

Float switches NIVOSTOP SS2

- Mercury-free
- Fair cost
- Easy to install
- Compatible with chemicals
- Switching current 1 mA ... 3 A

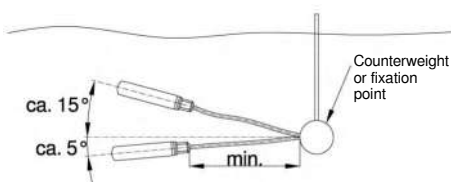


SS2 WA



SS2 KW

Operating (example)



CAUTION:
Fixed point minimum distance: PVC Cable = 100 mm
Other cables = 80 mm

APPLICATIONS

- Limit switch
- Sewage lifting plants
- Filling / draining control of tank
- Liquid level control in all industries

DESCRIPTION

NIVOSTOP SS2 float switches are designed for level control in tanks and basins. The cigar-shaped type is for insertion in tank with hole of diameter 30 mm, for instance through the wall or the top of the tank. The float switch rotates on one fixed point on its cable. The float follows the level of the liquid. The built-in contact switches at about 5 to 15° of angle below or above the fixed point. The height of switching point depends on the length of the cable between fixed point and float.

TECHNICAL FEATURES

| | |
|----------------------------------|--|
| Switching power: | 4 V - 250 V AC; 4 - 30 V DC |
| Switching current: | 1 mA ... 3A |
| Switch: | Microswitch (gold contacts), changeover contact, potential-free |
| Temperature limits: | +1 ... +60 °C |
| Operating pressure: | 0.5 bar as a maximum |
| Mounting, switching angle: | The float switch is fixed with its cable at one point. The float follows the level and tilts around the fixed point. |
| Liquid density | |
| TPK and PES cables: | $\rho \geq 1.0 \text{ kg/dm}^3$ |
| PVC cable (for lubricating oil): | $\rho \geq 0.9 \text{ kg/dm}^3$ |
| Materials | |
| Float: | Polyethylene (PE-HD) |
| Cable: | TPK, PVC, PVC oil-resistant, acid-resistant sheathed (PES) |
| Protection: | IP 68 |
| Chemical resistance of cables | |
| TPK: | Water; Alkalis and acids of low concentration |
| PES: | Acid-resistant |
| PVC: | Lubricating oil |

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

NOTE

At a voltages > 50 V, the liquid must be connected to earth.

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Float switches
NIVOSTOP SS2

12-06-2020

D-520.01-EN-AD

LEV

520-01 /1

CODE NUMBERS AND REFERENCES

Cigar-shaped float switches (NIVOSTOP SS2/ W..):

| Code | Reference | Specificity |
|---------|------------|---|
| 520 802 | SS2 / W2 | TPK cable, 2 m |
| 520 805 | SS2 / W5 | TPK cable, 5 m |
| 520 808 | SS2 / W10 | TPK cable, 10 m |
| 520 830 | SS2 / WA2 | TPK cable with PES sheath, acid-resistant, 2 m |
| 520 834 | SS2 / WA5 | TPK cable with PES sheath, acid-resistant, 5 m |
| 520 837 | SS2 / WA10 | TPK cable with PES sheath, acid-resistant, 10 m |
| 520 840 | SS2 / WH2 | PVC cable for lubricating oil, 2 m |
| 520 845 | SS2 / WH5 | PVC cable for lubricating oil, 5 m |
| 520 846 | SS2 / WH10 | PVC cable for lubricating oil, 10 m |

Other cable lengths: on request.

Pear-shaped float switches (NIVOSTOP SS2/ KW..):

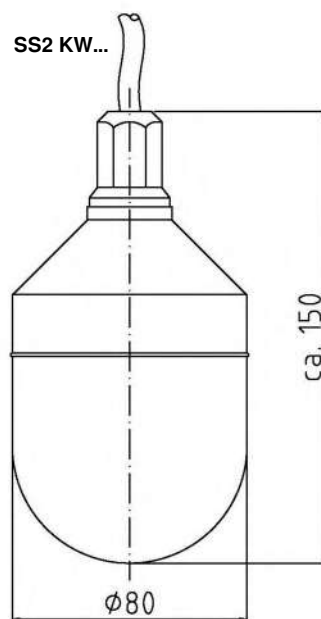
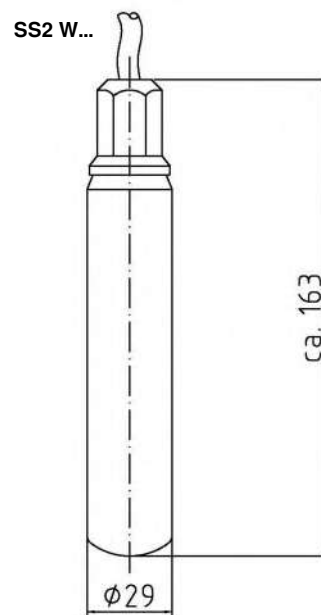
| Code | Reference | Specificity |
|---------|-------------|---|
| 520 810 | SS2 / KW5 | TPK cable, 5 m |
| 520 815 | SS2 / KW10 | TPK cable, 10 m |
| 520 832 | SS2 / KWA2 | TPK cable with PES sheath, acid-resistant, 2 m |
| 520 835 | SS2 / KWA5 | TPK cable with PES sheath, acid-resistant, 5 m |
| 520 838 | SS2 / KWA10 | TPK cable with PES sheath, acid-resistant, 10 m |
| 520 844 | SS2 / KWH5 | PVC cable for lubricating oil, 5 m |
| 520 847 | SS2 / KWH10 | PVC cable for lubricating oil, 10 m |

Other cable lengths: on request.

Accessories:

| Code | Reference | Description |
|---------|--------------------------------|----------------------------|
| 520 500 | Cable gland BSP 1" | PVC, PG 9 |
| 520 512 | Cable gland BSP 1/2" | PE, PG 9 |
| 520 531 | Cable gland BSP 1" | PE, PG 9 |
| 520 600 | CE 100 | PP, Blocking nut, BSP 1" |
| 520 610 | CE 12 | PP, Blocking nut, BSP 1/2" |
| 520 901 | Adjustable counterweight 175 g | For cable types W and WH |
| 520 902 | Adjustable counterweight 250 g | For cable type WA |
| 520 917 | Ring cable fastener | |
| 520 919 | Clamp cable fastener | |

DIMENSIONS



520 917 Ring cable fastener



520 919 Clamp cable fastener



Cable glands

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Float switches
NIVOSTOP SS2

12-06-2020

D-520.01-EN-AD

LEV

520-01/2

Float level detector NIVOSTOP® / C

- For aggressive liquids
- Cable in FEP, seal in FPM, body in PP
- Temperature max. 100 °C
- Built-in counterweight
- Standard cable lengths: 5, 10 & 20 m



APPLICATIONS

The float level detector NIVOSTOP® / C is designed for use in aggressive liquids such as acid, base solutions compatible with PP, FEP and FPM.

DESCRIPTION

Operation of NIVOSTOP® / C is identical to other detectors NIVOSTOP® with a built-in counterweight.

When the level is rising up, the tilting of the float actuates an integrated switch (connected to a controller in a control cabinet). The built-in counterweight allows the float not to rise to the surface nor to wrap around objects. The detector therefore remains immersed and switches in a small space.

TECHNICAL FEATURES

| | |
|---------------------|--|
| Operation | Multidirectional |
| Pressure max. | 2 bar |
| Protection | IP 68 |
| Temperature max. | 100 °C |
| S.G. limits | 0.95 ... 1.05 |
| Switching angle | 10° |
| Switch, change-over | Gold plated contacts |
| Switching power | 1 mA / 4 V – 5 A / 250 V |
| Cable | FEP, seal in FPM, 3 x 0.5 mm ² |
| Body | PP Ø 100 mm, height 180 mm |

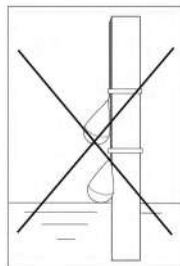
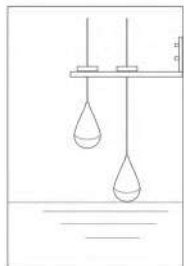
EC Conformity: The device meets the legal requirements of the current European Directives.

CODE NUMBERS AND REFERENCES

| Code | Reference | Description | Mass (kg) |
|---------|---------------|-----------------|-----------|
| 520 705 | NIVOSTOP C-5 | 5 m long cable | 1.4 |
| 520 710 | NIVOSTOP C-10 | 10 m long cable | 1.9 |
| 520 720 | NIVOSTOP C-20 | 20 m long cable | 2.8 |

Mounting accessories

| | | | |
|---------|--------------------|--------------|---|
| 520 917 | Cable tie | For 1 cable | - |
| 520 919 | Cable double clamp | For 2 cables | - |



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Float level detector
NIVOSTOP® / C

19-09-2019

D-520.04-EN-AD

NIV

520-04/1

ATEX certified float level detector NIVOSTOP® PR2 / Ex



- For liquids in hazardous area, Ex
- Built-in counterweight
- Heavy duty controller
- High quality neoprene cable
- Cable lengths: 10 or 20 m

APPLICATIONS

- Pump automation and remote alarming signal in lifting stations, or wastewater pumping stations, in hazardous area (Ex)

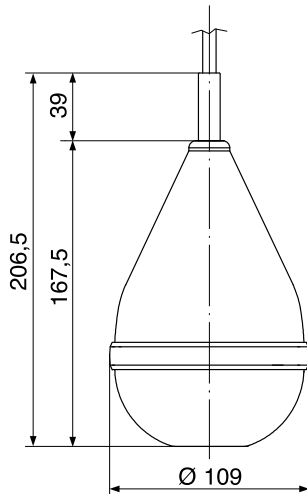
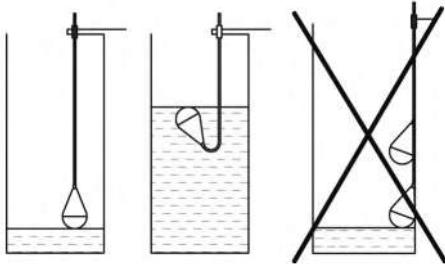
DESCRIPTION

When level is rising the float tilts and actuates a contact connected via the cable to the control room. Its integrated counterweight prevents it from rising to the surface and wrapping around nearby objects. The NIVOSTOP® PR2-Ex remains immersed and switches in a small space.

The NIVOSTOP® PR2-Ex has a large diameter cable and a reinforced sealing with 3 envelopes, which give it durability and reliability under severe environmental conditions.

With the carbon black incorporated to the material, the electrostatic charges that could be created are evacuated to the outside through the ground wire of the cable.

Important: The use of an intrinsic safety relay type RDN 11 is mandatory for installation in hazardous area, Ex. See data-sheet 251-01



TECHNICAL FEATURES

| | |
|--------------------|--|
| Pressure limit | 2 bar |
| Protection | IP 68 |
| Class | I |
| Temperature limits | -20 °C ... +80 °C |
| Density limits | 0.95 ... 1.05 kg/dm ³ |
| Tilting angle | 20° |
| Switch type | Micro-switch, changeover |
| Power supply | 4 ... 40 V AC / 100 mA |
| Cable | H05RN-F 4 G0,75 - Ø 8.8 mm (2 functions) |
| | Available lengths: 10 m and 20 m |
| Cable sealing | EPDM |
| Body | Anti-static PP |
| | Insulated body: 3 sealed envelopes |
| Depth limit | 20 m |
| Ex Certificate | 0425 ATEX 003942-00 |
| Agreement | Ex II 1 G Ex ia II C T6 |

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

CODE NUMBERS AND REFERENCES

| Code | Reference | Cable length | Mass [kg] |
|---|------------------------|------------------------------|-----------|
| 521 510 | NIVOSTOP PR2-Ex - 10 | 10 m | 1.9 |
| 521 520 | NIVOSTOP PR2-Ex - 20 | 20 m | 2.5 |
| Accessories: Intrinsic safety relays | | | |
| 251 011C | RDN11 / 230 V AC | Power supply: 230 V AC | |
| 251 012 | RDN11 / 24 ... 48 V DC | Power supply: 24 ... 48 V DC | |

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ATEX certified float level
 detector
NIVOSTOP® PR2 / Ex

01-02-2021

D-521.04-EN-AF

NIV

521-04/1

Float level regulator NIVOSTOP® - MEZZO

- Regulation between two trigger points
- Change-over microswitch
- High switching power
- Switching angle 120°
- Cable lengths: 5, 10 and 20 m



APPLICATIONS

Level regulation between two points for drain or fill function:

- Clear water, clean water, rainwater
- Liquids slightly aggressives (oils, sludge, paints)

DESCRIPTION

NIVOSTOP® MEZZO are designed for level regulation of liquids between two levels.

A large differential between trigger points allows automation of a pump with only one regulator. With the large differential, switches on and off are smooth for the pump or the automation devices.

The differential between low and high levels depends on the distance between the float and the attachment point of the cable. When NIVOSTOP® MEZZO is used with an adjustable counterweight along the cable, it is the distance between the counterweight and the float that determines the differential.

Caution: The regulator must float on the varying surface of the liquid.

TECHNICAL FEATURES

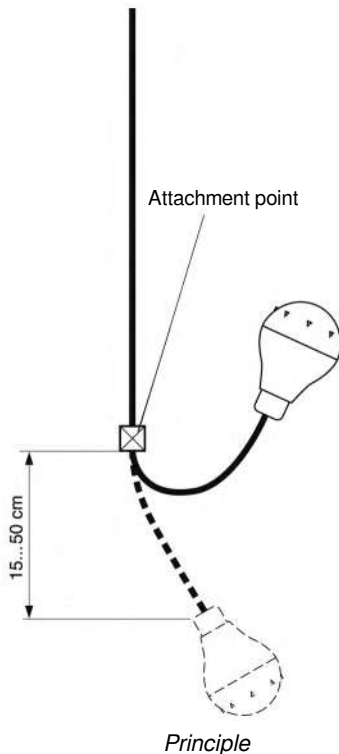
| | |
|------------------|---------------------------------------|
| Operation | Multidirectional |
| Pressure max. | Atmospheric |
| Protection | IP 67 |
| Temperature max. | + 40 °C |
| S.G. limits | 0.95 ... 1.10 |
| Switching angle | 120° |
| Switch type | Change-over microswitch |
| Switching power | 16 (6) A / 250 V |
| Cable | PBS; O.D. 9 mm; 3 x 1 mm ² |
| Body | PP |
| | Ø 85 mm; height 125 mm |
| Counterweight | 0.230 kg |
| Cable lengths | 10, 15 or 20 m |

CE Conformity: The device meets the legal requirements of the current European Directives.

REGULATION BETWEEN 2 LEVELS

The correct operation of NIVOSTOP® MEZZO regulator, between low and high levels, depends on the distance between the rotation axis fixed point and the float. This distance must be between 15 cm (as a minimum) and 50 cm (as a maximum).

Depending on this distance, as well as the agitation of the liquid, the difference between the low and high trigger points level will be 30 to 60 cm.



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Float level regulator
NIVOSTOP® - MEZZO

12-07-2018

D-522.06-EN-AC

NIV

522-06/1

CODE NUMBERS AND REFERENCES

| Code | Reference | Description | Mass (kg) |
|----------------------|------------------------------|--|-----------|
| 522 122 | NIVOSTOP® MEZZO L120 / PBS5 | NIVOSTOP® MEZZO 120° - Câble PBS, longueur 5 m | 0.6 |
| 522 123 | NIVOSTOP® MEZZO L120 / PBS10 | NIVOSTOP® MEZZO 120° - PBS cable, 10 m long | 1.0 |
| 522 124 | NIVOSTOP® MEZZO L120 / PBS20 | NIVOSTOP® MEZZO 120° - PBS cable, 20 m long | 1,6 |
| Mounting accessories | | | |
| 520 906 | Counterweight | Counterweight for NIVOSTOP MEZZO | 0.230 |
| 520 917 | Cable tie | For 1 cable | - |
| 520 919 | Cable double clamp | For 2 cables | - |

INSTALLATION, RECOMMENDATIONS

The adjustable counterweight on the cable is mandatory for a correct operation of the regulator. It allows the cable to remain tight and insure a right point of rotation.

Positioned about 30 cm from the floats, it can be moved away or closer to the float depending on the more or less agitated liquid in which it is installed.

The cable tie or cable double clamp, inexpensive and often neglected accessories, are strongly recommended for all suspended devices to avoid deterioration of electrical cables.



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Float level regulator
NIVOSTOP® - MEZZO

12-07-2018

D-522.06-EN-AC

NIV

522-06/2

Float level regulator NIVOSTOP® ECO



- For clear, non-aggressive liquids
- Economic model, easy to install
- Switching angle: 45°
- Regulation between 2 levels
- PVC cable, 10 m long

APPLICATIONS

Level control of non-aggressive liquids:

- Automatic start and stop of a pump
- High and low level alarms
- Opening and closing a valve

DESCRIPTION

NIVOSTOP® ECO is suitable for neutral environment conditions (clear water, rain water, etc.)

Against the movement of the liquid, tilting of the float actuates a contact (output cable to connect to a control cabinet).

TECHNICAL FEATURES

| | |
|-----------------|---|
| Pressure limit | 1 bar max. |
| Protection | IP68 |
| Body | PP (Polypropylene) |
| Cable | PVC, 10 m long; 3x1 mm ² (Ø 8.8 mm) |
| Temperature | +5 ... +60 °C |
| S.G. Limits | 0.95 ... 1.05 |
| Switching angle | 45° |
| Switch | Change-over microswitch |
| Switching power | 10 A resistive load; 8 A inductive load; 250 V AC |
| Counterweight | 230 g (included) |

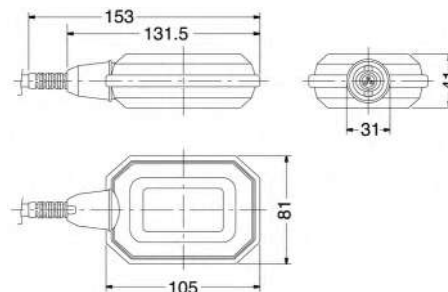
Caution

The tank (in fact the liquid) must be connected to earth, otherwise the detection loop must be in low voltage, safe low current.

CODE NUMBER AND REFERENCE

| Code | Reference | Description |
|---------|-----------------|---|
| 522 700 | NIVOSTOP ECO 10 | NIVOSTOP ECO; Cable 10 m; Counterweight |

DIMENSIONS



Counterweight
(supplied)



Installation

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Float level regulator NIVOSTOP® ECO

17-03-2021

D-522.07-EN-AE

NIV

522-07 /1

Float level detector NIVOSTOP® PR2-H05



- For wastewater
- Built-in counterweight
- Robust design
- High grade Neoprene cable
- Cable lengths: 6, 10, 15 or 20 m

APPLICATIONS

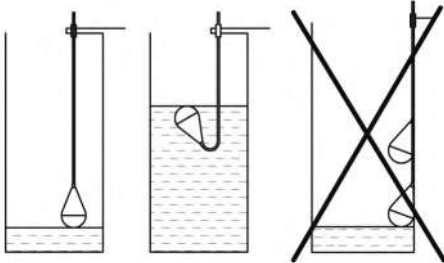
Automation of pump or alarm level for sewage pumping and lifting stations of wastewater.

DESCRIPTION

Operation of NIVOSTOP® PR2-H05 is identical to other detectors NIVOSTOP® with a built-in counterweight.

When the level is rising up, the tilting of the float actuates an integrated switch (output cable to connect to a control cabinet). The built-in counterweight allows the float not to rise to the surface nor to wrap around objects. The detector therefore remains immersed and it switches in a small space.

The cable PR2-H05 is of a large diameter, sealing system is reinforced (3 envelopes) which gives to the detector a great reliability and durability under severe operating conditions



TECHNICAL FEATURES

| | |
|--------------------|--|
| Pressure max. | 2 bar |
| Protection | IP 68 |
| Temperature limits | -15 ... +50 °C |
| S.G. limits | 0.95 ... 1.05 |
| Switching angle | 20° |
| Switch | Change-over micro-switch |
| Switching power | 10 A (resistive load) 8 A (inductive load) – 250 V AC |
| Cable | Neoprene; Ø 7.7 mm; 3x1 mm ² |
| Seal | EPDM |
| Enveloppe | PP; Ø 110 mm; Height 180 mm |

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

CODE NUMBERS AND REFERENCES

| Code | Reference | Description | Mass [kg] |
|-----------------------|---------------------|--|-----------|
| 522 307 | NIVOSTOP PR2-6-H05 | NIVOSTOP PR2-H05 cable length: 6 m | 1.5 |
| 522 311 | NIVOSTOP PR2-10-H05 | NIVOSTOP PR2-H05 cable length: 10 m | 1.9 |
| 522 316 | NIVOSTOP PR2-15-H05 | NIVOSTOP PR2-H05 cable length: 15 m | 2.5 |
| 522 321 | NIVOSTOP PR2-20-H05 | NIVOSTOP PR2-H05 cable length: 20 m | 3.0 |
| Accessories, fittings | | | |
| 520 917 | Fastening cable | For 1 cable | - |
| 520 919 | Strength clamp | For up to 2 cables | - |

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Float level detector
NIVOSTOP® PR2-H05

19-09-2019

D-522.08-EN-AA

NIV

522-08/1

Level controller SNR 4



- PVC or stainless steel versions
- Hydrostatic level detection
- Output: 1 contact
- For liquids (chemically compatible)
- Independent of conductivity, viscosity

APPLICATIONS

- Level control for open tanks or without pressure.

DESCRIPTION

The liquid, as it rises in the open tube at the bottom, increases the pressure of the trapped atmosphere. The pressure variation acts on a diaphragm that directly activates a contact. The level controller SNR 4, affords a dirt liquid as far as this one does not clog the measuring tube. Threshold is adjustable.

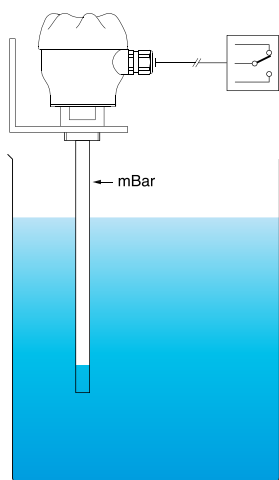
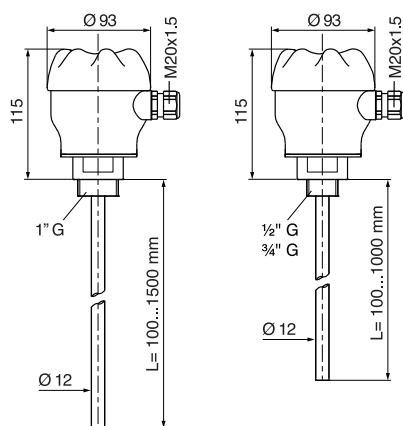
NOTE: The inner atmosphere can diffuse through the diaphragm; It is necessary to renew the atmosphere (fresh air) every three months.

TECHNICAL FEATURES

| | |
|---------------------|---|
| Measuring tube | PVC, Ø 12 mm (length ≤ 1500 mm) AISI 316 L, Ø 12 mm (length ≤ 1000 mm) |
| Housing head | PBT - IP 65 |
| Fitting | PVC: BSP 1" AISI 316 L: BSP 1/2" or 3/4" |
| Diaphragm | FPM |
| Hysteresis | 60 mm |
| Tolerance | ±8 mm |
| Level switch | Changeover contact |
| Repeatability | ± 5 % trigger point distance (minimum ± 0.3 mbar) |
| Contact lifetime | 10 ⁶ cycles |
| Switching power | 250 V / 1 A, resistive load |
| Ambient temperature | Max. 60 °C |
| Adjustment range | From 100 to 750 mm (For liquid at SG = 1) |

CODE NUMBERS AND REFERENCES

| Code | Reference | Description |
|---------|--------------|------------------------------------|
| 528 100 | SNR4-C /PVC | PVC stem, Ø 12 mm, BSP 1" |
| 528 200 | SNR4-C /Inox | AISI 316 L stem, Ø 12 mm, BSP 1/2" |
| 528 210 | SNR4-C /Inox | AISI 316 L stem, Ø 12 mm, BSP 3/4" |



Operating principle

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Level controller
SNR 4

14-10-2020

D-528.01-EN-AC

NIV

528-01 /1

Resistive level detector ES 2001



- For all electrically conductive liquids
- Adjustable sensitivity, timer; selectable operating mode

Functions:

- On /Off level controller between 2 rods
- Level regulation (filling/draining) between 2 thresholds (3 rods)
- Compatible with all our electrodes

APPLICATIONS

- Control of the level height of electrically conductive liquids
- Fill or drain automated operation

DESCRIPTION

Probes and electrodes are specially designed for different type of applications. ES2001 is used as a limit value detector on conductive liquids; Probes and rods are chosen according to the application.

Detection sensitivity to different type of liquids is set through the built-in potentiometer from 1 to 150 k Ω .

The hysteresis between on/off switchings of output relay is about 20% of sensibility. Such a narrow hysteresis limits false detections by a leakage current due to presence of mist, foam or condensed vapors.

With both timers, it is easy to adjust the level detection or level regulation to prevent false triggering due to wave effects.

For level detection, 1 relay ES2001 is necessary for each independant trigger point.

TECHNICAL FEATURES

| | |
|------------------------|--|
| Power supply | 230, 115, 48, 24 V AC – 50/60 hz 24, 12 V DC |
| Consumption | \leq 2 VA |
| Outputs | 2 Change-over contacts Max. 250 V AC; 5 A; 500 VA Max. 125 V DC; 1 A; 40 W |
| Powered detection loop | Galvanic insulation < 6 V AC / < 2 mA |
| Hysteresis | About 20 % of sensitivity |
| Sensitivity | Adjustable on 2 ranges 1 ... 70 k Ω m (Low range) 5 ... 150 k Ω m (High range) |
| Operating status | N.O. or N.C through DIP switch |
| Timer | Delay "ON" and "OFF" from 0.5 to 3 s Adjustable through a potentiometer |
| Ambient temperature | -15 ... +45 °C |
| Mounting | Rail DIN 46277 |
| Protection | IP 40 (tropicalization on request) |

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

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Resistive level detector
ES 2001

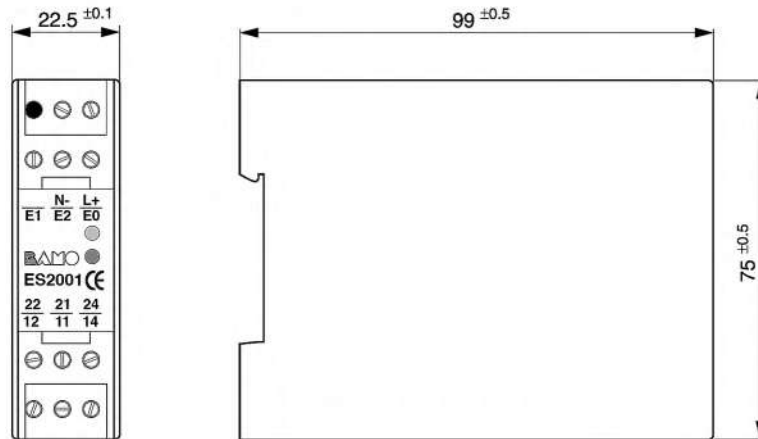
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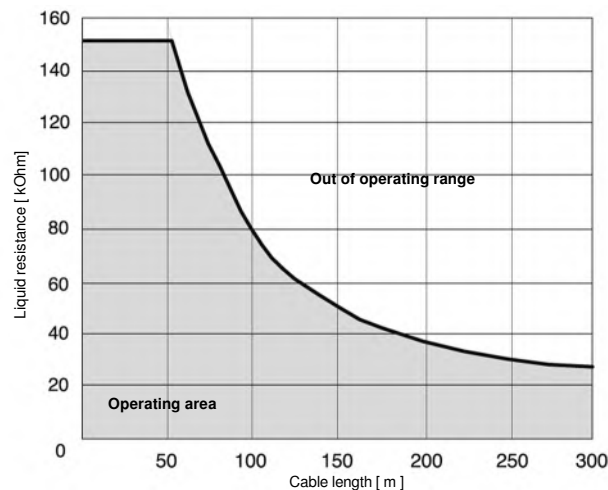
530-01 /1

DIMENSIONS



WORKING LIMITS

The capacitance of the cable on the detection loop, may reduce the sensitivity resulting of total cable length.
A standard cable, PVC, 3-wire, has a capacitance of 100 pF/m
Working limits are against the liquid resistance and detection loop capacitance (diagram below).



(This diagram concerns a relay with alternative current supply)

CONNECTIONS OF DETECTION LOOP

- Use a multi-conductor cable of 0.5 mm²
- This cable must be away from power cables.
- Over 25 meters, it is necessary to use a shielded cable (Max. 300 m).

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Resistive level detector
ES 2001

28-05-2019

D-530.01-EN-AB

NIV

530-01 /2

CODE NUMBERS AND REFERENCES

| Code | Reference | Description |
|---------|--------------------|--|
| 530 200 | ES 2001 / 230 V AC | Resistive level relay, power 230 V AC - 50/60 Hz |
| 530 210 | ES 2001 / 115 V AC | Resistive level relay, power 115 V AC - 50/60 Hz |
| 530 220 | ES 2001 / 48 V AC | Resistive level relay, power 48 V AC - 50/60 Hz |
| 530 230 | ES 2001 / 24 V AC | Resistive level relay, power 24 V AC - 50/60 Hz |
| 530 252 | ES 2001 / 12 V DC | Resistive level relay, power 12 V DC |
| 530 254 | ES 2001 / 24 V DC | Resistive level relay, power 24 V DC |

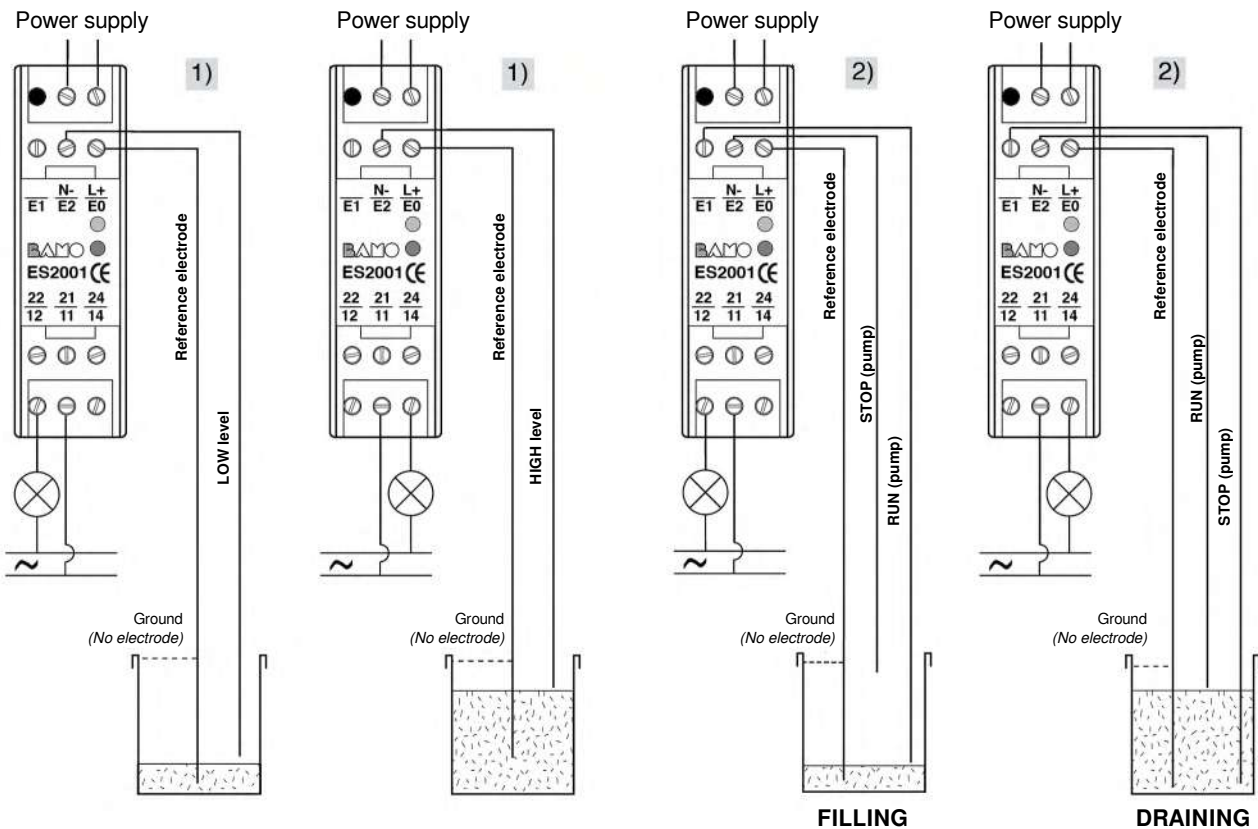
OPERATING FUNCTIONS

1) LEVEL DETECTION: 2 electrodes

The output relay is actuated when the liquid creates an electrical bridge between the metal tank body or a reference electrode and the level electrode.

2) FILL OR DRAIN AUTOMATION: 3 electrodes

The third electrode allows an automation between high and low level. A LED on the front shows the status of the relay. This one is lit when the relay is energized.



To test the relay:

- Disconnect the electrodes
- Shunt between E0 & E2: relay is actuated (alarm function)
- Shunt between E0, E2 & E1. Disconnect E2, then E1 (pump automation)

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Resistive level detector
ES 2001

28-05-2019

D-530.01-EN-AB

NIV

530-01/3

Resistive level probe STE



- For level control
- Applications with conductive liquids
- 1 to 5 Detection electrodes
- Level regulation with relays ES2001

APPLICATIONS

- Level control in open or closed vessels
- Alarm for excess or lack of liquid (leak detection, empty piping, dry-pump prevention, etc.)
- Fill or drain function with ES 2001 relay

DESCRIPTION

The STE level probe in combination with a relay ES2001 detect the level of electrically conductive liquids. According to the model, up to 5 levels may be triggered (using the tank as the reference electrode)
Provide a reference electrode if the tank is made of insulating material. These STE probes are not suitable for liquids with hydrocarbons or grease or for any other application where an insulating layer may deposit on the electrodes.

TECHNICAL FEATURES

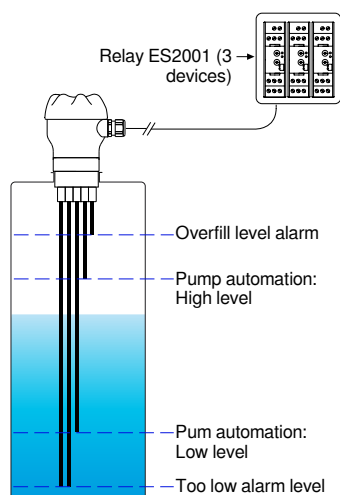
| | |
|----------------------------|--|
| Electrodes | Up to 5 rods, AISI 316 L (Titanium in option) |
| Fitting | PP or AISI 316 |
| Head housing | PBT glass fiber reinforced, IP 65 (EN 60 529), cable gland M20 x 1 |
| Option: Partial insulation | Polyolefin (heat shrinkable) <i>To avoid false alarms by conductive bridge through the medium between electrodes or if the electrodes are long and can touch each others.</i> |
| Temperature limits | Ambient: -20 ... +60 °C Liquid: -5 ... +100 °C (restrictions apply according the chemical) |
| Pressure limits | 6 bar at +20 °C 1 bar at 100 °C Other pressure limits: On request |
| Min. L1 & L2 | 45 mm |
| Max. L1 ... L5 | 2000 mm |
| Installation | Vertical on top of tank; Never install horizontally |

CAUTION:

STE with relays ES2001 are designed for liquids with a conductivity > 6.6 µS/cm or a lower resistance than 150 kΩ.cm
Use only in liquids compatible with stainless steel 316 L and insulation when provided.
Do not use on liquids that may create an insulating layer.

Accessories Relay ES2001 (data-sheet 530-01)

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



Example: In operation

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Resistive level probe
STE

LEV

540-01 /1

02-03-2020

D-540.01-EN-AC

CODE NUMBERS AND REFERENCES

| Code | PPH fitting | Code | AISI 316 L fitting | Description |
|---------|-------------|---------|--------------------|---|
| 540 110 | STE A 2 X | 540 210 | STE A C3 X | STE for 1 rod (not included), BSP 1/2" |
| 540 120 | STE Z 2 X | 540 220 | STE Z C6 X | STE for 2 rods (not included), BSP 1 1/4" |
| 540 130 | STE D 2 X | 540 230 | STE D C6 X | STE for 3 rods (not included), BSP 1 1/4" |
| 540 140 | STE V 2 X | 540 240 | STE V C8 X | STE for 4 rods (not included), BSP 2" |
| 540 150 | STE F 2 X | 540 250 | STE F C8 X | STE for 5 rods (not included), BSP 2" |

Electrodes for STE:

| Code | Reference | Description |
|---------|------------------|--|
| 540 010 | 500 mm long rod | AISI 316 L electrode, Ø 4 mm, length: 500mm |
| 540 011 | 1000 mm long rod | AISI 316 L electrode, Ø 4 mm, length: 1000mm |
| 540 012 | 1500 mm long rod | AISI 316 L electrode, Ø 4 mm, length: 1500mm |
| 540 013 | 2000 mm long rod | AISI 316 L electrode, Ø 4 mm, length: 2000mm |

Level detection

Number of electrodes and fitting type

- S** 1 rod - BSP 1/2" without head housing
- A** 1 rod - BSP 1/2"; IP 65 housing
- Z** 2 rods - BSP 1 1/4"; IP 65 housing
- D** 3 rods - BSP 1 1/4"; IP 65 housing
- V** 4 rods - BSP 2"; IP 65 housing
- F** 5 rods - BSP 2"; IP 65 housing

Fitting material

- 2** PP (Standard)
- C3** 316 Ti; BSP 1/2"
- C6** 316 Ti; BSP 1 1/4"
- C8** 316 Ti; BSP 2"

Rods insulation

- X** None (Standard)
- T** With polyolefin sheath

Rod length from sealing surface

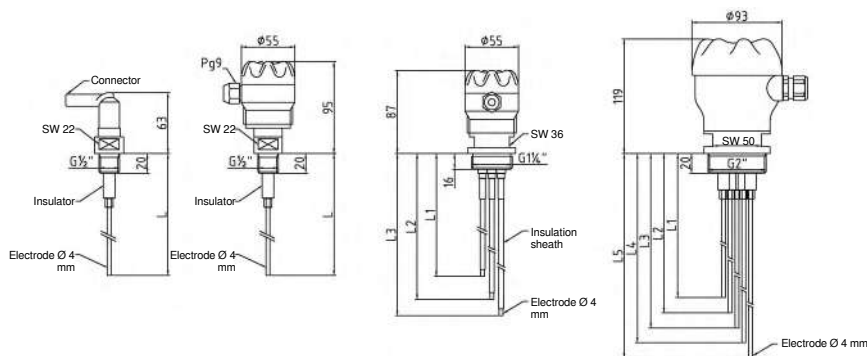
- L1** ... mm
- L2** ... mm
- L3** ... mm
- L4** ... mm
- L5** ... mm

STE

| | | | | |
|--|--|--|--|--|
| | | | | |
|--|--|--|--|--|

Option: Paint-free design (Silicone cleaned with restrictions: on request)

DIMENSIONS



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Resistive level probe
STE

LEV

540-01/2

02-03-2020

D-540.01-EN-AC

Floor leak detection BES 680



BES 680



Bottom view



ES5000

- Static floor water detector
- Integrated resistor for detection loop monitoring, with ES5000 relay

APPLICATIONS

- Control of presence or not of conductive liquid on the floor
- Monitoring in technical room, computer room, etc.
- Detection in retention basins, underground cable trays, etc.

