

Smart meters

EM10-H



Single-phase meter
with integrated switching device



EM10-H

Remote In-home display keypad and integrated switching device



The **EM10** is a smart, single-phase, bidirectional and multi-tariff electricity meter designed for low-voltage domestic consumers. It measures **active and reactive energy**, as well as voltage, current and power, and supports up to **six tariffs**. The meter supports **prepayment**, with an integrated switching device for load disconnection and reconnection.

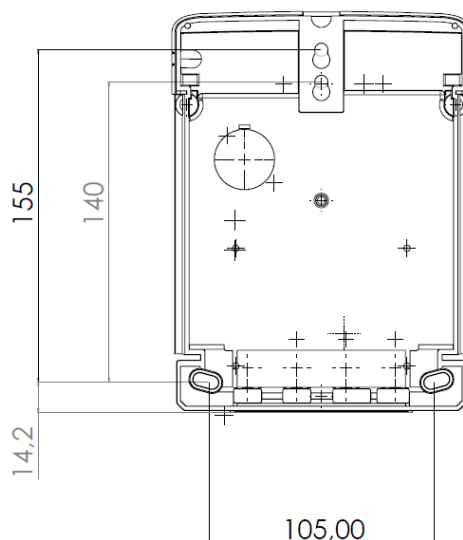
It provides advanced functionalities including **DLMS/COSEM, HAN communication, billing and load profiles, event logging, tamper detection and net-metering**. Depending on the variant, communication can be provided through **2G/4G cellular or G3-PLC/RF Hybrid** technologies. The EM10 complies with IEC 62052-11, IEC 62053-21 and IEC 62053-23.

Key features

- ✓ Measurement of electrical values
- ✓ Integrated switching device
- ✓ Internal real-time clock with DST
- ✓ Flexible tariff policy with up to 6 tariffs
- ✓ 230 V/50 Hz supported
- ✓ Optical port
- ✓ DLMS/COSEM
- ✓ Fraud detection
- ✓ 2G/4G cellular communication
- ✓ G3-PLC/RF Hybrid communication
- ✓ No-power reading and parameterization
- ✓ Billing profile
- ✓ Load profiles
- ✓ Power limit
- ✓ Event logs
- ✓ Measurement of neutral current (optional)
- ✓ High level data security

Measurements - Measurement of power and energy in both directions and absolute values (A+, A-, A , R+, R-, R1, R2, R3, R4, S+, S- and by quadrants) - Measurement of energies, voltages and currents, network frequency and power factor Maximum demand - Programmable maximum demand integration period (typically 10, 15, 30 or 60 minutes) Multi-rate registration and TOU - Programmable tariff structure (up to 6 tariffs) Internal real-time clock with DST - In accordance with IEC 62054-21 - Automatic DST (Daylight Saving Time) switching - Backup battery supply, super-capacitor HMI and Display - LCD Display: with optional backlight - Programmable selection of data and display sequence 2 Buttons for display menu navigation - LED (1000 imp/kWh) 1000 imp/kvarh	Optical port - Physical layer in accordance with IEC 62056-21 Mode E - Communication protocol - DLMS COSEM P1 port - A unidirectional communication port HAN/P1-DSMR for the subscriber Output 2 auxiliary relays Communication options - Variant with Hybrid RF PLC modem (narrowband) - Variant with cellular modem (2G/4G) Integrated switching module - Bi-stable switching module placed under meter cover for remote or local connection / disconnection - Phase current break up to 60 A, whilst neutral stays closed - In accordance with IEC 62055-31, UC2	- Minimum 10 000 mechanical disconnections/reconnections under maximum load Billing profiles - Recording billing data at the end of the programmable billing period with automatic reset of maximum demand. 12 channels Load profiles 2 channels load profile for measured values up to 720 records 8 recordable events - Programmable and independent registration periods (10, 15, 30, 60 minutes) Log books - Standard log book - Fraud detection log book - Disconnect control log book - Long power interruption log Energy quality measurement - Voltage variation registration - Outage registration (short outage – Event counter, long outage – Long power interruption log) - Under-voltage and over-voltage measurement and registration in Quality Event log book - Voltage THD and Current THD registration	Fraud detection - Detection of meter cover opening/ closing - Detection of terminal block cover opening/closing - Detection of wrong authorization for meter parameterization - Detection of strong magnetic field - Recording of events in the Fraud event log book Power limiting - Power or current limiting of electrical consumers by defining the limit value of power or current in dedicated meter registers - Programmable Tolerance time Data security - High level data security including authentication and data encryption No-power reading - Local reading via display or via optical port in no power condition - Integrated supercapa Current terminal block - For current up to 60 A - For all types of conductors up to 25 mm² Compact meter case - Dimensions and fixing points in accordance with BS
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Accuracy Class Active	
energy Reactive	1
energy	2
Nominal and maximum current	10 (60) A
Nominal voltage, U _n	230 V
Voltage range	0.65 U _n – 1.15 U _n
Frequency	50Hz
Optical port	IEC 62056-21 (physical layer) IEC 62056-46 (DLMS) communication protocol
RS485	DLMS COSEM - Direct HDLC
Self-consumption	IEC 62053-21/23/61
Operational temperature range	-10 °C - +70 °C
Storage temperature range	-25 °C - +80 °C
Insulation AC strength	4 kV, 50 Hz, 1 min
Insulation impulse strength	6 kV; 1.2/50 µs
IP protection level	IP54, in accordance with IEC 60529
Dimensions	
Meter	202 x 125 x 65 mm
In-home keypad	120 x 90 x 43 mm
Weight	Approx. 0.80 kg





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EM10 – Single-phase smart meter Split