

# COUNTIS E2x

## Active energy meters

three-phase - direct 80 A



COUNTIS E24 - MID

### Function

The **COUNTIS E2x** is a modular energy meter displaying the energy (kWh, kVAh and kVA) and other measurements directly on its backlit LCD display. It is designed for three-phase networks and allows a direct connection of up to 80 A.

### Advantages

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

To easily centralise your consumption, COUNTIS E2x devices have one pulse output or one RS485 (MODBUS), M-BUS or an Ethernet Modbus TCP communication output. With RS485 and Ethernet communication models, you can configure your meters remotely.

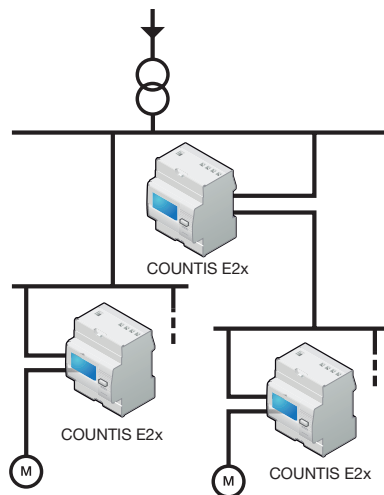
#### Multi-tariff

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

#### B+D module MID-certified

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



count\_224\_b\_1\_x\_cat\_eps

### General characteristics

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

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
- > Healthcare
- > Energy



### Strong points

- > RS485 (MODBUS) communication, M-Bus, Ethernet or pulse outputs
- > Multi-tariff
- > B+D module MID-certified

### 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.



### 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

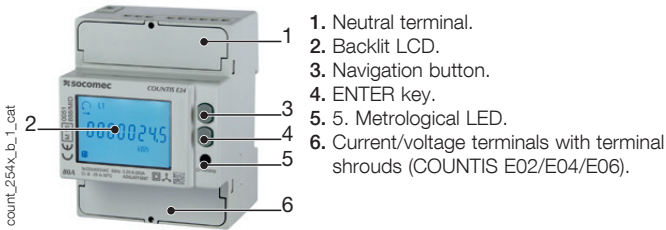


### Associated current transformers

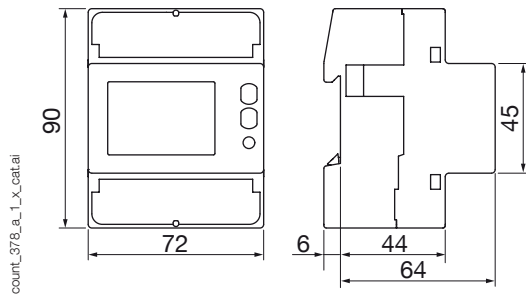


See "Current transformers".

## Front panel



## Dimensions (mm)



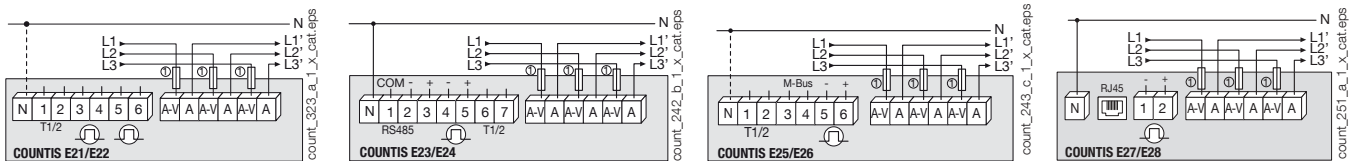
Type	Modular
Number of modules	4
Dimensions W x H x D	72 x 90 x 64 mm
Casing protection degree	IP 20
Front panel protection degree	IP 51 <sup>(1)</sup>
Display type	Backlit LCD, 8 digits
Cross-section of rigid connecting cable	1.5 to 35 mm <sup>2</sup>
Cross-section of flexible connecting cable	1.5 to 35 mm <sup>2</sup>
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 <sub>cfst</sub> /c <sub>f</sub> )	20 mA		
Minimum current (I <sub>min</sub> )	0.25 A		
Transient current (I <sub>cftr</sub> /c <sub>f</sub> )	0.5 A		
Reference current (I <sub>ref</sub> )	5 A		
Permanent overload (I <sub>max</sub> )	80 A		
Transient overload	30 I <sub>max</sub> 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)			
Optocoupler (IEC 62053-31)	COUNTIS E23...E28 27VDC 27mA max.		
Number	2 (E21/E22) 1 (E23 to E28)		
Mosfet	COUNTIS E21/E22 250 VAC / VDC 100mA max.		
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



1. Fuses 80 A gG/aM max

**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).

## 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						5703 5003		
gG 22x58 80 A fuses				10		6032 0080		
End of line resistor 120 Ohm						4899 0019		

\* seal kits are supplied with MID counters