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E120M Integrated Meter

The E120M integrated meter is a part of Enermet's AIM system. The system has been designed for energy utilities and property maintenance companies to make management of energy consumption and metering information easier and more efficient. Designed for the AIM system, E120M is versatile, reliable and easily installed and configured.

The E120M is an electronic integrated class 2 electricity meter. The integrated communication part uses Enermet's PLC MV communication. The meter has one S0-input and three relay outputs.

Versatility to Future

E120M is designed for household metering in rural areas where communication distances are long. In addition to electricity metering it can be used to gather metering information about gas or water consumption through its S0 input. The relay outputs can be used to control different loads like heating. Relays can be controlled by the programmable weekly schedule of the meter, which allows for maximum of eight on/off changes per day or by dynamic messages directly from the AIM system.

The meter communicates over the electricity network using a medium voltage power line carrier communication technology developed by Enermet. Additionally it can be used with an external modem through its RS232 connection. Multiple input/output options and open communication make the E120M a flexible and versatile metering tool both now and in the future.

More Information – More Value

E120M does not only gather electricity-metering information. The S0 input can be used to gather metering values to the metering system from other sources, like gas or water meters. The meter also monitors and records power quality (over/under voltage), power cuts, alarms and events. All registers and relay status can be read from the system and alarm limits can be set according to needs. The meter is easily configured with its configuration program E120MUI to suit different needs and locations.

Safely to Future

The E120M integrated meter meets strict environmental requirements. All device parts can be recycled and the packaging is made of recyclable cardboard.

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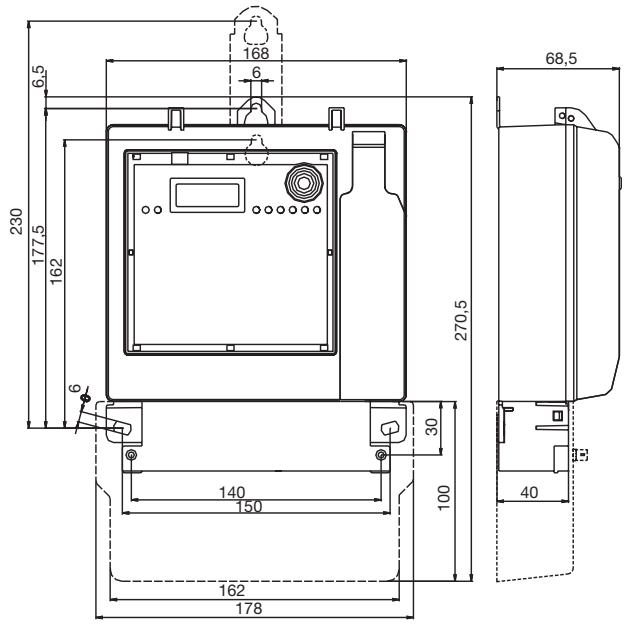

E120M Technical Specification

Accuracy Class
- Class 2 for active kWh

Method of Measurement
- VLSI-ASIC
  (A/D-conversion and digital signal processing)

Metrological Requirements
- In accordance with IEC62053-21 and IEC62052-11

Voltage
- U_n = 3x230/400V
- Measuring range: -20 % to +15 % U_n

Power Consumption in voltage circuit
- ≤ 3.9 VA, ≤1.15 W
  (including metering and application modules)

Current
- Rated currents: I_b = 5 A or 10 A
- Maximum current: I_{max} = 85 A
- Starting current: (0.5) % of I_b ≤ 25 mA
- Thermal current: I_{th} = 100 A

Power Consumption in current circuit
- 0.05 VA

Frequency
- 50 Hz ±1 Hz

S0 input
- In accordance with IEC62053-31, Class A and B
- Isolation voltage test 4 kV rms
- Impulse voltage test 6 kV

Load control relay output
- Mechanical relay output, 230 V, 6 A
- Mechanical relay output, 230 V, 16 A

Service relay output
- Semiconductor relay output, 230 V, 100 mA

Communication
- MV PLC communication

Real-time Clock
- Clock accuracy: +0,5 s / 24 h (in +23 °C)
- Power back-up: super capacitor 14 days

Self-diagnostics
- Internal alarms
- Memory
- Phase failure
- Watchdog

Register structure
- 1 cumulative profile
- 1 cumulative profiles for external meterings via S0 inputs (S0 pulse profiles)
- 8 tariff registers (periodical data), with 15 history levels
- Power cut counter, power quality log and alarm & event log

Meter Constant (yellow LED indicator)
- 10 000 imp/kWh

Temperature Ranges
- Operating –40 ... +60 °C
- LCD operating –20 ...+55 °C

Case
- According to DIN 43857 and DIN 43859
- IP 51
- IP 20 (terminal block and terminal cover)

Weight
- 1.6 kg

LCD display
- 6 integers and 0-2 optional decimals
- Cumulative values alternate on display

Overvoltage protection
- 12 kV (metering core) / SP1618
- 4 kV rms (S0 input and relay insulation test voltage)
- 6 kV (S0 input and relay impulse test voltage)

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