

# Moisture in oil Detector

The MOISTURE DETECTOR is specially designed for the measurement of water content in oil & is ideal for online monitoring of moisture in lubrication or insulation oil, very important for the long-term performance and preventive maintenance of plant and machinery.

## Humidity measurement in oil

Similar to the humidity in air, the water content in oil can be indicated by the absolute value in **ppm** or by the relative value **a<sub>w</sub>**:

ppm (mass of water / mass of oil)

a<sub>w</sub> (actual water content as fraction of water content in saturated oil)

a<sub>w</sub> = 0 corresponds to water-free oil, while a<sub>w</sub> = 1 indicates saturated oil. a<sub>w</sub> measurement with the unit is based on the outstanding long term stability and resistance to contamination of the capacitive sensor elements series HC.

The measured physical quantities are water activity a<sub>w</sub> and temperature T. The unit calculates the water content x (ppm) in mineral oils. Calculation of water content (ppm) in non mineral oils and lubrication oils can be achieved by programming the specific parameters of the oil into the unit.

## Screw connection mounting for 360° rotation

Enable desired position / rotation of unit.

## TYPICAL APPLICATIONS:

Transformer oils, hydraulic oils and turbine oils.

## FEATURES:

Measuring range 0 - 1 a<sub>w</sub>

Measurement of water content in ppm

Temperature range -40 - 80°C

Two relay outputs for a<sub>w</sub> / ppm / T



**At last, a quick, accurate & simple solution to measure moisture in oil instead of the traditional Karl Fischer titration method.**

**Detect • Measure • Remove**



## MOISTURE DETECTOR

Principle of operation: Capacitance

Moisture is the biggest enemy of hydraulic & lubricating oils ... even bigger than particulate contamination.

The chart below explains the co-relation of moisture and acid / sludge formation in oil.

## FUNCTION OF CATALYSTS

Test	Catalysts (Metal)	Water	Time (Hrs)	Acid Value (mgKOH/gm)
1	nil	nil	3,500	0.17
2	nil	exist	3,500	0.90
3	iron	nil	6,500	0.65
4	iron	exist	400	8.10
5	copper	nil	3,000	0.89
6	copper	exist	100	11.20

Note:

- Time: hours for reaching a certain level of acid value.
- Acid value indicates formation of "Sludge" and sticky resinous matter which forms hard deposits on valves, pipes, etc.
- Tested at 90° C

**Don't just detect moisture,  
Remove it immediately with our -  
Vacuum Dehydration unit**



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