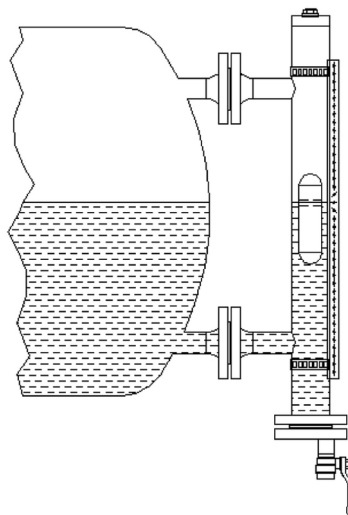
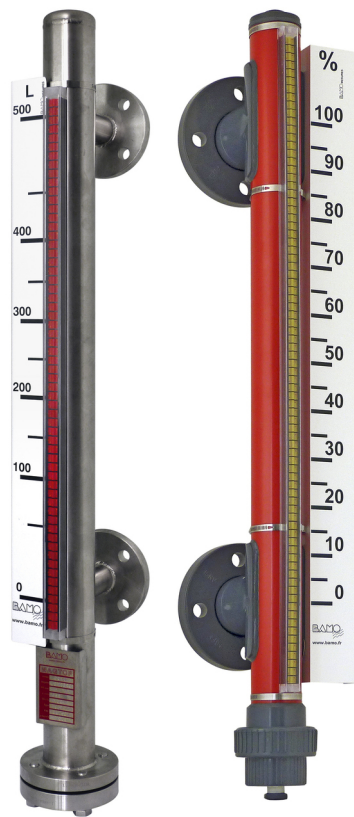


# Level indicator MAGTOP



## USER MANUAL

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07-03-2022

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# SUMMARY

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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.
- 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 (like: brass, stainless steel or plastic).
- All ferrous parts must be kept at a minimum distance of 10 cm.
- Check the compatibility of the liquid 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 process connection.
- 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 above the maximum value of 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. According to mechanical strength and chemical compatibility, MAGTOP is well adapted to work with liquids such as hot water, oils, alkali and acids. When the distance between fittings is large, we integrate brackets on the measuring tube to afford the weight; they have to be fixed on corresponding tank brackets.

MAGTOP 300 in stainless steel is suitable for lateral mounting on metal tanks.

MAGTOP 400 and 410 are designed for axial mounting on the top of the tank; The necessary space outside the tank is equivalent to height of immersion.

MAGTOP 801, 803 & 806 (PVC, PPH, PVDF) are convenient for use with aggressive fluids.

These devices may include optional equipments to mount on the measuring tube such as:

- Adjustable level switches
- Reed chain "RTM" with transmitter 4-20 mA (or Ohmmic output)
- Graduated ruler in cm, % or volume according specifications
- Drain valve with fitting BSP 1/2" (suit the drain plug of the MAGTOP)

