



Operating Instructions
for
Magnetostrictive Level Meter
Model: NMT



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2. Note

Please read and take note of these operating instructions before unpacking and setting the unit for operation, and follow the instructions precisely as described herein.

The devices are only to be used, maintained and serviced by persons familiar with these operating instructions and with the prevailing regulation applying to procedural safety and the prevention of accidents.

3. Instrument Inspection

These devices are checked before dispatch and sent away in perfect condition. Should the damage to a device be visible, we recommend a thorough inspection of the delivery packing. In case of damage, please inform your parcel service/ forwarding agent immediately, since they are responsible for damages during transit.

Scope of delivery:

- Magnetostrictive Level Meter, Model NMT
- Operating Instructions

4. Regulation Use

The level meter is to be installed only in the specified applications. Every usage which exceeds the specifications is considered to be non-specified. Any damages resulting therefrom are not the responsibility of the manufacturer. The user assumes all risk for such usage. The application specifications include the installation, start-up and service requirements specified by the manufacturer.

5. Operation Principle

The Kobold level meter NMT is a very accurate float-controlled sensor for the continuous measurement of levels.

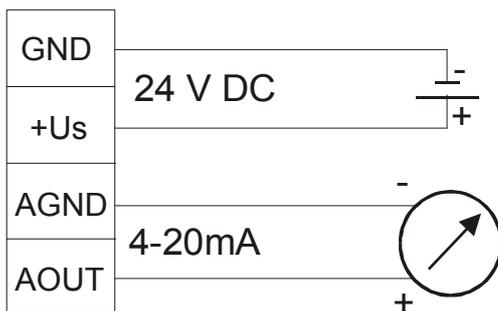
The principle of measurement is based on echo time measurement. A magnetostrictive wire is tensioned in the guide tube. Current pulses are transmitted through the wire thus generating an annular magnetic field around the wire. The wire is also magnetized axially by magnets fitted in the float. Due to the superimposition of both magnetic fields, a torsional impulse is generated in the vicinity of the float magnet, which propagates with ultrasonic speed in both directions. The distance from the float magnet to a defined zero-point is measured by an echo time measurement. The integrated electronics transforms the signal to a standardized analog signal.

6. Mechanical Connection

Mount the level meter with guide tube on the vessel.
Use suitable flat gasket for screwing.

7. Electrical Inspection

Connect level meter according to the following wiring diagram:



Terminal assignments

GND: 0 V supply
+Us: 24 V_{DC} supply
AGND: analog output GND
AOUT: analog output 4-20 mA

8. Commissioning

The magnetostrictive level meter is ready for operation after mechanical and electrical connection.

9. Maintenance

The instrument needs no maintenance when the measured medium is not polluted.

Remove any dirt from guide tube and float with a suitable cleaning agent.

To dismantle the float, undo the retaining washer with the flat-head screw.

By installation after cleaning, secure the flat-head screw with a screw-lock fluid to prevent loosening.

