Radar measurement
Time-of-Flight
Micropilot FMR52

For level measurement in aggressive liquids or applications with hygiene requirements

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

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<tr>
<th>Continuous / Liquids</th>
<th>Measuring principle</th>
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<td>Level radar</td>
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<th>Characteristic / Application</th>
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<tr>
<td>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);</td>
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<td>Flush mounted, fully PTFE filled horn antenna</td>
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<th>Specialities</th>
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<tr>
<td>Heartbeat Technology,</td>
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<td>SIL 2 according to IEC 61508,</td>
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<td>Bluetooth® commissioning,</td>
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<td>Operation and maintenance SmartBlue App,</td>
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<td>Safety and reliability with Multi-Echo Tracking,</td>
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<td>HistoROM,</td>
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<td>RFID TAG for easy identification</td>
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<th>Supply / Communication</th>
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<tr>
<td>2-wire (HART / PROFIBUS PA/ FOUNDATION Fieldbus)</td>
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<td>4-wire (HART)</td>
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<td>Bluetooth® wireless technology and App (optional)</td>
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<tr>
<th>Frequency</th>
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<tbody>
<tr>
<td>K-band (~26 GHz)</td>
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Continuous / Liquids

**Ambient temperature**
-50...+80 °C  
(-58...+176 °F)

**Process temperature**
-196...+200 °C  
(-321...+392 °F)

**Process pressure / max. overpressure limit**
Vacuum...25 bar  
(Vacuum...363 psi)

**Main wetted parts**
PTFE

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

**Process connection hygienic**
Tri-Clamp ISO2852  
DIN11851

**Max. measurement distance**
Standard: 40 m (131 ft)  
With advanced dynamics: 60 m (197 ft)

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

**Certificates / Approvals**
ATEX, FM, CSA C/US, IEC Ex, JPN Ex, INMETRO, NEPSI, KC, EAC, UK Ex
Continuous / Liquids

Safety approvals
Overfill protection WHG
SIL

Design approvals
EN 10204-3.1
ASME B31.3
AD2000

Hygienic approvals
3A, EHEDG
CoC ASME-BPE

Marine approval
GL/ ABS/ LR/ BV/ DNV

Options
Display,
Customized parameterization,
Remote operation via SmartBlue App using Bluetooth®,
Gas-tight feed through,
PWIS free

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

More information www.endress.com/FMR52