FTM50 in Blockage Detection in Corn Conveyor on Top of Silo- Renewable Fuels

Soliphant FTM50 is used to detect blockage in ethanol processing

Soliphant FTM50 is used to detect blockage in corn conveyor. Set to High Level alarm (max detection) it causes the conveying process to stop before the whole lines to the top of the 125ft silos are clogged. Thus, the tuning fork instrument reduces plant maintenance costs.

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 feedstock.

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

Here, the Soliphant set to “max detection” (High Level alarm) is used to detect the presence of corn in the upper part of a conveyor on top of a silo to indicate a clogging of the conveyor line.

- Product: corn
- Conveyor: 20ft x 20ft
- Silo heights: 125ft (38m)
- Outdoor installation

In case the tuning fork sensor trips the conveying process can be stopped before the whole conveyor line is clogged. Since these point level measurement points reduce the maintenance costs of the plants, Soliphant tuning forks are installed in all conveyor lines.

No moving parts and calibration free
In comparison to other bulk solids point level measuring technologies the tuning fork does not consist of moving parts and does not need to be calibrated.

Instrument description:
Soliphant 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, washing powders, dyes, chalk plaster, and cement.

Measuring principle
A piezoelectric drive excites the tuning fork of the Soliphant to its resonance frequency. If medium covers the vibrating rod, the rod’s vibrating amplitude changes (the vibration is damped). Soliphant’s electronics compare the actual amplitude with a target value and indicates whether the tuning fork is vibrating freely or whether it is covered by medium.

For more information contact:
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Corn storage silo in ethanol plant

Soliphant installed in corn conveyor

Soliphant in blockage detection in corn conveyor

Soliphant FTM 50 tuning fork point level detection in bulk solids