DESCRIPTION

The resistive level detector, associated to a resistive relay, detects the variation of resistor value caused by the presence of a conductive liquid between two electrodes. This variation generates an alarm signal via a resistive relay. With the integrated resistor (680 kOhm), the ES5000 relay secures the detection loop by detecting any cable break or short circuit.

TECHNICAL FEATURES

| | |
|-------------------------|--|
| Materials | Housing head: PBT Electrodes: AISI 316 L Cable: PVC; 2x 0.34 mm ² (LiYY type) |
| Protection | IP 67 (not suitable for permanent immersion) |
| Cable length | 5m (standard) |
| Liquid height detection | Min. about 1mm |
| Electrical connection | Terminals E0, E2, on relay ES 2001/5000 (any polarity) |
| Ambient temperature | -20 ... +60 °C |

Detection loop monitoring

This function is available with the ES5000 relay.

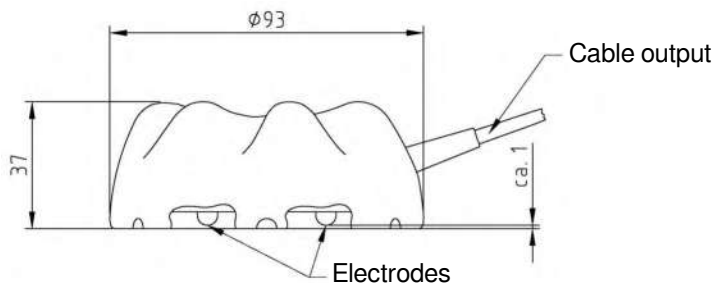
EC Conformity: The instrument meets the legal requirements of the current European Directives.

CODE NUMBERS AND REFERENCES

BES 680 Floor leak detector, 5 m long PVC cable, AISI 316 L electrodes, with integrated resistor for loop monitoring.

| Code | Reference | Description |
|---------|-----------|---|
| 540 901 | BES 680 | Floor leak detector, 5 m long PVC cable |

DIMENSIONS



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Floor leak detection
BES 680

17-12-2019

D-540.02-EN-AE

LEV

540-02/1

Resistive level probes TVI & MINITEV



TVI 1E / TVI 3 E



MINITEV



ES 2001

- For all electrically conductive liquids
- 1 to 4 electrodes
- Materials: Metals - PTFE
- Pressure up to 200 bar
- Temperature up to 220 °C
- Fittings or BSP or NPT
- Connection head in aluminum

PRINCIPLE

Electrical resistance variation, caused by the presence of a liquid between two electrodes, converted by level relay as ON/OFF signal (see data-sheets relay ES 2001, 530-01 and 233-01 for RXM).

Electrode length is adjusted according to distance of trigger point.

APPLICATIONS

- Level control or regulation, on open tanks or closed tanks, piping, open channels, etc.
- Detection of presence or lack of liquid (leaks, empty piping, dry run detection for pumps).

DESCRIPTION

Each probe has three parts:

- Cast aluminum head (IP 55) with screw terminals and cable gland (Excepted on MINITEV)
- Fitting: AISI 316 L with PTFE insulator(s).
- Electrodes: AISI 316 L, 1 to 4 electrodes (according the model) at necessary length.

Electrical connection: with end tip to the terminal.

A ground connection is available inside the housing IP55.

TERMINOLOGY

The term "Bougie", very often used at CIEMA (1998), refers to an electrode or a single-electrode probe.

The "Probe" or "Holder" is a set, electrode and connection head.

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Resistive level probes
TVI & MINITEV

27-05-2020

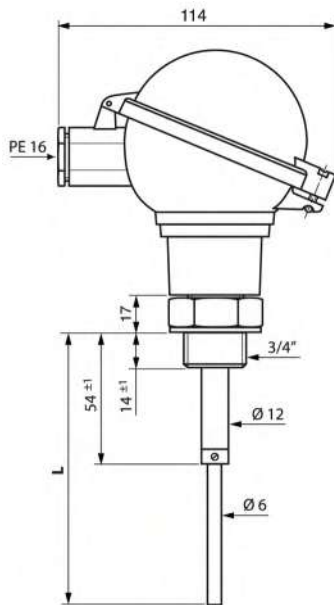
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NIV

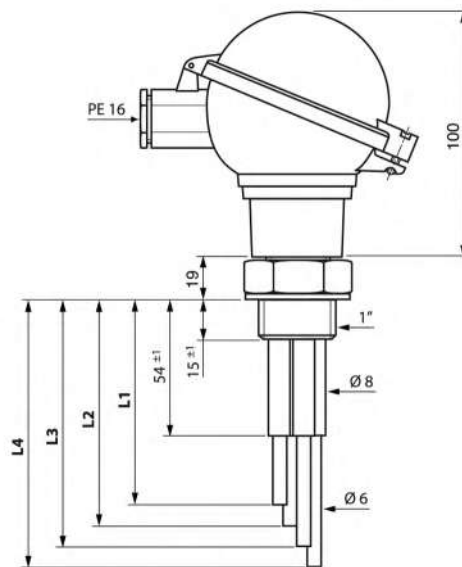
541-01 /1

CODE NUMBERS AND FEATURES

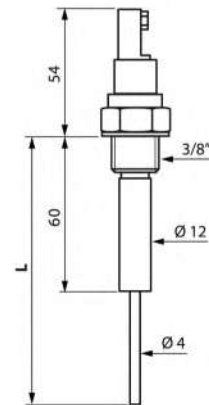
| Reference | TVI-1E | TVI-2E | TVI-3E | TVI-4E | MINITEV |
|----------------------------|--------------------------|-------------------|---------|-------------------------------|---------|
| Code | 541 310 | 541 420 | 541 430 | 541 440 | 541 330 |
| Number of electrodes | 1 | 2 | 3 | 4 | 1 |
| Fitting | 3/4" G (Option : 1/2" G) | | 1" G | | 3/8" G |
| Insulator | Insulator PTFE | | | | |
| Length Min. | 54 mm | - | | | 60 mm |
| Length Max. | 3000 mm | | | 1000 mm | |
| Temperature Max. | 220 °C | 80 °C | | 220 °C | |
| Pressure Max. (at T° Max.) | 25 bar (at 220 °C) | 25 bar (at 80 °C) | | 25 bar (at 220 °C) | |
| Pressure Max. at 20 °C | 200 bar | 50 bar | | 200 bar | |
| MATERIALS | | | | | |
| Head housing | Cast aluminum | | | <i>(Without head housing)</i> | |
| Fitting | AISI 316 L | | | AISI 316 L | |
| Electrode(s) | AISI 316 L | | | AISI 3016 L | |



TVI-1E



TVI-2E - TVI-3E - TVI-4E



MINITEV

PRECAUTIONS FOR COMMISSIONING

- Provide the correct number of electrodes: 1 per level point + 1 as a reference (if tank is not used as reference).
- Mount the probe on the top of the tank, in vertical position.
- If it is not possible, use a lateral position with an angle of 45° downwards (always think of conductive liquid bridges that create false alarms).
- Check the limits of temperature vs. pressure and the chemical resistance of wet part materials in contact with the fluid.
- **Beware of vapors, it is recommended to coat the connectors after wiring or use a pierced lid to avoid possible condensation.**
- In case of agitated liquid, make sure that rods cannot touch each other by using spacers, or using coated rods, or by isolating them from turbulences inside a transquilization tube.
- For clogging liquids or with vapours, be sure not to have any electrically conductive bridge between two electrodes.

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Resistive level probes
TVI & MINITEV

27-05-2020

D-541.01-EN-AB

NIV

541-01 /2

Resistive level with flexible probes HE - HS

- For electrically conductive liquids
- Immersion up to 5 m; cables: up to 25 m
- From 1 to 5 probes



HS

APPLICATIONS

- HE version: Level detection on neutral liquids
- HS version: Level detection on aggressives liquids

DESCRIPTION

Probes HE and HS, hanged electrodes, are to be in use with relays ES2001 for detection of liquid levels in storage tank.
Depending on the model, up to 5 levels can be detected using the wall tank as a reference electrode; Provide a reference electrode if the tank is made of insulating material (i.e. up to 4 level detection + 1 reference).
This technical solution is not suitable for liquids with hydrocarbons or grease or for any other application where an insulating layer is liable to deposit on the electrodes. Flexible probes are recommended for tanks with a height greater than 1000 mm.

TECHNICAL FEATURES

| | |
|--------------------------------------|--|
| Fitting material | HE: PP HS: PVC |
| Cable | HE: Flexible PVC HS: Special cable coated with PES |
| Housing | PBT, glass fiber reinforced |
| HS probe body | PVC |
| Ambient temperature | -20 ... +60 °C |
| Liquid temperature | HE version: 0 ... +60 °C, HS version: Depends of chemical resistance of PVC and PES |
| Pressure | 0.5 bar (Immersion depth Max. 5 m with SG = 1) |
| Protection | IP 65 according EN 60 529 |
| Minimum for cable lengths L1 & L2: | HE: 0.3 m HS: 0.2 m |
| Maximum for cable lengths L1 ... L5: | 25 m |

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

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Resistive level with flexible
probes
HE - HS

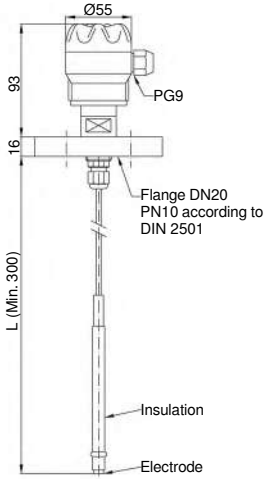
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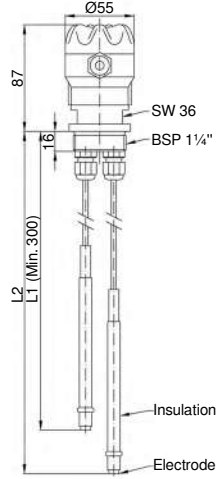
LEV

542-01 /1

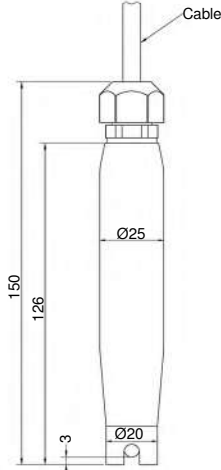
DIMENSIONS



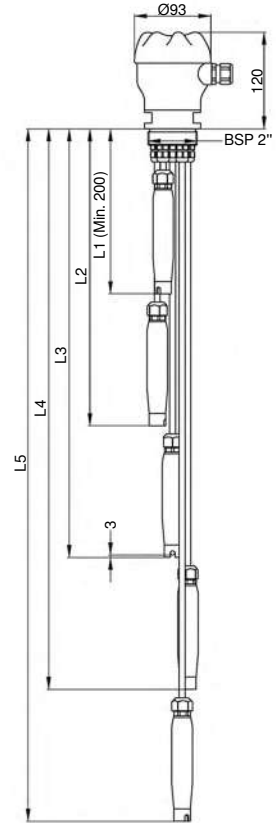
HE-AF2



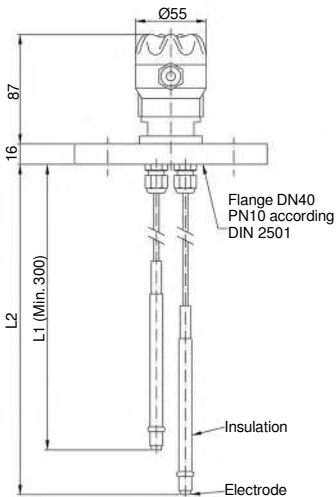
HE-Z



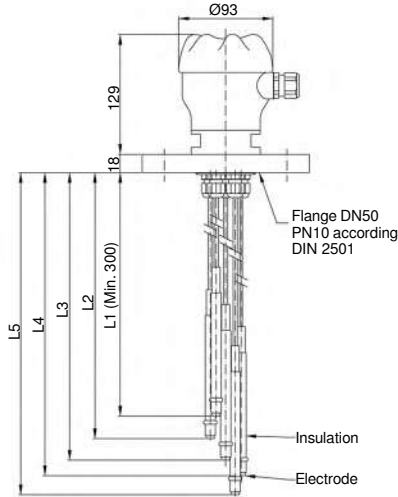
HS-X



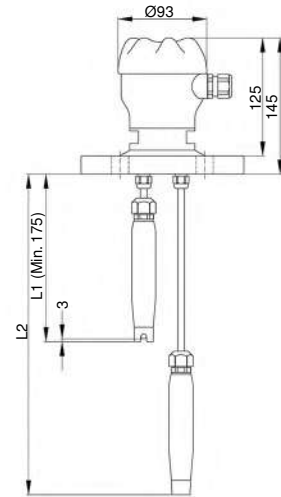
HS-F 5 electrodes, BSP 2"



HE-ZF2



HE-VF2



HS-ZF 2 electrodes, with flange

542

542

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Resistive level with flexible probes
HE - HS

15-04-2021

D-542.01-EN-AC

LEV

542-01 /2

HE version: References

Hanged electrodes

Level detection for electrically conductive liquids (with the use of a relay ES 2001).

HE...

Number of probes and fitting type

- X** 1 probe; no fitting
- A** 1 probe, BSP 1/2"; IP65
- Z** 2 probes, BSP 1 1/4"; IP65
- D** 3 probes, BSP 1 1/4"; IP65
- V** 4 probes, BSP 2"; IP65
- F** 5 probes, BSP 2"; IP65

Total length from sealing surface

- L1** mm
- L2** mm
- L3** mm
- L4** mm
- L5** mm

HE- L1

Accessories:

- G2Z3 = counter nut, PP, BSP 1/2"
- G2Z6 = counter nut, PP, BSP 1 1/4"
- G2Z8 = counter nut, PP, BSP 2"
- F2 = Flange DN20, BSP-F 1/2" for HE A version
- F6 = Flange DN50, BSP-F 1 1/4" for HE Z and HE D versions
- F7 = Flange DN65, BSP-F G2" for HE V and HE F versions
- F8 = Flange DN80, BSP-F 2" for HE V and HE F versions

HS version: References

Hanged electrodes

Level detection for electrically conductive and aggressive liquids (with the use of a relay ES 2001).

HS...

Number of probes and fitting type

- X** 1 probe; no fitting
- A** 1 probe, BSP 1"; IP65
- Z** 2 probe, BSP 2"; IP65
- D** 3 probes, BSP 2"; IP65
- V** 4 probes, BSP 2"; IP65
- F** 5 probes, BSP 2"; IP65
- AF2** 1 probe, flange DN25 PN10, PVC; IP65
- ZF6** 2 probes, flange DN50 PN10, PVC; IP65
- DF6** 3 probes, flange DN50 PN10, PVC; IP65
- VF7** 4 probes, flange DN65 PN10, PVC; IP65
- FF8** 5 probes, flange DN80 PN10, PVC; IP65

Total length from sealing surface

- L1** mm
- L2** mm
- L3** mm
- L4** mm
- L5** mm

HS- L1



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Resistive level with flexible probes
HE - HS

15-04-2021 D-542.01-EN-AC

LEV

542-01 /3

542

542

Level electrodes for wells EF / EFC

- Compact electrodes
- All stainless steel
- For conductive liquids
- Supplied with or without cable



APPLICATIONS

Due to their designs and small dimensions, these electrodes are suitable for the control of the presence of fluid in wells (pump protection) as well as for level control in large reservoirs, barrages, etc.

DESCRIPTION

A low current is sent into a so-called reference electrode. When the liquid is in contact with the reference and the level electrode (trigger point), the current passes through the conductive liquid. This short circuit is detected by a relay ES 2001 that activates a contact to trigger an alarm (remote signal).

EF 16 electrode is a single contact electrode.

EFC 16 electrode is a dual-contact electrode, the outer body is used as the reference. No needs to provide a special ground connection. Measuring current returns through the shield of the coaxial cable connected to the outer body.

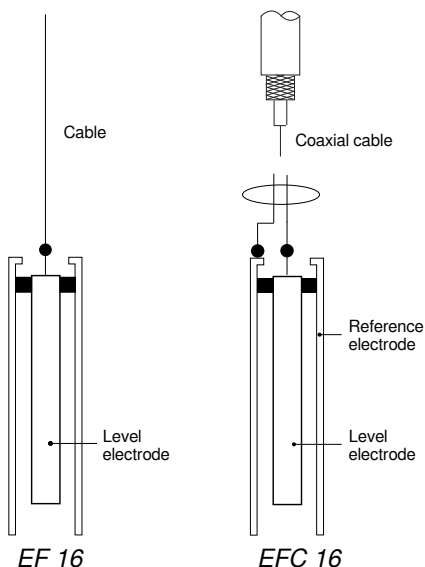
TECHNICAL FEATURES

| | |
|-------------------|---|
| Outer body | AISI 316 L |
| Electrode | AISI 316 L |
| Insulation | Delrin (Polyacetal) |
| Temperature limit | 100 °C |
| Fixture | Cable suspended |
| Dimensions | EF: Ø 16 x 130 mm (overall) EFC: Ø 16 x 157 mm (overall) |
| Mass | 70 g |



CODE NUMBERS AND REFERENCES

| Code | Reference | Description |
|---------|-----------|------------------------------------|
| 542 016 | EF 16 | Electrode Ø 16 |
| 542 018 | EFC 16 | Coaxial electrode Ø 16 |
| 542 112 | CNEF | Cable for EF 16 electrode |
| 542 118 | CVEFC | Coaxial cable for EFC 16 electrode |



ES 2001

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Level electrodes for wells EF / EFC

26-06-2020

D-542.02-EN-AC

NIV

542-02/1

Water detector in diesel tank DETECTO SR18



DETECTO SR18

- Water detection
- Small dimensions
- Cable, 5 m long
- To use with a relay ES 2001:
1 relay output (alarm)

APPLICATIONS

- Water detection at the bottom of diesel storage tanks

DESCRIPTION

The detection is based on the variation of electrical resistance caused by the presence of water between the two electrodes of the probe.
This variation is converted into a signal On/Off by the relay ES 2001 (see data-sheet 530-01).

The probe must be placed inside, at the bottom of the tank and connected to the ES 2001 relay.

TECHNICAL FEATURES

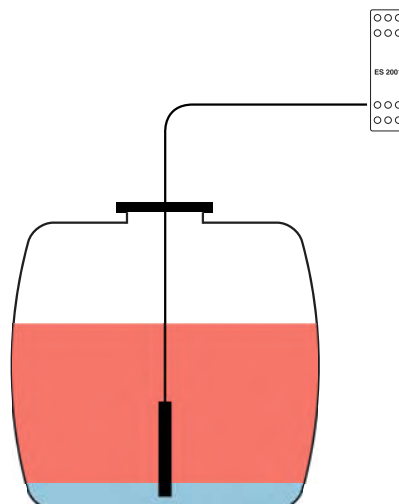
| | |
|------------|--|
| Electrodes | AISI 316 L |
| Body | PVC, polyamide cable gland O.D.: 20 mm; Height: 120 mm (including PG) |
| Cable | NEOPRENE, 3x1 mm ² (O.D. 8.8 mm) Length 5 m |

CODENUMBERS AND REFERENCES

| Code | Reference | Description |
|----------|--------------------|--|
| 542 300 | DETECTO SR18 | Probe for detection of settled water in diesel |
| 530 200 | ES 2001 / 230 V AC | Relay, power supply 230 V AC |
| 530 254C | ES 2001 / 24 V DC | Relay, power supply 24 V DC |
| 590 860 | Mount fitting | |



ES 2001



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Water detector in diesel tank
DETECTO SR18

14-10-2020

D-542.03-EN-AB

NIV

542-03/1

Resistive level detectors STS



- For aggressives and conductive chemicals
- PVC or PVDF
- Up to 5 electrodes
- Custom manufacturing
- Fixed alarming level

APPLICATIONS

Level control of electrically conductive and corrosive liquids:

- Metal finishing industry
- Control of presence or absence of liquid (leak detection, empty piping etc.)
- Pump automation (fill or drain) with ES 2001 relay

DESCRIPTION

The STS level probe with a relay ES 2001, detects a level of a conductive liquid.

The longest electrode is used as the reference. The electrical contact occurs when the reference electrode and another electrode are both in contact with the liquid. Then, the current in detection loop provokes through the relay ES2001, an amplified ON/OFF signal (see data-sheet 530-01).

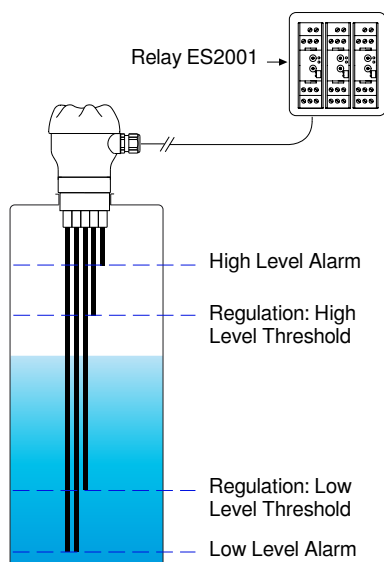
Acid resistant materials:

With Hastelloy G30 electrode ends and PVC or PVDF stems, the STS probes are useful for level control of most acids.

Other electrode ends such as Tantalum, other stem materials (PTFE or PPH), are available on request.

TECHNICAL FEATURES

| Type | STS/A | STS/Z | STS/D | STS/V | STS/F |
|-----------------------|------------------------------|-------|-------|-------|--------|
| Number of electrodes | 1 | 2 | 3 | 4 | 5 |
| BSP fitting | 3/4" | 2" | 2" | 2" | 2" 1/2 |
| Flange PN 10 | ND 25 | ND 65 | ND 65 | ND 65 | ND 80 |
| Min. length (L in mm) | 50 | 70 | 70 | 70 | 70 |
| Max. length (in mm) | 3000 | | | | |
| Temperature | See corrosion table | | | | |
| Max. Pressure | 4 bar at 20 °C | | | | |
| Head housing | In PBT, IP 65 | | | | |
| MATERIALS | | | | | |
| Electrode | Hastelloy G30 | | | | |
| Stem and fitting | PVC (max. 55 °C for water) | | | | |
| | PVDF (Max. 110 °C for water) | | | | |



Installation example

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Resistive level detectors
STS

10-03-2020

D-543.01-EN-AB

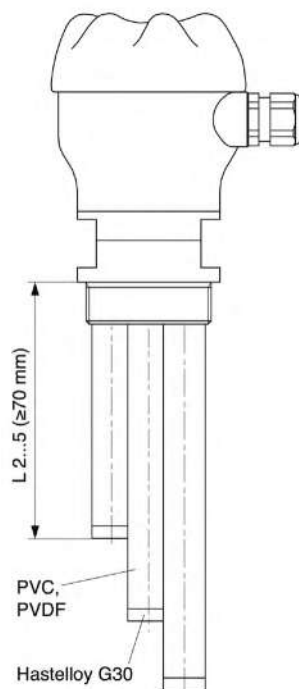
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543-01 /1

CODE NUMBERS AND REFERENCES

| Reference | Code for PVC | Code for PVDF |
|----------------------|--------------|---------------|
| STS / A / ... / G 30 | 543 010 | 543 110 |
| STS / Z / ... / G 30 | 543 020 | 543 120 |
| STS / D / ... / G 30 | 543 030 | 543 130 |
| STS / F / ... / G 30 | 543 040 | 543 140 |
| STS / V / ... / G 30 | 543 050 | 543 150 |

NOTE: Stems are supplied at the requested lengths (± 2 mm).
By construction (solvent welding on PVC, welding for PVDF) stems cannot be adjusted on site.
Procure to order the necessary quantity of relays ES 2001.



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Resistive level detectors
STS

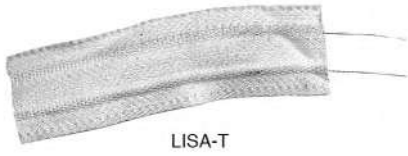
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543-01 /2

10-03-2020

D-543.01-EN-AB

Leakage detection: Liquid Intrusion Safety Alarm LISA



LISA-T



LISA-B



LISA-G



LISA-T-K2



LISA-T-K1



ES 5000

- Detection of water leaking (1 drop is sufficient)
- Alarm signal before flooding
- Self diagnostic of measuring loop integrity, LED display (Short circuit or ribbon sensor break off)
- Protection of equipment and exposed areas
- Suitable to any surface

CONCEPT

Detection of flood, leakage, presence of water or moisture in exposed area or special environment.
LISA system combines a detector (linear or point) with a relay dedicated to this application, the ES 5000.

APPLICATIONS

The LISA system is dedicated for leakage detection of water distribution (pipes, sprinklers) and alarming in case of water, condensates or humidity in areas where water is prejudicial for equipments (Computer rooms, machinery, power plants, medical equipments, HVAC, museum, stores, etc.).

DESCRIPTION

The ribbon detector consists of two metal wires connected at the end by a resistor and insulated by an absorbent fabric.
The special material used for the ribbon, contains ionic ingredients, which allow detection of demineralised water.
This flexible ribbon is placed in all positions and fits all shapes.
As soon as there is humidity somewhere on the ribbon, the relay detects the change of resistivity and switch on the alarm signal, even before a significant amount of water could be find out.
The relay ES 5000 includes a self diagnostic of the integrity of measuring loop (alarm in case of short circuit, or ribbon sensor break off) in order to warrant a positive safe detection system.

INSTALLATION

The ribbon is applied on any horizontal or vertical surface/ support for monitoring an area, or, the one point detector is used for a local detection.
The ribbons is fixed on the ground with a special adhesive, or wrapped round a pipe/ a valve.
An adequate grid of the area will allow to locate the leak.
Depending on the system and expected monitoring result, one or more detectors will be used with one or more relays.
After an alarm and repair of the leakage, the ribbon sensor is easily dried out without dismantling it.

Components of a system LISA:

| | |
|----------------------------|---|
| LISA-T : Ribbon sensor | LISA-T-K1: Connection kit "Start of detection loop" |
| LISA-B: One point detector | LISA-T-K2: Connection kit "End of detection loop" |
| LISA-G: Floor detector | ES 5000: Relay |

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Leakage detection: Liquid
Intrusion Safety Alarm
LISA

13-07-2018

D-544.03-EN-AA

NIV

544-03/1

TECHNICAL FEATURES

Relay ES 5000

| | |
|----------------------|--|
| Power supply | 230, 115, 48, 24 V AC – 50/60 Hz 24, 12 V DC |
| Consumption | < 2 VA |
| Ambient temperature | -15 ... +45 °C |
| Mass | 100 g |
| Mounting | Rail DIN 46277 |
| Dimensions | 22.5 x 75 x 99 mm |
| Protection | IP40 – Tropicalized on request (varnish) |
| Hysteresis | About 10 % |
| Adjustable timer | 0.5 ... 3 s (increase and decreasing signal) |
| Sensitivity: | Low range = 5 to 70 kOhm High range = 15 to 150 kOhm |
| Current loop output | Galvanic insulated < 6 V AC / < 2 mA |
| Relay outputs (2) | Max. 250 V AC, 3 A Max. 125 V DC, 1 A |
| EC Conformity | In accordance with low voltage guidelines (2006/95/EEC) and (89/336/CEE) |

Ribbon sensor LISA-T

| | |
|-----------|--|
| Width | 20 mm |
| Packaging | Roll of 50 m (or supply at required length; per meter) |

Floor detection: LISA-G

| | |
|-----------------------------|--|
| Mass | < 50 g |
| Dimensions (Excluding PG 9) | Length: 65 mm; Width: 50 mm; Height: 35 mm |

One point detection: LISA-B

| | |
|-----------------------------|--|
| Mass | About 50 g |
| Dimensions (Excluding PG 9) | Length: 65 mm; Width: 50 mm; Height: 45 mm |

Connection kits

LISA-T -K1 and LISA-T -K2

| | |
|-----------------------------|--|
| Mass | < 50 g |
| Dimensions (Excluding PG 9) | Length: 65 mm; Width: 50 mm; Height: 45 mm |

To assure the self diagnostic of the measuring loop (short circuit; ribbon break off) using the relay ES5000:

- Length of the ribbon: 50 m Max.
- Independently of ribbon length, an extension may be use to reach the relay: 50 m Max. (2-wire; 2 x 0.5 mm²)

CODE NUMBERS AND REFERENCES

| Code | Reference | Description |
|---------|--------------------|--|
| 544 300 | ES 5000 / 230 V AC | Relay ES 5000; IP 40; 230 V AC – 50/60 Hz |
| 544 310 | ES 5000 / 115 V AC | Relay ES 5000; IP 40; 115 V AC – 50/60 Hz |
| 544 320 | ES 5000 / 48 V AC | Relay ES 5000; IP 40; 48 V AC – 50/60 Hz |
| 544 330 | ES 5000 / 24 V AC | Relay ES 5000; IP 40; 24 V AC – 50/60 Hz |
| 544 352 | ES 5000 / 12 V DC | Relay ES 5000; IP 40; 12 V DC |
| 544 354 | ES 5000 / 24 V DC | Relay ES 5000; IP 40; 24 V DC |
| 544 135 | LIBA-B | One point detector |
| 544 136 | LISA-T | Ribbon sensor / per metre |
| 544 137 | PL400 | Special adhesive (O/A - on request) for ribbon |
| 544 140 | LISA-T-50 | Ribbon sensor / Roll of 50 m |
| 544 141 | LISA-G | Floor detector |
| 544 142 | LISA-T-K1 | Connexion kit "Start detection loop" |
| 544 143 | LISA-T-K2 | Connexion kit "End of detection loop" |

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Leakage detection: Liquid
 Intrusion Safety Alarm
LISA

13-07-2018

D-544.03-EN-AA

NIV

544-03/2

Relay for resistive level detection

ES5000



- For all electrical conductive liquids
- Suitable for level or leakage detection
- Adjustable sensitivity and timer,
Selection of action mode
- Self diagnostic with instant alarm (LED) for:
Short circuit on the loop detection,
Loop detection cable break off
- Functions:
 - On /Off level controller between 2 rods
 - Level regulation between 3 rods
 - Leakage, inundation and humidity detection

PRINCIPLE

The relay ES 5000 works with the electrical conductivity property of the liquid, detecting the opening or closing circuit between two electrodes.

APPLICATIONS

Relay for level control

Minimal or maximal levels – Dosing, flow detection and alarm, pump control, solenoid valve control, fluid detection in a pipe.

Relay for leakage, inundation and humidity detection

In use with a LISA sensor, the relay ES5000 is dedicated for leakage detection on water distribution (pipes, sprinklers) and alarming in case of water, condensates or humidity in areas where water is prejudicial for equipments. The relay ES5000 includes a self diagnostic of the detection loop (short circuit on the loop detection and ribbon sensor break off) in order to warranty a positive safe detection system.

TECHNICAL FEATURES

| | |
|----------------------|---|
| Power supply input: | 230, 115, 48, 24 V AC - 50/60 Hz 12, 24 V DC |
| Consumption: | < 2 VA |
| Ambient temperature: | -15 to +45°C |
| Mass: | 100 g |
| Mounting: | DIN rail (DIN 46277) |
| Dimensions: | 22.5 x 75 x 99 mm |
| Protection: | IP40 – Tropicalized on request (<i>varnish</i>) |
| Hysteresis: | About 10% of sensitivity |
| Adjustable timer: | 0.5 ... 3 s (<i>increase and decreasing signal</i>) |
| Sensitivity: | Low range = 5 to 70 kOhm High range = 15 to 150 kOhm |
| Current loop output: | Galvanic insulated, < 6 V ac / < 2 mA |
| Relay outputs (2): | Max 250 V, 3 A [AC] Max 125 V, 1 A [DC] |

CE Labels: In accordance with low voltage guidelines (2006/95/EEC) and (89/336/CEE)

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Relay for resistive
level detection
ES5000

10-03-2009

544 I1 06 B

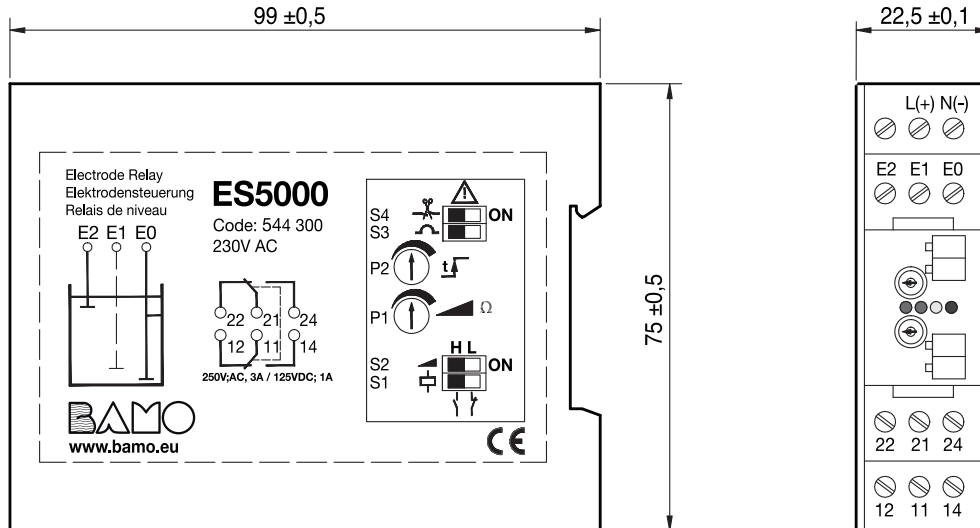
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544-06/1

CODE NUMBERS AND REFERENCES

| Code | Reference | Designation |
|---------|-----------------|--|
| 544 300 | ES5000 /230 | Relay, input power supply 230 V / 50-60 Hz |
| 544 310 | ES5000 /115 | Relay, input power supply 115 V / 50-60 Hz |
| 544 320 | ES5000 /48 | Relay, input power supply 48 V / 50-60 Hz |
| 544 330 | ES5000 /24 | Relay, input power supply 24 V / 50-60 Hz |
| 544 352 | ES5000 /12 V dc | Relay, input power supply 12 V DC |
| 544 354 | ES5000 /24 V dc | Relay, input power supply 24 V DC |

DIMENSIONS



OPERATING RANGE

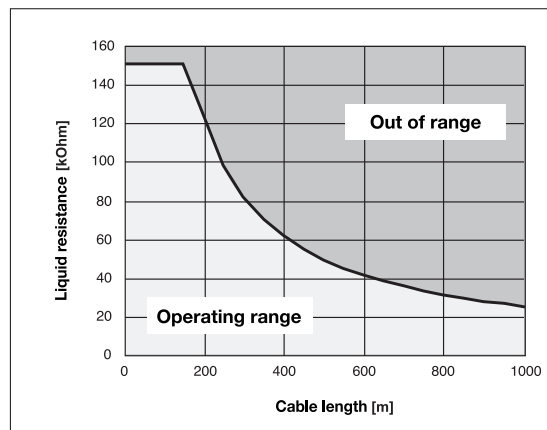
The capacitive resistance of a long cable reduces the sensitivity of the relay ES5000. A standard PVC cable, shielded, 3 conductors, has a capacitance of approx. 100 pF/m. This results in an operating range which is dependent upon cable length and the liquid resistance in accordance with the following drawing.

Caution:

- Choose a suitable cable with 0.5 mm² wires
- Over 25 m distances, preferably use a shielded cable
- All the detection loop, must be faraway from high power lines

! To assure the self diagnostic of the detection loop (*short circuit on the loop detection and ribbon sensor break off*) using the relay ES5000, the standard cable (2 wires 0.5 mm²) connecting the sensor, is **50 m as a maximum**.

[Only for V AC supply]



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Relay for resistive
level detection
ES5000

10-03-2009

544 I1 06 B

NIV

544-06/2

Leak detector and localizer BAMOLEAK



- Leak localization
- Length up to 3,000 metres (12 areas)
- Automatic recognition of loop parameters
- Event recording (date / time)
- Outputs: 4-20 mA, MODBUS RTU, relays

APPLICATIONS

- Building automation
- Datacenters
- Semiconductor Industry
- Clean rooms
- Archives storage / Libraries / Museums
- Heating and air conditioning systems
- Switching centers, computers room

DESCRIPTION

BAMOLEAK allows to secure work areas where leaks are prejudicial for equipments, by detecting and precisely locating leaks of conductive liquids. The sensor (cable) is laid along the monitored area or pipeline, and, connected to the evaluation unit. Leakage is detected by the converter, which determines, records and reports information via the analog output, relays and the RS485 Modbus interface.

Two complementary detectors can be connected to the converter such as MAXITOP LWC (Detection in double-walled tank, data-sheet 556-03) or LWC-B (Local floor detector, data-sheet 556-05).

Note: BAMOLEAK can locate one leak at a time.



