

Application Report

Level Measurement at the Donnelly Chute: **Intelligent Level Sensor**

It was demonstrated that, level detection sensors at the Donnelly Chute available on the market today, from different manufacturers, did not fully meet the requirements necessary for proper detection of the sugarcane level within the Donnelly Chute.

Several possibilities have been seen at the customers and numerous complaints. Given this evidence and account several facts, Authomathika decided to analyze all projects of the market and define a new technology that solved the problems definitively.

The **SLV-1A** was developed for this purpose, tested in laboratory and in the field for two different crops, the results

are excellent.

Was sought in the mechanical project, keep the same characteristics of the projects that are already in the field to facilitate and enable replacement of sensors from any manufacturer that have failed or do not operate properly, as the need that the system requires.

The **SLV-1A** is intelligent and uses digital microprocessor to detect the level of sugarcane in the Chute Donnelly, the most advanced technology currently called "OFDM", differently from the old technology, developed 20 years ago, capacitive detection that all Donnelly Chute sensors have.

Results:

- **Installation**

Simple, just replace the previous model with the more technologically advanced **SLV-1A**. Interconnections didn't need to be redone or do any wiring. They used the same cables and installing of the old sensors that were replaced

- **Adjustments:**

The **SLV-1A** has adjustment system by Hall effect, in other words, is set using the screwdriver with magnet that triggers the Hall sensors and makes adjustments. Therefore, there is no external contact, making SLV-1A more resistant to to the humidity of the field.

- **Operation:**

The sensor **SLV-1A** operated well. Fulfilled its function of eliminating false signals of the sugarcane level, constant misfits and met the requirements of moisture variations within Donnelly Chute, not interfering with the measurements.

The "bargraph", which indicates the level of detection, helped a lot in settings, commissioning and startup of the level sensor.

- **Robustness**

SLV-1A didn't lose the calibration and adjustment any time during the tests. It didn't need to review the programming at any time. Measurements were extremely reliable.



Technical Data: **Characteristics and Benefits**

Charge transfer technology	More reliable detection Immunity to electromagnetic interference
Configuration by magnetic screwdriver	Easy configuration and resistance to extreme conditions Visualization of the levels adjustment in bar LEDs
Flange system adjustable	Adjustment of the sensor to any use situation
Lag and Delay adjustable through microprocessor.	Prevents false detection in the passage of the sugarcane Adjustment allows to adapt the delay time of the control system