

Servo tank gauging instrument Proservo NMS81

High precision servo measurement for liquid level, interface and density



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 $\pm 0.4\text{mm}$ ($\pm 0.02\text{''}$)
- 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
- Superior corrosion resistance with 316L materials in the process compatible with sour applications such as crude oil
- Measurement of interfaces between up to three liquid layers, tank bottom, spot, and profile densities
- Best fit for LNG/LPG applications without influence of dc value or Boil Off Gas

More information and current pricing:

www.be.endress.com/NMS81

Specs at a glance

- **Accuracy** up to 0.4 mm
- **Process temperature** $-200^{\circ}\text{C} \dots 200^{\circ}\text{C}$ ($-328^{\circ}\text{F} \dots 392^{\circ}\text{F}$)
- **Process pressure absolute / max. overpressure limit** up to 25 bar (363 psi) abs
- **Max. measurement distance** 47 m (154 ft)
- **Main wetted parts** 316L, AlloyC276, PTFE

Field of application: The intelligent tank gauge Proservo NMS81 is designed for high accuracy liquid level measurement in custody transfer and inventory control applications with NMI- and PTB-approvals. It meets the relevant requirements according to OIML R85 and API 3.1B. It fulfills the exact demands of tank inventory management and loss

control and is optimized in regards of total cost saving and safe operation.

Features and specifications

Continuous / Liquids

Measuring principle

Servo / Float Tank Gauging

Characteristic / Application

Servo Tank Gauging: High precision measurement for liquid level, interface, spot density, profile density

Specialities

Custody transfer level measurement

Interface measurement

Spot density, density profile measurement

Supply / Communication

85-264 VAC

Accuracy

up to 0.4 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

-200°C...200°C

(-328°F...392°F)

Process pressure absolute / max. overpressure limit

up to 25 bar (363 psi) abs

Continuous / Liquids

Main wetted parts

316L, AlloyC276, PTFE

Process connection

Flange:

DN80/3" / DN100/4" / DN150/6"

Max. measurement distance

47 m (154 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 / Approvals

ATEX, FM, IEC Ex, NEPSI, EAC

Safety approvals

Overfill protection WHG

SIL

Design approvals

EN 10204-3.1

NACE MR0175, MR0103

Metrological approvals and certificates

OIML, NMi, PTB

Continuous / Liquids**Options**

Redundant fieldbus
Alu-coated or 316L housing
Weather protection cover
Guide wire assembly
Relief valve
Gas purging nozzle connection
Pressure gauge
Cleaning nozzle connection

Application limits

Stilling well or guide wires for turbulent application
Recommend PTFE displacer for high viscosity application
Recommend AlloyC276 displacer for corrosive application
Interface measurement requires min. difference of 0.100 g/ml between layers

Density**Measuring principle**

Servo / Float Tank Gauging

Characteristic / Application

Servo Tank Gauging: High precision measurement for liquid level, interface, spot density, profile density

Supply / Communication

85-264 VAC

Density**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

-200°C...200°C

(-328°F...392°F)

Process pressure absolute

up to 25 bar (363 psi) abs

Wetted parts

316L, AlloyC276, PTFE

Output

Fieldbus: Modbus RS485, V1, HART

Analog 4-20mA output (Exi/ Exd)

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Inputs:

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Certificates / Approvals

ATEX, FM, IEC Ex, NEPSI, EAC

Density

Options

Redundant fieldbus
Alu-coated or 316L housing
Weather protection cover
Guide wire assembly
Relief valve
Gas purging nozzle connection
Pressure gauge
Cleaning nozzle connection

Specialities

Custody transfer level measurement
Interface measurement
Spot density, density profile measurement

Measuring range

47 m (154 ft)

Other approvals and certificates

OIML, NMI, PTB

More information www.be.endress.com/NMS81