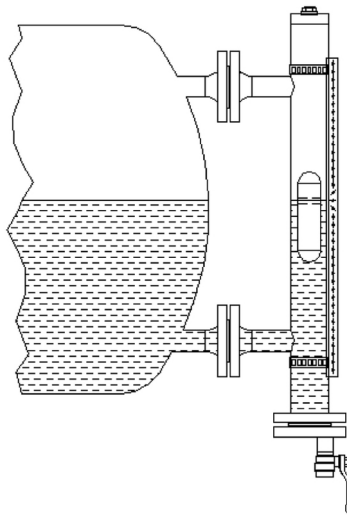


Level indicator - ATEX or/and P.E.D. MAGTOP-D



USER MANUAL

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Level indicator - ATEX or/and
P.E.D.
MAGTOP-D

14-03-2022

M-560.03-EN-AA

LEV

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1. SAFETY INSTRUCTIONS

- The operation of the device must be in accordance with and strictly limited to the applications, as mentioned further on and on data-sheet.
- Installation, commissioning and maintenance must be carried out by qualified personnel.
- The power supply must comply with the values specified in the technical features.
- Disconnect all power sources from the device during interventions or maintenance tasks.
- For these indicators, the use and installation area must be far from any magnetic induction field.
- Use non-magnetic couplings (brass, stainless steel or plastic).
- All ferrous parts must be kept at a minimum distance of 10 cm.
- Check the compatibility of the fluid with the chemical resistance of the device.
- To facilitate the assembly and disassembly of the indicator, a valve can be placed between the tank and each connection flange.
- On the lower connection, such a valve can provide flow control so that no too rapid filling can project the float to the top of the measuring tube (which would damage it).
- The pressure in the tank and therefore in the indicator, must not be higher than the limits mentioned on identification plate and in the technical features.

2. DESCRIPTION

The MAGTOP instantly indicates the level of liquid contained in a tank, via a ruler with two-color magnetic flaps pivoting to the passage of the float in the measuring tube. The device is made of AISI 316 L (1.4404), with lateral connections by ANSI flanges (150 or 300 # RF), or DIN flanges, or thread connections BSP-M or NPTM 1/2"

Its design allows it to be installed in an hazardous area (ATEX), to work with dangerous liquids and under high pressure and/or temperature. Level switches can be arranged along the level column, as well as a continuous transmission ruler with 4-20 mA output. A graduated ruler (%), can be mounted on the side opposite to the flaps, providing a quick evaluation of the stored volume.

3. TECHNICAL FEATURES

MAGTOP-D

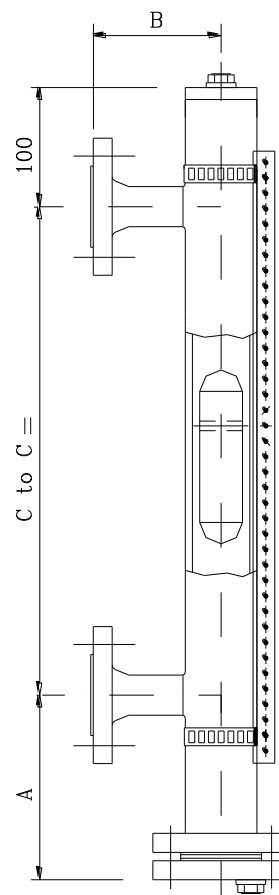
Materials	AISI : 316 L (O/A: AISI 304 or 316Ti or Titanium or Hastelloy)
Identification plate	Stainless steel
Tube diameter	Standard: O.D. 60.3 x 2 mm (Other on request)
Pressure	Maximum 250 bar
Temperature	Maximum 450 °C
C to C	Maximum 5500 mm
Magnetic ruler	Polycarbonate; Aluminum/Glass, Stainless steel
Process connections	DIN flanges ND15, 32 / PN16 → B = 75 mm ANSI flanges 1/2" or 1 1/4" 150# RF → (B = 85 mm ND40, ND50 and ANSI 1" or 1 1/2" and 2" → B = 130 mm Male threads 1/2" and 1" → B = 75 mm (Others on request)
Drain plug	1/4", 1/2", 3/4", BSP or NPT
Drain valve	1/4", 1/2", BSP or NPT
Gasket	PTFE, Aramid, Graphite
Vent plug	1/4", 1/2", 3/4", BSP or NPT; Flange ND25 / PN16
Float	Minimum density 0.66 kg/dm ³
Height (A)	Minimum density 0.94 kg/dm ³ → A = 210 mm Minimum density 0.83 kg/dm ³ → A = 245 mm Minimum density 0.72 kg/dm ³ → A = 295 mm Minimum density 0.66 kg/dm ³ → A = 350 mm

