

# Servo tank gauging instrument Proservo NMS83

High precision servo measurement for liquid level, interface and density for hygienic applications



## 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
- Simplified installation and trouble-free operations due to easy connection to major DCS systems via open protocols
- Measurement of interfaces between up to three liquid layers, tank bottom, spot, and profile densities

More information and current pricing:

[www.de.endress.com/NMS83](http://www.de.endress.com/NMS83)

## 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 / max. overpressure limit** 6 bar abs
- **Max. measurement distance** 22 m (72 ft)
- **Main wetted parts** 316L, AlloyC276, PTFE

**Field of application:** The intelligent tank gauge Proservo NMS83 is designed for high accuracy liquid level measurement in custody transfer and inventory control applications with NMI- and PTB-approvals. It meets all requirements for hygienic applications. It fulfills the exact demands of tank inventory management and loss control and is optimized in regards of total cost saving and safe operation.

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## Features and specifications

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### Continuous / Liquids

**Measuring principle**

Servo / Float Tank Gauging

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**Characteristic / Application**

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

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**Specialities**

Custody transfer level measurement

Interface measurement

Spot density, density profile measurement

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**Supply / Communication**

85-264VAC

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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 / max. overpressure limit**

6 bar abs

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**Main wetted parts**

316L, AlloyC276, PTFE

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## Continuous / Liquids

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### Process connection

Flange:  
DN80/3" / DN150/6"

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### Max. measurement distance

22 m (72 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, 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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## Continuous / Liquids

### Options

Redundant fieldbus  
Weather protection cover  
CIP (Cleaning in Place)  
Relief valve  
Gas purging nozzle connection  
Pressure gauge  
Cleaning nozzle connection

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### Application limits

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

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## Density

### Measuring principle

Servo / Float Tank Gauging

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### Characteristic / Application

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

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### Supply / Communication

85-264VAC

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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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**Density****Process temperature**

-200°C...200°C  
(-328°F...392°F)

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**Process pressure**

6 bar abs

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**Wetted parts**

316L, AlloyC276, PTFE

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**Output**

Outputs:

Fieldbus: Modbus RS485, V1, HART

Analog 4-20mA output (Exi/ Exd)

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**Certificates / Approvals**

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**Options**

Redundant fieldbus

Weather protection cover

CIP (Cleaning in Place)

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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## Density

### Measuring range

22 m (72 ft)

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### Other approvals and certificates

EN 10204-3.1

NACE MR0175, MR0103

OIML, NMI, PTB

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More information [www.de.endress.com/NMS83](http://www.de.endress.com/NMS83)