



MESSKO® TRASY2

MODULAR TEMPERATURE
MEASURING SYSTEM WITH AN
EXTENSIVE RANGE OF ACCESSORIES.



MESSKO® TRASY2 – INDICATOR THERMOMETER FOR DISTRIBUTION AND POWER TRANSFORMERS.

Continually monitoring oil and winding temperature is one of the most important tasks for ensuring the functionality, reliability and operational readiness of a transformer.

The requirements for a good transformer thermometer are identical around the world: Rugged, durable technology, functional reliability, accuracy, low maintenance and resistance to shocks and vibration. The thermometer in a transformer should ideally last throughout the service life of the transformer and, under the best circumstances, without any readjustment or recalibration.

More than 100 years of measuring and monitoring

MESSKO thermometers stand out in temperature monitoring thanks to the 100 years of experience. The MESSKO® TRASY2 temperature measuring system was specifically developed for use in distribution and power transformers. The product series is used both for monitoring oil as well as winding temperature.

The centerpiece: The Bourdon spring

The MESSKO® TRASY2 indicator thermometer is based on Bourdon technology. The core element of this principle is the Bourdon spring, and as a know-how carrier, the company produces the product from start to finish in Oberursel, Germany. Critical components alongside the spring include the temperature sensor, the capillary tube and, of course, the indicator. They work together to create a precise and reliable temperature indicator.

The indicator thermometer also works independently and without any additional energy and can detect various switching tasks (e.g. cooling control, alarm, trip) with the help of its micro-switches.

Two strong technologies from a single source

In addition to the Bourdon principle, bellow-type technology has emerged as a second generic thermometer technology over the years. MESSKO customers can obtain both of these proven technologies from a single source. While the two MESSKO® COMPACT and TRASY2 series utilize Bourdon technology, the MESSKO® BeTech thermometer operates using the bellow-type technology.



Additional products



MESSKO® COMPACT
Temperature measuring system with a Bourdon spring



MESSKO® BeTech
Temperature measuring system with expansion bellows



MESSKO® MTeC EPT303
Digital temperature management

MESSKO® TRASY2 – BENEFITS AT A GLANCE.

Extremely durable

- ▮ Precise and rugged Bourdon tube measuring system without any additional mechanics
- ▮ Extremely durable and operatively sound, meaning there is no need for readjustment or recalibration over the entire service life
- ▮ Reliable operation, even when subjected to vibrations and extreme outdoor conditions

Modular building block system for oil and winding temperature

- ▮ Two redundant measurement points in conjunction with combi well or ZT-F2.1 winding temperature transmitter
- ▮ Various output signal options: Cu10 (only via combi well), PT100, 4...20 mA
- ▮ In combination with signal converter: 0...1 mA, 0...20 mA, 4...20 mA analog signals; relay output; RS 485 digital signals
- ▮ Compatible with a variety of remote displays in the switch room: D1272AT digital display, PQ96 / PQ144 moving coil instrument, EI 100 / 160 electronic display



Variants and options

- ▮ Offshore version
- ▮ Protective tube made from PVC or V4A stainless steel

Easy installation and commissioning

- ▮ Quick and easy configuration of gradients using DIP switches in the ZT-F2.1 (thermal image of the winding temperature)
- ▮ Automatic compensation for ambient temperature
- ▮ Installation in thermometer pockets in accordance with EN 50216-4 possible

Optimized blending and scaling

- ▮ Use of pictograms for quickly and easily distinguishing between various functions, such as oil and winding temperature
- ▮ The latest generation of digital printing ensures higher scratch resistance, better color stability and lower mechanical wear
- ▮ Viewing glass with laminated safety glass construction and integrated UV filter

Sample configurations



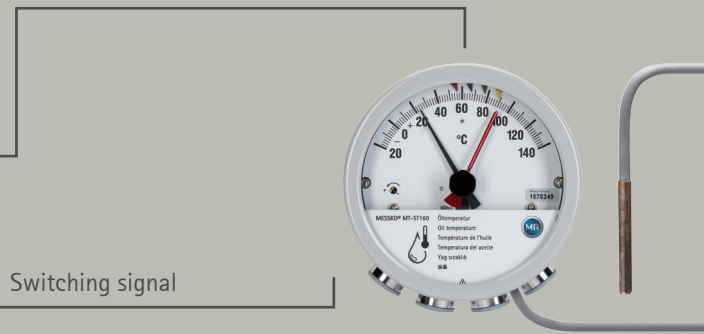
TRASY2 MT-STW160F2
For measuring winding temperatures (thermal image), with direct display



TRASY2 MT-ST160F
For measuring oil temperature, with direct display

MESSKO® TRASY2 – FEATURE MODULAR KIT FOR TEMPERATURE MEASUREMENT.

