

Radar measurement

Micropilot NMR81

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



More information and current pricing:

www.apsc.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 absolute / 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 absolute / max. overpressure limit

Vacuum.....16 bar abs

Continuous / Liquids**Main wetted parts**316L, PTFE

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"

Max. measurement distance

70 m (230 ft)

For calibration to regulatory standards:

30 m (98 ft)

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)

Certificates / ApprovalsATEX, FM, IEC Ex, EAC, JPN Ex

Safety approvals

Overfill protection WHG

SIL

Continuous / Liquids

Design approvals

EN 10204-3.1
NACE MR0175, MR0103
AD2000

Metrological approvals and certificates

OIML, NMI, PTB

Options

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

Application limits

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

More information www.apsc.endress.com/NMR81