

# 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.at.endress.com/NMS81](http://www.at.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

### 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

**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

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## Density

### Output

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, NEPSI, EAC

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### 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

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### Specialities

Custody transfer level measurement

Interface measurement

Spot density, density profile measurement

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### Measuring range

47 m (154 ft)

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### Other approvals and certificates

OIML, NMI, PTB

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## Continuous / Liquids

### Measuring principle

Servo / Float Tank Gauging

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## Continuous / Liquids

### Characteristic / Application

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

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### Specialities

Custody transfer level measurement

Interface measurement

Spot density, density profile measurement

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### Supply / Communication

85-264 VAC

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### Accuracy

up to 0.4 mm

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### Ambient temperature

Standard:

-40°C...60°C

(-40°F...140°F)

For calibration to regulatory Standards:

-25°C...55°C

(-13°F...131°F)

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### Process temperature

-200°C...200°C

(-328°F...392°F)

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### Process pressure absolute / max. overpressure limit

up to 25 bar (363 psi) abs

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### Main wetted parts

316L, AlloyC276, PTFE

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### Process connection

Flange:

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

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### Max. measurement distance

47 m (154 ft)

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## Continuous / Liquids

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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)

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Discrete input (Exd, passive/ active)

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### Certificates / Approvals

ATEX, FM, IEC Ex, NEPSI, EAC

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### Safety approvals

Overfill protection WHG

SIL

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### Design approvals

EN 10204-3.1

NACE MR0175, MR0103

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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

Guide wire assembly

Relief valve

Gas purging nozzle connection

Pressure gauge

Cleaning nozzle connection

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## Continuous / Liquids

### 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

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More information [www.at.endress.com/NMS81](http://www.at.endress.com/NMS81)