



MESSKO® MFIoC®

FLOW INDICATOR –
KEEPS THINGS MOVING.

MESSKO INSTRUMENTS

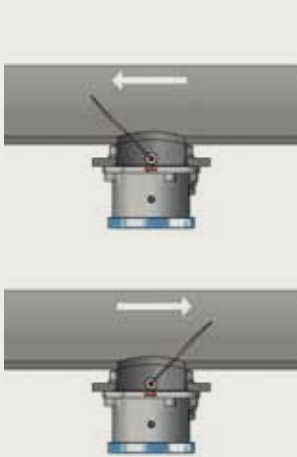


THE MESSKO® MFloC® FLOW INDICATOR – KEEPS THINGS MOVING.



Functional Safety

The MFloC® flow indicator immediately and reliably detects pump failure in the oil and water cooling system of a transformer. A specially designed spoon-shaped paddle is placed in the cooling circuit as flow resistance to monitor the cooling fluid's flow. When the pump is in use, flow pressure is applied to the paddle during both laminar and non-laminar (turbulent) flows, ensuring that it is reliably pressed onto the end stop (at flow velocities from as low as 0.70 m/s). The MESSKO® MFloC® uses a patented magnetic coupling to convert this movement of the paddle into a rotary motion of the pointer in the indicator. Two permanently installed microswitches (changeover type) signal the pump status.



Installation positions MFloC®
sensor unit (flow direction)



Installation positions MFloC®
indicator unit



Longevity and reliability

The MFloC® flow indicator possesses MESSKO's familiar quality features. The cast aluminium housing is extremely sturdy and weatherproof. An offshore version is also available as a further option. Separation of the sensor and indicator units ensures leak-tightness in relation to the cooling circuit.

The MFloC® is designed for use at ambient temperatures between -50° C and +80° C and at temperatures of the cooling medium between -30° C and +120° C. The indicator's laminated sight glass has an integrated UV filter. These quality features ensure many years of reliable operation and perfect readability of the indicator. This is why we give the same 5-year MESSKO warranty on the MFloC® as on many other MESSKO products.

Simple and secure installation

There are no settings, e.g. adjustment of the paddle size or calibration for different flow velocities, required when installing the MFloC® flow indicator. One version of the MFloC® covers all customary pipe diameters and flow directions. This not only cuts procurement and installation costs but also prevents adjustment errors and therefore increases the reliability of the whole system.

MESSKO® MFloC® – THE HIGHLIGHTS AT A GLANCE.

Long service life

- Sturdy, weatherproof cast aluminium housing
- Permanent readability of the indicator thanks to laminated safety glass with integrated UV filter
- 5-year Messko warranty

Usable even under extreme conditions

- Offshore version available

1 product for all applications

- 1 MFloC® version for the most common pipe diameters, all flow directions and flow velocities from 0.70 m/s upwards



Reliability/functional safety

- Safe function even with non-laminar (turbulent) flows in the cooling circuit thanks to specially designed paddle
- Reliable return of the paddle after switching off the pump
- Absolute seal-tightness with cooling circuit due to separation of sensor and indicator units

Reduction of installation costs and adjustment errors

- No need for size adjustment of the paddle or calibration for different flow directions
- Convenient adjustment to the various flow directions due to the indicator unit which can be rotated in steps of 90°
- Simple retrofitting

MFloC®	Technical Data
	Materials
Viewing glass	Laminated safety glass with UV filter
Housing/flange/terminal box	Aluminium alloy
Paddle	High-grade steel 1.4301
Dial	Matte aluminium, anodized
	Characteristics/Dimensions
Dial markings	PUMP ON/PUMP OFF, OIL or WATER
Ambient temperature	-50° C to +80° C
Cooling agent temperature	-30° C to +120° C
Protection mode	IP54 acc. with DIN EN 60529
Nominal tube diameter	DN100 to DN300; other diameters on request
Max. flow velocity	2.5 [m/s] / 98.43 [inch/s]
Min. flow velocity	0.7 [m/s] / 27.56 [inch/s]
Pressure loss	< 0.1 bar
Indicator unit housing	Ø 100 mm
	Microswitches
Number switches	2 changeover type, electrically isolated, fixed positioned
Contact load	Max. 5 A/250 V AC or 2.5 A/24 V DC, min. 1 mA/4 V DC
Switching point	Central between PUMP ON and PUMP OFF
Rated isolation voltage	2.5 kV AC, 1 min, contacts to housing
	Electrical connection
Connection design	Terminal box with M20 x 1.5 screwed cable gland and connection terminals (min. 0.25 mm ² /max. 2.5 mm ²) or via ANSI connector/MIL connector

Nominal diameter DN	Internal flange diameter in acc. with DIN 2633		Minimum flow velocity to response of MFloC *		Oil flow rate to response of MFloC	
	[mm]	[inch]	[m/s]	[inch/s]	[l/min]	[Gallonen/min]
100	107.10	4.22	0.70	27.56	380.00	100.39
125	131.70	5.19	0.70	27.56	572.00	151.11
150	159.30	6.27	0.70	27.56	837.00	221.11
200	207.30	8.16	0.70	27.56	1418.00	374.60
250	260.40	10.25	0.70	27.56	2236.00	590.69
300	309.70	12.19	0.70	27.56	3163.00	835.58

* Other values on request