Why is the dynamic range of a radar device important?

The dynamic range of a radar sensor defines which applications the sensor can be successfully used in. The reflective properties of various bulk solids dier
greatly. A large dynamic range ensures that even the smallest signals and therefore the widest range of products can be measured.

The theory

The dynamic range of a sensor indicates the dierence between the largest and smallest signal that can be measured. Since the transmitting power cannot be increased, the electronics has to detect and evaluate ever smaller signals.

The solution

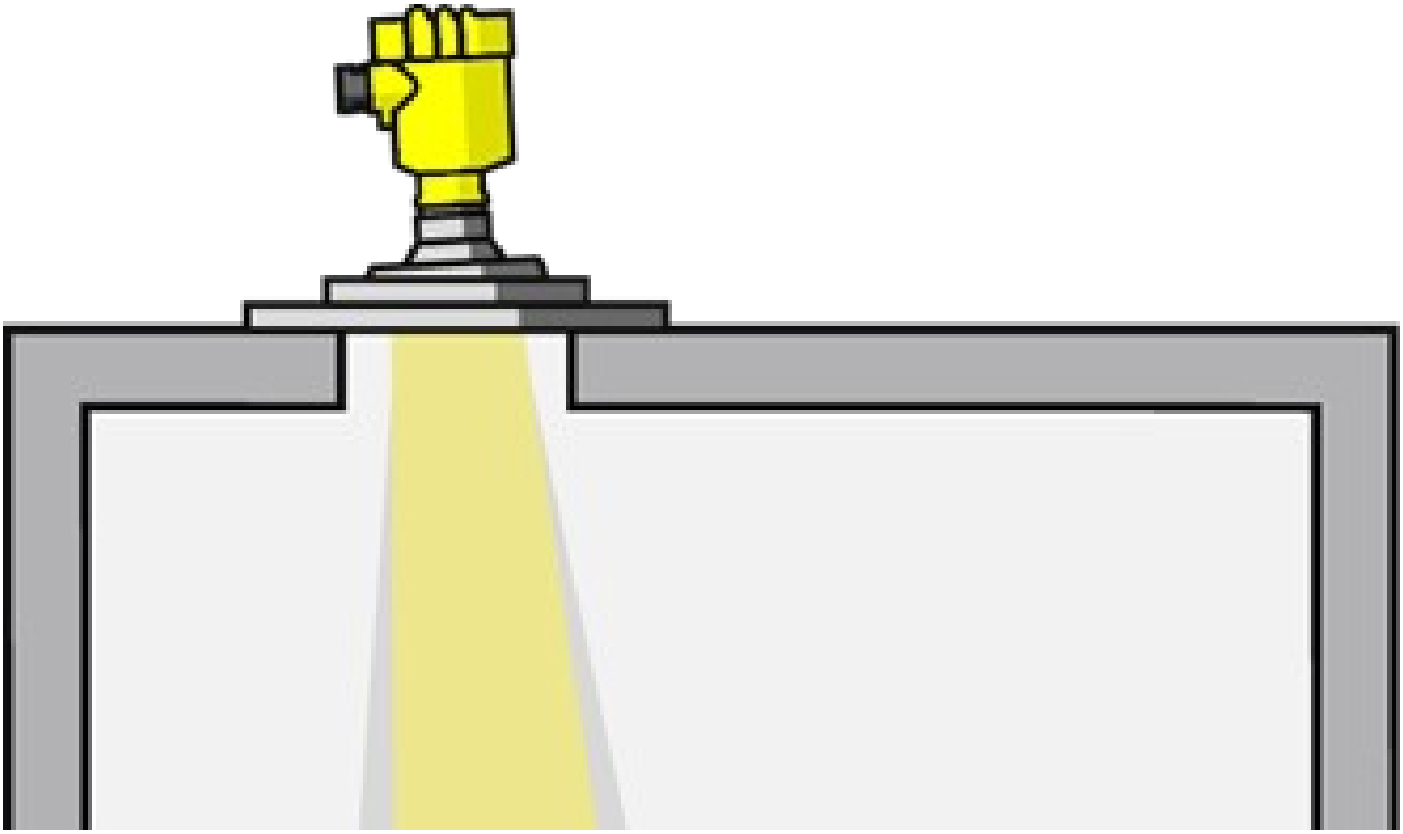
VEGAPULS 69 sets new standards. Because of its large dynamic range, it can measure even the tiniest of reflected signals. This ensures even better measurement certainty and reliability for media with good reflective properties – such as coal, ore or rocks. When it comes to the measurement of media with poor reflective properties, such as plastic powders or dry wood chips, this new technology comes into its own, with significantly improved signal dierentiation.

