

# Level measurement in a double chamber silo

## The challenge



A German manufacturer of food packaging stores its plastic granules in a few double chamber silos. The challenge in this application is to measure the lower chamber through a long tube leading from the silo through the upper chamber. A non-contact sensor such as ultrasound or radar does not work reliably because the long tube attenuates the reflected signal or even leads to incorrect measurements by wrong echos.

A full and low-level signal by limit switches has also to be integrated into the control system.

## Our solution

The upper as well as the lower silo chamber can be measured with the electromechanical system Nivobob NB3100. Both can be installed on the silo in standard flanges or 1.5 "thread sockets. Simple sensor installation and sensor commissioning was possible in this double chamber silo. The sensor weight passes through the tube into the lower chamber until it has contact with the plastic granulate and moves back to the upper end position. The setting of the measuring range can be made in the menu of the Nivobob.

The silo filling alarm is carried out by a Rotonivo RN3002 with a flexibly configurable extension, and a Rotonivo RN3004 with a protective tube and lateral installation is used for the empty message. This sensor can withstand high mechanical product loads and can be installed without a protective canopy.

## Products



### NB 3100 Rope Version

#### Continuous Level Measurement

- Suitable for use in most granular and coarse bulk materials.
- Threaded or flange mounting.
- Measuring range up to 30m.
- Convenient level monitoring via Modbus interface together with price competitive NivoTec 3500/4500.



### RN 3002 Tube Extension

#### Full Detector

Tube extension version

- Vertical or oblique installation.
- Protection tube ensures high mechanical load strength to the shaft.
- Flexible height adjustment.



### RN 3004 Horizontal Tube Extension

#### Full, Demand, Empty Detector

Protection tube version

- Horizontal, vertical and diagonal installation.
- Extremely robust due to protection tube, able to withstand heavy mechanical load.