



Application Case Study

Flour Storage for Food Production

The Application

Bleached wheat flour is used to manufacture a wide variety of food products. Flour is typically stored in a series of tall, narrow silos and fed into a batch processing system. Many other dry bulk solids are used in food production, but flour is the most common and used in the highest quantities.



One international biscuit company was experiencing trouble monitoring their flour silo levels. They use the flour to produce a popular snack cracker, and the ability to know inventory status is critical to smooth operation. The silos had another popular brand of ultrasonic transmitter installed but it just couldn't do the job.

The old ultrasonic transmitters would not read during filling (causing occasional overflows). They were erratic during normal operation and sometimes failed for no apparent reason. One technician discovered that they seemed to work better for a few hours after being started up, so they programmed their control system to power them down three times a day to try to improve performance! The company decided that this was unacceptable and they needed to find a solution.

The Solution

The OEM that supplied the silos and material transfer system had already been working with SOR® to solve this problem. We had presented the echOsonix and described how the low-frequency/high-power sound penetrates flour dust better while the adaptive gain adjusts the sensitivity of the unit according to silo conditions. The OEM felt this was what they needed, and the biscuit company agreed.

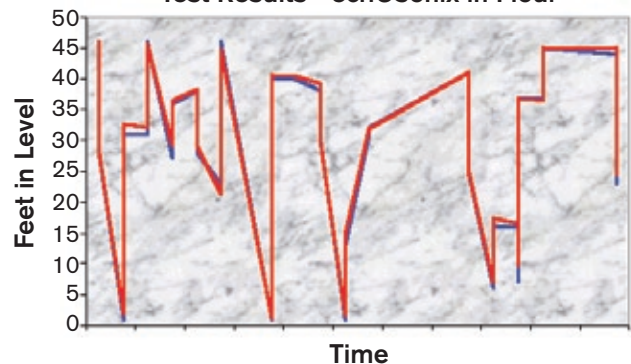
A U73/RBP was installed onto one of seven silos as a test. For 30 days the level was manually checked and compared to the echOsonix readout. This test was done to verify the proper operation of the unit and assure both the OEM and the end-user that echOsonix could do the job. Instruments for the remaining six silos at this site were all based on the results of this test.

The Results

The U73/RBP performed excellent during the course of the test (the results are shown in the chart to the right). The red line is the echOsonix readout; the blue line is the manual reading. The results are very close with the few offsets being attributed to inconsistencies in the manual measurement.

During the 30-day test, the echOsonix never lost signal and proved to be reliable in this application. Both the end user and the OEM agreed that the U73/RBP is the solution for tough flour measurement. The biscuit company now has reliable inventory management and they have eliminated the worry about overfilling a silo.

Test Results - echOsonix in Flour



Ordering Information

Electronics model **U73-FL7J-ZZ-10**
Remote 110VAC/24VDC Line-powered transmitter
Isolated 4-20 mA output
4 x SPDT Relays adjustable over entire range
NEMA 4X Agency-listed remote electronics housing

Sensor model **RBP-GC-ZZ-50**
10 kHz Transducer for remote unit
10" 150# FF mounting flange
Group A-G, Division 2, Agency-listed transducer
50-foot transducer cable