



**HIGH ACCURACY**

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## PRODUCT DATASHEET

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# Rosemount TGU 58

## Tank Radar Gauge, Parabolic Antenna



**Rosemount TGU 58 Tank Radar Gauge, Parabolic Antenna is a marine non-contacting radar level gauge that is integrated in the Rosemount Cargo Monitoring System (CMS). It is designed to be used in harsh conditions on tankers and offshore installations, and has a superior robustness and accuracy under all tank conditions. TGU 58 can have up to three independent measurement channels in the same unit.**

- 26 GHz FMCW tank radar gauge, with advanced signal processing, high bandwidth and optimized parabolic antenna
- Accurate and reliable measurement that keeps you operating under adverse conditions in tank
- Stainless steel with Mo>2.5% makes the unit resistant against all commonly transported cargos
- Seamless in-flange integrated antenna
- Easy to install, light weight and narrow beam
- Optional integrated vapor pressure sensor
- Optional level redundancy measurements
- Optional independent high level and overflow alarm measurements

*Product Discontinued*

## Description

The Rosemount TGU 68 Tank Radar Gauge, Parabolic Antenna, is suited for installation on general tanks with a tank height of up to 35 meter. The unit is equipped with a parabolic antenna, and is mounted on an 8" deck socket.

The gauge is intrinsically safe and operates based on 26 GHz FMCW radar technology. The advanced signal processing, the high bandwidth and the optimized parabolic antenna gives a superior robustness in measurement. The TGU 68 keeps operating under the most difficult conditions in the tank and on the deck.

The narrow beam of  $\pm 2^\circ$  makes it easy to install on tanks.

### Connections

One digital bus connection to the Rosemount SCU 51 Supply and Communication Unit in the control room per level measurement channel.

Optional digital bus connections to:

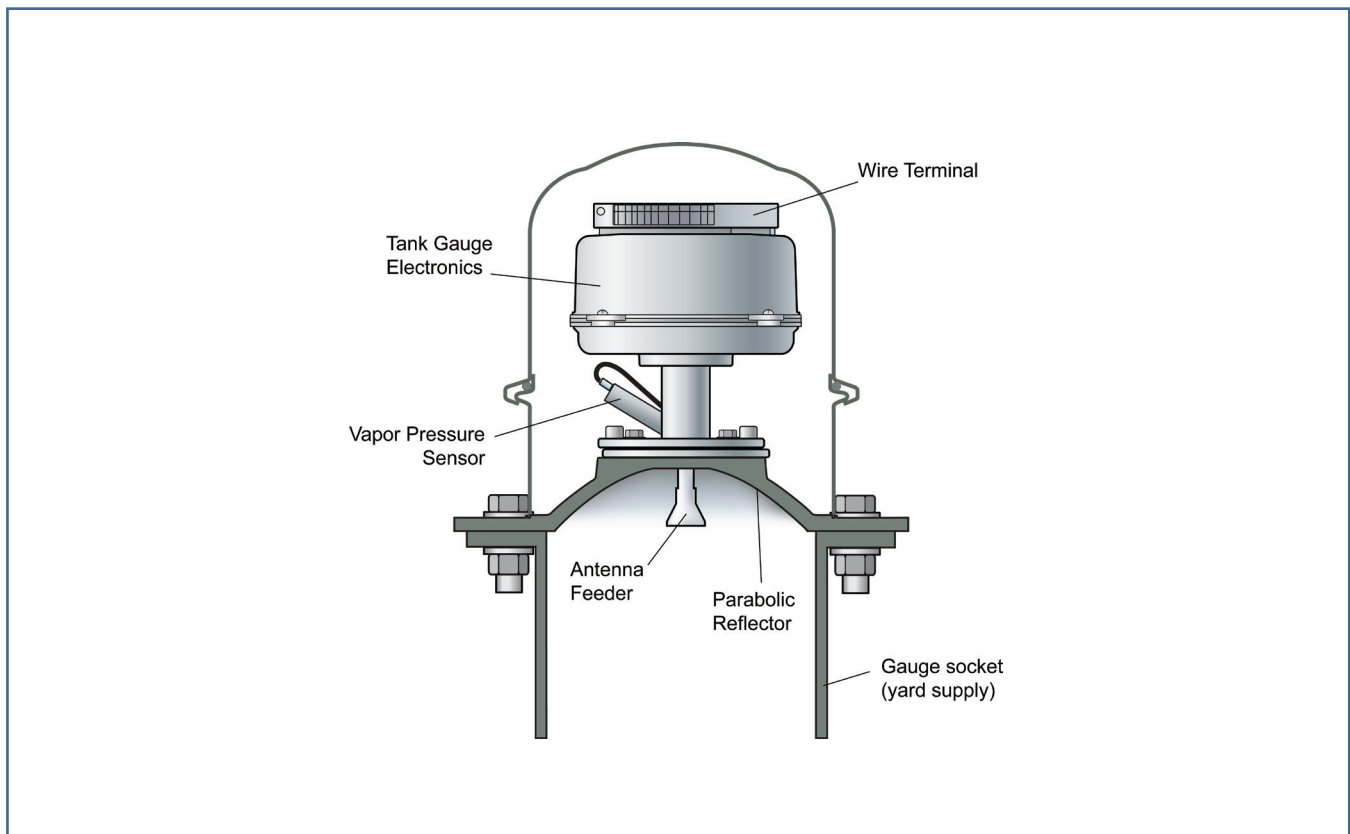
- Rosemount TMU 51/53 Temperature Measuring Units
- Rosemount TGD 51 Tank Gauge Display
- Rosemount WTU 51 Tank Cleaning Monitoring

