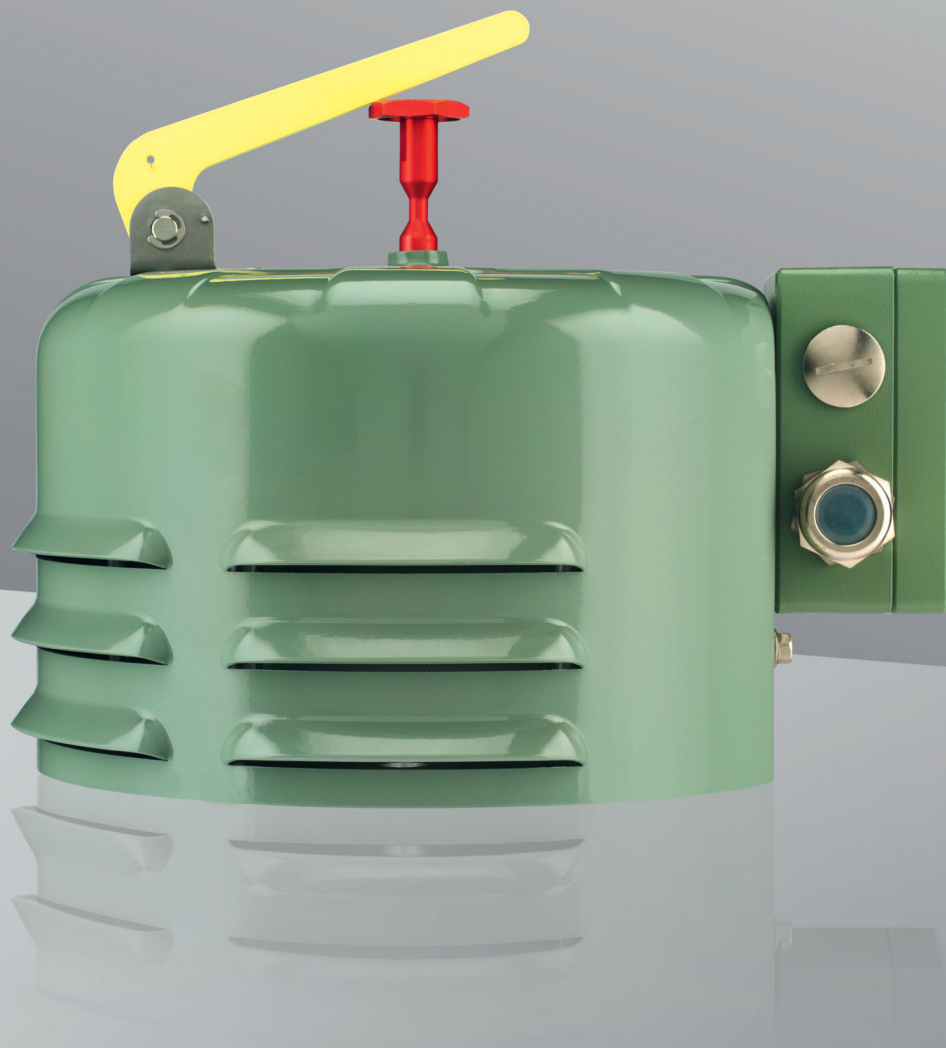




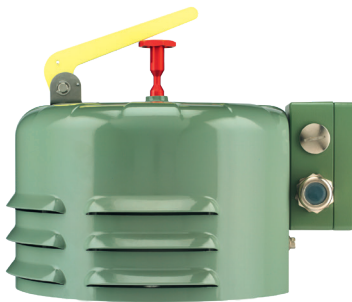
MESSKO® MPREC  
PRESSURE RELIEF DEVICE  
SAFETY GUARANTEED.

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# MESSKO® MPREC – SAFETY YOU CAN RELY ON.

