

Moisture Content Sensor

The Moisture Content Sensor (MCS) is a perfect solution for easy detection of water activity in the oil.



ORDERING CODES:

MCS	-	-	-	B
	BOX 1	BOX 2	BOX 3	

SENSORS

Connection [Box 1]	
Code	Description
01	G 1/2" BSPP male

Seal [Box 2]	
Code	Description
0	FPM (Viton)

RELATED PRODUCTS

Power Data Cable

MCC-2-B-030

118 in (3 meters)

MCC-2-B-100

394 in (10 meters)

Water in hydraulic and lubrication fluids is one of the main causes for oxidation, additive depletion, loss of dielectric strength in insulating oils, corrosion and reduced lubricating film thickness. These expensive problems can be prevented by monitoring the water level of your fluid and taking actions at an early stage.

The high accuracy of the measurement and excellent long-term stability make the MCS ideal for online monitoring of moisture in transformer, lubricating and hydraulic fluid.

The MCS is perfectly suitable for long term usage in moisture levels, higher than 90% RH. Making it the perfect solution for gearboxes, thrusters and other applications where free water is a threat.

By combining the MCS with other RMF products like a Condition Monitoring Center and Vacuum Dehydration Unit, we offer you the optimal solution for your water contamination problems.

The compact design and rugged stainless steel housing allow a space-saving installation in the most demanding applications. The MCS measures not only water activity but also oil temperature. The measured values are available on two 4-20mA outputs and one digital output with Modbus RTU interface.

Key Features

- Continuous measurement of moisture in oil
- Excellent pressure and temperature tolerance
- Measures water activity in %RH
- Both analog and digital outputs available

Typical Applications

- Transformer oil
- Lubrication oil
- Hydraulic oil
- Engine oil
- Diesel fuel



Specifications

MEASUREMENT PERFORMANCE:

WATER ACTIVITY

- **Measurement range:** 0 - 1 aw, 0 - 100% RH
- **Accuracy (including non-linearity, hysteresis, and repeatability):** 0 - 0.9 aw \pm 0.02 aw, 0.9 - 1.0 aw \pm 0.03 aw
- **Response time in oil flow (typical):** < 1 min (dry-wet)

TEMPERATURE

- **Accuracy at +68°F (+20°C):** \pm 0.36°F (0.2°C)

OPERATING ENVIRONMENT:

- **EMC compliance:** EN61326-1, Industrial environment
- **Operating temperature:** -40 - +140°F (-40 - +60°C)
- **Storage temperature:** -40 - +176°F (-40 - +80°C)
- **Oil temperature:** -40 - +212°F (-40 - +100°C)
- **Oil flow:** Some flow recommended
- **Pressure range:** Up to 200 bar
- **Fluid compatibility¹:** Petroleum based and synthetic fluids

¹The MCS is not suitable for water based fluids or aerospace phosphate ester hydraulic fluids.

INPUTS AND OUTPUTS:

- **Alarm level indication by analog signal:** User selectable
- **Digital outputs:** RS-485, Modbus RTU
- **Analog current output:** 0 - 20 mA, 4 - 20 mA
- **Analog voltage output:** 0 - 5 V, 0 - 10 V

MECHANICAL SPECIFICATIONS:

SENSOR

- **Cable connections (2 ports):** M8 4-pin male
- **Mechanical connections with bonded seal ring (washer):** G 1/2" BSPP male
- **Weight:** 7 oz (200 g)

MINIMUM OPERATING VOLTAGE WITH

- **RS-485 output:** 14 - 28 VDC
- **Voltage output:** 16 - 28 VDC
- **Current output:** 22 - 28 VDC

SUPPLY CURRENT

- **Normal measurement:** 20 mA + load current

EXTERNAL LOAD FOR

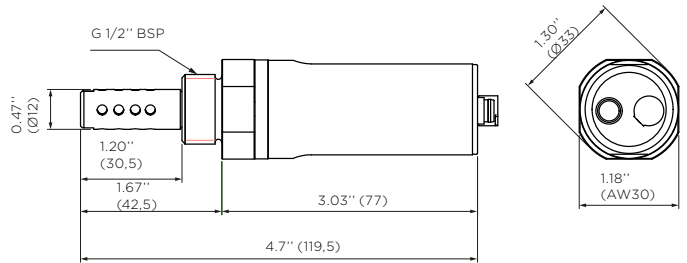
- **Voltage output:** Min. 10 k Ω
- **Current output:** Max. 500 Ω

HOUSING

- **Probe body material:** Stainless steel (AISI 316L)

DIMENSIONS:

Note: All dimensions are in Inch / (mm)



CONNECTIONS:

PIN	Wire Colors	I	II
Pin 1	Brown	VDC supply+	VDC supply+
Pin 2	White	Signal Ch 1+	RS-485 - / B
Pin 3	Blue	GND	GND
Pin 4	Black	Signal Ch 2+	RS-485 + / A

RS-485 Properties

Bauds	Parity	Data bits	Stop bits
19200	None	8	1

WIRING:

