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TPN100DR Iskaemeco MT172

Three-Phase Electronic Meter with internal clock

MT172 – Three-Phase Electronic Meter with internal clock

The MT172 three-phase electronic meters are designed for measuring and registration of active and reactive energy in three-phase four or three-wire network for direct and indirect connection. Measuring and technical characteristics of the meter comply with the IEC 62052-11 and IEC 62053-21 (IEC 61036) international standards for electronic active energy meters, class 1 or 2, and reactive energy meters, classes 2 and 3 in compliance with IEC 62053-23 as well as a standard for time switches IEC 62052-21.

The meters are designed and manufactured in compliance with the standards and ISO 9001 as well as more severe Iskraemeco standards.

1. Real time clock

A real time clock is driven by a 32 kHz quartz oscillator. The clock accuracy complies with the requirements stated in the IEC 62052-21 standard. A source for a back-up power supply is built in the meter. It is performed by uninterchangeable LiSOCL2 battery and assures energy up to 3 years of the clock operation in case of a complete power supply failure. Its lifetime is 20 years.
The real time clock generates:

- A tariff program, seasons changeover, transition to day light saving period and vice-versa

2. Display

Display and indications:

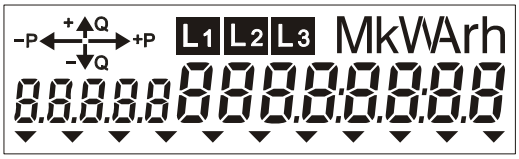


Fig. 5 – Large display

Measuring data are displayed with eight 7-segment 8 mm high digits. Displayed data are identified with five-digit EDIS code (DIN 43863-3), digits are 7-segment and 5 mm high.

Symbols indicating energy flow direction, valid tariffs as well as the meter statuses are also displayed on both displays.

3. Inputs and outputs

3.1. Inputs

The meter is equipped with one (two-rate meters) or two (3- and 4-rate meters) tariff inputs that are used for external tariff changeover with a phase voltage or network.

3.2. Outputs

The meter is equipped with one or two impulse outputs. Two impulse outputs are used in case of bi-directional energy flow (an output for each energy flow direction).
Outputs can be an S0 (DIN 43864) or opto-MOS relay type.

4. Anti-fraud protection

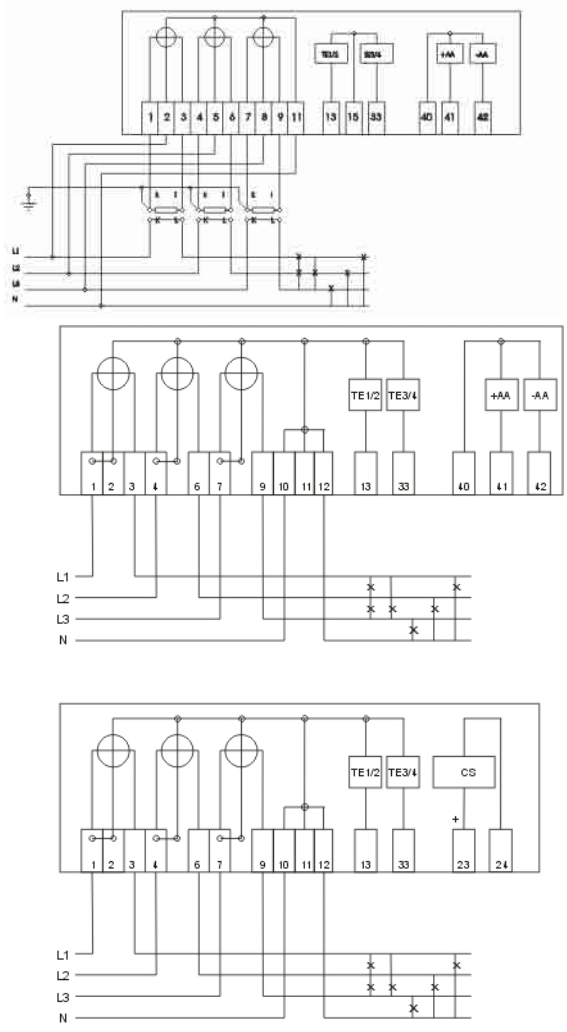
Detection is performed by:

- Meter cover opening (option)
- Terminal cover opening (option)

Each detection of meter cover or terminal cover opening is stored as increment in a special register that can be readout by means of a MeterView or MeterRead service software.
A number of meter cover opening is stored in register.
A number of terminal cover openings are stored in register.

5. Connection

The meter can be connected to network as a single-phase, two-phase or three-phase meter.



6. Lifetime

The meter is designed for a 20-year lifetime at normal operating conditions.

7. Meter connection procedure

1. Place the meter to a connection position
2. Connect the meter to network
3. Check connection indication:
   - LED is lit (load current is less than starting current)
   - LED is blinking (proportional to load current strength)
4. Check connection – see LCD indications:
   - **display:**
     - Presence of all three phases - **L1 L2 L3;** all symbols displayed,
     - One phase failed – a symbol for the failed phase is not displayed
     - Reversed phase sequence - **L1 L2 L3** symbols of reverse connected phases are blinking

8. Meter case

The meter case is made of self-extinguishing polycarbonate that can be recycled.

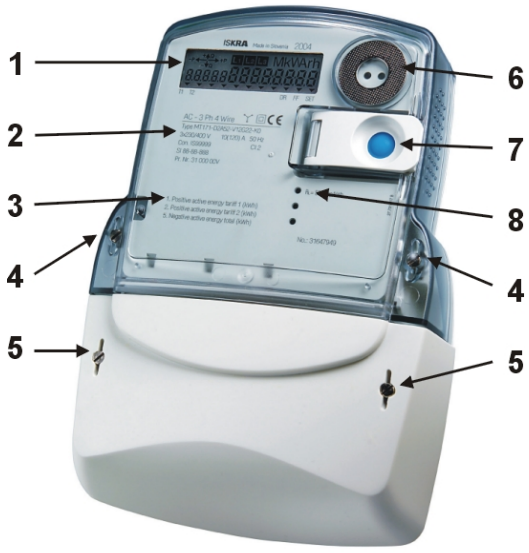


Fig. 7 – Meter constituent parts

1. An LCD
2. Meter technical data
3. A legend of data identification codes
4. A meter cover sealing screw
5. A terminal cover sealing screw
6. An IR optical port
7. Scroll and Reset keys
8. An impulse LED