



Redundent security in alkyd resin production

for liquid level measurement



Challenge

A production facility located in Ontario, Canada, is a leading manufacturer of alkyd resins. Alkyd resins are the result of a reaction between oil or fatty acid and polyacids. Resin production uses elevated temperatures for material reaction, causing a demanding environment where temperatures can exceed 150 °C (302 °F). A critical part of the production process is reliable and accurate level measurement of both raw materials and finished product. The precise combination of the many possible ingredients, together with careful control of the

reaction, influences the final properties of the alkyd produced. Operators must provide a sufficient supply of materials according to strict production planning and they must ensure that the tanks are not overfilled to avoid potentially explosive conditions. Initially a higher cost point level switch was installed that was more sensitive to material conditions: the switch performed well for the first few weeks but began failing after the third week. When the switch was removed, the tip of the switch had melted and the electronics were exposed, causing unit failure. Because of the harsh materials measured and high temperatures

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reaching up to 150 °C (302 °F), a more durable point level device is necessary in alkyd resin production.

Solution

SITRANS LVL200 was installed in the condensate tank (condensation is the change of the physical state of matter from vapor (gaseous phase) into liquid or condensate). SITRANS LVL200 was used for high-level control and pump protection. When condensate reached high levels, the pump turned on to avoid potentially hazardous overfill conditions. Because of the success of the initial installation, SITRANS LVL200 was installed for redundant point level measurement of raw materials and finished alkyd resin. It is unaffected by high product viscosity, high temperatures, and high-pressure ranges up to 64 psi (bar). It is reliable in high temperature applications because of the threaded piezo drive: the piezo crystals are fixed mechanically to ensure that they are not subject to temperature shock conditions. It is durable with no moving parts and is not susceptible to build-up. SITRANS LVL200 offers redundant control and works in conjunction with the high frequency SITRANS LR250 radar transmitter that continuously monitors material levels. SITRANS LVL200 is cost-effective, easy to install, and acts as an important security device. In the event of failure by the primary level detector, LVL200 will alarm and operators can respond to avoid over-filling or dry run and potentially explosive conditions.

Benefits

The SITRANS LVL200 is a cost effective, low maintenance, durable solution to any liquids or slurry point level application. SITRANS LVL200 provides redundant control and pump protection in the processing of alkyd resin, increasing security in a demanding and potentially explosive environment.

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