TECHNICAL FEATURES

| | |
|-----------------|--|
| Power supply | Or 100 ... 240 V AC - 50/60Hz Or 10 ... 30 V DC; 12 ... 24 V AC |
| Consumption | 2 ... 5W |
| Contact outputs | 5 contacts, adjustable, potential-free To set as, or N.O. or N.C. contact |

Note:

All contacts are open when de-energized

| | |
|-----------------|------------------------------|
| Switching power | 250 V AC, 2 A / 30 V DC, 1 A |
|-----------------|------------------------------|

Caution:

Contacts are not protected against overload, provide an external protective device.

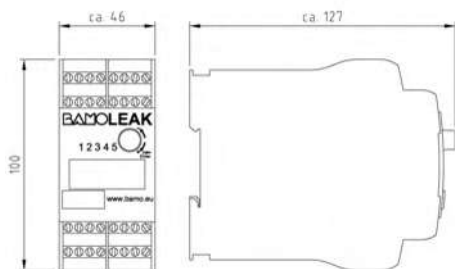
| | |
|----------------------|---|
| Maximum cable length | 3,000 m |
| Housing | 46 x 100 x 127 mm Rail mounting (DIN EN 50 022; 35x7.5 mm) |
| Protection | IP40 |

Note:

The protection against accidental contact according to DIN EN 61010-1 is only guaranteed when the unit is installed in a closed cabinet with a protection IP5x or greater.

| | |
|-----------------------------------|-----------------|
| Ambient temperature limits | -10 ... +45 °C |
| Sensor (cable) temperature limits | -50 ... +150 °C |
| Connectors temperature limits | -20 ... +60 °C |

DIMENSIONS



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Leak detector and localizer BAMOLEAK

14-10-2020

D-544.50-EN-AE

LEV

544-50/1

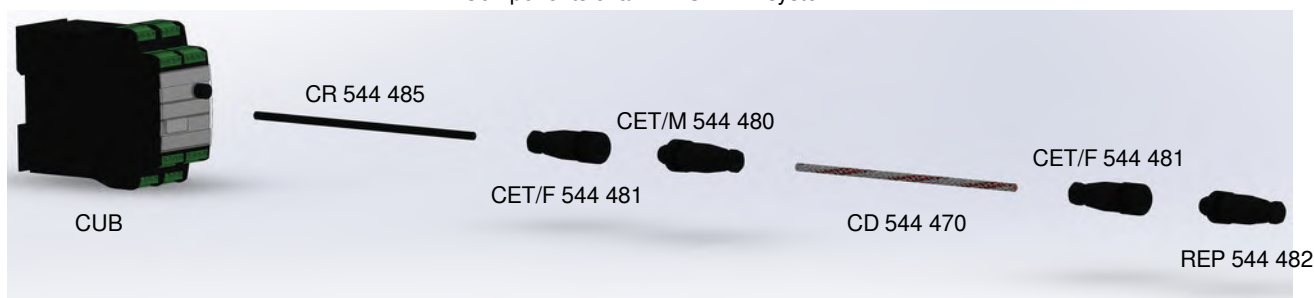
TECHNICAL FEATURES (CONTINUED)

| | |
|-------------------------------------|---|
| Wall-mount cabinet (Option) | 175 x 200 x 155 mm |
| Screw terminals | Screw connectors, cable diam. Max. 1.5 mm ² |
| Detection areas | 12 areas; Setting of name/ TAG to each one |
| Accuracy of leak localization | < 1 %; ±1 m |
| Measuring loop | 1 input for the 4 poles sensor (cable) 2 additional inputs for 2 one-point detectors (e.g. MAXITOP LWC or LWC B) |
| Power supply to the detection loops | Localization with sensor (cable): Max. 20 V AC/DC; Max. 5 mA One-point detectors: Max. 30 mA (each) |
| Analogue output 4-20 mA | Active signal output (with its own loop power) 4 ... 5 mA: No alarm 5 ... 20 mA: Localization of the detected leak point = [cable length x (current value - 5mA)] / 15mA 21 mA: Fault, error message |
| Adjustable timer | When detection occurs: 0.5 to ... 5 minutes delay before signaling |
| Real time clock | integrated clock with battery, automatic summer time switch can be activated |
| Records | Automatic record of all events, max. 48 inputs, events can be acknowledged and deleted, individually |
| Language | To choose between English, German, French, Spanish, Portuguese, Polish |
| Key protection of settings | 4 digits; Can be deactivated |
| Signaling interface | Display: 2 line-text LCD Status of contact outputs 5 LED (multicolour) |
| Digital communication | RS 485 / MODBUS |
| Sélecteur | Rotary switch on front panel |

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

CODE NUMBERS AND REFERENCES

Components of a BAMOLEAK system



| Code | Reference | Description |
|---------|------------------|---|
| 544 450 | BAMOLEAK CUB/220 | BAMOLEAK converter, DIN rail mounting, 100 ... 240 V AC |
| 544 460 | BAMOLEAK CUB/24 | BAMOLEAK converter, DIN rail mounting, 10 ... 30 V DC; 12 ... 24 V AC |
| 544 489 | WME2 | Wall-mounting cabinet with DIN rail, cable glands. |

Accessories:

| Code | Reference | Description |
|---------|----------------|--|
| 544 470 | BAMOLEAK CD | Cable sensor, per metre; Length up on request |
| 544 480 | BAMOLEAK CET/M | M12 male connector for sensor (cable) |
| 544 481 | BAMOLEAK CET/F | Connector M12 female for sensor or ending resistor |
| 544 482 | BAMOLEAK REP | Ending resistor |
| 544 485 | BAMOLEAK CR | Connection cable, extension, per metre (Length: up on request) |
| 544 486 | BAMOLEAK M | Factory mounting: Connector on cable (on request) |
| 544 202 | WM25 | Floor leak detector |
| 556 500 | MAXITOP LWC B | Floor leak detector |

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Leak detector and localizer
BAMOLEAK

14-10-2020

D-544.50-EN-AE

LEV

544-50/2

Magnetic Level Controllers MNR 7



- Versions in: PVC, PP or PVDF
- 1 to 4 level changeover contacts
- Fitting 2" for standard models
- No effects of foam, neither of vapours
- Measuring height: up to 2500 mm

APPLICATIONS

- Level controllers for liquids, even aggressive ones, not viscous, not clogging and free of suspended solid particles.

DESCRIPTION

The Reed contacts (up to 4) inside the stem, are actuated directly by the magnet float. Wet parts (stem and float) to choose between: or PVC & PP, or PP, or PVDF

Quick commissioning:

- Distance of each contact from sealing surface is fixed (requested on P.O.): No adjustment requested on site to guarantee the exact positioning of contacts.
- The PP float passes through the BSP 2" fitting without dismantling the MNR.
- At the stem bottom a nut limits the float movement: By unscrewing it, the float may be removed.

Note: It is recommended to provide the optional flange ND100 to allow the PVDF float to pass through the fitting.

Recommendations:

The use of a relay ES2001 (data-sheet 250-02) will protect the Reed contact and increase its switching power and lifetime.

TECHNICAL FEATURES

| | |
|----------------|--|
| Height of stem | Min. 250 mm / Max. 2,500 mm |
| Liquid density | Min = 0.75 |
| Temperature | PVC: 0 ... +60 °C PP: 0 ... +80 °C PVDF: 0 ... +110 °C |
| Pressure limit | Max. 1 bar at 20 °C |

Materials:

| | |
|------------------|-----------------------------------|
| Stem and fitting | PVC, PPH or PVDF |
| Float | PPH or PVDF |
| Head housing | PBT, glass fiber reinforced, IP65 |

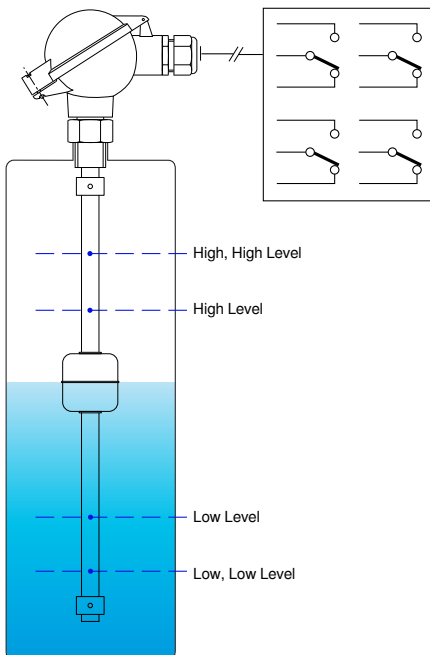
Contacts:

| | |
|-----------------|---|
| Number | 1 to 4 bistable change-over contacts |
| Switching power | 60 VA / 220 V / 0.5 A |
| Connections | Screw terminals Cable gland M20 x1.5 (for cable Ø 5 ... 9) |
| Shortest gap | 100 mm between 2 contacts |
| Accuracy | ± 2 mm |
| Hysteresis | 8 mm |

Fittings:

| | |
|----------|-------------------------|
| Standard | BSP 2" |
| Option | Flange ND 100 or BSP 1" |

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



Principe de fonctionnement

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Magnetic Level Controllers
MNR 7

26-02-2020

D-550.01-EN-AA

NIV

550-01 /1

CODE NUMBERS AND REFERENCES

Standard length: 500 mm (Extra cost over 500 mm)

| Code | Reference | Nr of contacts | Stem | Float |
|---------|----------------|----------------|------|-------|
| 550 121 | MNR7-PVC/1-2" | 1 | PVC | PPH |
| 550 122 | MNR7-PVC/2-2" | 2 | PVC | PPH |
| 550 123 | MNR7-PVC/3-2" | 3 | PVC | PPH |
| 550 124 | MNR7-PVC/4-2" | 4 | PVC | PPH |
| 550 221 | MNR7-PPH/1-2" | 1 | | PPH |
| 550 222 | MNR7-PPH/2-2" | 2 | | PPH |
| 550 223 | MNR7-PPH/3-2" | 3 | | PPH |
| 550 224 | MNR7-PPH/4-2" | 4 | | PPH |
| 550 321 | MNR7-PVDF/1-2" | 1 | | PVDF |
| 550 322 | MNR7-PVDF/2-2" | 2 | | PVDF |
| 550 323 | MNR7-PVDF/3-2" | 3 | | PVDF |
| 550 324 | MNR7-PVDF/4-2" | 4 | | PVDF |

Extra-cost over 500 mm, per each 100 mm:

| | |
|---------|----------------------|
| 550 110 | PVC stem, per 100 mm |
| 550 210 | PPH stem, per 100 mm |
| 550 310 | PVDF stem per 100 mm |

Spare parts for MNR 7

| | |
|---------|--|
| 550 050 | Bistable change-over contact, 60 VA (wires: 500 mm long) |
| 550 211 | PPH Float for MNR 7 PVC & PPh (Ø 52 mm) |
| 550 311 | PVDF Float for MNR 7 PVDF (Ø 78 mm) |

Option: ISO Flange size ND 100 for MNR7

| | |
|---------|------------------------------------|
| 550 120 | PVC Flange ND100, threaded BSP 1" |
| 550 220 | PPH Flange ND100, threaded BSP 1" |
| 550 320 | PVDF Flange ND100, threaded BSP 1" |

INFORMATION REQUESTED

Operating conditions:

Liquid

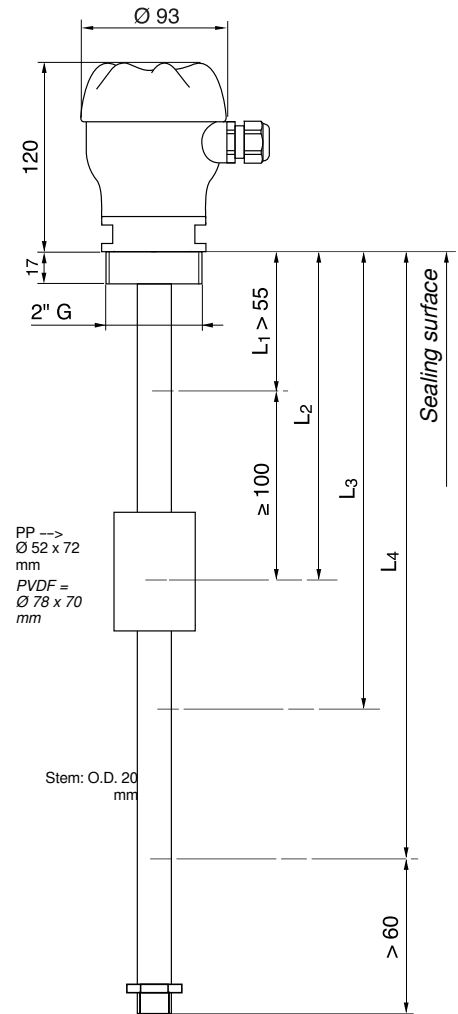
Density

Pressure max. Max..... bar

Temperature max. Max °C

Contact distance from sealing surface:

| | | | |
|--------------|--------------|--------------|--------------|
| L1 = mm | L2 = mm | L3 = mm | L4 = mm |
|--------------|--------------|--------------|--------------|



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Magnetic Level Controllers MNR 7

26-02-2020

D-550.01-EN-AA

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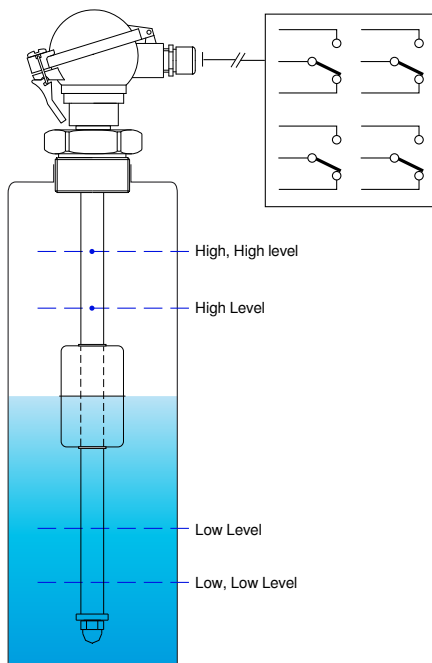
550-01 /2

Magnetic level controllers in stainless steel

MNR 7 - I



Avec l'option bride DN 100



Example: In operation

- AISI 316 L version
- 1 to 4 changeover bistable contacts
- No effects of foam, neither of vapours
- Compatible with RTM:
Reed-Chain with analogue output signal
(data-sheet 586-01)

APPLICATIONS

- Level detection on liquids compatible with stainless steel
MNR 7-I is suitable for liquids, not viscous, not clogging and free of suspended solid particles.

DESCRIPTION

The Reed contacts inside the stem are actuated when the magnetic float passes in front of; Detection of up to 4 thresholds.
The contacts are changeover and bistable: status reverses only when the float passes again in front of.

Terminals are in an aluminum housing, IP 65 (cable gland M20 x1.5); Wiring diagram is shown on the board inside. A nut limits the float movement at the stem end: by unscrewing the nut, the float is easily removed.

Tip: The 2" connection model with Ø 52 mm float and the DN 100 flange option, allow direct installation without removing the float.

TECHNICAL FEATURES

| | |
|-----------------------|---|
| Stem height | Min. 250 mm / Max. 3,000 mm |
| Liquid density | Min. 0.75: Float O.D. 91 mm; Min. 0.85: Float O.D. 52 mm |
| Pressure limit | Max. 25 bar at 20 °C |
| Ambient temperature | -20 ... +70 °C |
| Operating temperature | -10 ... +100 °C |
| Reed contacts | Changeover and bistable |
| Switching power | 60 VA / 220 V / 0.5 A |
| Shortest gap | 100 mm between 2 contacts |
| Accuracy | ±2 mm |
| Hysteresis | 8 mm |
| Floats | Ø 52, height 88 mm; Density: Min. 0.85 Ø 91, height 110 mm; Density: Min. 0.75) |
| Upper dead zone | ≥ 50 mm with float Ø 52 ≥ 75 mm with float Ø 91 |
| Lower dead zone | ≥ 85 mm with float Ø 52 ≥ 80 mm with float Ø 91 |
| Connections | Aluminum head housing, painted, IP 65 Cable gland M20 x1.5 (for cables Ø 5 ... 9 mm) |
| Fittings | BSP 1/2" BSP 2" Option: Flange ND 100 |

Materials

| | |
|----------|--------------------------|
| Stem | AISI 316 L (DIN 1.4404) |
| Float | AISI 316 Ti (DIN 1.4571) |
| Fittings | AISI 316 Ti (DIN 1.4571) |
| Flange | AISI 316 L (DIN 1.4404) |

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

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Magnetic level controllers in
stainless steel
MNR 7 - I

27-02-2020

D-550.02-EN-AA

NIV

550-02/1

CODE NUMBERS AND REFERENCES

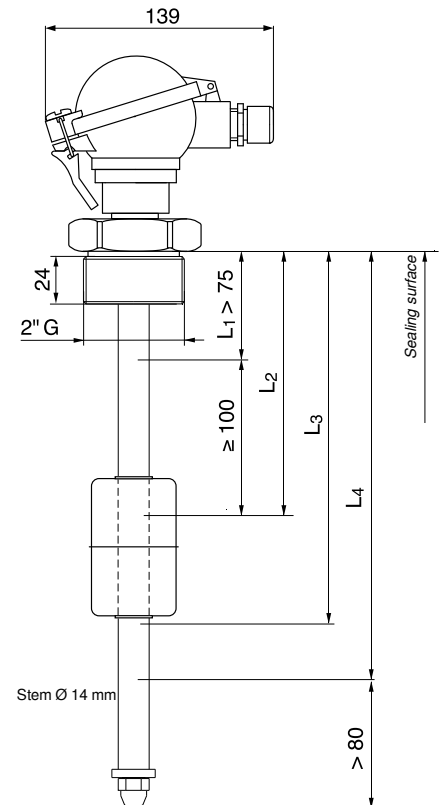
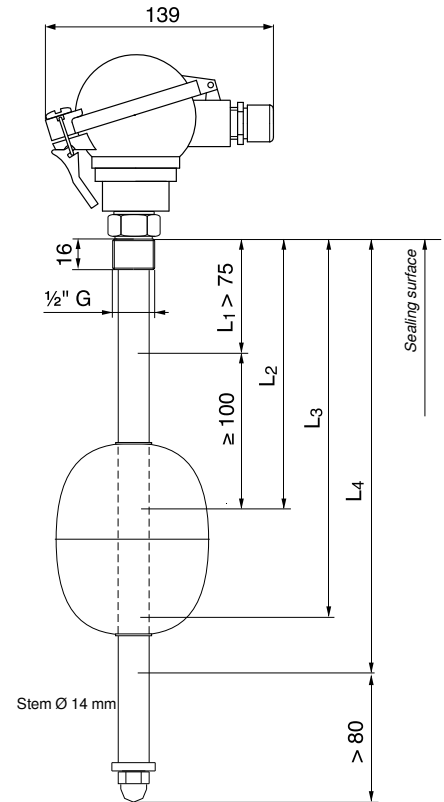
| Code | Description |
|---|---|
| 550 401 | MNR 7 - I; AISI 316; length 500 mm; fitting BSP 1/2" - 1 contact |
| 550 402 | MNR 7 - I; AISI 316; length 500 mm; fitting BSP 1/2" - 2 contacts |
| 550 403 | MNR 7 - I; AISI 316; length 500 mm; fitting BSP 1/2" - 3 contacts |
| 550 404 | MNR 7 - I; AISI 316; length 500 mm; fitting BSP 1/2" - 4 contacts |
| 550 410 | Extra cost for each 100 mm above 500 mm |
| 550 421 | MNR 7 - I; AISI 316; length 500 mm; fitting BSP 2" - 1 contact |
| 550 422 | MNR 7 - I; AISI 316; length 500 mm; fitting BSP 2" - 2 contacts |
| 550 423 | MNR 7 - I; AISI 316; length 500 mm; fitting BSP 2" - 3 contacts |
| 550 424 | MNR 7 - I; AISI 316; length 500 mm; fitting BSP 2" - 4 contacts |
| 550 430 | Extra cost for each 100 mm above 500 mm |
| Spare parts for MNR 7 - I | |
| 550 050 | Bistable changeover contact 60 VA (cable output 500 mm) |
| 550 411 | Float for MNR 7 - I, AISI 316 Ti, Ø 91 mm |
| 550 ____ | Float for MNR 7 - I, AISI 316 Ti, Ø 52 mm) |
| Option: DN 100 Flange for MNR 7 - I with fitting BSP 1/2" | |
| 550 419 | ISO Flange ND 100 type; threaded bore BSP 1/2" |

ORDERING INFORMATION

Operating conditions:

Liquid
 Density
 Pressure Max. bar
 Operating temperature °C

| Trigger point distances | | | |
|-------------------------|---------------|---------------|---------------|
| L1 = mm | L2 = mm | L3 = mm | L4 = mm |



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Magnetic level controllers in
 stainless steel
MNR 7 - I

27-02-2020

D-550.02-EN-AA

NIV

550-02/2

Magnetic float level controller

MNR 7 Ex



- Construction: stainless steel 1.4571
- Up to 4 bi-stable change over contacts
- ATEX II 1/2 G - EEx ib IIC T4

APPLICATIONS

Automation ON/OFF of pumps and solenoid valves, low and high alarm indication, automatic tank filling up or draining, etc.

MNR7 level controllers are suitable to non viscous, non sticky liquids without magnetic and solids particles. The liquids may not crystallize or polymerized.

PRINCIPLE

Switches are mounted in the guide tube; they are actuated by the magnet built in the float, to allow 1 to 4 level detections within the application.

DESCRIPTION

The housing is IP65 and the cable pass through a cable gland PG11, acc. to Ex specifications. Internal wiring is done on a screw terminal.

On the lower end of guide tube, a blocking ring allows to take off the float before to fit the guide tube through a small diameter hole.

ORDERING

Please, verify the material compatibility with your chemical fluid and the limits of pressure and temperature with your process maxima, as well the correspondence of ATEX certificate with your requirements.

- Our technicians may help you in MNR7 definition. Always mention the fluid in contact, concentration, process temperature and pressure.

- Note the exact distance of contact(s) measured as of the sealing surface. Consider the minimum distance between two contacts (100 mm) and dead zone we indicate on the drawings.

- The power supply of each contact of the MNR 7 Ex should be from a Zener barrier or certified Intrinsically Safe relay. Our RDN 11 relay is convenient to that purpose, see documentation 251.

TECHNICAL FEATURES

| | |
|--------------------------------------|--|
| Wetted parts material: | Stainless steel DIN 1.4571 (AISI 316 L) - PTFE |
| Housing: | Aluminum, IP 65 acc. EN 60 529 |
| Process connection: | BSP 1" as a standard Flange DN100 PN10 stainless steel 1.4571 |
| Length: | 200...3000 mm |
| Minimum specific weight: | 750 g / L |
| Fluid temperature: | -20...+100°C |
| Room temperature: | -20...+60°C |
| Contact: | 1 to 4 |
| Minimum distance between 2 contacts: | 50 mm |
| Contact type: | bi-stable change over contacts, 60 VA |

The use of a magnetic float level controller MNR 7 Ex is only for connection to intrinsically safe control circuits in conformity with EEx ia II C or EEx ib II C specification in zone 0 category 1.

CE Mark: in accordance with low-voltage directive (73/23/ECC), EMC directive (89/336/ECC); EN 50 082-2:1995 and EN 55 011 (class A):1991.

BAMO MESURES

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Magnetic float level controller
MNR 7 Ex

27-02-2007

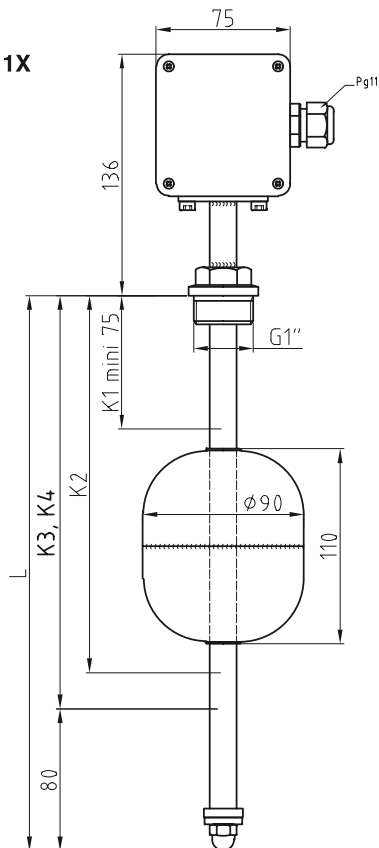
550 I1 03 A

NIV

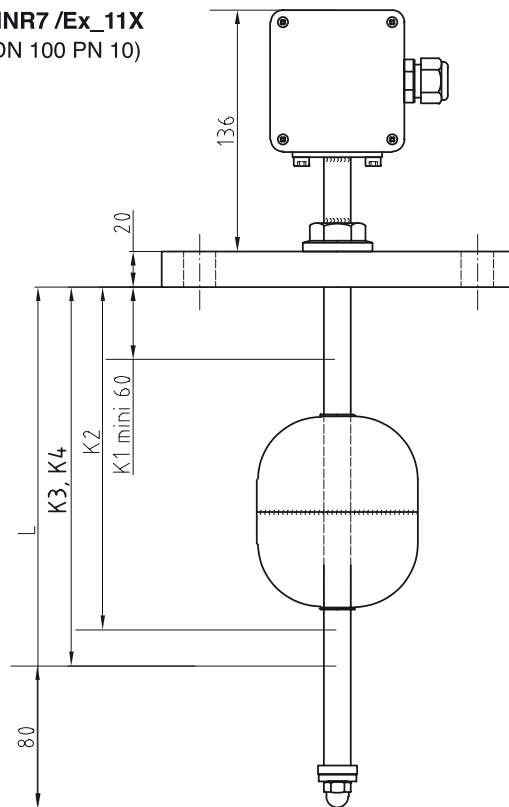
550-03/1

550

MNR7 /Ex_11X
(1" G)



MNR7 /Ex_11X
(DN 100 PN 10)



CODE NUMBERS AND REFERENCES

| Code | Reference | Designation |
|---------|--------------|---|
| 550 501 | MNR7 /Ex 1-1 | Level controller Ex / 1 contact / 1" G |
| 550 502 | MNR7 /Ex 2-1 | Level controller Ex / 2 contacts / 1" G |
| 550 503 | MNR7 /Ex 3-1 | Level controller Ex / 3 contacts / 1" G |
| 550 504 | MNR7 /Ex 4-1 | Level controller Ex / 4 contacts / 1" G |
| 550 511 | MNR7 /Ex 1-2 | Level controller Ex / 1 contact / flange DN 100 PN 10 |
| 550 512 | MNR7 /Ex 2-2 | Level controller Ex / 2 contacts / flange DN 100 PN 10 |
| 550 513 | MNR7 /Ex 3-2 | Level controller Ex / 3 contacts / flange DN 100 PN 10 |
| 550 514 | MNR7 /Ex 4-2 | Level controller Ex / 4 contacts / flange DN 100 PN 10 |
| 550 010 | +value | Extra-cost for each 100 mm over the standard length of 500 mm |

NOTES

The maximum room temperature is 60°C.

For use as a category 1 device, only if room temperature is between -20 and +60°C and the room pressure is between 0.8 and 1.1 bar.

When the zone is not under category 1 requirements, the maximum fluid temperature acceptable for the level controller MNR7 Ex is 100°C



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Magnetic float level controller
MNR 7 Ex

27-02-2007

550 I1 03 A

NIV

550-03/2

Magnetic level controllers

MNR 6



- Versions: PVC, PPH, PVDF or AISI 316
- 1 or 2 changeover contacts
- Reduced dimensions
- No effects of foam and vapours
- Measuring height: Up to 1500 mm

APPLICATIONS

Pumps and solenoid valves automation, low and high alarm signals, overflow detection, etc.

The MNR 6 series is recommended for non-viscous, non-sticky liquids and without magnetic particles or suspended solids.

DESCRIPTION

Reed contacts are adjusted at factory according requested trigger points on purchase order; They are actuated by the magnetic float. Wet parts are in PVC, PPH, PVDF or stainless steel (see further on detailed versions).

Quick commissioning:

Trigger point distances are determined prior to manufacture in relation to the sealing surface, in order to ensure the correct position of the contacts. The float can be removed from the bottom of the MNR6 controller (end stop ring removed). it is useful to order the option 2" coupler or a flange NB 50 to allow the float introduction from the tank top when possible.

Recommendations:

The use of a relay ES2001 (data-sheet 250-02) is recommended to protect the Reed contact by a low intensity current in the loop and to procure a great longevity to the device.

TECHNICAL FEATURES

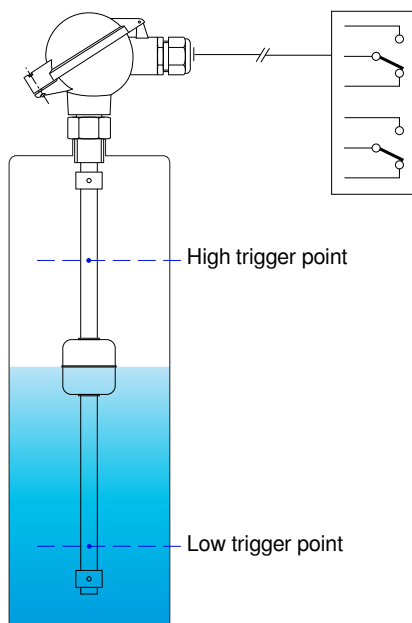
| | |
|-------------------------|--|
| Trigger point distances | From sealing surface: Min. 250 mm, Max. 1500 mm <i>See the table "CODES AND REFERENCES"</i> |
| Temperature limits | PVC-U: 5 ... +50 °C; PPH: -5 ... +80 °C PVDF: -10 ... +110 °C; AISI 316 L: -20 ... +110 °C |
| Pressure limits | Max. 3 bar at 20 °C for plastic versions Max. 20 bar at 20 °C for stainless steel version |

Materials

| | |
|------------------|--|
| Stem and fitting | PVC, PP, PVDF or AISI 316 L |
| Float | PP, PVDF or AISI 316 L |
| Head housing | PBT for plastic versions; IP 65 (or DIN Plug IP 65) Aluminum alloy for AISI 316L version; IP 54 (or DIN plug IP 65) |

Output signals:

| | |
|--------------------------|--|
| Number of contacts | 1 or 2 changeover contacts <i>One stop ring is added if a bistable contact is requested</i> |
| Switching power | 60 VA / 220 V / 1 A |
| Terminals | Terminal board head housing or DIN Plug or cable output (3 m) |
| Gap between two contacts | Min. 100 mm |
| Accuracy | ± 2 mm |
| Hysteresis | 8 mm |



In operation

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Magnetic level controllers

MNR 6

05-05-2021

D-551.01-EN-AE

NIV

551-01 /1

CODE NUMBERS AND REFERENCES

Model

Stem and stop rings material

- P** PVC; Max. height: 1000 mm
- H** PPH; Max. height: 1000 mm
- V** PVDF; Max. height: 1000 mm
- I** AISI 316 L; Max. height: 1500 mm

Floats

- H** PPH; Height 36 mm; Ø 42; Mass: 20 g; S.G. Min. 0.65
- V** PVDF; Height: 49 mm; Ø 41; Mass: 40 g; S.G. Min. 0.90
- I** AISI; Height: 43 mm; Ø 43; Mass: 24 g; S.G. Min. 0.70

Number of contacts

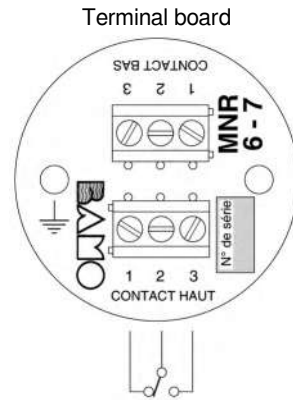
- 1** 1 contact
- 2** 2 contacts

Fitting

- 00** None
- 1** BSP 1/2"
- 2** BSP 2"
- 51** Flange NB 50

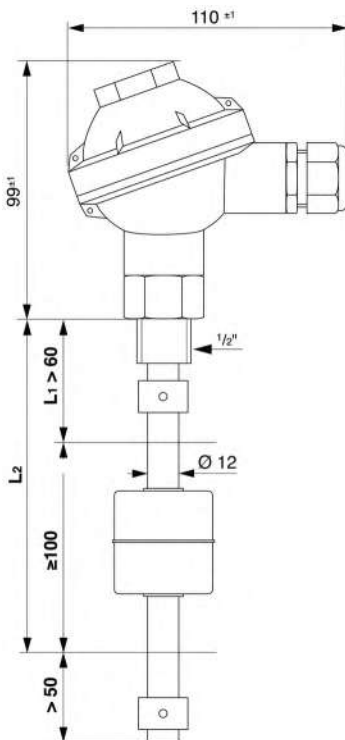
Connection

- FIL** Cable output (3 m long)
- DIN** DIN connector (only 1 contact)
- PP** PP head
- B** Aluminum alloy head

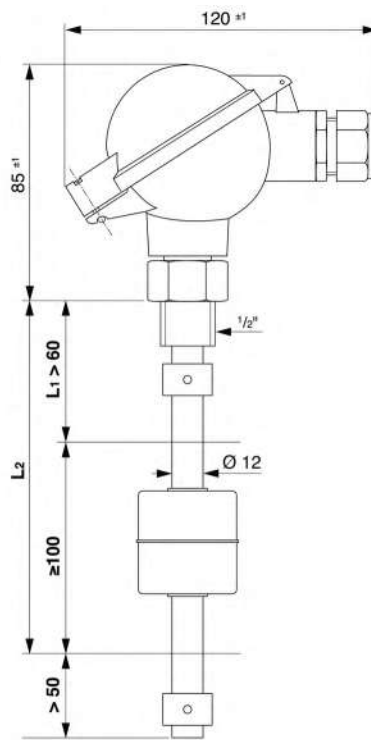


MNR6 P H 2 1 PP

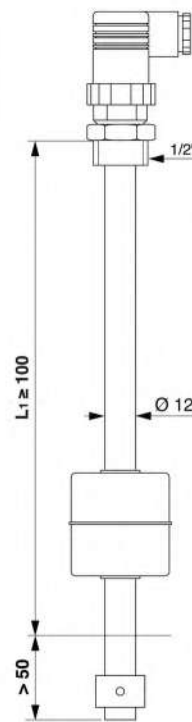
DIMENSIONS



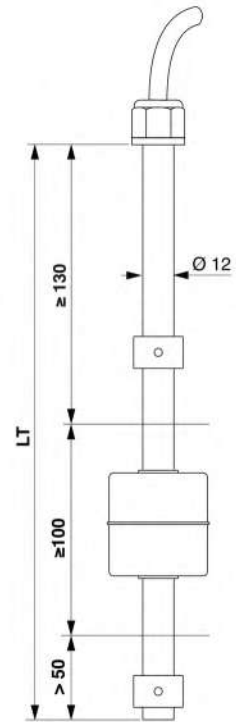
PP head



Aluminum head



DIN connector



Cable output

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Magnetic level controllers
MNR 6

05-05-2021

D-551.01-EN-AE

NIV

551-01/2

MEASURING TRANSDUCER MAXIMAT SHR CS



- Measuring transducer for overflow inhibitors and leakage detection systems
- 2-wire measuring circuit
- Relay output with potential-free double changeover contact

APPLICATION

For connecting an overflow sensor per German Water Resources Act (WHG):






- MAXIMAT C...
 - MAXIMAT VK...
- Leakage sensor (WHG):
- MAXIMAT LW C..., LW...
- Safety probe:
- CAPSYTRON SFL...
- Or limit switch:
- MAXITOP...

DESCRIPTION

The MAXIMAT SHR CS measuring transducer is used as power supply, current band monitor and alarm relay.

It serves in combination with the overflow sensors and leakage sensors included in the MAXIMAT VK..., MAXIMAT LW... and MAXIMAT C... series, as well as MAXITOP... limit switches, as part of overflow inhibitors and leakage detection systems.

TECHNICAL DATA

| | |
|---------------------|--|
| Power supply | 230V AC $\pm 10\%$; 50...60Hz; optional 24V DC $\pm 10\%$ |
| Note | The device may only be connected to supply power via an electrical disconnecting device which is located in close proximity. |
| Power consumption | approx. 3VA / approx. 3W |
| Ambient temperature | -20...+60 °C |
| Housing | IP40, 22,5x75x110mm, for top-hat rail 35x7,5mm, DIN EN 50 022 |
| Caution | Contact protection per DIN EN 61010-1 is only assured when installed to a closed switch cabinet or housing with at least IP54 protection! |
| Terminals | Screw terminal for wire gauge of up to 2.5mm ² |
| Relay output | potential-free double changeover contact max. 250V AC; max. 115V DC, max. 3A AC; max. 0.5A DC, min. load 10mA at 5V DC |
| Caution | Contacts are not protected against overload, use external protective device! |
| Time delay | 0.3...3s adjustable |
| Measuring circuit | max. 300m, min. wire cross-section 0.5mm ² |
| Signaling | <p>  LED (green) Operation  LED (green) Relay operated  LED (red) Overflow alarm  LED (red) Measuring circuit interrupted  LED (red) Short circuit </p> |

CE mark: The device fulfills the legal requirements of applicable EU-guidelines

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**MEASURING TRANSDUCER
MAXIMAT SHR CS**

21-05-2021

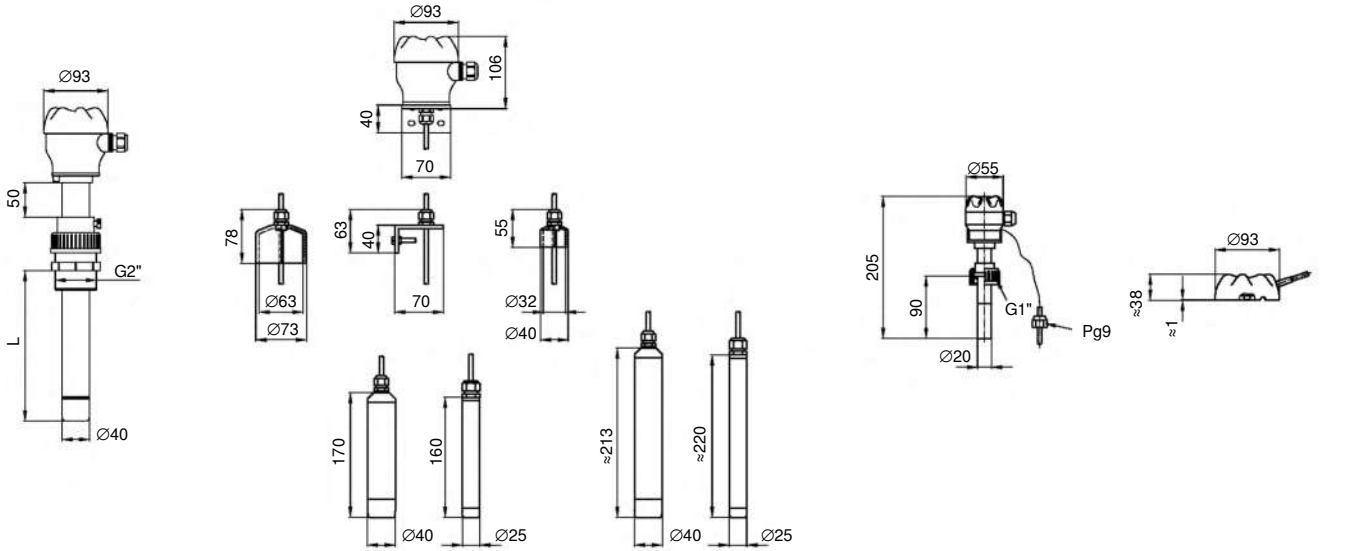
D-555.06-EN-AC

555-06 /1

ORDERING INFORMATION

| Code | Reference | Description |
|---------|-----------|---------------------------|
| 555 600 | SHR CS G | MAXIMAT SHR CS G, 230V AC |
| 555 610 | SHR CS D | MAXIMAT SHR CS D, 24V DC |

Example: compatible overflow sensors and Leakage sensors per German Water Resources Act (WHG)



Overfill sensor
MAXIMAT C... / MAXITOP...

