

Solutions for the building materials industry

Monitoring of silos on construction sites

Cost benefits for the customer:

- Reduction of logistics and operating costs by avoiding missed trips, route optimization and ensured material availability
- The installation of the level sensor Micropilot FWR30 requires no electrical wiring
- The web-based inventory management software SupplyCare requires no IT infrastructure from the customer and therefore no initial investments
- The cost of the software is billed on a usage and silo basis



Digital service:
Inventory management software
SupplyCare Hosting SCH30



Sensor on silos:
Level sensor Micropilot FWR30 (battery-operated)

On a construction site, the continuous availability of material inside a silo is an important prerequisite for adhering to the tight schedule of a construction project.

The challenge Planning the material requirements of a construction site is often still a manually controlled process. This ordering process is based on telephone calls and the experience of employees. Accordingly, the process is significantly influenced by factors such as illness, holidays, temperature and the tendency to place orders too early or too late. The consequences can be a lack of product availability, high storage costs or inefficient operational processes.

Our solution A solution is the completely automated, recording and visualization of all relevant parameters on the construction site and at the distribution location. This ensures that everyone involved in the supply chain can see the information they need in a precise and uniform manner and act accordingly. In this way it can be ensured that each delivery is made „just-in-time“ and missed trips, emergency deliveries, or late deliveries are avoided. As a result, the efficiency of operational processes increase and avoidable costs can be saved.



The first step is the precise measurement of all relevant parameters in a silo. A battery-operated IIoT-enabled level sensor (80 GHz radar) provides information about the exact fill level inside the silo. In addition to considering the behaviour of the bulk material, the measuring device has additional sensors for:

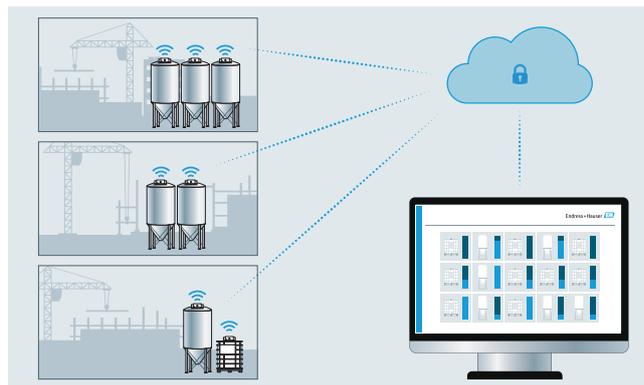
- Measurement of the ambient temperature to ensure the integrity of the product quality
- Measurement of the angle of inclination in order to be able to draw conclusions about the time of transport and installation
- GPS position detection
- Monitoring of the battery status



Details of the solution Similar to a tablet or mobile phone, the measurement data recorded by the radar is transmitted to a cloud via common mobile radio standards and visualized via a browser-based user interface. The visualization of the data is supplemented by an integrated map view. Based on Google Maps the current positions of the individual silos are shown. For the exact calculation of the mass inside a silo, product-specific conversions can also be configured within the Software. The different behaviour of bulk materials when setting up, filling and emptying can be taken into account in the best possible way.

Customer benefit The cellular and battery-powered solution enables manufacturers and distributors of building materials (e.g. gypsum, lime, plaster, etc.) to quickly and

The second step is the user-friendly visualization of the measured parameters. In combination with a web-based inventory management software, the level measurement offers full transparency across all steps of the supply chain. From production to distribution to storage on site. Orders and subsequent deliveries can also be automated by automatically transmitting inventory data to other systems. This allows deliveries to be optimally planned and transmitted to the customer.



easily view the available quantity of materials at their customers' respective locations. Deliveries can be efficiently planned based on the data. Wrong journeys can be avoided, which not only reduces operating costs but also lowers the carbon footprint of the supplier.

The time of delivery and availability of the material on the construction site can be documented and thus verified based on the change in the angle of inclination. In addition, the quality of the stored materials can be ensured by continuous measurement of the ambient temperature. If desired, the manufacturer can also give its customers direct insights into the stock which is still available. This offers customers decisive added value, with which the manufacturer can differentiate itself from its competitors on the market.

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