



# COUNTIS E4x

## Active energy meters

three-phase - via CT up to 12000 A

Single-circuit metering,  
measurement &  
analysis



COUNTIS E44 - MID

### Function

The **COUNTIS E4x** is a modular electrical energy meter displaying the energies (kWh, kVAh and kVA) and other measurements directly on its backlit LCD display. It is designed for three-phase load metering with connection via CT and is suitable for applications of up to 12000 A.

COUNTIS E42, E44, E46 and E48 are MID certified.

### Common characteristics

- Measurement accuracy: 1 % / 0,5%(MID).
- Backlit LCD display.
- Multi-measurement available on display.

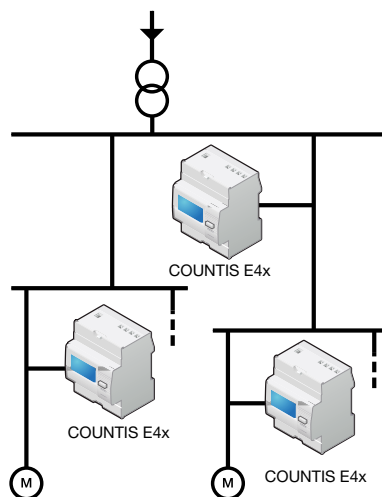
### Advantages

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

To enable the remote reporting of energy consumption, COUNTIS E4x devices have either one pulse output, one RS485 (MODBUS), M-BUS or an Ethernet Modbus TCP communication output.

In addition to their reporting functions, COUNTIS E4x with RS485 and Ethernet can be configured remotely and enable access to multi-measurement values.

### 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.

#### Bi-directional metering

This function is for metering energy production or energy consumption.

#### Multi-measurement and load curve

Display of electrical values (I, U, V, P, Q, S, PF) and load curve over a 3 day period via communication.

### The solution for

- > Industry
- > Infrastructure
- > Data centre
- > EV Chargers



### Strong points

- > RS485 (MODBUS), M-BUS, Ethernet or pulse outputs
- > Multi-tariff
- > MID certified B+D module
- > Bi-directional metering
- > Multi-measurement and load curve

### 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.



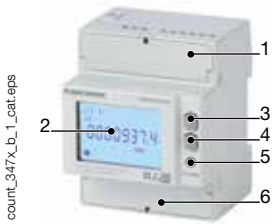
### Conformity to standards

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



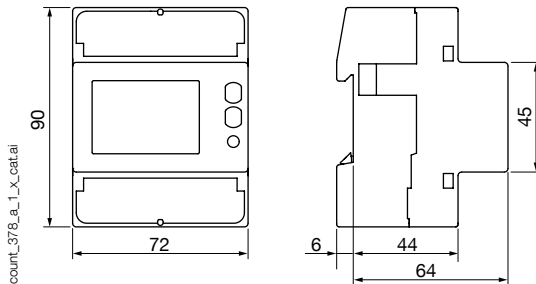
Models	Key functions
E41	Dual tariff + Pulse output
E42	Dual tariff + Pulse output + MID
E43	Dual tariff + Pulse output + RS485 MODBUS communication
E44	Dual tariff + Pulse output + RS485 MODBUS communication + MID
E45	Dual tariff + Pulse output + M-BUS communication
E46	Dual tariff + Pulse output + M-BUS communication + MID
E47	Dual tariff + Pulse output + Ethernet
E48	Dual tariff + Pulse output + Ethernet + MID

### Front panel



1. Terminal shrouds (COUNTIS E42, E44, E46 and E48).
2. Backlit LCD display.
3. Navigation button.
4. ENTER key.
5. Metrological LED.
6. Current, voltage terminals and terminal shrouds (COUNTIS E42/E44/E46/E48).

