

KONGSBERG Radar Tank Gauge for Slop tank – Still pipe solution

Features

- Applicable for slop tank where obstructions prohibit free radar beam
- 3,5 ” standpipe
- Radar RMS accuracy 5 mm
- Measuring range 0 to 50 m
- Operating temperature -45 to +85 °C
- Environmental protection IP 66/67
- Intrinsically safe Ex ia IIC T4
- Stainless steel AISI 316 L
- Integrated tank pressure transmitter

General description

GL-300 Tank Monitoring consists of the GLA-300 Radar Tank Gauge (RTG), the GC-300 Cargo Temperature Unit (CTU) and the GLK-300 Signal Processing Unit (SPU). The RTG introduces modern and flexible arrangements for simpler installation. The tank pressure transmitter is fully integrated by means of both mechanics, electronics and cabling. The radar technology provides accurate measurement regardless of atmospheric conditions inside the tank.

Principle of operation

The RTG employs the Frequency Modulated Continuous Wave (FMCW) principle with dual sweep technology to eliminate Doppler-effect caused by cargo movement. The distance (i.e. ullage) is derived from the time delay of the reflected signal. The electronic unit in the RTG includes a patented signal detection method that ensures optimum performance.



Fig. 1: GLA-300/HS

Tank pressure transmitter

The GT-450 tank pressure transmitter is fully integrated in the RTG. The only installation work needed is to connect the cable to the terminal block, the rest is performed before delivery.

The GT-450 pressure transmitter is built around a dry, robust ceramic measurement capsule with internal capacitive sensing and with a ratiometric output. The ceramic capsule is "burned in" during the manufacturing, giving a transmitter with very good long term behaviour.

Tank installation

The RTG adapts to a Gauge Socket with inner diameter of 200 mm or larger. The Gauge Socket shall be welded to the top of the tank, preferably as close to the centre of gravity of the tank as possible.

Optional sounding plug requires a Gauge Socket diameter from 400 mm and above. Also, if strict cleaning of tank equipment is essential, a larger diameter socket than 200 mm is preferable.

For slop tank solution with standpipe 3.5'' the top section of the standpipe installed inside the Gauge Socket is Kongsberg Maritime supply. The pipe sections to follow are normally yard supply.

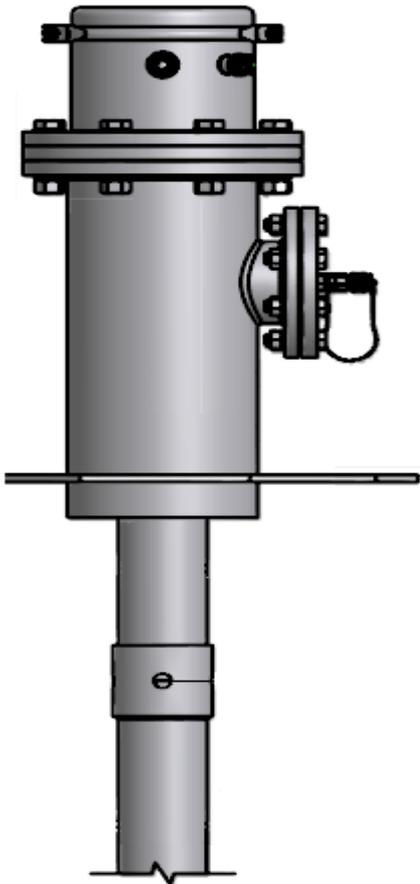


Fig. 2: GLA-300/HS with Still pipe details

Specifications

Radar Tank Gauge

Material: AISI 316L and PTFE
Frequency: X-band (10 GHz)
Measuring range: 0 to 50 metres
RMS accuracy: 5 mm

Tank Pressure Transmitter

Material: AISI 316 and Titanium
Measuring range: 0.8 to 1.4 bar
(optional 0.8 to 1.8 bar)
Accuracy: $\pm 1.0\%$ of FRO* from 20 °C to 85 °C
 $\pm 2.5\%$ of FRO* from -45 °C to +20 °C

*FRO = Full Range Output

Common specification

Cable spec.: 3 x twisted pair common screen
Protection: IP66/67
Ambient temp.: -45 °C to +85 °C
Ex-classification: $\text{Ex II 1 G Ex ia IIC T4}$
Ex-certification: CE 0470
Nemko 09ATEX1132X
Weight: 17 kg
EMC Standard: EN50081-1 and EN 50082-2

Gauge Socket

Material: According to builder specification
Diameter: $\text{Ø}200$ mm or larger
Flange: JIS: 5K200
Height: 500 mm
(other lengths upon request)

Inspection hatch with cleaning equipment connection has to be mounted in the Gauge Socket

KONGSBERG MARITIME AS
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RADAR TANK GAUGE GLA-300/x-yz

Ser.no. Yr. Nemko 09ATEX1132X
0470 $\text{Ex II 1 G Ex ia IIC T4}$
UI=14.3VDC, PI=2.1W, CI=347nF, LI=0
-45°C ≤ Ta ≤ 85°C

GLA-300/HS-yz type codes

Optional for HS:

y: 1=10GHz, 2=24GHz (operational)
z: 1=PTFE, 2=PEEK (lens material)

ATEX related document



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