

Tank Loading Overfill Protection Monitor

Applications:

- Tank Overfill Monitor
- Tank Overfill Protection
- Tanker Truck Overfill Monitor
- Tanker Truck Overfill Prevention
- Tanker Rail Car Overfill Monitor
- Tanker Rail Car Overfill Prevention

Application Background:

Overfilling or overflowing a liquid product in a tanker truck or tanker rail car can create a safety and environmental hazard, not to mention the loss of valuable product. Having a way to know when the level of the liquid product is getting close to the top of the tank or vessel would provide a warning to take preventative measures against an overflow.

Application Solution:

There are many liquid level monitoring technologies including: manual sticking, site glass, floats, conductivity probes, capacitance probes, vibrating forks, etc. All have proven to work with varying degrees of success. Some rely on operator's time and attention, while some have mechanical parts and are prone to wear, hang-up, and failure. Still other electronic type probes require conductive fluids or fluids of different capacitance or viscosities.

A better solution for liquid level detection at a specific point in the tanker trucks and rail cars is the Thermal Differential Switch. The TD switch has two thermal sensing devices (RTD's) encased in ruggedized stainless steel tips. One sensor detects the temperature of the liquid while the second has a very small current applied to create a thermal differential above the liquid temperature. The differential temperature between air and liquid is different. Therefore detection of an uncovered sensor probe and a probe covered by the liquid is a simple, reliable technique for a point level monitor.

With a simple clamp-on connection to the manway opening in the tanker a TD probe can be strategically located to monitor for approaching high liquid level alarm point. When the probe detects the liquid, the TD switch activates a relay output to alarm and/or activate a control step to stop the impending overflow.

Any of the Delta M Corporation microtuf® and Versa-Switch® liquid level product models can provide the solution in this application. The dual channel Versa-Switch® has the added feature of a second relay contact for a Failure Alarm (FA) option to watchdog the unit for power failure or interrupt, sensor failure, electronics failure, etc. This combination provides for the best security and assurance that the point level switch is ready at all times to provide for the overfill protection.