

Product Data Sheet

Edition 02

September 2010

Rosemount® TankRadar TGU51

Parabolic Antenna Gauge - TGU51

Benefits

- 10 GHz FMCW radar with narrow radar beam for accurate and reliable level measurement
- Measure products, with low reflectivity, in deep tanks and capturing all relevant surface reflection
- Service under closed tank conditions
- Robust, withstands harsh conditions in tank and on deck
- Integrated vapor pressure sensor
- Cost effective solution with sensor bus for temperature, cleaning machines and local display
- Independent 2-in-1 and 3-in-1 radar channels for level redundancy or High Level & Overfill alarm in a single deck penetration

Applications

Rosemount TankRadar TGU51 can be installed on deep tanks, suitable of all type of vessel including VLCC and ULCC. The gauge is equally suitable for cargo and slop tanks.

Additional measurement channels can be added for optional redundant level measurement or High Level & Overfill Alarm.

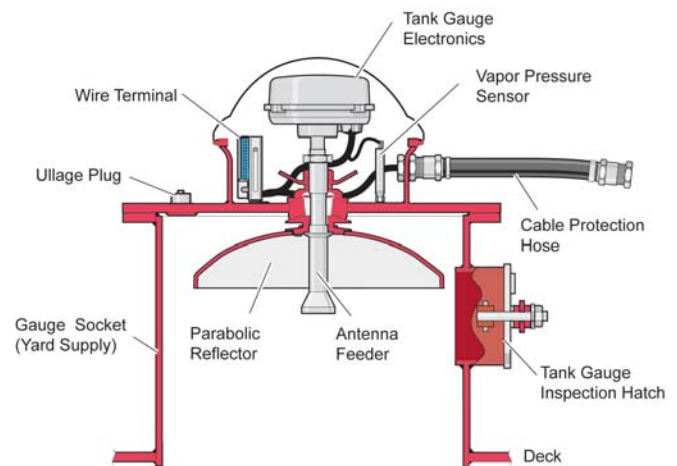
Description

The gauge uses intrinsic safe FMCW radar technology. The gauge is intelligent and processes tank signals locally. The advantage is better and faster tracking of echoes in tank, and to pick up the reflected signal for level calculation.

By using 10 GHz and a large parabolic antenna the gauge has a good sensitivity (signal to noise ratio) and a narrow beam width of $\pm 3^\circ$, making the gauge suitable to measure in deep tanks up to 40 meters.

On the flange a sounding plug is fitted which can be used for manual dipping.

Exchange of electronics and cleaning of the antenna can be done under closed tank conditions. The fast opening inspection hatch makes the cleaning process easy.



The larger parabolic antenna and 10 GHz frequency result in robust measurement. Thus more tolerant to cargo buildup and deposits on the antenna.


The vapor pressure sensor is mounted inside the radar gauge and connected to the breather to provide relative tank vapor pressure.

Rosemount® TankRadar TGU51

Technical Specification

Rosemount TankRadar TGU51

Gauge

Measuring range	0 to 40 m
FMCW Center frequency	10 GHz
Instrument accuracy	±2 mm
Ambient temperature	-40 to +70° C
Cable to control room	Up to 3 cables with two or three twisted pairs with common shield. Max. length is 400 m.
Number of cable inlets	Up to 4 inlets (Ø 6 - 21 mm cable)
Flange	20 hole flange (Pipe diameter 525 - 553 mm)
Half power beam width	±3.0° (lobe angle from antenna axis) ¹
Sounding plug	Inner diameter 42 mm
Deck socket height (Yard supply)	500 mm (standard)
Material facing tank atmosphere	Stainless steel 316L, PTFE, Mo >2.5% (optional) Mo >2.7%
Material facing deck	Stainless steel 316 L
Weight (deck socket excluded)	55 kg (117 lbs.)
Sealing	IP66
Explosion protection	Intrinsically safe: ATEX  II 1 G, Ex ia IIC Ga T4 IECEX: Ex ia IIC Ga T4

Optional

Channels	No. of independent channels	Up to 3: Level, Redundant level, High level and/or Overfill alarm
Vapor Pressure	Operating range	-100 to 300 mBar alt. -100 to 900 mBar
	Instrument accuracy	±3 mBar
	Material facing tank atmosphere	Alloy C276

1) For details see Installation Manual.

The Emerson logo is a trademark and service mark of Emerson Electric Co. The Rosemount trademark and logotype are registered trademarks of Rosemount Inc. All rights reserved. The content of this publication are presented for information purposes only, and while efforts have been made to ensure their accuracy, they are not to be construed as warranties or guarantees, expressed or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available upon request. We reserve the right to modify or improve the designs or specifications of our products at any time without notice. Rosemount Tank Radar AB accepts no responsibility for any errors that may appear in this publication.

Marine Tank Management

Emerson Process Management

Rosemount Tank Radar AB

Box 13045

SE-40251 Sweden

T +46 31 337 00 00

F +46 31 25 30 22

www.EmersonProcess.com/mtm