The KONGSBERG GLA-300/H Radar Tank Gauge (RTG) is part of the GL-300 Tank Monitoring System. Together with 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 radar technology provides accurate measurement regardless of the atmospheric conditions inside the tank. The tank pressure transmitter is fully integrated by means of both mechanics, electronics and cabling.

**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.

A frequency sweeping microwave signal is emitted by the RTG, and by aid of the horn antenna directed vertically down the tank either directly or by an angular adapter. The high frequency combined with the antenna design gives a very narrow beam width of ±4°.

The GLA-300/H is designed with a PTFE lens isolating the radar electronics from the tanks atmosphere and provide a clean surface toward the tank contents. The clean surface ensures easy cleaning of radar, which is regarded critical in the transport of hazardous chemicals.

The radar are connected to a dedicated GLK-300 SPU by a RS-485 communication link (2-pair cable).

**Tank pressure transmitter**

The GT450 tank pressure transmitter is fully integrated in the RTG. The transmitter comes ready installed from the factory.

The GT450 pressure transmitter is built around a dry, robust ceramic measurement capsule with internal capacitive sensing element and with a ratiometric output.

The pressure transmitter is connected to the GLK-300 SPU by a HART bus link (1-pair cable).

**Tank installation**

The RTG adapts to a gauge socket with a minimum inner diameter of 200 mm (larger sockets can be used if straight type). The gauge socket shall be welded to the top of the tank, preferably as close to the center of gravity of the tank as possible.

In high temperature applications, using a specially designed angular gauge socket, the radar tank gauge avoids direct heat radiation from the cargo. This reduces the exposure of the high temperature and increases the lifetime of the electronics inside the GLA-300/H housing.

The RTG housing includes a cable gland for cable connection to the GC-300 Cargo Temperature Unit (1-pair cable).
**FEATURES**

- Radar RMS accuracy: 2 mm
- Measuring range: 0 to 50 m
- Half power beam width: 8° (±4°)
- Operating temperature: -45 to +85 °C
- Ingress protection: IP 66/67
- Intrinsically safe Ex ia IIC T4 Ga
- Stainless steel AISI 316 L
- Integrated tank pressure transmitter

* For details about free space requirements, ref. Installation Manual.

**TECHNICAL SPECIFICATIONS**

**Radar Tank Gauge**
- Measuring range: 0 to 50 meter
- RMS accuracy*: 2 mm
- Frequency: K-band (24 GHz)
- Beam width: ± 4 °
- Material: AISI 316L and PTFE

**Tank Pressure Transmitter**
- Measuring range: 0.8 to 1.4 bar (optional 0.8 to 1.8 bar)
- Accuracy: ±1.0 % of FRO** (+20 °C to +85 °C)
  ±2.5 % of FRO** (-45 °C to +20 °C)
- Material: AISI 316 and Titanium

**Common specification**
- Cable specification: 3 x twisted pair common screen
- Operating temperature: -45 °C to +85 °C
- Protection grade: IP66/67
- Weight: 17 kg
- Ex-classification: Ex ia IIC T4 Ga
- Ex-certification: Sira 14ATEX2056X
  IECEx SIR 14.0025X

- Environmental standards: IACS E10
  CISPR 22

**Safety data**
- Max. input voltage: Ui = 14,3 VDC
- Max. input power: Pi = 2,1 W
- Max. input current: li = 560 mA
- Max. internal capacitance: Ci = 347 nF
- Max. internal inductance: Li = negligible

- Type approvals: ABS, BV, CCS, DNV-GL, KRS, LRS, NK, Rina

* RMS sensor accuracy at controlled environment
**FRO = Full Range Output

Specifications subject to change without any further notice.