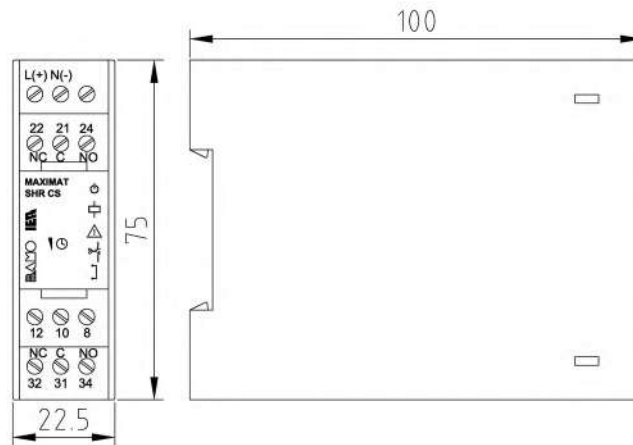
Leakage probe
MAXIMAT LW...

Leakage probe
MAXIMAT LW C... SDR

Floor probe
MAXIMAT LWC B...

Other probe types on request

DIMENSIONS



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MEASURING TRANSDUCER MAXIMAT SHR CS

21-05-2021

D-555.06-EN-AC

555-06/2

Alarming unit for MAXIMAT and MAXITOP

MAXIMAT TC4



- For detectors MAXIMAT C... Series
- Optical and acoustic signals, in conformity with overfill prevention devices (ZG-ÜS)
- Automatic probe detection and testing
- Wire break monitoring
- Function "Test" of the entire system*

APPLICATION

Signaling of alarms at:

- Storage tanks
- Up to 4 monitored tanks
- Etc.

DESCRIPTION

MAXIMAT TC4 is a signaling device for up to 4 overfill prevention devices or leakage detectors of MAXIMAT C ... series, with an optical and an acoustic signals according to the approval principles for overfill prevention devices (ZG-ÜS). If an alarm signal is issued by one of the MAXIMAT C ..., it is signaled optically and acoustically by the MAXIMAT TC4.

TECHNICAL FEATURES

| | |
|---------------------------|--|
| Power supply | 230 V AC 50/60 Hz; Optional version for 24 V DC |
| Consumption | About: 6 VA / 6 W |
| Ambient temperature | -20 ... +60 °C |
| Protection (EN 60 529) | IP65 |
| Supply to the detectors | 15 V DC, short-circuit proof |
| Inputs | 4 detectors (Overfill and leak probes) 1 external reset contact |
| Outputs | 4 Potential-free changeover contacts, assigned to the individual probes 1 Potential-free changeover contact, for common external alarm 1 Potential-free changeover contact for an external horn |
| Contact load output relay | 250 V AC / 115 V DC 500 VA / 3 A |
| Terminals | Wire cross-section Max. 2.5 mm ² |
| Signaling | 4 Multicolor LED Flashing red = alarm unacknowledged Continuous red light = alarm acknowledged Flashing yellow = probe defective Yellow continuous light = test is running Continuous green light = probe in operation LED dark = no probe connected 1 Acoustic signal (piezo generator) > 75 dB (A) /1m 1 Extra-bright flash LED for common alarm |
| Controls | Reset button for alarm acknowledgement Test button for complete system test* |

*** Note:**

The test routine is not a substitute for the regular operational test prescribed in the ZG-ÜS, which must be carried out at least once a year.

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Alarming unit for MAXIMAT
and MAXITOP
MAXIMAT TC4

15-04-2021

D-555.07-EN-AA

LEV

555-07 /1

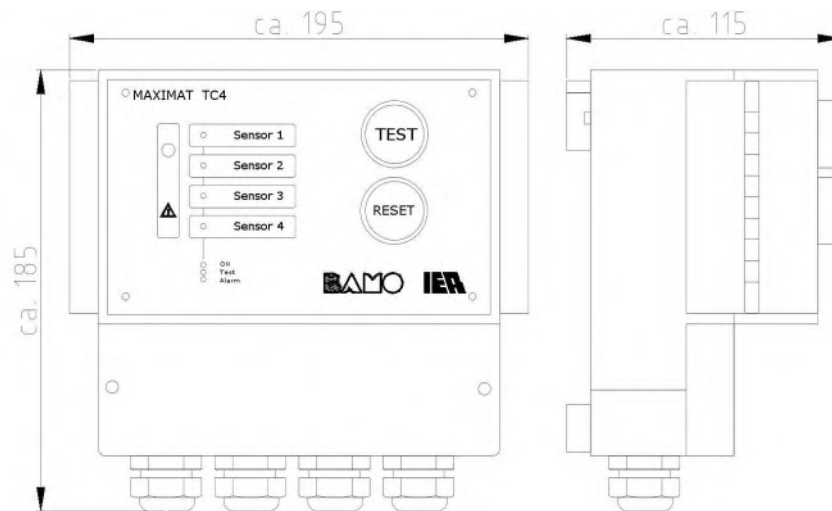
TECHNICAL FEATURES (continued)

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

ORDERING INFORMATION

| Code | Reference | Description |
|---------|---------------|------------------------------------|
| 555 700 | MAXIMAT TC4 G | MAXIMAT TC4; power supply 230 V AC |
| 555 710 | MAXIMAT TC4 D | MAXIMAT TC4; Power supply 24 V DC |

DIMENSIONS



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Alarming unit for MAXIMAT
and MAXITOP
MAXIMAT TC4

15-04-2021

D-555.07-EN-AA

LEV

555-07 /2

555

555

1 Channel alarm unit MAXIMAT TC1, TC1-B



- Alarm unit, 1 channel, for: MAXIMAT CX & and MAXITOP series, overfil and leak detectors
- Optical and acoustic alarms (> 75 dB)
- Diagnostic of detection loop
- Relay output, changeover contact
- Robust and inexpensive

APPLICATIONS

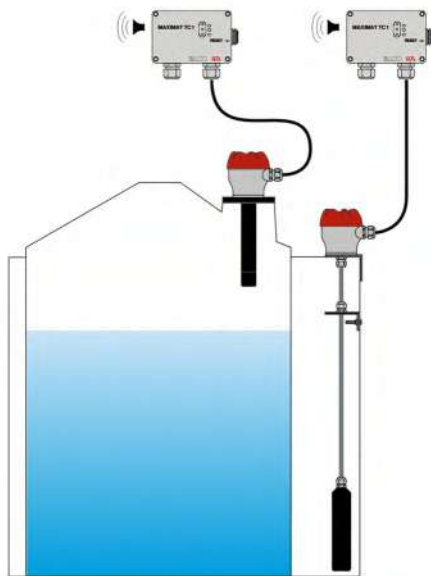
- Alarm signaling device for:
- Containers for storage of liquids, in safe area
 - Retention basins, piping
 - Tanks and collecting basins

DESCRIPTION

MAXIMAT TC1 is a signaling unit for overflow and leakage detectors MAXIMAT (X series) and MAXITOP. The detector is powered directly by TC1 unit. The built-in buzzer provides local alarm to the operator, and the LEDs inform visually about the alarm status. The audible alarm is acknowledged through the push-button on the right side.

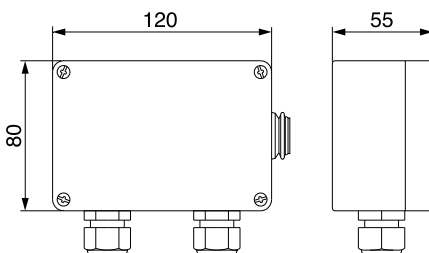
TECHNICAL FEATURES

| | |
|-------------------|---|
| Power supply | 230 V AC $\pm 10\%$; 50/60 Hz; 24 V DC |
| Consumption | About 2 VA / 2 W |
| Protection | IP 65 according EN 60 529 |
| Temperature | -20 ... +60 °C |
| Connections | Screw terminals |
| Indications | Green LED for "operating system" Red LED for "alarm in progress" Yellow LED for "alarm not yet acknowledged" Integrated audible alarm; can be disabled |
| Output relay | Max. 230 V AC / 3 A; potential free changeover contact |
| Housing | Polycarbonate, 120x80x55 mm; for wall mounting |
| Operating element | Push button for test and alarm acknowledgement |



Example: Application with MAXIMAT CX series

Dimensions



CODE NUMBERS AND REFERENCES

| Code | Reference | Description |
|---------|---------------|-------------------------|
| 555 720 | MAXIMAT TC1 G | Alarming unit, 230 V AC |
| 555 730 | MAXIMAT TC1 D | Alarming unit, 24 V DC |

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1 Channel alarm unit
MAXIMAT TC1, TC1-B

09-10-2019

D-555.10-EN-AD

NIV

555-10/1

1 Channel alarm unit MAXIMAT TC1-B



- Alarm unit, for 1 dry-contact detector
- Optical and acoustic alarms
- Alarming until acknowledgement
- Output relay : Changeover contact
- Robust and inexpensive

APPLICATIONS

Alarm signaling device for:

- Containers for storage of liquids, in safe area
- Retention basins
- Tanks and collecting basins

DESCRIPTION

MAXIMAT TC1-B is an optical and audible alarm unit for dry-contact detectors. The built-in buzzer provides local alarm to the operator and the LED inform visually about the alarm status. The audible alarm is acknowledged with the push-button on the right side.

TECHNICAL FEATURES

| | |
|-----------------|--|
| Power supply | 230 V AC $\pm 10\%$ - 50/60 Hz 24 V DC |
| Consumption | About 2 VA / 2 W |
| Protection | IP 65 according EN 60 529 |
| Temperature | -20 ... +60 °C |
| Detector input | Closed dry-contact: Normal operation Open dry-contact: Alarm status Terminal: Cable Max. 2.5 mm ² |
| Delay | About 1 second |
| Signaling | 1 LED (green): operating 1 LED (red): alarm occurs 1 LED (yellow): unacknowledged alarm Audible alarm integrated; Can be disabled |
| Switching power | 230 V AC / 3 A; change-over, potential free contact |

Operating mode:

In normal operation, the dry-contact of detector is closed. If the dry-contact of detector opens, the TC1-B goes into alarm and the relay output switches.

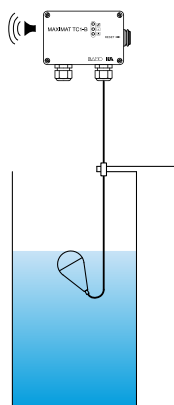
The operator must then acknowledge the alarm.

| | |
|-----------------|--------------------------------|
| Case | Polycarbonate Wall mounting |
| Acknowledgement | By push-button |

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

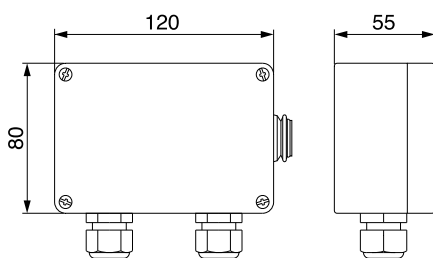
CODE NUMBERS AND REFERENCES

| Code | Reference | Description |
|---------|----------------|-------------------------------------|
| 555 740 | MAXIMAT TC1B G | MAXIMAT TC1B G, alarm unit 230 V AC |
| 555 741 | MAXIMAT TC1B D | MAXIMAT TC1B D, alarm unit 24 V DC |



Example: In use with a level controller
NIVOSTOP

DIMENSIONS



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1 Channel alarm unit
MAXIMAT TC1-B

10-10-2019

D-555.11-EN-AB

NIV

555-11 /1

Compact Overfill detector MAXITOP



- Wet parts in plastic materials
- For aggressive and conductive liquids
- Fail safe; Auto-diagnostic with SHR relay
- Fitting: Adjustable depth

APPLICATIONS

The MAXITOP monitors the overfilling of a tank with electrically conductive, non-flammable liquids, even highly aggressive liquids.
Example : Storage tanks for caustic soda (NaOH), hydrochloric acid (HCl), etc.

DESCRIPTION

The detector MAXITOP is designed to prevent overfilling of tanks. It detects conductive liquids (acids, alkalis) with a reactance below 5 kOhm and a coupling capacitance towards ground of more than 50 pF. In no case should liquids form insulating or conductive deposits.

The MAXITOP has 4 different possible interfacing connections:

- Direct connection to a 4 channels alarm unit MAXIMAT TC4 (data sheet 555-07) or 1 channel unit MAXIMAT TC1 (data-sheet 555-10)
- Direct connection to a PLC
- For relay output and loop diagnostic with a MAXIMAT SHR (data sheet 555-06)
- For relay output with a MAXIMAT CST (data sheet 555-09)

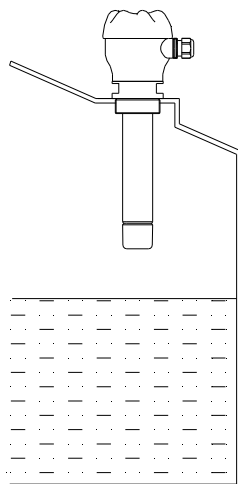
TECHNICAL FEATURES

| | |
|-----------------------------|--|
| Power supply | 15 ... 27 V DC |
| Consumption | < 1 W |
| Ambient temperature | -20 ... +60 °C |
| Operating pressure | Atmospheric 0.8 to 1.1 bar |
| Stem | HD-PE, O.D. 40 mm |
| Fitting | PVC, BSP 2", sliding coupling for depth adjustment |
| Trigger point distances (L) | L Max.: or 500 mm or 700 mm or 900 mm |
| Other lengths | On request |
| Head housing | PBT, fibreglass reinforced, IP 65 according EN 60 529 |
| Connectors | Screw terminals, wire Max. 2.5 mm ² |
| Input | For external button switch to test the complete system |
| Signaling display | Green LED on the terminals board |
| Output | Reed contact, potential free, for low voltage Rated: 50 V AC/DC; 0.5 A; 10 VA |

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

CODE NUMBERS AND REFERENCES

| Code | Reference | Description |
|---------|-------------|--|
| 556 109 | MAXITOP 500 | Overfill detector, L max. = 500 mm, BSP 2" |
| 556 113 | MAXITOP 700 | Overfill detector, L max. = 700 mm, BSP 2" |
| 556 117 | MAXITOP 900 | Overfill detector, L max. = 900 mm, BSP 2" |



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Compact Overfill detector
MAXITOP

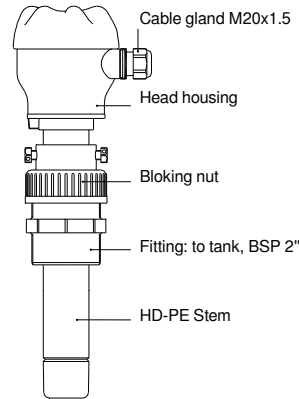
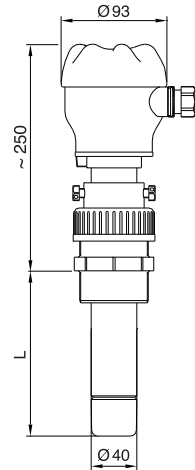
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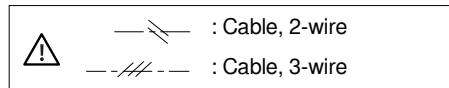
556-01 /1

DIMENSIONS

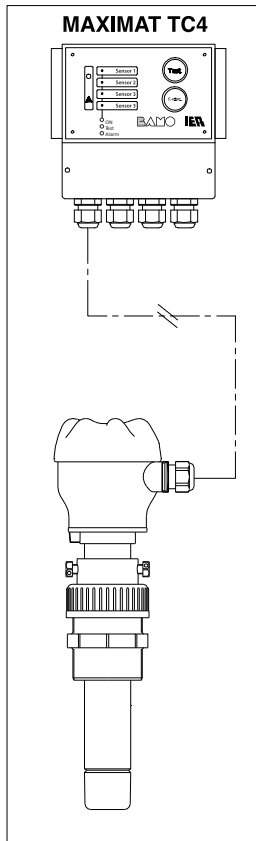


4 INTERFACING CONNECTIONS

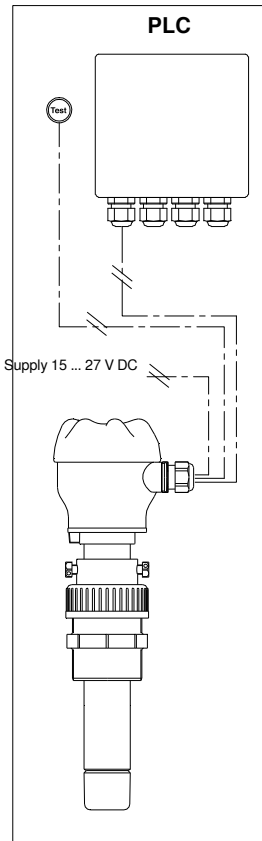
A button "TEST" for diagnostic of operating conditions; It is not mandatory for the detection itself.



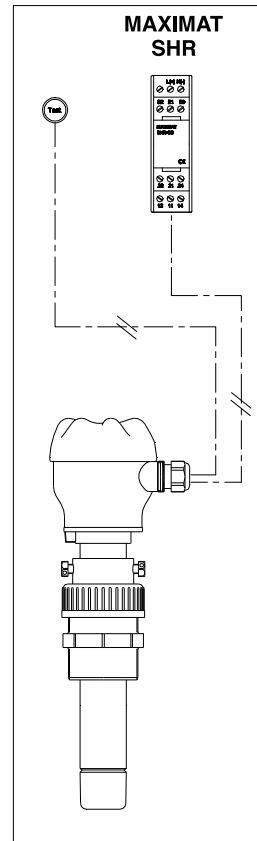
Connection to a TC4 (or TC1) alarm unit



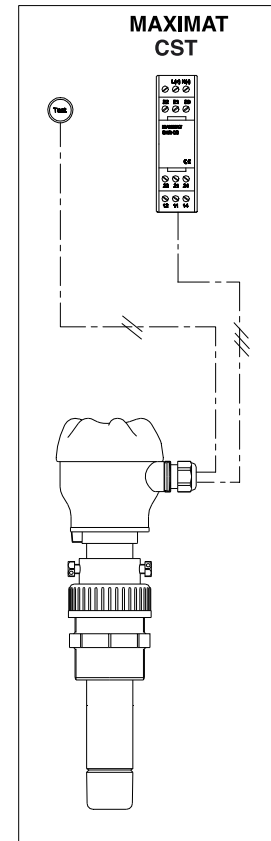
Connection to a PLC



Connection through SHR relay



Connection through CST relay



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Compact Overfill detector MAXITOP

10-03-2020

D-556.01-EN-AA

NIV

556-01 /2

Leak detector MAXITOP – LW C



- Capacitance detection loop
- For aggressive and conductive liquids
- Fail safe; Auto-diagnostic with SHR relay
- Wet parts in plastic materials
- Safe: no electrode touching the fluid

APPLICATIONS

With its integrated positive safety converter, the MAXITOP is ideal to give an alarm when a leakage occurs from storage tank for electrically conductive, non-flammable liquids, even highly aggressive liquids.

DESCRIPTION

The detector MAXITOP is designed to detect the presence of liquids (acids, alkalis) with a reactance below 5 kOhm and a coupling capacitance towards ground of more than 50 pF.

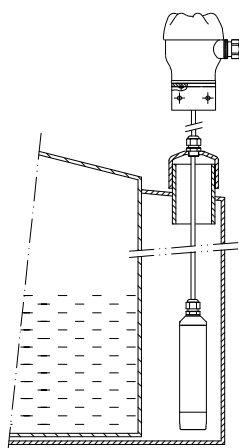
In no case should liquids form insulating or conductive deposits.

The MAXITOP LW C has 4 different possible interfacing connections:

- Direct connection to a 4 channels alarm unit MAXIMAT TC4 (data sheet 555-07) or 1 channel unit MAXIMAT TC1 (data-sheet 555-10)
- Direct connection to a PLC
- For relay output and loop diagnostic with a MAXIMAT SHR (data sheet 555-06)
- For relay output with a MAXIMAT CST (data sheet 555-09)

TECHNICAL FEATURES

| | |
|--------------------|--|
| Power supply | 15 ... 27 V DC |
| Consumption | < 1 W |
| Operating pressure | Atmospheric 0.8 to 1.1 bar |
| Probe | HD-PE, O.D. 40 or in PVC O.D. 25 mm |
| Suspension cable | Shielded cable, PVC sheath, standard length 6 m, 5-wire, 0.34 mm ² |
| Head housing | PBT, fibreglass reinforced, IP 65 according EN 60 529 |
| Connectors | Screw terminals, wire Max. 2.5 mm ² |
| Input | For external button switch to test the complete system |
| Signaling display | Green LED on the terminals board |
| Output | Reed contact, potential free, for low voltage Rated: 50 V AC/DC; 0.5 A; 10 VA |
| Hysteresis | About 2 mm |
| Switching contact | Liquid height Min. 5 mm |



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

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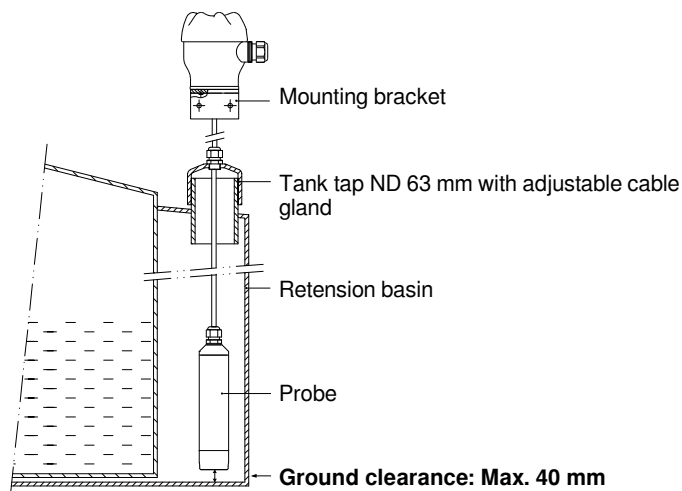
Leak detector
MAXITOP – LW C

19-03-2021

D-556.03-EN-AB

NIV

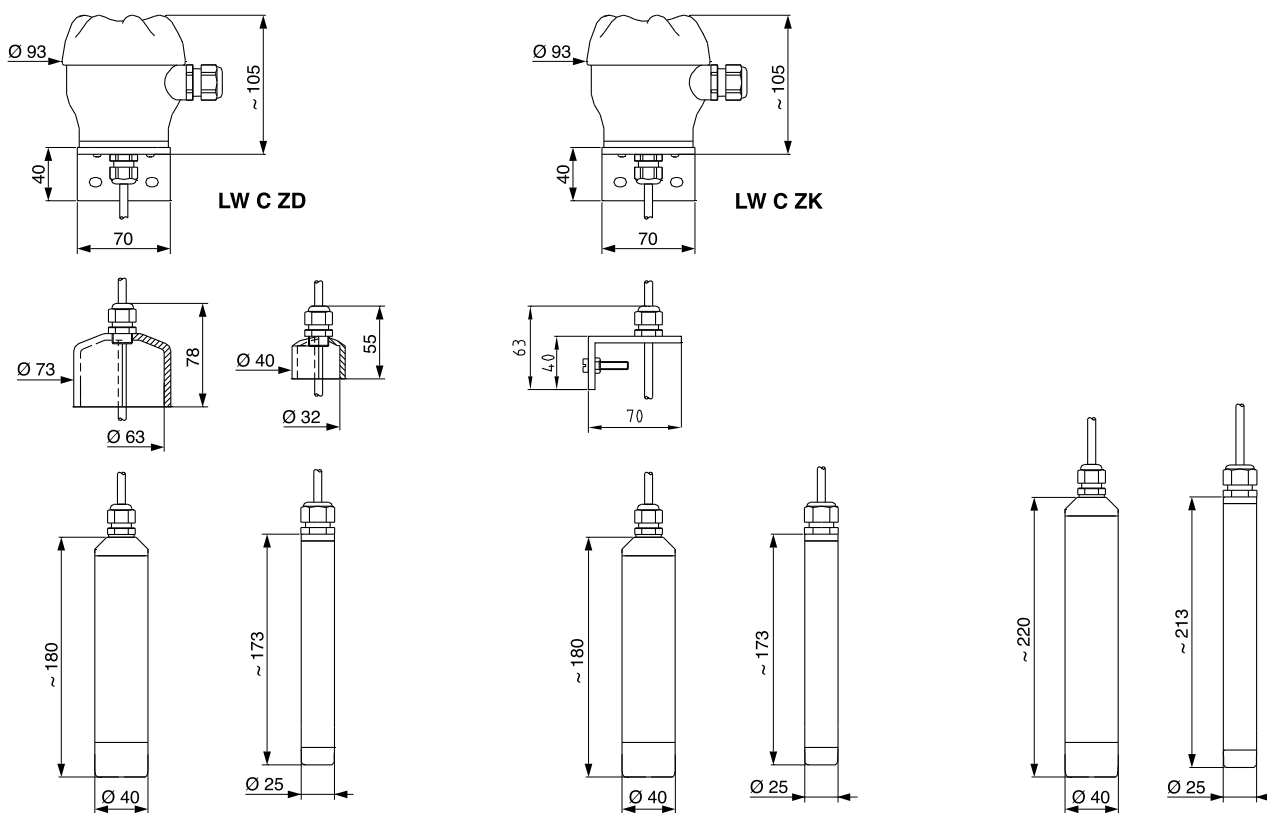
556-03/1



CODE NUMBERS AND REFERENCES

| Code | Reference | Description |
|---------|----------------------|---|
| 556 300 | MAXITOP-LW C ZK Ø 40 | Complete with HD-PE probe O.D. 40 mm, bracket and adjustment system |
| 556 305 | MAXITOP-LW C ZK Ø 25 | Complete with PVC probe O.D. 25 mm, bracket and adjustment system |
| 556 310 | MAXITOP-LW C ZD Ø 40 | Complete with HD-PE probe O.D. 40 mm, bracket, PVC female tap Ø 63 with adjustment system |
| 556 315 | MAXITOP-LW C ZD Ø 25 | Complete with PVC probe O.D. 25 mm, bracket, PVC female tap Ø 32 with adjustment system |

DIMENSIONS



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Leak detector
MAXITOP – LW C

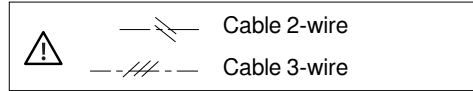
19-03-2021

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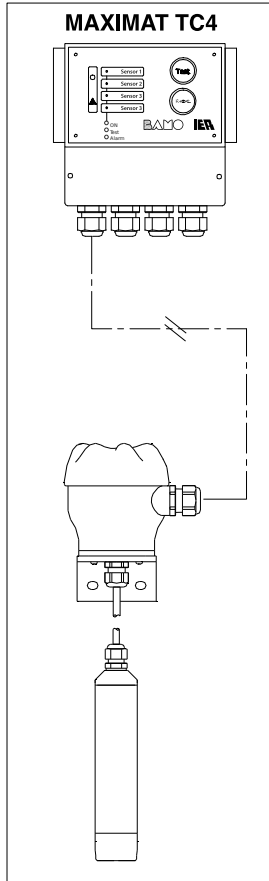
NIV

556-03/2

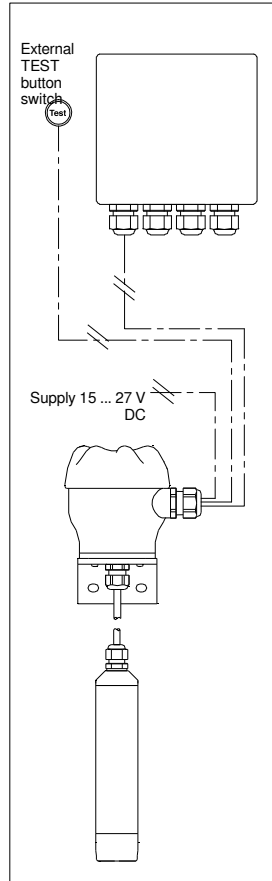
4 TYPES OF ELECTRICAL CONNECTIONS



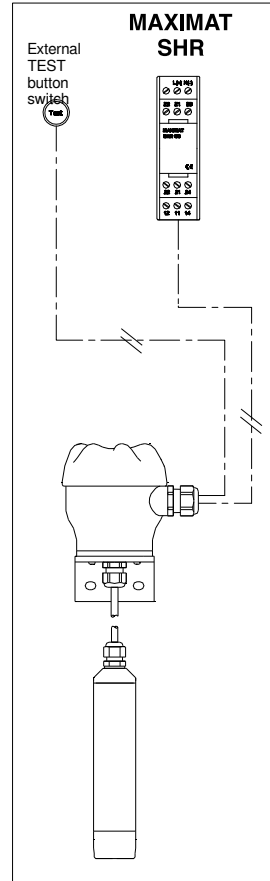
Connection to a TC4 (or TC1) alarm unit



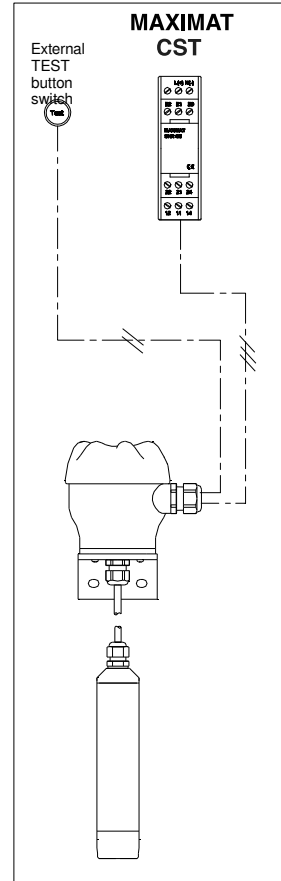
Connection to a PLC



Connection through SHR relay



Connection through CST relay



556

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Leak detector
MAXITOP – LW C

19-03-2021

D-556.03-EN-AB

NIV

556-03/4

On-line leak detector in double-walled piping MAXIMAT LW CX SDR



Detector with its on-line holder



MAXIMAT LW CX SDR 4



Detector on its on-line holder with viewing tube

- All-plastic versions
- Integrated transmitter and connection for test button
- No moving parts
- For aggressive and conductive liquids
- NPN / PNP interface

AGREEMENTS

- General building supervisory approval issued by DIBt: Z-65.40-496
- Certification of Product Approval by SVTI ASIT: KVV-Nr. 321.012.19
- Vlarex II (Corcon bvba) certificate: CP0914/3073-HCC001

APPLICATION

Leak detector in accordance with the German Water Resources Act (WHG) for double-walled pipings with water-polluting, electrically conductive, non-flammable liquids.

DESCRIPTION

The MAXIMAT LW CX SDR compact leak detectors are designed to detect leaks in double-walled piping with water-polluting liquids.

When an electrically conductive liquid comes into contact with the detection sensor, the integrated electronics respond by interrupting the continuous output signal; This signal can be read out from the system controller as acoustic and optical alarms.

TECHNICAL FEATURES

| | |
|---------------------|--|
| Working principle | Capacitive high-frequency sensor |
| Ambient temperature | -20 ... +60 °C |
| Operating pressure | Atmospheric; Limits: 0.8 to 1.1 bar |
| Head housing | PBT, fibre-glass reinforced |
| Protection | IP65 according to EN 60 529 |
| Fittings | See the table "ordering information" |
| Power supply | 15 ... 27 V DC |
| Consumption | < 1 W |
| Materials | Probe: PE or PP Union nut: PVC / PP Seal Reference Electrode: TPR Seals of probe and ball valve: EPDM (Option: FPM) |
| Output | Potential-free Reed contact for low voltage (Normally Closed, it opens when alarm occurs) Rated: Max. 50 V AC/DC, 0.5 A, 10 VA; Convenient for operating with a coupling relay or PLC, signaling device TC4 / TC1 or CST unit. Or: 2-wire alarm output reporting with transmitter MAXIMAT SHR C |

Note: Simultaneous use of both outputs is not possible.

| | |
|---------------------|--|
| Terminals | Screw terminals, cable max. 2.5 mm ² |
| Additional function | Connection of an external test button (potential-free contact), for a complete diagnostic of the device integrity (connection loops, electronics). |

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On-line leak detector in
double-walled piping
MAXIMAT LW CX SDR

01-06-2021

D-556.04-EN-AE

LEV

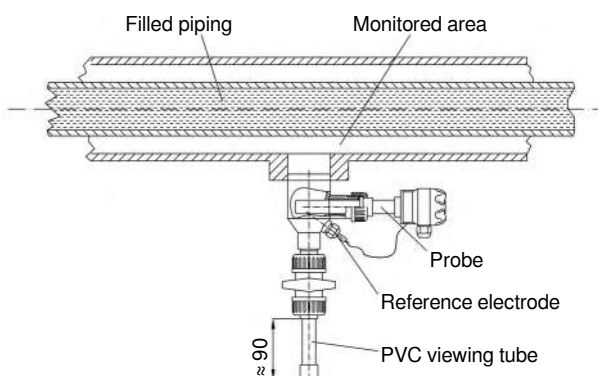
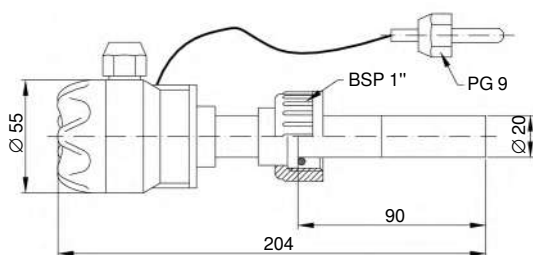
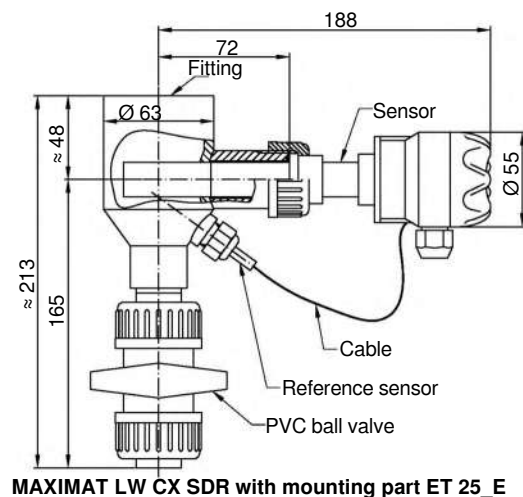
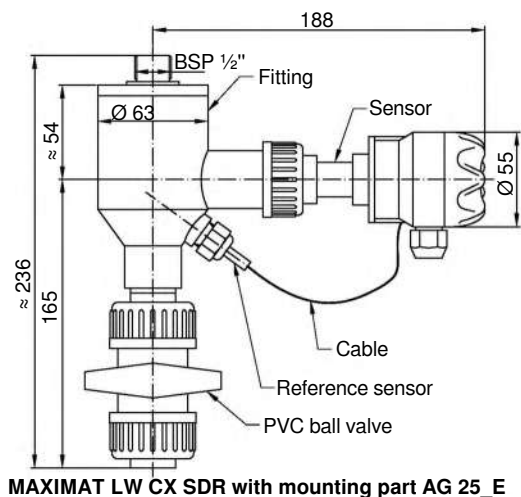
556-04/1

TECHNICAL FEATURES (continued)

Connectivity interfaces Alarm units: MAXIMAT TC1 / TC4
Coupling relay: CST
Transmitter: MAXIMAT SHR C
Automation with PLC

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

DIMENSIONS



CODE NUMBERS AND REFERENCES

| Code | Reference | Description |
|---------|---------------------|--|
| 556 810 | MAXIMAT LW CX-SDR 4 | Detector, PE, sensor Ø 20 mm; With PVC union nut BSP 1"; Reference sensor PG 9 |
| 556 815 | MAXIMAT LW CX-SDR 2 | PP leak probe with Ø20mm sensor With PP union nut BSP 1"; Reference electrode Pg9 |
| 556 820 | ET 251 E | PVC holder, for solvent welding Ø 63 mm; PVC ball valve ND 15 |
| 556 830 | ET 254 E | HDPE holder, for fusion welding Ø 63 mm; PVC ball valve ND 15 |
| 556 840 | AG 251 E | PVC holder, fitting BSP 1/2"; PVC ball valve ND 15 |
| 556 850 | AG 254 E | HD-PE holder, fitting BSP 1/2"; PVC ball valve ND 15 |
| 556 860 | PVC viewing tube | Transparent viewing tube for holders models AG |

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On-line leak detector in
double-walled piping
MAXIMAT LW CX SDR

01-06-2021

D-556.04-EN-AE

LEV

556-04/2

Leak detector on floor MAXITOP LWC B



- Capacitance detection loop
- For aggressive and conductive liquids
- Fail safe; Self diagnostic of loop integrity with SHR or TC4 or TC1
- Wet parts in plastic materials

APPLICATIONS

The MAXITOP LWC-B is ideal to give an alarm when a leakage occurs on the floor of retentions or collecting areas. With its fail safe detection loop, it is permanently operational.

