

Magnetostrictive Level Sensor **Type: AFTMS...**

OPERATING PRINCIPLE:

The sensor operates according to the magnetostrictive principle and thus works almost independently of the temperature.

A wire made in magnetostrictive material is mounted inside the sensor's tube.

The microcontroller of the sensor emits pulses of current through the wire and generates a circular magnetic field.

A magnet integrated to the float indicates the level. Its magnetic field creates an axial magnetizing of the wire.

The conjunction of both magnetic fields generates a torsion wave around the float magnet.

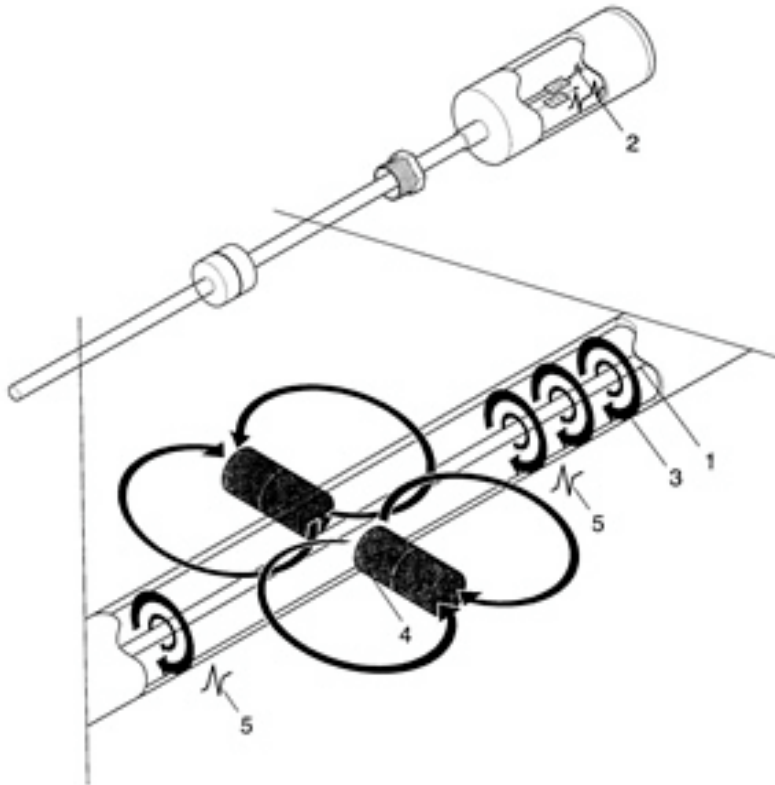
This wave runs along the wire in both directions: one directly to the sensor's head, the other is reflected at the bottom of the sensor.

The interval of time between the emission of the pulse and the return to the sensor's head is measured and allows to determine the float position.

TECHNICAL ADVANTAGES:

- Measuring accuracy: $\pm 0,25$ mm
- Measure controlling through a microcontroller
- Temperature-compensated measuring principle
- 2-wire version 4...20 mA level transmitter
- Optional: Possible **HART** protocole execution
- Short measuring intervals
- Optional: ATEX Area 0 approval
- Long life service, robust
- Insensitivity to shocks and vibrations
- Adjustable measuring range through two keys along the complete sensor length
- Easy installation and application





ANNOTATIONS:

1. magnetostrictive wire
2. current pulses emission
3. circular magnetic field
4. magnet inside the float
5. torsion wave

MOUNTING:

If you want to install the device in an explosive area, please make sure the power supply is approved for explosive areas.

Other materials and special floats on request.

TECHNICAL DATA:

• **Float:**

- spheric: Ø 52 to 105 mm
pressure: 20 to 50 bar
- cylindric: Ø 44 mm
pressure: 16 bar

Material: stainless-steel, titanium, C276/C4
Fluid density: from 500 kg/m³

• **Housing:**

Protection: IP68
Dimensions: Ø 50 x 120 mm
Material: stainless-steel
Cables diameter: 5 to 10 mm

• **Guide tube:**

Diameter: 12 mm
Material: stainless-steel, hastelloy C
Length: 200 to 4000 mm (or more on request)

• **Process connection:**

Thread 2" stainless-steel 316,
BSP ½ stainless-steel 316 or 316 Ti,
Welded standard flanges

• **Measuring accuracy:**

Filling level: < ± 0,5 mm
Resolution: < 0,1 mm
Analogue part: ± 0,1 % (20°C) + 0,005 % K

