



# MESSKO® COMPACT

## TEMPERATURE MEASUREMENT SYSTEM FOR TRANSFORMERS.

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# MODULAR TEMPERATURE MEASUREMENT SYSTEM WITH DIRECT DISPLAY.

Continually monitoring oil and winding temperatures is one of the most important steps to ensure the functional capability and operational readiness of distribution and power transformers.

The requirements for a good transformer thermometer are the same anywhere in the world: robust, durable technology, functional reliability and accuracy, low-maintenance and able to withstand both shaking and vibrations. Ideally, a transformer thermometer should outlive the service life of the transformer, preferably without readjustments or recalibrations. The MESSKO® COMPACT thermometer is equipped with an integrated 4...20 mA output as well as a CT current input.

## Measuring and controlling for over 100 years

MESSKO® thermometers are shaped by over 100 years of experience in temperature monitoring. Based on this experience, the MESSKO® COMPACT temperature measurement system was specially developed for use in distribution and power transformers. The product range is used for monitoring both oil and winding temperatures.

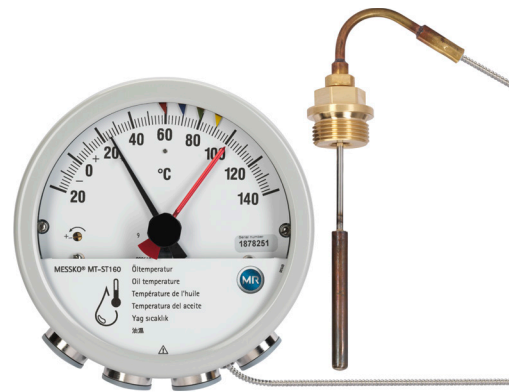
## The centerpiece: the Bourdon spring

The MESSKO® COMPACT indicator thermometer is based on Bourdon technology. The centerpiece of this principle is the Bourdon spring, which is fully manufactured by the know-how holding company in Oberursel, Germany. In addition to this spring, the temperature sensor, the capillary tube and, of course, the indicator are key components that contribute to the proven, highly precise temperature display.

Furthermore, the indicator thermometer – which works autonomously and has its own energy supply – can perform various switching tasks (e.g. cooling system control, alarm, trip) thanks to its integrated micro-switches.

## Two strong technologies – from a single source

Aside from the Bourdon principle, expansion bellows technology has developed over decades to become the second generic thermometer technology. MESSKO customers benefit from being able to obtain both proven technologies from a single source. While the MESSKO® COMPACT and TRASY2 series both feature Bourdon technology, the MESSKO® BeTech thermometer works on the basis of the expansion bellows principle.



## Additional products



**MESSKO® TRASY2**  
Temperature measurement system with Bourdon tube



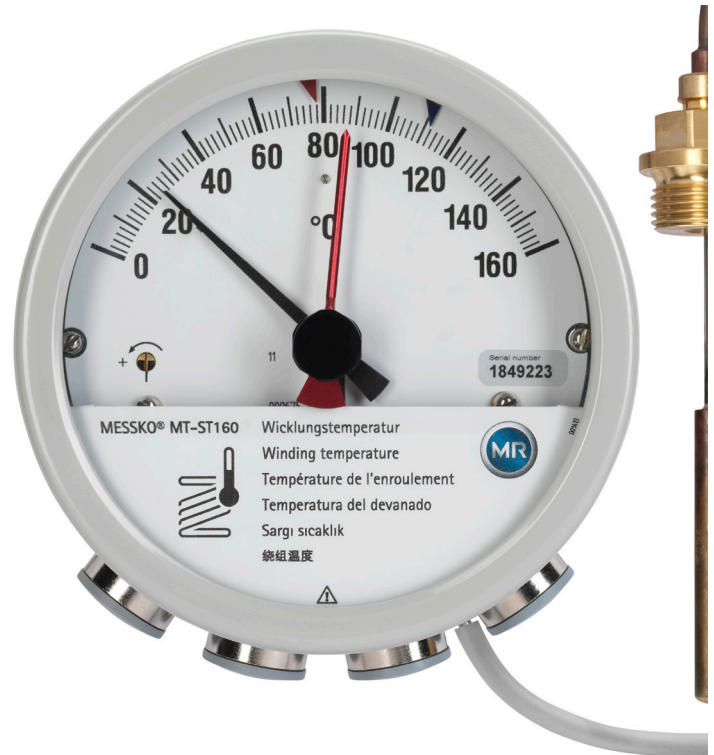
**MESSKO® BeTech**  
Temperature measurement system with expansion bellows



