

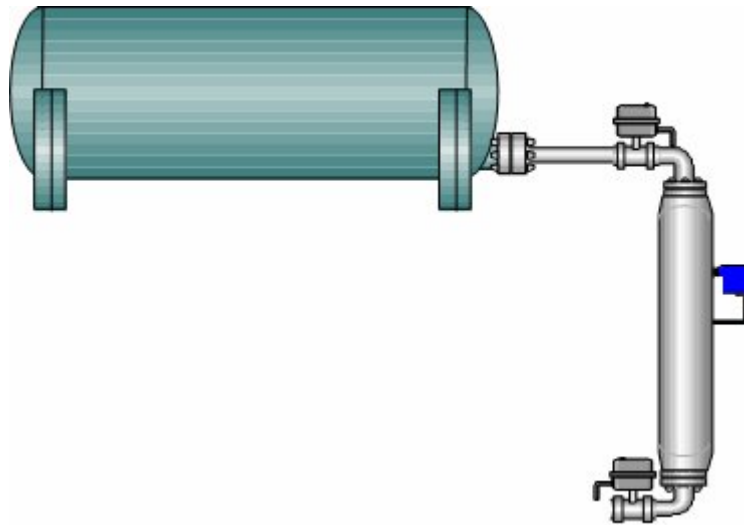


APPLICATION NOTE: 364025 ACID LEVEL DETECTION

Petro-Chemical

Application: Overflow Level Protection, Acid

Products Used: Kurz 6500 Series Flow-Level-Interface-Temperature Switch



Description: Reliable and repeatable level control is critical in order to prevent contamination of the process upstream or downstream. The acid must not be allowed to flow into the process except when required as a chemical additive.

Problem: Prior to Kurz the customer tried a competitor's thermal switch and a gap switch in this application. Kurz was chosen, and has succeeded where the other instruments failed:

- The Kurz 6500 Series allows the customer to independently and incrementally adjust *the level of heat, the range, and the (relay) set points* to achieve high sensitivity and fast response to changes in the media level.
- Previous failures were caused when the acid literally ate through the sensors and entered the electronics enclosure. All Kurz sensors are welded (not brazed). All flanged sensors (this unit required a 3/4" flanged sensor built from Monel) are welded front and back to resist failures caused by corrosion and vibration.

For a level switch to perform well in this application it must resist failures caused by:

- Corrosion and/or "sludging" damage to the sensor.
- Temperature extremes – depending upon location and operation the instrument will see high temperatures (including steam).
- Water contamination – feed water and cooling water often contains sediment and high mineral content.
- Electromagnetic interference.



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Solution: The *Kurz 6500 Series Thermal Dispersion Flow, Level, Interface, Temperature Switch* is used to provide the critical control for acid additive level. The switch is set to activate or deactivate the feed valve, either directly or as is done in this case through a master control system, using either of the independent relay contacts or the 4-20 mA analog output.

Although often overlooked in LEVEL application in favor of more complicated and expensive technologies, Kurz thermal dispersion switches provide *digital repeatability* and *fast response* in a rugged package that is not bothered by coating on the probe and will not drift, seize, or ever require calibration.

Easy, front panel controls and display make set up fast and easy. Unlike float, paddle or gap switches Kurz switches feature all-welded sensors, no-moving-parts design, true digital electronics *with auto-diagnostic functions*, two independent relay timers, a bypass timer for auto pump restart, simultaneous process temperature monitor and a 4-20 mA *analog output corresponding to the process level (flow)*.