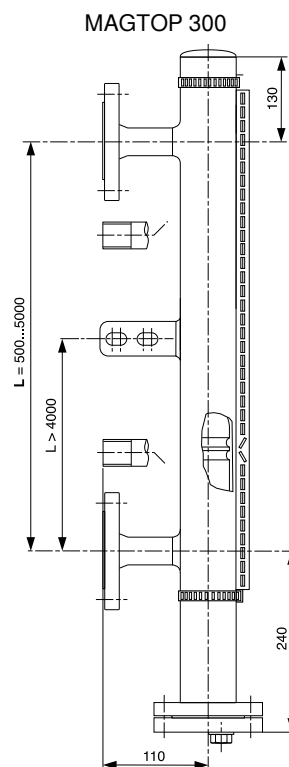
## 3. TECHNICAL FEATURES

### 3.1 MAGTOP 300

|                                       |  |
|---------------------------------------|--|
| Maximum pressure                      | 16 bar   |
| Maximum temperature                   | 200 °C (with Aluminum magnetic ruler)                                |
| Measuring tube                        | O.D. 60.3 mm; AISI 316 L   |
| Process connections                   | Flanges ND 10, 15, 20, 25, 32 / PN16<br>BSP-M 1/2", 3/4", 1" / PN16  |
| Drain plug                            | BSP 1/2"   |
| Magnetic float                        | AISI 316 Ti (Option: Titanium)                                       |
| Magnetic ruler, maxima of temperature | Makrolon: 120 °C; Aluminum: 200 °C<br>with magnetic red/yellow flaps |
| End-tube for float insertion          | AISI 316 L, ISO flange   |
| Gasket                                | PTFE   |
| Fixing clamps                         | AISI 304   |
| Extra bracket                         | AISI 316 L   |
| Fasteners, screws                     | AISI 316 L   |
| TAG / Identification plate            | AISI 316 L   |

### 3.2 MAGTOP 400

|                                       |  |
|---------------------------------------|--|
| Maximum pressure                      | 16 bar   |
| Maximum temperature                   | 200 °C (with aluminum magnetic ruler)                                |
| Measuring tube                        | O.D. 60.3 mm; AISI 316 L   |
| Immersed guiding tube                 | O.D. 60.3 mm; AISI 316 L   |
| Magnetic positionner (actuator)       | AISI 316 L   |
| Transmission rod                      | AISI 316 L   |
| Float                                 | AISI 316L; O.D. 50; Height 330 mm                                    |
| Magnetic ruler, maxima of temperature | Makrolon: 120 °C; Aluminum: 200 °C<br>with magnetic red/yellow flaps |
| Top tank connexion                    | AISI 316L; Flange: ND80, 100, 125 /<br>PN16                          |
| Float stopper (bottom end)            | AISI 316 L   |
| Fixing clamps                         | AISI 304   |
| TAG / Identification plate            | AISI 316 L   |



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### 3.3 MAGTOP 410

|                                       |   |
|---------------------------------------|---|
| Maximum pressure                      | 16 bar  |
| Maximum temperature                   | 200 °C (with Aluminum magnetic ruler)                             |
| Measuring tube                        | O.D. 60.3 mm; AISI 316 L  |
| Immersed guiding tube                 | O.D. 104 mm; AISI 316 L   |
| Magnetic positionner (actuator)       | AISI 316 L  |
| Transmission rod                      | AISI 316 L  |
| Float                                 | AISI 316 L, Ø 90 height 195                                       |
| Magnetic ruler, maxima of temperature | Makrolon: 120 °C; Aluminum: 200 °C with magnetic red/yellow flaps |
| Top tank connexion                    | AISI 316L ISO flange, DN125 / PN16                                |
| Float stopper (bottom end)            | AISI 316 L  |
| Fixing clamps                         | AISI 304  |
| TAG / Identification plate            | AISI 316 L  |

### 3.4 MAGTOP 801 - PVC -

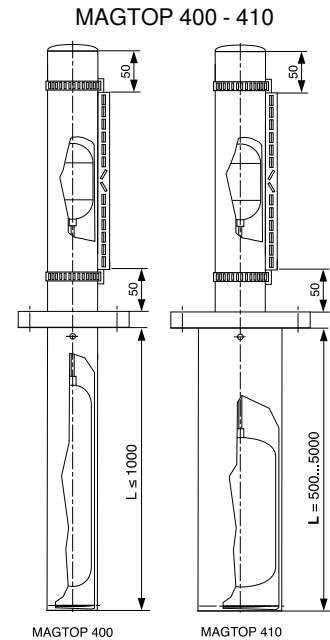
|                              |  |
|------------------------------|--|
| Maximum pressure             | 6 bar at 20 °C                           |
| Fluid temperature            | Maximum 50 °C at atmospheric pressure    |
| Measuring tube               | O.D. 63 mm; PVC                          |
| Process connections          | ISO flanges; PVC; ND25 or ND32           |
| Drain plug                   | BSP 1/2"                                 |
| Vent plug                    | BSP 1/2"                                 |
| Magnetic float               | PVC                                      |
| Magnetic ruler               | Makrolon, with magnetic red/yellow flaps |
| End-tube for float insertion | 3-piece union fitting, PVC               |
| Fixing clamps                | AISI 304                                 |
| Extra bracket                | PVC                                      |
| TAG / Identification plate   | AISI 316 L                               |

