



# MESSKO® MTO

## Oil level indicator for transformers

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# Indicator for precise oil level measurement

MESSKO® oil level indicators of the MTO series are measuring devices with or without main switching contacts. They are especially well suited for measuring the fill level in transformer oil conservators.

The oil level indicators of the MESSKO® MTO series measure the level in the oil conservator of transformers using two different types of float movement – radial or axial – in relation to the oil conservator. In the standard version, the float movement is radial; the version with axial float movement is suitable for vessels in which only a small float movement is possible. The float movement can be reproduced in various ratios.

The oil level indicators can be supplied with up to three microswitches (either fixed or adjustable) and optionally with up to 4 additional relays. The device offers further options such as analog and/or digital remote transmission of the oil level to control cabinets, monitoring systems (e.g. ETOS®), or control rooms.

MESSKO® MTO oil level indicators consist of a housing with display scale and a float. The inspection glass is made of laminated safety glass with UV filter. The bayonet lock and the seal ensure safe closing and protection of the moving parts inside the housing.

## Optional

- Mounting with inclination angle (15°; 30°; 45°)
- Remote display possible via optional analog and/or digital output
- Option for connecting remote display EI 100/160 via analog output
- Offshore design
- Individual display scales

## Your advantages at a glance

- Extremely durable and functionally reliable
- High accuracy due to state-of-the-art measuring technology
- No readjustment or recalibration needed over the entire service life
- Radial or axial design with different floats for adaptation to various tank geometries
- Inspection glass made of laminated safety glass with integrated UV filter
- Scratch-resistant and colorfast dials
- Switchless or with limit switches freely adjustable over the scale range
- Versions compliant with IEC or ANSI
- Modbus RTU interface with individual scale setting
- CX painting specification in accordance with ISO 12944 9
- Complies with EMC standard IEC 61000 6 5 (Level 4)

## Additional products



### MTO STF/TTMR

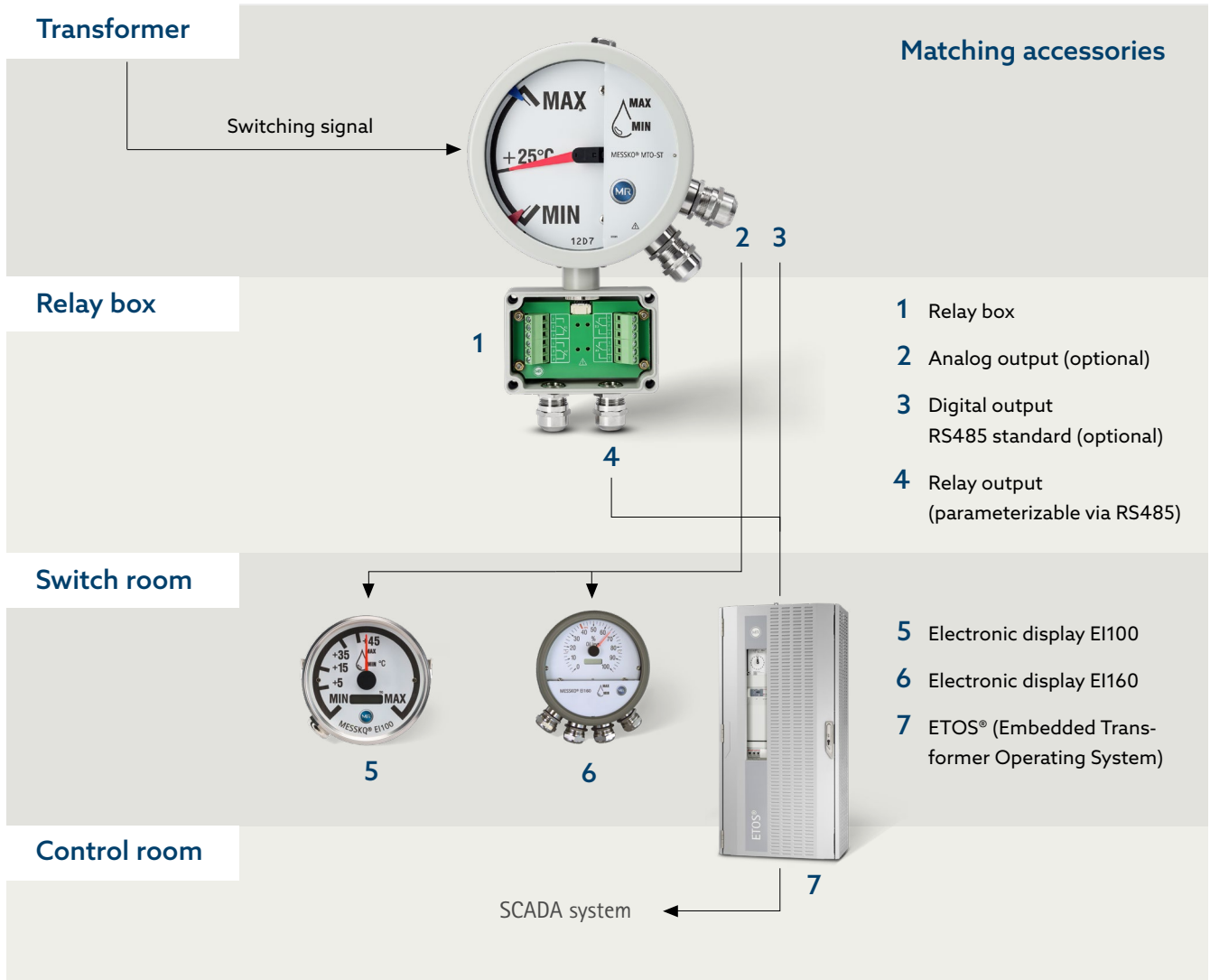
with integrated signal converter for remote transmission of measured values