The challenge that all transformer operators face is to protect their equipment from unexpected threats and, in turn, to prevent dangerous explosions and fires. Installation of protective devices to provide early warnings and, if required, emergency shutdown if problems arise in the transformer not only protect the equipment but can also extend its operating life.



MESSKO® MPREC pressure relief device



MESSKO® MPREC "directed oil flow"

A common reason for failures and problems in the transformer area are short-circuits, which can cause the build-up of excess overpressure in the tank and in the tap changer of the transformer.

## For your safety

Pressure relief devices such as the MESSKO® MPREC safely and reliably protect medium and large distribution transformers, electric coils, power transformers and tap changers when the pressure increases suddenly in the oil system. Depending on the size and type of the transformer, up to eight MPREC pressure relief devices can be installed in different areas in special cases. The customer specifies the triggering pressure at which the device will activate (between 4 and 30 psi / 0.28 and 2.07 bar).

## Quality you can feel

Your fingers can tell you what differentiates MESSKO pressure relief devices from the rest. No perceptible sharp edges, perfect fits, high-quality materials.

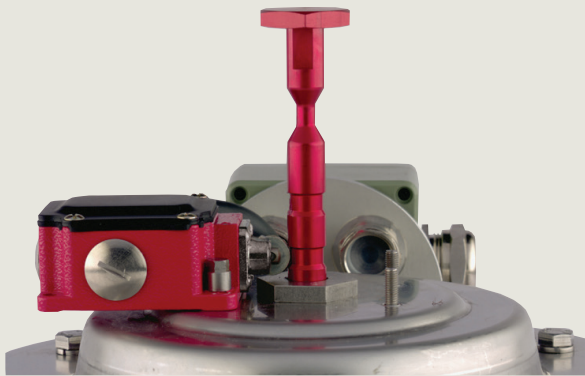
## Selected material

Each and every part is tested for months and optimized in our MESSKO and MR testing laboratories. Perfectly adjusted springs, optimized gaskets, tried-and-tested components and functional design demonstrate our know-how. For special applications in the offshore area and for use in wind turbines, our devices were subjected to extreme load tests in external test labs and successfully certified.

## Environmentally friendly thanks to a directed oil flow

If the maximum permissible triggering pressure in the tap changer or transformer is exceeded, the MPREC lifts the cover with the gasket opening within milliseconds, relieves pressure from the tank and signals an error in order to protect the equipment and ensure that operation is secure and uninterrupted. The pressure relief device can be optionally equipped with a special, oil-directed cover to carefully direct the hot oil to a containment device in the event of a fault. The piping can be easily fitted to the cover using a flange. The "directed oil flow" version of the MESSKO® MPREC helps to ensure employee safety, protects the environment and prevents the need for cost-intensive cleaning of the transformer.

# FUNCTIONALITY YOU CAN COUNT ON.



Indicator pin, main switching contact

- ▮ The internal signaling contacts and the valve disk are protected from direct environmental influences (UV exposure, hail and torrents of hot oil) by the standardized integrated cover
- ▮ The outlet openings ensure immediate, downward oil drainage – a cover with directed oil flow can be ordered as an option
- ▮ Indicator pin made of weather-resistant anodized aluminum
- ▮ Clear triggering and locking with fall-back protection by means of two notches which prevent the pin from falling back if it has not fully sprung out – e.g. in the case of weak oil flows
- ▮ Contacts can also be easily installed after assembly on the equipment

# PRODUCTION WITH AN EYE FOR DETAIL.

A product is only as good as its components. This is why we pay special attention to detail in the production of individual parts. We only use high-quality materials and exceptional production processes and continuously develop our pressure relief device further. This improves protection of transformers and/or tap changers and, therefore, you.

