

ROSEMOUNT TANK GAUGING SYSTEM – OVERFILL PREVENTION SOLUTIONS FOR BULK LIQUID STORAGE



Leaving safety to chance is not an option

MAKE SURE YOU ARE IN CHARGE

Take control of your plant safety with Emerson's Rosemount Tank Gauging System—get access to modern overfill prevention techniques based on relevant standards such as IEC 61511 and API 2350. Dual radar-based tank gauging ensures inherent reliability as the gauges are always in operation, have no moving parts and no contact with the liquid.



INVESTMENT IS PAID BACK IN
1-2 YEARS

Know before

Tank overfills do not occur randomly—they are predictable and thereby preventable. Dual radar-based tank gauging lets you reach a higher level of safety than with traditional mechanical overfill prevention methods. A safer terminal also pays off in economic terms in higher reliability and fewer costly interruptions.



- + Protect life and health
- + Protect the environment
- + Protect plant assets
- + Comply with regulations
- + Improve public relations
- + Fulfill corporate social responsibility
- + Increase plant efficiency
- + Minimize financial and legal risks

Meet tough demands today and tomorrow

Safety expectations are increasing as legislators become more aware of the potential danger of tank farm accidents. Using the latest advances and future-proof solutions in overfill prevention makes a big difference.

TAKE THE RIGHT ACTIONS

Reduce your risk of tank overfills and stay out of trouble. Tank overfills are a major concern in the petroleum industry. In the best case, you have to clean it up. In the worst case, you go out of business and end up in court. Modern tank gauging and overfill prevention solutions minimize your risk. What is more, accurate and continuous control of tank content opens up for quicker transfers, better tank utilization, fewer visual inspections and longer intervals between proof tests.

Good reasons for good overfill prevention

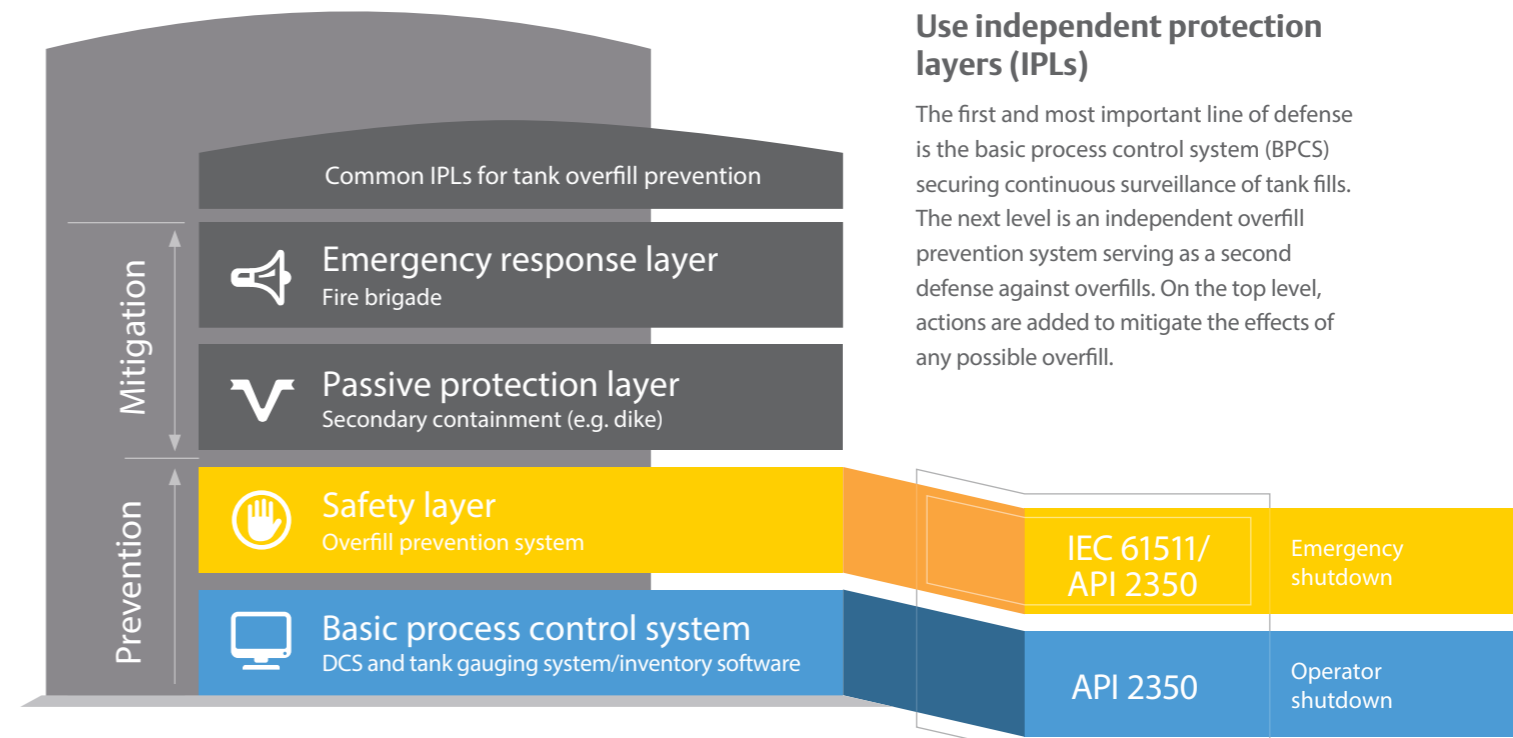
Hundreds of tank spills of hazardous liquids occur every day. These spills may affect the drinking water or, if exposed to an ignition source, result in an explosion with severe consequences for everybody involved.



