

COUNTIS E3x

Active energy meters for electrical distribution
three-phase - direct 100 A



COUNTIS E32 - MID

Function

The **COUNTIS E3x** is a modular electrical power meter. It shows power readings (kWh and kW) on its backlit LCD. These devices are intended for three-phase power metering and accommodate a direct connection up to 100 A.

The COUNTIS E3x is fully integrated into the SOCOMEC monitoring ecosystem (Webview, screens, gateways, configuration software, etc.).

COUNTIS E32, E34 and E36 are also MID-certified.

Advantages

Communication via RS485 (MODBUS or M-BUS) or pulse outputs

COUNTIS E3x units have either one pulse output or one RS485 MODBUS or M-BUS communication output.

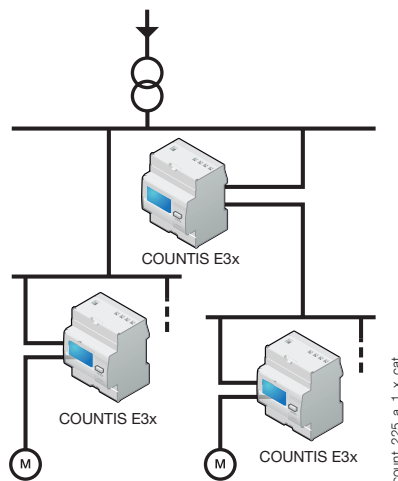
Connection error detection

The devices are protected against phase/neutral inversion and detect wiring errors. Easy to install and commission – reduces costs and ensures the proper functioning of the devices.

B+D module, MID-certified

COUNTIS E units meet MID standards and ensure accurate and reliable metering (crucial prerequisites of power-billing applications). The "module B+D" certification proves that an external laboratory has verified the design and production process of these devices.

Functional diagram



Multi-power monitoring and load curves

Shows electrical readings (I, U, V, P, Q, S, PF) and the load curve over a 7-day period via the communication methods.

Socomec monitoring ecosystem

Inherent compatibility with energy management systems and Socomec gateways (Webview, screens, gateways, etc.).

General characteristics

- Measurement accuracy: 1%
- Backlit LCD.
- Detects connection errors.

The solution for

- > Data centre
- > Building
- > Industrial process



Strong points

- > Communication via RS485 (MODBUS or M-BUS) or pulse outputs
- > Connection error detection
- > B+D modules are MID-certified, providing multi-power monitoring and load curves
- > Socomec monitoring ecosystem: user software, remote displays

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.



Compliance with standards

- > IEC 62053-21 Class 1
- > IEC 62053-31
- > IEC 62053-11
- > EN 50470-1
- > EN 50470-3



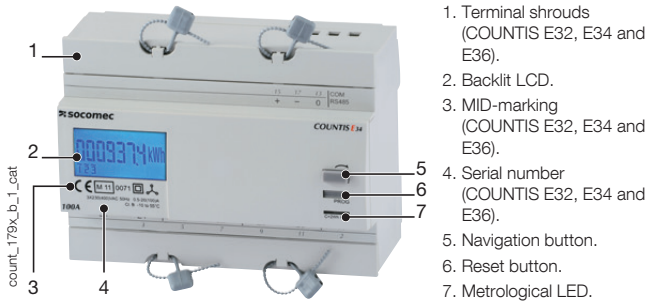
Associated current transformers



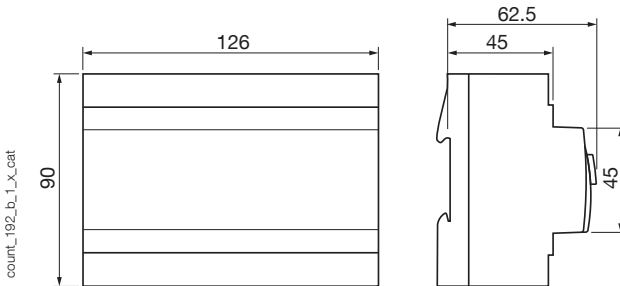
See "Current transformers".

| Models | Main specifications |
|--------|--|
| E30 | Output (pulses) |
| E31 | Dual-tariff (2 partial meters) + pulse output |
| E32 | Dual-tariff + MID + pulse output |
| E33 | Dual-tariff + communication via RS485 MODBUS |
| E34 | Dual-tariff + communication via RS485 MODBUS + MID |
| E35 | Dual-tariff + communication via M-BUS |
| E36 | Dual-tariff + communication via M-BUS + MID |

Front panel



Dimensions (mm)



| | |
|--|---------------------------|
| Type | Modular |
| Number of modules | 7 |
| Dimensions W x H x D | 126 x 90 x 62.5 mm |
| Casing protection degree | IP20 |
| Front panel protection degree | IP51 |
| Display type | Backlit LCD |
| Cross-section of rigid connecting cable | 2.5 to 35 mm ² |
| Cross-section of flexible connecting cable | 2.5 to 35 mm ² |
| Weight | 490 g |