Direct displays
at the transformer

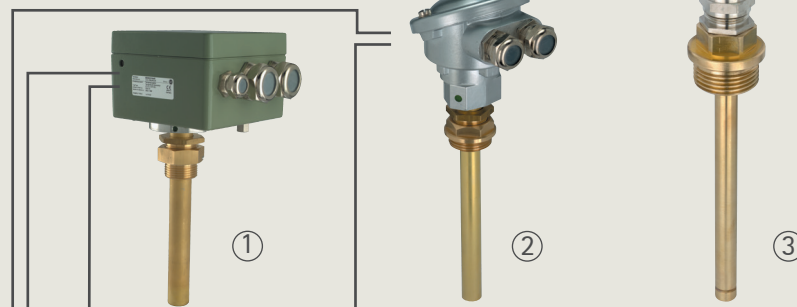


Matching
accessories

Sensors

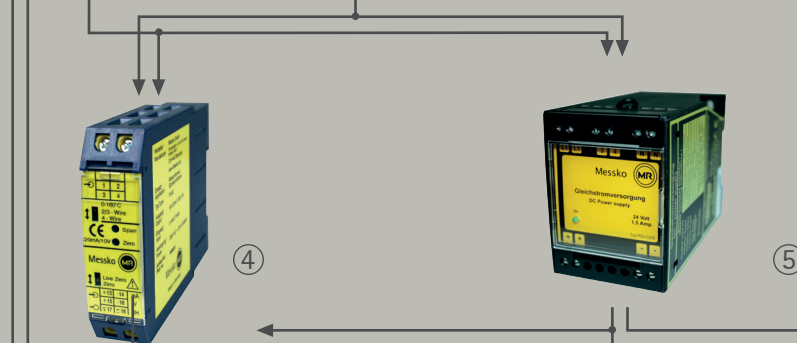


Winding temperature Oil temperature



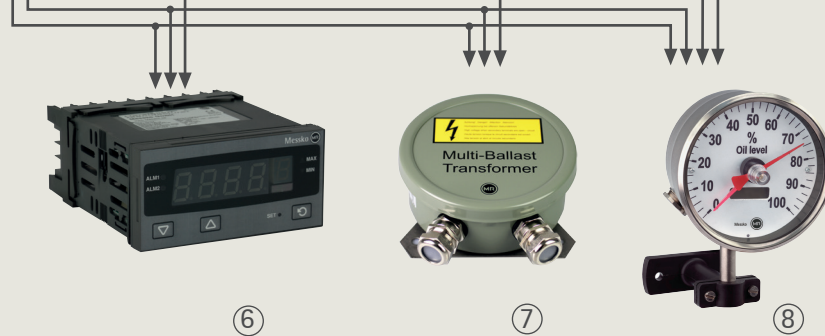
- ① Temperature transmitter ZT-F2.1
- ② Combi well
- ③ Mounting well

Signal converter
at control cabinet



- ④ Measuring transducer
- ⑤ Power supply

Remote displays
at the switch room



- ⑥ Digital indicator 1272/1272 AT
- ⑦ Multi-ballast transformer
- ⑧ Elektronic indicator

Control room



SCADA-System



Additional
information:



ONE TEAM – MESSKO® TRASY2 AND THE ZT-F2.1 TEMPERATURE TRANSMITTER.

| MESSKO® TRASY2 | Technical data |
|--------------------------|--|
| Housing (standard) | Galvanized steel plate |
| Front ring and housing | Powder-coated, bayonet ring with silicone seal |
| Viewing glass | Laminated safety glass with built-in UV filter |
| Temperature sensor | Bare brass |
| Mounting plate | Stainless steel |
| Cable gland | M25 x 1.5 nickel-plated brass |
| | Characteristic data |
| Measuring range | -20 ... 140° C or 0 ... 160°C |
| Accuracy | Class 1 in accordance with DIN EN 13190 |
| Installation | Indoors and outdoors, tropic-proof |
| Ambient temperature | -50 ... 80° C |
| Degree of protection | IP55 after IEC 60529 |
| Aeration | The viewing glass resists fogging up to 80% relative humidity thanks to an aerator |
| Trailing indicator | All thermometers have a resettable red trailing indicator |
| Weight | Approximately 2.5 kg (6 m capillary line) |
| | Micro-switches |
| Number | 1 ... 6 adjustable micro-switches (1 ... 4 changeover contacts) |
| Contact load | For adjustable micro-switches in accordance with IEC 60947-5-1 |
| Switching distance | 6% of the measuring range |
| Contact material | Silver cadmium oxide (AgCd010) |
| Rated insulation voltage | AC: 2,500 V / 1 min |
| Switch hysteresis | Approximately 5 K |
| Connecting terminal | Min. 0.25 mm ² / max. 2.5 mm ² |

| MESSKO ZT-F2.1 | Technical data |
|-----------------------------|--|
| Housing/terminal box | Cast aluminum alloy, painted |
| HxWxD dimensions | 274 mm x approx. 143 mm x 122 mm / 10.78" x approx. 5.64" x 4.80" |
| Temperature sensor sleeve | Bare brass |
| Screw connection | G1B double screw connection, bare brass (optional M27x2, M27x1.5, G3/4B double screw connection) |
| Installation | DIN EN 50216-4 Type A1 thermometer pocket or similar |
| Installation position | Any |
| Degree of protection | IP 56 in accordance with DIN EN 60 529 |
| Flange | Teflon |
| Weight | 1.7 kg |
| Cable gland | 1x M16 x 1,5 WADI; 2 x M25 x 1,5 WADI |
| Connecting terminals | 4 mm ² single wire |
| Aeration | Via pressure compensation element |
| CT rated current | 2 A from converter |
| Overload resistance | Continuously max. 3 A (corresponds to CT rated current x 1.5); 12 A for 30 sec. |
| Gradient configuration | Via DIP switches: 4 - 50K in 1K increments (at min. 18 VA of power at the CT input) |
| Thermometer measuring range | Corresponds to thermometer in use |
| Ambient temperature | -50 to +85 °C |
| Installation | Indoors and outdoors, tropic-proof |
| Heater | Integrated into temperature sensor sleeve |
| Power at the CT input | $P [VA] = I_{CT}^2 \times 4,5$ |
| Rated insulation voltage | 300 VAC, 50 Hz |
| Analog output signal | Up to 2x for PT100 / PT1000 or 2x 4...20 mA, other on request 4...20 mA: Passive; Supply voltage: Min. 10 VDC up to max. 30 V DC; Load: Max. 750 at 24 V DC |