BOISWOOD
GAS AND LIQUID CONTROL TECHNOLOGIES
Pressure & Vacuum
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Level & Temperature
Tube & Fittings
HVACR
Custom Services

Magnetostrictive level transmitter High-resolution measurement principle, compact design Model FLM-CA

for further approvals see page 2

Applications

High-accuracy level detection for liquid media

Special features

- Compact and space-saving design
- Output signal 4 ... 20 mA (NAMUR NE43) or HART® ver. 6
- Operating limits:
  - Operating temperature: T = -40 ... +250 °C
  - Operating pressure: P = Vacuum to 40 bar
  - Limit density: ρ ≥ 580 kg/m³
- Explosion-protected version (option)
- Vibration resistant version (option)

Fig. left: Mounting thread, cylinder float from stainless steel
Fig. right: Mounting flange, sphere float from stainless steel

Description

The model FLM-CA magnetostrictive level transmitter is used for the high-accuracy, continuous level detection of liquids and is based on determining the position of a magnetic float according to the magnetostrictive measurement principle.

The FLM-CA emits a 4 … 20 mA output signal, which is configured via buttons within the probe head. Optionally, the FLM-CA is also available with HART® protocol as a digital output signal. Probe lengths of 100 mm to 3 m and also various temperature and pressure ranges are possible.

In comparison to the FLM-S, the FLM-CA is particularly notable for its very compact and space-saving design. In addition, it can be used in applications with vibrations up to 4 g.

Data sheets showing similar products:
Magnetostrictive level transmitter, high-resolution measurement principle, model FLM-S; see data sheet LM 20.01

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Model overview

Model	Description
FLM-CA	Standard version
FLM-CAI	Explosion-protected version

Approvals

Logo	Description	Country
CE Ex	**EU declaration of conformity** ■ EMC directive EN 61326 emission (group 1, class B) and immunity (industrial application) ■ RoHS directive ■ ATEX directive (option - only with model FLM-CAI) Hazardous areas - Ex i II 1G Ex ia IIC T6 ... T4 Ga II 1/2G Ex ia IIC T6 ... T4 Ga/Gb II 2G Ex ia IIC T6 ... T4 Gb II 1D Ex ia IIIC T160 °C Da	European Union
IEC IECEx	**IECEx (option)** Hazardous areas - Ex i Ex ia IIC T6 ... T4 Ga Ex ia IIC T6 ... T4 Ga/Gb Ex ia IIC T6 ... T4 Gb Ex ia IIIC T160 °C Da	International

Manufacturer‘s information and certificates

Logo	Description
SIL	**SIL 2** Functional safety

Approvals and certificates, see website

Specifications

Magnetostrictive level transmitter, models FLM-CA, FLM-CAI	
Guide tube	■ Ø 6 mm (max. 1,000 mm) ■ Ø 12 mm (max. 3,000 mm)
Process connection	Mounting thread downwards ■ G 1/2" ... G 2" ■ NPT 1/2" ... NPT 2" Mounting flange ■ ANSI 1/2" ... 2 1/2", class 150 ... 600 ■ EN DN 20 ... DN 65, PN 6 ... PN 100 ■ DIN DN 20 ... DN 65, PN 6 ... PN 100 Other process connections on request

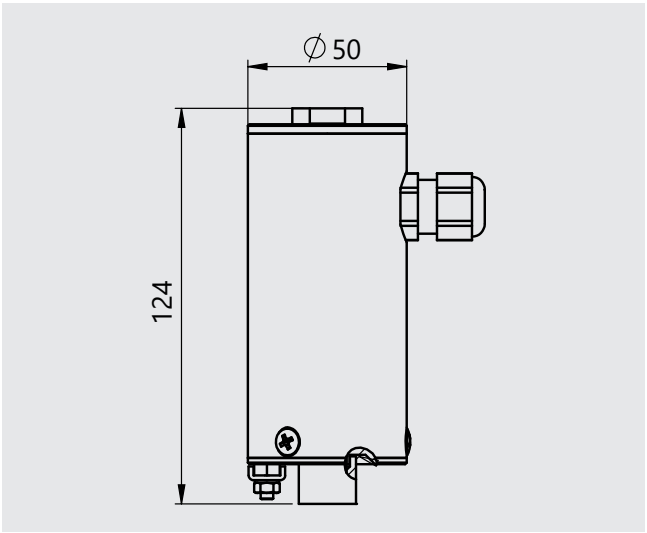
Magnetostrictive level transmitter, models FLM-CA, FLM-CAI	
Materials	
Wetted parts	Stainless steel 1.4571 (316Ti)
Connection head	Stainless steel 1.4305 (303)
Insertion length	
Guide tube Ø 6 mm	100 ... 1,000 mm
Guide tube Ø 12 mm	100 … 3,000 mm
Measurement accuracy	±1.25 mm
Resolution	0.1 mm
Electrical connection	Connection terminals max. 1.5 mm^2
Supply voltage	DC 8 ... 30 V
Output signal	■ 4 ... 20 mA (NAMUR NE43) ■ HART® ver. 6
Vibration resistant version (option)	to 4 g (only for guide tube Ø 12 mm)
Operating pressure	Depending on the float, max. 40 bar
Operating temperature	
Guide tube Ø 6 mm	-40 ... +125 °C
Guide tube Ø 12 mm	-40 ... +250 °C
Ambient temperature	-40 ... +85 °C
Ingress protection per EN 60529	IP68
Configuration	
Version without HART® protocol	Via two built-in buttons in the connection housings
Version with HART® protocol	Via two built-in buttons, HART® communicator or HART® interface in the connection housings