## We take testing very seriously – 100% tests at the factory

- ▮ Stringent quality testing is an integral part of the assembly process
- ▮ The valves are checked for leaks using helium
- ▮ The "sealing" and "relief" functions of the pressure relief device are tested at the factory on Messko's fully automated test bench
- ▮ Final inspection and documentation in accordance with customer-specific values

## Even more safety with the mobile MESSKO® MPREC test bench

Messko GmbH developed the mobile MESSKO® MPREC test bench as an additional safety package for the commissioning, inspection and maintenance of pressure relief devices. Weighing approx. 50 kg, it is portable and can be used in the laboratory, in the test field and also during commissioning and maintenance. The test bench tests and logs the accuracy and functional safety of pressure relief devices on oil-filled transformers in a disassembled state.



MESSKO® MPREC test bench with installed pressure relief device

## Technical data:

MESSKO® MPREC	Materials
Flange	Seawater-resistant cast aluminum
Standard cover	Seawater-resistant aluminum with RAL 7033 or RAL 7038 powder coating
Oil-directed cover	Seawater-resistant cast aluminum with RAL 7033 or RAL 7038 powder coating
Corrosion protection	In accordance with ISO 12944-9:2018, available in C4H or CX (optional)
Valve disk	Rust-proof steel (1.4301)
Sealing material	Perbunan (NBR) for mineral oils; optional fluorocarbon rubber FKM (Viton®) for alternative insulating media
Springs	Spring steel in accordance with EN 10270-1-SH, plastic-coated customer-specific part painting (KTL)
Indicator pin	Seawater-resistant aluminum, red (mineral oil) or blue (alternative coolant) anodized
Semaphore	Stainless steel with RAL 1026 acrylic resin coating
Vent screw	Stainless steel for oil bleeding in accordance with IEC 60076-22-1
	<b>Dimensions</b>
Cover	Ø 291 mm (Ø 11.46"), bolt circle Ø 235 mm (Ø 9.25"); 6 drilled holes each Ø 15.5 mm (Ø 0.61")
Installation height	With standard cover: 234.5 mm (9.23") / with semaphore: 340 mm (13.39") With oil-directed cover: 246.5 mm (9.71") / with semaphore: 442 mm (13.46")
Weight	With standard cover: approx. 6 kg (13 lbs.), with oil-directed cover: approx. 13 kg (29 lbs.)
Mounting gasket (optional)	Ø 200 x Ø 178.5 x 4.25 (Ø 7.87" x Ø 7.03" x 0.17")
	<b>Operating temperatures</b>
Environment	-50°C to +80°C (mechanical); -40°C to +80°C (micro-switch)
Oil	-30°C to +120°C
	<b>Micro-switches</b>
Number of switches	Up to 2 switches, 1x NO each, 1x NC each; electrically isolated
Contact load	As per IEC 60947-5-1: AC-15: 240 V / 3 A; 120 V / 6 A; DC-13: 250 V / 1.1 A; 125 V / 2.2 A
Max. continuous current	10 A
Rated insulation voltage	AC: 2.5 kV/1 min.
Degree of protection	IP65 or IP66
Connection designs	Cable connection with 1x or 2x M20x1.5 cable glands Terminal box with 1x or 2x M25x1.5 cable glands ANSI connector with 16 AWG, SOOW cable; available in various lengths

## Pressure ranges:

Type	LMPRD 04	LMPRD 06	LMPRD 08	LMPRD 10	LMPRD 12	LMPRD 15	LMPRD 20	LMPRD 25	LMPRD 30
PSI	4 PSI ± 1	6 PSI ± 1	8 PSI ± 1	10 PSI ± 1	12 PSI ± 1	15 PSI ± 1	20 PSI ± 1	25 PSI ± 1	30 PSI ± 1
Bar	0.28 bar	0.41 bar	0.55 bar	0.69 bar	0.83 bar	1.03 bar	1.38 bar	1.72 bar	2.07 bar
kPa	28 kPa	41 kPa	55 kPa	69 kPa	83 kPa	103 kPa	138 kPa	172 kPa	207 kPa

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THE POWER BEHIND POWER.

