

# Radar measurement Time-of-Flight Micropilot FMR52

For level measurement in aggressive liquids or applications with hygiene requirements



More information and current pricing:

[www.endress.com/FMR52](http://www.endress.com/FMR52)

## Benefits:

- Hardware and software developed according to IEC 61508 up to SIL3 (in homogeneous redundancy)
- 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
- 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** -196...+200 °C (-321...+392 °F)
- **Process pressure / max. overpressure limit** Vacuum...25 bar (Vacuum...363 psi)
- **Max. measurement distance** Standard: 40 m (131 ft) With advanced dynamics: 60 m (197 ft)
- **Main wetted parts** PTFE

**Field of application:** For applications in aggressive liquids Micropilot FMR52 offers extraordinary advantages with its completely PTFE-filled and flush-mounted horn antenna. The FMR52 is also the sensor for

hygiene-sensitive applications in the food and life sciences industry - ASME BPE, USP Class VI, 3-A and EHEDG approvals. Micropilot 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.

## Features and specifications

### Continuous / Liquids

#### Measuring principle

Level radar

#### Characteristic / Application

Premium device for continuous non-contact level measurement, in which aggressive media are used as well as for highest hygiene requirements (ASME BPE, USP Class VI);

Flush mounted, fully PTFE filled 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)

## Continuous / Liquids

**Ambient temperature**

-50...+80 °C  
(-58...+176 °F)

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**Process temperature**

-196...+200 °C  
(-321...+392 °F)

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**Process pressure / max. overpressure limit**

Vacuum...25 bar  
(Vacuum...363 psi)

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**Main wetted parts**

PTFE

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**Process connection**

Flange:  
DN50...DN150  
ASME 2"...6"  
JIS 10K

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**Process connection hygienic**

Tri-Clamp ISO2852  
DIN11851

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**Max. measurement distance**

Standard: 40 m (131 ft)  
With advanced dynamics: 60 m (197 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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## Continuous / Liquids

### Safety approvals

Overfill protection WHG  
SIL

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### Design approvals

EN 10204-3.1  
ASME B31.3  
AD2000

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### Hygienic approvals

3A, EHEDG  
CoC ASME-BPE

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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®,  
Gas-tight feed through,  
PWIS free

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### Application limits

Maximum measuring range is dependent on the tank form and/or application  
Ammoniacal gas phase:  
FMR54 in stilling well  
Strong build-up formation:  
FMR54 with air purge  
Custody transfer measurement:  
FMR5xx

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