

Transformer Protection Relay MCHD

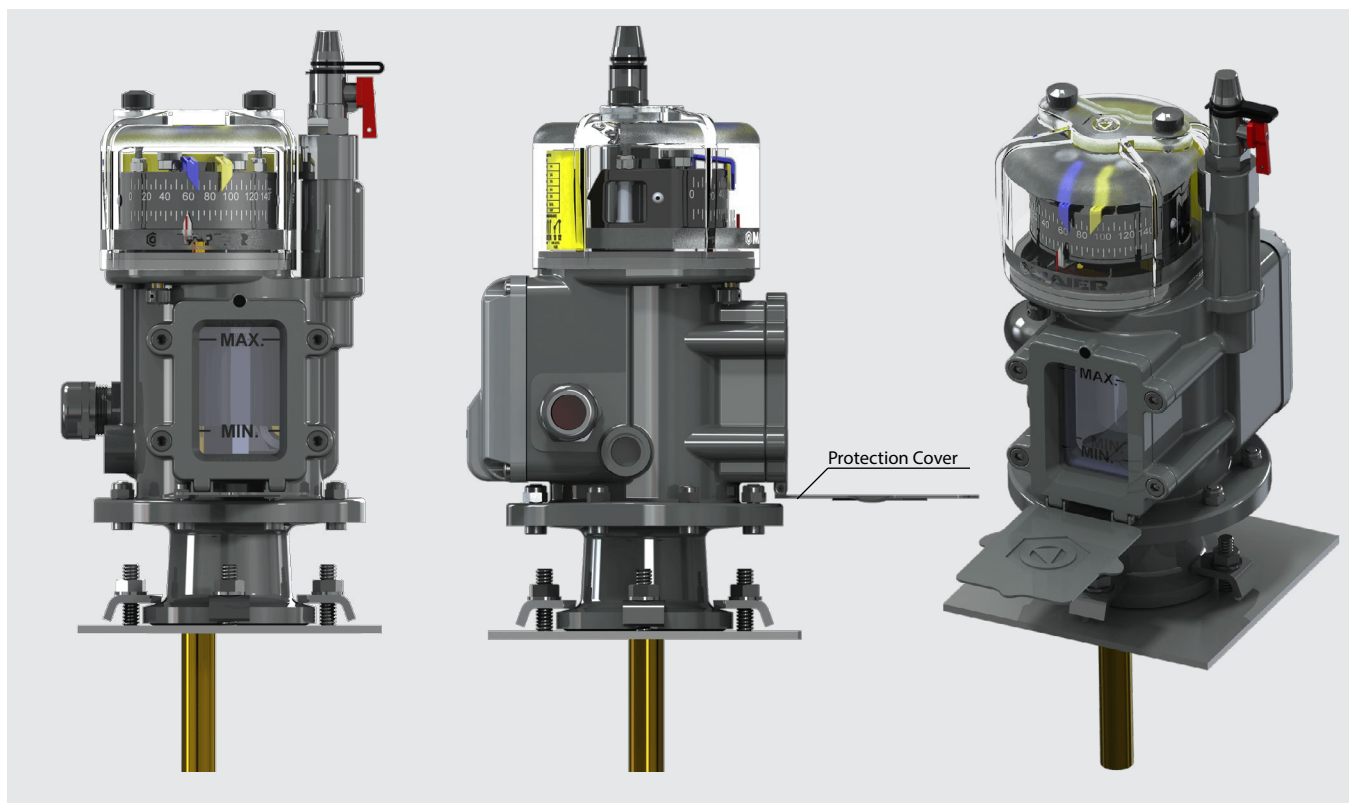
*Protects Hermetically Sealed, Oil Filled Distribution Transformers and Reactors
in Accordance with EN 50216-3*

- Reed switch for gas formation and oil level detection
- Adjustable pressure switch
- Bimetal thermometer for temperature detection
- Two adjustable temperature limit switches
- 1/8" ball valve for oil sampling and air venting
- UV-resistant C5-M coating (SOLIDLINE)
- Separated oil and switching systems



Transformer Protection Relay MCHD

Overview



Features

Oil Temperature

- Measures internal oil temperature of the transformer
- Bimetal thermometer for temperature detection
- Oil temperature scale 0°C - 140°C
- Two adjustable (min./max.) limit switches (20°C - 120°C)
- Resettable max. temperature indicator

Oil Level

- The system indicates any oil level variation and displays it between min. and max. level
- Reed switch for oil level detection

Gas Formation

- The device indicates any gas accumulation
- Reed switch for detection of gas formation
- The alarm contact operates at a maximum volume of 170 cm³ gas collection