### Vapor Pressure Option

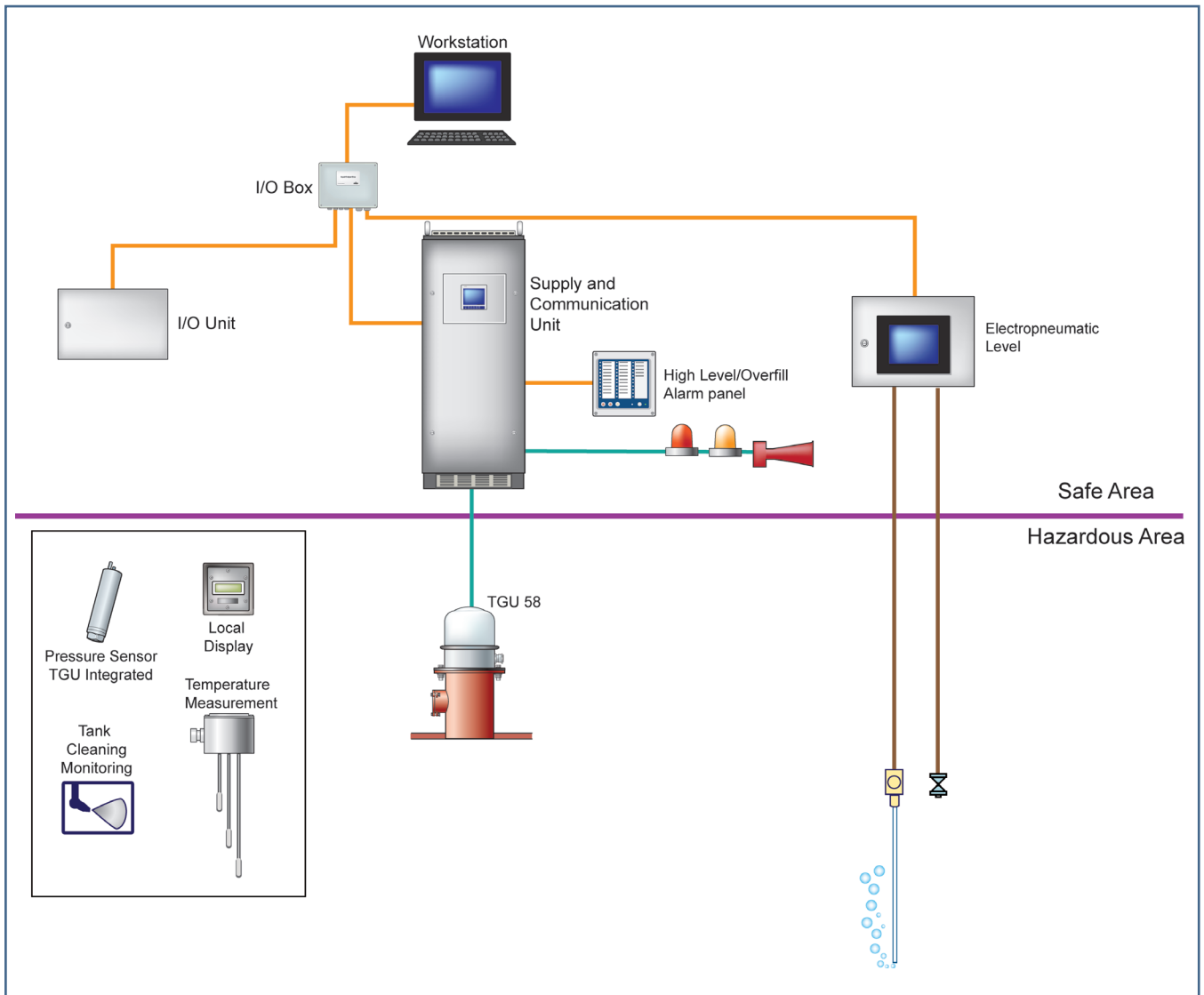
An optional vapor pressure sensor can be mounted as an integrated part inside the TGU 58. The vapor pressure sensor provides the relative pressure inside the tank.