The benefits

- Broader range of applications for all bulk solids, regardless of their reflective properties
- Universal measuring method thanks to the large dynamic range

Expert tip:

When selecting a sensor for bulk solids applications, it makes sense to opt for a sensor with the largest possible dynamic range. Such a sensor always ensures maximum reliability, regardless of the measuring range and the type of application.



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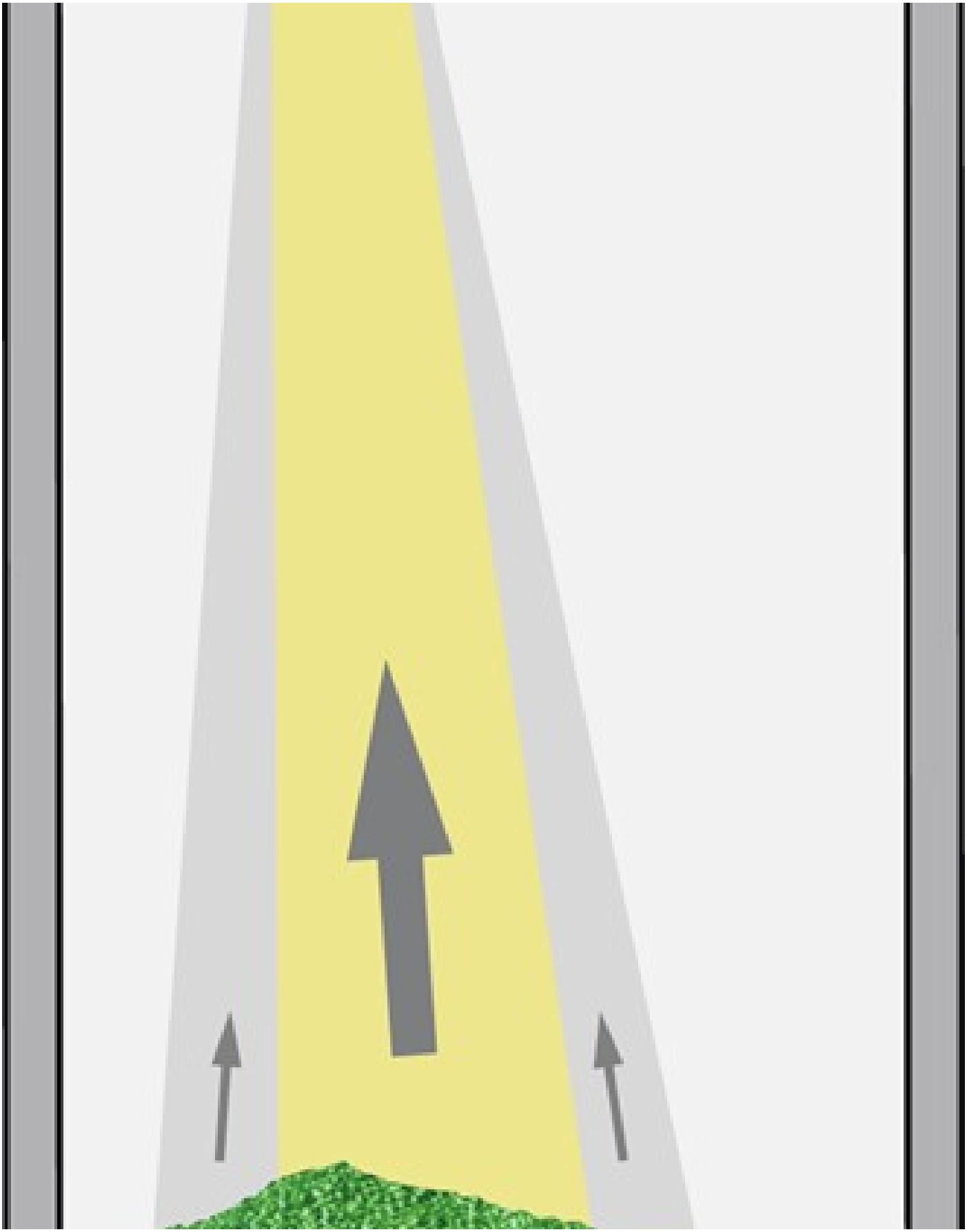

