Microcems provide accurate level measurement and pump control for galvanized steel sump pit

Overview

Galvanizing steel is one of the most common and environmentally friendly ways to protect steel from corrosion. This process involves dipping the steel into zinc to ensure the product is protected in harsh environments.

During the galvanization process, there are various chemicals, oils, and other substances pumped through the system. All wastewater that is produced from a galvanized manufacturing plant is often treated before it is discharged from the plant, taken to the main municipal wastewater system for further treatment and finally returned to the environment. During this process, sump pits are often used. These pits are designed to collect water and other spilled fluids before pumping them away as effluent or to the next stage of the treatment process.

Ensuring an accurate wastewater level measurement in these sump pits is crucial to ensure that the whole galvanization process is running smoothly and efficiently. In the case of a manufacturer in Thailand, their outdated float switch level measurement technique was causing them some problems, so they approached Microcems, Pulsar Measurement's trusted partner in Asia, for help.

Float Switches - The Challenges

A float level switch is an instrument for monitoring the height of a liquid and tripping an electrical contact switch when a maximum or minimum level has been reached. However, float switches rely on contact with the measurement medium, meaning they are subject to a whole host of issues such as:

- Moving parts that are vulnerable to clogging, wear-and-tear, and damage
- Fouling that can cause unreliable movement or seizure of float actuation
- Float actuation relies on liquid contact
- Turbulence in the fluid may cause the float to move
- Thick or sticky fluids may prevent the float from moving

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- Regular maintenance to ensure nothing is restricting float movement
- Single point level switch with side entry type
- Float assembly protruding into liquid causing obstruction, attracting fouling and hygienic cleanliness issues

The Right Solution

The galvanized steel manufacturer approached Microcems, their local Pulsar Measurement partner, for a more accurate and reliable level measurement solution. As the sump pit was enclosed with a flanged entry point, Microcems decided that a dB10 PTFE faced transducer with an ANSI flange, connected to an Ultra Lite pump controller would be the best option. The dB10 is a non-contacting transducer that uses ultrasonic technology to measure the fluid level interface, which then sends a signal to the Ultra Lite controller that is used to switch the sump pumps on or off, depending on the fluid level in the tank.

As the sump pit was collecting wastewater, it could be mixed with chemicals and other corrosive substances. So, the dB10 PTFE coated transducer was ideal for this application. PTFE coatings are resistant to corrosive chemicals, provide good insulation from electricity, do not absorb fluids, and can withstand extreme heat and cold. The additional ANSI flange helped with the transducer installation by making it easy to fit the transducer to the existing tank and keeping the exterior housing of the dB transducer outside the tank.

The steel plant was extremely happy with the non-contacting solution as it means that engineers now don't have to remove the existing float switches to maintain them, helping the plant to improve the health, safety, and wellbeing of their site engineers.

More Information

dB Transducer: www.pulsarmeasurement.com/db-transducer

Partner Locator: www.pulsarmeasurement.com/partnerlocator

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