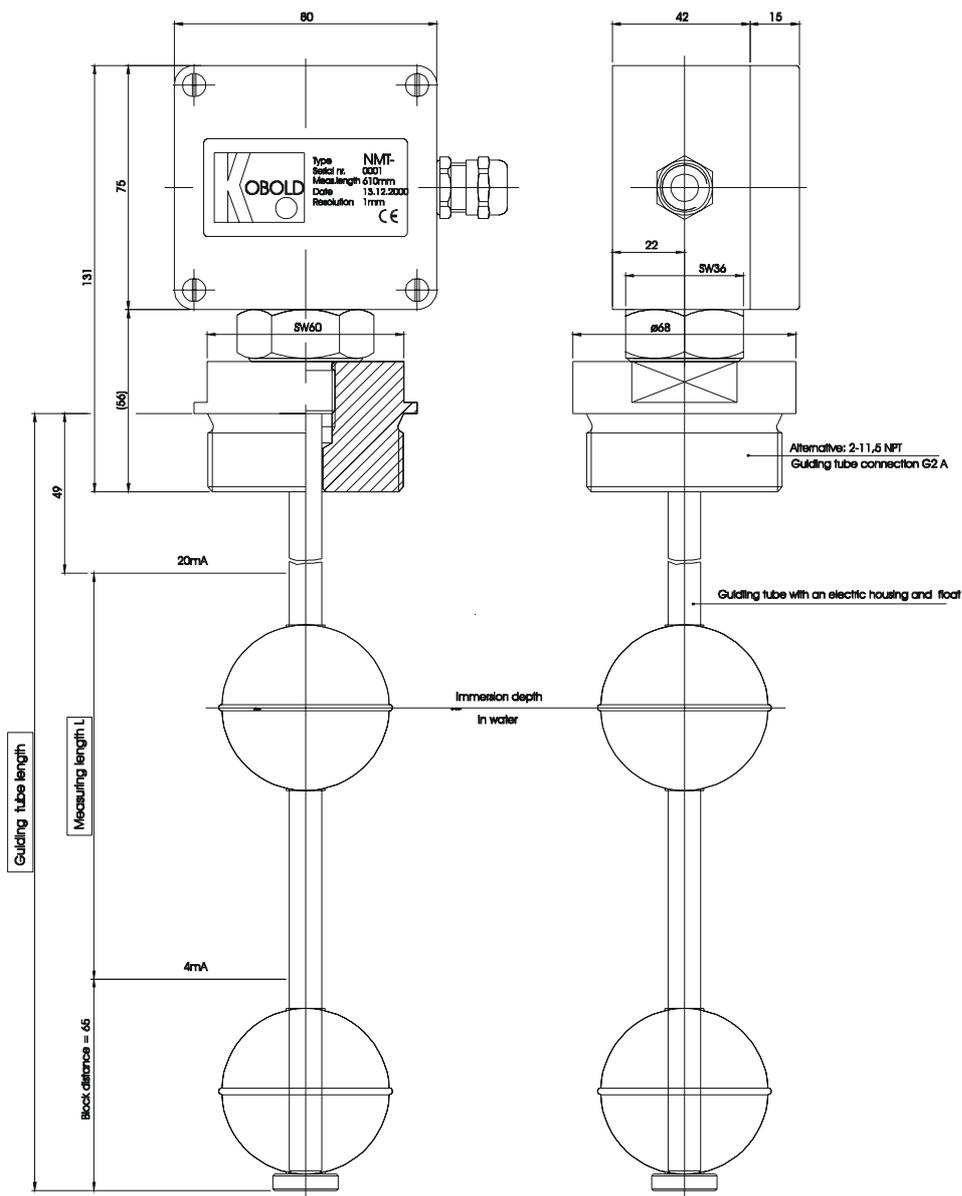
10. Technical Data

Accuracy:	± 1 mm
Measuring length:	300...2500 mm
Length of guide tube:	measuring length + 114 mm
Overall length:	see Dimensions
Standard density:	1.0 g/cm ³
Special density:	0.7 g/cm ³
Max. service temperature:	80 °C
Max. operating pressure:	PN 10
Connection / guide tube:	stainless steel 1.4571
Float:	stainless steel 1.4701
Connection box:	aluminium
Process connection:	G 2 male or 2 NPT
Electrical connection:	terminal block in connection box
Analog output:	4...20 mA 4-wire
Load:	500 ohm
Power supply:	24 V _{DC} ± 20%
Power consumption:	< 4 W
Protection model:	IP 65

11. Order Codes

Description	Model	Connection
Transducer Measuring tube st. steel Connection G 2 AG Density 1.0 kg/dm ³	NMT-1201	R50 = G2 N20 = 2 NPT
Transducer Measuring tube st. steel Connection 4 – 20 mA Density 0.8 kg/dm ³	NMT-1208	

12. Dimensions



13. Declaration of Conformance

We, KOBOLD-Messring GmbH, Hofheim-Ts, Germany, declare under our sole responsibility that the product:

magnetostrictive level meter model: NMT

to which this declaration relates is in conformity with the standards noted below:

EN 50082-2 1996-02
Electromagnetic compatibility basic specification noise immunity

DIN EN 61000-4-2 1996-03
Noise immunity to electrostatic discharge (e.s.d.)

DIN EN 61000-4-4 1996-03
Noise immunity to fast transients (BURST)

DIN EN 61010-1 1994-03
Safety requirements for electrical measuring, control and laboratory instruments

EN 60529, DIN VDE 0470-1 1992-11
Protection type through case (IP code)

Also the following EWG guideline is fulfilled:

89/336/EWG Electromagnetic compatibility



Signed:

H. Peters

M. Wenzel

Date: 22.06.01