



# COUNTIS E2x

Active-energy meters

three-phase - direct 63/80 A

Single-circuit metering,  
measurement &  
analysis

**new**



COUNTIS E24 - MID



COUNTIS E20

### The solution for

- Industry
- Infrastructure
- Data center



### Strong points

- RS485 (MODBUS), M-BUS, Ethernet or pulse outputs
- Multi-tariff
- Detection of connection errors
- MID certified B+D module

### Conformity to standards

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



### Function

The **COUNTIS E2x** is a modular active electrical energy meter displaying the energy and power consumed (kWh and kW). It is designed for three-phase networks and allows a direct connection of up to 63/80 A.

### Common characteristics

- Measurement accuracy: 1%
- Displayed on backlit screen
- Detection of connection errors

### Advantages

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

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

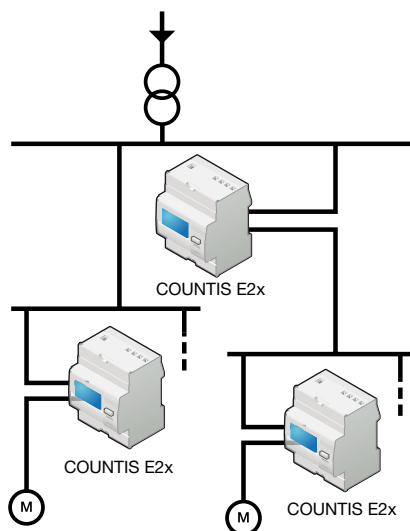
#### Multi-tariff

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.

#### Guaranteed connection (E20/21)

The product is protected against phase/neutral inversion and detects wiring errors. This makes it easier to start up, ensures the device is functioning properly and reduces the cost of the installation.

### 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.

Models	Model-related specifications
E20	Pulse output
E21	Dual tariff (2 partial indices) + pulse output
E22	Dual tariff + pulse output + MID
E23	Dual tariff + pulse output + MODBUS RS485 communication
E24	Dual tariff + pulse output + MODBUS RS485 communication + MID
E25	Dual tariff + pulse output + M-BUS communication
E26	Dual tariff+ pulse output + M-BUS communication + MID
E27	Dual tariff + pulse output + Ethernet
E28	Dual tariff + pulse output + Ethernet + MID

## Front panel

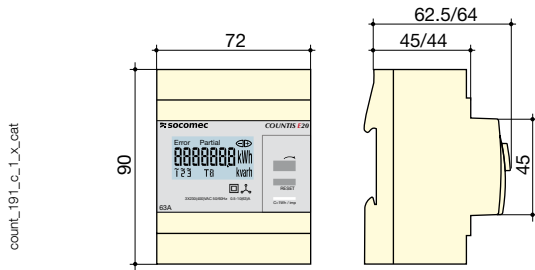


1. Backlit LCD display.
2. Navigation button.
3. Reset button.
4. Metrological LED (1000 pulses/kWh).



1. Neutral terminal
2. Backlit LCD display
3. Navigation button.
4. ENTER key
5. Metrological LED
6. Current and voltage terminals

## Case

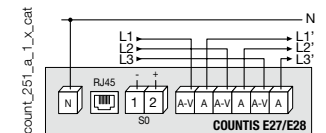
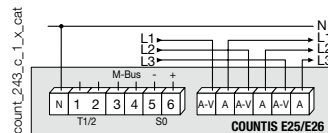
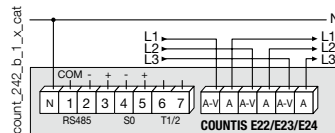
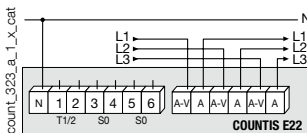
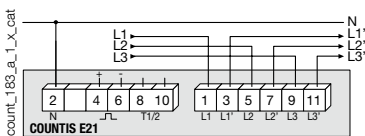
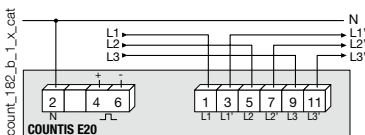


	COUNTIS E20 ... E21	COUNTIS E23 ... E28
Type	modular	modular
Number of modules	4	4
Dimensions W x H x D	72 x 90 x 62.5 mm	72 x 90 x 64 mm
Case degree of protection	IP 20	IP 20
Front degree of protection	IP 51	IP 51
Display type	Backlit LCD	8-digit backlit LCD
Rigid cable cross-section	1.5 ... 16 mm <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	440 g

## Electrical characteristics

Measurement of currents	COUNTIS E20 ... E21	COUNTIS E22 ... E28	
Type	three-phase - direct 63 A	three-phase - direct 80 A	
Input consumption	0.8 VA max. per phase	0.5 VA max. per phase	
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 ... 400 V $\pm 20\%$	230 ... 240 V $\pm 20\%$	
Consumption (VA)	Max. 2 VA	7.5 VA max (0.5 W) per phase E22/25/26 / 3.5 VA max (1 W) per phase E23/24/27/28	
Permanent overload	280 V phase-neutral / 480 V phase-phase E20/21 290 V phase-neutral / 500 V phase-phase E22 ... E28		
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		
Output (pulses)			
Optocoupler type (IEC 62053-31)	Class A (20 ... 30 VDC)	250 VAC/DC - 100 mA (E22) 27 VDC - 27 mA (E23 ... E28)	
Number	1	2 (E22) 1 (E23 ... E28)	
Fixed pulse weight	100 Wh		
Pulse duration	100 ms	50 $\pm$ 2 ms ON time 30 $\pm$ 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 to 3 half duplex (E23/24)		Full duplex
Protocol	MODBUS <sup>®</sup> RTU	M-BUS	MODBUS TCP, HTTP, NTP, DHCP
Baudrate	1200 ... 115200 bauds	300 ... 9600 bauds	10/100 Mbps

## Connection



## References

Type	COUNTIS E20 Reference	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 63 A	4850 3003								
Direct 63 A - Dual tariff		4850 3004							
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 + M-Bus communication						4850 3052			
Direct 80 A - Dual tariff + M-Bus communication + MID							4850 3053		
Direct 80 A - Dual tariff + Ethernet Modbus TCP communication								4850 3054	
Direct 80 A - Dual tariff + Ethernet Modbus TCP + MID									4850 3055