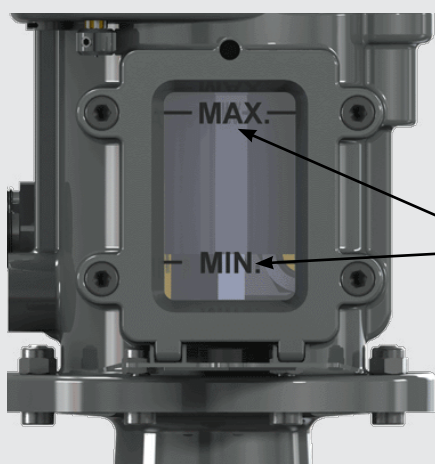
Pressure

- Operates at a set limit of internal pressure
- Adjustable setting from 10 - 50 kPa

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Functions in Detail

Oil Level Indicator



Adjustable contact for min. temperature

Max. and min. oil and gas gathering level indicator

Bimetal Thermometer



Current oil temperature

Resettable max. indicator

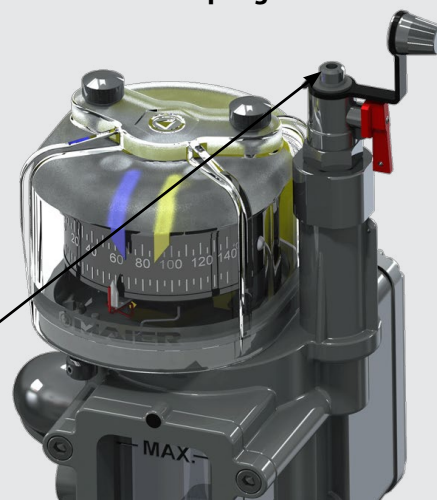
Adjustable contact for max. temperature

