Integrated Solutions for Terminal Safety
The terminal environment is hazardous. Critical process parameters require continuous monitoring to protect people and the plant, and meet stringent safety, environmental and measurement legislation.

As recent experience shows, ineffective safety technology and awareness risks catastrophic incidents at oil and gas terminals and significant financial losses. These challenges demand solutions from a trusted partner.

Solutions for a Safer Workplace

**Tank Overfill Monitoring**
Overfill protection is an essential safeguard in terminals to manage the risks of accidents that, as recent years show, have the potential to cause serious damage. Penalties for even smaller incidents can have significant economic impact.

Using proven level measurement solutions you can significantly improve the accuracy, reliability and cost-effectiveness of overfill monitoring.

- Honeywell Enraf servo ATG has an integrated diagnostic function “Servo Auto Test” to ensure safe operations of SIL 2 or SIL 3 overfill protection loops. Existing servo installations can also be upgraded to be SIL compliant, extending the life of your investments via a simple software patch.
- Enhanced diagnostics in the Servo level gauge detect failures inside the gauge or in the application and report these to higher level systems for action, mitigating the possibility of an overfill. With a safe failure fraction rate of more than 99 percent, the gauge's diagnostics features can extend the safety proof-test intervals to five years, reducing costs and increasing efficiency.
- AlarmScout overfill measurement probes are all SIL rated to allow for overfill detection independent of the tank gauging equipment. They include loop-powered magnetostrictive level transmitters with HART communications, ultrasonic switches, and both single and dual-point measurement and mechanical overfill switches that can be used for floating roof monitoring.

**Floating Roof Monitoring**
An automated tank roof monitoring solution can protect assets and avoid safety incidents associated with floating roofs.

Developed to reduce volatile emissions at bulk liquid storage, floating roofs may be flooded or collapse if they stick, resulting in expensive repair and clean up costs. Honeywell Enraf's exclusive solution uses three radars, each measuring the roof at different points, covering its circumference and giving you unparalleled safety. The system continuously compares roof and product levels to generate an alarm if the difference exceeds threshold values.

**Fire and Gas Detection**
Honeywell's integrated fire and gas solutions include gas detectors, fire detectors, fire alarm panels, SIL 3 certified PLCs and integrated fire and gas safety systems. Continuously monitoring heat, temperature, smoke, and toxic or combustible gas levels, these solutions give you early warning of abnormal situations before they become a serious hazard.

**Tank Level Gauging**
Terminal operators have a wide choice from Honeywell Enraf's comprehensive portfolio including level transmitters, switches and indicators for every terminal application and for even the harshest environments.

- SmartRadar FlexLine tank gauging systems combine proven technology, advanced innovation and maximum flexibility. The FlexLine microwave-processing algorithm gives you the most accurate and reliable radar gauge available today and is SIL certified. Redundancy allows the gauge to continue to function as a safety device without interrupting the process for higher availability than competitive offerings.
- The versatile servo gauges can give you level measurement accuracy of up to 0.4 mm. Microprocessor-controlled, compact and easily integrated with existing SmartRadar, hydrostatic or hybrid gauging installations, they are also SIL certified by Germany's TÜV.
Safety is operators’ first priority. From applying a single instrument to engineering the largest plant, we can help you meet the highest standards with solutions and services built on more than six decades’ experience.

Both the Servo ATG and the Radar ATG are SIL 2 / SIL 3 certified by the TÜV against the latest IEC61508:2010 standard.

Making Terminals Safer

Safety Through Precision
Solutions for continuous monitoring of critical process parameters help control and manage the hazardous environment of the terminal. Highly reliable designs and market-leading accuracy mean you can count on our tank level monitoring to prevent the overfills that risk damaging people, the plant, environment and reputation.

Safety Through Standards
Safety standard IEC 61508 and ANSI/ISA S84.01 in the U.S. stipulate that safe operations should be achieved through a series of protection layers. Use our solutions to apply IEC 61508 and IEC 615111 (providing specific guidance for the process industry) to hydrocarbon storage sites.

Taking a holistic approach to industrial safety means comprehensive, integrated and scalable solutions for your terminal. Under our integrated strategy you can unify all the plant protection layers to achieve the highest Safety Integrity Level (SIL) and solutions compliant with all major international standards.

Safety in Numbers
Operators understand the risks posed by information gaps, manual monitoring procedures and ad-hoc measurement tools. The challenge today is determining where to invest for the best return.

Draw on Honeywell Enraf’s comprehensive portfolio of products and systems for terminal safety, including tank level gauging, tank overfill monitoring, floating roof monitoring and fire and gas detection systems, to find the right solution for your business.

Measuring Up
You can use Honeywell Enraf FlexLine radar ATG and servo ATG in SIL 3 rated applications in a redundant configuration. For the ultimate safety solution, use two diverse measurement techniques – radar and servo – and compare the measurements in a safety system such as Honeywell’s Safety Manager.

For scalable solutions, overfill sensors can also be integrated into Honeywell’s Experion® platforms or third-party safety systems.
Expert Services
A holistic approach to safety means more than just applying instrumentation and systems. With the global resources of Honeywell Process Solutions, you can draw on services including safety consulting, HAZOP studies, training programs, maintenance and ongoing customer services for a program tailored to your requirements.

Our network comprises local support with in-depth domain knowledge, for full lifecycle-based safety management:
- Project management
- Site surveys and analysis of existing facilities
- Basic/detailed design and prototyping
- Hardware and software engineering
- Installation and commissioning
- Startup assistance and training
- Services and maintenance

A Safer Strategy
An effective project strategy begins with a thorough assessment of the facility’s safety performance in accordance with international safety functional standards. This is the foundation for a detailed roadmap for installing new equipment or updating obsolete infrastructure.

Honeywell Enraf safety consultants will be with you at every step to help identify hazard points and possible risks, and develop basic design packages and related acceptance test criteria to meet all safety requirements. Services, consultation and training form an integral part of the project throughout its lifecycle.

Finally, support doesn’t end with commissioning. Online and onsite support are important parts of the program for both manned and unmanned terminals.

With an unmatched legacy, we’ll be with you for the long term.

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