

# Radar measurement Micropilot NMR81

Drip-off lens antenna with 80 GHz transmitting frequency for custody transfer applications



More information and current pricing:

[www.fi.endress.com/NMR81](http://www.fi.endress.com/NMR81)

## Benefits:

- Hardware and software developed according to IEC 61508 up to SIL3 (in homogeneous redundancy) for high level of safety
- Maximum reliability through accuracy up to  $\pm 0.5\text{mm}$  ( $\pm 0.02\text{''}$ )
- Developed according to international metrology recommendations such as OIML R85 and API MPMS
- Local and country-specific certifications like NMI or PTB for custody transfer applications
- Simplified installation and trouble-free operations due to easy connection to major DCS systems via open protocols
- 80GHz technology for narrow beam angle for sharper focus, without interference from tank wall and obstructions

## Specs at a glance

- **Accuracy** up to 0.5 mm
- **Process temperature**  $-40^{\circ}\text{C} \dots 200^{\circ}\text{C}$  ( $-40^{\circ}\text{F} \dots 392^{\circ}\text{F}$ )
- **Process pressure / max. overpressure limit** Vacuum.....16 bar abs
- **Max. measurement distance** 70 m (230 ft) For calibration to regulatory standards: 30 m (98 ft)
- **Main wetted parts** 316L, PTFE

**Field of application:** Micropilot NMR81 is used for custody transfer and inventory control applications with NMI- and PTB-approvals and meets the requirements according to OIML R85 and API 3.1B. NMR81 is particularly suited for free space applications up to 70m. The drip-off lens

antenna with 80 GHz transmitting frequency produces a sharply focused beam angle of 3° and avoids obstacles even close to tank wall.

## Features and specifications

### Continuous / Liquids

**Measuring principle**

Level radar

**Characteristic / Application**

Lens antenna, 80GHz: High precision measurement for for storage tanks up to 30 m (98ft)

**Specialities**

Custody transfer level measurement  
Measurement close to tank wall

**Supply / Communication**

85-264VAC

**Accuracy**

up to 0.5 mm

**Ambient temperature**

Standard:

-40°C...60°C  
(-40°F...140°F)

For calibration to regulatory  
standards:

-25°C...55°C  
(-13°F...131°F)

**Process temperature**

-40°C...200°C  
(-40°F...392°F)

**Process pressure / max. overpressure limit**

Vacuum.....16 bar abs

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**Continuous / Liquids****Main wetted parts**

316L, PTFE

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**Process connection**

Flange:

DN50/2"...DN300/12"

Flange w/ Alignment tool:

DN100/4"...DN300/12"

UNI-Flange:

DN150/6"...DN300/12"

UNI-Flange w/ Alignment tool:

DN150/6"...DN300/12"

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**Max. measurement distance**

70 m (230 ft)

For calibration to regulatory standards:

30 m (98 ft)

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**Communication**

Outputs:

Fieldbus: Modbus RS485, V1, HART

Analog 4-20mA output (Exi/ Exd)

Relay output (Exd)

Inputs:

Analog 4-20mA input (Exi/ Exd)

2-, 3-, 4-wire RTD input

Discrete input (Exd, passive/active)

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**Certificates / Approvals**

ATEX, FM, IEC Ex, EAC, JPN Ex

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**Safety approvals**

Overfill protection WHG

SIL

## Continuous / Liquids

### **Design approvals**

EN 10204-3.1  
NACE MR0175, MR0103  
AD2000

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### **Metrological approvals and certificates**

OIML, NMI, PTB

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### **Options**

Redundant fieldbus  
Alu-coated or 316L housing  
Weather protection cover  
Adjustable mounting seals

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### **Application limits**

Maximum measuring range is  
dependent on the tank form and/  
or application  
Strong condensate or build-up  
formation

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