CERTIFICATES

Material EN 10204 3.1
Hydrostatic test / bar
GL, LRS or BV
NACE MR 01.75 / ISO 15156
WPS / PQR
Ex II 1/2G c IIC T1...T6;
II 1 D Txx °C KEMA 10ATEX0199X

OPTIONS

4-20 mA output
Thermal insulation (partial or total) in fiberglass
Graduated ruler
Min. / Max. level pointer



EC Conformity: The instrument meets the legal requirements of the current European Directives

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LEVEL SWITCHES (option)

BSM 515 MAG	<i>Fixing with stainless steel colar</i>
Rated voltage	4 .. 250 V AC, 4 ... 30 V DC
Rated current	1 mA ... 3 A (AC or DC)
Contact	Bistable micro-switch, change-over
Gap between 2 trigger points	40 mm, positioned 120° apart
Connector	3-pole plug acc. DIN EN 175301
Electrical connections	Cable cross section: Max. 1.5 mm ²
Cable gland	PG 13.5
Ambient temperature	-20 ... +90 °C
Housing	Polycarbonate
Fitting	Stainless steel colar for tube Ø 63
Protection	IP65 according to EN 60 529



BRT 60 MAG	<i>Fitting with stainless steel colar</i>
Switching power	60 VA / 230 V AC / 1 A
Reed contact	bi-stable, change-over
Housing	Aluminum
Protection	IP55
Process temperature	Maximum 200 °C
Fitting	Stainless steel colar for Ø 63 tube



LMS-Ha1	<i>Mounting on the magnetic ruler</i>
Contact	Microswitch, bi-stable, change-over
Switching power	2 A / 40 W / 100 VA
Voltage	10 ... 230 V
Process temperature	-50 ... +380 °C
Protection	IP67
Cable gland	M16
Dimensions	95 x 65 x 54 mm
Housing	Stainless steel



HLS-25i (Ex i)	<i>Mounting on the magnetic ruler; cable outlet, Ex ia</i>
Switch	Reed contact, bi-stable, changeover
Switching power	0.25 A / 1.3 W
Voltage	10 ... 30 V
Process temperature	-40 ... +100 °C
Protection	IP66 / 67 and IP68
Connection	Cable outlet: 5 m long PVC cable
Dimensions	80 x 25 x 20 mm
Housing	AISI 316
Certification	II 1GD Ex ia IIC T6 Ga II 1GD Ex ia IIC T85°C IP66/67 Da



HLS-25d (Ex d)	<i>Mounting on the magnetic ruler; cable outlet, Ex id</i>
Switch	Reed contact, bi-stable, changeover
Switching power	24 V DC / 2.5 A / 60 W
Voltage	10 ... 30 V
Process temperature	-25 ... +100 °C (Ambient: -20 ... +70 °C)
Protection	IP 66 / 67 and IP68
Connection	Cable outlet: 5 m long PVC cable
Dimensions	80 x 25 x 20 mm
Housing	AISI 316
Certification	II 2GD Ex d IIC T6 Gb II 2GD Ex tb IIIC T85°C Db



