

Solutions for solid applications

Simple and efficient level measurements in bunker and stockpiles

Advantages for the customer:

- Reliable measurement performance – regardless of weather conditions, pressure, temperature, physical state of the medium or widely varying grain size – thanks to the highly developed radar chip, the wide range of installation options and weather protection cover.
- In-house-developed 80 GHz radar chip and 80 mm/3" antenna for precise measurements up to 30 m/98 ft.
- Heartbeat Technology enables diagnostics and verification during operation without device removal. Certified, verifiable and documented in accordance with ISO 9001.
- Guided setup sequences (called "wizards") considerably simplify commissioning, proof tests and verifications.
- Intuitive remote use via app and on-device with the color touch display ensures fast and safe commissioning, operation and control.
- Gas and dust explosion protection certification for Micropilot FMR20B and FMR30B.



80 GHz radar level measurement



Level measurement independent from weather conditions

Reliable level measurements in bunker and stockpiles to avoid process interruptions. Supported by simple and fast operation and maintenance.

The challenge The level measurement of solids in bunker, dumps and stockpiles is often challenging due to various influences. Extreme demands of weather conditions like sun, wind, rain or snow, can lead to a variation in material states. Grains can therefore be dry, wet or even frozen. These states also change the solids property, which can influence the reflection of the radar signal and measurement result. In addition, highly variable grain sizes, measurement heights and frequently changing surface formations also have an impact on the measurement accuracy.

Our solution The simpler, the better: Endress+Hauser's answer to these

challenges is the new product family Micropilot FMR10B, FMR20B and FMR30B. Equipped with 80 GHz radar technology, the measurement is highly precise and reliable independent of media properties. Highly variable surface conditions, for example, due to fast-moving bulk material, are no challenge. In addition, the new product family can be complemented with a variety of accessories to eliminate the challenges of weather and mounting conditions. A weather protection cover, for instance, shields the measuring device from strong sunlight. Additionally, mounting brackets are available to enable the installation on railings above the stockpile.



The new product family Micropilot FMR10B, FMR20B, FMR30B

Details of the solution A reliable measurement is guaranteed by 80 GHz radar technology in combination with a variety of accessories and antenna options. For example, the 80 mm/3" antenna with a narrow radius allows a strong signal, even in high stockpiles or bunkers.

Each of the new radar sensors is suitable for measuring liquids and solids – it is just a question of setting, that the user can change in the device control. This makes selection easier and eliminating the need to keep several replacement devices in stock.

The Micropilot FMR20B and FMR30B are certified for explosion protection with respect to dust and gas. The device can be easily and reliably operated via remote access through a smartphone or tablet or by using the color touch display. Commissioning and operation can be performed without having to open the lid. Heartbeat Technology with Radar Accuracy Index (RAI) enables traceable verification in accordance with ISO 9001, significantly reducing the calibration and documentation workload and increasing the trust in

the accuracy of the measurement device over its lifetime. On-demand verification and diagnostic proof tests are guided through wizard and can be performed without process interruption in less than three minutes.

Customer benefit Our compact 80 GHz radar sensors have been specially designed for customers needing a reliable and stable level measurement in their basic solid applications independent from external influences and material properties. In addition, the product family is simple to operate and is for everyone who wants to worry less about their level measurement. Installation efforts and operation are simplified thanks to remote and on-device access. The device identification is possible during Bluetooth connection thanks to a flashing LED or display ("It's me-function").

Guided wizards not only simplify device commissioning but also guide through proof tests and verifications. In addition, the Micropilot FMR30B has a unique color touch display that allows the device to be controlled quickly and safely without opening the lid. All these benefits add up to both improved productivity and reduced complexity.

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