

Weighing solutions from Minebea Intec make North America's largest polypropylene production possible



Braskem used Minebea Intec products to weigh tanks and a 448-tonne container in its polypropylene production. The high-precision weighing solutions ensure accurate results despite the most difficult environmental conditions.

Key facts

For a new polypropylene plant with an annual product capacity of 450 kilotons, weighing solutions were needed that could withstand even the most adverse environmental conditions. Polypropylene is the second most common standard plastic and is mainly used for packaging.

Application

Minebea Intec supplied a specially designed weighing solution for the weighing of an emptying tank for cleaning polypropylene granulates, as well as tanks with raw and waste materials.

Products

- Modified installation kits PR 6144, load cells PR 6201
- Weighing platforms with PR 6201 load cells and PR 6001 mounting kits

Benefits for the customer

- High-precision load cells with certifications for EX areas offer maximum safety
- Specially developed installation kits and cable boxes guarantee safety in the production process
- Precisely fitting weighing solution through modifications



The customer

Braskem is the largest producer of polypropylene in the United States and the world's leading producer of biopolymers. Braskem is active in the chemical and petrochemical industries and plays an important role in other production chains that are essential for economic development. In this context, chemicals and plastics help create sustainable solutions that improve people's lives in areas such as housing, food and transportation.

Project objective and implementation

The plant produces the entire spectrum of polypropylene products, such as homopolymers, random copolymers and impact copolymers. For two applications, precise weighing solutions were required that delivered accurate results even under challenging conditions: the ambient conditions in the Houston area as well as the size and weight of the parts to be weighed play a special role:

The weighing technology must be able to continue operation properly and without disruption after events such as heavy rain, hurricanes, frost or earthquakes occur. Braskem awarded the planning and installation of the weighing technology to Linde Engineering AG, which chose weighing technology from Minebea Intec. Minebea Intec developed three platform scales in different sizes for weighing tanks with raw and waste materials.

Due to the environmental conditions and the loads to be weighed, no standard platform scales could be used here – instead, load cells from the PR 6201 series were used for container weighing in the customised weighing solution. In the further production process, a 450 t heavy cleaning container is

weighed. The maximum total weight for weighing is approx. 1,186 tonnes. For this purpose, Minebea Intec used eight load cells of the PR 6201 series for installation under the support ring of the container, which are installed in installation kits of the PR 6144 series specially developed for the high requirements in earthquake-prone areas.

The weighing solution guarantees maximum safety even with high lateral forces (2000 kN). On customer request, project-specific dummy load cells as well as pressure and foot pieces for the load cells were developed. These extra solutions enable the load cells to be replaced without problems when the container is lifted by a maximum of only 5 mm. Weighing is carried out in two measuring circuits, each with four load cells connected to one weighing point of the Maxxis 5 process controller via two specially

developed cable boxes (according to NEC 500) with knife disconnect terminals. The modified installation kits allow easy maintenance despite the high loads.

The Maxxis 5 process controllers are mounted in a heatable housing (for use in the specified hazardous area) to guarantee the optimum operating temperature and the required explosion protection of the controller.

“Minebea Intec’s weighing solutions not only met the extreme demands imposed by the environment and the high loads: they also ensure that the efficiency and output of North America’s largest poly- propylene production has been increased.”

*Matthias Oettel, Chief Engineer Process Control /
Chief Engineer Automation and Instrumentation
Linde Engineering*



The modified installation kits allow easy maintenance despite the high loads.



The PR 6201 load cells can accurately weigh loads of up to 12 tonnes.



Would you like to know more?
We will be happy to make you an offer!
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Globalsolutions@minebea-intec.com

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