

RELIABLE LEVEL MONITORING

CLEVER SOLUTION WITH ULTRASONIC SENSOR AND MEASURING TRANSDUCER

Sensors with analog evaluation are required for reliable level monitoring of a tank. An ideal solution for this task is the **UT309023** ultrasonic diffuse-reflection sensors from ipf electronic in combination with the versatile **BA050100** analog converter.

For this purpose, the **UT309023** ultrasonic sensor is mounted in the lid area of a silo tank so that the sound lobe generated by the transducer is directed downwards towards the material to be detected. From the time taken by the ultrasonic waves to travel from the sensor to the material and back to the device, the sensor calculates the exact distance and outputs this value as an analog current or voltage signal. Using the teach mode or the integrated IO-Link interface, the measuring range of 600-6,000mm can be perfectly adapted to the silo tank.

The evaluation of the filling level does not necessarily have to be done by a PLC, but can be done directly via the analog converter BA050100. With the two **BA050100** 16-bit analog inputs and the four digital outputs of the **BA050100**, such an application can be perfectly implemented. The transmitter is parameterized via the multicolor touchscreen display on the front panel, and it can be set for both current and voltage signals. The four digital outputs can be assigned to the analog input and an event can be programmed for each output individually.

In this specific case, the digital outputs control different colored lights as well as an audible signal, which are switched for a short time at 90% of fill via the pulse output setting. An additional setting also makes it possible to reproduce the switching processes of the signal lamp signals on the display by means of a color change. The **BA050100** is mounted e.g. with the top-hat rail adapter **AC000035** on a 35mm top-hat rail.

The **BA050100** can be mounted both by front mounting in a control cabinet door and with the **AC000035** adapter on a top-hat rail.



The ultrasonic diffuse-reflection sensor was mounted in the lid area of a silo container (right). The measuring transducer (left) is located in a switching cabinet, near the silo (center).