APPLICATION NEWSLETTER

PROBLEM: Hydrostatic Tank Level Measurement

Measuring hydrostatic pressure to determine liquid levels in tanks is a technique that has been used for a long time. There are several drawbacks to this method. One is that virtually every gauge has to be custom made to match a tank's dimensions and to match the density of the liquid in the tank.

This can become complicated when a tank is used to hold fluids with different densities. The gauge on this tank has to use either dials with multiple scales or read out in inches of water column. The multiple scales can be difficult to read and are prone to operator error. The inches of water column dial requires that the operator either refer to a chart or perform calculations to determine the amount of liquid in the tank.

SOLUTION: The new Meriam 2110L Smart Level gauge solves these problems and more. This microprocessor based gauge has five programmable registers that work together to display tank level in the units of volume or mass desired. These registers allow a single model 2110L to be programmed to accurately read out liquid levels in tanks in a variety of shapes and sizes. This eliminates the need to stock replacement gauges or parts in various ranges.

The gauges are easily adjusted when the density of the liquid in the tank is changed. Simply resetting two registers through either the front keypad or the RS-232 communications in the gauge adjusts it for the change in hydrostatic pressure due to the change in density. With this quick adjustment the gauge will read out the volume or mass in the units selected.

The Model 2110L is available in several configurations that allow it to be used on vented or pressurized tanks, with a bubbler, or in direct head measurement. It can be programmed to measure liquid level in vertical cylinders, horizontal cylinders with dished or flat ends, or in spherical tanks.

In addition to local indication, the Model 2110L is available with output options. These include a combination of RS-232 communication and SPDT relays, or RS-232 and a 4 to 20 mA output.

Meriam Model 2 2110L Smart Level uge for Non-Linear Tank Level Measurement

Low pressure line to tank top on pressurized tanks only.

Maximum Height of Fluid

Dip Tube Height

pressure source

Bubbler System

Maximum Height of Fluid

Dead Leg

Direct Head Pressure System

H = High Pressure   L = Low Pressure