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 ±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
- 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

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** 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
- 85-264VAC
- 52-74VAC
- 19-64VDC

#### 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 / 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, 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
- 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
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Supply / Communication
- 85-264 VAC
Density

**Ambient temperature**
Standard:
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**Certificates / Approvals**
ATEX, FM, IEC Ex, NEPSI, EAC
Density

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- 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.us.endress.com/NMS81](http://www.us.endress.com/NMS81)