OVERFILLS OCCUR IN
1 out of 3300 fillings
 worldwide Source: Marsh and McLennan Companies

Use independent protection layers (IPLs)

The first and most important line of defense is the basic process control system (BPCS) securing continuous surveillance of tank fills. The next level is an independent overfill prevention system serving as a second defense against overfills. On the top level, actions are added to mitigate the effects of any possible overfill.



DESIGN WITH LIFETIME SAFETY IN MIND

Get the most out of your investment in overfill prevention throughout the safety lifecycle. Based on a holistic perspective, IEC 61511 covers both process and bulk liquid storage industries and is summarized in the figure below. Rosemount Tank Gauging System is open and scalable, making sure you can comply with the latest overfill prevention standards, today and in the future.



“ As our terminal is located in the New York metropolitan area, the Rosemount Tank Gauging System’s reliability and overfill prevention capability are fundamental. ”

+ Craig Royston, General Manager, New York Terminals



Real-life examples of why to invest in overfill safety

CONTAMINATION AND SPILL CLEAN-UP

WESTERN MASSACHUSETTS, UNITED STATES, 2005

23,000 gallons of diesel

were released to the secondary containment, consisting of a soil bottom and steel sides, as a result of human error.

9,000 gallons were lost and the groundwater contaminated.

FATALITIES, INJURIES AND EVACUATION

JAIPUR, INDIA, 2009

12 people were killed and **300 were injured**

as a result of a massive explosion, which occurred during a routine transfer of kerosene between two terminals.

Accusations were raised against 20 employees.

GET THE SUPPORT YOU NEED TO FIND THE RIGHT SOLUTION

Discover what Emerson can do to help you meet your challenges in overfill prevention—such as regulatory compliance, sustainability policies, union demands and insurance requirements. Some of the world’s leading overfill prevention experts work for us and regularly handle questions relating to these areas and many more. Contact details are on the back cover.



“The quality of this book makes it the primary educational tool for the global process and bulk liquid storage industry to reduce the number of tank overfills.”

+ Phil Myers, API 2350 Edition 4 Committee Chairman

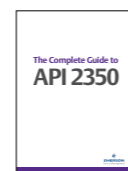
EmersonProcess.com/level-handbooks



Learn more and reach further

Discuss the latest standards, get training programs and implement future-proof overfill prevention solutions together with Emerson. We offer services to assess a part of your tank farm, or all of it, to make sure it fulfills IEC 61511 or API 2350 or both. A typical assessment comprises:

- + Management system evaluation
- + Risk assessment evaluation
- + Tank and operations evaluation
- + Compliance report with gap closure recommendations



