Level | Pressure | Flow | Temperature | Liquid Analysis | Registration | Systems Components | Services | Solutions

FMR245 Radar Level Measurement in Liquid Propylene- Chemical

Micropilot M replaces differential pressure transmitter in horizontal (bullet) tank

Horizontal cylinder tank

Micropilot M FMR245

Chemical plant

A 26 Ghz radar gauge is installed on a tall nozzle, and incorporates a full port non-lined valve for isolation purposes. The radar outperforms differential pressure in this application. The level measurement provides information about the tank inventory to the customer and his supplier.

Company profile

Chemical plant in Texas that manufactures several products at this site. Chemicals produced primarily service the automotive and OEM markets.

Application

In this application, the level of liquid Propylene in a bullet tank (horizontal cylinder) is measured with an FMR245 with flat faced PTFE antenna through a full port non-lined ball valve.

The continuous level measurement provides information about the tank inventory to both the customer, and the supplier. The Propylene is supplied by a neighboring plant. The supplier is responsible for keeping the tanks filled, while the customer needs to know how much material is available for production. They have a common 4 to 20 mA signal from each tank running back to each plant.

Previous instrumentation

A competitor's differential pressure system was used, but unreliable. The changes in ambient temperature affected the measurement accuracy, plus lightning caused many failures.

Radar's benefit

The benefit of this installation is that the level can be measured directly in the vessel without having to use a bypass. The radar gauge can be removed at any time by closing the ball valve.

To solve the lightning problems, a lightning arrestor feed through on the cable gland was supplied.

The reason a bypass is not used for continuous measurement is that sun shine and ambient temperature changes causes the proplyene to gas off. Bubbles can be clearly seen through a site glass at the right time of day. This also causes expansion of the liquid, and an incorrect level reading in a bypass line.

The FMR245 radar gauge offers a top mounted non-contact measurement. The flat PTFE face of the antenna also makes installation easier without having to worry about clearances for a cone antenna above the ball valve. No special changes were required to mount the instrument.

A further advantage of this solution is that the measurement is made directly in the main part of the tank. The measurement is unaffected by temperature changes.

For more information, contact
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317-535-7138
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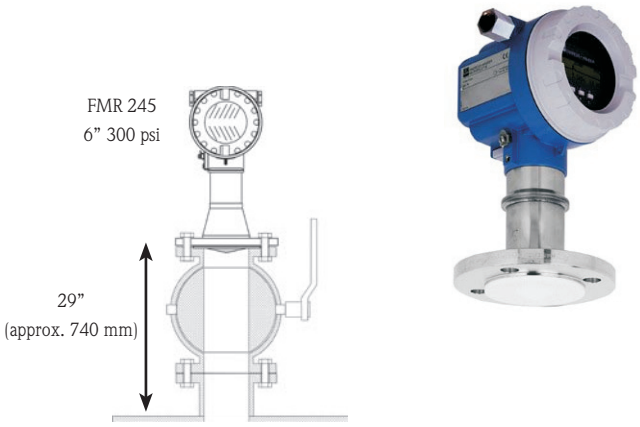
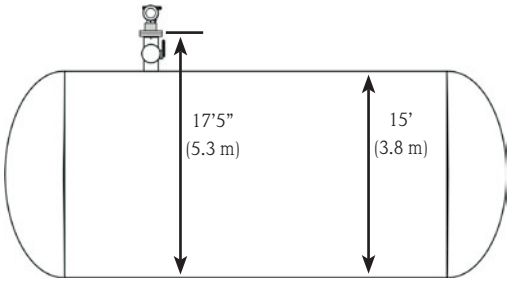


FMR 245 with 6” 300 psi flange and flat PTFE face mounted on top of gate valve. Total height of nozzle to flange of radar gauge is 29 inches.



Measurement in bullet horizontal tank (measuring range): 17’ 5” / tank diameter 15 foot

ISO 9001:2000 Certified

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