



The True Color of
Reliability



chemical

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Case Study • 2003

The True Color of Reliability

Challenge

At its plant in Leverkusen, Germany, DyStar Textilfarben GmbH & Co. produces industry-leading textile dyes and pigments for world markets.

DyStar, owned in partnership by Bayer, Hoechst, and BASF, employs 4,000 people worldwide and has annual sales of approximately €900 million.

The plant has 64 pigment reactors. Reliable level measurement in the pigment reactors is critical to achieving maximum process efficiency, and for producing consistent quality products for customers. Many process variables depend on the reactor material level, including raw material injection, agitator activation, vacuum and pressure pump operation, heater control, and product discharge.

"Reliable level measurement is essential for the smooth process flow," said Mr. Leichsenring, Measurement and Control Supervisor/Engineer.

Over the years, the company tried various pressure transmitters and traditional radar level measurement instruments on the pigment reactors without much success. "They either couldn't handle the heavy material coating or the extreme amount of vapor during the condensation phase," he said.

Solution

In 2000, after the successful application of Siemens radar instruments elsewhere in the plant, Mr. Leichsenring decided to conduct a trial on the pigment reactor. He selected a SITRANS® LR 300 with a DN150/PN16 flange and 150 mm (6") horn antenna.

SITRANS LR 300 uses 5.8 GHz pulse radar technology and patented Sonic Intelligence® to provide reliable level measurement in liquids and slurries, even in extreme process conditions. With its low frequency and high signal transmission speed, it is virtually unaffected by vapors, steam, foam, condensation, turbulence, agitation, or temperature and pressure extremes. The instrument has a compact design and robust construction, with a wide selection of process connections and antenna configurations available to suit virtually any application.

For this application, the horn was shortened by 5 mm (0.20") to reduce the diameter as required to fit inside the rubber-lined nozzle. DyStar staff had the radar instrument running within a few minutes, using the patented infra-red hand programmer.

Benefits

The SITRANS LR 300 provided reliable, accurate level measurement, even in the conditions of heavy material build-up.

Before finding this solution, DyStar staff had spent many hours installing and trouble-shooting other instruments in this process. "Now that we can keep these reactors within precise process limits, we're experiencing less production downtime and raw material spoilage," said Mr. Leichsenring. "We are also able to use more of the reactor capacity, clearly increasing production for each process cycle."



DyStar Textilfarben GmbH & Co. in Leverkusen, Germany, uses the SITRANS LR 300 for reliable level measurement of pigment