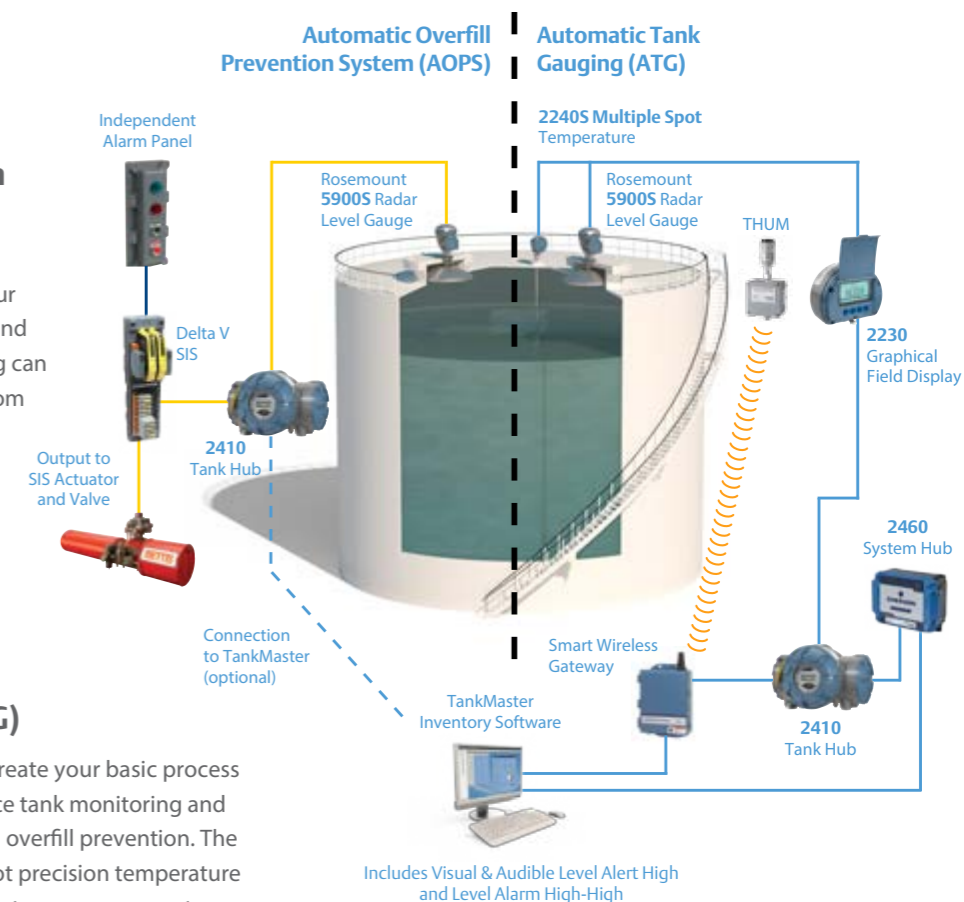
Get the latest Complete Guide to API 2350 at API-2350.com

Automatic Overfill Prevention System (AOPS)

Benefit from the same high performance devices as in your ATG system to create your overfill prevention system (OPS)—the second independent protection layer. Proof testing can be done automatically from the control room without affecting tank operations.

Automatic Tank Gauging (ATG)

Use Rosemount Tank Gauging System to create your basic process control system (BPCS) for high-performance tank monitoring and as the first independent protection layer in overfill prevention. The system includes radar gauges, multiple spot precision temperature measurements, pressure transmitters, inventory management software and networking capabilities.



ACHIEVE THE DESIRED LEVEL OF SAFETY

Meet the never-ending challenge of fulfilling the latest safety regulations. Rosemount Tank Gauging System is future-proof and lets you stay compliant year in, year out. The system supports safety devices with Safety Integrity Levels (SIL) from SIL 1 to SIL 3. Devices can be delivered ready for upgrade to a higher safety integrity level. You get a cost-efficient solution and peace of mind.



Combine devices the way you want

Get solutions for tank gauging and overfill prevention covering all storage tank types and installation conditions. Rosemount Tank Gauging System supports everything from an independent additional level switch to a complete SIL 2 or SIL 3 Automatic Overfill Prevention System (AOPS) including various level technologies. Using the same types of proven devices for tank gauging and overfill prevention simplifies training, procurement, parts handling, engineering and installation.



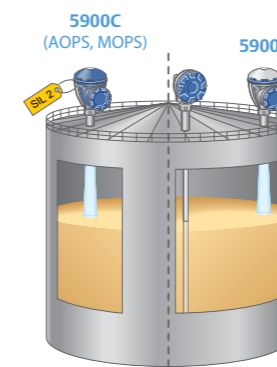
Use two level gauges per tank

The 5900S gauge with 2-in-1 technology provides dual level data in two independent layers of protection using only one housing and a single tank nozzle. The level output from the safety layer sensor is available as backup level measurement for day-to-day operations. Installation time is also reduced, not least in tanks with only one opening such as floating roof tanks with still-pipes and LPG tanks.