Adjustable Pressure Switch



Setting pressure between 10 - 50 kPa in steps of 5 kPa

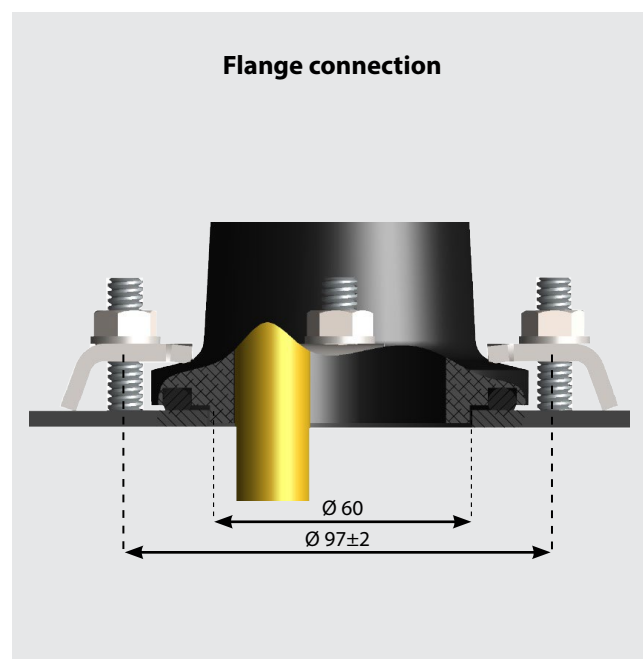
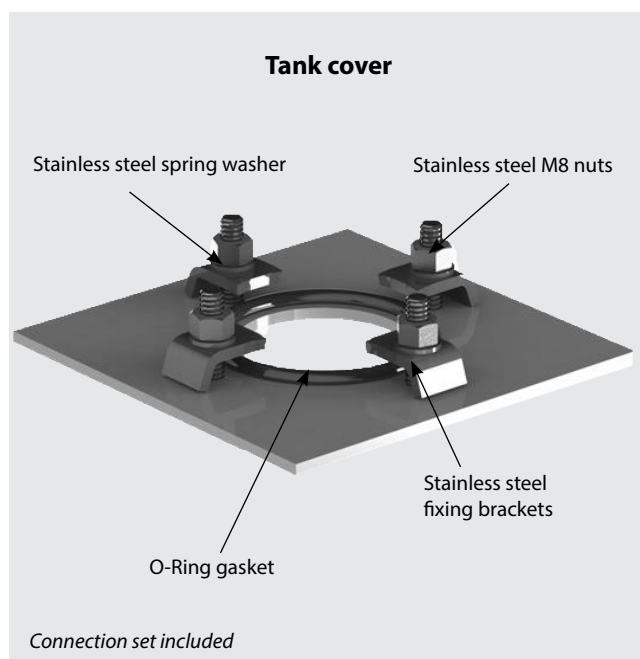
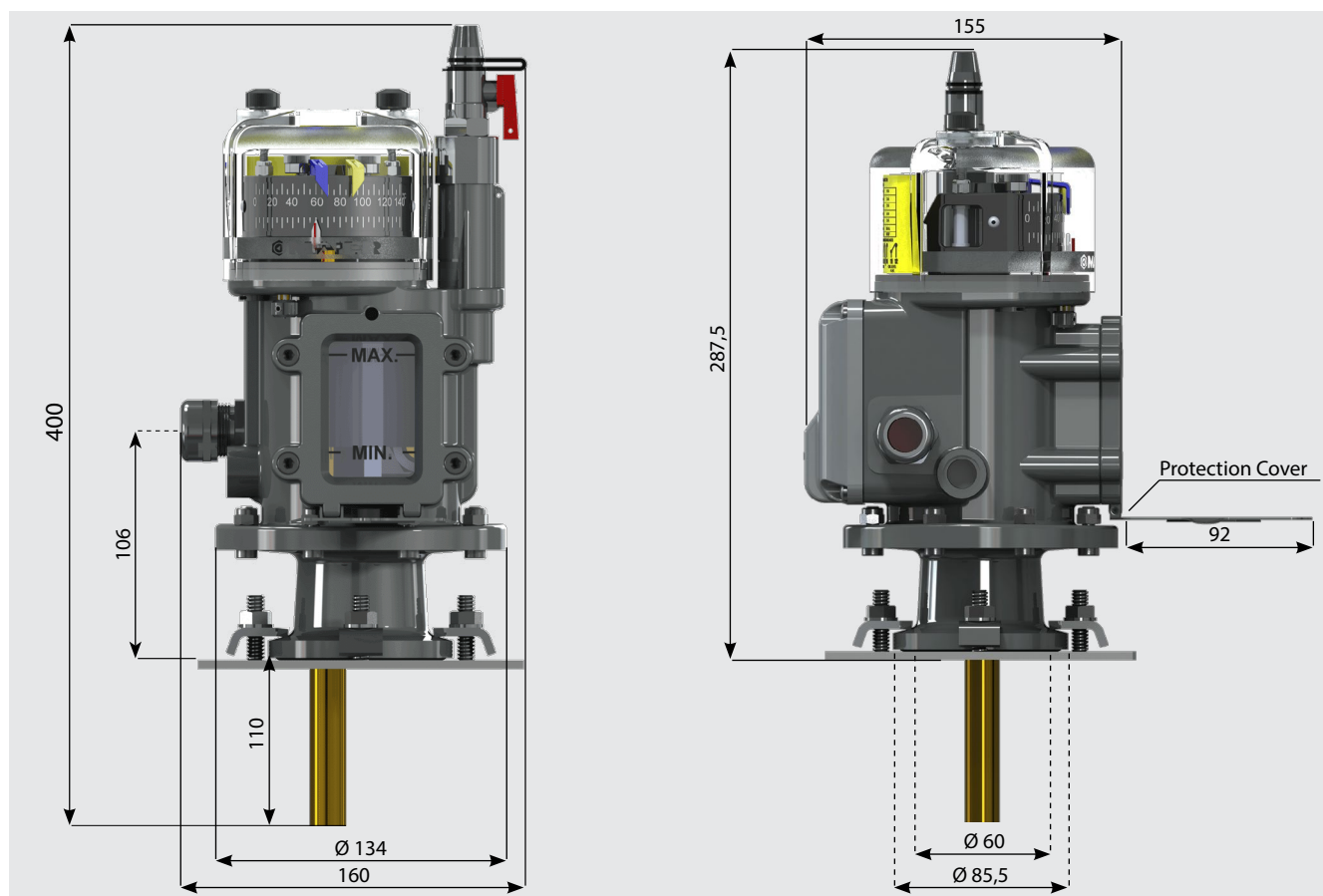
Oil Sampling Valve



1/8" ball valve for oil sampling or air venting

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Dimensions



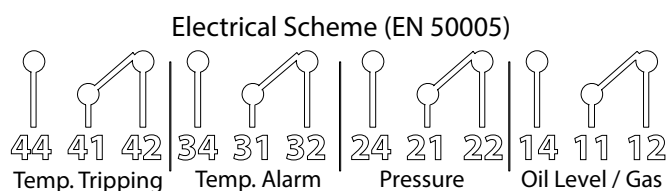
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Technical Specifications