### 3.5 MAGTOP 803

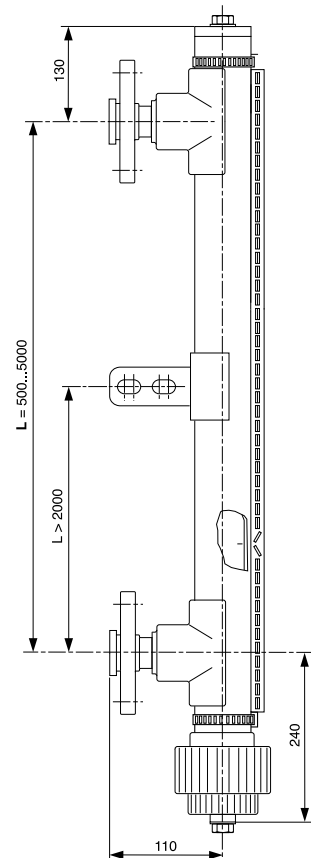
|                              |  |
|------------------------------|--|
| Maximum pressure             | 6 bar at 20 °C                             |
| Fluid temperature            | Maximum 90 °C at atmospheric pressure      |
| Measuring tube               | O.D. 63 mm, PPH                            |
| Process connections          | ISO PPH flanges (Steel core), DN25 or DN32 |
| Drain plug                   | BSP 1/2"                                   |
| Vent hole                    | BSP 1/2"                                   |
| Magnetic float               | PPH  |
| Magnetic ruler               | Makrolon, with magnetic red/yellow flaps   |
| End-tube for float insertion | 3-piece union fitting, PPH                 |
| Fixing collars               | AISI 304                                   |
| Extra bracket                | PPH  |
| TAG / Identification plate   | AISI 316 L                                 |

### 3.6 MAGTOP 806

|                              |  |
|------------------------------|--|
| Maximum pressure             | 6 bar at 20 °C                             |
| Fluid temperature            | Maximum 120 °C at atmospheric pressure     |
| Measuring tube               | O.D. 63 mm, PVDF                           |
| Process connections          | ISO PPH flanges (Steel core), DN25 or DN32 |
| Drain plug                   | BSP 1/2"                                   |
| Vent hole                    | BSP 1/2"                                   |
| Magnetic float               | PVDF                                       |
| Magnetic ruler               | Makrolon, with magnetic red/yellow flaps   |
| End-tube for float insertion | 3-piece union fitting, PVDF                |
| Fixing clamp                 | AISI 304                                   |
| Extra bracket                | PVDF                                       |
| TAG / Identification plate   | AISI 316 L                                 |



MAGTOP 801 - 803 - 806



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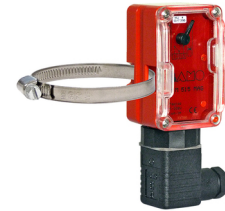
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## 4. ACCESSORIES

### 4.1 Level switch BSM 515 MAG (Stainless steel MAGTOP only)

|                              |   |
|------------------------------|---|
| Rated voltage                | 4 ... 250 V AC; 4 ... 30 V DC                 |
| Rated current                | 1 mA ... 3 A (AC and DC)                      |
| Built-in contact             | Micro-switch, bistable, change-over           |
| Gap between 2 trigger points | Minimum 40 mm, positioned: at 120°            |
| Connector                    | 3-pole cable plug acc. DIN EN 175301          |
| Electrical connection        | Cable cross section: 1.5 mm <sup>2</sup> Max. |
| Cable output                 | PG 13.5                                       |
| Ambient temperature          | -20 ... +90 °C                                |
| Case                         | Polycarbonate                                 |
| Fitting                      | AISI 304 clamp                                |
| Protection                   | IP65 according to EN 60 529                   |