DESCRIPTION

MAXITOP LWC-B is designed to detect conductive liquids with a reactance of up to 5 kOhm/cm and when the coupling capacitance towards ground is more than 50 pF. The liquids may not generate electrical insulating or conductive deposit.

MAXITOP LWC-B has 5 different types of connections:

- Contact output, low voltage (Max. 50 V AC/DC; Max. 0.5 A; Max. 10 VA)
- Relay output, adding a relay converter CST (data-sheet D-555.09)
- Output relay, adding a relay converter SHR (data-sheet 555-06)
- Direct connections to a PLC
- Signaling events on site, with devices TC4 or TC1 (data-sheet 555-07)

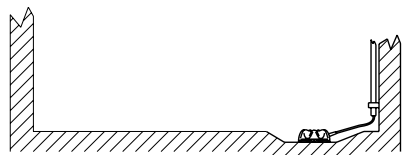
TECHNICAL FEATURES

| | |
|---------------------|--|
| Power supply | 15 ... 26 V DC |
| Consumption | About 1 W |
| Ambient temperature | -20 ... +60 °C |
| Housing | PBT; IP 67 (EN 60529) |
| Cable output | Standard length: 6 m 5 x 0.5 mm ² , shielded, PVC sheath |
| Trigger point | Minimum height of liquid: 1 mm |

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

CODE NUMBER AND REFERENCE

| Code | Reference | Description |
|---------|---------------|---|
| 556 500 | MAXITOP LWC-B | Floor leak detector With PVC cable; 6 m long |



Floor leak detection

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Leak detector on floor
MAXITOP LWC B

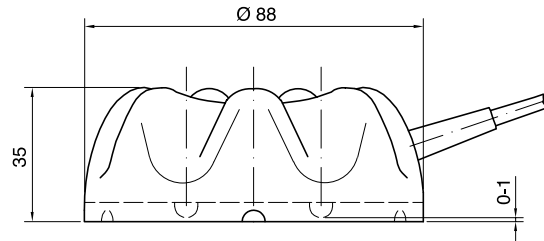
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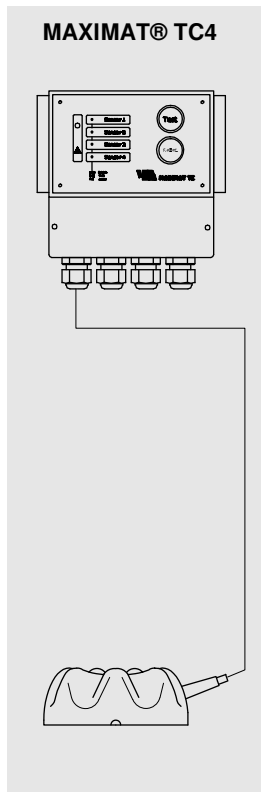
DIMENSIONS



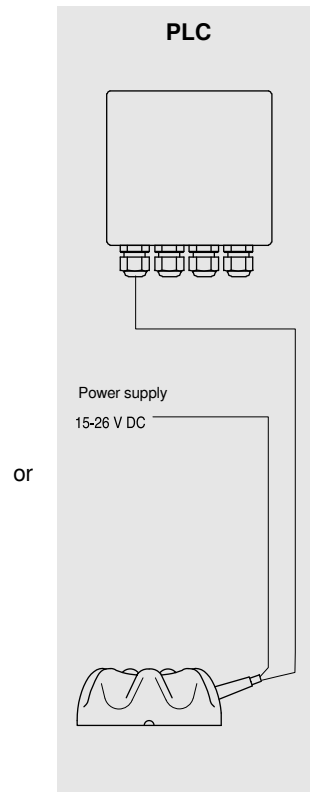
CONNECTION POSSIBILITIES

- Schematic representation of connection possibilities -
For detailed electrical connections: see the end-user manual msa556-05.

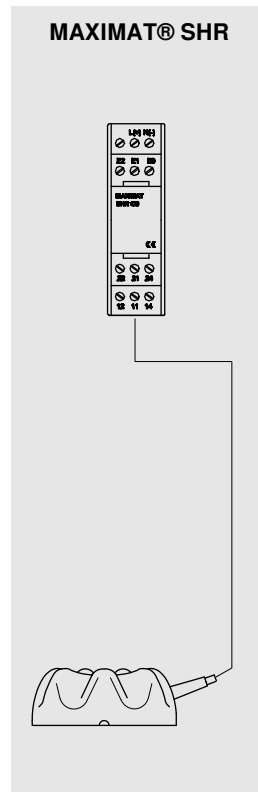
Direct connection to alarm units TC4 (or TC1)



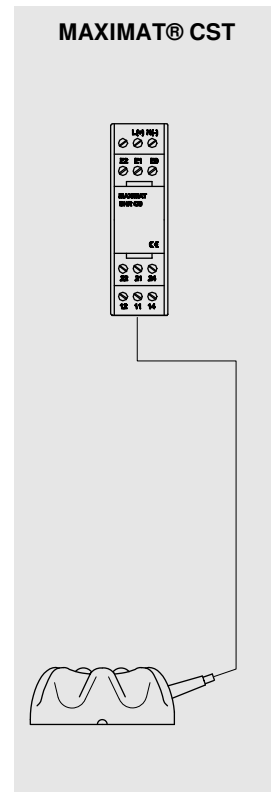
Connection to a PLC



Connection with the converter SHR



Connection with a relay CST



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Leak detector on floor
MAXITOP LWC B

26-06-2020

D-556.05-EN-AA

NIV

556-05/2

Compact overflow detector MAXIMAT CX



- All-plastic versions
- Integrated transmitter and connection for test button
- No moving parts
- For storage tanks
- NPN / PNP interface

AGREEMENTS

- General building supervisory approval issued by DIBt: Z-65.13-494
- Certification of Product Approval by SVTI ASIT: KVV-Nr. 302.019.19
- Vlarex II (Corcon bvba) certificate: CP0914/3072-HCC001
- GOST-Clearance Certificate: 42 1300/ 9026 10 290 0

APPLICATION

Overflow detector in accordance with the German Water Resources Act (WHG) for containers used for storing, filling and handling water-polluting, electrically conductive, non-flammable liquids.

DESCRIPTION

MAXIMAT CX compact overflow detectors are level limit switches which are used to prevent overflowing of containers with water polluting liquids. When an electrically conductive liquid comes into contact with the detector stem, the integrated electronics respond by interrupting the continuous output signal. This signal can be read out from the system controller as an acoustic and optical alarms and, if required, can be used to cause an emergency shutdown of the filling process.

TECHNICAL FEATURES

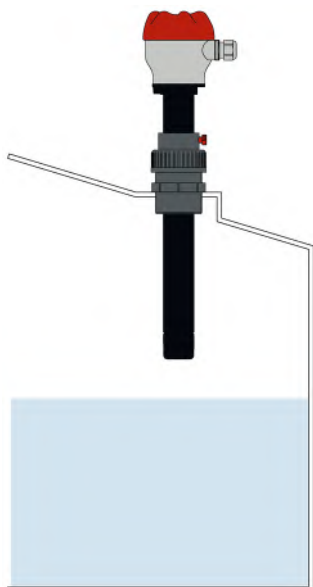
| | |
|---------------------|--|
| Detection | Capacitive high-frequency sensor, fail-safe detector |
| Ambient temperature | -20 ... +60 °C |
| Operating pressure | Atmospheric; Limits: 0.8 to 1.1 bar |
| Housing head | PBT, fibre-glass reinforced |
| Protection | IP65 according to EN 60 529 |
| Fittings | See the table "ordering information" |
| Power supply | 15 ... 27 V DC |
| Consumption | < 1 W |
| Outputs | Potential-free Reed contact for low voltage (Normally Closed, it opens when alarm occurs) Rated: Max. 50 V AC / DC, Max. 0.5 A, Max. 10 VA, convenient for operating with a coupling relay or PLC, signaling device TC4 / TC1 or CST unit. 2-wire alarm output reporting with transmitter MAXIMAT SHR C |

Note: Simultaneous use of both outputs is not possible.

| | |
|---------------------|--|
| Terminals | Screw terminals, cable max. 2.5 mm ² |
| Additional function | Connection of an external test button (potential-free contact), for a complete diagnostic of the device integrity (connection loops, electronics). |

| | |
|--------------------|--|
| Connection options | Alarm units: MAXIMAT TC1 / TC4 Coupling relay: CST Transmitter: MAXIMAT SHR C Automation with PLC |
|--------------------|--|

WHG



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Compact overflow detector
MAXIMAT CX

16-10-2019

D-556.06-EN-AC

LEV

556-06/1

TECHNICAL FEATURES (continued)

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

ORDERING INFORMATION

Compact overfill detector MAXIMAT CX

- 20** Stem O.D. 20mm
- 40** Stem O.D. 40mm

- K** with connection head
- 0** without connection head

Materials

- 4** PE (Standard)
- 2** PP (on request)
- 3** PVDF (on request)

Trigger point

- V** Adjustable
- N** Fixed point

Fittings

- U2** CX40: BSP 2" sleeve nut for weld-on union (V type)
- U254** CX40: BSP 2" sleeve nut for PE weld-on union (V type)
- U252** CX40: BSP 2" sleeve nut for PP weld-on union (V type)
- U253** CX40: BSP 2" sleeve nut for PVDF weld-on union (V type)
- G2** CX40: BSP 2" process interface, external thread (N & V types)
- F40** CX40: Flange DN 40, PN 10 (N & V types)
- F50** CX40: Flange DN 50, PN 10 (N & V types)
- G1** CX20: BSP 1" process interface, external thread (N & V types)
- G11/4** CX20: BSP 1 1/4" process interface, external thread (V type)
- G11/2** CX20: BSP 1 1/2" process interface, external thread (V type)
- F25** CX20: Flange DN 25, PN 10 (V type)
- F32** CX20: Flange DN 32, PN 10 (V type)

Fitting materials

- 1** PVC (Standard)
- 4** PE
- 2** PP
- 3** PVDF

L Distance (mm), from sealing surface *

MAXIMAT CX

Other versions: On request.

Please contact us.

- (V): Adjustable process connection (Adjustable trigger point distance)
- (N): Not adjustable process connection (Fixed trigger point distance)

Note:

Not all materials can be combined with each other; This applies for all non-adjustable versions on above table.

The overall length of the stem is 50 mm longer than the distance "L" plus, the height of the adjusting threaded fitting. During commissioning, the triggering level "A" can be adjusted by 50 mm downwards (i.e. lower switching point). Distance "L" is the desired trigger point measured as of the sealing surface.

* Min. installation length for O.D. 40 and 20 mm versions = 150 mm

* Max. installation length for O.D. 40 mm versions = 1000 mm

* Max. installation length for O.D. 20 mm versions = 500 mm

Larger lengths and version with double cable gland: On request.

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Compact overfill detector
MAXIMAT CX

LEV

556-06/2

16-10-2019

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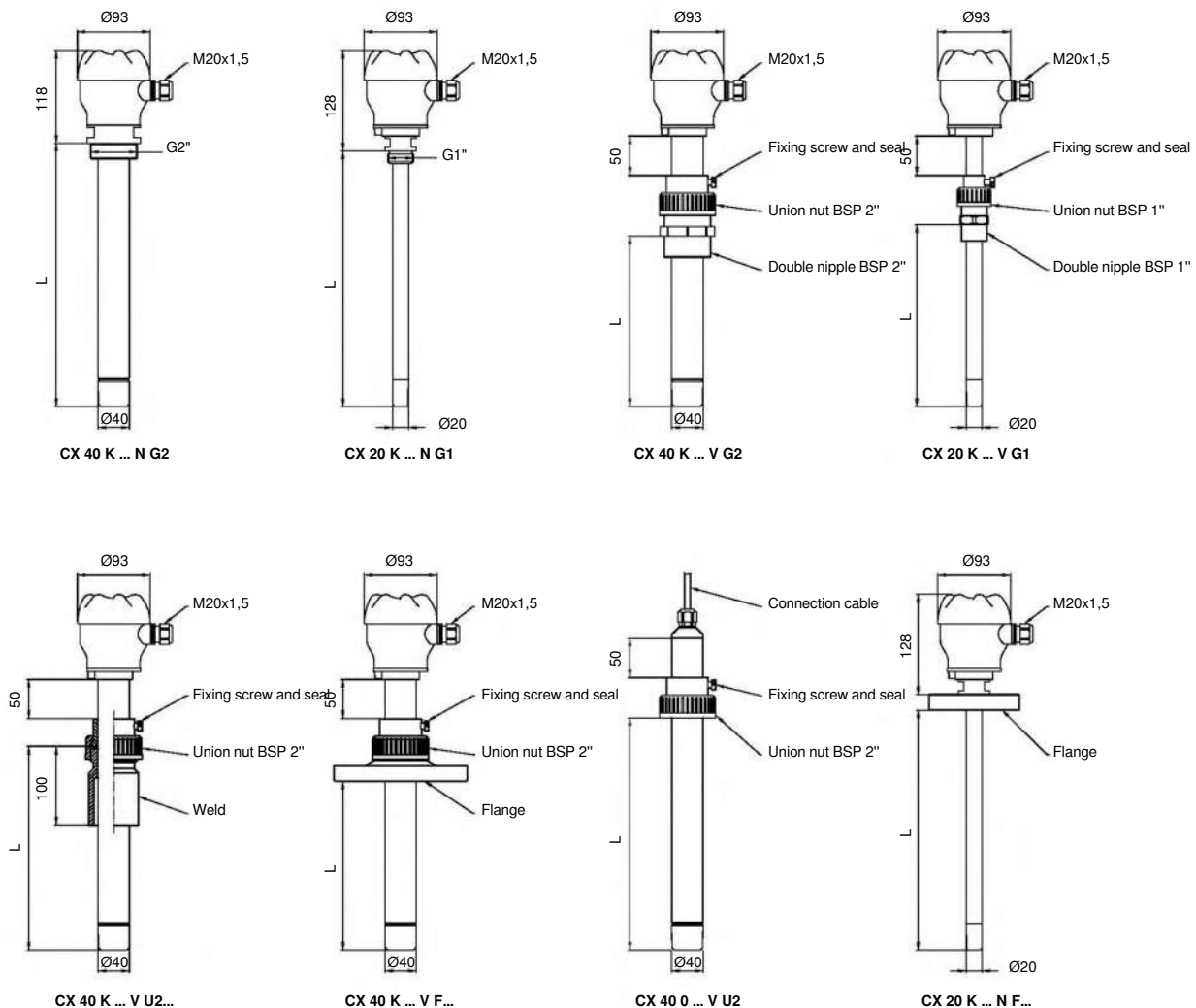
ORDERING INFORMATION (continued)

Standard versions

| Code | Reference | Description |
|---------|-----------------------------------|---|
| 556 602 | MAXIMAT CX 40 K 4 V G2 1 L= 200mm | Terminal housing, O.D. 40 mm, PE, adjustable, BSP 2" PVC, L = 200mm |
| 556 604 | MAXIMAT CX 40 K 4 V G2 1 L= 300mm | Terminal housing, O.D. 40 mm, PE, adjustable, BSP 2" PVC, L = 300mm |
| 556 606 | MAXIMAT CX 40 K 4 V G2 1 L= 400mm | Terminal housing, O.D. 40 mm, PE, adjustable, BSP 2" PVC, L = 400mm |
| 556 608 | MAXIMAT CX 40 K 4 V G2 1 L= 500mm | Terminal housing, O.D. 40 mm, PE, adjustable, BSP 2" PVC, L = 500mm |
| 556 662 | MAXIMAT CX 20 K 4 V G1 1 L= 200mm | Terminal housing, O.D. 20 mm, PE, adjustable, BSP 1" PVC, L = 200mm |
| 556 664 | MAXIMAT CX 20 K 4 V G1 1 L= 300mm | Terminal housing, O.D. 20 mm, PE, adjustable, BSP 1" PVC, L = 300mm |
| 556 666 | MAXIMAT CX 20 K 4 V G1 1 L= 400mm | Terminal housing, O.D. 20 mm, PE, adjustable, BSP 1" PVC, L = 400mm |
| 556 668 | MAXIMAT CX 20 K 4 V G1 1 L= 500mm | Terminal housing, O.D. 20 mm, PE, adjustable, BSP 1" PVC, L = 500mm |

DIMENSIONS

Examples of common models



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Compact overflow detector
MAXIMAT CX

16-10-2019

D-556.06-EN-AC

LEV

556-06/3

Compact leak detector MAXIMAT LW CX



WHG

- All-plastic versions
- Integrated transmitter and connection for test button
- No moving parts
- For retention on storage tanks
- NPN / PNP interfaces

AGREEMENTS

- General building supervisory approval issued by DIBt: Z-65.40-496
- Certification of Product Approval by SVTI ASIT: KVV-Nr. 321.012.19
- Vlare II (Corcon bvba) certificate: CP0914/3073-HCC001
- GOST-Clearance Certificate: 42 1300/ 9026 10 290 0

APPLICATION

Leak detection in accordance with the German Water Resources Act (WHG) for double-walled containers and retention in use for water-polluting, electrically conductive, non-flammable liquids.

DESCRIPTION

MAXIMAT LW CX compact leak detectors are used to detect leakage of containers, outside the container, leaks of water polluting liquids. When an electrically conductive liquid comes into contact with the detector probe, the integrated electronics respond by interrupting the continuous output signal. By interrupting the signal, audible and visual alarms are triggered.

TECHNICAL FEATURES

| | |
|---------------------|---|
| Detection | Capacitive high-frequency sensor, fail-safe detector |
| Ambient temperature | -20 ... +60 °C |
| Operating pressure | Atmospheric; Limits: 0.8 to 1.1 bar |
| Housing head | PBT, fibre-glass reinforced |
| Protection | IP65 according to EN 60 529 |
| Fittings | See the table "ordering information" |
| Power supply | 15 ... 27 V DC |
| Consumption | < 1 W |
| Materials | Mounting bracket or cap: PVC Probe: PVC for O.D. 25; PE for O.D. 40 |
| Outputs | Potential-free Reed contact for low voltage (Normally closed, it opens when alarm occurs) Rated: Max. 50 V AC / DC, Max. 0.5 A, Max. 10 VA, convenient for operating with a coupling relay or PLC, signaling device TC4 / TC1 or CST unit. 2-wire alarm output reporting with transmitter MAXIMAT SHR C with transmitter MAXIMAT SHR C |

Note: Simultaneous use of both outputs is not possible.

| | |
|---------------------|--|
| Terminals | Screw terminals, cable max. 2.5 mm ² |
| Additional function | Connection of an external test button (potential-free contact), for a complete diagnostic of the device integrity (connection loops, electronics). |
| Connection options | Alarm units: MAXIMAT TC1 / TC4 Coupling relay: CST Transmitter: MAXIMAT SHR C Automation with PLC |

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Compact leak detector MAXIMAT LW CX

18-10-2019

D-556.07-EN-AB

LEV

556-07 /1

TECHNICAL FEATURES (Continued)

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

ORDERING INFORMATION

MAXIMAT LW CX with 6 m long cable

Probes

- 25** O.D. 25 mm (PVC)
- 40** O.D. 40 mm (PE)

Detector versions

- K** Mounting bracket with adjustable cable gland
- D** Cap Ø63 or Ø32 with adjustable cable gland
- 0** Without head housing neither brackets

MAXIMAT LW CX

Other cable lengths, fitting types: On request.

| Code | Reference | Description |
|---------|--------------------|---|
| 556 700 | MAXIMAT LW CX 40 K | Leak detector, PE, O.D. 40 mm; Connection head; mounting bracket with adjustable cable gland |
| 556 710 | MAXIMAT LW CX 40 D | Leak detector, PE, O.D. 40 mm; Connection head; cap Ø 63 mm with adjustable cable gland |
| 556 715 | MAXIMAT LW CX 40 0 | Leak detector, PE, O.D. 40 mm; Cable output, 6m long without mounting accessories |
| 556 730 | MAXIMAT LW CX 25 K | Leak detector, PVC, O.D. 25 mm; Connection head; mounting bracket with adjustable cable gland |
| 556 740 | MAXIMAT LW CX 25 D | Leak detector, PVC, O.D. 25 mm; Connection head; cap Ø 32 mm with adjustable cable gland |
| 556 745 | MAXIMAT LW CX 25 0 | Leak detector, PVC, O.D. 25 mm; Cable output, 6 m long without mounting accessories |



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Compact leak detector
MAXIMAT LW CX

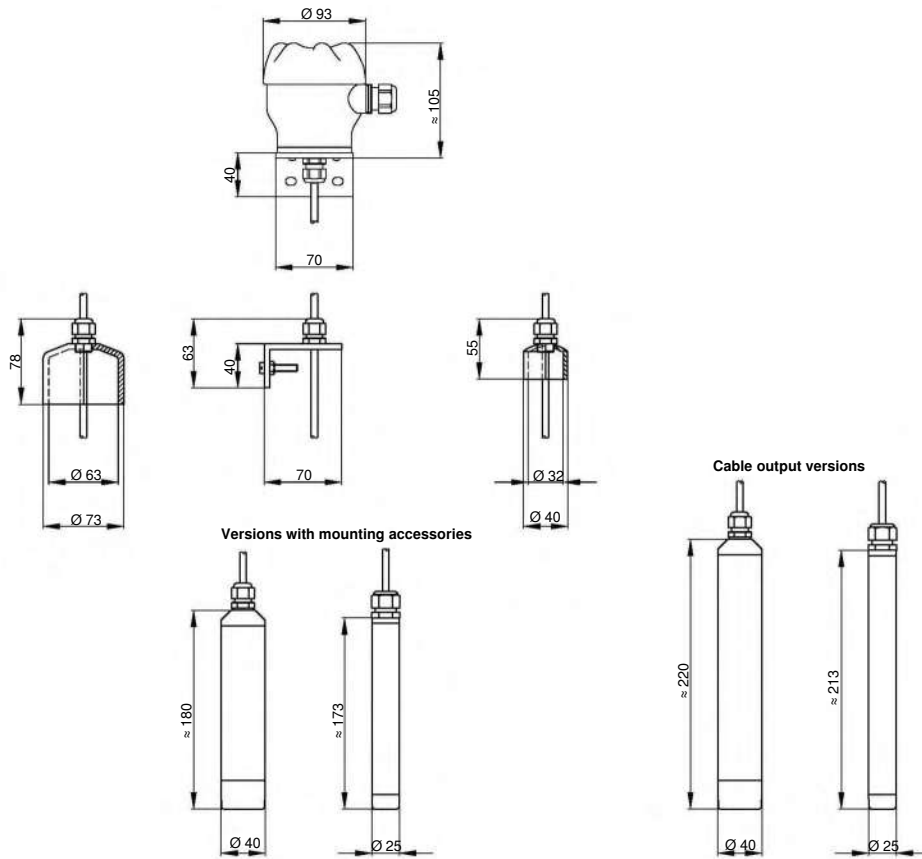
18-10-2019

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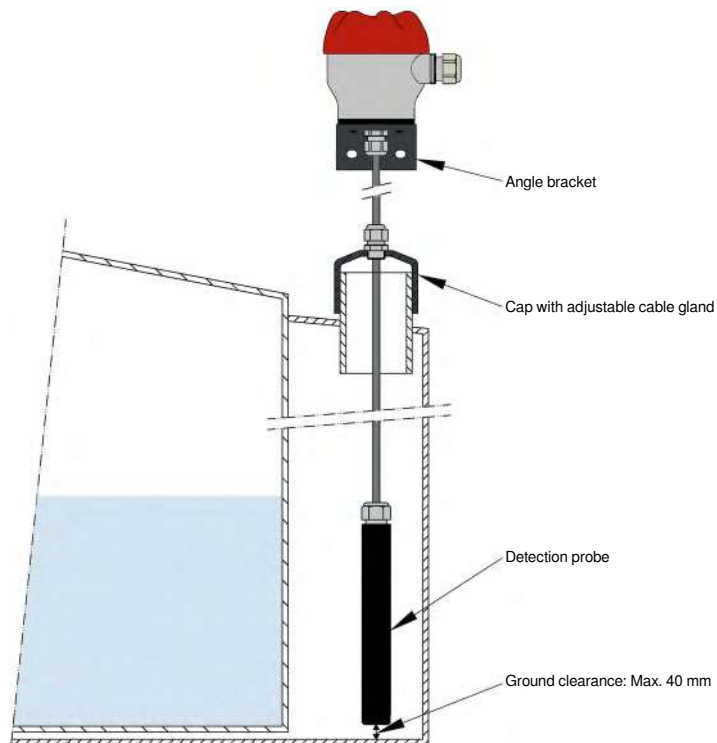
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556-07 /2

DIMENSIONS



Examples



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Compact leak detector
MAXIMAT LW CX

18-10-2019

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LEV

556-07/3

Leak detector on floor MAXIMAT LWC BX



WHG



Bottom view

- All-plastic versions
- Integrated transmitter and connection for test button
- No moving parts
- Floor leak detection
- NPN / PNP interfaces

AGREEMENTS

- General building supervisory approval issued by DIBt: Z-65.40-496
- Certification of Product Approval by SVTI ASIT: KVV-Nr. 321.012.19
- Vlare II (Corcon bvba) certificate: CP0914/3073-HCC001
- GOST-Clearance Certificate: 42 1300/ 9026 10 290 0

APPLICATION

Leak detection in accordance with the German Water Resources Act (WHG) for retention basins and floors where are in use water-polluting, electrically conductive, non-flammable liquids.

DESCRIPTION

MAXIMAT LWC BX compact leak detectors are used to detect leakage or spread water polluting liquids. Due to the short detection height of liquid, about 1mm, even a small leakage quantity is reliably detected. The device is used for leakage detection of water polluting media.

TECHNICAL FEATURES

| | |
|---------------------|--|
| Detection | Capacitive high-frequency sensor, fail-safe detector |
| Ambient temperature | -20 ... +60 °C |
| Operating pressure | Atmospheric; Limits: 0.8 to 1.1 bar |
| Housing head | PBT, fibre-glass reinforced |
| Protection | IP67 (not suitable for permanent immersion) |
| Power supply | 15 ... 27 V DC |
| Consumption | < 1 W |
| Cable | PVC, 6 m long; 5x 0.34 mm ² |
| Outputs | Potential-free Reed contact for low voltage (Normally closed, it opens when alarm occurs) Rated: Max. 50 V AC / DC, Max. 0.5 A, Max. 10 VA, convenient for operating with a coupling relay or PLC, signaling device TC4 / TC1 or CST unit. 2-wire alarm output reporting with transmitter MAXIMAT SHR C |

Note: Simultaneous use of both outputs is not possible.

| | |
|---------------------|--|
| Additional function | Connection of an external test button (potential-free contact), for a complete diagnostic of the device integrity (connection loops, electronics). |
| Connection options | Alarm units: MAXIMAT TC1 / TC4 Coupling relay: CST Transmitter: MAXIMAT SHR C Automation with PLC |

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

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Leak detector on floor MAXIMAT LWC BX

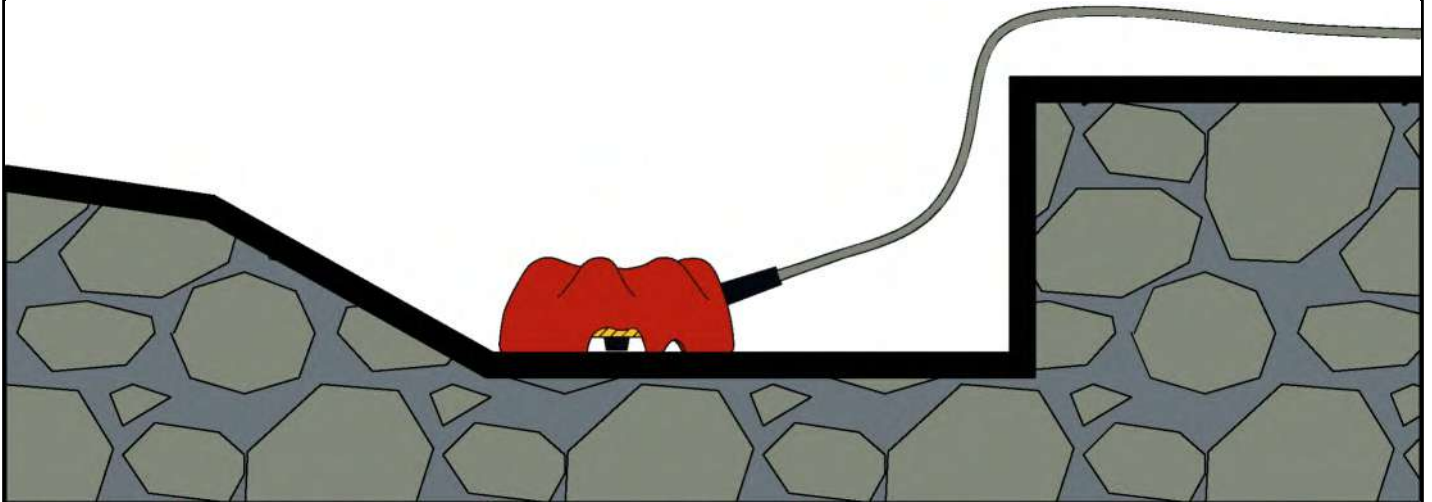
18-10-2019

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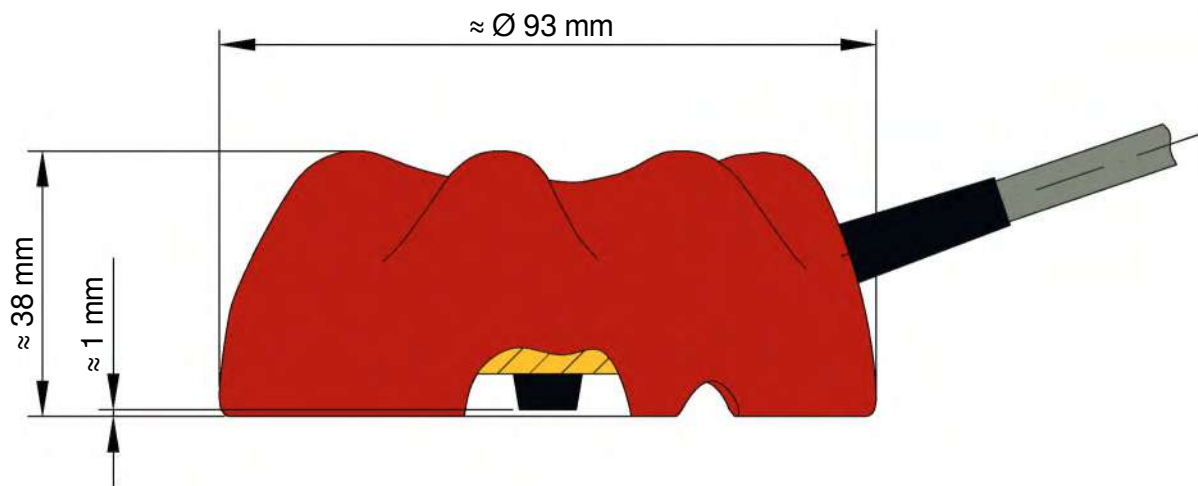
LEV

556-08/1

Examples



DIMENSIONS



CODE NUMBERS AND REFERENCES

| Code | Reference | Description |
|---------|----------------|------------------------------------|
| 556 910 | MAXIMAT LWC BX | Floor leak detector MAXIMAT LWC BX |

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Leak detector on floor
MAXIMAT LWC BX

18-10-2019

D-556.08-EN-AC

LEV

556-08/2

Dry run protection CAPSYTRON TLS



- Wet parts in plastic materials
- Compact probe
- Plug for function test
- Switches when pipe is empty
- No moving parts

APPLICATIONS

- Protection against dry run; Detection of empty filling pipe
- Prevents hammer effects when air is compressed in the pipe.

DESCRIPTION

The CAPSYTRON TLS is designed for empty tube detection. It avoids hammer effects when filling a tank.

It is designed to detect the presence of liquids whose reactance is $< 5 \text{ k}\Omega$, or even whose coupling capacity to earth is $> 50 \text{ pF}$. In no case should liquids form insulating or conductive deposits.

TECHNICAL FEATURES

| | |
|---------------------|--|
| Power supply | 15 ... 27 V DC |
| Consumption | $< 1 \text{ W}$ |
| Output | Potential free Reed contact N.C. with liquid; N.O. without liquid (in air) Rated: Max. 50 V AC / DC; Max. 0.5 A; Max. 10 VA for PLC connection or coupling relay |
| Connector | Screw terminals, IP 20, cable Max. 2.5 mm ² |
| Additional function | Connection to an external test button, with which the whole electronics, wiring and signaling device can be tested. |
| Probe | Or PE, or PP |
| Length | Min. 95 mm |
| Fitting | Union nut BSP 1", includes EPDM o-ring |
| Ambient temperature | -20 ... +60 °C |
| Pressure limit | 2 bar |
| Housing terminal | PBT, IP 65 acc. EN 60529 |

Caution:

When supply is switched on, the output contact remains closed about 0.5 second during the auto-test routine.

The Capsytron TLS sensor is of one piece; Previous series had 1 detector and 1 reference electrode, separated of each other (SFL / SFL BZ).

To adapt actual model to an old series holder, we recommend to plug in a tap where was the reference electrode.

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

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Dry run protection
CAPSYTRON TLS

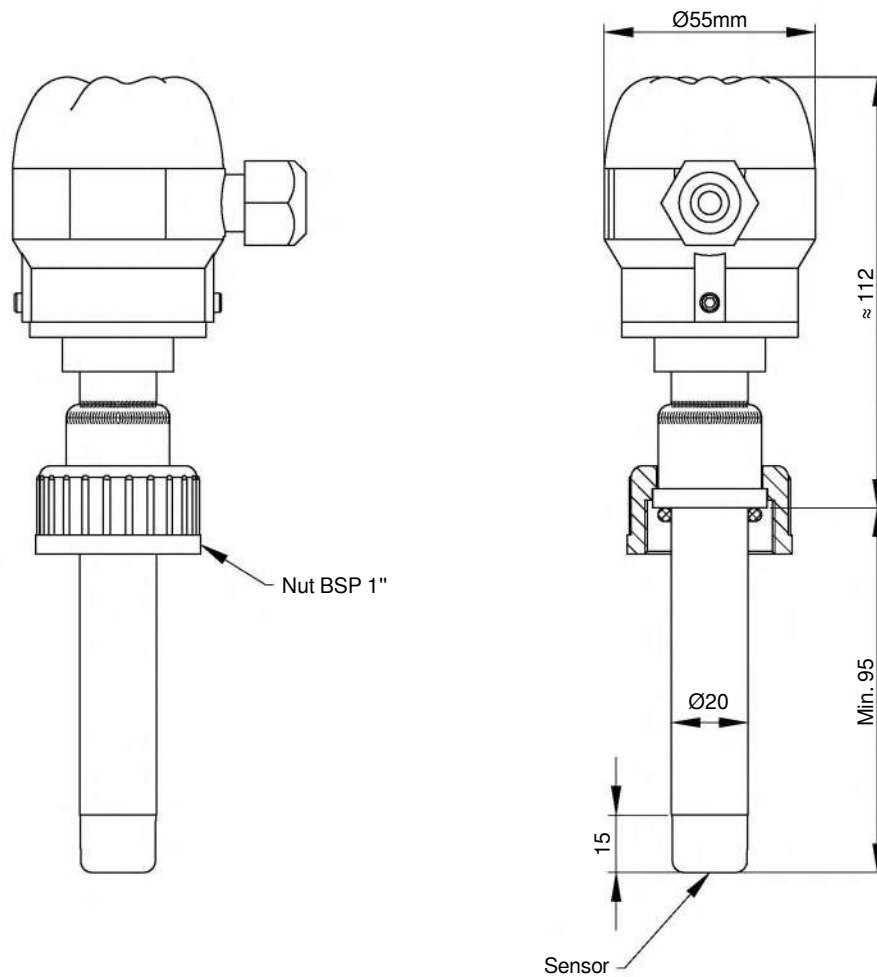
10-03-2020

D-556.95-EN-AC

LEV

556-95/1

DIMENSIONS



CODE NUMBERS AND REFERENCES

| Code | Reference | Description |
|---------|-----------------|--|
| 556 900 | CAPSYTRON TLS 4 | CAPSYTRON TLS, 15 - 27V DC, HD-PE stem, PVC nut BSP 1" |
| 556 905 | CAPSYTRON TLS 2 | CAPSYTRON TLS, 15 - 27V DC, PP stem, PVC nut BSP 1" |

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Dry run protection
CAPSYTRON TLS

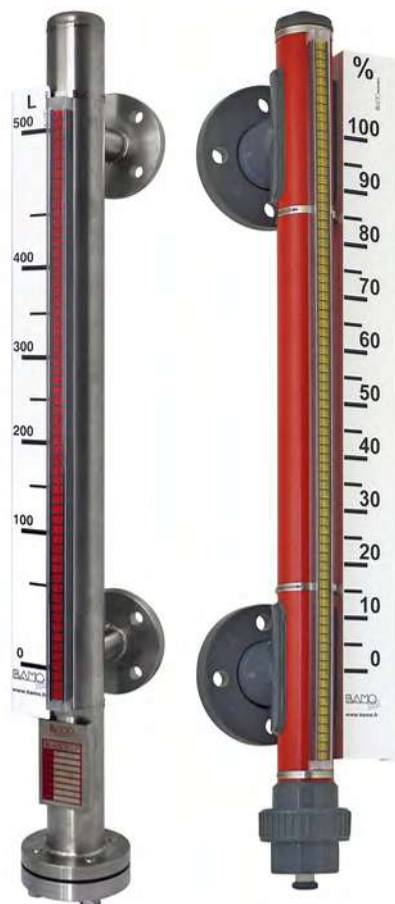
10-03-2020

D-556.95-EN-AC

LEV

556-95/2

Level indicator MAGTOP



- Lateral mount
- Direct reading on two-color magnetic ruler
- Materials: AISI 316L, PVC, PPH, PVDF
- Operating under pressure
- Options: Level switches, Graduated ruler, Analogue output 4-20 mA

APPLICATIONS

Direct reading of level in opaque and closed tanks, metal or plastic vessels.

