RLS LEVEL SENSOR

Hydrometric measurement sensor based on the radar measurement principle

PRODUCT DESCRIPTION

The RLS is a two-wire level transmitter operating with 6 GHz radar pulses for measurement ranges up to 20 m. It lends itself to the continuous monitoring of liquids and sludge in non-pressurised storage tanks in normal environmental conditions. The RLS is suitable for applications with chemical vapours, temperature gradients, vacuum or pressure, for example in tank farms, in storing chemical substances, in digestion towers or in sludge tanks. ETG RLS has a measurement range from 0.3 up to 20 m. The design of the RLS offers simple programming with the intrinsic security hand-held programming device, also without opening the cover of the instrument in the Ex area. The rod antenna in polypropylene offers high chemical resistance and is made as a single watertight piece. It has an integrated internal shield that eliminates disturbances coming from the assembly structure. The high signal/noise ratio of the RLS guarantees optimum reliability. The level measurement contains level switches and protection against overflow, empty signalling and protection against dry operation.

OPERATION

The instrument uses radar technology to measure the hydrometric level of the waterway, taking a measurement of the distance of the water surface from the sensor case and then subtracting the value found from the hydrometric zero value. An antenna system radiates very short microwave pulse on the surface of the water that will be reflected and again picked up by the antenna system. The pulses propagate at the speed of light and the round trip time from emission to receipt of the signal is proportionate to the level. The probe generates a high signal/noise ratio that leads to greater measurement reliability. It is built in propylene with outstanding chemical resistance in addition to being hermetically sealed. Radar technology is not influenced by temperature, pressure, steam or dust.

MAIN FEATURES

Principle of measurement:

radar technology is not influenced by temperature, pressure, steam or dust. This characteristic makes them better and superior in performance compared to their ultrasonic competitors.

Easy maintenance:

the benefits that our radar hydrometric sensor offers are not limited to precision, but also include simple and quick maintenance due to the engineering of the sensor that simplifies the phases. The only preventive activity consists of controlling the levelling of the sensor and in cleaning the target struck by the sensor. In fact, there must be no obstacles between the emitter of the sensor and the free surface of the water.

Sturdy and reliable construction:

makes it an instrument with a long lifetime, which safeguards the customer's investment. The instrument does not drift due to aging and requires no periodic calibrations.

It is built in propylene with outstanding chemical resistance in addition to being hermetically sealed.

a. Recommendations

- Ambient temperature falling between –40°C and 80°C
- Access for programming via local display

b. Precautions

- Avoid proximity with high voltage cables, high voltage contacts and variable frequency motors
- Avoid obstacles near the emission cone
- Avoid installation near walls and interferences of indirect echoes

COMPONENTS THAT CAN BE ADDED OR BE BUILT INTO THE PRODUCT

hand-held programming device with intrinsic safety, even without opening the cover of the instrument in the area.

TECHNICAL SPECIFICATIONS

SPECIFICATIONS	
Sensor type	Radar
Range of measurement	0-20 m
Accuracy	0,1% span
Electrical output	4-20 mA
Operative temperature	.-40°C... +80°C
Material	Polypropylene antenna and rod

CERTIFICATIONS AND PROTOCOLS

	ETG
General	CSAUS/C, FM, CE, C-TICK
Radio	Europe (R&TTE), FCC, Industry Canada
Zones at risk (intrinsically secure)	ATEX II 1 G Ex ia IIC T4 Ga; IECEx SIR 13.0005X Ex ia IIC T4 Ga
Zones at risk (non-incendiary)	FM2 Classe I, Div. 2, Gruppi A, B, C, DT5