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Enermet E420i Electricity Meter

E420i is a versatile meter for three phase household locations. Its wide current and temperature ranges, configurable measurement and many tariff control options fulfill the needs of various installation sites and energy companies. The meter also has a configurable S0 output and can be connected to different external devices. This offers a possibility to connect to AMR (automatic meter reading) system later.

Enermet has a long experience in designing electricity meters. This experience together with modern design gives E420i meter a long expected lifetime with stable measurement throughout. The meter's intelligent self diagnostics, several different alarms indicated by LED and tampering prevention are based on the advanced ASIC and current measurement technique used in E420i.

Cost-efficiency and Usability

Cost efficiency is created by attention to every stage of the meter's life time. The logistics as well as verification and installation processes can be complicated and time consuming when dealing with large amounts of meters. E420i has been designed to make installation and logistics as easy as possible.

E420i is a compact and light-weight meter making it easy to transport, store and install. As an electronic meter, the E420i is immune to disturbances due to vibration or mounting position. Thanks to this, it is safe to transport and the measurement is reliable even under difficult circumstances.

The housing structure and seals make the meter tamper proof. Also the meter's configurable measurement and alarms indicate attempts to tamper with the meter. Long lifetime and stable measurement result in a maintenance free meter which means fewer visits to the installation site.

Advanced ASIC and Measurement Technology

Enermet has a long experience in designing electronic meters and has developed some of the most advanced measurement solutions and ASIC in the market. Accelerated lifetime tests at international research institutes have shown that the operation of electronic meters remain accurate throughout their lifetime. Even after several years of use the calibration values have shown virtually no changes. Using that experience, we have developed the 5th generation of electronic 3-phase meters, the E420i meter family. The meter family includes one- and two-tariff meters.

aim
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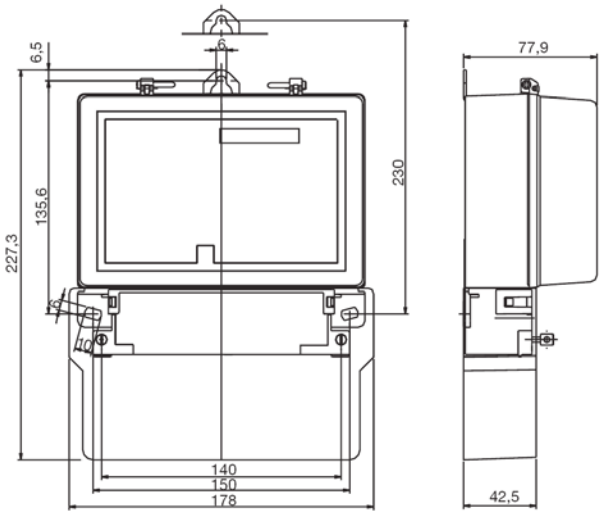
Safely to Future

The E420i is simple and robust. If you choose, the E420i meters can be delivered with an S0 output, through which it can be connected to a metering system, either now or in the future. Thanks to the E420i meter's standard terminal block dimensions, installing of additional devices is easy.

The E420i meter meets strict environmental requirements. End processing and recycling of the meter after its lifetime have also been considered in the design: the meter and its packaging are made of recyclable materials.



E420i Technical Specification

Accuracy Class
- Class B for active energy (kWh)

Method of Measurement
- A/D-conversion
- Digital signal processing

Metrological Requirements
According to
- EN50470-1
- EN50470-3

Voltage
- U_n = 3 x 230/400 V, 3 x 230 V, 2/3 x 230/400 V
- Measuring range from -20 % to +15 % Un

Current
- Maximum current 60, 65, 80, 85 or 100 A
- Starting current I_{st} < 25 mA
- Reference current 5 or 10 A (for E420i-s)

Power consumption
- Voltage circuit: ≤ 8 VA_{cap}, ≤ 0.4 W
- Current circuit: ≤ 0.05 VA at I_{ref} / phase

Frequency
- 50 Hz +/- 2 %

Overvoltage protection
- 12 kV (metering core)

Case
- According to DIN 43857
- IP51
- IP20 (terminal block and terminal cover)

Temperature ranges
- Operating: -40 … +70 °C
- Storage: -40...+70 °C

S0-Pulse Output (E420i-ns type)
- Type "S0"
- According to DIN 43864
- Max. 27 V DC, 27 mA DC
- Configurable impulse constant 250/500 imp/kWh
- Pulse length 32 ms (±5 %)
- Impulse test voltage 6 kV (1.2/50 µs)
- Insulation test voltage 4 kV (50 Hz, 1 min)
- According to IEC62053-31

LEDs
- Meter constant LED (red, 10 000 imp/kWh)
- Power/alarm LED (power green, alarm red)
- Tariff I and II LEDs

Weight
- 880 g

Dimensions
- Height: 227 mm
- Width: 178 mm
- Depth: 78 mm

Electromechanical counter
- Counter with 7 drums
- 6 integers, one numerical or coded decimal

Tariff Control
Control inputs
  - 13
  - 13 inv.
  - 13&15
  - 13&15 inv.
- Tariff I: 230 V AC (-20%/+15%), 50 Hz
- Tariff II: <115 V or no voltage

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