



*Vaisala's HMP243 dewpoint transmitter has specially designed for reliable and fast dewpoint measurement.*

## U.S. National Weather Service Awards Dewpoint Contract to Vaisala

**T**he U.S. Department of Commerce/NOAA, National Weather Service (NWS) has awarded a contract to Vaisala to develop and manufacture a state-of-the-art meteorological dewpoint sensor. This sensor will replace several hundred aging and high maintenance units originally installed in Automated Surface Observing Systems (ASOS) at major airports throughout the United States.

NWS selected Vaisala after more than three years of extensive testing of standard off-the-shelf dewpoint instruments manufactured by Vaisala and its competitors. Vaisala's HMP243 dewpoint transmitter was the unit tested by NWS, and the core technology of this transmitter will be incorporated into the sensors to be delivered to NWS.

Vaisala's HMP243 humidity/dewpoint transmitter provides fast and reliable dewpoint measurement even under extreme conditions where a combination of high humidity and rapidly changing temperature might present unwanted dew formation on the sensor head. Because the temperature of the HMP243's sensor head is constantly higher than ambient, the possibility of dew formation is eliminated. The result is uninterrupted, accurate and stable dewpoint measurement that is unmatched by other technologies. ■



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Many industrial environments set specific requirements for humidity instrumentation. The latest addition to the Vaisala range of industrial humidity transmitters is a small stainless steel sensorhead. It offers many new advantageous features for applications where a robust sensorhead is required. The new transmitter models HMP237 and HMP247, incorporating the new sensorhead structure, are already available.

### Focus on reliable readings

Measuring humidity in demanding environments is not an easy task.

First, the measurement technology used must be applicable for the particular environmental conditions in a specific application. One technology may offer certain features for good measurement, but maintenance needs can be very high. Not all the instruments offering the same technology have the ability to provide reliable readings in high temperatures, very high levels of humidity approaching condensation, or in certain environments where chemicals are present in the measured gas.

Second, the mechanics of the instrument, and especially those of the sensorhead are extremely important in demanding applications.

### HMP237/247 sensorhead technology

In industrial applications, the transmitter housing must be IP65/NEMA4 protected, to allow for plants to be spray-watered, for example. The housing material can be plastic or,



*HMP247 humidity transmitter uses the recently developed small-sized metal sensorhead for the most demanding applications.*



*Two threaded holes on the back of the sensorhead mean that the sensorhead can be installed in process conditions.*

## Managing demanding customer needs in Industrial Humidity Measurements

in demanding environments, metal. The sensorhead mechanics are a little more complicated, because the most essential part of the entire instrument is located in the sensorhead. If the mechanics and the sensor protection are not well adapted to the particular environment that they are in, the entire measurement can be impaired or the lifetime of the instrument can be reduced.

The new small-sized, extremely robust sensorhead was developed for the most demanding customer needs. The sensorhead was first used in the HMP230 series, and the transmitter model was then called the HMP237. Later, the same structure was developed and also added to HMP240 series and called the HMP247.

The main difference between these two series, the HMP230 and HMP240, is that the HMP240 series sensorheads incorporate a warming system,

which ensures reliable measurements even in conditions where dew may form. This warming method is patented by Vaisala. Both of these sensorhead types can be used in very high temperatures of up to +180 °C (+356 °F).

### Leak tight installation

The material of these new sensorheads is stainless steel, a material suitable for a wide variety of applications. The robust nature of this sensorhead is not its only asset, because it is also leak tight up to 1 Mpa (10 Bar/145 Psi). The leak tight installation can be fitted around the sensorhead, but also on the sealing around the sensorhead cable, making the installation very flexible in applications where the pressure of the measurement space differs from the ambient pressure.

In addition to the traditional duct installation kit, the design of the new sensorhead also

means that it can be installed in different ways. On the back of the sensorhead, two threaded holes allow it to be fixed to a threaded pole inside the process and thus to be usefully located right in the heart of a particular place, if needed.

The new installation options, a design adapted to tough environments and high performance humidity sensing with HUMICAP sensors make the HMP237 and HMP247 a very attractive choice as industrial humidity transmitters. ■

*A leak tight installation is possible for the sealing around the sensorhead cable, but naturally also for sealing the connection around the metal body of the sensorhead.*

