



MESSKO® BETECH®

THERMOMETER WITH  
BELLOW-TYPE TECHNOLOGY.

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Wicklungstemperatur  
Winding temperature  
Température de l'enroulement  
Temperatura del devanado  
Temperatura do enrolamento  
Temperatura avvolgimento  
Sargi Sicaklığı  
Температура обмотки  
绕组温度计  
Lindningstemperatur



# TWO STRONG TECHNOLOGIES – FROM ONE SOURCE.

Continually monitoring temperature is one of the most important tasks for ensuring the functionality, reliability, and operational readiness of a transformer. Two generic thermometer technologies – the Bourdon and the bellow-type principle – have developed over the decades and are widely used today. MESSKO customers can obtain both these proven technologies from one source.

The MESSKO® BETECH® thermometer range relies on the proven bellow-type technology, while the MESSKO® COMPACT and TRASY2 series are based on the well established Bourdon principle.

## The Bourdon principle

The MESSKO® COMPACT and TRASY2 series follow the Bourdon principle. The measuring system used in the oil and winding thermometer with Bourdon spring basically comprises three functional units: the temperature sensor, the capillary tube, and the Bourdon spring with pointer. With Bourdon technology, the robust and thermally-treated Bourdon spring and the direct transfer of the increase in pressure to the pointer ensure an extremely precise temperature display.

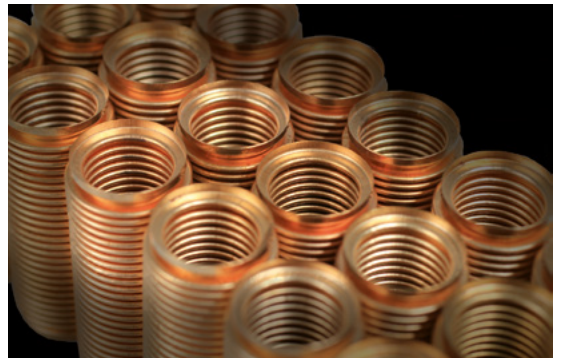
## The bellow-type technology

The measuring system of the MESSKO® BETECH® oil and winding thermometer with bellow-type technology comprises four main components: the temperature sensor, the capillary tube, the first bellows for displaying the measurement and actuating the micro-switch, and the second bellows for compensating the ambient temperature. As with the Bourdon technology, the measuring system is filled with a liquid but is depressurized. With bellow-type technology, the intelligent interaction of the functional units ensures that the micro-switch is switched correctly.

## Global network delivers fast local service

The customer-friendly MESSKO service package includes repairs, upgrades, and recalibration of all MESSKO® BETECH® models and previously installed bellow-type fleet models. This also includes retrofitting with an equivalent device. What's more, MESSKO produces special versions, such as polar or 2-gradient models.

Both the bellow-type and Bourdon technologies are characterized by maintenance-free, robust measuring principles with a low tendency to develop faults, offering impressive reliability and longevity. The innovation, quality and service you would expect of MESSKO still come as standard.

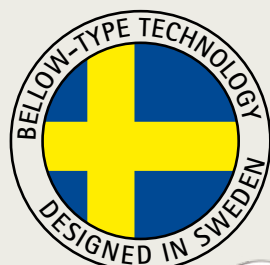


The bellow-type technology



The Bourdon spring

# MESSKO® BETECH® – THE BENEFITS AT A GLANCE.



- | High-quality materials
- | Professional and competent contacts the world over
- | Leak testing of all measuring systems prior to delivery
  
- | Display of oil and winding temperature
- | Adjustable gradients; also with 5 A CT models
- | Independent settings of the contacts
- | Selectable hysteresis
- | IP 55 (optional: IP 65)
- | Magnetic Blow Out (MBO)
- | Integrated kick protection as standard
- | Laminated safety glass as standard
- | Offshore version (optional)

MESSKO® BETECH®	Technical data
	<b>Materials</b>
Housing	Die-cast aluminum, powder-coated, RAL 7033 (RAL 7038 optional)
Viewing glass	Laminated safety glass (standard) (optional: UV-stabilized polycarbonate)
Sensor screw joint	Square flange 4-holes; G3/4"; G1"; 7/8"-14UNF; other thread joints on request
Cable gland	Up to 3 x M20 and 1 x M16
	<b>Characteristic data</b>
Measuring range	0 ... 150 °C or -20 ... 130 °C or 0 ... 160 °C or -40 ... 160 °C; other ranges on request
Display accuracy	± 3 °C (30-150 °C) (optional: ± 2 °C or ± 1.5 °C)
Installation	Indoor and outdoor, tropicalized
Ambient temperature	-40 to +70 °C (optional: polar version down to -60 °C)
Insulation voltage	2.5 kV 50 Hz 1 min
Degree of protection	IP 55 in accordance with EN60529 (optional: IP 65)
Analog output	4-20 mA; 4-20 mA and 5 V DC; 0-5 V DC; Pt100
Weight	Approx. 4 kg
	<b>Micro-switches</b>
Number	2, 3, 4 or 5
Contact load	Standard SPDT 250 V AC / 15 A; (optionally: MBO, DPDT or gold plated SPDT)
Switch hysteresis	12 ± 2 °C; others on request

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THE POWER BEHIND POWER.

