Active Floating Roof Tank Monitoring System

GroundGuardian®

Which Tank Is Protected? Which Isn’t?
Contact an ALLTEC Representative for more information regarding recommendations for the protection of your facility. You can also learn more about ALLTEC’s products and services at www.alltecglobal.com.

**GroundGuardian®**

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**Lightning Risks Involving Floating Roof Storage Tanks**

At any given time, 2,000 thunderstorms blanket the earth, producing between 40-80 lightning strikes per second, and creating a constant threat to oil, gas and petrochemical facilities. Rim-seal fires are the most common type of fire for floating roof tanks, and 95% of rim-seal fires are the result of lightning. These fires can lead to months or years of downtime, tank/facility damage or injury to personnel. Your facility need not suffer one of the many catastrophic tank fires that happen each year. The **GroundGuardian® Active Floating Roof Tank Monitoring System** is an important part of the comprehensive layered ALLTEC Protection Pyramid™. The GroundGuardian® provides constant monitoring and instant alerts, enabling your facility to quickly act on tank bonding issues before they become serious threats.

**How GroundGuardian® Monitors and Alerts You to Threats**

ALLTEC has developed, using patented innovative active monitoring technology, an easy way to monitor your existing lightning strike mitigation measures as well as those proposed by the American Petroleum Institute RP 545.

GroundGuardian® detects hazardous changes in resistance of the electrical bond between the floating roof and the storage tank’s grounding system. GroundGuardian® continuously monitors for unsafe deviations produced by corrosion, product/wax accumulation, or shunt breakage. By using an intrinsically safe ground loop supervisor circuit, the state of your existing shunts are monitored. If a dangerous state change occurs, the GroundGuardian® can notify your facility’s Process Control monitoring system.

**Features & Benefits**

GroundGuardian® Monitor and your facility’s Process Control system can:

- Initiate external alarms
- Activate product transfer interlocks
- Update time/date stamp records
- Trigger lightning protection bonding inspection/maintenance

The GroundGuardian® Monitor/Alarm is housed in an ATEX rated flame-proof/explosion proof metal enclosure suitable for installation in the hazardous environment of your External Floating Roof Tank (EFRT).

Learn more at alltecglobal.com/products grounding-bonding-solutions groundguardian

**Ease of Management:**

- During normal conditions, 3 green LEDs flash at the dedicated tank unit and indicate a non-alarm condition at the control center.
- When the bonding system integrity deteriorates or malfunctions, 2 DRC contacts change state to provide alarm condition at the control center, while a red LED remains illuminated at the dedicated tank unit.

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**Enclosure Ratings:**

- NEC/CEC: Class I, Groups B, C & D, Type 3&4, Class II, Groups E, F & G, and Class III Hazardous Locations
- ATEX: Zone 1
- Environmental certification: CE/IEC 68-2-52 Part 2,Safety 2 per ATSM BB117-11

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**Locations of the Main Components (Example)**

- Monitoring Reel
- Junction Box
- Monitor
- Explosion proof Monitor/Alarm Unit - Suitable for ATEX Zone 1, and NEC Class 1, Div 1 applications.
- Intrinsically safe current is passed through the NEC: CLASS 1, DIV 1 / ATEX: ZONE 0 rated Remote I/O Enclosure.
- Switch contact outputs for alarm control or computer interface with remote monitoring system.
- Any rise over the 10 Ohm limit is detected by the monitoring unit’s ground loop supervisor, instantly creating an alarm state.
- Resistance between the floating tank roof and grounded tank wall is continuously monitored.

**“24/7 Protection”**

Understand the constant risk. Enjoy the security of knowing you are protected by continuous, reliable monitoring.

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Grounding and Bonding Solutions · Surge Suppression · Lightning Protection