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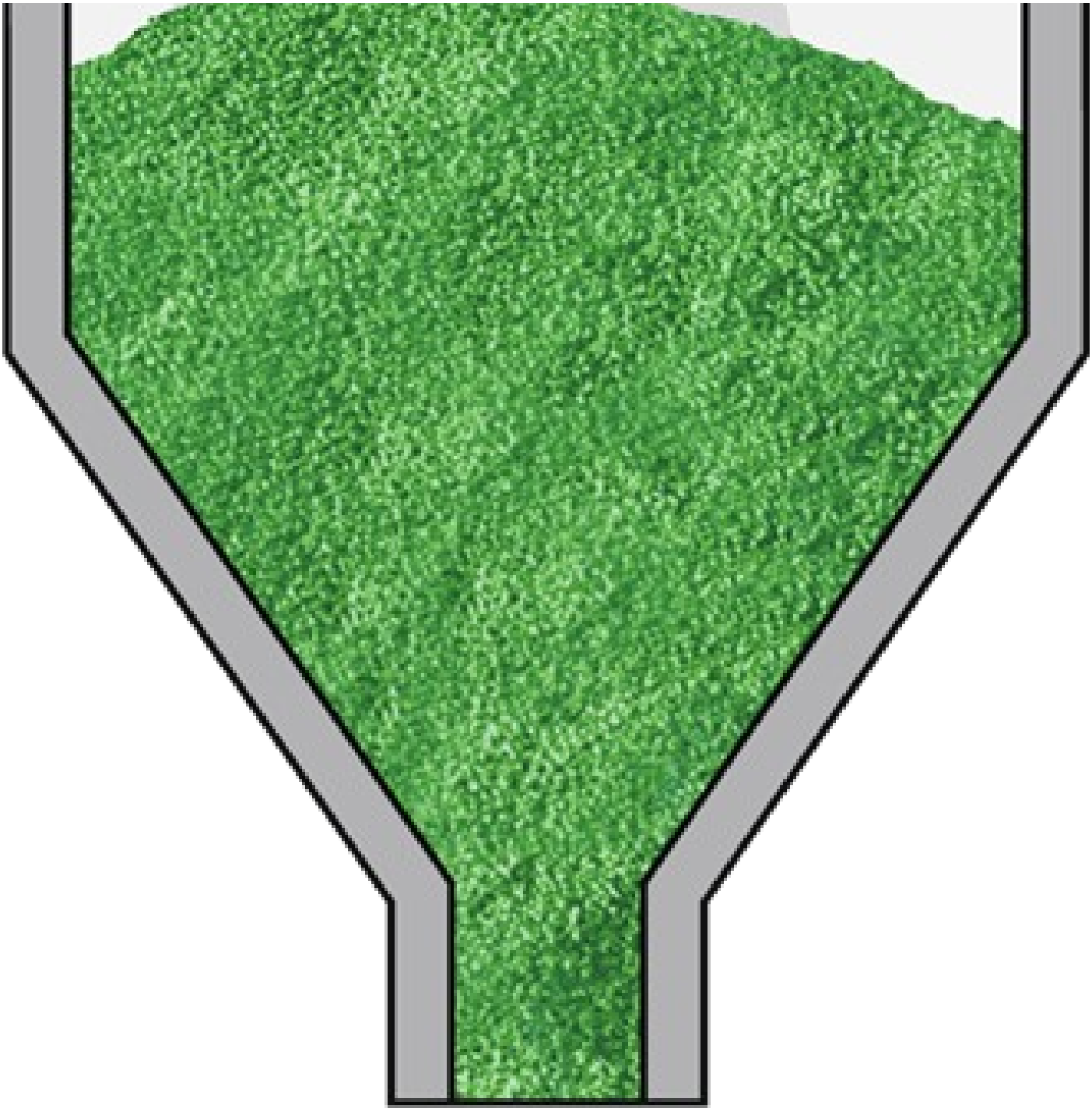

Applications

Level and pressure measurement and point level detection in cement silos

Before further processing, the cement is stored in tall silos. The cement is transported both in and out of the silo via pneumatic conveying. Efficient storage and transport of the product is ensured by accurate level measurement and point level detection, as well as also monitoring the pneumatic conveying system pressure.

