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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</table>
## 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.endress.com/NMS83](http://www.endress.com/NMS83)