

Siemens answer to limestone level measurement

Process Instrumentation and Analytics



SITRANS LR460 radar level transmitter measures limestone for cement production

A large plant in the Southwest United States manufactures cement used in the building industry. Common uses for the cement are: pavements, foundations, sidewalks, etc. Limestone is a key ingredient in the cement manufacturing process and is delivered from an on-site aggregate quarry to a dome-shaped storage facility via a conveyor belt. The limestone is unloaded from the conveyor belt onto a large "arm" that circles the facility on a track and dumps the limestone as needed.

Challenge

The quarry is operated by a contracting company that works four, ten-hour days. The cement plant runs seven days a week. During the four days that the quarry is operating, the amount of limestone produced and moved into the storage facility could exceed the available storage space.

The customer was using a proximity switch mounted on the "arm" to monitor the level of the limestone as it moves along the conveyor belt to the cement processing area. The proximity switch was unreliable because it had neither a strong nor

dependable signal. As a result, the instrumentation and control crew needed to physically check the limestone levels several times a day to start and stop the process of moving the limestone from point A to B. The environment near the proximity switch was extremely dusty and this affected the reliability of the signal. This also made it difficult and time-consuming to maintain the instrument.

Solution

A SITRANS LR Series radar level transmitter for solids measurement replaced the proximity switch and is measuring the level of the limestone being delivered from the on-site quarry. The LR Series instrument is mounted on the arm, and measures the level as it moves along the conveyor belt.

The SITRANS LR Series radar level transmitter provides reliable, accurate measurement and has decreased the need for human intervention resulting in reduced labor and maintenance costs. It has eliminated the need for the older, high-maintenance level measurement technology and the associated aggravation that goes with it.

The SITRANS LR Series radar level transmitter for measuring solids: (left) SITRANS LR460 and (right) SITRANS LR 560 transmitters



Benefits

- *Improved process reliability:* The Siemens radar level transmitter is reliable regardless of the dusty atmosphere, and provides a dependable signal of the actual level. No more worries about running out of limestone or overfilling the storage facility.
- *Time and cost savings:* No need to double check the instrument to make sure it is working correctly. By switching to the Siemens radar level transmitter, the customer is saving money on repeated maintenance of the older technology instrument and downtime due to its erroneous readings.
- *Local customer support:* Sales and support are available in your neighborhood. Our extensive global coverage means you get sales and support when and where you need it.

About the LR Series Level Transmitters for Solids Measurements

The SITRANS LR Series instruments for continuous measurement in powder and/or bulk solids can be either a two-wire pulse radar version or a four-wire FMWC transmitter for very low dielectric materials, severe dust and high temperatures. Models can be specified for measuring ranges up to 131 feet or up to 328 feet. Models that perform well on this or similar applications include SITRANS LR460 and SITRANS LR560 transmitters.

SITRANS LR460:

- *Easy installation* – small horn antenna and narrow beam allows installation practically anywhere on your vessel
- *Built-in Easy Aimer* – for optimal signal reflection
- *Quick configuration* – Quick Start Wizard guides you through setup
- *Process Intelligence* – advanced echo processing for unparalleled performance
- *Reliable accuracy* – extremely high signal and low noise yields high performance, even on very low dielectric material
- *Quick setup* – infrared handheld programmer for local operation or with SIMATIC PDM (Process Device Manager) via HART® or PROFIBUS PA
- *Local user interface* – standard level and diagnostic information available at a glance

SITRANS LR560:

- *Rugged* – stainless steel design for industrial applications
- *High frequency* – 78 Hz frequency provides very narrow beam, virtually no mounting nozzle noise, and optimal reflection from sloped solids
- *Aimer option* – allows direct beam to area of interest, such as draw point of cone
- *Lens antenna* – highly resistant to product build up
- *Air purge connection* - for self-cleaning of extremely sticky solids
- *Local display interface (LDI)* – allows local programming and diagnostics

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