

# Radar measurement Time-of-Flight Micropilot FMR20

## Level measurement of liquids and solids in all industries



### Benefits:

- Non-contact radar with commissioning via HART or wireless via Bluetooth® app or with remote display
- Most compact radar due to unique radar chip design offering perfect fit in limited space applications
- Best price-performance-ratio radar
- Perfect application fit for water & wastewater, mining, minerals & metals as well as utilities in all industries (IP66, 68 / NEMA4x, 6P)
- Full PVDF body to resist outdoor conditions, sealed wiring and fully potted electronics eliminates water ingress and allows operation under harsh environmental conditions
- Easy setup with three main parameters suits for most applications
- Simple, safe and secure wireless remote access via Bluetooth® – even in hazardous areas or places difficult to reach

More information and current pricing:

[www.de.endress.com/FMR20](http://www.de.endress.com/FMR20)

### Specs at a glance

- **Accuracy** +/- 5 mm (0.2")
- **Process temperature** -40...+80°C (-40...+176°F)
- **Process pressure absolute / max. overpressure limit** -1...3 bar (-14,5...43 psi)
- **Max. measurement distance** DN80: 10 m (32.8 ft)
- **Main wetted parts** PVDF, PBT

**Field of application:** Micropilot FMR20 offers continuous non-contact level and flow (via linearization table) measurement and is a perfect application fit for the water & wastewater industry and utilities across all industries. Commissioning is possible via HART or wireless via app using Bluetooth® or with remote display. Signal curves can be shown via app

on every Bluetooth®-enabled smartphone/tablet (iOS, Android). With the compact design, thanks to unique chip, the device is ideal for limited space applications.

## Features and specifications

### Continuous / Solids

**Measuring principle**

Level radar solid

**Characteristic / Application**

For simple applications:

Reliable non-contact level measurements in silos or storage tanks for bulk solids

**Specialities**

Bluetooth® commissioning,

Operation and maintenance SmartBlue App

**Supply / Communication**

2-wire (HART, 4...20 mA, Modbus),

Bluetooth® wireless technology and App (optional)

**Frequency**

K-band (~26 GHz)

**Antenna**

80 mm/ 3"

**Accuracy**

+/- 5 mm (0.2")

**Ambient temperature**

-40...+80°C (-40...+176°F)

**Process temperature**

-40...+80°C (-40...+176°F)

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

-1...3 bar (-14,5...43 psi)

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**Continuous / Solids****Main wetted parts**PVDF, PBT

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**Process connection**

Thread:

G1", NPT1";

Flange:

UNI DN80....DN150 (3"...6")

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**Max. measurement distance**DN80: 10 m (32.8 ft)

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**Communication**

4...20 mA HART

Modbus

Bluetooth® wireless technology

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**Options**

Remote operation via SmartBlue App using Bluetooth®,

Remote HART indicator RIA15 in order structure,

Flooding protection tube,

Different mounting possibilities

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**Application limits**

DK &lt; 2

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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**Continuous / Liquids****Measuring principle**Level radar

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**Continuous / Liquids****Characteristic / Application**

Water & Wastewater (e.g. basins / channels / rivers / dams / lift stations / storm water basins / pump control)  
Utility applications in all industries  
Storage tanks

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**Specialities**

Bluetooth® commissioning,  
Operation and maintenance SmartBlue App

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**Supply / Communication**

2-wire (HART, 4...20 mA, Modbus),  
Bluetooth® wireless technology and App (optional)

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**Frequency**

K-band (~26 GHz)

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**Accuracy**

+/- 2 mm (0,08")

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**Ambient temperature**

-40...+80°C (-40...+176°F)

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**Process temperature**

-40...+80°C (-40...+176°F)

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

-1...3 bar (-14,5...43 psi)

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**Main wetted parts**

PVDF, PBT

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**Process connection**

Thread:

G1", NPT1"; G1 1/2", NPT1 1/2", G2", NPT2",

Flange:

UNI DN80....DN150 (3"...6")

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## Continuous / Liquids

### Max. measurement distance

DN40: 15 m (49.2 ft),

DN80: 20 m (65.6 ft)

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### Communication

4...20mA HART

Modbus

Bluetooth® wireless technology

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### Certificates / Approvals

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

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### Options

Remote operation via SmartBlue App using Bluetooth®,

Remote HART indicator RIA15 in order structure,

Flooding protection tube,

Different mounting possibilities

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### Application limits

FMR5x;

Ammoniacal gas phase:

FMR54 in stilling well;

Strong build-up formation:

FMR54 with air purge;

Only PTFE resistant:

FMR52;

Custody transfer measurement:

FMR5xx or NMR8x

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More information [www.de.endress.com/FMR20](http://www.de.endress.com/FMR20)