• **Temperature:**

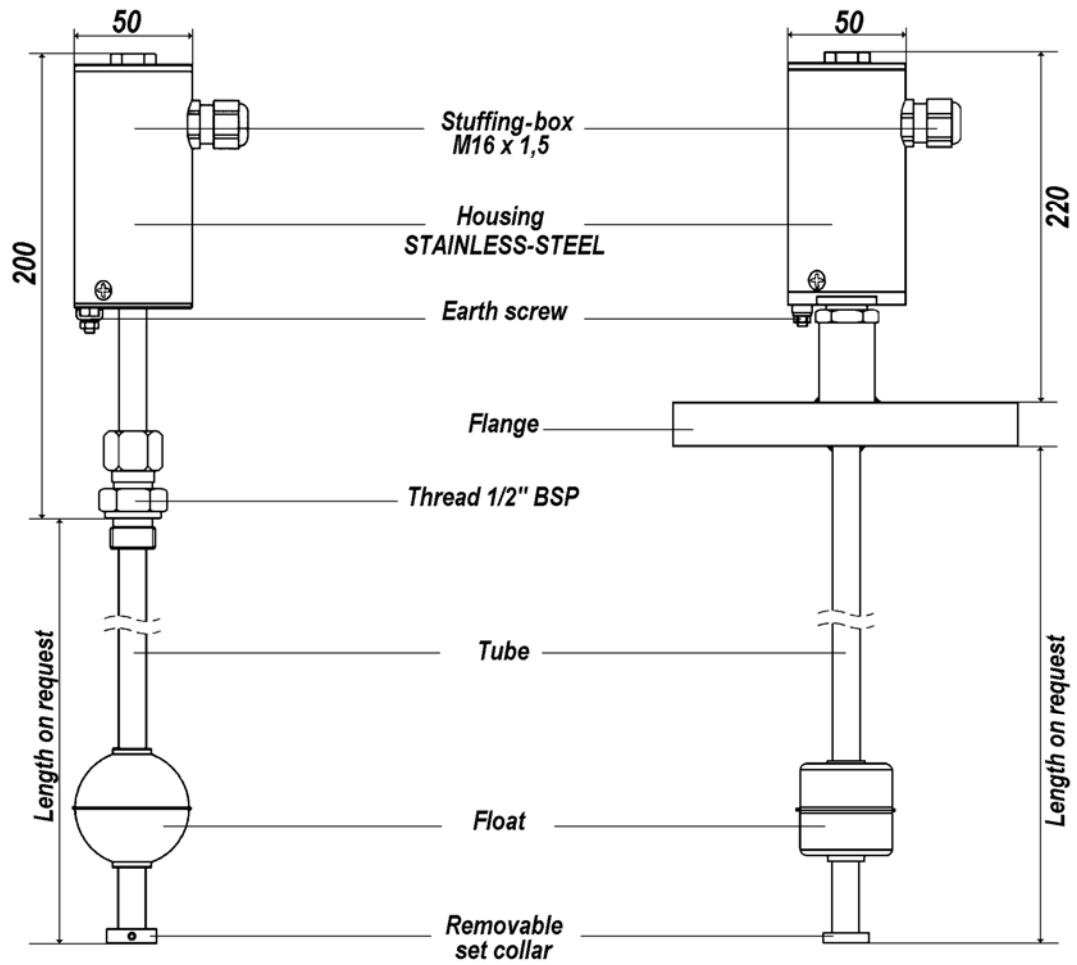
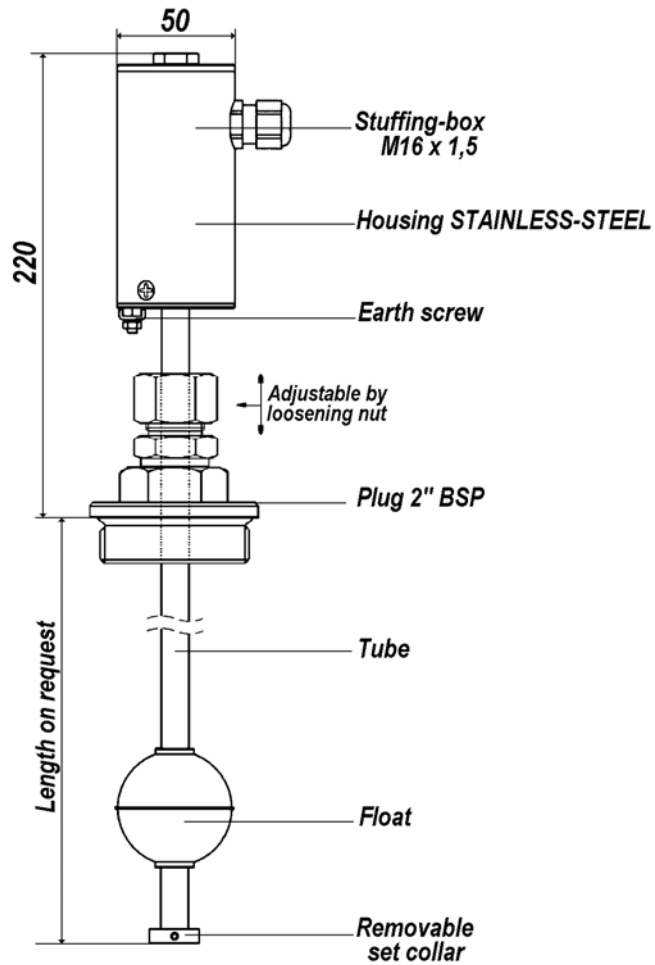
Standard: -40 to +125 °C
Extreme: -200 to +250°C

• **Electrical data:**

Power supply: 10...30 VDC
Signal: 4...20 mA
Error message: adjustable to 3,6 or 21,5 mA
Optional: possible **HART** protocole execution version 6.0



MAGNETOSTRICTIVE LEVEL SENSOR



10, Avenue d'Alsace
68702 CERNAY
www.kublerfrance.com

TEL : +333.89.75.41.73
FAX : +333.89.75.53.14
contact@kublerfrance.com

TYPE : **AFTMS**

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