Float

Material	Version	Description	Suits guide tube Ø in mm	Minimum dimension U in mm	Max. operating pressure in bar	Limit density 85 % in kg/m^3
Stainless steel 1.4571 (316Ti)	V18/42A	Cylinder Ø 18 mm	6	48	6	800
	V27A	Cylinder Ø 27 mm	6	22	16	700
	V29A	Sphere Ø 29 mm	6	20	25	920
	V29A/40	Cylinder Ø 29 mm	12	26	10	620
	V44A	Cylinder Ø 44 mm	12	32	16	720
	V52A	Sphere Ø 52 mm	12	32	40	690
Titanium 3.7035 (Grade 2)	T29A	Sphere Ø 29 mm	6	21	30	700
Buna (NBR)	B18A	Cylinder Ø 18 mm	6	38	3	620
	B20A	Cylinder Ø 20 mm	6	26	3	940
	B23A	Cylinder Ø 23 mm	6	31	6	800
	B25A	Cylinder Ø 25 mm	6	20	3	790
	B30A	Cylinder Ø 30 mm	6	51	3	680
	B40A	Cylinder Ø 40 mm	12	36	3	580

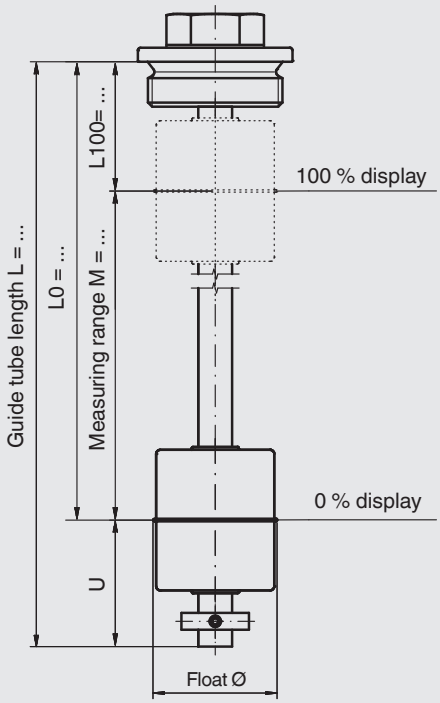
Dimensions in mm

Read-out unit

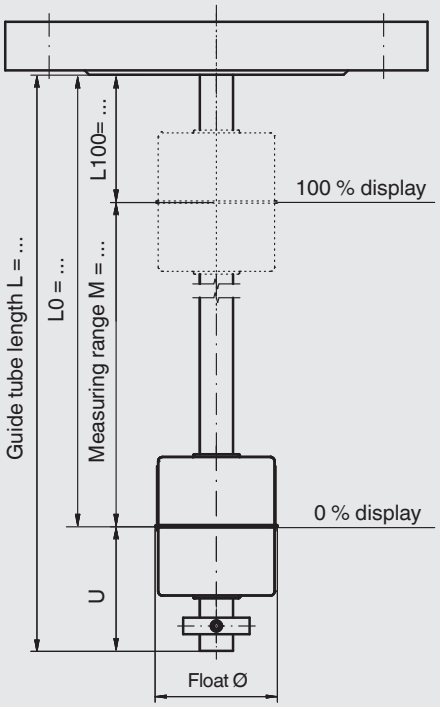


Sensor unit

Mounting thread



Mounting flange



Ordering information

Model / Version / Electrical connection / Process connection / Guide tube diameter / Guide tube length (insertion length) L / 100 % mark L1 / Measuring range M (span 0 ... 100 %) / Process specifications (operating temperature and pressure, limit density) / Options

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