



Level



Pressure



Flow



Temperature



Liquid Analysis



Registration



Systems Components



Services



Solutions

Blockage Detection in Dust Collection Bin

Solphant II - FTM31 with extension tube is used to prevent blockage in ethanol processing



Distillers dried grains (DDG) collected in a storage hall



Corn is used as raw material in the Ethanol production



Ethanol is used in automobile gasoline

Solphant II - FTM31 is used to prevent blockage of bins that collect the dust after the milling process.

Customer Profile

Ethanol plant in the Midwest.

Ethanol plants produce automotive gas substitutes using a variety of feedstock thus helping the energy economy become more independent from crude oil-based products. The most common processes use corn as a feed stock.

Local Ethanol production provides a benefit to agriculture (farmers) by stimulating the rural communities which produce corn and other starch crops beyond food production. 80% of all revenue generated by an ethanol facility is spent within a 50 mile radius of the plant, thereby creating substantial pockets of rural economic development.

Application description

Solphant II point level detection instruments are used in the whole “dry” side of the Ethanol plant from storage silos to the grinding process.

Here, Solphant II set to “max detection” (High Level alarm) is used to detect when corn mill dust starts to clog in collection bin.

- Product: dust from milled corn
- Outdoor installation

Application challenges

The bin is equipped with a full coupling at the lower part for the point level detection instrument. At first a compact Solphant II - FTM30 was used in this installation. Due to the instrument's dimension the sensor happened to be flush mounted to the tank wall and even slight build-up caused false trips. By using a Solphant II - FTM31 with extension tube the membrane of the Solphant was not flush with the tank wall any more and the instrument worked without problems even when build-up was present.

Instrument description

Solphant II is a rugged level switch for use in silos containing fine-grained and powdery solids, including those with very low bulk densities. The various versions ensure it can be used in a wide range of applications, including explosion hazardous areas.

Typical applications include grain, flour, milk powder, cocoa, sugar, animal feed, powders, dyes, cement, and plastic granules.

Measuring principle

A piezoelectric drive excites the tuning fork of Solphant II to its resonance frequency. If medium covers the vibrating rod, the rod's vibrating amplitude changes (the vibration is damped).

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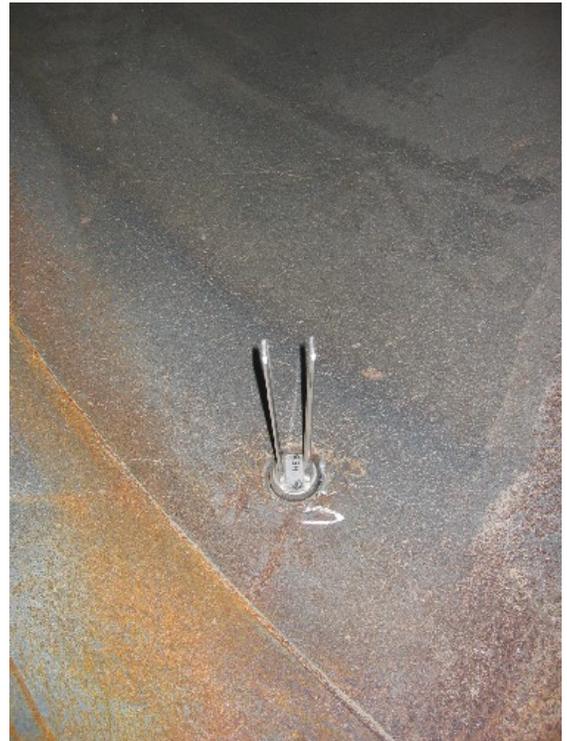
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Soliphant II - FTM31 installed in a dust collection bin



Mounting: Soliphant II - FTM31 installed in a full coupling



Previous to the FTM31 with extension tube a FTM30 compact version was installed flush mounted to the tank wall in this application. In this installation small build-up at the tank wall caused false trips. By using an extension tube the membrane of the Soliphant was not flush with the tank wall any more and the instrument worked without problems.



Soliphant II -
FTM30 compact version
and FTM31 with extension tube

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