**MESSKO® MTeC EPT303**  
Digital temperature management

# MESSKO® COMPACT – BENEFITS AT A GLANCE.

- Integrated CT current input and a 4 ... 20 mA output
- Bourdon tube spring measurement system with no additional mechanisms
- Extremely durable and functionally reliable, therefore no readjustments or recalibrations necessary at any point during the service life
- Closed system with pressure cell, therefore protected against external influences such as dust and humidity
- Reliable function even in the event of vibrations and extreme external conditions
- Temperature sensor suitable for all standard transformer thermometer pockets and wells
- Quick and easy configuration of the gradients via potentiometer (thermal mapping of the winding temperature)
- Viewing glass made of composite safety glass with integrated UV filter



## Example configurations



**Signal converter TT30**  
For converting a wide range of sensor signals into process signals



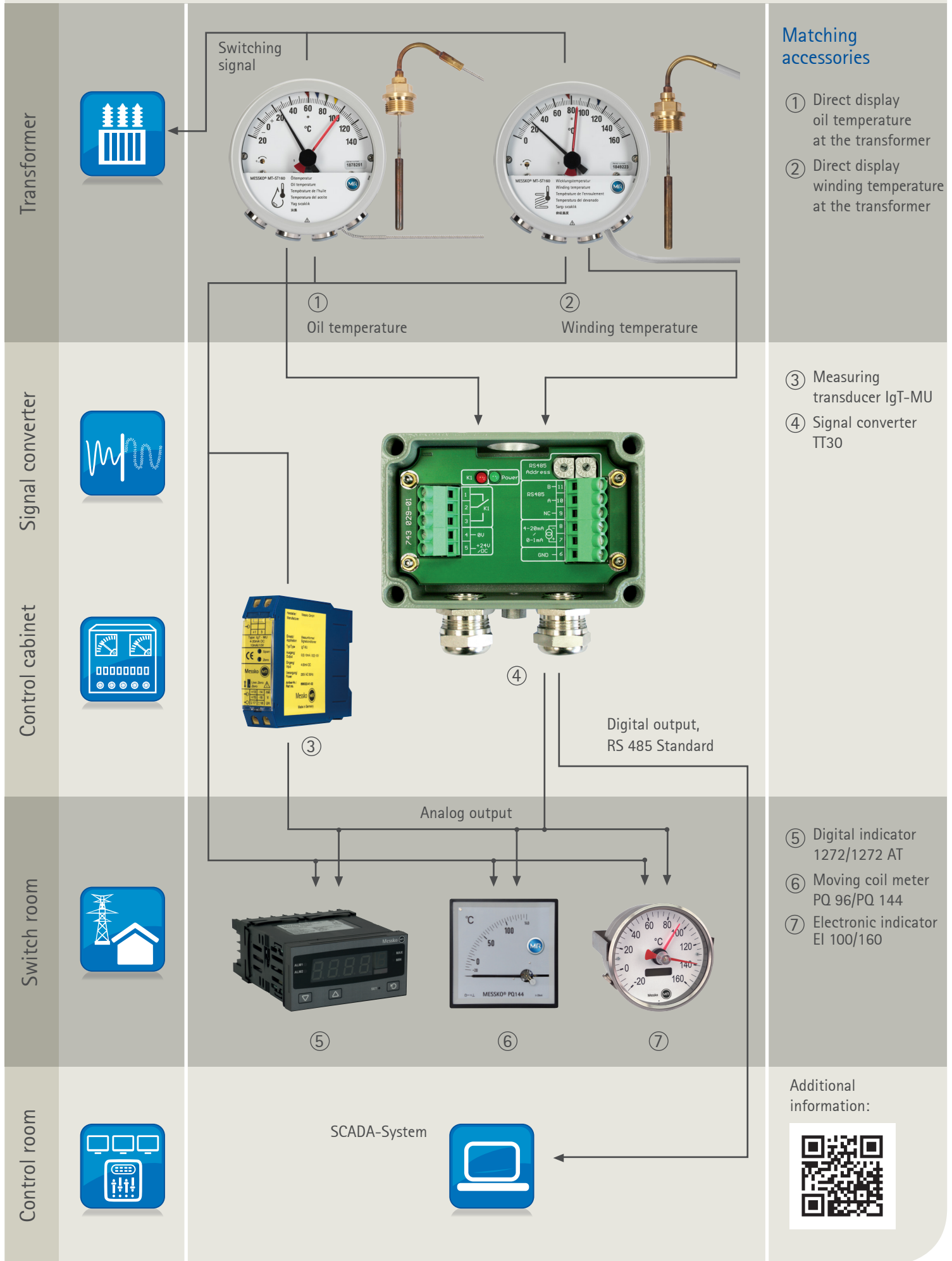
**Electronic display EI 100 with clamping bracket**  
Analog indicator instrument with digital LCD display



