



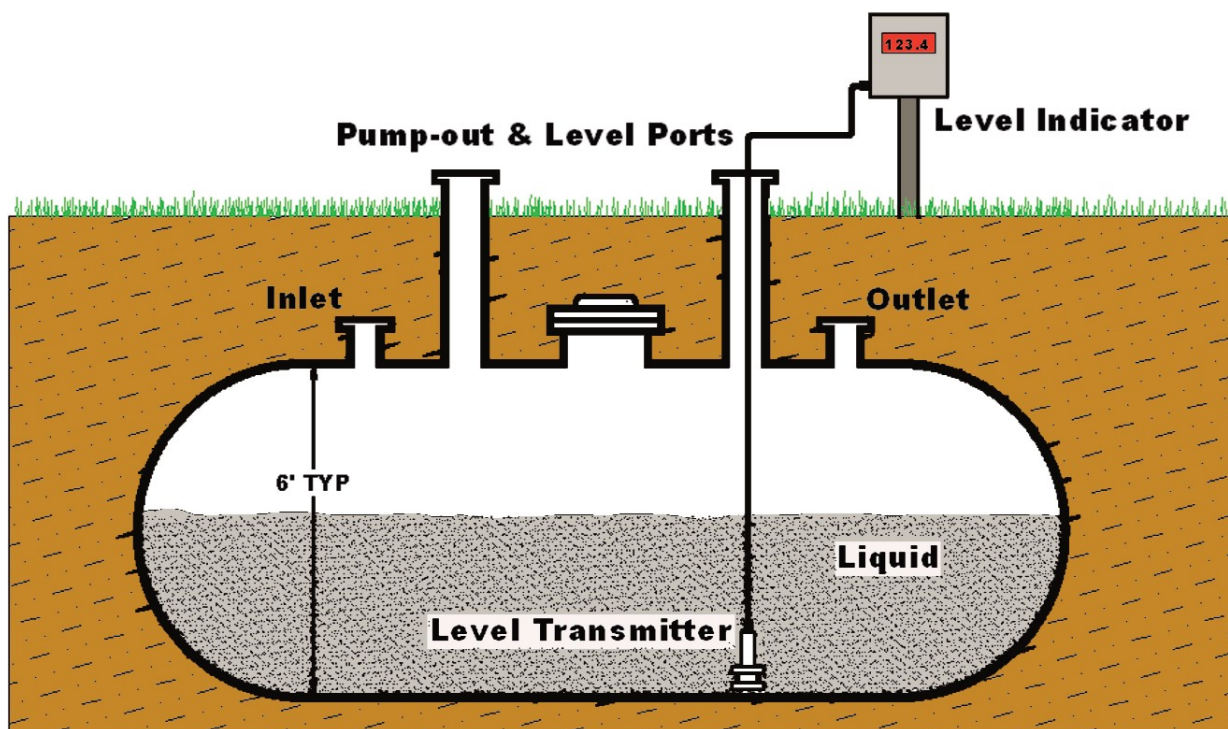
Pressure, Level & Temperature Transmitters & Transducers  
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## FLARE KNOCKOUT TANK

### Application Note #2

A Flare Knockout Tank is typically a horizontal vessel for trapping hydrocarbon liquids in a gas flare system. Separating the liquids out of the gas stream prevents possible damage further down the process.

The fluid in knockout tanks is mostly water mixed with some hydrocarbon. In areas where above ground tanks are prone to freezing these knockout tanks are often buried underground below the frost line.



As these tanks fill with the hydrocarbon condensate a reliable level indication is required to indicate when the tank reaches a predetermined level.

The simplest way to access the water level in this tank is through a stilling well or access port that is installed in the tank and is accessible above ground. Because the tanks are installed underground this access port is the only viable means of installing a level device.

Many different level instruments have been used with varying success. Mechanical floats were used but the coating tendencies of the hydrocarbon and water mix required regular maintenance. Guided wave radar is another option, but requires long rigid probes making it difficult to install, ship and handle. Ultrasonic devices are yet another option but require precise setup, are susceptible to errors in level due to foaming and can be costly.

A GP:50 Model 311-M351 which works on a hydrostatic level principal avoids these limitations. It simply is installed through the access port or stilling well, allowed to settle to the bottom and then interfaced to the existing SCADA system. The 3 inch sensing element eliminated the clogging issues found with other contact devices, is easy to install, and is impervious to foaming or other pitfalls found setting up radar level systems. The Model 311-M351 successfully prevents tank overflow which maintained plant safety and reduced unnecessary pump out cost by not emptying the tank sooner than is required.



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### Model 311-M351

#### Features

- Non-Clogging 3-1/2" Diameter sensor face
- All 316 Stainless Steel construction to resist corrosion
- 1/2" NPT Male electrical conduit connection for rigid installation support
- Integral lightning protection
- ~6lbs in weight to limit cavitation and movement

Critical Specification Overview: (see data sheet for full specs)

Pressure Ranges: 0-30" WC thru 0-300 PSI

Accuracy: +/-0.5% FSO (+/-0.25% FSO available)

Output: 4-20mA (0-5 VDC available)

Wetted Materials: 316 Stainless Steel, Polyurethane & Neoprene.

Temperature compensated: 0-140° F



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