

COUNTIS

Active energy meter and concentrator

E40 / E41 / E42 / E43 / E44 / E45 / E46



3-phase - Via CT up to 6000 A

↻ Function

The **COUNTIS E4x** is an active and reactive electrical energy meter designed for three-phase networks. It is used for connection via CT up to 6000 A. The COUNTIS E4x is protected against phase/neutral inversion and detects wiring errors.

↻ Applications

The **COUNTIS E40** displays the total energy consumed and allows remote access through a pulse output. Metering over specific period can be managed through a partial counter.

The **COUNTIS E41** is a double tariff meter intended for dual tariff invoicing. A partial counter is available for each tariff. Remote access is possible through a pulse output.

In addition to the COUNTIS E41 functions, the **COUNTIS E42** also offers MID certification.

In addition to the COUNTIS E40 functions, the **COUNTIS E43** also offers JBUS/MODBUS RTU communication via RS485.

↻ Conformity to standards

- IEC 62053-21 class 1
- IEC 62053-23 class 2
- EN 50470-1
- EN 50470-3

In addition to the COUNTIS E43 functions, the **COUNTIS E44** also offers MID certification.

In addition to the COUNTIS E40 functions, the **COUNTIS E45** also offers M-BUS communication via RS485 to provide access to advanced multi-measurement functions.

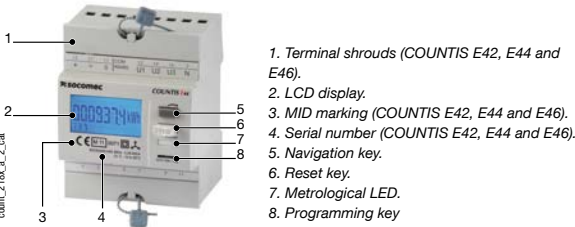
In addition to the COUNTIS E45 functions, the **COUNTIS E46** also offers MID certification.

The MID meters have no partial counter and cannot be reset.

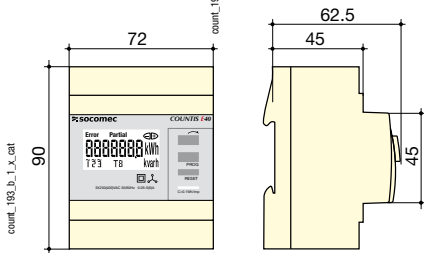
Meters with communication do not have a pulse output.

The **COUNTIS E43** and **E45** are bi-directional (i.e. counting energy production or consumption).

➤ **Front panel**



➤ **Case**



Type	Modular
Number of modules	4
Dimensions W x H x D	73 x 90 x 62.5 mm
Case protection index	IP20
Front protection rating	IP51
Display type	Backlit LCD display
Rigid cable cross-section	1.5 to 10 mm ²
Flexible cable cross-section	1 to 6 mm ²
Weight	230 g

➤ **Electrical characteristics**

Current measurement

Type	Three-phase on CT/5A up to 6 000 A
Input consumption	0.2 VA per phase
Startup current (I_{st})	10 mA
Minimum current (I_{min})	50 mA ⁽¹⁾
Transition current (I_{tr})	250 mA ⁽²⁾
Reference current (I_{ref})	5 A ⁽³⁾
Permanent overload (I_{max})	6 A
Intermittent overload	120 A for 0.5 s

Voltage measurement

Range of measurement	230 ... 400 V +/- 20 %
Consumption (VA)	2 VA
Permanent overload	280 V phase-neutral / 480 V phase-phase

Energy accuracy

Active (according to IEC 62053-21)	Class 1
Active (according to EN 50470)	Class B

Power supply

Self-supplied	Yes
Frequency	50 / 60 Hz

Output (pulsed)

Number	1 (except E43)
Type of optocoupler	IEC 62053-31 Class A (20 ... 30 VDC)
Pulse weight	100 Wh, 1 kWh, 10 kWh, 100 kWh
Pulse duration	50 ms, 100 ms, 200 ms, 400 ms, 800 ms, 1000 ms, 1500 ms

Operating conditions

Operating temperature	-10 to 55 °C
Storage temperature	-20 to 70 °C
Relative humidity	85 %

Communication

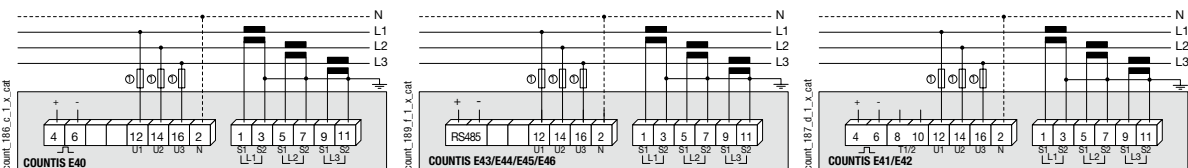
Link	RS485
Type	2 ... 3 half duplex wires
Protocol	JBUS/MODBUS® RTU
JBUS/MODBUS® speed	4800 ... 38 400 bauds
M-BUS speed	300 ... 9 600 bauds

(1) $I_{min} \leq 0.5 \cdot I_{tr}$
 (2) The accuracy class is guaranteed between I_{tr} and I_{max}
 (3) $I_{ref} = I_{tr}$ (base current) = $10 \cdot I_{st}$ for direct connection COUNTIS.

➤ **Connection**

Recommendation:

- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- While disconnecting the COUNTIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically via a SOCOMEC PTI: Please consult us.



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

➤ **References**

Type	COUNTIS E40	COUNTIS E41	COUNTIS E42	COUNTIS E43	COUNTIS E44	COUNTIS E45	COUNTIS E46
Type	Reference	Reference	Reference	Reference	Reference	Reference	Reference
Via CT	4850 3008						
Via CT - Dual tariff		4850 3009					
Via CT - Dual tariff - MID			4850 3015				
Via CT with JBUS MODBUS communication via RS485 ⁽¹⁾				4850 3017			
Via CT with JBUS MODBUS communication via RS485 - MID ⁽¹⁾					4850 3014		
Via CT with M-BUS communication via RS485 ⁽¹⁾						4850 3027	
Via CT with M-BUS communication via RS485 - MID ⁽¹⁾							4850 3028

(1) 4 tariffs through RS485 communication.

➤ **Management software for COUNTIS**

See page

➤ **MID Certification**

The Measuring Instruments Directive (MID) authorises the use of MID COUNTIS in applications for which sub-billing of the electrical energy consumed is necessary (apartments, commercial units, etc.). It guarantees each user that meters meets a high level of accuracy, quality design and manufacturing through a 3rd party verification.

