phase-neutral	300 V phase-neutral
Energy accuracy		
Active (according to IEC 62053-21)	Class 1	Class 1
Active (according to EN 50470)	Class B	
Power supply		
Self-supplied	yes	
Frequency	50/60 Hz	

Output (pulsed)	COUNTIS E10/E11/E12	
Type of optocoupler	IEC 62053-31 Class A (20 ... 30 VDC)	
Number	1	
Fixed pulse weight	100 Wh	
Pulse duration	100 ms	
Operating conditions	COUNTIS E10...E12	COUNTIS E13...E16
Operating temperature	-10 to 55 °C	-25 to 55 °C
Storage temperature	-20 to 70 °C	-25 to 70 °C
Relative humidity	85 %	85%
Communication	COUNTIS E13/E14	COUNTIS E15/E16
Link	RS485	Connection
Type	2 half duplex wires	2 half duplex wires
Protocol	MODBUS® RTU	M-BUS
Speed	4800 ... 38400 bauds	300 ... 9600 bauds

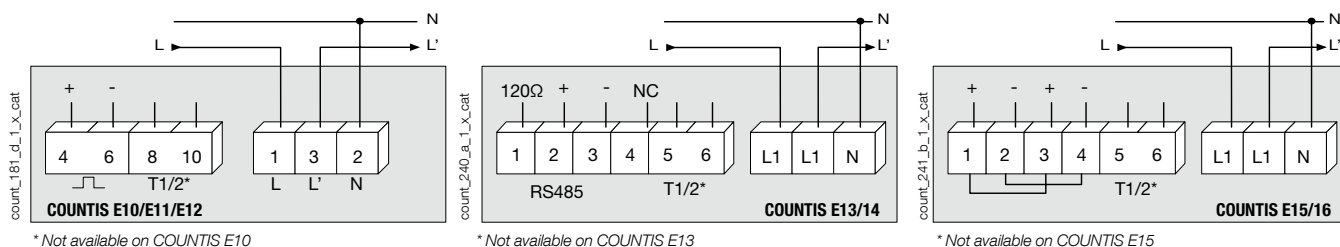
(1) $I_{min} \leq 0.5 \cdot I_{tr}$
(2) The accuracy class is guaranteed between I_{tr} and I_{max} .
(3) $I_{ref} = I_{tr}$ (base current) = $10 \cdot I_{tr}$ for direct connection COUNTIS.

Case

Dimensions		COUNTIS E10...E12	COUNTIS E13...E16
Width		54	62.5 / 64
Height		90	45
Depth		45	45

Type		COUNTIS E10...E12	COUNTIS E13...E16
Type		modular	modular
Number of modules		3	3
Dimensions W x H x D		54 x 90 x 62.5 mm	54 x 90 x 64 mm
Case degree of protection		IP 20	IP 20
Front degree of protection		IP 51	IP 51
Display type		Backlit LCD display	LCD display
Rigid cable cross-section		1.5 to 16 mm ²	7 to 50 mm ²
Flexible cable cross-section		1 to 16 mm ²	7 to 50 mm ²
Weight		170 g	170 g

Connection



References

Type	COUNTIS E10	COUNTIS E11	COUNTIS E12	COUNTIS E13	COUNTIS E14	COUNTIS E15	COUNTIS E16
direct 63 A	Reference 4850 3000						
direct 63 A - Dual tariff		4850 3001					
direct 63 A - Dual tariff and MID			4850 3002				
direct 80 A - Dual tariff + MODBUS com. via RS 485				4850 3031			
direct 80 A - Dual tariff + MODBUS com. via RS 485 - MID					4850 3032		
direct 80 A - Dual tariff + M-BUS communication						4850 3033	
direct 80 A - Dual tariff + M-BUS communication - MID							4850 3034