

# Radar measurement Time-of-Flight Micropilot FMR50

## Basic model for level liquid applications



More information and current pricing:

[www.casc.endress.com/FMR50](http://www.casc.endress.com/FMR50)

### Benefits:

- Reliable non-contact measurement even for changing product and process conditions
- 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
- Hardware and software developed according to IEC 61508 up to SIL3 (in homogeneous redundancy)
- 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)
- World's easiest proof test concept for SIL and WHG saves time and cost

### Specs at a glance

- **Accuracy** +/- 2 mm (0.08 in)
- **Process temperature** -40...+130 °C (-40...+266 °F)
- **Process pressure absolute / max. overpressure limit** Vacuum...3 bar (Vacuum...43.5 psi)
- **Max. measurement distance** Standard: 30 m (98 ft) With advanced dynamics: 40 m (131 ft)
- **Main wetted parts** PVDF, Viton, PP, PBT

**Field of application:** Micropilot FMR50 is the best choice in simple reservoir and storage applications as well as in utility processes. The FMR50 free space radar is used for continuous, non-contact level measurement of liquids, pastes and slurries. The measurement is not

affected by changing media, temperature changes, gas blankets or vapors. Remote access with SmartBlue app via Bluetooth module is available.

## Features and specifications

### Continuous / Liquids

#### Measuring principle

Level radar

#### Characteristic / Application

For basic level measurement in liquids, pastes and slurries; non affected by changing media, temperature changes, gas blankets or vapor;  
Encapsulated PVDF or PP clad horn antenna

#### Specialities

Heartbeat Technology,  
SIL 2 according to IEC 61508,  
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)

#### Accuracy

+/- 2 mm (0.08 in)

#### Ambient temperature

-40...+80 °C  
(-40...+176 °F)

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**Continuous / Liquids****Process temperature**

-40...+130 °C  
(-40...+266 °F)

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**Process pressure absolute / max. overpressure limit**

Vacuum...3 bar  
(Vacuum...43.5 psi)

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**Main wetted parts**

PVDF, Viton, PP, PBT

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**Process connection**

Thread:  
G1 1/2, MNPT1 1/2  
Flange:  
UNI DN80...DN150 (3"...6")

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**Max. measurement distance**

Standard: 30 m (98 ft)  
With advanced dynamics: 40 m (131 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, JPN Ex, INMETRO, NEPSI, KC, EAC, UK Ex

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**Safety approvals**

Overfill protection WHG  
SIL

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**Options**

Display,  
Customized parameterization,  
PWIS free,  
Remote operation via SmartBlue App using Bluetooth®

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## Continuous / Liquids

### **Application limits**

Ammoniacal gas phase:

FMR54 in stilling well

Strong build-up formation:

FMR54 with air purge

Low DK:

FMR51

Only PTFE resistant:

FMR52

Custody transfer measurement:

FMR5xx

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