

# Magnetostrictive level transmitter

## High-resolution measurement principle, compact design

### Model FLM-CA

WIKA data sheet LM 20.04



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:  $T = -40 \dots +250 \text{ °C}$
  - Operating pressure:  $P = \text{Vacuum to } 40 \text{ bar}$
  - Limit density:  $\rho \geq 580 \text{ kg/m}^3$
- Explosion-protected version (option)
- Vibration resistant version (option)

#### 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.





**Fig. left: Mounting thread, cylinder float from stainless steel**

**Fig. right: Mounting flange, sphere float from stainless steel**

## Model overview

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

## Approvals

Logo	Description	Country
	<b>EU declaration of conformity</b> <ul style="list-style-type: none"> <li>EMC directive EN 61326 emission (group 1, class B) and immunity (industrial application)</li> <li>RoHS directive</li> </ul>	European Union
	<b>ATEX directive (option - only with model FLM-CAI)</b> Hazardous areas - Ex i II 1G Ex ia IIC T4 Ga II 1/2G Ex ia IIC T6 ... T3 Ga/Gb II 2G Ex ia IIC T6 ... T3 Gb II 1D Ex ia IIIC T160 °C Da No. TÜV 18 ATEX 225120 X	

Approvals and certificates, see website

## Specifications

Magnetostrictive level transmitter, model FLM-CA	
<b>Guide tube</b>	<ul style="list-style-type: none"> <li>Ø 6 mm (max. 1,000 mm)</li> <li>Ø 12 mm (max. 3,000 mm)</li> </ul>
<b>Process connection</b>	Mounting thread downwards <ul style="list-style-type: none"> <li>G 1/2" ... G 2"</li> <li>NPT 1/2" ... NPT 2"</li> </ul> Mounting flange <ul style="list-style-type: none"> <li>ANSI 1/2" ... 2 1/2", class 150 ... 600</li> <li>EN DN 20 ... DN 65, PN 6 ... PN 100</li> <li>DIN DN 20 ... DN 65, PN 6 ... PN 100</li> </ul> Other process connections on request
<b>Materials</b>	
Wetted parts	Stainless steel 1.4571 (316Ti)
Connection head	Stainless steel 1.4305 (303)
<b>Insertion length</b>	
Guide tube Ø 6 mm	100 ... 1,000 mm
Guide tube Ø 12 mm	100 ... 3,000 mm
<b>Measurement accuracy</b>	±1.25 mm
<b>Resolution</b>	0.1 mm
<b>Electrical connection</b>	Connection terminals max. 1.5 mm <sup>2</sup>
<b>Supply voltage</b>	DC 8 ... 30 V
<b>Output signal</b>	<ul style="list-style-type: none"> <li>4 ... 20 mA (NAMUR NE43)</li> <li>HART® ver. 6</li> </ul>

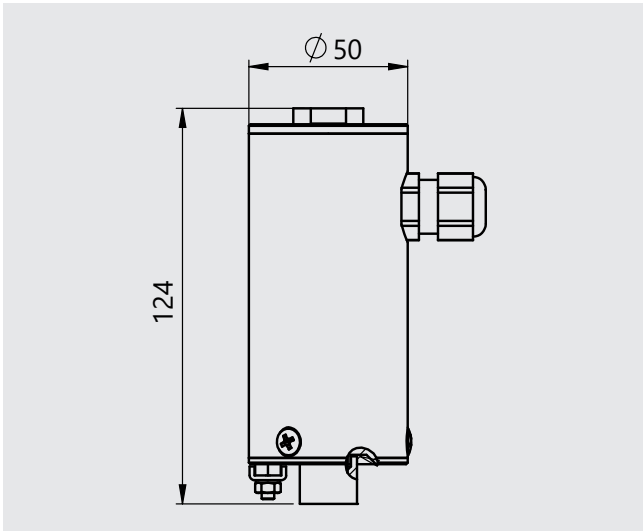
<b>Magnetostrictive level transmitter, model FLM-CA</b>	
<b>Vibration resistant version (option)</b>	to 4 g (only for guide tube Ø 12 mm)
<b>Operating pressure</b>	Depending on the float, max. 40 bar
<b>Operating temperature</b>	
Guide tube Ø 6 mm	-40 ... +125 °C
Guide tube Ø 12 mm	-40 ... +250 °C
<b>Ambient temperature</b>	-40 ... +85 °C
<b>Ingress protection per EN 60529</b>	IP68
<b>Configuration</b>	
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

