Radar Pit-Level Sensor

Measures the drilling mud in trip tanks, including extra deep and narrow tanks, to monitor mud volumes and avoid potential well control issues

The radar pit-level sensor provides reliable measurements of drilling mud levels to help monitor well conditions during tripping in and out.

Applications

- Measuring the drilling mud in trip tanks on drilling rigs to monitor well conditions and confirm well control

Features

- Simple installation and startup
- Noncontact measurement sensor
- 4 to 20 mA standard output transducer
- Exact measuring results in tanks up to 30 m deep, independent of pressure, temperature, gas, and steam
- Narrow beam angle for measuring in narrow pits, such as trip tanks

Tool Description

The Vega radar pit-level sensor measures drilling mud in trip tanks, especially those in extra-deep and narrow tanks typically found on high-capacity drilling rigs. Installed at the top of a tank, the radar sensor emits a beam toward the bottom of a tank, and the surface of fluid in the tank reflects most of that energy back to the sensor. The elapsed time from the signal emission to its reception is proportional to the fluid level in the tank. The higher the fluid level in the tank, the quicker that energy returns to the sensor. A special time-stretching procedure makes it possible to measure these extremely short intervals.

Specifications

Certifications: The radar pit-level sensor meets the following certifications:

ATEX	ATEX II 1G, 1/2G, 2G EEx ia IIC T6
ATEX	ATEX II 1G, 1/2G, 2G EEx ia IIC T5+ATEX II 1/2D IP6X T6
FM	FM Class I to III, Division 1 (intrinsically safe)
IEC	Ex ia IIC T6

Measurements

Brand	Vega
Model	Vegapuls 62
Range	0 to 31.3 ft (0 to 10 m)

Weatherford®

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Brand	Vega
Sensor	K-band radar pulse emission and detection
Thread	Thread G1-1/2 A or 1-1/2 NPT, flange from DN 50 or ANSI
Supply voltage	9.6 to 36 Vdc
Output signal	4 to 20 mA, HART
Accuracy	±0.04 in. (±1 mm)
Resolution	±0.04 in. (±1 mm)
Location	Trip tank (intended use) or any fluid tank
Operating temperature	–40 to 176°F (–40 to 80°C)
Vibration	55 Hz, 1 mm
Shock	30 g, 11 ms
Output	All SLS operating systems
Material	316L, Hastelloy® C22, Monell®[1] alloy, stainless-steel precision casting
ANAX JDE number	1306550