### Dimensions (mm)

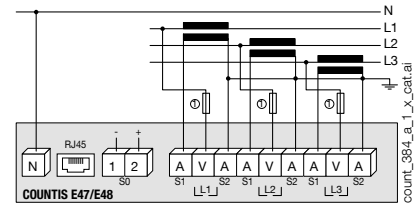
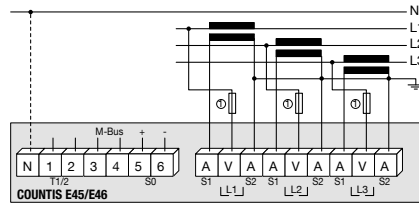
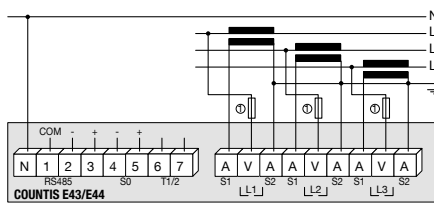
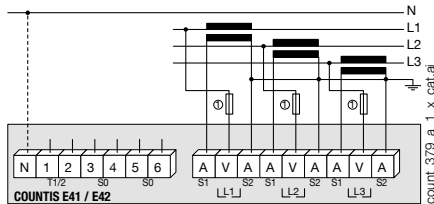


Type	modular
Number of modules	4
Dimensions W x H x D	72 x 90 x 64 mm
Case degree of protection	IP20
Front degree of protection	IP51
Display type	8-digit backlit LCD
Rigid cable cross-section	1.5 ... 6 mm <sup>2</sup>
Flexible cable cross-section	1.5 ... 6 mm <sup>2</sup>
Weight	322 g

### Connection

#### Recommendation:

- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the COUNTIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically by a SOCOMEC PT1, an accessory which is included in this catalogue. Please consult us.



1. Fuses 0.5 A gG / 0.5 A class CC.

### References

Type	COUNTIS E41 Reference	COUNTIS E42 Reference	COUNTIS E43 Reference	COUNTIS E44 Reference	COUNTIS E45 Reference	COUNTIS E46 Reference	COUNTIS E47 Reference	COUNTIS E48 Reference
Via CT - Dual tariff	4850 3063							
Via CT - Dual tariff + MID		4850 3064						
Via CT - Dual tariff + MODBUS communication via RS485 <sup>(1)</sup>			4850 3065					
Via CT - Dual tariff + MODBUS communication via RS485 + MID <sup>(1)</sup>				4850 3066				
Via CT - Dual tariff + M-Bus communication <sup>(1)</sup>					4850 3067			
Via CT - Dual tariff + M-Bus communication + MID <sup>(1)</sup>						4850 3068		
Via CT - Dual tariff + Ethernet Modbus TCP communication <sup>(1)</sup>							4850 3056	
Via CT - Dual tariff + Ethernet Modbus TCP communication + MID <sup>(1)</sup>								4850 3057

(1) 4 tariffs through RS485 communication.

### Electrical characteristics

#### Current measurement

Type	three-phase on CT1 and 5A up to 12000 A
Input consumption	0.5 VA max. per phase
Startup current (I <sub>st</sub> )	1 mA - Class C
	2 mA - Class 1
Minimum current (I <sub>min</sub> )	10 mA
Transition current (I <sub>tr</sub> )	50 mA
Reference current (I <sub>ref</sub> )	1 A
Permanent overload (I <sub>max</sub> )	6 A
Intermittent overload	120 A for 0.5 s

#### Voltage measurement

Range of measurement	230 ... 240 V ± 20 %
Consumption (VA)	7.5 VA max (0.5 W) per phase E41/E42/E45/E46 3.5 VA max (1 W) per phase E43/E44/E47/E48
Permanent overload	290 V phase-neutral / 500 V phase-phase

#### Energy accuracy

Active (according to IEC 62053-21)	Class 1
Active (according to EN 50470)	Class C
Reactive (according to IEC 62053-22)	Class 2

#### Power supply

Self-supplied	yes
Frequency	50 / 60 Hz

#### Output (pulse)

Number	2 (E41/E42) 1 (E43 ... E48)
Type of optoisolated	250 VAC/DC - 100 mA (E41/E42) 27 VDC - 27 mA (E43 ... E48)
Pulse weight	1 Wh ⇒ CT = 1 ... 4 5 Wh ⇒ CT = 5 ... 24 25 Wh ⇒ CT = 25 ... 124 125 Wh ⇒ CT = 125 ... 624 1000 Wh ⇒ CT = 625 ... 3124 10000 Wh ⇒ CT = 3125 ... 12000
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 E43/E44	COUNTIS E45/E46	COUNTIS E47/E48
Link	RS485	Wired	RJ45
Type	2 to 3 half duplex	2 half duplex	Full duplex
Protocol	MODBUS RTU	M-BUS	MODBUS TCP, STTP, NTP, DHCP
Speed	1200 ... 115200 bauds	300 ... 9600 bauds	10/100 Mbps