DESCRIPTION

The MAGTOP instantly indicates the level of liquid contained in a tank, via a two-color magnetic ruler, 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. Instrument is installed on the tank by lateral or axial fittings. 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 are available in various models:

- MAGTOP 300 in stainless steel is suitable for lateral mounting on metal tanks.
- MAGTOP 400 & 410 are designed to an axial installation over 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.

To facilitate handling during commissioning or to satisfy transport conditions, MAGTOP can be made in 2 or 3 parts.

The MAGTOP is subject to a plan submitted for approval, before manufacture.

Options, accessories

- Adjustable level switches to mount on measuring tube (data sheets 585)
- Reed chain "RTM" with transmitter 4-20 mA (or resistor output) for MAGTOP (made of one piece); See data sheet 586-01.
- Graduated ruler in cm, % or volume according specifications.
- Drain valve with fitting 1/2" G

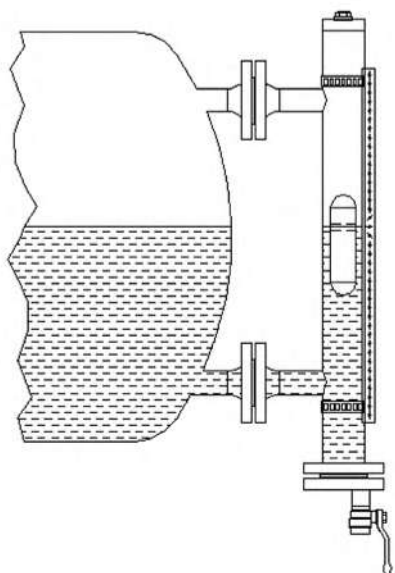
DEFINITION OF AN INSTRUMENT

OPERATING CONDITIONS

Liquid:
 Density (kg /m³)
 Pressure (bar)
 Temperature (°C)

Model:
 Type (300, 400, 410, 801, 803, 806)
 Center to Center (L in mm, acc. spec.)
 Fittings (acc. spec.)
 OPTIONS (acc. spec.)

PED or/ and ATEX versions see data-sheet 560-03



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Level indicator
MAGTOP

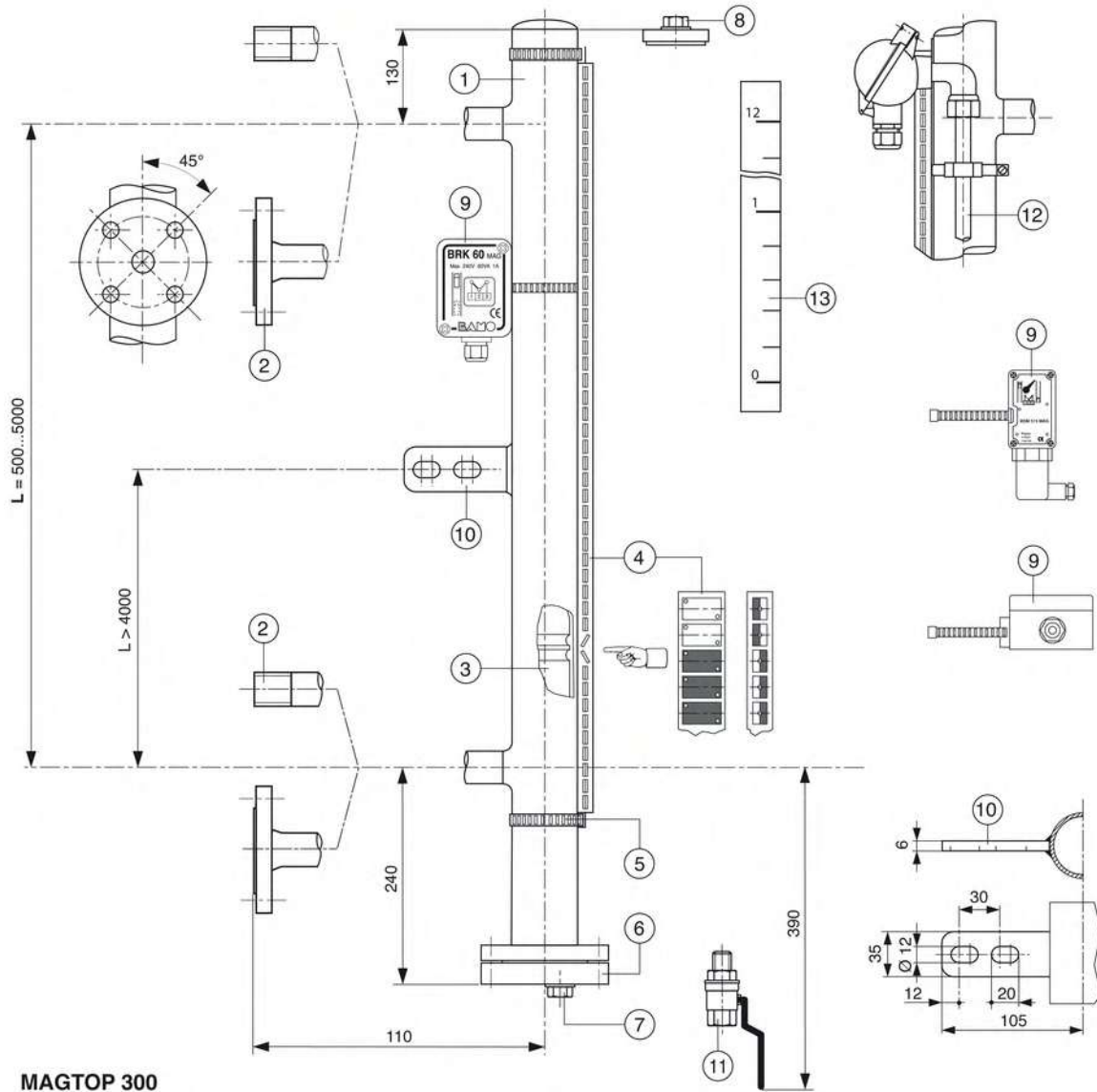
30-10-2020

D-560.01-EN-AF

NIV

560-01 /1

MAGTOP 300: All stainless steel version



MAGTOP 300

DESCRIPTION

| | |
|----|---|
| 1 | AISI 316L measuring tube, Ø 60.3 |
| 2 | Lateral fittings: Flanges ND 10, 15, 20, 25, 32 (PN 16); Threads ½", ¾", 1" G (PN 16); other fittings on request |
| 3 | Float with built-in magnet |
| 4 | Magnet ruler: Makrolon® or Aluminum according to temperature |
| 5 | Clamp collars in stainless steel 304 |
| 6 | Plain flange for float insertion or maintenance |
| 7 | Drain plug ½" G |
| 8 | OPTION : Vent plug ½" G |
| 9 | OPTION: Level switches BRK 60/MAG (T° < 80 °C); BSM 515 (T° < 90 °C); BRT60 if temperature is up to 200 °C |
| 10 | Brackets (L > 4000) |
| 11 | OPTION : Drain valve ½" G |
| 12 | OPTION : RTM, Reed chain with output signal resistor or with 4-20 mA transmitter (only when measuring tube is of 1 piece) |
| 13 | OPTION: Stainless steel graduated ruler (volume, %, cm), scale linear or not |

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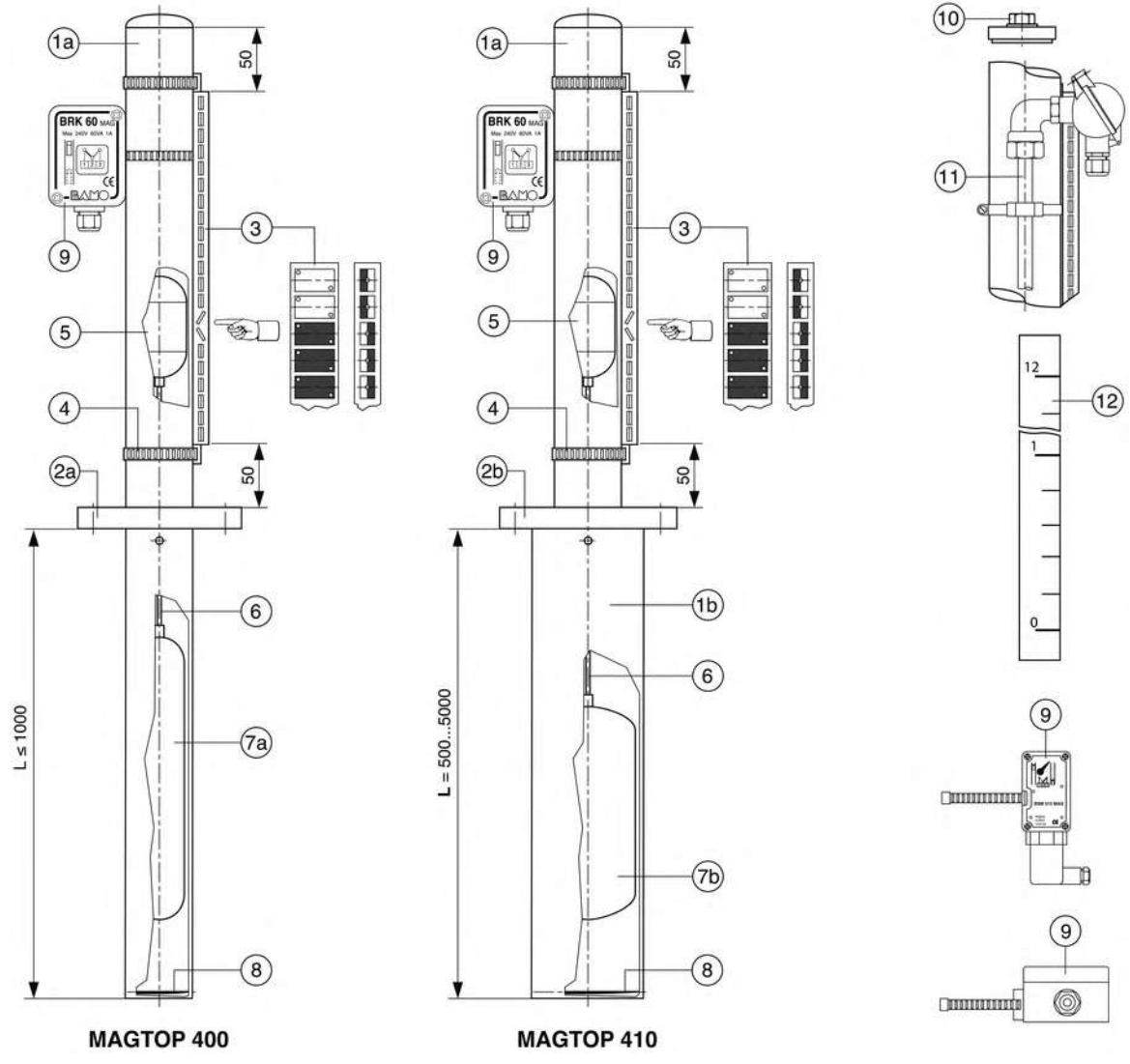
Level indicator
MAGTOP

30-10-2020

D-560.01-EN-AF

NIV

560-01 /2



MAGTOP 400

MAGTOP 410

DESCRIPTION

| | |
|----|--|
| 1a | AISI 316L measuring tube, Ø 60.3 |
| 1b | Immersion tube: AISI 316 L, Ø 104 |
| 2a | Axial connection: flange DN 80, 100, 125 / PN 16 |
| 2b | Axial connection: Fitting by flange DN 125 / PN 16 |
| 3 | Magnet ruler: Makrolon® or Aluminum according to temperature |
| 4 | Clamp collars in stainless steel 304 |
| 5 | Magnet actuator |
| 6 | Rod assembly |
| 7a | Float Ø 50 mm, height 330 mm |
| 7b | Float Ø 90 mm, height 195 mm |
| 8 | Float stopper |
| 9 | OPTION: Level switches BRK 60/MAG (T° < 80 °C); BSM 515 (T° < 90 °C); BRT60 if temperature is up to 200 °C |
| 10 | OPTION : Vent plug ½" G |
| 11 | OPTION : RTM, Reed chain with output signal resistor or with 4-20 mA transmitter |
| 12 | OPTION: Stainless steel graduated ruler (volume, %, cm), scale linear or not |

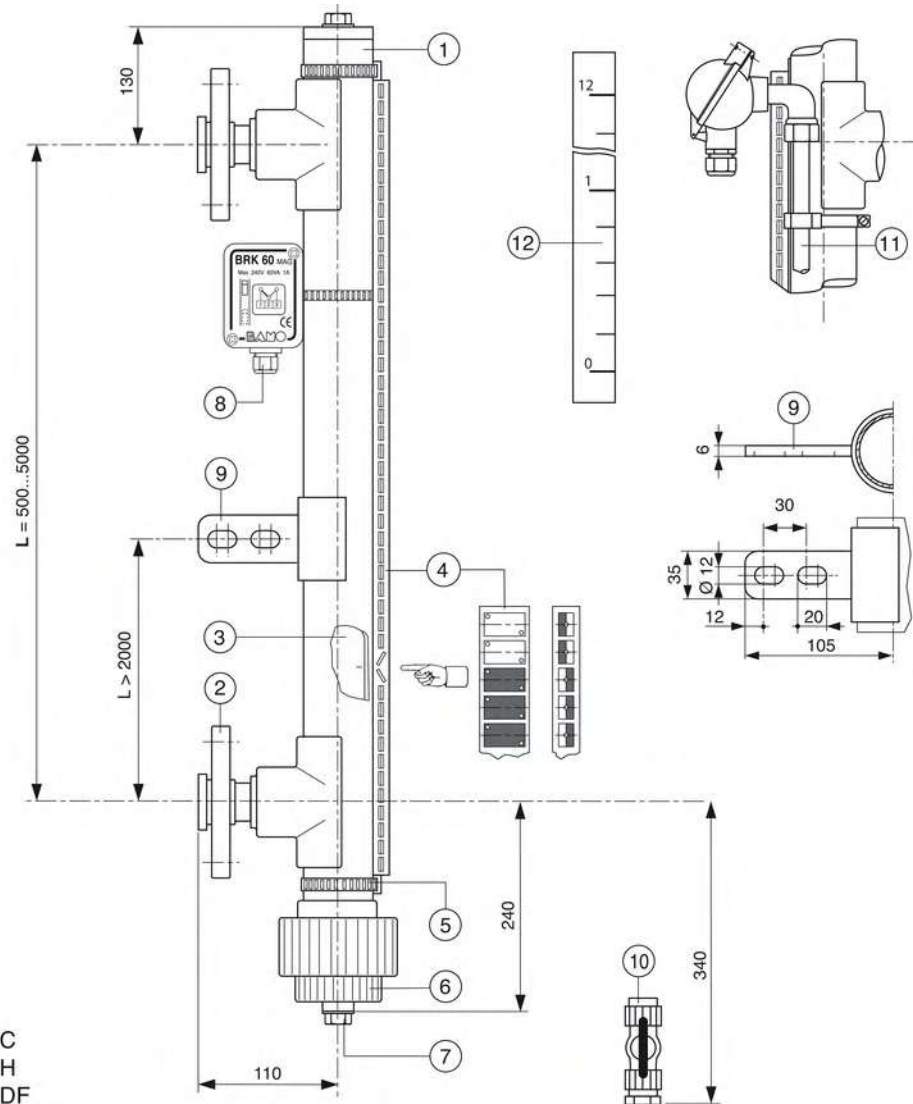
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**Level indicator
 MAGTOP**
 30-10-2020 D-560.01-EN-AF

NIV
560-01 /3

MAGTOP 800: Plastic versions PVC, PPH or PVDF

Important: As a maximum, operating pressure is 6 bar at 20 ° C.



MAGTOP 801 → PVC
 MAGTOP 803 → PPH
 MAGTOP 806 → PVDF

DESCRIPTION

| | |
|----|---|
| 1 | Measuring tube Ø 63 mm, PVC (MAGTOP 801), PPH (MAGTOP 803), PVDF (MAGTOP 806) |
| 2 | Lateral fittings: Flanges ND 25 or 32 in PVC (MAGTOP 801), in PP steel core (MAGTOP 803 & 806); other fittings on request |
| 3 | Float with built-in magnet: PVC (MAGTOP 801), PPH (MAGTOP 803), PVDF (MAGTOP 806) |
| 4 | Magnet ruler: Makrolon® |
| 5 | Clamp collars in stainless steel 304 |
| 6 | Union (3 pieces) for float insertion or maintenance |
| 7 | Drain plug ½" G, PVC (MAGTOP 801), PPH (MAGTOP 803), PVDF (MAGTOP 806) |
| 8 | OPTION: Level switches BRK 60/MAG |
| 9 | Brackets (L > 2000 mm), PVC (MAGTOP 801), PPH (MAGTOP 803), PVDF (MAGTOP 806) |
| 10 | OPTION : Drain valve ½" G, PVC (MAGTOP 801), PPH (MAGTOP 803), PVDF (MAGTOP 806) |
| 11 | OPTION : RTM, Reed chain with output signal resistor or with 4-20 mA transmitter (only when measuring tube is of 1 part) |
| 12 | OPTION: Graduated ruler (volume, %, cm), scale linear or not, in PVC (MAGTOP 801, 803 & 806) |

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Level indicator
MAGTOP

NIV

560-01 /4

30-10-2020

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



- Versions ATEX or and PED
- Direct reading on two-color magnetic ruler
- Temperature up to 450 °C
- Pressure up to 250 bar
- Options: Level switches, graduated ruler, Analogue signal transmitter

APPLICATION

Direct reading and control of level inside opaque and closed metal tanks in hazardous area ATEX or/ and under pressure requirements of Pressure Equipment Directive.

DESCRIPTION

MAGTOP D indicates instantly the level of liquid inside the tank, with a two-colour ruler with magnetic flaps actuated by the magnetic float inside the measuring tube.

Design of this series allows the installation in hazardous area on storage tank for dangerous fluids, under pressure, with high temperature. For extreme operating temperatures we provide a complete or partial insulation (fiber glass fabric).

Our MAGTOP D are made of stainless steel with lateral fittings, flanges or threaded fittings.

Other type of connection is available: coaxial or for over-tank installation (free space above the tank is equivalent to the immersion depth).

MAGTOP D is subject to approval: we submit a plan before manufacture (mandatory).

Options : Accessories

- Level switches are adjustable along the measuring tube (data-sheets 585-...)
- Analogue transmitter with a 4-20 mA output signal.
- Graduated ruler in %
- Drain valve (1/2" BSP or NPT).

Certificates available on request (before quote/ manufacturing):

- Materials certificate EN 10204 3.1
- P.E.D. 2014/68/EU
- Pressure test (bar) 2.2
- GL, LRS or BV
- NACE MR 01.75 / ISO 15156
- ATEX II 1/2 G c IIC T1...T6; II 1 D Txx °C

MAGTOP ATEX, DESIGN

Operating conditions:

Hazardous area, ATEX Class:

Liquid

S.G.

Pressure bar

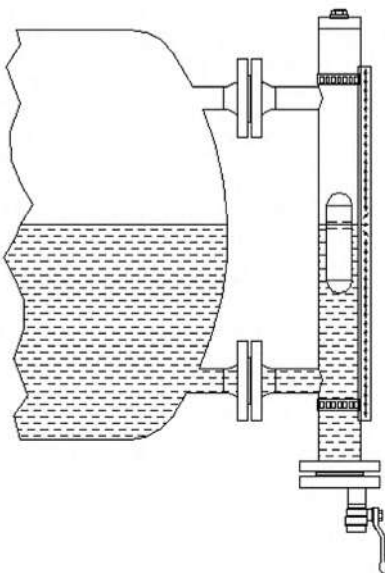
Temperature °C

Features:

Center to Center (L= CtoC in mm)

Fittings (according to specifications)

OPTIONS (according to specifications)



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

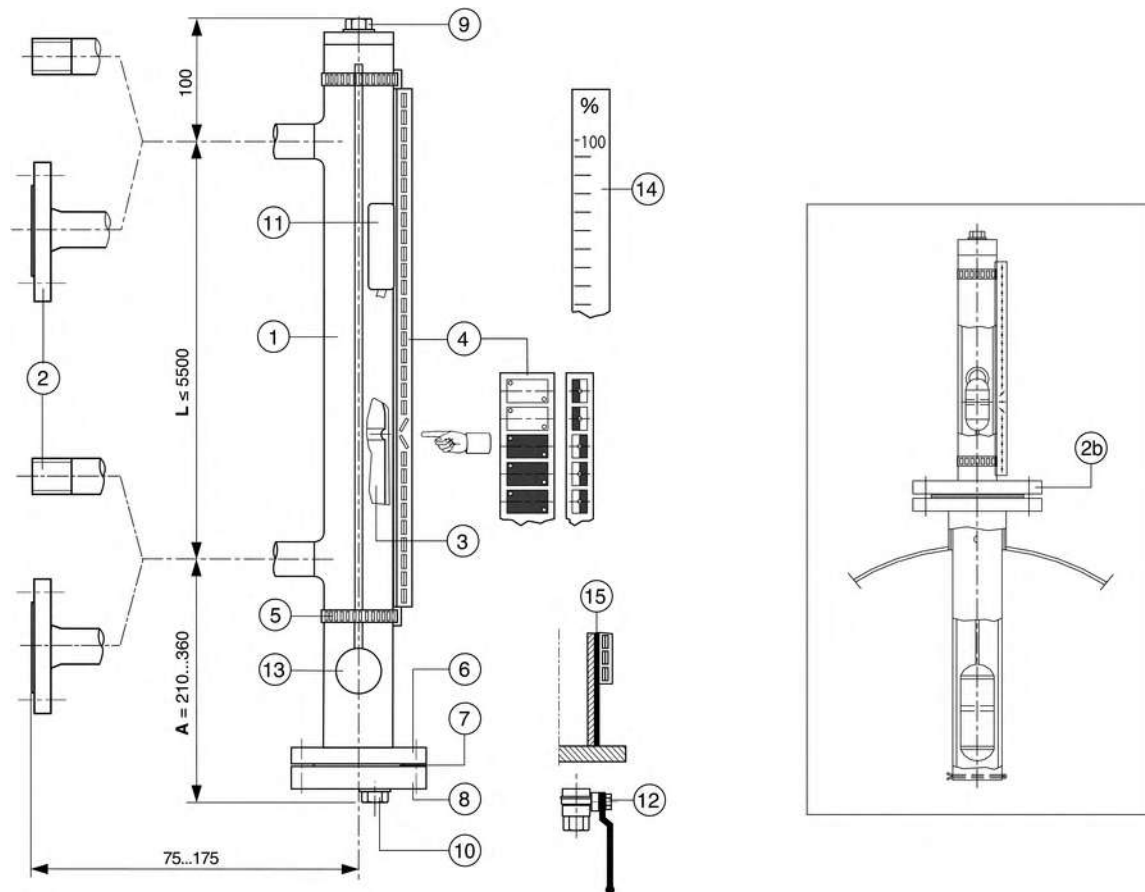
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D-560.03-EN-AE

NIV

560-03/1

NOMENCLATURE



| | | |
|----|--|--------------------------------|
| 1 | Measuring tube O.D. 60.3 x2 mm | AISI 316 L |
| 2 | Sided tank fittings: ANSI flanges | AISI 316 L |
| | Sided tank fittings: ISO flanges | AISI 316 L |
| | Sided tank fittings: Male threads BSP or NPT | AISI 316 L |
| 2b | Axial tank fitting: ND 50 to 150 / PN 40 ----> On request | AISI 316 L |
| 3 | Float: Dimension according to the density of the liquid | AISI 316 Ti or Titanium |
| 4 | Indicator | Aluminum/ Polycarbonate/ Glass |
| 5 | Mounting clip | AISI 301 |
| 6 | Flange for float removal | AISI 316 L |
| 7 | Gasket | PTFE, Aramide, Graphite |
| 8 | Counter flange | AISI 316 L |
| 9 | Vent plug 1/2" BSP or NPT | AISI 316 L |
| 10 | Drain plug 1/2" BSP or NPT | AISI 316 L |
| 11 | OPTION : Level switch, with ATEX certification | - |
| 12 | OPTION : Drain valve 1/2" BSP or NPT | - |
| 13 | OPTION : Reed chain ± 5 mm, with 4-20 mA transmitter EExia | AISI 316 L; Aluminum |
| 14 | OPTION : Graduated ruler [%] | AISI 316 L |
| 15 | OPTION : Thermic insulation (partial or total) | Fiber glass fabric |

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

30-10-2020

D-560.03-EN-AE

NIV

560-03/2

Level indicator GNR 5 - PVC



- Direct reading on site
- Height: 40 to 500 cm
- Wet parts: PVC, PPH
- Seals: EPDM
- Adjustable level switches

APPLICATIONS

Reading and control of liquid level in a tank; With level switches: Pump and solenoid valves automation, remote alarm signals.

DESCRIPTION

The GNR5 consists of a transparent PVC tube for direct viewing of the stored liquid level.

Stop valves (in option) allow the disassembly of the measuring tube by keeping the tank under pressure.
Drain valve as an option on the bottom fitting.

To limit shocks to the measuring tube, GNR5 can be equipped with a transparent PVC protection screen.

Accessories: Level switches BSM or BRK to send a remote signal on/off for alarms or automation of pump or solenoid valve.

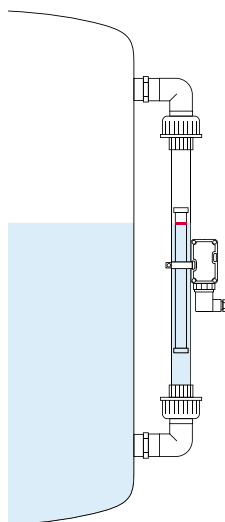
TECHNICAL FEATURES

| | |
|-----------------------|--|
| Measuring tube | PVC, transparent, Ø 32 mm |
| Magnetic float | PPH, Ø 25 mm (height 180 mm) |
| Stop valves | PVC, EPDM seals (standard) |
| Operating temperature | 0... +45 °C |
| Operating pressure | 4 bar max. at 20 °C |
| Fittings: | <i>To the tank</i> |
| | Loose flanges, PVC, DN20 or DN25 (PN 10) |
| | Threads: BSP 1" |
| Center to center | 400 ... 5000 mm |
| | <i>For heights greater than 2000 mm, the indicator is supplied in 2 parts.</i> |

Options:

- Level switches BRK 60 (data-sheet 585-02)
- Level switches BSM 501 (data-sheet 585-01)
- Protection screen, Ø 63 mm, transparent PVC

To validate the use of a GNR5 for your application, please provide the distance CtoC, fluid quality & density, maxima of temperature and pressure, requested fittings & accessories.



Operating system

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Level indicator
GNR 5 - PVC

04-10-2019

D-571.01-EN-AC

NIV

571-01 /1

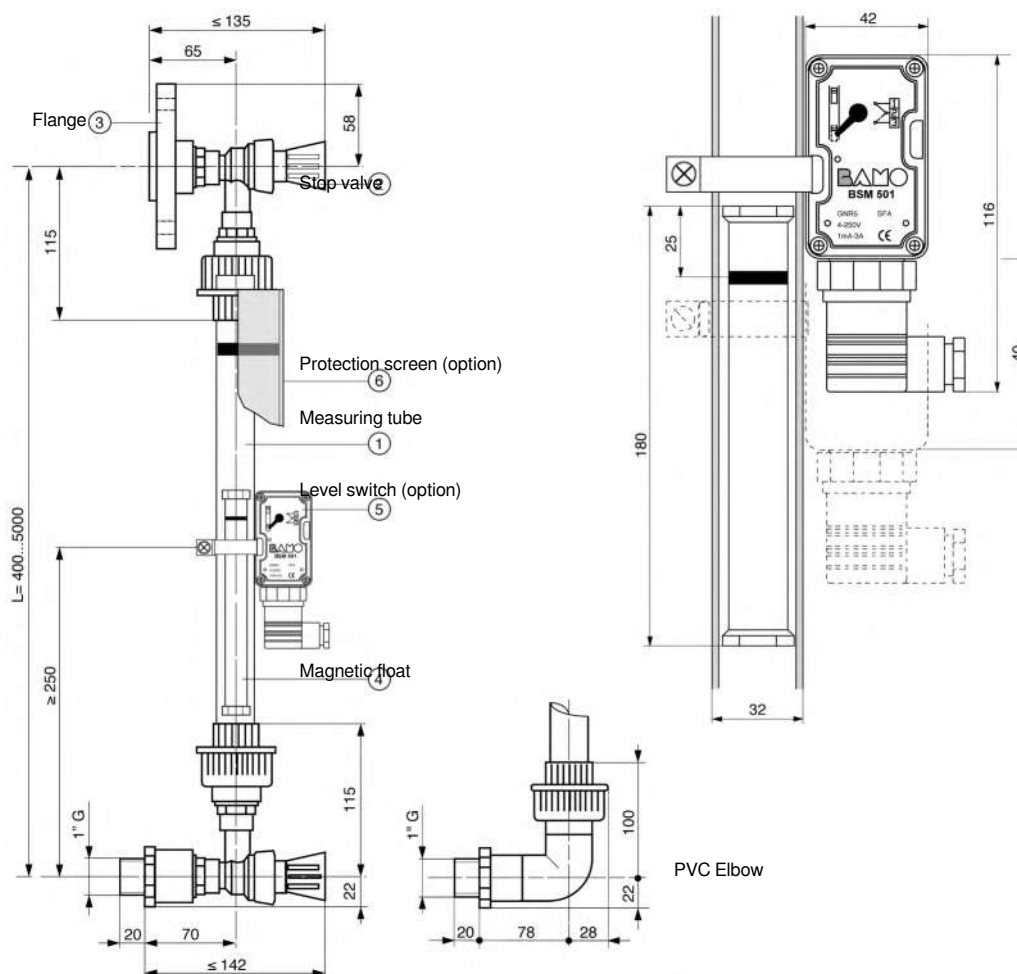
CODE NUMBERS AND REFERENCES

| Code | Reference | Fittings | Stop valves | Elbows (90°) | Drain valve |
|---------|-----------------------|----------------|-----------------|-----------------|-------------|
| 571 100 | GNR 5/PVC-52/1" | Threads BSP 1" | On top & bottom | - | - |
| 571 101 | GNR 5/PVC-52/DN 20 | Flanges DN 20 | On top & bottom | - | - |
| 571 102 | GNR 5/PVC-52/DN 25 | Flanges DN 25 | On top & bottom | - | - |
| 571 120 | GNR 5/PVC-52/1"+P | Threads BSP 1" | On top & bottom | - | Included |
| 571 121 | GNR 5/PVC-52/DN 20 +P | Flanges DN 20 | On top & bottom | - | Included |
| 571 122 | GNR 5/PVC-52/DN 25 +P | Flanges DN 25 | On top & bottom | - | Included |
| 571 110 | GNR 5/PVC-42/1" | Threads BSP 1" | On bottom | On top | - |
| 571 111 | GNR 5/PVC-42/DN 20 | Flanges DN 20 | On bottom | On top | - |
| 571 112 | GNR 5/PVC-42/DN 25 | Flanges DN 25 | On bottom | On top | - |
| 571 200 | GNR 5/PVC-32/1" | Threads BSP 1" | - | On top & bottom | - |
| 571 201 | GNR 5/PVC-32/DN 20 | Flanges DN 20 | - | On top & bottom | - |
| 571 202 | GNR 5/PVC-32/DN 25 | Flanges DN 25 | - | On top & bottom | - |

Accessories

| | | |
|---------|----------------------------|---|
| 570 080 | GNR 52 | For replacement: Magnetic float, PPH, for PVC tube \varnothing 32 x 2,4 |
| 585 100 | BSM 501 / 32 | Level switch BSM 501, with stainless steel collar for tube \varnothing 32 |
| 570 050 | BRK 60 / 32 | Level switch BRK 60, with stainless steel collar for tube \varnothing 32 |
| 571 130 | Ecran PVC \varnothing 63 | Protection screen \varnothing 63, transparent PVC |

DIMENSIONS



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Level indicator
GNR 5 - PVC

04-10-2019

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NIV

571-01/2

Level indicator GNR 6

- Direct reading on site
- Measuring tube O.D. 63 mm
- Wet parts: PVC and PPH
- Stop valves, included
- Options: Level switches, graduated ruler



APPLICATIONS

Reading and control of liquid level in a tank; With level switches: Pump and solenoid valves automation, remote alarm signals.

DESCRIPTION

The GNR6 consists of a transparent PVC tube for direct viewing of the stored liquid level.

Standard supply includes the stop valves to allow the disassembly of the measuring tube for cleaning maintenance. The measuring tube is in transparent PVC, O.D. 63 mm, which guides the magnetic float. On the bottom the PVC drain plug (union fitting) allows an easy introduction of the float into the measuring tube.

Option: Graduated ruler, PVC ruler, graduated in cm or on request in % or in volume.

The ruler is fixed with PE clamps to the measuring tube.

Accessories: Level switches BSM or BRK to send a remote signal on/off for alarms or automation of pump or solenoid valve.

TECHNICAL FEATURES

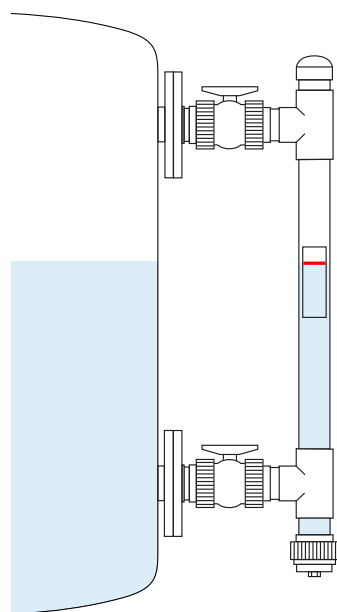
| | |
|-----------------------|--|
| Measuring tube | PVC, transparent, Ø 63 mm |
| Stop valves | PVC |
| Seals | EPDM (Option : FPM) |
| Magnetic float | PPH, Ø 52 mm, 132 mm high, 170 g |
| Operating temperature | 0... +45 °C |
| Operating pressure | Atmospheric |
| Fittings | Loose flanges, PVC, (PN16) On request: Threads or unions |
| Center to center | As a minimum: 500 mm <i>For heights greater than 2000 mm, the indicator is supplied in 2 parts.</i> |

Options:

- Level switches BRK 60 (data-sheet 585-02)
- Level switches BSM 501 (data-sheet 585-01)
- Graduated ruler, white PVC

To validate the use of a GNR 6 for your application, please provide the distance CtoC, fluid quality & density, maxima of temperature and pressure, requested fittings & accessories.

Standard version is convenient for liquids of S.G. 1 with a viscosity similar to water one.



Operating system

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Level indicator
GNR 6

08-10-2019

D-572.01-EN-AB

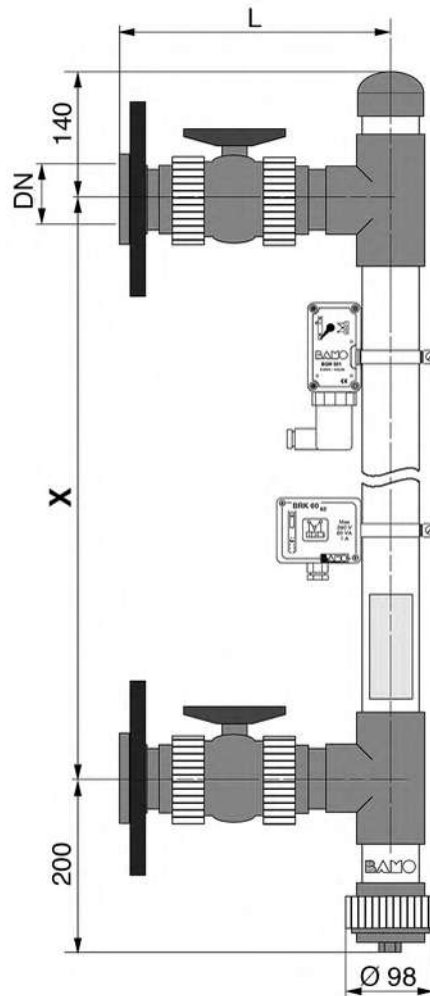
NIV

572-01 /1

CODE NUMBERS AND REFERENCES

| Code | Reference | Fittings | Sealing |
|---------|------------------|-----------------------|---------|
| 572 100 | GNR 6 / PVC - 63 | Flanges ND 50 (PN 16) | EPDM |
| 572 105 | GNR 6 / PVC - 50 | Flanges ND 40 (PN 16) | EPDM |
| 572 110 | GNR 6 / PVC - 40 | Flanges ND 32 (PN 16) | EPDM |

DIMENSIONS



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Level indicator
GNR 6

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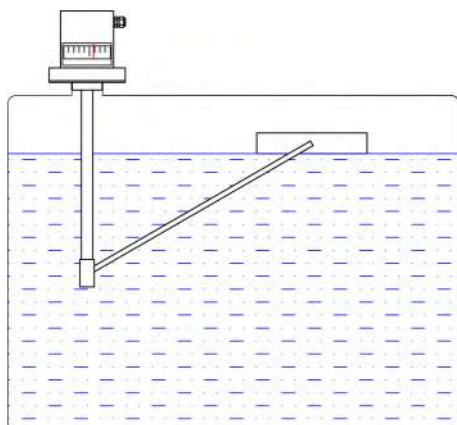
NIV

572-01 /2

572

572

Level controllers and indicators CF3/ CF4 Series



- Tank height from 250 to 3000 mm
- Transmission: angle drive
- Fitting: male 2" BSP
- Head housing: IP 54
- 3 possible functions:
Direct reading
With 1 to 3 contacts, potential free
Output signal: continuous resistive signal (Ω)

APPLICATIONS

Gauge for level display and filling control.

- Diesel in storage tank or day-tank
- Stored lubricating oil, glycol water, rainwater

Particularly suited to meet the needs and conditions of use for storage tank or day-tank of diesel generators.

