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PROCESS INSTRUMENTATION

Level measurement reliability even in sticky situations

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From liquid raw materials to plastic granulate to finished products, the plastic components in your car or your electronics have come a long way.

DSM Specialty Compounds NV manufactures high-quality plastic granulates, or TPE (thermoplastic elastomers), in their factory in Genk, Belgium. This production process called compounding involves melting plastic pellets and mixing them with other materials to create a specifically characterized type of plastic.

The company's final product is a granulate mainly used in Europe's automotive and electronics and electrics (E&E) industry. TPE production is batch processed in silos. Every three weeks, operators begin a new

TPE batch in different colors or with other characteristics or requirements. The final product is loaded into bags and shipped to manufacturers across the continent.

Cleaning challenges in a sticky silo

To measure the level of granulate in the filling silos, DSM Specialty Compounds previously used a lower-frequency transmitter with a 430-millimeter horn antenna protruding into the silo.

A side effect of the TPE granulation process is the creation of a small amount of fine particles. After a certain period, these fine particles tend to form a sticky layer inside the silo. This sticky substance also coated the transmitter's horn antenna, blocking





DSM Specialty Compounds rely on SITRANS LR560 for accurate and reliable level readings in this challenging application.

the signal and creating poor reliability for operators trying to get level readings in the control room.

The silo therefore needs to be cleaned thoroughly after each batch production to guarantee a continuous and permanent product quality.

This cleaning process used to be performed manually with a high-pressure cleaner. Manual cleaning is a time-consuming job, as operators had to visually check the cleanliness of the silo walls and the transmitter's antenna by bending over and sticking their head into the silo.

Added to that was the inconvenience of removing the level transmitter each time cleaning was required, as operators couldn't reach its horn.

Higher frequency for higher reliability

With all of this extra effort just to clean the silos, DSM Specialty Compounds decided to replace their existing transmitter with a new Siemens SITRANS LR560 non-contacting radar transmitter on the two TPE silos.

Siemens proposed the non-contacting SITRANS LR560 radar transmitter without an antenna cone. The 78 GHz high frequency wavelength provides ultra-precise and reliable measuring results and makes it an ideal solution for this solids application. Its four-degree narrow beam allows for installation practically anywhere on the silo.

Operators mounted the transmitter flush against the top of the silo, so the flange doesn't protrude into the tank and risk damage from pressure washing.

Since unnecessary dirt no longer sticks on the level meter horn or flange, operators can now use an automatic spray cleaning system. No workers need to manually clean the transmitter, saving a lot of time and effort.



Operators easily installed SITRANS LR560 onto the fillingsilos and have seen a reduction in cleaning costs along with an increase in product quality.

SITRANS LR560 is the only flush mount solution for solids on the market, so the benefits to DSM Specialty Compounds are substantial:

- **Cost and time savings:** the transmitter's reliability gives the company guaranteed product quality. Also, since cleaning is now performed automatically, these costs are greatly reduced
- **Increased safety:** operators no longer need to enter the application to remove the radar device each time they begin the cleaning process
- **Improved process reliability:** the SITRANS LR560 works well without the need to remove it for cleaning

Based on this unique device combined with the expertise and extended support of the Siemens account manager, the company is now discussing two additional projects to replace mechanical plumb bob level measuring with SITRANS LR560.

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