

# COUNTIS M0x

Active energy meters for OEM

single-phase - direct 45 A



COUNTIS M04

## Function

The **COUNTIS M0x** meters are modular energy meters for machine manufacturers (Bulk packaging) that can display energies (kWh and kvarh) and other measurement directly on its backlit LCD display. They are suited for direction connection up to 45A.

With multifunction monitoring and compact size in one module, they support RS485 MODBUS RTU or MBUS communication and are suited for domestic, commercial or industrial power distribution systems.

COUNTIS M04 and M06 have MID certification.

## Advantages

### Bulk packaging

The packaging and accessories of these meters are optimised for high quantities requirements :

- Unboxing and integration are quicker.
- Packaged with large quantities to simplify ordering and shipping process.

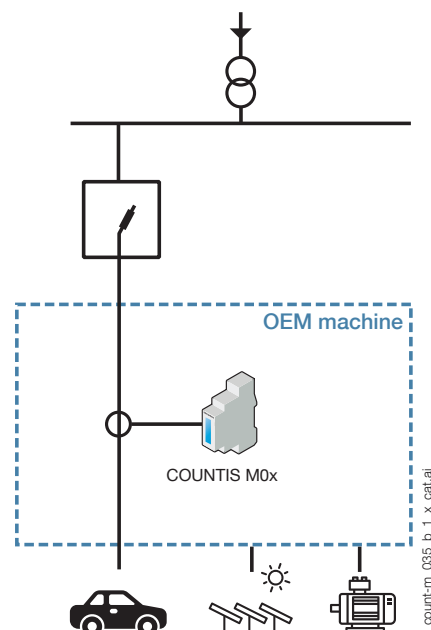
### Compact

1 module width only.

### Communication and pulse outputs

- RS485 communication (MODBUS RTU) or MBUS communication.
- Energy values can be remotely transmitted via the communication output (computer, BMS, etc...) to a system for billing analysis, energy savings or energy cost management.
- 2 available pulse outputs : one with configurable pulse weight and duration, the second with fixed 1000 Wh/imp.

## Functional diagram



### MID Module B+D certified

COUNTIS M 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.

### Extended temperature range

Operating temperature from -40°C up to +70°C without degrading any functions of the meter.

## The solution for

- > EV chargers
- > Inverters
- > OEM machines



## Strong points

- > Bulk packaging
- > Compact
- > Communication and pulse outputs
- > MID Module B+D certified
- > Extended temperature range

## MID certification

- > COUNTIS M units comply with the MID directive to guarantee accuracy and reliability when metering, compulsory for energy billing applications.
- > COUNTIS M MID feature tamper-proof components to prevent fraud.



## Conformity to standards

- > IEC 62053-21
- > IEC 62053-23
- > EN50470-1
- > EN50470-3

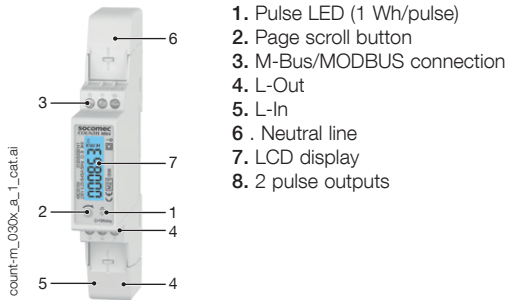


## General Characteristics

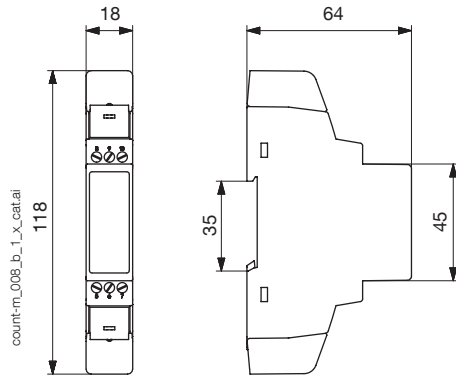
- Compact design.
- Measurement accuracy: 1 %.
- LCD display.

Model	Key functions
M04	2 pulses output + RS485 MODBUS communication + MID
M06	2 pulses output + M-Bus communication + MID

## Front panel



## Dimensions (mm)

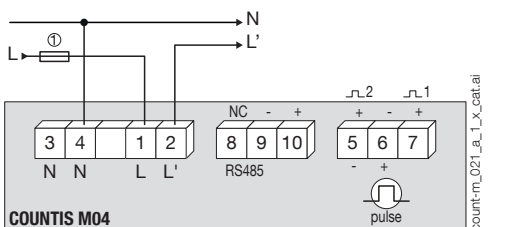


Type	modular
Number of modules	1
Dimensions W x H x D	18 x 118 x 64 mm
Case degree of protection	IP 20
Front degree of protection	IP 51
Display type	LCD Backlight
Rigid cable cross-section	2.5 ... 6 mm <sup>2</sup>
Flexible cable cross-section	2.5 ... 6 mm <sup>2</sup>
Weight	100 g

## Electrical characteristics

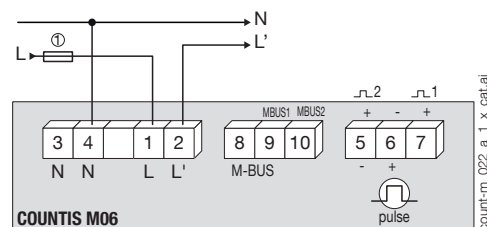
Current measurement	
Type	Single-phase 45 A
Max. current ( $I_{max}$ )	45 A
Reference current ( $I_{ref}$ )	5 A
Min. current ( $I_{min}$ )	0.25 A
Input consumption	< 2 W / 10 VA
Overcurrent withstand	30 $I_{max}$ for 0.01s
Voltage measurement	
Voltage AC ( $U_n$ )	230 V
Voltage range	172-276 VAC
Frequency	50 or 60 Hz $\pm 2\%$
AC voltage withstand	4 kV for 1 minute
Impulse voltage withstand	6 kV~1.2 $\mu$ s waveform
Output (pulse)	
Pulse output 1	configurable : 1, 10, 100, 1000 pulses per kWh/kvarh
Pulse output 2	non-configurable : 1000 pulses per kWh
Type of optoisolated	5-27 VDC - 27 mA DC max.
Pulse duration	60 / 100 / 200 ms
Accuracy	
Voltage / Current / Frequency	0.5% / 0.5% / 0.2%
Power factor / Active power / Reactive power / Apparent power	1%
Active energy	Class 1 IEC 62053-21 Class B EN50470-1/3 (MID version only)
Reactive energy	Class 2 IEC 62053-23
Total harmonic distortion	1% up to 31st harmonic
Values refresh rate	1s
Operating conditions	
Operating temperature	-40°C to +70°C (3K7)
Storage temperature	-40°C to +70°C
Relative humidity	0 to 95%, non-condensing

## Terminals and connections



N - L: network input.  
1. 45 A gG / Am fuses max.

N' - L': network output.



## References

Type	COUNTIS M04 Reference	COUNTIS M06 Reference
Direct 45 A - RS485 MODBUS Communication + MID	48C0 3104	
Direct 45 A - M-Bus Communication + MID		48C0 3106