

Best practice

A high-resolution weighing solution for potentially explosive areas



After expanding its range of petrochemical products, SABIC found that the weighing system of its batching hoppers was not adequate for their increased production.

Key facts

SABIC needed two distinct weighing solutions for new and existing batching hoppers placed in hazardous areas. Beside of ATEX certification, Minebea Intec provided high weighing resolution and also weighing data transfer to the safe area.

Application

The application required ATEX-certified load cells as replacements for not suitable components of batching and storage hoppers.

Products

- Load cells PR 6241
- Mounting kits PR 6143
- Remote display PR 5110
- Load cells PR 6201

Benefits for the customer

- Approval/certificate for hazardous areas according ATEX available
- Proven, durable product quality for challenging environments
- Improved operation using a new remote display with installation compliant for hazardous area
- Fast, secure and reliable transmission of weighing data

Customer

SABIC is the largest petrochemical company in Saudi Arabia and among the ten largest in the world. It was founded in 1976 and currently employs 35,000 people around the globe. Most of its processing facilities are located in the Persian Gulf and on the Red Sea coast. In the recent years, the company also opened new processing sites in Europe.



Project goal and implementation

After expanding its range of products, to include basic chemicals, intermediates, polymers, polycarbonates, fertilizers and metals, SABIC reached out to possible suppliers seeking two specific solutions: a weighing system for a batching hopper used to produce polyethylene granulate additives, and the replacement of a competitor's defective weighing components in twelve granule hoppers.

Minebea Intec was chosen for the accuracy, reliability and safety standards of its devices.

In the first instance, the new hopper was to be installed in an outside area that required the use of Group II and Category 2G equipment according to the ATEX directive.



On top of compliance with mandatory standards, the customer required a readability of 100 g, and the placement of the weighing electronics (transmitter) at a distance of 500 m from the hopper.

The hopper weighed 523 kg in total with a net capacity of 60 kg. To achieve the desired resolution with such an unfavourable ratio of dead load to weighing capacity, the system had to register a change in signal of 1.3 µV.

Minebea Intec therefore selected three PR 6241 compression S-type load cells PR 6241, which combine a high sensitivity to compression with the capability of being tilted and counterbalancing this movement when the hopper undergoes thermal expansion. To respect the distance of 500 m, the signal of the load cells is transferred through a 6-wire connection to the transmitter and then back to the remote display.

For each of the defective hoppers, Minebea Intec supplied four PR 6201 precision compression load cells PR 6201, and PR 6143 compact mounting kits PR 6143. The components were ATEX-certified for Zone 2 and linked over an analogue interface to a PLC system.



Thanks to its wide range of load cells and mechanical and electronic accessories, Minebea Intec met and exceeded the customer's requirements, and successfully registered with them as an official supplier. This entitles a supplier to automatically submit price quotations and/or bid offers for listed products and to receive orders.

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The transmitter was connected to the load cells through a 6-wire connection



The precise compression load cells PR 6201 are specially designed for the weighing of silos, tanks and vessels



Are you interested? We'll make you an offer!
Simply send an email to
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