BSM 515 (MAGTOP 300, 400, 410)

### 4.2 Level switch BRK 60 MAG

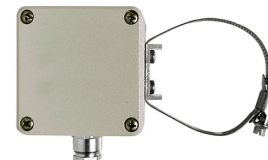
|                    |                                      |
|--------------------|--------------------------------------|
| Switching power    | 60 VA / 230 V AC / 1 A               |
| Built-in contact   | Reed contact, bi-stable, change-over |
| Case               | ABS                                  |
| Cable output       | PG 9                                 |
| Temperature limits | -40 ... +80 °C                       |
| Fitting            | AISI 304 clamp                       |
| Protection         | IP55                                 |



BRK 60 Mag

### 4.3 Level switch BRT 60 MAG

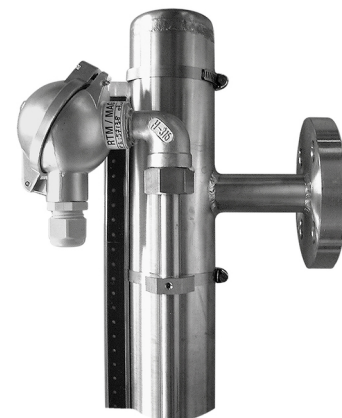
|                    |                                      |
|--------------------|--------------------------------------|
| Switching power    | 60 VA / 230 V AC / 1 A               |
| Built-in contact   | Reed contact, bi-stable, change-over |
| Case               | Painted aluminum                     |
| Cable output       | PG 9                                 |
| Temperature limits | -40 ... +200 °C                      |
| Fitting            | AISI 304 clamp                       |
| Protection         | IP55                                 |



BRT 60

### 4.4 RTM (Reed chain transmitter)

|                                      |   |
|--------------------------------------|---|
| Reed contacts                        | Specific Reed contacts  |
| Internal ruler:                      | Support: Glass, epoxy resin   |
| Potentiometric output                | Discrete-continuous measurement (up to 10 kΩ)   |
| Analogue output (2-wire transmitter) | 4-20 mA / 13 ... 30 V DC  |
| Measuring height                     | From 250 mm up to 1500 mm   |
| Resolution                           | By step of 10 mm  |
| Stem                                 | PVC-U: 0 ... +50 °C<br>PPH: +5 ... +80 °C<br>PVDF: 0 ... +100 °C<br>AISI 316 L: -10 ... +110 °C |
| Head housing                         | Or PBT-G, IP 65<br>Or painted aluminum  |



RTM Mag

### 4.5 Graduated ruler

|                        |   |
|------------------------|---|
| MAGTOP 300 - 400 - 410 | AISI 316 L ruler, width 50 mm; Fixing collars: AISI 304 |
| MAGTOP 801 - 803 - 806 | PVC ruler, width 70 mm; Fixing collars: AISI 304        |

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## 5. MAGTOP COMMISSIONING

- Check the compatibility of the MAGTOP fittings on to the tank fittings .
- Install the MAGTOP on to the tank.
- Do not forget to place gasket (not supplied) between flanges (not supplied) or sealing tape on threads.

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.

## 6. START-UP

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 flaps turn 180° (from yellow to red).

The exact level is indicated by two flaps that have only turned 90°.

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

In the event of bad viewing angle of the magnetic ruler: To position it properly on the tube, loose the fixing collars. Once the reading is correct, apply a moderate tightening on to the fixing collars not to distort the ruler.

## 7. ELECTRICAL CONNECTIONS

Refer to the corresponding instructions for the level switches BSM 515, BRK-60 MAG, BRT-60 MAG, as well as for the RTM (Reed chain transmitter).

## 8. MAINTENANCE

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

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

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