### MTO-STF RM

with IEC-compliant or ANSI-compliant design

## Modular kit feature for oil level indicators



### Optional: Oil level indicator with remote display



For situations where space is limited (e.g. installation in a building), for very large transformers, for displaying the oil level in a remotely located control room, or for connection to a monitoring system, all variants of the oil level indicators with fixed limit switches can be optionally equipped with an analog or digital output signal.

- Analog output - 4...20 mA
- Digital output RS485 Modbus RTU (optional)
- Four additional relays adjustable via Modbus (specify switching point when ordering)

For visualization of the 4 ... 20 mA signal, the electronic displays, such as the EI100/160, can be used.

# MESSKO® MTO technical data

Technical data MESSKO® MTO	MESSKO® MTO
Housing	Sheet steel, galvanized, painted RAL 7033, other color tones on request, coated in acrylic resin, Standard C4H, optional C5H or CX
Flange	Aluminium AISi1 MgMn
Viewing glass	Laminated safety glass with UV filter
Cable gland	Brass, nickel-plated (standard), A4 stainless steel (offshore)
Indicator scale	White coated aluminum sheet with scratch-resistant and color-stable digital printing
Outputs	4 ... 20 mA, RS485 Modbus RTU*
Labeling	Black, indicator in red daylight luminous paint
Float rod	Aluminum; optionally in brass for L ≤ 350 mm
Float	Rohacell 110, oil-resistant, temperature-resistant to 160 °C
Dial lettering	„MIN“, „+20 °C“, „MAX“ (other lettering possible)
Operating temperature	-40...+80 °C / -50 °C on request
Degree of protection	IP55 in accordance with IEC 60529
Ventilation	Ventilation element in the gauge part to avoid condensation
Installation	Indoors and outdoors, tropicalized
Operating altitude	Up to 2000 m above sea level
Breaking capacity standard switch in accordance with IEC 60076-22-1 Freely adjustable	230 V AC-Making capacity: 250 VA, cos φ > 0.5; breaking capacity: 60 VA, cos φ > 0.5 24...220 V DC-Making capacity: 130 W, L/R < 40 ms; Breaking capacity: 25 W, L/R < 40 ms
Fixed setting	250 V AC-Making capacity: 250 VA, cos φ > 0.5; breaking capacity: 60 VA, cos φ > 0.5
Breaking capacity switch with gold-plated contacts**	230 V AC-Breaking capacity: max. 6.9 VA, cos φ = 0.9 24...220 V DC-Breaking capacity: max. 6.6 W, L/R < 25 ms
Technical data	MESSKO® MTO TTMR relay box Technical data
Housing	AlSi die casting
Dimensions	120 (L) x 80 (W) x 60 (H) mm
Color	Standard RAL 7033 color tone, other color tones on request, coated in acrylic resin
Cable gland	2 x M20 x 1.5, nickel-plated brass, offshore variant: A4 stainless steel
Housing degree of protection	IP55 (DIN EN 60529)
Relay type	4 changeover switches
Maximum voltage	250 V AC, 220 V DC
Maximum currents	5 A at 250 V AC, 0.3 A at 220 V DC

\*) optional \*\*\*) Switching of higher loads destroys the gold layer

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Please note:

The data in our publications may differ from the data of the devices delivered.

We reserve the right to make changes without notice.

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