### Redundancy and High Level / Overfill Options

The gauge is as standard equipped for level measurements, but is prepared for optional redundant level or independent high level or overfill alarm measurements.



# Rosemount Cargo Monitoring System

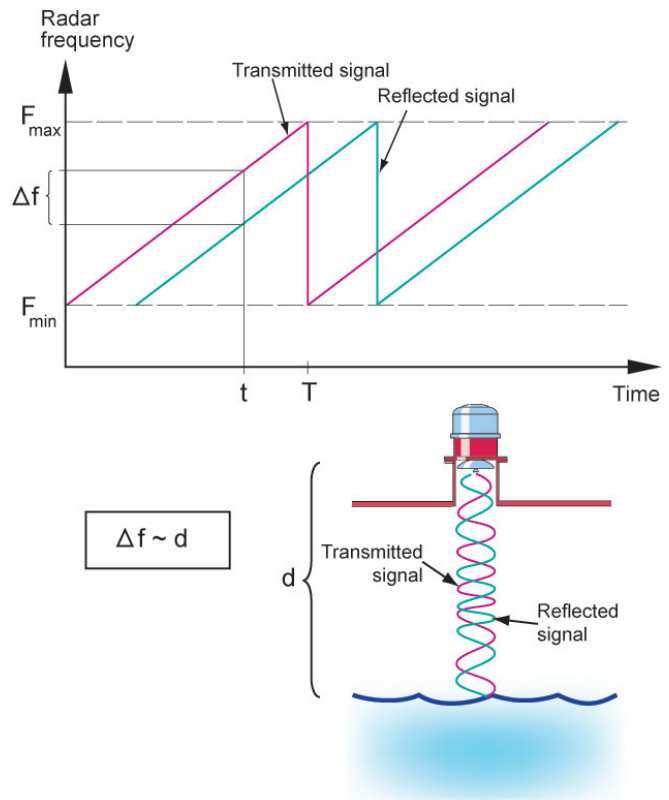


**Radar Principles**

The FMCW radar used in Rosemount CMS emits radar waves continuously at a known range of frequencies. The transmitted radar frequency is increased over a time creating a sweep. The reflected signals is then mixed with the transmitted signals creating a low frequency signal that is proportional to the product level. The signals are digitally processed and presents a very accurate reading of the distance to the product level.

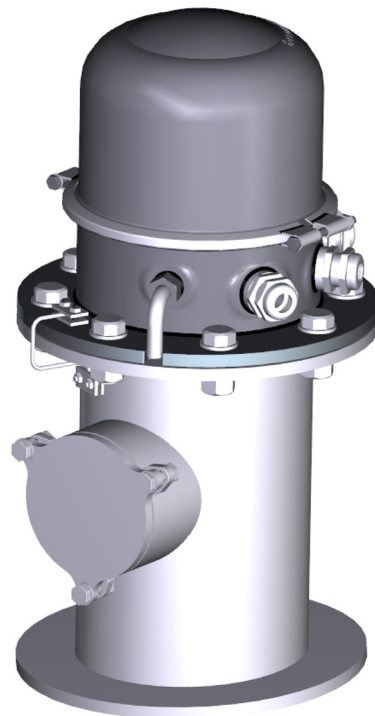
The main advantage for using radar for tank gauging are:

- Radar waves are extremely robust to any conditions in the tank.
- Radar waves are generally not affected by the atmosphere above the product in the tank
- The only part located inside the tank is the antenna without moving part
- High reliability
- High accuracy
- With Rosemount CMS, the Tank Gauge electronics can easily be services and replaced during closed tank conditions.




