

# Radar measurement Time-of-Flight Micropilot FMR57

The standard sensor for highest demands in bulk solids level measurement



More information and current pricing:

[www.ca.endress.com/FMR57](http://www.ca.endress.com/FMR57)

## Benefits:

- Hardware and software developed according to IEC 61508 up to SIL3 (in homogeneous redundancy)
- HistoROM data management concept for fast and easy commissioning, maintenance and diagnostics
- Highest reliability even in the presence of obstructions in the vessel due to new Multi-Echo Tracking evaluation
- Heartbeat Technology for a cost-effective and safe plant operation during the entire life cycle
- Seamless integration into control or asset management systems and intuitive, menu-guided operation concept (on-site or via the control system)
- Reliable measurement even for changing product and process conditions
- World's easiest proof test concept for SIL and WHG saves time and cost

## Specs at a glance

- **Accuracy** +/- 3 mm (0.12 in)
- **Process temperature** -40...+400 °C (-40...+752 °F)
- **Process pressure / max. overpressure limit** Vacuum...16 bar (Vacuum...232 psi)
- **Max. measurement distance** 70 m (230 ft)
- **Main wetted parts** 316L, PEEK, PTFE, Polyamid

**Field of application:** Micropilot FMR57 is the sensor for the highest demands in bulk solids and best suited for measurements in high silos, bunkers or stockpiles. The parabolic antenna facilitates very small emitting angles and thus the measurement in slim silos. Micropilot free

space radar is used for continuous, non-contact level measurement in powdery to granular bulk solids. Dust, filling noises, temperature layers and gas layers do not affect the measurement.

## Features and specifications

### Continuous / Solids

#### Measuring principle

Level radar solid

#### Characteristic / Application

For highest demands in measuring tasks of bulk solids:  
Reliable, non-contact level measurement in high silos, bunkers or stockpiles also under extreme conditions like strongly dusting and build-up forming media

#### Specialities

Heartbeat Technology,  
Bluetooth® commissioning,  
Operation and maintenance SmartBlue App,  
Safety and reliability with Multi- Echo Tracking,  
HistoROM,  
RFID TAG for easy identification

#### Supply / Communication

2-wire (HART / PROFIBUS PA/ FOUNDATION Fieldbus)  
4-wire (HART),  
Bluetooth® wireless technology and App (optional)

#### Frequency

K-band (~26 GHz)

#### Antenna

Parabolic DN200/8", DN250/10"  
Horn DN80/3", DN100/4"

#### Accuracy

+/- 3 mm (0.12 in)

## Continuous / Solids

**Ambient temperature**

-40...+80 °C  
(-40...+176 °F)

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**Process temperature**

-40...+400 °C  
(-40...+752 °F)

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**Process pressure / max. overpressure limit**

Vacuum...16 bar  
(Vacuum...232 psi)

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**Main wetted parts**

316L, PEEK, PTFE, Polyamid

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**Process connection**

Thread:  
MNPT 1 1/2, R 1 1/2  
Flange:  
DN80...DN100,  
ASME 3"...4",  
JIS 10K,  
UNI DN100/8"...DN250/10"

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**Max. measurement distance**

70 m (230 ft)

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**Communication**

4...20 mA HART  
PROFIBUS PA  
FOUNDATION Fieldbus  
Bluetooth® wireless technology

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**Certificates / Approvals**

ATEX, FM, CSA C/US, IEC Ex, INMETRO, NEPSI, KC, JPN Ex, EAC, UK Ex

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**Safety approvals**

SIL

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## Continuous / Solids

### Design approvals

EN 10204-3.1

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### Marine approval

GL/ ABS/ LR/ BV/ DNV

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### Options

Display,  
Customized parameterization,  
Remote operation via SmartBlue App using Bluetooth<sup>®</sup>,  
Antenna extension,  
PWIS free

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### Application limits

Dk < 1.6  
Reduction of the max. possible measuring range through:  
Media with poor reflection properties  
Angle of repose  
Extremely loose surfaces of bulk solids, e.g. bulk solids with low bulk weight for pneumatic filling  
Build-up, above all of moist products

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