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 ±0.4mm (± 0.02")
- 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

Specs at a glance
- **Accuracy** up to 0.4 mm
- **Process temperature** -200°C...200°C (-328°F...392°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.
# Features and specifications

## Continuous / Liquids

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## Continuous / Liquids

**Main wetted parts**
316L, AlloyC276, PTFE

**Process connection**
Flange:
DN80/3” / DN150/6”

**Max. measurement distance**
22 m (72 ft)

**Communication**
Outputs:
- Fieldbus: Modbus RS485, V1, WM550
- HART, BPM and TRL/2 (via GE option)
- 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, EAC, JPN Ex, KC Ex,
INMETRO, NEPSI, UK Ex

**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
Weather protection cover
CIP (Cleaning in Place)
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
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 and density profile for hygienic applications

Supply / Communication
85-264VAC

Ambient temperature
Standard:
-40°C...60°C
(-40°F...140°F)
For calibration to regulatory standards:
-25°C...55°C
(-13°F...131°F)
Density

**Process temperature**
-200°C...200°C
(-328°F...392°F)

**Process pressure**
6 bar abs

**Wetted parts**
316L, AlloyC276, PTFE

**Output**
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

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

**Specialities**
- Custody transfer level measurement
- Interface measurement
- Spot density, density profile measurement
Density

**Measuring range**
22 m (72 ft)

**Other approvals and certificates**
EN 10204-3.1
NACE MR0175, MR0103
OIML, NMi, PTB

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