

MESSKO®

KIHLSTRÖM®/AKM Technology

Oil and Winding

Temperature Indicators



MESSKO NORDIC AB
sales@se.nordic.com
Office: +46 8 177 870
Fax : +46 8 179 600
www.messko-nordic.com

OTI and WTI designed for power transformers to meet all environmental requirements.

OTI's and WTI's designed and manufactured to operate for decades, to match a transformer's life. 5 year guarantee.

Using liquid filled bellows technique, for maximum operating force. Non pressurized measuring system minimizes risk of leakage.

Up to five independent microswitches for control of cooling equipment, alarm and trip function - SPDT type as standard, DPDT available. Customised configurations possible.

Optional Analogue outputs for remote readings.

Compliance with IEC standards.

Winding Temperature functionality (thermal image) inside the enclosure, meaning no heating element in pocket.

Large visible dial having black text and pointer on white background.

All components are made of non corroding materials to withstand long time outdoor use in tropical as well as arctic climates

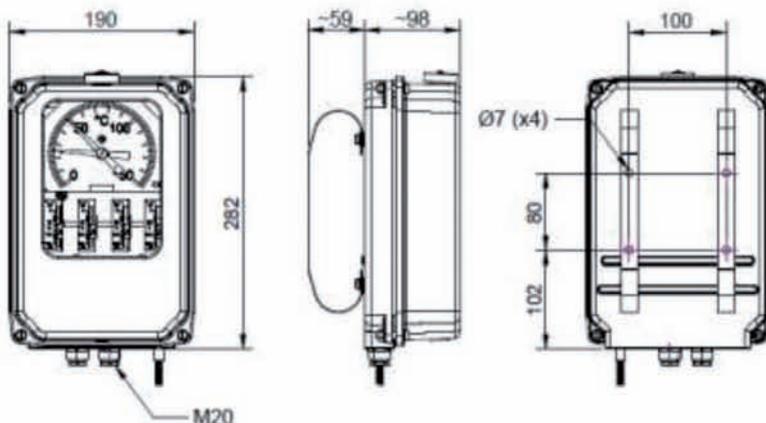
| | |
|------------------------|------------------|
| Indication accuracy | ± 3°C (30-150°C) |
| Switching accuracy | ± 4°C (30-150°C) |
| Switching differential | 12 ± 2 °C |
| Ambient temperature | -40 to +70 °C |
| Protection class | IP 55 |

Technical data

| Rated voltage | Rated current, resistive load | | Rated current, inductive load | |
|---------------|-------------------------------|------------|-------------------------------|------------|
| | Standard switch | MBO switch | Standard switch | MBO switch |
| DC 30 V | 10 A | 10 A | 10 A | 10 A |
| DC 110 V | 0,6 A | 10 A | 0,1A | 6 A |
| DC 220 V | 0,3 A | 3 A | 0,05 A | 1,5 A |
| AC 30 V | 15 A | 10 A | 15 A | 10 A |
| AC 110 V | 15 A | 10 A | 15 A | 6 A |
| AC 220 V | 15 A | 3 A | 15 A | 1,5 A |

Note for Inductive load; power factor is 0,4 for AC and time constant L/R = 7 ms max for DC
Service life: Standard switches: min 500 000 operations / MBO switches: min 100 000 operations

Dimensions



| | |
|-----------------|--------------------------------|
| Insulation test | 2 500 V 50 Hz during 60 s |
| Weight | 4 kg |
| Coating | Polyester powder coat, RAL7047 |
| Window | UV- stabilized poly carbonate |
| Casing | Die casted aluminium |