**Multi-ballast transformer**  
Conversion of the CT current



# MESSKO® COMPACT – THE FUNCTION MODULE FOR TEMPERATURE MEASUREMENT.



## Matching accessories

- ① Direct display oil temperature at the transformer
- ② Direct display winding temperature at the transformer

- ③ Measuring transducer IgT-MU
- ④ Signal converter TT30

- ⑤ Digital indicator 1272/1272 AT
- ⑥ Moving coil meter PQ 96/PQ 144
- ⑦ Electronic indicator EI 100/160

Additional information:



# MESSKO<sup>®</sup> COMPACT – THE INDICATOR THERMOMETER WITH ITS OWN ENERGY SUPPLY.

MESSKO <sup>®</sup> COMPACT	Technical data
Housing (standard)	Galvanized sheet steel
Front ring and housing	Powder-coated, bayonet ring with silicone seal
Viewing glass	Composite safety glass with UV filter
Temperature sensor	Brass, bright, angled
Mounting plate	Stainless steel
Capillary tube	Copper capillary with PVC protective sleeve or stainless steel protective sleeve
Cable gland	4 x M25 x 1.5 nickel-plated brass
Sensor gland	Double gland G1" B, brass, bright
	<b>Key figures</b>
Measurement range	-20 ... 140° C or 0 ... 160° C
Accuracy	±3° C in accordance with DIN EN 13190 Class 1 and DIN 16196
Installation	Indoors and outdoors, tropicalized
Ambient temperature	-50 ... 80° C electronics, (compensated)
Degree of protection	IP55
Aeration	The viewing glass resists fogging up to 80% relative humidity thanks to an aerator
Drag hands	All thermometers are equipped with resettable drag hands, red
Weight	Approximately 2.5 kg (6 m capillary tube)
	<b>Micro-switches</b>
Number	Two to six freely configurable micro-switches (of which up to four as changeovers)
Breaking capacity	AC breaking capacity in accordance with DIN EN 60947-5-1: AC-12: 230 V / 5 A, AC-15: 230 V / 260 mA, 120 V / 500 mA, 24 V / 2 A  DC breaking capacity in accordance with DIN EN 60947-5-1: DC-12: 220 V / 200 mA, 110 V / 400 mA, DC-13: 220 V / 110 mA, 120 V / 210 mA, 24 V / 1.04 A
Switching distance	6% of the measuring range
Contact material	Silver alloy (AgNi10)
Rated insulation voltage	AC: 2,500 V / 1 min (terminals to ground)
Switching hysteresis	Approximately 5 K
Connection terminals	0.25...2.5 mm <sup>2</sup>

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THE POWER BEHIND POWER.