EC Conformity: The devices meet the legal requirements of the current European Directives

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**Level indicator - ATEX or/and
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 MAGTOP-D**

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LEV

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OPTION - Reed chain with analogue output

Transmitter	Reed Chain Transmitter		
Model	Standard	EEx i (intrinsic safety)	EEx d (explosion-proof)
Certification		II 1G Ex ia II C T4..T6	II 2G Ex db IIC T5..T1 Gb II 2D Ex tb T100°C..T350°C
Supply	8 ... 35 V DC	8 ... 30 V DC	
Process temperature	-50 ... +350 °C		
Accuracy	±5 mm		
Material	AISI 316 L		
Maximun height	5.50 m		
Housing	Aluminum or stainless steel	Aluminum or stainless steel	Aluminum or AISI 316
Protection	IP 67		IP 66/67, IP68
Connection	M16 x 1.5	M20 x 1.5	NPT ¾", M 20 x 1.5
Signal output	4-20 mA; 2-wire		
OPTIONS	Accuracy ± 2.5 or ± 1 mm		
	Connection: M16 x 1.5 or M20 x 1.5; NPT ½" or ¾"		
	HART / PROFIBUS / FIELDBUS		
	Protection IP68		
	Housing in AISI 316		
	Housing with display for local reading (LCD screen)		
	Output signal: V or Ohm		



EC Conformity: The devices meet the legal requirements of the current European Directives

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**Level indicator - ATEX or/and
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MAGTOP-D

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LEV

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4. MOUNTING

- Check the compatibility of the MAGTOP fittings on to the tank fittings.
- Install the MAGTOP on to the tank.
- Do not forget to place gaskets (not supplied) between flanges.

It is strongly recommended to install stop valves between fittings of the tank and the MAGTOP, in order to be able to work without emptying the tank, in the event of a malfunction of the system.

- Remove the bottom end flange, insert the float into the tube, then reassemble the flange.
On the float, the 2 closest grooves indicate its top position.

5. COMMISSIONING

It is advisable to proceed at atmospheric pressure in order to avoid a sudden rise of the float which could damage it. As the magnet passes, the flange turn 180 ° and change of colour.

To drain the MAGTOP: Unscrew the tap on drain plug (or open the optional drain valve).

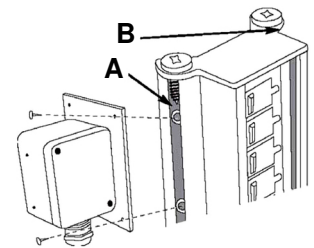
6. MAINTENANCE

In the case of liquids with solid particles, the float may be blocked.

If it occurs, drain the MAGTOP (or the tank if no stop valves are installed) several times, in succession to remove impurities. If the float remains blocked despite everything, dismantle the indicator and extract the float to carry out a complete cleaning.

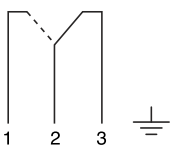
7. MOUNTING OF LEVEL SWITCHES

As shown in the drawing, two mounting positions are possible. One rail is located on the left (A), the other one on the right (B) of the magnetic ruler.

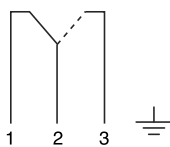


8. ELECTRICAL CONNECTIONS

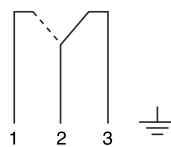
Bistable change-over contact
BSM 515 MAG



Bistable change-over contact
BRT 60 MAG

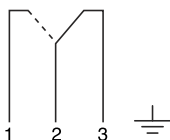


Bistable change-over contact
LMS-Ha1

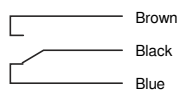


Transmitter 4-20 mA
4-20 mA "SMART"

Bistable change-over contact
HLS-25i



Bistable change-over contact
HLS-25d



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