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New compact MMT318 transmitter for

Monitoring Moisture in Oils

The Vaisala HUMICAP® Moisture and Temperature Transmitter MMT318 is a fast and reliable on-line detector of moisture in lubrication, hydraulic and transformer oils. It is ideal for continuous on-line moisture monitoring and as a control function, allowing separators and oil purifiers to be started only when needed. The MMT318 is a small compact transmitter, which is easy to integrate into larger systems to control or monitor the performance of oil purifiers or dryers.

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Water activity measurement

It is customary to describe moisture in oil by measuring the water content in PPM (parts per million). However, due to the differences in oil types and the difficulty of predicting aging effects, PPM values are not always sufficient. Therefore, relative values such as water activity have often been found more useful in applications such as lubrication in which the water amount must not exceed the solubility limit.

The MMT318 measures moisture in terms of the water activity and temperature. Water activity indicates directly whether there is a risk of free water formation that may cause wearing, cavitation and corrosion of essential and expensive machine parts. The measurement is independent of oil type, age and temperature. The on-line transmitter gives accurate relative values of oil moisture without calibration with a specific reference oil.

Calculation of water content in PPM for transformer oils

The PPM values are usually used in transformer applications. They indicate the average mass concentration of water in oil that correlates with the moisture of the insulation cellulose of the transformer. The calculation of water content in PPM is also an option in the MMT318 when it is used with mineral transformer oil. The on-line transmitter gives accurate relative values of oil moisture without calibration with a specific reference oil.

Flexible installation options

The probe of the MMT318 can take direct measurements in the process pipe. The probe mechanics and the sensor are designed to operate over a wide range of process temperatures (-70 to +180 °C) and pressures (0-40 bar). The MMT318 has two adjustable probe lengths and three cable lengths as options. The transmitter can be ordered with a ball valve set that enables insertion and removal of the moisture probe for calibration, without having to empty the oil system. In addition, there are two user-selectable installation plates available for the MMT318.

Several outputs - one connector

The MMT318 has two analog outputs and an RS232 serial output as standard. The signals and the supply power travel in the same cable - the only cable connected to the unit. The MMT318 is supplied, depending on the order, either with a connector counter piece and a 5-meter cable, or with a counter piece equipped with screw terminals.

Reliable Vaisala HUMICAP® technology

The MMT318 incorporates the latest generation of the Vaisala HUMICAP® Sensor. The sensor is developed for demanding moisture measurements in liquid hydrocarbons. The excellent chemical tolerance of the sensor provides accurate and reliable measurements over the whole measurement range. The sensor is very sensitive even to negligible amounts of water. The chemical durability of the sensor makes the MMT318 suitable for different applications and fluids, such as mineral and synthetic oils, vegetable oils, hydraulic fluids and even fuels. ●

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