DESCRIPTION

The electric gauge is mounted above the tank. Against the liquid height, the float transmits the level through an angle drive to a vertical stem. The stem actuates on a pointer associated with a graduated dial to display the level in the tank. Depending on the model, it can also act on contacts, and/ or a potentiometer which will deliver an ohmic value image of measurement.

The instrument is available with several functions:

- 1 continuous signal output (Ω)
- Display for direct reading of level
 For commodity, the level is visible on 2 opposite sides.
- 1 to 3 contacts (potential free)
 Option: on request up to 5 contacts

The complete system is supplied ready to install and to use.

TECHNICAL FEATURES

| | |
|--------------------------|--|
| Materials | Steel, Nylon Float: Foamed PVC |
| Flange seal | Cork gasket |
| Fitting | 2" BSP, male |
| Head housing | IP 54 |
| Operating pressure | Atmospheric |
| Operating temperature | Between 0 and 40 °C |
| Measuring distances | Model 1: From 250 up to 1100 mm Model 2: From 1100 up to 3000 mm |
| Scale: | Liters |
| Contact(s) | Default setting: Filling function: ON at 50 % and OFF at 80 % capacity (2-way contact, 10 A, 230 V, potential free) - High level: 90 % capacity (Change-over contact, 10 A, 230 V, potential free) - Low level alarm: 30 % capacity (Change-over contact, 10 A, 230 V, potential free) <i>On request: Factory adjustment between 10 and 90 %.</i> |
| Output, resistive signal | From 0 to 90 Ω (approx., ± 15 %) |

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Level controllers and
indicators
CF3/ CF4 Series

08-09-2017

D-579.02-EN-AB

NIV

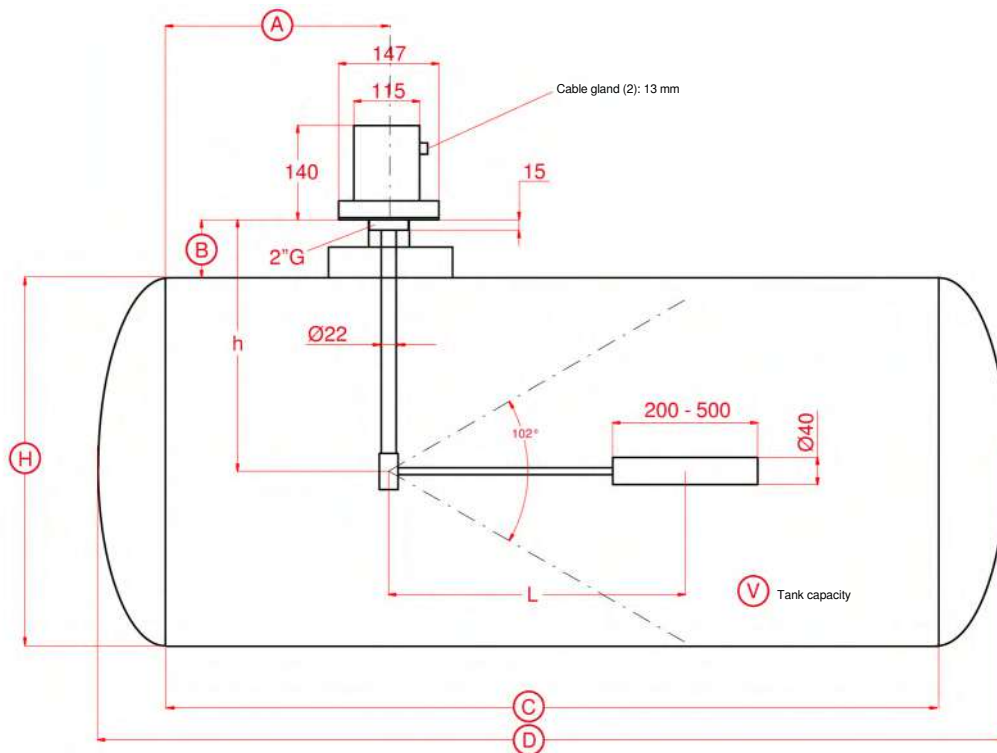
579-02/1

CODE NUMBERS AND REFERENCES

| Code | Reference | Direct reading | Output Ω | Contacts | | |
|---|--------------|----------------|-----------------|-----------|------------|---------|
| | | | | LOW Level | HIGH Level | ON/ OFF |
| Model 1: distance from 250 up to 1100 mm | | | | | | |
| 579 050 | CF3 | ● | ● | | | |
| 579 054 | CF3-1S | ● | ● | ● | | |
| 579 058 | CF3-2S | ● | ● | ● | ● | |
| 579 070 | CF4 RD SIA | ● | ● | ● | ● | ● |
| 579 200 | CF4 | ● | | ● | ● | ● |
| 579 220 | CF20 | | | ● | ● | ● |
| 579 300 | JLD20 | ● | | | | |
| 579 636 | CF102 | | | ● | | |
| 579 641 | CF103 | | | ● | ● | |
| Model 2: Distance from 1100 up to 3000 mm | | | | | | |
| 579 052 | CF3 G | ● | ● | | | |
| 579 056 | CF3 G-1S | ● | ● | ● | | |
| 579 060 | CF3 G-2S | ● | ● | ● | ● | |
| 579 072 | CF4 RD SIA G | ● | ● | ● | ● | ● |
| 579 210 | CF4 G | ● | | ● | ● | ● |
| 579 225 | CF20 G | | | ● | ● | ● |
| 579 304 | JLD20 G | ● | | | | |
| 579 637 | CF102 G | | | ● | | |
| 579 642 | CF103 G | | | ● | ● | |

DIMENSIONS

Dimensional (not to scale)



Dimensions A, B, C, D, H and V (tank volume) must be confirmed on purchase order.
In case of a rectangular shaped tank, the width must be mentioned as well.

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Level controllers and
indicators
CF3/ CF4 Series

08-09-2017

D-579.02-EN-AB

NIV

579-02/2

Level electric gauge JE100



- Tank height from 1250 to 3000 mm
- Transmission: angle drive
- Fitting: male 2" BSP
- Head housing: IP67
- 2 possible functions:
 - 1 or 2 contacts, potential free
 - 1 analogue output (Ω) + 1 contact

APPLICATIONS

Level transmitter and alarm signals on low and high levels, are designed for indoor or outdoor tanks:

Liquid storage examples:

- Diesel
- Lubricating oil
- Glycol water
- Rainwater

They are particularly well adapted for storage or day-tank on diesel generators located outdoor.

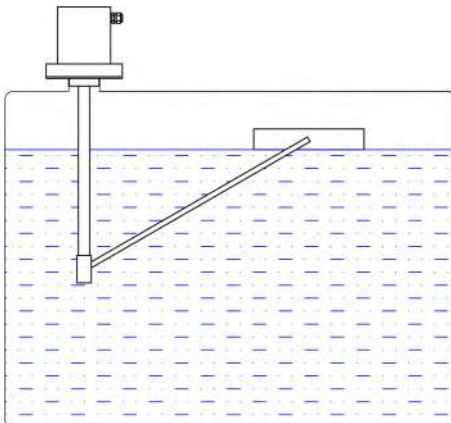
DESCRIPTION

Under the thrust of the fluid, the float transmits the level through an angle drive to a vertical stem.

The stem is then actuating a potentiometer (resistive output) and/or actuates contacts (alarms).

The electric gauge is mounted above the tank.

The complete system is supplied ready to install and to use.



TECHNICAL FEATURES

| | |
|--------------------------|---|
| Materials | Steel, Nylon Float: Foamed PVC On request: Stainless steel (316L) |
| Flange seal: | Cork gasket |
| Mounting | BSP 2", male fitting |
| Head housing | Nylon, IP67 1 pressure gland 13 mm |
| Pressure | Atmospheric |
| Temperature | Between 0 and 40 °C |
| Contacts | Default setting: 1 or 2 contacts (2 way contact), 10 A, 230 V, potential free HIGH level alarm: 90 % LOW level alarm : 25 % On request: Factory adjustment between 20 and 90 %. |
| Continuous signal output | Resistive signal From 0 to 215 Ω (approx., ± 15 %) |

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Level electric gauge JE100

12-01-2021

D-579.03-EN-AC

NIV

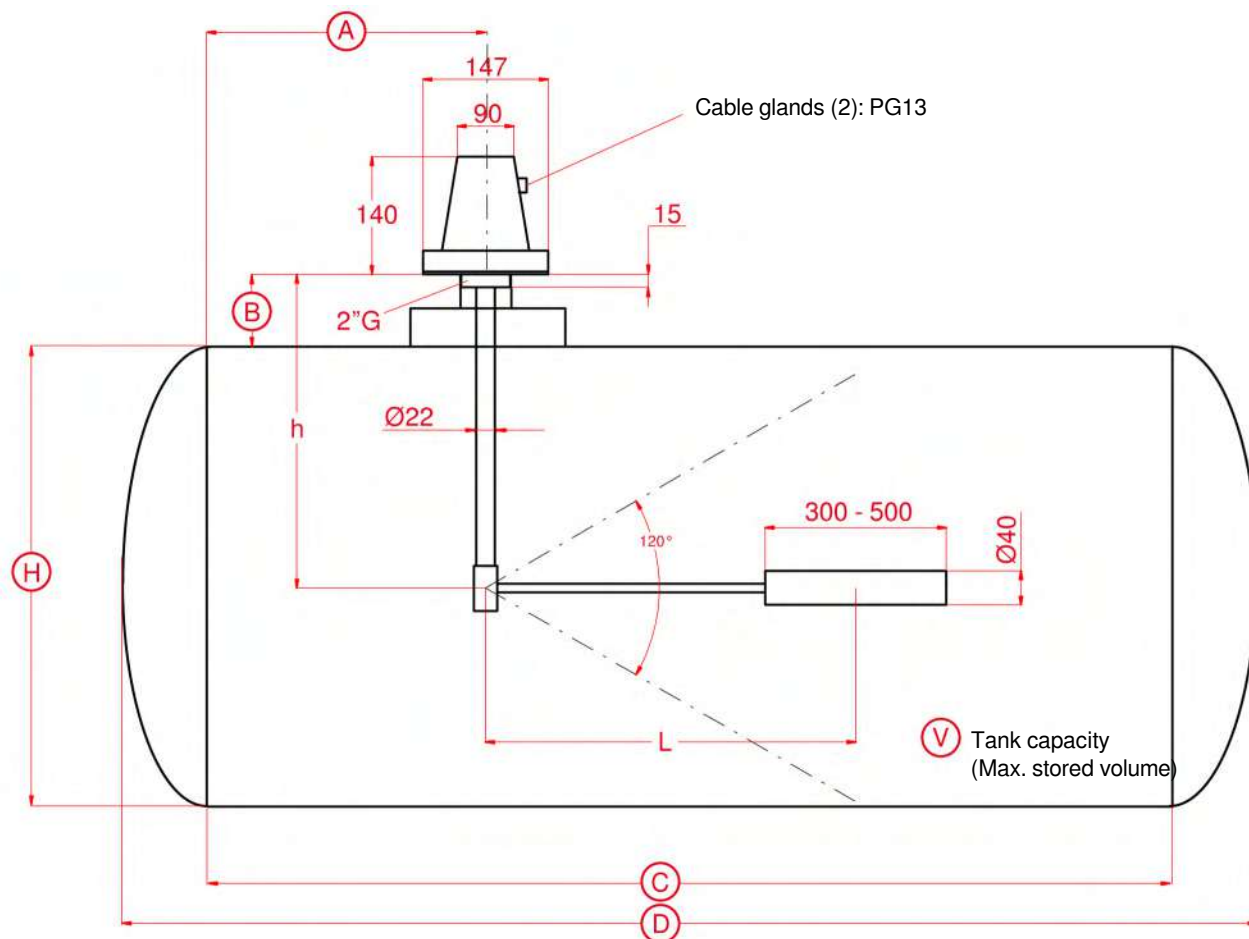
579-03/1

CODE NUMBERS AND REFERENCES

| Code | Reference | Description |
|---------|------------|--|
| 579 010 | JE100 | Resistor output (Ω) |
| 579 012 | JE100 C | Resistor output (Ω) + 1 contact (LOW level alarm) |
| 579 639 | CF102 IP67 | 1 contact (LOW level alarm) |
| 579 643 | CF103 IP67 | 2 contacts (LOW and HIGH level alarms) |

DIMENSIONS

Dimensional (not to scale)



Dimensions A, B, C, D, H and V must be confirmed on purchase order.
In case of a rectangular shaped tank, the width must be mentioned as well.

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Level electric gauge
JE100

12-01-2021

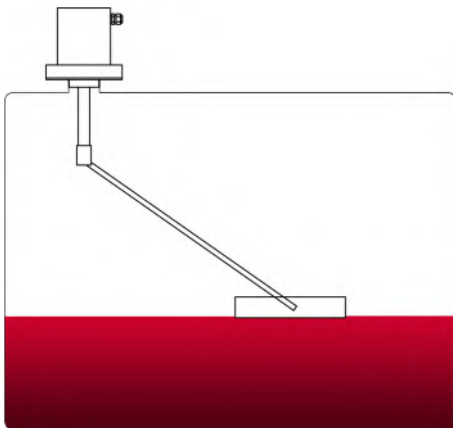
D-579.03-EN-AC

NIV

579-03/2

Level indicator and controller CF80 Series

- Height from 150 to 650 mm
- Fitting: BSP 2", male
- Head housing: IP54
- 3 possible functions:
 - Direct reading on dial
 - With 1 to 3 contacts, potential free
 - Output signal: continuous resistive signal (Ω)



APPLICATIONS

These controllers for alarms on low, high levels, and transmitters of continuous level, are designed for indoor and small tanks

- Diesel in tanks
- Day-tanks
- Lubricating oil
- Glycol water
- Rainwater

Particularly suited for small storage tanks (150 to 650 mm high), e.g. on filling automation of tanks for diesel generators.

DESCRIPTION

Under the thrust of the fluid, the float transmits the level through a rod transmission to a vertical stem.

The stem actuates a pointer on the dial, the contacts or/ and a potentiometer for output resistive signal image of the level.

Gauge is mounted on the top of the tank.

Instrument is available in various versions according to requirements:

- Direct reading of level on top or/ and side of gauge head.
- 1 to 3 contacts (2 way contact), high and low levels and/ or pump automation
- Output for continuous resistive signal

The complete system is supplied ready to install and to use.

Models JE80, CF80 and JLD are designed for tanks with a height of 150 to 500 mm.

Model JE80N is designed for tanks with a height of 150 to 650 mm.

TECHNICAL FEATURES

| | |
|-----------------------|---|
| Materials | Steel, Nylon, brass, stainless steel |
| | Float: foamed PVC |
| | Flange seal: Cork gasket |
| Fitting | BSP 2", male |
| Head housing | IP 54 |
| Dial | Above: Orange background; Graduations at 0, 1/2 and 1 (fig1.) |
| | Side: White background; Graduations at 0, 1/2 and 1 (fig.2) |
| Operating pressure | Atmospheric |
| Operating temperature | From 0 to 40 °C |

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Level indicator and controller CF80 Series

08-09-2017

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NIV

579-04/1

Contacts

Default setting:

Low level alarm: 20 % capacity (Change-over contact, 10 A, 230 V, potential free)

High level alarm: 85 % capacity (Change-over contact, 10 A, 230 V, potential free)

Filling function: ON at 40 % and OFF at 80 % capacity (2-way contact, 10 A, 230 V, potential free)

On request: Factory setting between 20 and 85 % capacity.

Output, resistive signal

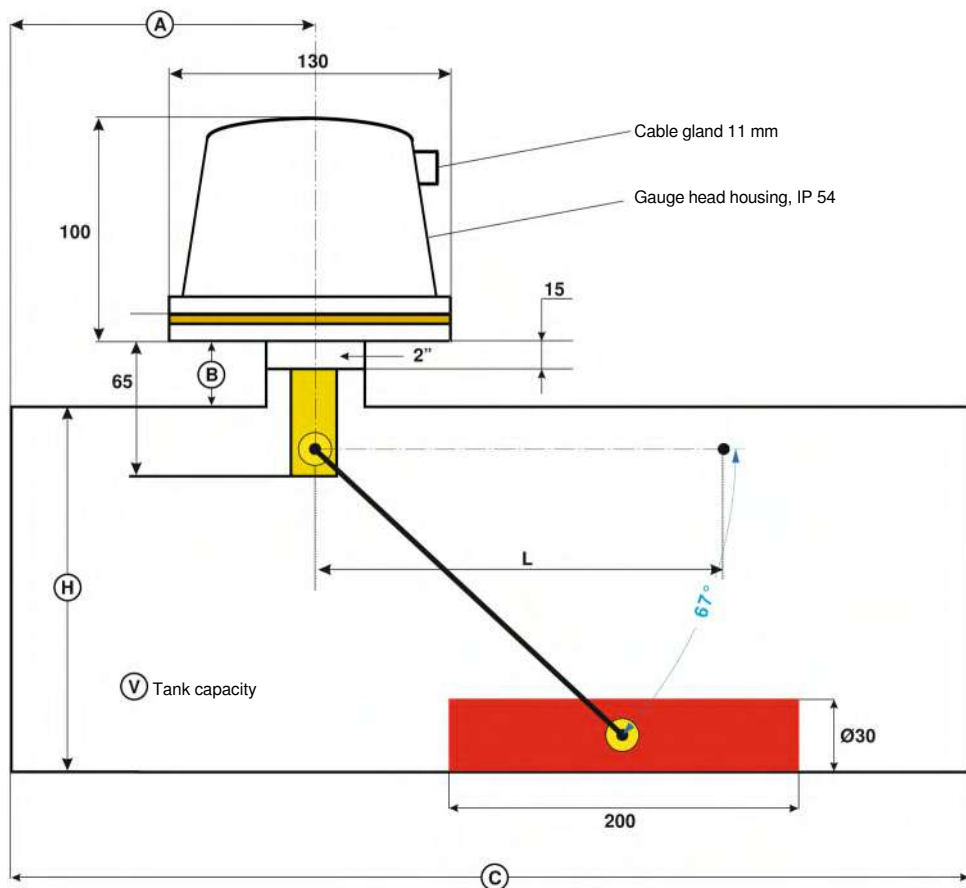
From 0 to 160 Ω (approx., $\pm 15\%$)

CODE NUMBERS AND REFERENCES

| Code | Reference | Direct reading on dial | | Output, Ω | Contacts | | |
|---------|-----------|------------------------|-------------|------------------|-----------|------------|---------|
| | | On top | On the side | | LOW level | HIGH level | ON/ OFF |
| 579 030 | JE80 | | | ● | | | |
| 579 032 | JE80 1S | | | ● | ● | | |
| 579 034 | JE80 2S | | | ● | ● | ● | |
| 579 040 | JE80 N | ● | | ● | | | |
| 579 042 | JE80 N-1S | ● | | ● | ● | | |
| 579 044 | JE80 N-2S | ● | | ● | ● | ● | |
| 579 500 | CF80 N | ● | ● | | ● | ● | ● |
| 579 502 | CF80 1S | | | | ● | | |
| 579 504 | CF80 2S | | | | ● | ● | |
| 579 510 | CF 80 | | | | ● | ● | ● |
| 579 518 | JLD 80 | ● | | | | | |

DIMENSIONS

Dimensional (not to scale)



Dimensions A, B, C, H and V (tank volume) must be confirmed on purchase order.
In case of a rectangular shaped tank, the width must be mentioned as well.

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Level indicator and controller
CF80 Series

08-09-2017

D-579.04-EN-AB

NIV

579-04/2

Float switch for retention receiver CF30 Series



CF-30

- For retention receiver and gutter
- Stem length: from 150 to 2000 mm
- Easy installation
- Output: contact, potential free
- Head housing: IP 54

APPLICATIONS

The float switch CF30 and its variants, are designed to detect a leak from the main tank falling into the retention receiver.

Compatibility with liquids (examples):

- Diesel
- Lubricating oil
- Rainwater
- Water-glycol mixture

As it is a simple controller, much more applications are available.

DESCRIPTION

Against the liquid height, the float lift up a stem actuating a change-over contact.

The fitting allows installation on almost any day-tank or retention receiver. The stem length may be modified on request.

Several versions are available depending on detection heights and mounting:

CF30 Model:

The float is mounted vertically to reduce dimensions.

Distance H: Min. 150 mm

Distance H: Max. 950 mm

Detection from 100 mm of liquid as a minimum (depending of H).

CF31 Model:

The float is mounted horizontally for a detection as soon as possible.

Distance H: Min. 150 mm

Distance H: Max. 2000 mm

Detection from 20 mm of liquid as a minimum (depending of H).

CF32 Model:

Similar to CF30, but with BSP 2" fitting



CF-31



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Float switch for retention
receiver
CF30 Series

13-03-2020

D-579.10-EN-AC

NIV

579-10/1

TECHNICAL FEATURES

| | |
|-----------------------|--|
| Materials | Stem: Stainless steel Float: Foamed PVC |
| Head housing | IP 54 |
| Operating pressure | Atmospheric |
| Operating temperature | Between 0 and 40 °C |
| Contact(s) | 1 changeover contact, 4 A, 230 V, potential-free <i>Factory setting</i> |

CODE NUMBERS AND REFERENCES

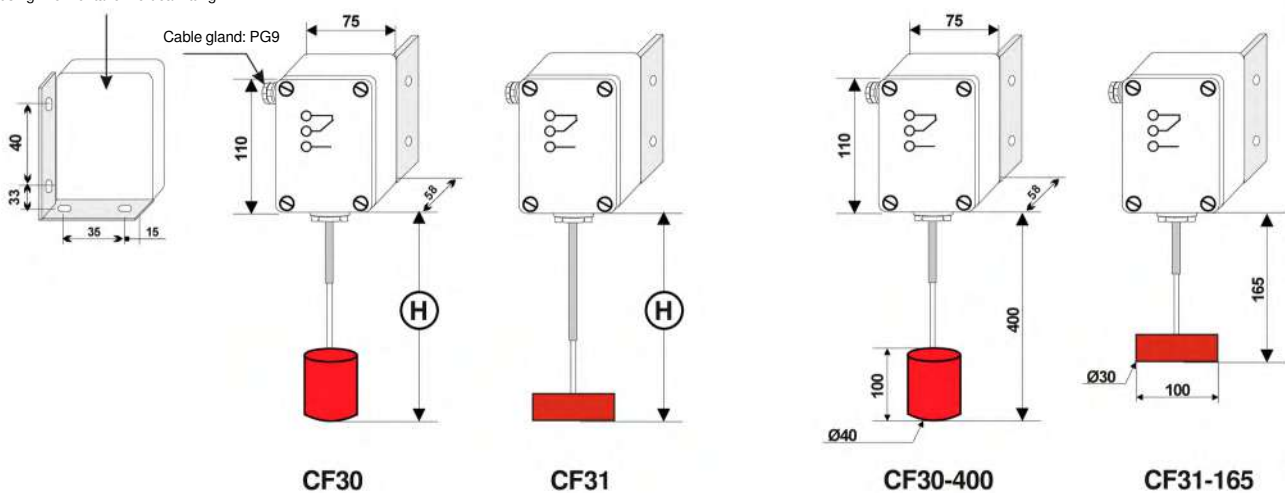
| Code | Reference | Description | Distance H |
|---------|-----------|---|-------------------|
| 579 601 | CF30-400 | Float switch, vertical float, 400 mm | 400 mm |
| 579 611 | CF31-165 | Float switch, horizontal float, 165 mm | 165 mm |
| 579 600 | CF30-xxx | Float switch, vertical float, length H on request | 150 up to 950 mm |
| 579 610 | CF31-xxx | Float switch, horizontal float, length H on request | 150 up to 2000 mm |
| 579 615 | CF32-xxx | Float switch, vertical float, fitting BSP 2", length H on request | 150 up to 950 mm |

DIMENSIONS

Dimensional (not to scale)

The diameter and the length of the float vary according to the distance H.

Housing: Horizontal or vertical fitting



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Float switch for retention
receiver
CF30 Series

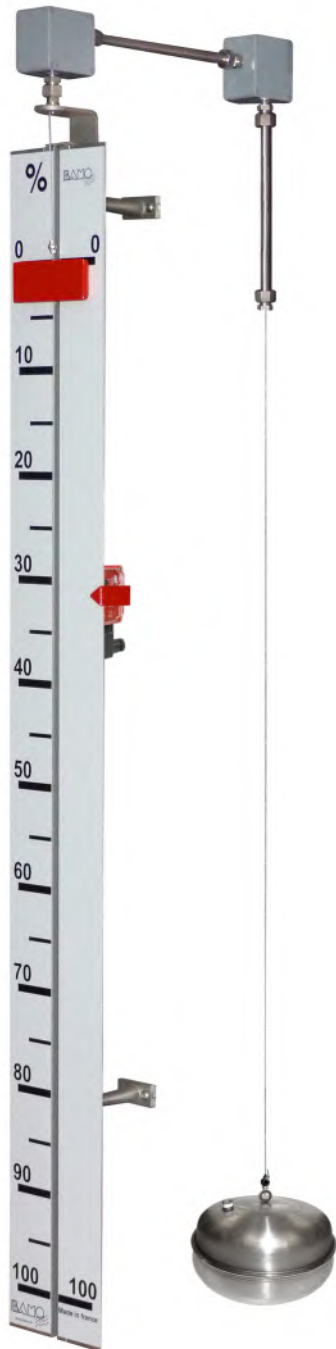
13-03-2020

D-579.10-EN-AC

NIV

579-10/2

Level gauge JAR



- **Metallic level indicator**
- **Height up to 15 m**
- **Graduated ruler in %, m³ or volume**
- **Protected pulleys with no-jump system**
- **Modular equipment**

APPLICATIONS

Level indication for large metal tanks (water storage, lubricant oil, etc.)

DESCRIPTION

The gauge JAR is designed for large metal tanks installed outdoors.

JAR is custom made, delivered in several parts for easy transport and installation on site. The graduated ruler is subject to an approval (drawing is sent before manufacture).

This level indicator includes a float and a pointer linked together with a cable running on 2 pulleys. The pointer is used as a counter weight; it slides along a graduated ruler, following the height of the liquid inside the tank. The graduated scale is fixed on the tank by means of adjustable and sliding tees and can be equipped with level switches.

Note: In the case of a pulley system, the indication is the inverse image of the level in the tank.

TECHNICAL FEATURES

Operating limits

- Tank at atmospheric pressure
- Operating temperature: From 0 °C to 80 °C

JAR kit, base 2980 mm high, includes:

- 1 float, Ø 200 mm, AISI 316
- 6 m long cable, AISI 316, Ø 1 mm
- 2 cable clamps, AISI 316
- 1 pulley AISI 316, ruler top mounting, with a no jump system, protected in aluminum casing
- 1 pulley AISI 316, tank top mounting, with a no jump system, protected in aluminum casing
- 2 transfer tubes AISI 316, Ø 12 mm, each 1 m long
- 1 pointer with built-in magnet, AISI 316, red painted
- 1 graduated ruler in aluminum
- 1 set of 3 sliding tees, adjustable depth

Options:

- Additional section of 1490 mm with 1 fixing tee
- Level switches (change over contact) BSM 501/J

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

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Level gauge
JAR

21-02-2019

D-582.01-EN-AD

NIV

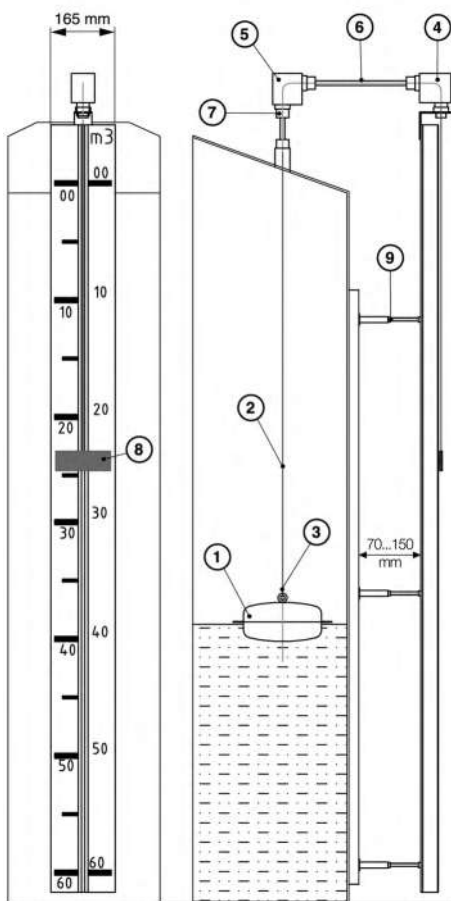
582-01 /1

CODE NUMBERS AND REFERENCES

| Code | Reference | Description | Mark |
|---------------------|---------------|---|------|
| 582 010 | JAR Kit, base | Complete JAR system, base 2980 mm | |
| Spare parts: | | | |
| 583 300 | FI/200/SFA | AISI 316 float, Ø 200 mm | 1 |
| 583 302 | FI/200/SFA OG | AISI 316 float, Ø 200 mm, with guiding rings | - |
| 583 500 | CIM/SFA | AISI 316 cable, Ø 1 mm | 2 |
| 583 550 | SC/SFA | AISI 316 Cable clamp | 3 |
| 582 040 | JAR/PI | Pulley in aluminum case (ruler top) | 4 |
| 582 041 | JAR/PC | Pulley in aluminum case (tank top) | 5 |
| 582 045 | TT/J | AISI 316 Transfer tube, 1 m long (2 tubes needed) | 6 |
| 582 042 | RO/J | Gland connector 3/8" BSPT conical | 7 |
| 582 050 | IM/J | Pointer (red painted), built-in magnet | 8 |
| 582 055 | FIX/J | Tee fitting, sliding (adjustable depth between 70 & 150 mm) | 9 |

Option:

| Code | Reference | Description |
|---------|-----------|---|
| 585 010 | BSM 501/J | Level switch, change-over contact for JAR (data-sheet 585-01) |



Adjustable mounting



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Level gauge JAR

NIV

582-01 /2

21-02-2019

D-582.01-EN-AD

Parts SFA series

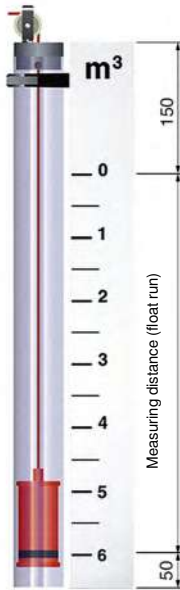


Fig. 1

GRADUATED RULERS

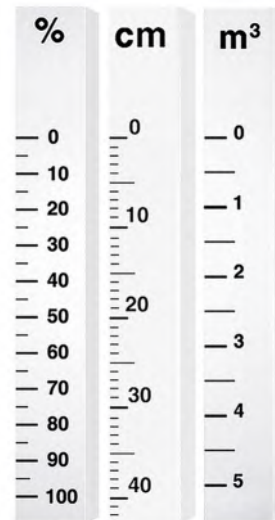
| | |
|--------------------------|--|
| Material | PVC, white |
| Section | U shape (70 x 35 mm) |
| Marks | Black printed |
| Top blind zone | 150 mm |
| Bottom blind zone | 50 mm |
| Units | % Metric [cm] Volume Weight |

When total length is greater than 2.30 m:

Unless otherwise specified, equipment with heights greater than 2.30 meters is made of two interlocking parts.

Position of markings:

Unless otherwise specified, (as shown in Fig.1), the graduated scale is on the left side (for mounting the ruler to the right of the tube).



Graduated ruler for SFA & SFA/E



Level switch BSM 501



Level contact BRK

LEVEL SWITCHES

They have a bistable behavior: they remain on the last position actuated by the magnetic counterweight; Change of status occurs when counterweight is passing back.

Level switch BSM 501, see data-sheet 585-01; Level contact BRK 60, see data-sheet 585-02.

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Parts
SFA series

22-02-2019

D-583.03-EN-AA

NIV

583-03/1

CODE NUMBERS AND REFERENCES

| Code | Reference | Description |
|---------|---------------|---|
| 583 200 | SFA/T | Pulley, PPH & AISI brackets, top of tube (tapping the tube) |
| 583 250 | SFA/R | Pulley, top of tank, PPH & AISI bracket (fixing: 2 screws, not supplied). |
| 583 260 | SFA/TR/PLAS | Set of 2 pulleys, all plastic, for tube & tank, PP/PVC |
| 583 760 | PE/SFA | Gastight pulley (for solvent welding on transfer tubes), ND 32 |
| 583 212 | FI/102/SFA | Float AISI 316 L, spherical, Ø 102 |
| 583 300 | FI/200/SFA | Float, ballast type, AISI 316 L, Ø 200 (possibility to load weight, sand/water) |
| 583 302 | FI/200/SFA OG | Float, ballast type, AISI 316 L, Ø 200, with guide rings (possibility to load weight, sand/water) |
| 583 370 | FP98/SFA | Float, PPH, Ø 98, h = 110, S.G. min. 0.94, for CP63 & CP50, includes fixing device for rope fitting |
| 583 374 | FP90/SFA | Float, PPH, Ø 90, h = 100, for CP40, includes fixing device for rope fitting |
| 583 371 | FP/SFA/PVC | Float, PVC, Ø 98, S.G. min 1.44, for CP63, includes fixing device for rope fitting |
| 583 380 | FP/C/SFA/PVC | Float, PVC, Ø 98, S.G. min. 1, for CP63, includes fixing device for rope fitting |
| 583 372 | FP/SFA/PVDF | Float, PVDF, Ø 80, S.G. min. 1, for CP63, includes fixing device for rope fitting |
| 583 403 | CP63/SFA | Counterweight, built-in magnet, PVC, Ø 50, for tube Ø 63 x 57 |
| 583 401 | CP50/SFA | Counterweight, built-in magnet, PVC, Ø 40, for tube Ø 50 x 42.6 |
| 583 404 | CP40/SFA | Counterweight, built-in magnet, PVC, Ø 32, for tube Ø 40 x 34 |
| 583 500 | CIM/SFA | Cable, AISI 316, Ø 1 (supplied at requested length) |
| 583 550 | SC/SFA | Clamp, AISI 316, to fit stainless steel cable to stainless steel float |
| 583 552 | SCCP/SFA | Clamp, AISI 316, to fit stainless steel cable on PVC counterweight |
| 583 560 | CPM/SFA | Rope, PP, Ø 3 (supplied at requested length) |
| 583 566 | CT/SFA | Rope, PTFE, Ø 3 (supplied at requested length) |
| 583 570 | TT/SFA | Guide tube, transparent PVC, Ø 63 x 57 |
| 583 575 | CTB/SFA | Adjustable tee with PE collar Ø 63, to fit guide tube to tank |

All dimensions are in mm



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Parts
SFA series

22-02-2019

D-583.03-EN-AA

NIV

583-03/2

Level indicator, reduced path SFA / CR



- Convenient to a wide range of liquids
- Easy to install; Simple to use
- Reduced graduated ruler
- Guided float
- Adjustable level switches

APPLICATIONS

SFA/CR is convenient for any level indication inside open tanks, on very deep tanks or to reduce indicating ruler length on top of a tank.

DESCRIPTION

The float, suspended to a cable supported with 2 pulleys, drives a counterweight inside the ruler made of PVC.
The counterweight is suspended to a third pulley in order to reduce at half the path.

The ruler accepts level switches BRK, actuated by the magnet inside the counterweight.

CODE NUMBERS AND REFERENCES

Code 583 800

Description SFA/CR/Inox

Stainless steel version, includes:

- 1 stainless steel bottom tank Te
- 1 stainless steel float, Ø 200 mm with guiding rings
- 4 stainless steel cable clamps
- 1 PVC graduated ruler: length according request
- 2 stainless steel holders
- 1 counterweight, built-in magnet, with pulley
- 1 PVC plate 650 x 450 x 15 mm
- Stainless steel cable: length according the project

Code 583 850

Reference SFA/CR/PPH

PPH version, includes:

- 1 PPH float, Ø 100 mm with cable rings
- 1 PVC graduated ruler: length according request
- 2 stainless steel holders
- 1 counterweight, built-in magnet, with pulley
- 1 PVC plate 650 x 450 mm x 15 mm
- PP rope, Ø 3, length according the project

Code 583 890

Reference BRK 60/SFA/CR

Changeover contact to fit SFA/CR; SFA CN

See detailed information on data-sheets 585-02

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Level indicator, reduced path
SFA / CR

22-03-2019

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NIV

583-04/1

Sets and kits

SFA, modular series

- For tanks with large heights
- Easy carriage
- Short delivery time
- Level indicator protected by PVC tube
- All sets and kits for assembly on site

PRINCIPLE

The float, suspended to a rope supported with 2 pulleys, drives a counterweight inside the external transparent tube; Liquid level is shown by counterweight. Counterweight has a built in magnet to actuate the level switches.

COMPONENTS

Model: SFA

This set consists of a float and an indicator interconnected by a rope running on pulleys.

Model: SFA/E

For gastight protection: Pulleys are enclosed in PVC elbows with a non jump system ensuring a perfect guidance of the PP rope. Elbows are interconnected by a PVC tube (for solvent welding). Equipment fits the tank with a PVC loose flange ISO ND 100 (schedule PN 10/16).