Product key - specification

| Pos 1 Type of instrument | Pos 2 Number of microswitches | Pos 3 Temperature measuring range | Pos 4 Bulb type (bulb Ø 14 mm unless otherwise stated) | | Pos 5 Capillary length | Pos 6 Options / specials required |
|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| WTI | 4 | 1 | 5 | - | 6 | X |
| Choices: OTI = Oil Temperature Indicator WTI = Winding Temperature Indicator | Choices: 2 3 4 5 | Choices: 1 = 0 to 150 °C 2 = -20 to +130 °C 3 = 0 to 160 °C 4 = -40 to +160 °C | Choices: 1 = Square flange 4 holes 2 = G3/4" B (=BSP3/4") 2F = G3/4" B Female thread 5 = G1" B (=BSP1") 6 = 7/8" - 14UNF, bulb Ø 12,2 mm 8 = G3/4" B (=BSP3/4") 9 = G1" B, bulb Ø 12 mm 22 = M22 x 1,5 mm 27 = M27 x 2 mm | | Choices: 4 m 6 m 8 m 10 m 12 m Optional: 2 to 20 m | Choices: Blank = no options required X = options required - to be specified |
| X = | Microswitches MBO Matching resistance MRB110-1 | | | | | |
| Pos 6 Choices of options/ specials: | <p><input checked="" type="checkbox"/> Microswitches MBO (otherwise Standard type)</p> <p>Matching resistance:</p> <p><input checked="" type="checkbox"/> MRB110-1, max 2,2 A cont, please refer to TS 20</p> <p><input type="checkbox"/> MRB110-2, max 2,65 A cont, please refer to TS 20</p> <p>Analogue output:</p> <p><input type="checkbox"/> TS 11, 4-20mA</p> <p><input type="checkbox"/> TS 12, 4-20mA and 0-5VDC</p> <p><input type="checkbox"/> TS 13, 0-5VDC</p> <p><input type="checkbox"/> TS 14, Pt100 ohm</p> <p>Protection class (standard = IP55)</p> <p><input type="checkbox"/> IP65</p> <p><input type="checkbox"/> Other...</p> <p>Mountings</p> <p><input type="checkbox"/> MTG302 (ASEA style) (otherwise Standard style)</p> | | | | | |

Example above: WTI415-6 X
Winding Temperature Indicator (Pos 1) having 4 MBO switches (Pos 2 + 6) measuring range 0-150 °C (Pos 3) bulb thread G1" (bulb Ø 14 mm) (Pos 4) 6 m capillary (Pos 5) Matching resistance MRB110-1 (Pos 6)

Accessories

Matching unit :

- MUT100-5, for 5A CT
- MUT100-1, for 1A CT

Remote indicator:

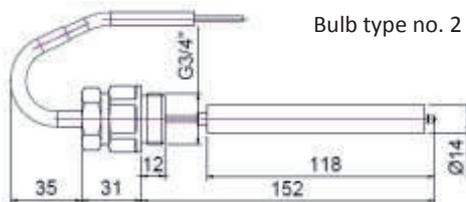
- RIA130-1, analogue 0 to 150 °C
- RIA130-2, analogue -20 to +130 °C
- RIA130-3, analogue 0 to 160 °C
- RID140-1, digital 0 to 150 °C

Power supply Unit for analogue output card

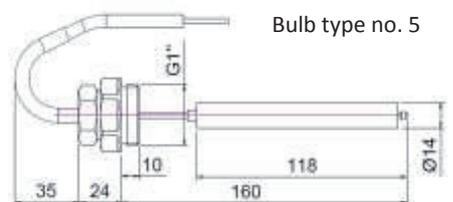
- PSU120-1, Multi-voltage input, 24 VDC output

Signal transducer:

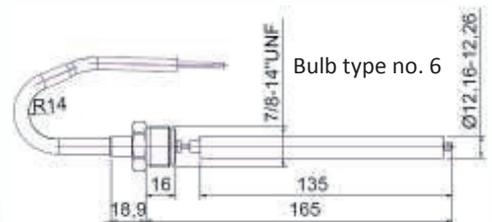
- STR200-2, 2 channel Pt 100 to 4-20 mA
- STR200-4, 4 channel Pt 100 to 4-20 mA



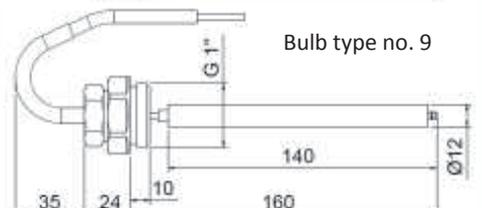
Bulb type no. 2



Bulb type no. 5



Bulb type no. 6



Bulb type no. 9

MESSKO NORDIC AB sales@se.messko.com
 Fabriksvägen 7 Office: +46 8 177 870
 SE-186 32 Vallentuna Fax : +46 8 179 600
 Sweden www.messko-nordic.com