

# ME160...

Single-phase  
kWh-meters



The **ME160** electronic single-phase single-rate kWh-meters measure energy in single-phase 2-wire networks in households and at small commercial customers. They are designed for direct connection. The meters comply with the IEC 62053-21 (IEC 61036) standard, and are manufactured in compliance with the ISO 9001 standard.

**Metering element**

The metering element is based on a shunt, A/D conversion and digital multiplication of current and voltage. The metering element assures excellent and long-term stable metering features, negligible effect of influence quantities and high meter reliability. Therefore, the meters do not require any re-calibration over their entire life time.

**Meter case and terminal block**

Small size ergonomically designed case is made of self-extinguishing polycarbonate and can be recycled at the end of the meter life. It assures double insulation and IP53 protection against dust and water penetration. The meter cover is made of polycarbonate with a window for reading the register. A cover and base are inseparable joined to prevent intruding into the meter. The meter base and the terminal block are injection moulded in one piece. Meter terminals are made of brass and are nickel-plated for tropical meter version. The terminals at ME160-D1 meters are arranged in compliance with the DIN 43857 standard; the terminals hole diameter is 8.5 mm. The terminals at ME160-D3 meters are arranged in compliance with the BS 7856 standard; the terminals hole diameter is 9.5 mm. The terminal cover can be either long or short version and is fixed with a sealing screw.

Fixing dimensions comply with the BS 7856 standard.

**Register**

A The cyclometric register is 7-digit (6+1 decimal). The figure size is 4.8 x 2.5 mm. The decimal drum has 100-division marking on its circumference. The register is positive

driven, i.e. the register always counts up regardless of energy flow direction through the meter.

**LED**

The meter is calibrated and its accuracy is checked via a LED on the meter front-plate.

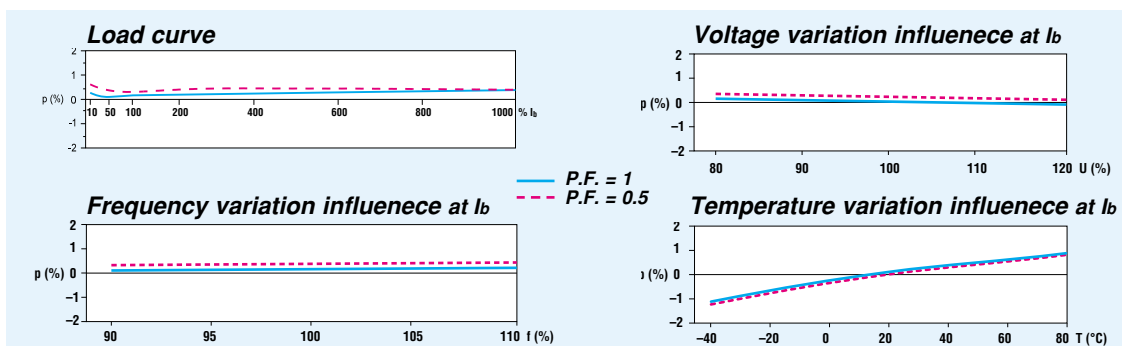
**Output**

The meters can be optionally equipped with an SO pulse output (by IEC 61393). The pulse transmission distance is up to 0.5 m.

**TECHNICAL DATA**

Accuracy class (IEC 62053-21 / IEC 61036)	.....2 or 1
Basic current $I_b$	.....10 A or 20 A
Maximum current $I_{max}$	.....85 A (DIN version)
Maximum current $I_{max}$	.....100 A (BS version)
Minimum current	.....0.05 $I_b$
Starting current	.....<0.004 $I_b$
Reference voltage $U_r$	.....120 V, 220 V, 230 V or 240 V (other voltages on request)
Voltage range	.....0.8 $U_r$ ... 1.15 $U_r$
Reference frequency	.....50 Hz or 60 Hz
Current circuit burden	.....<0.025 W / 0.025 VA
Voltage circuit burden	.....<0.8 W / 10 VA
Meter constant	.....3200 imp/kWh
Output pulse width	.....30 ms
Short-circuit current	.....30 $I_{max}$
Dielectric strength	.....4 kV, 50 Hz, 1 min
Impulse voltage	.....6 kV, 1.2/50 $\mu$ s
Electrostatic discharge (IEC 1000-4-2)	.....15 kV
High-frequency magnetic field (IEC 1000-4-3)	.....10 V/m
Burst (IEC 1000-4-4)	.....4 kV
Operating temperature range	.....-40 °C ... +60 °C
Storing temperature range	.....-50 °C ... +80 °C
Dimensions (H x W x D)	.....97 x 130 x 43 mm
Mass	.....approx. 0.38 kg

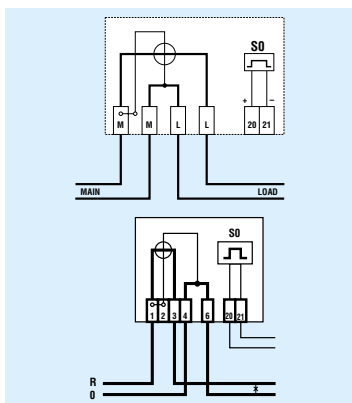
**TYPICAL METER CURVES**



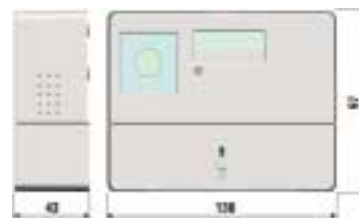
**METER TYPE DESIGNATION**

- M E 160 - D3 A 5 2 - G 12**
- M** – static meter
  - E** – single-phase meter
  - 160** – single-rate meter with cyclometric register
  - D1** – Direct connected meter up to 85 A (DIN 43875)
  - D3** – terminal block for direct connection up to 100 A (by BS 5685)
  - A** – active energy
  - 5** – class 2
  - 4** – class 1
  - 1** – one energy-flow directions
  - 2** – two energy-flow directions
  - G12** – SO pulse output (option)

**CONNECTION DIAGRAMS**



**OVERALL AND FIXING DIMENSIONS**



Owing to periodical improvements of our products the supplied products can differ in some details from the data stated in the prospectus material.