<b>Material</b>	<b>Version</b>	<b>Description</b>	<b>Suits guide tube Ø in mm</b>	<b>Minimum dimension U in mm</b>	<b>Max. operating pressure in bar</b>	<b>Limit density 85 % in kg/m<sup>3</sup></b>
<b>Stainless steel 1.4571 (316Ti)</b>	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
<b>Titanium 3.7035 (Grade 2)</b>	T29A	Sphere Ø 29 mm	6	21	30	700
<b>Buna (NBR)</b>	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

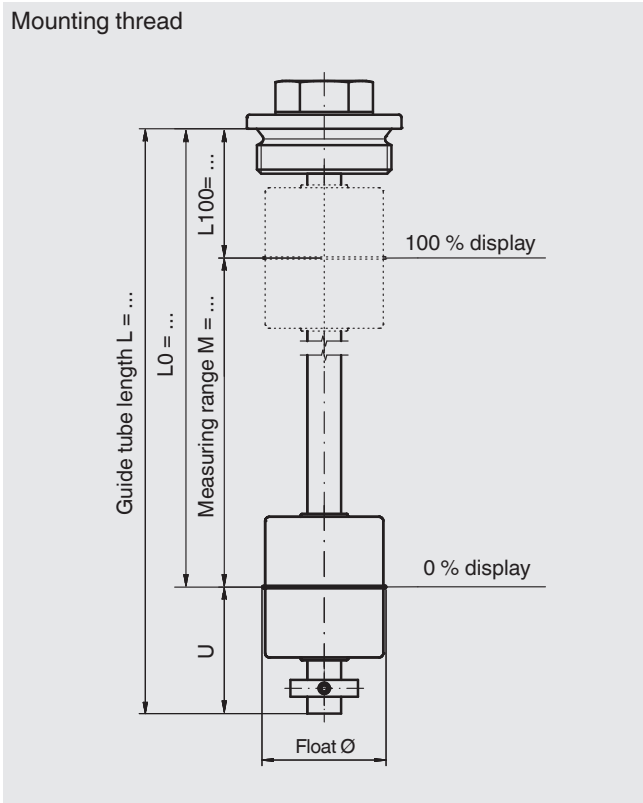
# Dimensions in mm

■ Read-out unit

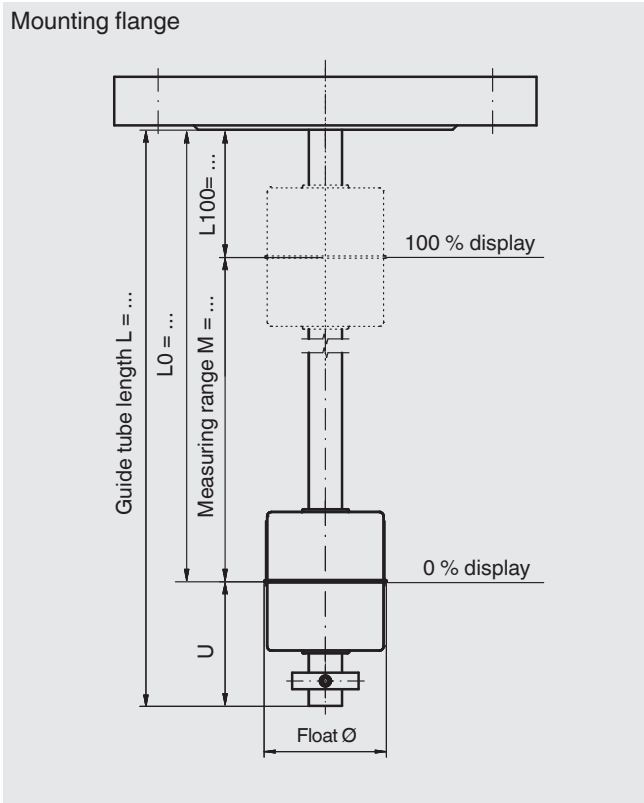


■ Sensor unit

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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