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Vaisala's HMT360 series intrinsically safe humidity transmitters were designed for demanding applications, including oil refineries.

Vaisala's new HMT360 humidity and temperature transmitter is designed to allow direct installation in hazardous areas. The modular design includes interchangeable probes, making it a user-friendly option for demanding applications from foodstuff production to offshore installations.



New HMT360 Humidity and Temperature Transmitter for Hazardous Areas

Avital requirement in the design of electronic equipment used in hazardous areas is non-ignitability. In other words, the equipment must not be allowed to ignite flammable gas or dust. This has usually been done by protecting the electronics of devices such as humidity transmitters with explosion-proof housings, or by installing them far enough away from the potentially explosive area.

A more advanced way to ensure ignition-free operation is to design the equipment according to intrinsically-safe principles, which obviates the need for heavy and costly explosion-proof housings for the electronics and conduits for the wires, while still allowing installation of the electronics in the most hazardous areas.

Safe and direct installation in hazardous areas

The new HMT360 humidity and temperature transmitter is designed with microprocessor-based electronics to fulfill the requirements of intrinsically-safe regulations. This makes it possible to install the unit even in areas classified as under continuous risk of explosion (zone 0 or division 1).

Depending on the measurements needed, an HMT360 transmitter can be used with various probes. This makes it versatile and suitable for a wide range of demanding applications, including environments with limited or pressurized spaces. The HMT360 series transmitters also incorporate the latest technology available, which in practice means even better long-term stability for humidity measurements in a wide variety of gases.

No process downtime during servicing

The modular design makes installation easy, even in places that are difficult to reach. Servicing and even installation are possible when the process is operating and explosive gas is present.

The HMT360 series transmitters comprise four detachable parts – a transmitter base unit, an electronics unit, a mounting plate and a probe (Figure 1). The mounting plate is fastened to a wall and the transmitter base locks into it. The electronics unit is attached to the transmitter base, and the probe is connected to the side of the electronics unit.

The electronics unit, the transmitter base unit and the probe are all detachable, and thus no wires have to be removed when servicing the transmitter or the probe. The probe for the HMT360 can be removed for calibration, and can be immediately replaced with a previously calibrated probe. This means that there is practically no process downtime. Naturally, the whole transmitter can also be removed from the mounting plate for calibration outside the hazardous area.

Approvals by national authorities

HMT360 series transmitters fulfill the requirements currently set by the EU directives (76/117/EEC and 79/196/EEC) for apparatus used in potentially explosive areas, as well as those that will become effective in the near future, including the only directive that will be applied after 2003 (ATEX 100a).

CENELEC approval has been granted by the Technical Research Center of Finland, which is Finland's national approval



Figure 1. HMT360 series transmitters comprise four detachable parts – (6) an electronics unit, (7) a mounting plate, (8) a transmitter base unit, and a wide selection of probes, which are pictured from the left: (1) HMP368, (2) HMP365, (3) HMP364, (4) HMP363 and (5) HMP361.

authority. Approvals by Physikalisch-Technische Bundesanstalt (PTB) in Germany, the Factory Mutual (FM) in the U.S., the Canadian Standards Association (CSA), the Standards Association of Australia (SAA), and the Technology Institute of Industrial Safety (TIIS) in Japan are pending. ■



Figure 2. HMT360 humidity and temperature transmitter.