Electrical characteristics

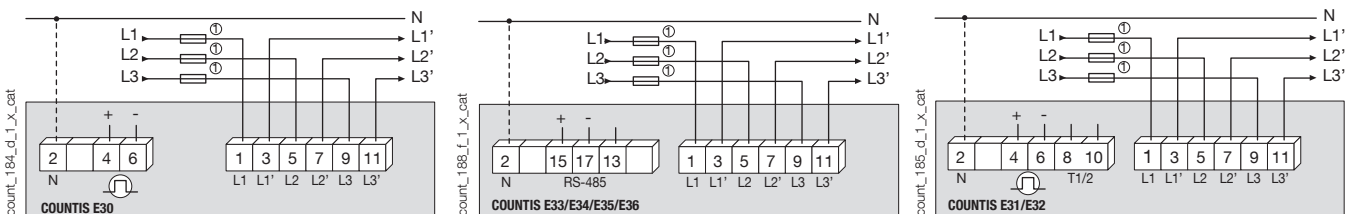
| Current measurement | | |
|--|---|--------------------|
| Type | Three-phase - direct 100 A | |
| Input consumption | 0.5 VA max. per phase | |
| Inrush current (I _{cfst} /c _f) | 80 mA | |
| Minimum current (I _{min}) | 0.5 A ⁽¹⁾ | |
| Transient current (I _{cftr} /c _f) | 2 A ⁽²⁾ | |
| Reference current (I _{ref}) | 20 A ⁽³⁾ | |
| Permanent overload (I _{max}) | 100 A | |
| Transient overload | 3000 A over 10 ms | |
| Voltage measurement | | |
| Measurement range | 230 to 400 V ± 20% | |
| Consumption (VA) | 2 | |
| Permanent overload | 280 V phase-neutral / 480 V phase-phase | |
| Power monitoring accuracy | | |
| Active (according to IEC 62053-21) | Class 1 | |
| Active (according to EN 50470) | Class B | |
| Power supply | | |
| Self-powered | Yes | |
| Frequency | 50 / 60 Hz | |
| Output (pulse) (COUNTIS E30/E31/E32) | | |
| Number | 1 | |
| Type of optical coupler | IEC 62053-31 Class A (20 to 30 VDC) | |
| Fixed pulses | 100 Wh | |
| Pulse duration | 100 ms | |
| Environment | | |
| Operating temperature | -10 to 55°C | |
| Storage temperature | -20 to 70°C | |
| Relative humidity | 85% | |
| Communication | | |
| Link | COUNTIS E33/34 | COUNTIS E35/E36 |
| Type | RS485 | Master/Slave |
| Protocol | 2-wire half duplex | 2-wire half duplex |
| Protocol | MODBUS in RTU mode | M-BUS |
| Baudrate | 4800 to 38400 bauds | 300 to 9600 bauds |

(1) $I_{min} \leq 0.5 \cdot I_{tr}$

(2) Guaranteed accuracy between I_{tr} and I_{max} .

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

Connections



1. Max. 100 A gG / Am fuse

IMPORTANT: Neutral is optional on COUNTIS E3x (neutral is represented by the dashed line in the image opposite).

References

| Type | COUNTIS E30 Reference | COUNTIS E31 Reference | COUNTIS E32 Reference | COUNTIS E33 Reference | COUNTIS E34 Reference | COUNTIS E35 Reference | COUNTIS E36 Reference |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Direct 100 A | 4850 3005 | | | | | | |
| Direct 100 A - Dual tariff | | 4850 3006 | | | | | |
| Direct 100 A - Dual-tariff + MID | | | 4850 3007 | | | | |
| Direct 100 A - Dual-tariff + MODBUS communication via RS485 ⁽¹⁾ | | | | 4850 3012 | | | |
| Direct 100 A - Dual-tariff + MODBUS communication via RS485 + MID ⁽¹⁾ | | | | | 4850 3013 | | |
| Direct 100 A - Dual-tariff + communication via M-BUS ⁽¹⁾ | | | | | | 4850 3025 | |
| Direct 100 A - Dual-tariff + communication via M-BUS + MID ⁽¹⁾ | | | | | | | 4850 3026 |

(1) 4-tariff via RS485 communication.

| Accessories | Available for order in multiples of | Reference |
|--|-------------------------------------|-----------|
| 10x sealing kits, 4U | | 4850 307U |
| Fuse disconnect switches for voltage input protection (RM type) 3-pole | 2 | 5703 5003 |
| gG 22x58 100 A fuses | 10 | 6032 0100 |