

NIVELCO CASE STUDIES

LEVEL MEASUREMENT IN THE SAINT GOBAIN WEBER PLASTER FACTORY

Instrumentation at the plaster factory

Saint Gobain Weber Group is one of the world leading producers of plasters, bonding and other coating materials, with a vocation of developing new solutions for the construction industry in 35 countries. The Group has two plants in Romania one in Torda (Transsylvania) and the other nearby Bucharest. In these two factories permanent developments were carried out in the recent years among others in the establishment of measurement systems for basic materials' registry and inventory management.

The Romanian affiliated firm of NIVELCO Co. was also requested to solve the latter problem. Considering the instruments most appropriate for the application, the technical solution and price the Weber Group found the NIVELCO's offer the most favourable. The task was to measure the level of six silos of 57 m³ for storage of raw material and to display the measured values in the control room. Transmission, display and data logging are carried out by NIVISION software program running on a PC.

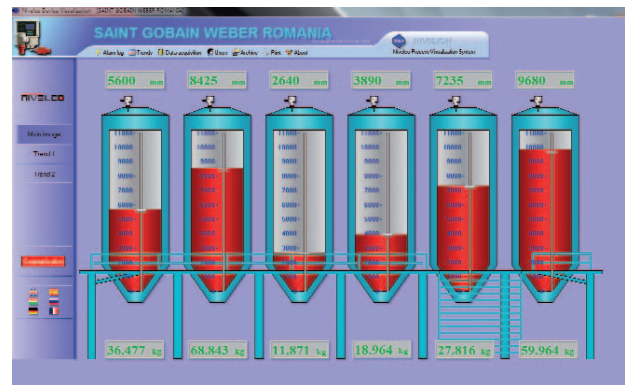
Taking into consideration the characteristics of cement, sand and dross granulate used in the technology we have chosen the MicroTREK-HTN-408-4 microwave level transmitter. Taking into account transmitting distances and the high level of electrical noise and the local problems of electricity supply we used the 4-20 mA analog outputs of the transmitter.

We connected the output signal of the transmitter in pair to three UNICONT PMM-324-1 universal control panels, programmed and scaled the display scale within the range of the given level.

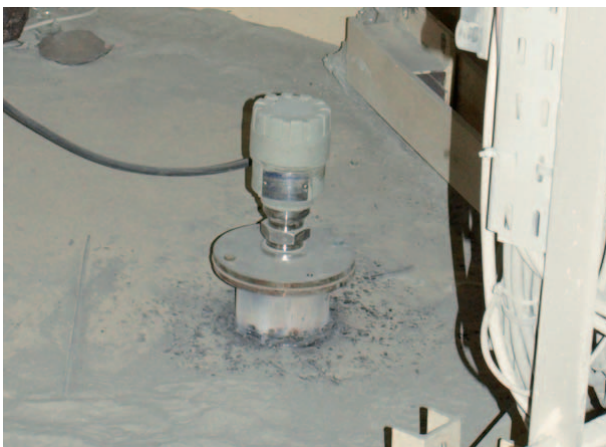


We connected the RS485 output of UNICONT controllers via ADAM 4520 serial industrial communicator to the computer. Upon Weber's request in the NIVISION project we visualized the level changes of the silos, the level value and mass of the materials stored in the silos.

The specialty of mass measurement in this case is that the lower part of the silos is cone shaped and it contains the 1/4 part of the stored mass therefore this mass should be registered together with the level changes. We have solved this problem with the help of a mathematical function that performs the needed calculation from the measured level value.



Also part of our task was the setup of data logging. The current measured level and calculated mass values of raw materials have to be stored every 15 minutes. This system works only in the Bucharest Plant in the Torda Plant only level transmitters and NIVOROTA level switches are installed. The establishment of a PC controlled system will be part of further developments.



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