ISKRAEMECO

Energy Measurement and Management

# TEMP-*100M*

Sub-standard meter

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*The **TEMP-100M** sub-standard meter is intended for measuring energy and power with 0.05% accuracy. The built-in microcomputer enables measurement of errors of single phase accuracy class from 3 to 0.2S in measuring laboratories and calibration rooms by the comparative method. The calibrated meters can be connected directly or indirectly. Reactive energy meters can be performed for natural connection.*

### *Measuring technique*

The TEMP-100M sub-standard meter is based on the Time Division Multiplication technique of multiplying current and voltage and conversion of the products into sequence of impulses the frequency of which is proportional to the measured power. Voltage and current are measured by the True-RMS method. After A/D conversion and depending on the voltage range the applied voltage or current is calculated. Apparent power and power factor are calculated form the measured value of voltage and current.

The chosen measuring method, built-in elements and production procedures assure high accuracy and reliability as well as long meter life.

### *Sub-standard meter versions*

The sub-standard meter can be built into the casing for flush mounting or a bench-top casing. At a flush type is provided with 19" aluminium casing which enables simple mounting into a calibration bench. The bench-top version is provided with a casing made of polystyrole and can be therefore recycled. The casing is provided with a handle for carrying the meter and for placing the meter on a bench at the most convenient angle. At the meter front side is a keypad that enables easy manipulation of the meter. The meter without a keypad is also available; it can be used only via a computer which is connected to the RS232 serial interface.

### *LCD*

A large menu-driven LCD is user-friendly. During the calibration all measuring parameters and the error of the calibrated meter are displayed.

### *Terminals*

All terminals are provided on the rear side of sub-standard meter. The sub-standard meter is connected via a socket with grounded terminal and an ON/OFF switch. The calibrated electricity meter can be connected to the sub-standard meter directly via a BNC connector (if the electricity meter is provided with a BNC connector for impulse output) or indirectly via a photo-scanning head for reading the calibrated meter rotor revolutions or LED impulses. The photo-scanning head is connected via a 5-pin connector. The sub-standard meter is provided with a terminal for dosing energy or controlling the calibration bench, and terminals of output frequency. TEMP-100M can be connected to a PC via a 9-pin connector of RS232 serial interface. The device is provided with two-times current inputs (10 A and 100 A) and current outputs as well as voltage inputs and a grounding terminal. The 10 A current range inputs are protected with 16 A fuses.

### *Accuracy self-testing*

The TEMP-100M enables self-testing of accuracy by comparing measuring accuracy of individual phases with the accuracy of three-phase measurement.

### *Accessory*

Iskraemeco also provides the required accessory for electricity meters calibration with TEMP-100M; however, it should be ordered separately. The following accessory is available: a stand for a meter under test, FG-LK photo-scanning head for read-out of rotor revolutions or impulses on the calibrated meter LED, a photo-scanning head stand with a setting element, 2 m long photo-scanning head cable, 0.8 m long 10 A current connection wires, 0.8 m long voltage connection wires.

## *TECHNICAL DATA*

| | |
|---|---|
| Power supply voltage | 230 V ± 10% |
| Power supply voltage influence | ≤ 0,005% / 10% AC |
| Power supply frequency | 45 ... 65 Hz |
| Burden | 40 VA (approx.) |
| Operation temperature range | 0 °C ... +45 °C |
| Permitted operation temperature range | –20 °C ... +60 °C |
| Temperature coefficient | TK ≤ 0.0025 % / °C |
| Influence of external magnetic field | ≤ 0.05% / 0.5 mT |
| Heating time | 60 min |

| **Casing** | **Flush type** | **Banch-top type** |
|---|---|---|
| Material | Aluminium | Polystirol |
| Dimensions | 19" case | 508 x 178 x 300 mm |
| Mass | approx. 10 kg | approx. 9.5 kg |

| **Accuracy** | |
|---|---|
| Active power | < ±0.05% measured values |
| Reactive power | < ±0.05% measured values |
| Apparent power | < ±0.05% measured values |
| Voltage | < ±0.01% measuring range |
| Current | < ±0.01% measuring range |

| **Measuring ranges and ratings** (automatic or manual selection) | |
|---|---|
| Voltage input | 480 V |
| | 240 V |
| | 120 V |
| | 60 V |
| 100 A-current input | 100 A |
| | 25 A |
| | 6.25 A |
| | 1.5625 A |
| | 0.390625 A |
| 10 A-current input | 10 A |
| | 2.5 A |
| | 0.625 A |
| | 0.15625 A |
| | 0.0390625 A |

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

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