**Deck Socket**

The TGU 58 is as standard mounted on a TGS 58 Tank Gauge Socket with a service opening for easy cleaning of the antenna. The TGS 58 Tank Gauge Socket is normally supplied by yard.



Rosemount TGU 58 Tank Radar Gauge, Parabolic Antenna on Rosemount TGS 58 Tank Gauge Socket

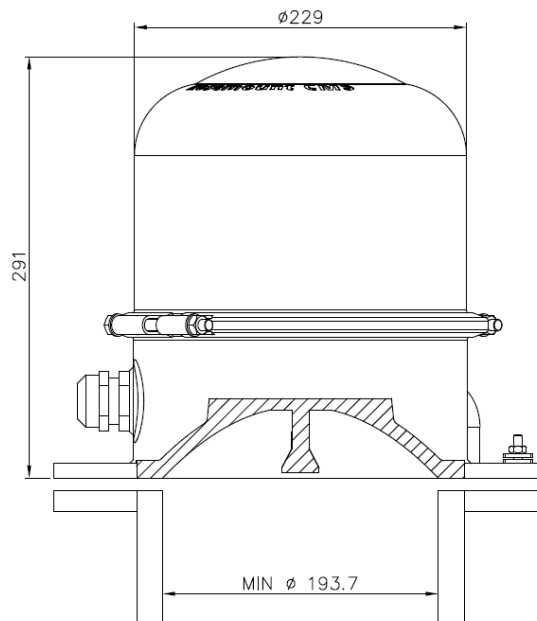
# Technical Specification

Rosemount TGU 58		
<b>General Specification</b>		
Antenna type	Parabolic antenna	
Measuring range	0 to 35m	
Instrument accuracy	±2 mm	
FMCW centre frequency	26 GHz	
Half power beam width	±2° (lobe angle from antenna axis) <sup>1</sup>	
Operating temperature in tank	-40 to +100 °C	
Operating pressure in tank	100 to +500 mbar	
<b>Electrical Specification</b>		
Cable to control room	Up to 3 cables with two or three twisted pairs with common shield. Max length approximately 400 m	
Number of cable inlets	1 to 3	
Cable diameters	6 to 21 mm	
Field bus	Proprietary intrinsically safe	
Microwave output power	<1mW	
<b>Mechanical Specification</b>		
Flange	Suitable for mounting on JIS 5K-200, DN200	
Weight	16.5 kg (35 lbs.)	
Material facing tank atmosphere	Stainless steel 316L with Mo>2.5%, PTFE, Fluorosilicone (standard) or Kalrez 6375 (optional)	
Material facing deck	Stainless steel 316L	
Deck socket <sup>2</sup>	350 mm with service opening 500 mm with service opening	
<b>Environment Specification</b>		
Ingress protection	IP 66/67	
Ambient temperature	-40 to +70 °C	
Humidity	0 - 100% relative humidity	
<b>Vapor Pressure Option</b>		
Operating range	-100 to 900 mbar	
Instrument accuracy	±3 mbar	
Material facing tank atmosphere	Stainless steel 316L and Alloy C276	
<b>Approvals</b>		
Marine type approvals	ABS, BV, CCS, DNV-GL, KR, LR, NK, RINA	
Explosion protection	Intrinsically safe:	ATEX:  II 1G Ex ia IIC T4 Ga IECEx: Ex ia IIC T4 Ga INMETRO: Ex ia IIC T4 Ga

1) For details see Reference Manual

2) Normally yard supply

## Dimensional Drawings



All dimensions in mm

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measurement instruments

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	<p>Pressure Measurement</p>		<p>Level Measurement</p>
	<p>Temperature Measurement</p>		<p>Flow Measurement</p>
	<p>Marine Measurement &amp; Analytical</p>		<p>Gas Analysis</p>
	<p>Liquid Analysis</p>		<p>Flame and Gas Detection</p>
	<p>Tank Gauging</p>		<p>Wireless Infrastructure</p>
	<p>Acoustic &amp; Discrete</p>		

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