Measuring task

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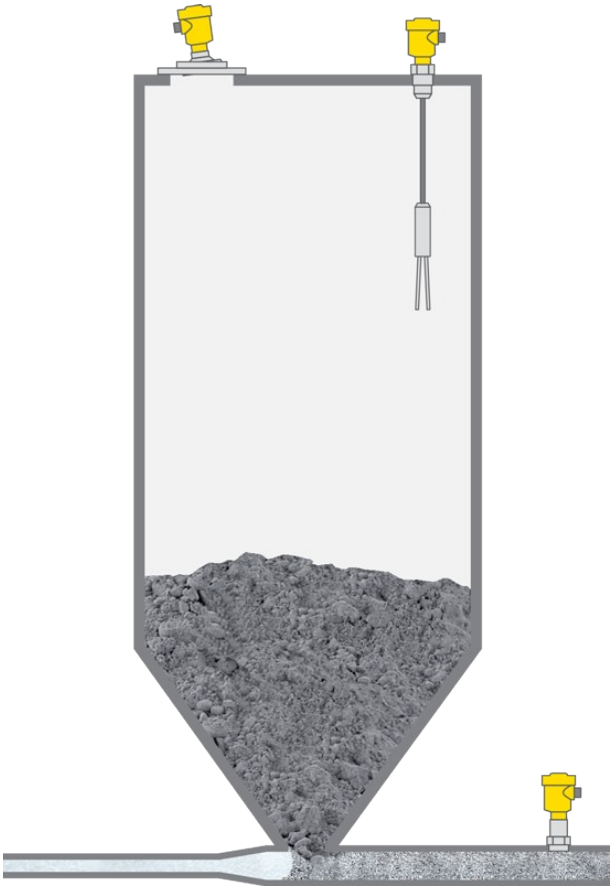

Level and pressure measurement, point level detection

Measuring point
Silo

Measuring range up to
50 m

Medium
Cement

Process temperature
-40 … +50 °C

Process pressure
0 … 0 bar

Special challenges
Strong dust generation, buildup

Reliable

Reliable measurement ensures a continuous supply of raw material

Cost effective

Optimal stocks enable continuous production

User friendly

Maintenance-free operation

See all recommended products

Level measurement and point level detection in silos

In the chemical industry, many different kinds of bulk solids are produced or used as raw materials. To ensure reliable measurement of silo contents, many factors must be considered: different bulk densities, abrasive properties, dust generation and the requirements of explosion protection. Implementation of the most suitable level sensors ensures optimal production planning and reliable logistics for the finished products.

Measuring task

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Level measurement and point level detection

Measuring point
Silo, stockpile, bunker

Measuring range up to
80 m

Medium
Granulated bulk solids

Process temperature
-40 … +200 °C

Process pressure
-1 … +3 bar

Special challenges
Dust, filling noise, changes in media properties, abrasive media

Reliable

Reliable measurement, independent of media properties and container geometry

Cost effective

Maintenance-free operation

User friendly

Universally applicable for almost all bulk solids

See all recommended products

Level measurement and point level detection in the grain silo

Barley is stored in malt houses in silos up to 20 metres high before it is processed into malt for production of beer. Filling the silos generates a lot of dust and the material cone geometry constantly changes during the filling and emptying process. A reliable indication of the level ensures the smooth operation by sending signals corresponding to the level or possible limit levels of the grain.

Measuring task

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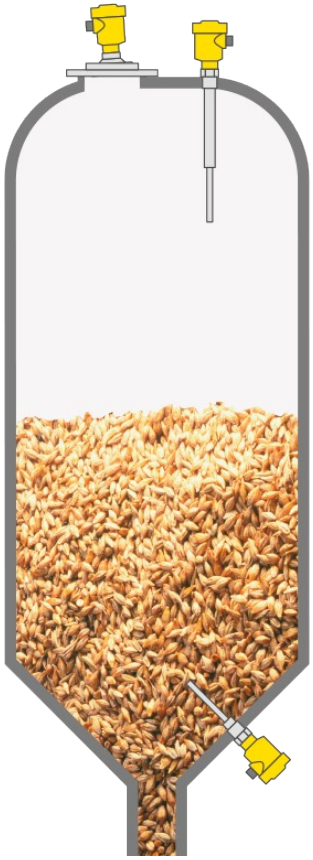

Level measurement and point level detection

Measuring point
Silo

Measuring range up to
20 m

Medium
Grain

Process temperature
-40 … +50 °C

Process pressure
0 … 0 bar

Special challenges
Strong dust generation during filling, tank geometry, bulk solid surface geometry

Reliable

Reliable measurement independent of the medium

Cost effective

Better utilisation of silo capacity and product through reliable measurement

User friendly

Simple calibration

See all recommended products

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