- + Always in continuous operation
- + No moving parts
- + No contact with the liquid

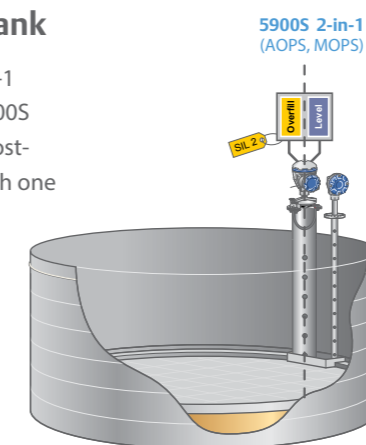
Fixed roof tank

Fixed roof tank with two separate tank openings. Safety layer suitable for SIL 2 using a 5900C radar level gauge. A 5900S high precision gauge for primary level measuring.



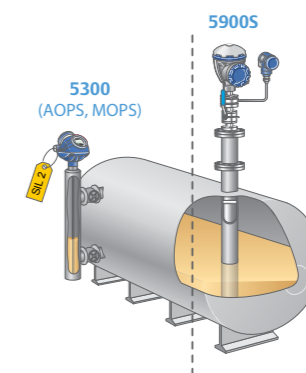
Floating roof tank

SIL 2 gauge with 2-in-1 functionality. This 5900S gauge is extremely cost-effective on tanks with one still-pipe only.



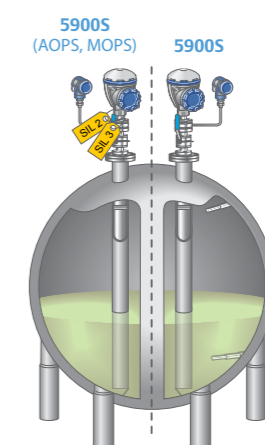
Bullet tank

Combining non-contacting and guided wave radar is often a cost-effective solution for tanks with bridles.



LPG tank

Pressurized tanks cannot normally be opened. The 5900 gauge verification pin function enables measurement verification without opening the tank. Dual gauge configuration with two still-pipes or with one still-pipe and 2-in-1 functionality provides state-of-the-art reliability.



AOPS=Automatic Overfill Prevention System
MOPS=Manual Overfill Prevention System



ROSEMOUNT™

Consider it Solved.

Emerson Process Management supports customers with innovative technologies and expertise to address your toughest challenges. Rosemount measurement instrumentation and the many other Emerson brands represent the many ways we're helping you do more and get more from your process.

For more information about Rosemount Tank Gauging System, visit EmersonProcess.com/Rosemount-TankGauging

Emerson Process Management Rosemount Tank Gauging

Box 150
(Visiting address: Layoutvägen 1)
SE-435 23 Mölnlycke
SWEDEN
Tel: +46 31 337 00 00
E-mail: sales.rtg@emerson.com

Emerson Process Management Rosemount Tank Gauging Middle East & Africa

P. O Box 20048
Manama
Bahrain
Tel: +973 1722 6610
E-mail: rtgmea.sales@emerson.com

Emerson Process Management Rosemount Tank Gauging North America Inc

6005 Rogerdale Road
Mail Stop NC 136
Houston, TX 77072, USA
Primary Phone: +1 281 988 4000
Secondary Phone: +1 800 722 2865
E-mail: sales.rtg.hou@emerson.com

Emerson Process Management Asia Pacific Pte Ltd

1 Pandan Crescent
Singapore 128461
Tel: +65 6777 8211
E-mail: Specialist-OneLevel.RMT-AP@Emerson.com

Emerson Process Management Latin America

1300 Concord Terrace, Suite 400
Sunrise, FL 33323, USA
Tel: +1 954 846 5030
E-mail: RFQ.RMD-RCC@EmersonProcess.com

© The Emerson logo is a trademark and service mark of Emerson Electric Co. Rosemount and the Rosemount logotype are registered trademarks of Rosemount Inc.

All other marks are property of their respective owners. © 2016 Rosemount Tank Radar AB. All rights reserved.

EMERSON™
Process Management