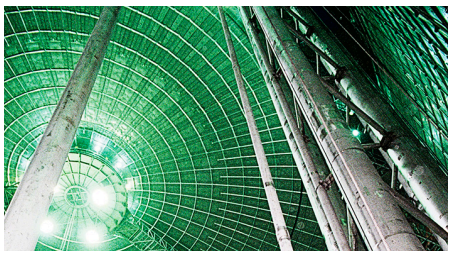
Rosemount Tank Gauging LNG System Solutions

Future-proof Your Instrumentation Infrastructure for Lifetime Precision

Reduce ***complexity*** *and increase* ***efficiency*** *with certified system solution for* ***cryogenic*** *and refrigerated* ***storage tanks***

When Accurate and Reliable Measurements are Critical



In cryogenic containment tanks, it is critical to have measurements that will not fail.

Radar technology provides a robust and virtually maintenance free level solution, offering highly accurate and reliable measurements at long range. It also has the ability to overcome difficulties associated with cryogenic storage such as vapor spaces, low dielectric constants, and thermal effects.

When Safety is a Concern

- Use reliable radar technology for level measurements and overfill prevention
- Identical separation reduces complexity and the likelihood of human errors
- Remote proof-testing from the control room saves time and improves safety
- Certified integrated instrumentation solution from one supplier
- No need for additional devices enables easy safety calculations
- Extended inventory management features incl. roll-over prediction in one package

IEC 61511-2: "Separation between the SIS and the BPCS may use identical or diverse separation." Identical separation means using the same technology from the same or a different manufacturer.

Unique System Features

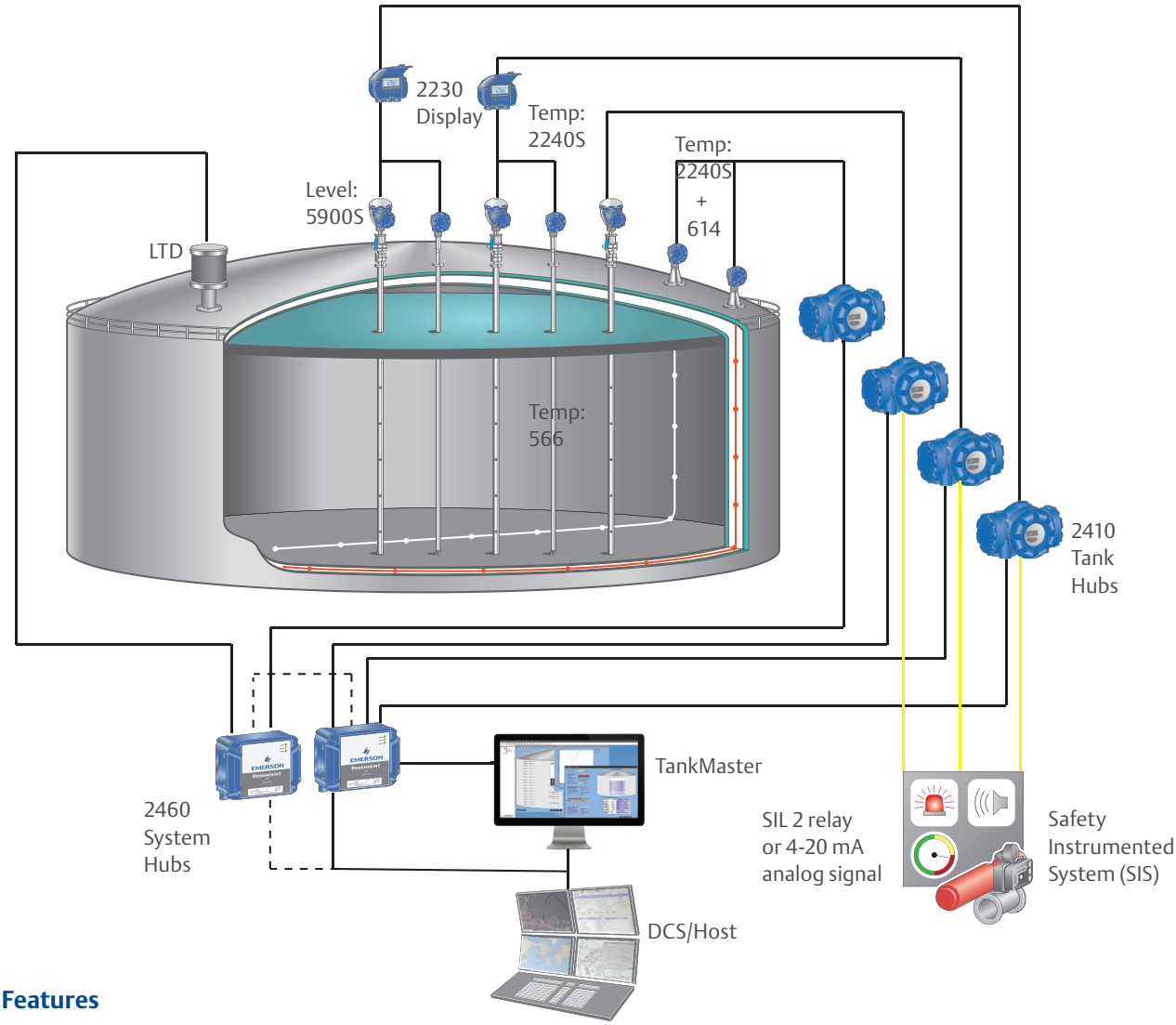
Triple redundancy is a common solution for measurement instrumentation.

- Support for measurement redundancy
- Very accurate level measurement
- Possibility to use 2oo3 voting
- Very accurate temperature measurements
- Cool-down and leak detection sensors
- Level, temperature and density profile device for stratification detection

*"***75 percent** *of accidents in industry are traceable to organizational and* **human factors**. *In this context, the Buncefield* **incident** *provides a case in point. Buncefield had redundant and diverse technology for* **overfill prevention,** *but the high-level alarm was inoperable due to human error."*

EMERSON™

Complete Cryogenic Tank Gauging System



System Features

Measurement Redundancy	Includes both level and temperature redundancy. For level, primary and secondary gauges support the Basic Process Control System (BPSC), and a third provides information on the Overfill Prevention System (OPS).
2oo3 Voting	2oo3 voting means an alarm is triggered when two out of three level gauges indicate abnormal conditions, thereby avoiding false alarms and unnecessary operation stops. With an extra gauge there is always a spare at hand.
Instrument Accuracy, Level	Rosemount 5900S: ±0.5 mm (0.020 in.).
Temperature Measurement	Rosemount 2240S temperature transmitter with Rosemount 566 Multiple Spot Temperature Sensor. The DIN Class A sensor elements may be calibrated for even higher accuracy. The same temperature transmitter may be used with the Rosemount 614 sensor, specifically designed to measure tank wall and isolation space temperatures for cool-down control and leak detection purposes. A Level Temperature and Density (LTD) profile device is used to detect stratification and provide data that can be used to prevent roll-over incidents.
Remote Proof-testing	Rosemount TankMaster inventory management software supports proof-testing from the control room, which means time consuming and potentially dangerous tank climbing is avoided.
Inventory Management	One software supports all full containment cryogenic storage tanks functions, including roll-over prediction.

Emerson Automation Solutions
Box 150 (Visiting address: Layoutvägen 1)
SE-435 23 Mölnlycke
Sweden
+46 31 337 00 00
Sales.RTG@Emerson.com

Emerson.com
Facebook.com/Rosemount
LinkedIn.com/company/Emerson-Automation-Solutions
Twitter.com/Rosemount_News

00807-0500-5100, Rev AB