

Spot and stop water contamination

New intelligence for continuous on-line measurement of moisture in oil



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The new Vaisala HUMICAP® Moisture and Temperature Transmitter Series for Oil MMT330 enables fast and reliable detection of moisture in oil.

Several power generation and transmission networks have various oil filled systems, for example, transformers and turbines, where oil acts as an insulating material, lubricant and/or cooling agent. As water contamination reduces the performance of oil, moisture is an important factor determining the condition of different types of oils. With on-line information on the quality of the oil, preventive actions can be taken and the maintenance costs cut substantially.

Lubrication systems

Water contamination reduces the performance of lubrication oil. Excess moisture, particularly free water, increases the risk of corrosion, overheating, machine malfunction and other problems. Therefore measuring and controlling the moisture in lubrication systems is essential to avoid costly failures and to ensure reliable performance of the equipment at all times. Monitoring the moisture in oil within lubrication systems helps to plan servicing and prevent unscheduled downtime.

Transformers

The detection of moisture in oil is also an essential part of a comprehensive transformer maintenance program. Oil immersed transformers rely on oil for cooling, protection from corrosion and as an important component of their insulation. Excessive moisture in oil causes accelerated ageing of the insulation materials and reduces their dielectric strength. In extreme cases this can result in arcing and short circuits within the windings. If accurate moisture measurements are available, leaks in the oil system can be detected in time as water is absorbed from the surrounding air.

New Vaisala solutions

The new Vaisala HUMICAP® Moisture and Temperature Transmitter Series for Oil MMT330 enables fast and reliable

detection of moisture in oil. The MMT330 can be used in on-line moisture monitoring and as a control device, allowing separators and oil driers to be started only when needed. Proper monitoring saves both oil and the environment. With the MMT330, it is easy and economical to monitor moisture in oil.

Reliable Vaisala HUMICAP® technology

The MMT330 incorporates the latest generation of the Vaisala HUMICAP® sensor, resulting from ten years of field experience. The sensor was developed for demanding moisture measurement in liquid hydrocarbons. Its excellent chemical tolerance provides accurate and reliable measurement over a wide measurement range. The operation is based on the measurement of changes in capacitance as the film absorbs water molecules from oil.

Indicates the margin to water saturation

The MMT330 measures moisture in oil in terms of water activity (aw) and temperature (T). The measurement indicates the margin to water saturation in oil and is therefore independent of oil type, age and temperature.

Water content as ppm conversion

In addition to water activity, the MMT330 can output ppm, the average mass concentration of water in oil. Vaisala has this conversion readily available for mineral transformer oil. For other oils, the oil specific conversion coefficients can be programmed to the transmitter by the user, if the water solubility of the oil is known.

Graphical measurement trend and historical display

The MMT330 can be ordered with a large numerical and graphical display with a



multilingual menu. It allows the user to monitor measurement trends over a one-year period.

Versatile outputs

The MMT330 provides up to three analog outputs. Galvanic isolation of supply power and analog outputs are also available. The RS232 and RS485 can be used for serial interface. In addition, an alarm relay option is available.

Easy installation

The Vaisala HUMICAP® Moisture and Temperature Transmitter Series for Oil MMT330 has three different probe options available, enabling various application installations with wide pressure and temperature ranges of up to 250 bar and 180 °C. In addition, the MMT330 has several options for transmitter mounting. Transmitters are delivered pre-configured with all settings installation ready.