

Still-pipe array antenna gauge RTG 3950

BENEFITS

- Highest reliability with non-contact radar measurement
- Low Loss Mode gives custody transfer accuracy
- Option with hatch for product sampling and verification hand-dips in the same still-pipe
- Drip-off design according to API ch. 3.1b, ed. 1
- Using existing still-pipes, 5-, 6-, 8-, 10- and 12 in.
- SIL 2 Safety Functions
- TÜV Overfill Protection
- Integrated in TankRadar Rex tank gauging system
- Can emulate other vendor's field buses

The RTG 3950 gauge measures level with outstanding reliability and accuracy by transmitting radar waves towards the liquid surface inside the tank's still-pipe. All electronics are located in the explosion proof housing, easily accessible from the outside. RTG 3950 is made for mounting on existing still-pipes. Typical RTG 3950 applications are crude oil tanks with floating roofs and gasoline/product tanks with or without inner floating roofs.

Advanced technology for accurate measurement in still-pipes

The gauge features Low Loss Mode radar propagation which virtually eliminates the influence of the still-pipe condition. Measurement is made with highest accuracy, even when the pipe is old, rusty and covered with deposits. This is often the case with e.g. crude oil tanks.

The Low Loss Mode improves the accuracy in pipes with deposits in the order of 100 times. This technology was originally developed by Rosemount Tank Gauging.

The RTG 3950 also uses state-of-the-art FMCW radar technology with digital reference and temperature control for further accuracy enhancement.

Fixed and inclined version available

The inclined version has a hinged hatch, enabling product sampling or verification hand dips in the still-pipe.



The RTG 3950 features Low Loss Mode radar propagation which virtually eliminates the influence of the still-pipe condition. This means high accuracy even when the pipe is rusty and covered with deposits.



Inclined version

A variety of communication possibilities

The gauge has inputs for temperature sensors, HART® based pressure sensors and other analog inputs, as well as analog and relay outputs. The gauge uses the standard 2-wire TRL/2 field bus for field data transmission. It can also communicate on other field buses such as FOUNDATION fieldbus, Profibus DP or Tiway and emulate other vendor's buses.

Safety functions


TankRadar Rex could replace a traditional Hi-Hi alarm device. With the RTG 3950 it is possible to use the gauge for overflow protection and simultaneously use it for high accuracy level measurement.

The Rosemount TankRadar Rex RTG 3900 series has been assessed by third party and considered suitable for use in SIL 2 safety functions according to IEC 61511-1. The safety function is based on the relay outputs, by using either one or a combination of two, for overflow or dry run protection.

TankRadar Rex is approved as an overflow protection device by TÜV (Technische Überwachungsverein)¹.



The Inclined version enables product sampling in the still-pipe with full pipe size opening.

Specification	
Measuring principle	FMCW radar with digital reference and temperature control.
Antenna type	Still-pipe array antenna using Low Loss Mode.
Instrument accuracy	± 0.5 mm (± 5/256 in.)
Measuring range	0,8 to 40 m (2,6 to 130 ft) from antenna end
Temperature	Operating ambient temperature -40° C to +70° C (-40° F to +158° F) Operating tank temperature -40° C to +120° C (-40° F to +248° F)
Pressure	Fixed version: 5- to 12- inch pipe: 0,2 to 2 bar (-2,9 to 29 psig) at 20° C Inclined version: 5- to 8 inch pipe: -0,2 to 0,5 bar (-2,9 to 7,2 psig) 10 and 12 inch pipe: -0,2 to 0,25 bar (-2,9 to 3,6 psig)
Material exposed to tank atmosphere	Acid proof steel EN 1.4404 (AISI 316L), Polyphenylensulfid (PPS), Fluorosilicone
Supply voltage	100-240 VAC, 50-60 Hz. Optional 34-70 VAC, 20-28 VDC (max 30 W) or 48-99 VDC
Outputs / inputs	Outputs: TRL/2 field bus, 1 pcs 4-20 mA, Profibus DP, Foundation™ fieldbus, Tiway, 2 pcs relays, other vendor's field buses Inputs: Temperature (Pt 100), 2 pcs 4-20 mA (of which one HART® Master)
Display	On separate DAU, RDU or remotely in control room
Still-pipe dimensions (standard)	5, 6, 10 in. (Sch 10-60). 8 in. (Sch 20-80). 12 in. (Sch 10-40)
Hazardous locations certifications	ATEX: CE 0575  II 1/2 G, CENELEC: EEx d[ia] IIB T6 UL: Class I, Div I, Groups C and D IECEx d IIB T6 (T _{amb} -40° C to +60° C)

Technical details are subject to change without prior notice. For more technical details see the Rex Technical Description.

1. TÜV is a German testing authority responsible for testing overflow protection equipment according to requirements stated by the German WHG institute concerning water protection.