

Radar measurement Time-of-Flight Micropilot FMR51

The standard sensor for highest demands in liquid level measurement



More information and current pricing:

www.fi.endress.com/FMR51

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)
- World's easiest proof test concept for SIL and WHG saves time and cost
- Highest safety due to double ceramic coupling and gas-tight feedthrough

Specs at a glance

- **Accuracy** +/- 2 mm (0.08 in)
- **Process temperature** XT: -196...+280 °C (-321...+536 °F) HT: -196...+450 °C (-321...+842 °F)
- **Process pressure absolute / max. overpressure limit**
Vacuum...160 bar (Vacuum...2320 psi)
- **Max. measurement distance** Standard: 40 m (131 ft) With "Advanced dynamics": 70 m (230 ft)
- **Main wetted parts** 316L, Alloy C, PTFE, ceramic

Field of application: Micropilot FMR51 for level measurement even under extreme process conditions like high temperature and high pressure in the oil & gas and chemical industry. The FMR51 free space radar offers maximum reliability due to an innovative and patented sensor-design. 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. Remote access via SmartBlue app is available.

Features and specifications

Continuous / Liquids

Measuring principle

Level radar

Characteristic / Application

Premium device for continuous non-contact level measurement of liquids, pastes and slurries even under extreme process conditions;
Horn antenna: 40...100 mm

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)

Continuous / Liquids**Accuracy**

+/- 2 mm (0.08 in)

Ambient temperature

-50...+80 °C
(-58...+176 °F)

Process temperature

XT: -196...+280 °C
(-321...+536 °F)
HT: -196...+450 °C
(-321...+842 °F)

Process pressure absolute / max. overpressure limit

Vacuum...160 bar
(Vacuum...2320 psi)

Main wetted parts

316L, Alloy C, PTFE, ceramic

Process connection

Thread:
MNPT 1 1/2, R 1 1/2
Flange:
DN50...DN150,
ASME 2"...6",
JIS 10K, 63K

Process connection hygienic

Tri-Clamp ISO2852

Max. measurement distance

Standard: 40 m (131 ft)
With "Advanced dynamics": 70 m (230 ft)

Continuous / Liquids**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

Safety approvals

Overfill protection WHG
SIL

Design approvals

EN 10204-3.1
NACE MR0175, MR0103
ASME B31.3
AD2000

Marine approval

GL/ ABS/ LR/ BV/ DNV

Options

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

Continuous / Liquids

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

316L or Alloy C non-resistant:

FMR50, FMR52, FMR53

Hygiene requirements:

FMR52, FMR53

Custody transfer measurement:

FMR5xx

More information www.fi.endress.com/FMR51