Functionality	Oil Temperature Indicator	Temperature scale range	0°C - 140°C
		Adjustable range of min./max. changeover contacts	20°C - 120°C (± 2°C)
		Resettable max. temperature indicator	
		Attention: Fix knurled nuts for locking the limit switches hand-tight for correct function!	
	Oil Level Indicator / Gas Formation	Visible Rohacell float in min./max. level Reed changeover contact Operates < 170 cm ³	
General Features	Pressure Detection	Max. 50 kPa	
		Adjustable 10 - 50 kPa (5 kPa steps)	
		Viton membran	
	Degree of Protection	IP 55 (EN 60529)	
	Shock Resistance	IK 07 (EN 50102)	
	Cable Gland	M 25 x 1.5 (10 - 17 mm)	
	Wire Section	1.5 - 2.5 mm ²	
	Minimum Load	3 W; 125 mA / 24 V DC	
	Contact Rating max.	100 W / VA	
	Operation Time	< 0.5 s	
	View Dome	UV resistant Lexan	
	Operating Temperature	-30 °C - +120 °C	
	Corrosion Resistance	C5-M (EN12944)	
	UV Resistance	audited in accordance with DIN EN 75220, Z-Out / 25 days	
	Media Resistance	Mineral Oil / synthetic and organic esters	



Switching Capacity		
Temperature	Current max. 24 V DC	4 A
	Current max. 240 V AC	3 A
Pressure	Current max. 24 V DC	2 A
	Current max. 240 V AC	6 A
Oli Level / Gas Formation	Current max. 24 V DC	3 A
	Current max. 240 V AC	0,4 A



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Routine Tests

Tests	Conditions
Oil Leakage Test	100 kPa with oil (90 °C) for a period of 12 h
Operation Test	All functions are checked in an operation simulation
Type Tests	Determination of the volume of gas or liquid sufficient to operate the contact at ambient temperature
	Operation of the relay with a propensity of 5° from the verticality to all sides
	Pressure test with 250 kPa for 2 min under oil of 115 °C
	Magnetic field solidity test of the contacts < 25 mT

Routine testing is carried out in accordance with EN 60076-1

In addition to the tests specified in EN 50216-1, above mentioned type tests are accomplished before delivery

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Switch Operation Test

Please Note: Before the switching test, ensure that the transformer is switched off and the wiring is mounted properly

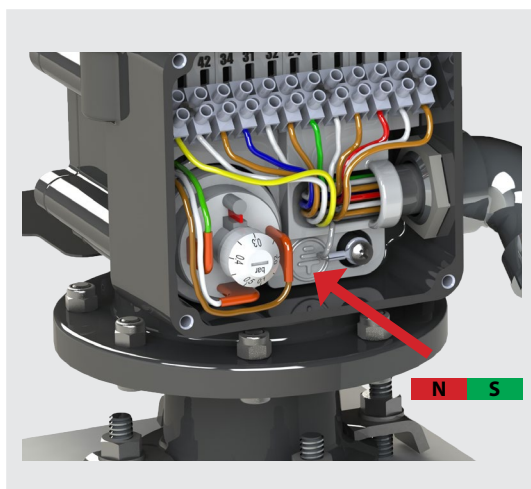


Testing the Temperature Switches

Approach:

- Remove the cover of the thermometer
- Slightly loosen knurled nuts of the limit switches
- Move the min. and max. limit switch by hand in the direction of the oil temperature indicator over its position
- The respective changeover contact is mechanically audible switched

Please note: Do not move the oil temperature indicator into the direction of the limit switches

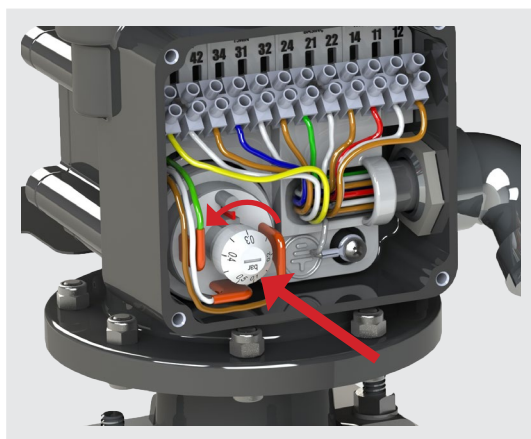


Testing the Reed Switch for Oil Level and Gas Formation

Approach:

- Remove the cover of the terminal box
- Move a rod magnet* towards the earthing symbol
- The reed changeover switch is magnetically switched
- If the rod magnet* removes from the device the changeover contact switches back to its standard position
- Alternatively, apply pressure to the device through the opened 1/8" ball valve until the oil level drops

Please note: Remove a sealing of the ball valve only after consultation and approval of the transformer manufacturer!



Testing the Pressure Switch

Approach:

- Remove the cover of the terminal box
- Set the value to 10 kPa (minimum pressure value)
- Connect an air pump to the opened 1/8" ball valve and apply pressure >10 kPa to the device until the pressure switch switches

Please note: Remove a sealing of the ball valve only after consultation and approval of the transformer manufacturer!

*not included in delivery!



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