AUTHOMATHIKA
A melhor solução para o seu projeto

Donnelly Chute Level Measurement: Intelligent Level Sensor

Application Report

It has been proven that the level detection sensors for the Donnelly Chute currently available on the market, supplied by various manufacturers, do not fully meet the necessary requirements for accurate detection of the cane level inside the Donnelly Chute.

Several alternatives have been observed in clients, along with numerous complaints. Based on this evidence and after analyzing various cases, Authomathika decided to review all existing market projects and develop a new technology to definitively solve this issue.

The **SLV-1A** was developed for this purpose, tested extensively both in laboratories and in the field over two harvest seasons and various conditions; the results are excellent.

In the mechanical design, efforts were made to maintain the same characteristics as the existing field devices to facilitate and allow the replacement of sensors from any manufacturer that fail or do not operate adequately according to system requirements.

The **SLV-1A** is an intelligent microprocessor-based digital sensor that uses the most advanced current technology called "OFDM modulation" for detecting the cane level inside the Donnelly Chute, differing from the old capacitive detection technology used by all existing Donnelly Chute sensors.

Results:

Installation
Simple - just replace the previous sensors with the more technologically advanced **SLV-1A** model. No rewiring or changes in the existing cabling were needed; the same cables and installation setups from the old sensors were used.

- **Adjustments**

The **SLV-1A** features a Hall effect adjustment system, meaning it is adjusted using a magnetic key that activates the Hall sensors and facilitates calibration. This design eliminates external contacts, making the **SLV-1A** more resistant to field moisture.

- **Operation**

The **SLV-1A** sensor performed very well. It successfully eliminated false cane level signals and constant misadjustments, meeting requirements for moisture variations inside the Donnelly Chute without interfering with measurements. The bargraph indicator, which shows detection levels, greatly aided in adjustments, commissioning, and sensor startup.

- **Robustness**

The **SLV-1A** neither lost calibration nor required any adjustments during the tests. There was no need to revisit programming at any point. The measurements were extremely reliable.

Technical Data: Features and Benefits

Charge Transfer Technology	More reliable detection Greater immunity to electromagnetic interference
Configuration via magnetic key	Easy configuration and resistance to extreme conditions Level visualization via LED bar display
Adjustable flange system	Allows sensor adjustment for any usage condition
Adjustable lag and delay via microprocessor.	Prevents false detection during cane passage Adjustment allows tuning to the control system's response time

R. Ivone Fernandes Bernardi, 600
Jardim Florenzza - Sertãozinho - SP, 14169-379
Fone: +55 (16) 3513-4000 | (16) 99123-8736
comercial@authomathika.com.br

AUTHOMATHIKA
A melhor solução para o seu projeto