



# COUNTIS E1x

Active-energy meters

single phase - direct 63/80 A

Single-circuit metering,  
measurement &  
analysis

**new**



COUNTIS E14 - MID



COUNTIS E12 - MID

## Function

The **COUNTIS E1x** is a modular active electrical energy meter displaying the energy and power consumed (kWh and kW). 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).

## Common characteristics

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

## Advantages

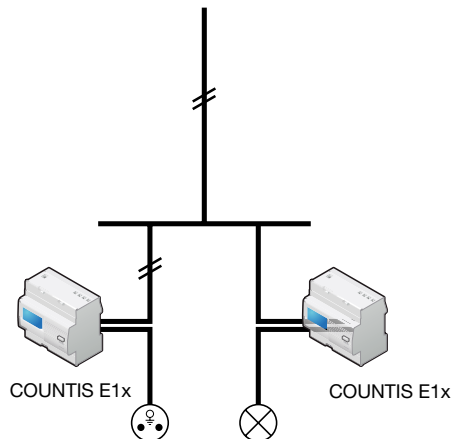
### RS485 (MODBUS), M-Bus communication, Ethernet or pulse outputs

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 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.

## Functional diagram



### 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.

## The solution for

- > Marinas
- > Shopping centers
- > Data centers



## Strong points

- > 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.



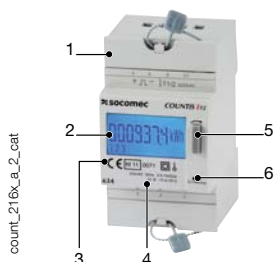
## Conformity to standards

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

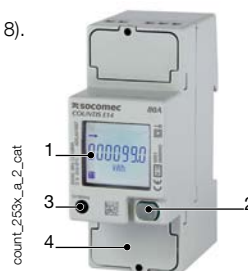


Models	Model-related specifications
E10	Pulse output
E11	Dual tariff (2 partial indices) + pulse output
E12	Dual tariff + pulse output + MID
E13	Dual tariff + pulse output + MODBUS RS485 communication
E14	Dual tariff + pulse output + MODBUS RS485 communication + MID
E15	Dual tariff + pulse output + M-BUS communication
E16	Dual tariff+ pulse output + M-BUS communication + MID
E17	Dual tariff + Ethernet
E18	Dual tariff + Ethernet + MID

## Front panel

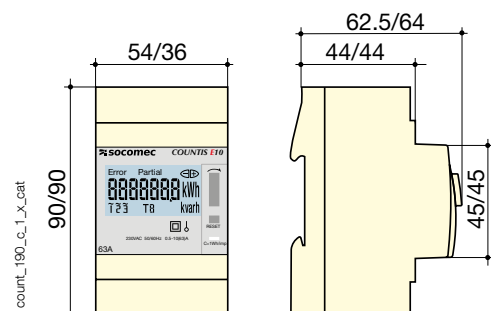


1. Terminal shrouds (COUNTIS E12/E14/E16/E18).
2. Backlit LCD display.
3. MID marking (COUNTIS E12/E14/E16/E18).
4. Serial number.
5. Navigation button.
6. Metrological LED (1000 pulses/kWh).



1. Backlit LCD display.
2. Navigation button.
3. Metrological LED (1000 pulses/kWh).
4. Voltage, current and neutral terminals.

## Case



	COUNTIS E10 ... E12	COUNTIS E13 ... E18
Type	modular	modular
Number of modules	3	2
Dimensions W x H x D	54 x 90 x 62.5 mm	36 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	backlit LCD
Rigid cable cross-section	1.5 ... 16 mm <sup>2</sup>	1.5 ... 35 mm <sup>2</sup>
Flexible cable cross-section	1 ... 16 mm <sup>2</sup>	1.5 ... 35 mm <sup>2</sup>
Weight	170 g	215 g E13/14/17/18 205 g E15/16

## Electrical characteristics

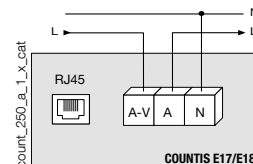
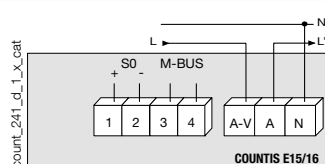
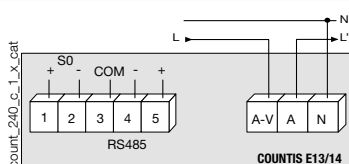
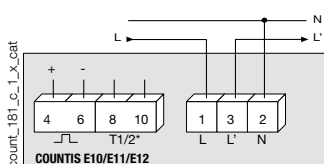
Measurement of currents	COUNTIS E10...E12	COUNTIS E13...E18
Type	single phase - direct 63 A	single phase - direct 80 A
Input consumption	max. 0.8 VA	max. 0.5 VA
Startup current ( $I_{st}$ )	40 mA	20 mA
Minimum current ( $I_{min}$ )	0.5 A <sup>(1)</sup>	0.25 A
Transition current ( $I_{tr}$ )	1 A <sup>(2)</sup>	0.5 A
Reference current ( $I_{ref}$ )	10 A <sup>(3)</sup>	5 A
Permanent overload ( $I_{max}$ )	63 A	80 A
Intermittent overload	1890 A over 10 ms	30 $I_{max}$ over 10 ms
Voltage measurement		
Range of measurement	230 V ± 20%	230 ... 240 V ± 20%
Consumption (VA)	Max. 0.5 VA	3.5 VA max E13/14/17/18 7.5 VA max E15/16
Permanent overload	280 V phase-neutral	290 V phase-neutral
Energy accuracy		
Active (according to IEC 62053-21)	Class 1	Class 1
Active (according to EN 50470)	Class B	Class B
Power supply		
Self-powered	Yes	
Frequency	50/60 Hz	

(1)  $I_{min} \leq 0.5 \cdot I_{tr}$  (2) Guaranteed precision class of between  $I_{tr}$  and  $I_{max}$ .

(3)  $I_{ref} = I_{tr}$  (base current) =  $10 \cdot I_{tr}$  for direct connection COUNTIS devices.

Output (pulses)	COUNTIS E10 ... E12	COUNTIS E13 ... E18	
Optocoupler type (IEC 62053-31)	Class A (20 ... 30 VDC)	27 VDC - 27 mA	
Number	1	1	
Fixed pulse weight	100 Wh		
Pulse duration	100 ms	50 ± 2 ms ON time 30 ± 2 ms min OFF time	
Operating conditions			
Operating temperature	-10 ... 55°C	-25 ... 55°C	
Storage temperature	-20 ... 70°C	-25 ... 75°C	
Relative humidity	85%	80%	
Communication			
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 ... 57600 bauds	300 ... 9600 bauds	10/100 Mbps

## Connection



\* Not available on the COUNTIS E10.

## References

Type	COUNTIS E10	COUNTIS E11	COUNTIS E12	COUNTIS E13	COUNTIS E14	COUNTIS E15	COUNTIS E16	COUNTIS E17	COUNTIS E18
Direct 63 A	Reference 4850 3000								
Direct 63 A - Dual tariff		4850 3001							
Direct 63 A - Dual tariff + MID			4850 3002						
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