

COUNTIS E1x

Active-energy meters

single-phase - direct 80 A



COUNTIS E14 - MID

Function

The **COUNTIS E1x** is a modular energy meter displaying the energies (kWh, kVArh and kVA) and other measurements directly on its backlit LCD display. It is designed for single-phase load metering and is used for direct connections of up to 80 A.

Advantages

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

To easily centralise your consumption, COUNTIS E1x devices have either one pulse output, one RS485 output (MODBUS), M-Bus or Ethernet Modbus TCP communication. With RS485 and Ethernet communication models, you can configure your meters remotely.

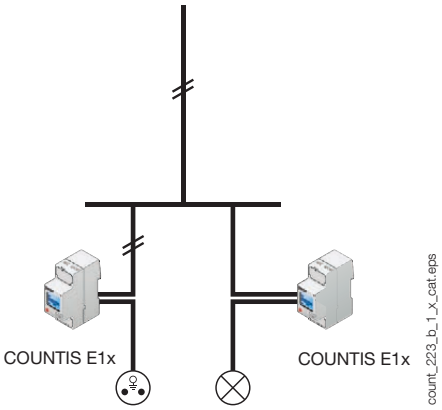
Multi-tariff

Lets you assign different time slots (every hour, dip times) or different sources (normal, back-up) to your energy readings to monitor your energy consumption in more detail.

MID certified B+D module

COUNTIS E units comply with the MID directive to guarantee accuracy and reliability when metering, compulsory for energy billing applications. “Module B+D” certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

Functional diagram



Common characteristics

- Measurement accuracy: 1%.
- Displayed on backlit screen.
- Multi-measurement available on display.
- Compact dimensions.

Models	Model-related specifications
E11	Dual tariff + pulse output
E12	Dual tariff + pulse output + MID
E13	Dual tariff + pulse output + MODBUS RS485 communication
E14	Dual tariff + pulse output + MODBUS RS485 communication + MID
E15	Dual tariff + pulse output + M-BUS communication
E16	Dual tariff+ pulse output + M-BUS communication + MID
E17	Dual tariff + Ethernet
E18	Dual tariff + Ethernet + MID

The solution for

- Marinas
- Shopping centers
- Data centers
- Industry
- EV Chargers
- Camping



Strong points

- Compactness
- Multi-measurement
- Bi-directional metering
- RS485 (MODBUS), M-Bus communication, Ethernet or pulse outputs
- Multi-tariff
- MID certified B+D module

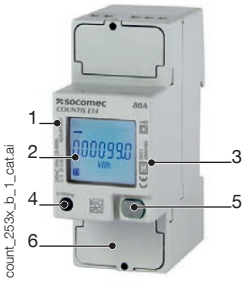
MID certification

- COUNTIS E units comply with the MID directive to guarantee accuracy and reliability when metering, compulsory for energy billing applications.
- COUNTIS E MID feature tamper-proof components to prevent fraud.

Conformity to standards

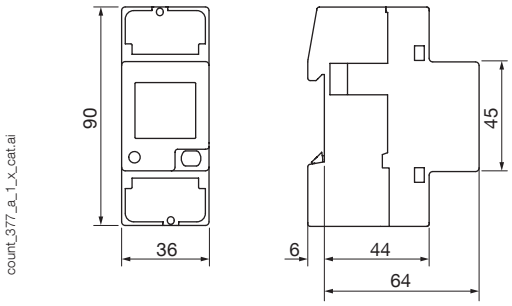
- IEC 62053-21 class 1
- IEC 62053-23 class 2
- IEC 62053-31
- IEC 62052-11
- EN 50470-1
- EN 50470-3

Front panel



1. Serial number.
2. Backlit LCD display.
3. MID marking (COUNTIS E12/E14/E16/E18).
4. Metrological LED.
5. Navigation button.
6. Voltage, current, neutral terminals and 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
Case degree of protection	IP 20
Front degree of protection	IP 51(1)
Display type	backlit LCD
Rigid cable cross-section	1.5 … 35 mm²
Flexible cable cross-section	1.5 … 35 mm²
Weight	215 g E13/E14/E17/E18 205 g E11/E12/E15/E16

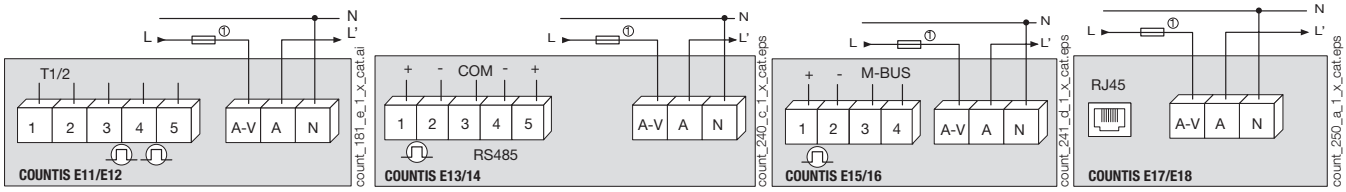
(1) For the installation in a cabinet at least with IP51 protection.

Electrical characteristics

Measurement of currents	
Type	single-phase - direct 80 A
Input consumption	max. 0.5 VA
Startup current (I_{st})	20 mA
Minimum current (I_{min})	0.25 A
Transition current (I_{tr})	0.5 A
Reference current (I_{ref})	5 A
Permanent overload (I_{max})	80 A
Intermittent overload	30 I_{max} over 10 ms
Voltage measurement	
Range of measurement	230 … 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
Energy 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)	
Optocoupler type (IEC 62053-31)	250 VAC/DC - 100 mA (E11/E12) 27 VDC - 27 mA (E13/E14/E15/E16)
Number	1
Fixed pulse weight	100 Wh
Pulse duration	50 ± 2 ms ON time 30 ± 2 ms OFF time
Operating conditions	
Operating temperature	-25 … 55°C
Storage temperature	-25 … 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)		Full duplex
Protocol	MODBUS® RTU	M-BUS	MODBUS TCP, HTTP, NTP, DHCP
Baudrate	1200 … 115200 bauds	300 … 9600 bauds	10/100 Mbps

Connection



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 + M-Bus communication					4850 **3045**			
Direct 80 A - Dual tariff + M-Bus communication + MID						4850 **3046**		
Direct 80 A - Dual tariff + Ethernet Modbus TCP communication							4850 **3047**	
Direct 80 A - Dual tariff + Ethernet Modbus TCP communication + MID								4850 **3048**

Accessories	To be ordered in multiples of	Reference
10x 1U sealing kits		4850 **305U**
Fuse disconnect switches to protect 1-pole voltage inputs (RM type)	6	5702 **5001**
gG 22x58 80 A fuses	10	6022 **0040**