Modular and extension kits:

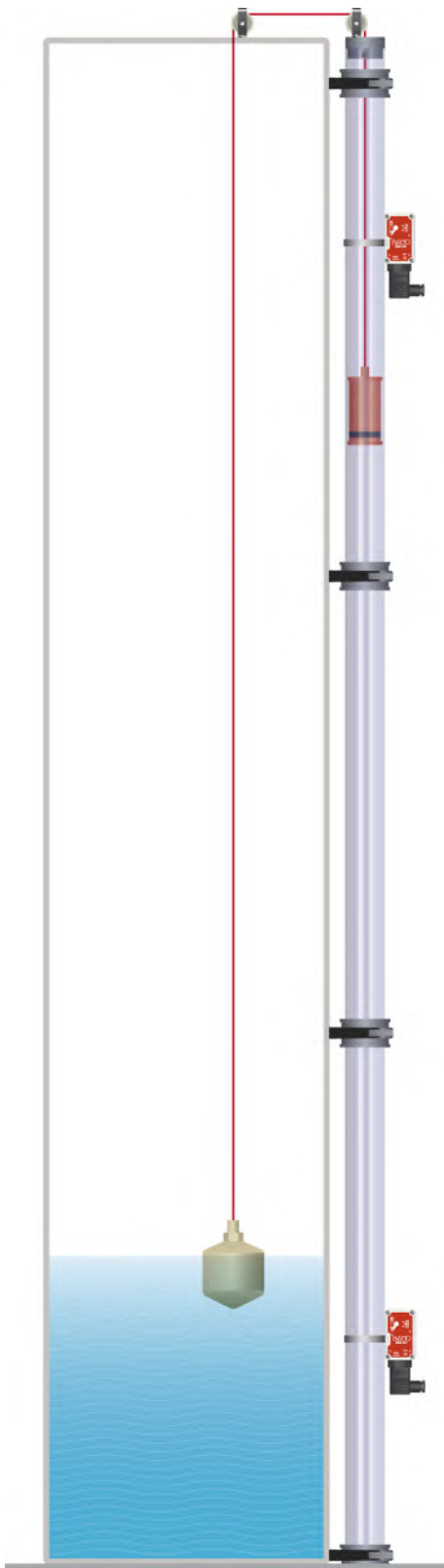
These kits are intended to reduce the cost of packing and carriage. Thus, to avoid manipulations of packs longer than 2 meters, we supply a modular system with special sleeve(s) for interconnection between modules. The standard modular kit: Basic module comes in 2 parts (total 3.2 m high) The basic kit may be extended by one or more extension kit(s), to install between parts of basic modular kit. The overall height is obtained by shortening the last tube at exact real dimension of tank.

Modular kits may be associated to:

- SFA sets
- SFA/E sets (gastight models)

The level switches BSM 501 can be fixed all along the tube, excepted where are the sleeves and collars.

The mounting of a graduated ruler can always be done, but the ruler may be supplied in various parts as for the guide tube (or a solution may be designed with our classic non-modular system, on request).



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Sets and kits
SFA, modular series

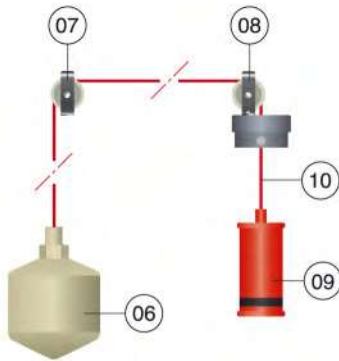
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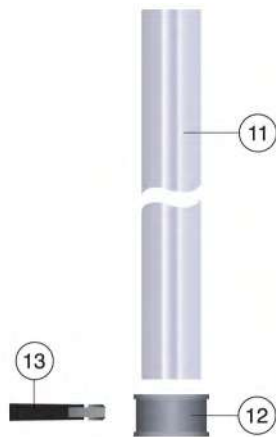
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583-05/1

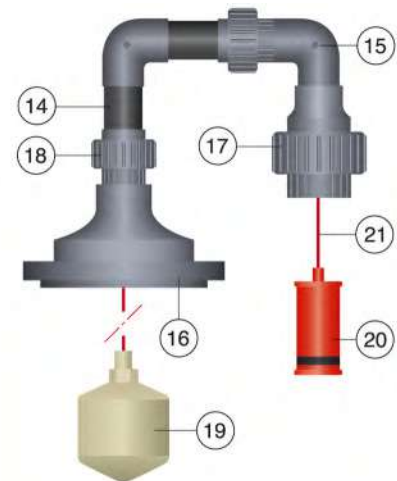
CODE NUMBERS AND DESCRIPTIONS



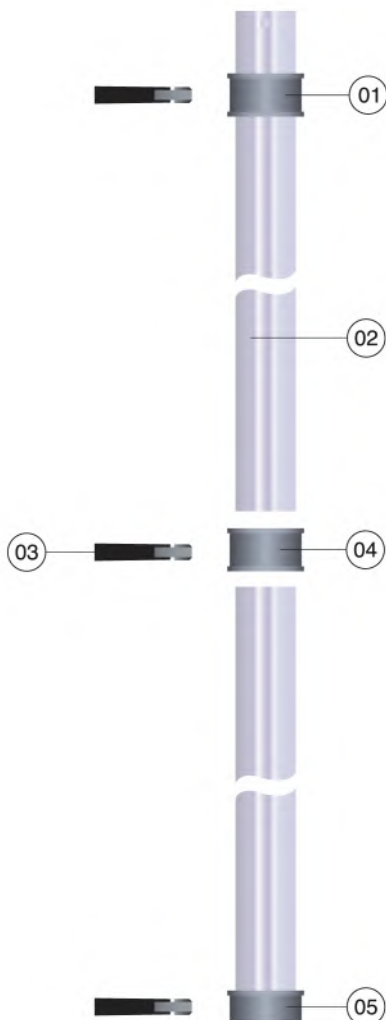
Code 583 020
Set SFA, standard
model



Code 583 581
Extension modular kit



Code 583 701
Set SFA/E/M, gastight model



Code 583 580 → Kit SFA basic module (3.2 m), includes:

| | |
|--|-----------|
| 1 Adjustable fitting (top part), PVC | (Mark 01) |
| 2 tubes, transparent PVC, Ø 57/63 mm, length 1600 mm | (Mark 02) |
| 3 Fitting collars, PE, Ø 75 mm | (Mark 03) |
| 1 Junction sleeve, PVC | (Mark 04) |
| 1 Bottom end, PVC | (Mark 05) |

Code 583 581 → Kit extension of SFA basic module (1.6 m), includes:

| | |
|---|-----------|
| 1 tube, transparent PVC, Ø 57/63 mm, length 1600 mm | (Mark 11) |
| 1 Junction sleeve, PVC | (Mark 12) |
| 1 Fitting collar, PE, Ø 75 | (Mark 13) |

Code 583 020 → PP level indicator set, includes:

| | |
|---|-----------|
| 1 PPH float, Ø 98 mm | (Mark 06) |
| 1 Pulley for top of tank | (Mark 07) |
| 1 Pulley for top of tube | (Mark 08) |
| 1 Counterweight with built-in magnet | (Mark 09) |
| Cable/rope, PP, Ø 3 mm, (length according to the project) | (Mark 10) |

Code 583 701 → Gas-tight set, includes:

| | |
|---|-----------|
| 2 Transfer tubes, PVC, Ø 40 mm, length 1000 mm each | (Mark 14) |
| 2 Gas-tight pulleys | (Mark 15) |
| 1 Fitting top tank, PVC loose flange ND100 and butt | (Mark 16) |
| 1 Union fitting for top of guiding tube Ø 63 mm | (Mark 17) |
| 2 Union fittings, Ø 40 mm | (Mark 18) |
| 1 PPH float, Ø 98 mm | (Mark 19) |
| 1 Counterweight with built-in magnet | (Mark 20) |
| Cable/rope, PP, Ø 3 mm, (length according to the project) | (Mark 21) |

Options: Accessories

| | |
|--------------|---|
| Code P41 576 | Collar in PE, Ø 75 mm to fit guiding tube to the tank |
| Code 582 055 | Adjustable tee (CTB) |
| Code 585 100 | BSM 501, level switch, change-over, for SFA and SFA/E |

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Sets and kits
SFA, modular series

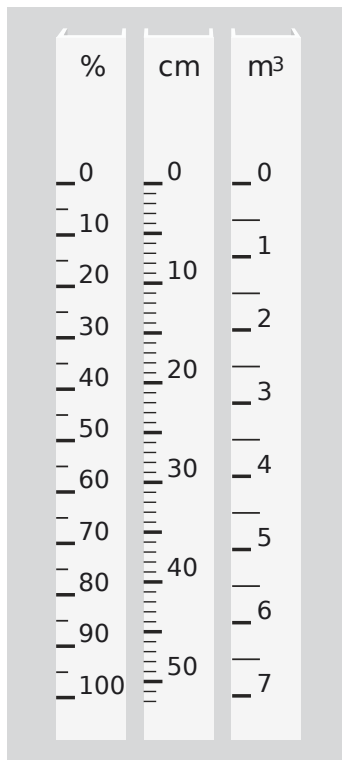
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NIV

583-05/2

Graduated rulers RÉGLETTES



Examples: Graduated rulers for cable & pulleys level indicators

- High readability
- Weather and UV resistance
- Thermal transfer printed
- Scale units: %, litre, m³, cm, feet, etc.
- Black marks on white background
- White PVC profile, U shape 70 x 35 mm or L shape width 30 mm

APPLICATIONS

For installation on:

- Level indicators with transparent tube, cable and pulleys indicators
- Level indicators with transparent tube for direct reading
- Transparent containers

DESCRIPTION

Graduated rulers are manufactured to customer specifications and are subject to approval of a drawing.

We propose an optimal scale (marks and values) for an easy reading and feasibility.

Standard units are: %; volume in litres, m³; height in cm; mass.

Supports:

For indicators SFA SFA/E or other indicators with transparent PVC tube Ø 63 mm, supports are of U-shaped 70 x 35 mm white PVC.

For direct reading indicators GNR5, FS4, supports are of L-shaped 30 mm width, white PVC.

Graduated rulers longer than 2.3 m:

Unless otherwise specified, equipment with height greater than 2.3 m is supplied in two interlocking parts.

However, the equipment may be supplied in a single part not exceeding 4.6 m .

Position of marks:

Unless otherwise specified, the scale marks are positioned on the left side of the ruler to fix it on the right side of the tube (Fig.1).

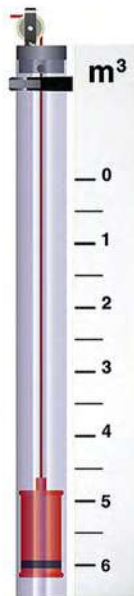


Fig. 1

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Graduated rulers
RÉGLETTES

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NIV

583-20/1

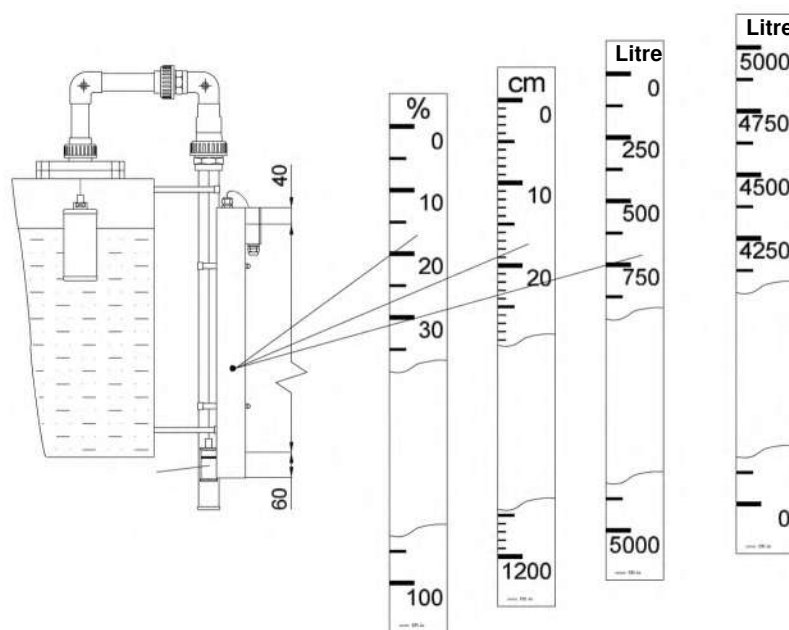
CODE NUMBERS AND REFERENCES

Graduated rulers, PVC, U shape, 70x35 mm

| Code | Reference | Description |
|---------|----------------------------|--|
| 583 650 | REG/SFA/cm | Graduated ruler, white PVC, U-70 Standard metric scale in [cm] - Cost according to real height |
| 583 651 | REG/SFA/% | Graduated ruler, white PVC, U-70 Standard scale 0 to 100 % (by step of 10 %) - Cost according to real height |
| 583 652 | REG/SFA/spe Lin | Specific scale: UNIT to confirm, white PVC, U-70; LINEAR SCALE - Cost according to real height |
| 583 655 | REG/SFA/spe N. Lin | Graduated ruler, white PVC, U-70; NON LINEAR SCALE Specific scale: UNIT to confirm, 50 marks or values per metre - Cost according to real height Extra-costs for each additional mark or number over 50 marks or numbers |
| 583 654 | Junction on U-shaped ruler | Supply of ruler in 2 parts (interlocking parts); Extra-cost per junction |

Graduated rulers, PVC, L shape, 30 mm width

| Code | Reference | Description |
|---------|----------------------------|--|
| 570 135 | REG/GNR/% | Graduated ruler, white PVC, L-30 Standard scale 0 to 100 % (by steps of 10 %) - Cost according to real height |
| 570 136 | REG/GNR/cm | Graduated ruler, white PVC, L-30 Standard metric scale in [cm] - Cost according to real height |
| 570 137 | REG/GNR/spe Lin | Specific scale: UNIT to confirm, white PVC, L-30; LINEAR SCALE - Cost according to real height |
| 570 138 | REG/GNR/spe N. Lin | Specific scale: UNIT to confirm, white PVC, L-30; NON LINEAR SCALE SPECIAL SCALE 50 marks or values - Cost according to real height Extra-cost for each additional mark or number over 50 marks or numbers |
| 500 000 | Junction on L-shaped ruler | Supply of ruler in 2 parts (interlocking parts); Extra-cost per junction |



Examples of installation

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Graduated rulers
RÉGLETTES

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NIV

583-20/2

Tank top level indicator FS4



FS4 "Fût" (for drums)

FS4 standard version



Installation, example

- Direct reading
- Materials PVC, PPH
- Magnetic pointer for level switches
- For tanks and drums

APPLICATIONS

- Level of clear chemicals or wasted liquids in opaque tanks, drums or underground tanks.
- Direct control of pumps, valves, alarm signals, with the use of level switches.

DESCRIPTION

A float at the bottom of a stem moves a pointer inside a transparent PVC tube, outside the tank. The reading is direct through the transparent tube.

• Model FS4 Standard:

The standard model is designed for tanks. For the float, the guiding tube has an O.D. of 63 mm. The mounting is on the top of the tank, with a loose flange ND 65.

• Model FS4 fût:

Model "Fût" is designed for drums and tanks of height less than 1000 mm. There is no guiding tube for the float; fitting is threaded. Reading tube comes with a graduated scale (one mark each 1 cm).

Each indicator is designed according the density of the liquid and height to monitor.
Note: liquid surface is at 70 to 80% of float height.

Option: Level switch

The pointer with a built-in magnet allows actuation of level switches BSM 501 or BRK60/32 (data-sheets 585-01 & -02).

TECHNICAL FEATURES

Wet parts:

| | |
|--------------|------------|
| Float | PPH or PVC |
| Stem | PPH or PVC |
| Guiding tube | PPH or PVC |

| | |
|------------------|---------------|
| Temperature max. | 60 °C --> PVC |
| | 80 °C --> PPH |
| Pressure max. | Atmospheric |

FS4 Standard

| | |
|-------------|---|
| Height max. | 3000 mm (Depending of SG of the liquid) |
| Fitting | Loose flange: PVC or PPH |

FS4 Fût

| | |
|-------------|--|
| Height max. | 1000 mm (Depending of SG of the liquid) |
| Fitting | BSP thread 2" G; PPH "Trisure" type 1 (Metric buttress thread); PPH "Trisure" type 2 (Metric buttress thread); PPH |

Option:

- Level switches BSM 501 & BRK 60/32 (data-sheets 585-01 & -02)

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Tank top level indicator
FS4

30-10-2018

D-584.01-EN-AE

NIV

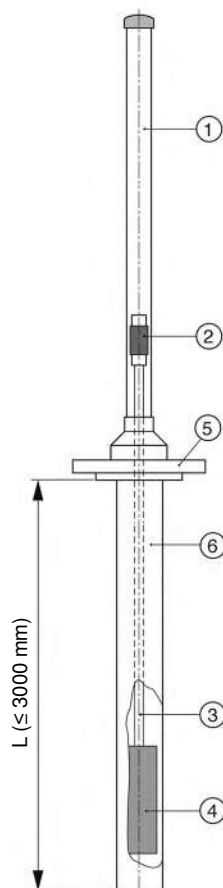
584-01 /1

CODE NUMBERS AND REFERENCES

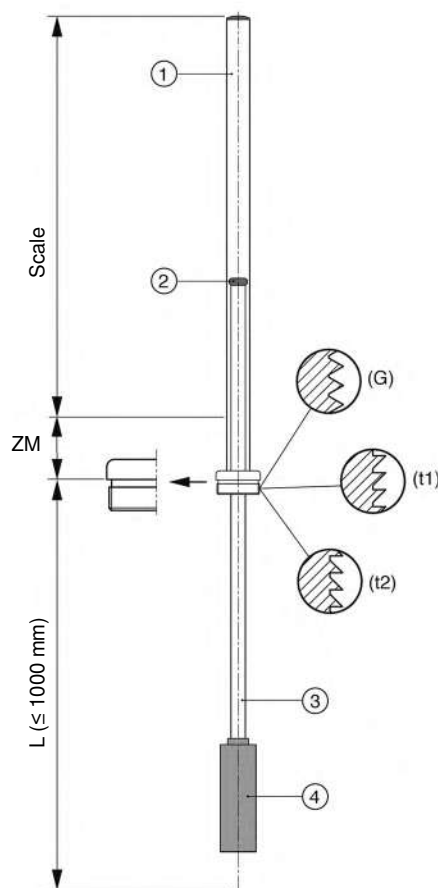
| Code | Reference | Description |
|---------|------------|---|
| 584 300 | FS4 PP-PVC | Standard model, PPH (float & stem), PVC (guiding tube & flange) |
| 584 310 | FS4 PVC | Standard model PVC* |
| 584 400 | FS4 PP | Standard model PPH* |
| 584 520 | FS4 F PVC | FS4 Fût PVC* (fitting in PPH) |
| 584 530 | FS4 F PP | FS4 Fût, PPH* |

COMPONENTS

Details to provide to us for the design: Distance L; Liquid and its concentration; S.G.; Temperature



FS4 Standard



FS4 "Fût"

| FS4 Standard | | FS4 "Fût" | |
|--------------|-------------------------------------|-----------|--|
| (1) | Reading tube Ø 32, transparent PVC | (1) | Reading tube Ø 32, transparent PVC |
| (2) | Pointer (built-in magnet) PPH/ PVC | (2) | Pointer (built-in magnet), PVC |
| (3) | Stem, PVC or PPH | (3) | Stem, PVC or PPH |
| (4) | Float Ø 50 mm, PVC or PPH | (4) | Float Ø 50 mm, PVC or PPH |
| (5) | Loose flange ND 65, PVC or PPH | (G) | BSP 2", PPH |
| (6) | Guiding tube O.D. 63 mm, PVC or PPH | (t1) | "Trisure" type 1 (Metric buttress thread Ø M57; pitch 4 mm), PPH |
| - | - | (t2) | "Trisure" type 2 (Metric buttress thread Ø M57; pitch 4 mm), PPH |
| - | - | ZM | Blind zone 100 mm (zone morte) |

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Tank top level indicator
FS4

30-10-2018

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NIV

584-01 /2

Level controller SECURICUVE



- Lack of liquid detection (drop of level)
- Positive active detection
- Compact
- Easy to test its integrity on site
- Material: Or PPH or PVDF

APPLICATION

- Level drop detection in tanks of surface-treating process
- Protection against overheating following evaporation or tank leaking, or default on chemical refilling

DESCRIPTION

A float (1) at the bottom of a stem (2) moves a magnet (3) inside the head housing (4).

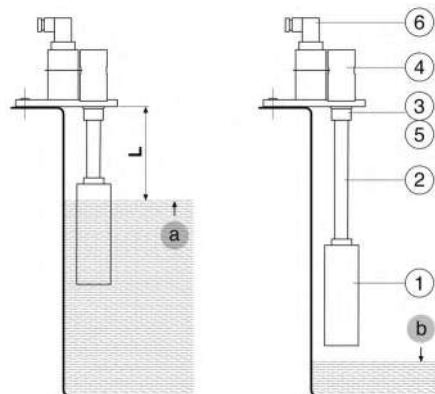
The fluid maintains the equipment (float, stem and magnet) in highest position "a" (normal status).

When the fluid level is going down, the equipment comes in lowest position, down to block on stopper (5), position "b".

The switch BSM (6) changes from normal status to alarm status (BSM: data-sheet 585-01).

To test the complete system, it is sufficient to push down the float to the lowest position or by draining part of the container.

For a safe operating condition it would be better to test regularly the complete system.



TECHNICAL FEATURES

| | |
|----------------------------|--|
| Float, stem, bracket, head | Or PPH, or PVDF |
| Temperature max. | PPH = 105 °C / PVDF = 140 °C |
| Pressure | Atmospheric |
| Fitting | Bracket in PPH or PVDF, 60x150 mm, 10 mm thick |

CONTACT BSM 501 (not included)

| | |
|---------------------|--|
| Rated voltage | 4 ... 250 V AC; 4 V ... 30 V DC |
| Rated current | 1 mA ... 3 A (AC or DC) |
| Switch | Microswitch bi-stable, change-over |
| Connector | Plug according DIN 43650 |
| Cable | Cross section 1,5 mm ² max. |
| Cable gland | PG 13.5 |
| Ambient temperature | -20 ... +90 °C |
| Housing | Translucent polycarbonate, IP 65 |

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Level controller
SECURICUVE

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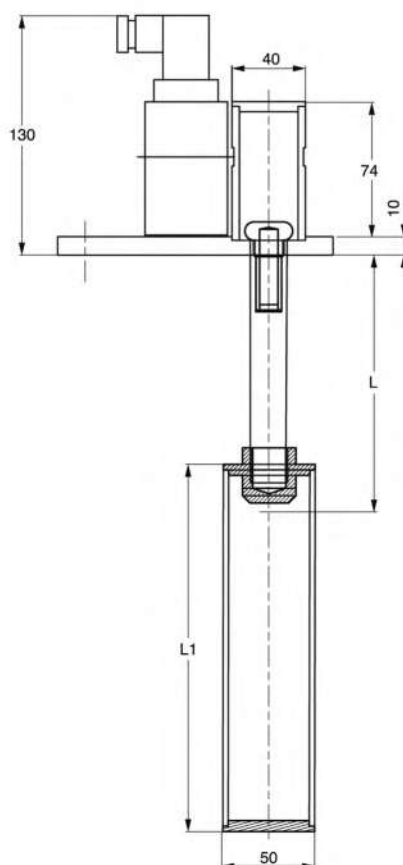
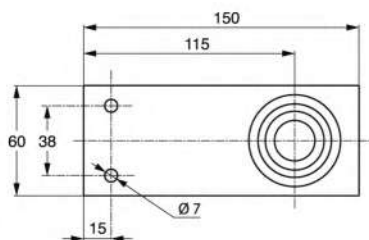
584-02/1

CODE NUMBERS AND REFERENCES

| Code | Reference | Description |
|---------|-----------------|-----------------------------|
| 584 500 | SECURICUVE-PPH | SECURICUVE, PPH Controller |
| 584 550 | SECURICUVE-PVDF | SECURICUVE, PVDF Controller |
| 585 100 | BSM 501 | Level switch with collar |

Mandatory: Ordering information must precisely fix the trigger point distance L (L = . . . mm)
(L max. = 500 mm)

DIMENSIONS



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Level controller
SECURICUVE

02-04-2019

D-584.02-EN-AA

NIV

584-02/2

Level switches with micro-switch BSM 501 - BSM 515



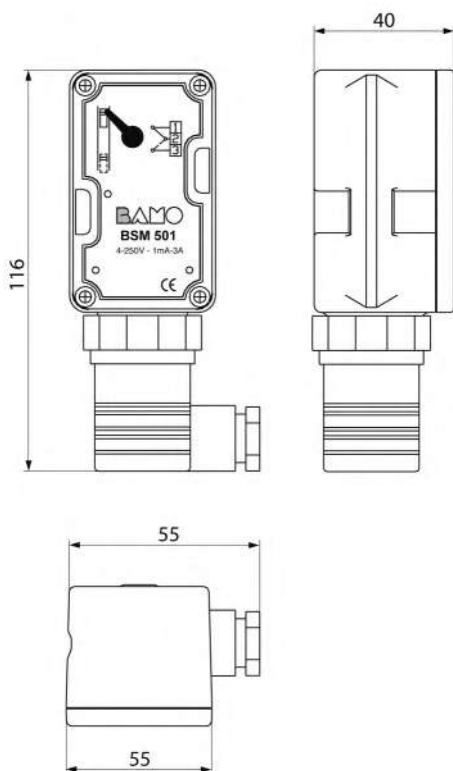
- High switching power
- Bistable switch
- Protection: IP 65

PRINCIPLE

A magnetic handle is actuated by an external float or counterweight, it operates the micro-switch causing electrical contact. Components, such as screw terminal, are fitted on PCB; Device is rated IP 65; Connector is a 3-pole cable plug acc. DIN EN 175301, with PE terminal 13.5; Pipe clamps allow fitting on tube diameters 32 to 63 mm.

TECHNICAL FEATURES

| | |
|------------------------|---|
| 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 contact |
| Gap between 2 switches | 40 mm, as a minimum, plans at 120° |
| Connector | Dismantable; 3-pole cable plug acc. DIN EN 175301 |
| Electrical connection | Cable cross section: 1.5 mm ² max. |
| Cable output | PG 13.5 |
| Ambient temperature | -20 ... +90 °C |
| Housing | Polycarbonate |
| Fittings | Pipe clamps, or stainless steel or plastic acc. O.D. |
| Protection | IP 65 according to EN 60 529 |
| CE Marks | Acc. to Guidelines 2006/95/EG (low Voltage), 89/336/EEC (EMV) |



ACTUATORS FOR BSM 501

| Code | Reference | Description |
|---------|-------------|--|
| 570 075 | GNR 51 | PPH float for glass tube Ø 34.5 x 2.75 mm |
| 570 080 | GNR 52 | PPH float for tube Ø 32 x 2.4 mm |
| 570 082 | GNR 53 PVDF | PVDF float for tube Ø 32 x 2.4 mm |
| 570 085 | GNR 62 | PPH float for tube Ø 63 x 3 mm |
| 583 403 | CP63/SFA | Counterweight, red PVC, for tube Ø 63 x 3 mm |
| 583 404 | CP40/SFA | Counterweight, red PVC, for tube Ø 40 x 2 mm |

ACTUATORS FOR BSM 515

| Code | Reference | Description |
|---------|--------------|--|
| 560 055 | F-Magtop 1 | AISI 316 Float; SG = 1; P. < 16 bar; -25...+160 °C |
| 560 056 | F-Magtop 0,8 | AISI 316 Float; SG = 0.8; P. < 16 bar; -25...+160 °C |

CODE NUMBERS AND REFERENCES

| Code | Reference | Description |
|---------|--------------|---|
| 585 010 | BSM 501 / J | Level switch for JAR |
| 585 100 | BSM 501 | Level switch for SFA, SFA/E, GNR 6, GNR 5 & FS4 |
| 585 163 | BSM 501 / 63 | Level switch for SFA, SFA/E & GNR 6 |
| 585 515 | BSM 515 MAG | Level switch for stainless steel MAGTOP |

BSM 515 is not convenient for plastic MAGTOP series.

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Level switches with
micro-switch
BSM 501 - BSM 515

30-09-2017

D-585.01-EN-AC

585-01 / 1

Magnetic level contacts BRK 60 - BRT 60



BRK 60 / 32

- **Switching power: 60 VA**
- **Bi-stable, change-over contact**
- **IP 55 casing, in ABS**
- **For tubes of O.D. 32 up to 63 mm**
- **High temperature version (BRT)**

APPLICATIONS

Compatible with our counterweights and floats:

- Remote alarm signals: Rising or drop of liquid level
- Pump automation with 2 BRK and 1 Relay ES 2001

These devices must not be used on vibrating machines or where there is a risk of shocks or vibrations.

DESCRIPTION

A Float or a counterweight with a built-in magnet, drives a Reed contact integrated to a PCB inside a casing in ABS, IP55. Electric connections are on screw connectors.

Level contacts BRK / BRT are fixed with a collar on the measuring tube of level indicators O.D. 32, 40, 60.3 or 63 mm. See the table Codes & references for compatibilities with actuators.

The contact is bi-stable, change-over with a switching capacity of 60 VA. The contact remains in position after the actuator (float or counterweight) passes in front of the BRK/ BRT. The contact returns to its original position only when the actuator passes back in the other direction.

Accessories: Relay ES 2001 (data-sheet 250-01)

- Relay ES 2001 increases the switching power of equipment.
- Pump or valve for filling or draining with 2 level contacts BRK plus 1 relay ES 2001.



BRK 60 / MAG

TECHNICAL FEATURES

| | |
|--------------------|--|
| Switching power | 60 VA / 230 V AC / 1 A |
| Contact | Reed contact, bi-stable, change-over contact |
| Casing | BRK: ABS; BRT: Aluminum |
| Protection | IP 55 |
| Temperature limits | BRK: -40 ... +80 °C BRT: -40 ... +200 °C |
| Collars | Standard is stainless steel for tubes O.D. 32, 40, 60.3 or 63 mm |

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

CODE NUMBERS AND REFERENCES

| Code | Reference | Compatibility |
|---------|-----------------|------------------------------|
| 560 102 | BRK 60 / MAG | For MAGTOP only |
| 560 120 | BRT 60 / MAG | For MAGTOP, high temperature |
| 570 050 | BRK 60 / 32 | For GNR 5 and FS4 |
| 570 040 | BRK 60 / 40 | For tube O.D. 40 mm |
| 583 050 | BRK 60 / SFA | For tube O.D. 63 mm |
| 583 890 | BRK 60 / SFA/CR | For SFA/CR and CN, only |



BRT 60 / 63

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**Magnetic level contacts
BRK 60 - BRT 60**

03-04-2019

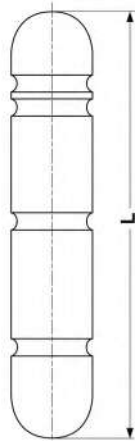
D-585.02-EN-AC

NIV

585-02/1

Actuators for level switches

FLOATS – COUNTERWEIGHTS



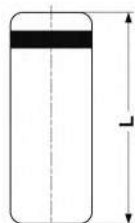
F-MAGTOP



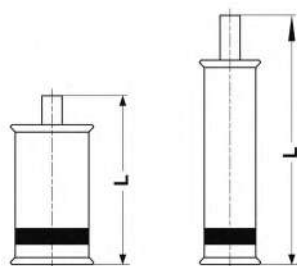
GNR 51



GNR 52



GNR 62



CP63/SFA



CP40/SFA

PRINCIPLE

Our floats and counterweights have built-in magnets dedicated to actuate our level switches.

CODE NUMBERS AND REFERENCES

| Code | Reference | Description |
|---------|--------------|--|
| 560 055 | F-Magtop 1 | AISI float; d = 1, Pressure <16 bar, -25...+160 °C |
| 560 056 | F-Magtop 0,8 | AISI float; d = 0,8, Pressure <16 bar, -25...+160 °C |
| 570 075 | GNR 51 | PPH float for glass tube Ø 34,5 x 2,75 |
| 570 080 | GNR 52 | PPH float for tube Ø 32 x 2,4 |
| 570 081 | S 32 | PPH float for plastic tube Diam. 40 x 2 mm |
| 570 082 | GNR 53 | PVDF float for tube Ø 32x2,4 |
| 570 085 | GNR 62 | PPH float for tube Ø 63 x 3 |
| 583 403 | CP63/SFA | PVC counterweight, red, for tube Ø 63 x 3 |
| 583 404 | CP40/SFA | PVC counterweight, red, for tube Ø 40 x 2 |

TECHNICAL FEATURES

| Reference | Ø [mm] | L [mm] | Mass [g] |
|--------------|--------|--------|----------|
| F-Magtop 1 | 50 | 260 | 260 |
| F-Magtop 0,8 | 50 | 260 | 260 |
| GNR 51 | 27 | 160 | 55 |
| GNR 52 | 25 | 180 | 50 |
| S 32 | 34 | 150 | 95 |
| GNR 53 | 27 | 185 | 80 |
| GNR 62 | 52 | 132 | 170 |
| CP63/SFA | 50 | 95 | 185 |
| CP40/SFA | 32 | 140 | 155 |

HYSTERESIS

| Float | BRK 60 | BSM 501 | BSM 515 | BRT |
|----------|--------|---------|---------|-------|
| GNR 51 | 10 mm | 35 mm | - | - |
| GNR 52 | 10 mm | 28 mm | - | - |
| S 32 | 10 mm | 30 mm | - | - |
| GNR 62 | 10 mm | 30 mm | - | - |
| CP63/SFA | 10 mm | 30 mm | - | - |
| MAGTOP | 10 mm | - | 35 mm | 10 mm |

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Actuators for level switches
FLOATS – COUNTERWEIGHTS

20-06-2018

D-585.03-EN-AB

NIV

585-03/1

Continuous level transmitter RTM



- Output signal: or 4-20 mA or resistor
- Customized models
- Direct mounting on top of a tank
- Direct mounting on MAGTOP and SFA series

APPLICATIONS

- Continuous level measurement on containers

DESCRIPTION

The RTM transmitter consists of a Reed chain (REED contacts connected by resistors) switching when magnetic float passes in front. The resulting resistor value is directly in correspondence with the level. The necessary magnetic field is created by the MNR 6/7, MAGTOP floats or SFA counterweight.

The T2F transmitter in the head converts the resistor value into a 4-20 mA signal.

Manufactured according to your application; Installation and commissioning are simplified on site (factory calibration).

Measurement display: The RTM may be connected to a BAMOWIZ (data-sheet 217-01) or to an ITU unit (data sheet 222-03).

TECHNICAL FEATURES

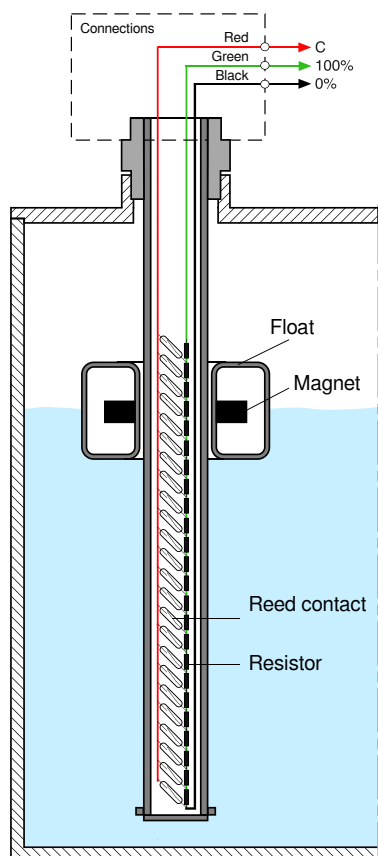
| | |
|------------------|---|
| Measuring height | From 250 mm up to 2,000 mm <i>See table "Codes and References"</i> |
| Temperature | PVC-U: 0 ... +50 °C; PPH: 5 ... +80 °C PVDF: 0 ... +100 °C; AISI 316L: -10 ... +110 °C |
| Pressure | 1 bar max. at 20 °C for plastic versions 20 bar max. at 20 °C for AISI 316L version |

Materials:

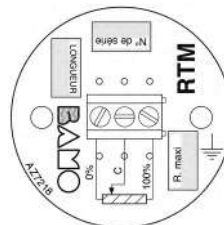
| | |
|------------------|--|
| Stem and fitting | PVC, PP, PVDF, or AISI 316L |
| Float | PP, PVDF, or AISI 316L |
| Head housing | PBT for plastic versions, IP65 Aluminum for AISI 316L version, IP65 |

Output signal:

| | |
|--------------------|---------------------------------------|
| Resistor output | from * xΩ to 10 kΩ |
| 2-wire transmitter | 4-20 mA; Power supply: 13 ... 30 V DC |
| Accuracy | By steps of 10 mm (resolution) |



Principle



PCB: Potentiometric output

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Continuous level transmitter RTM

12-02-2020

D-586.01-EN-AB

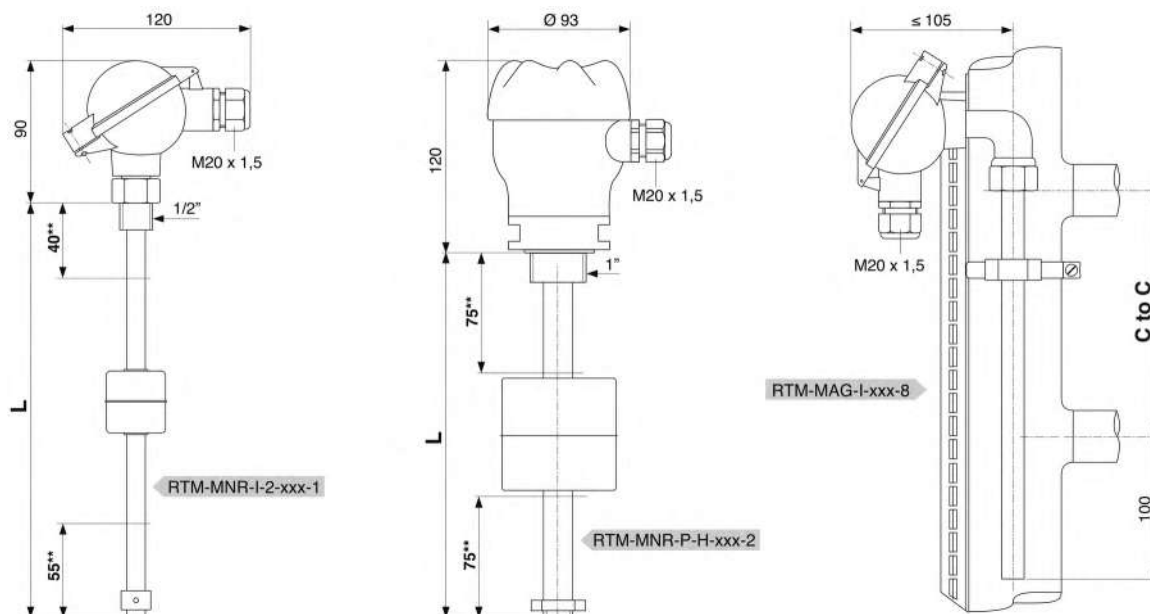
NIV

586-01 /1

CODE NUMBERS AND REFERENCES

| Code | Reference | Materials | | Measuring distance (L)* [mm] | |
|-------------|----------------|--|------------|------------------------------------|------|
| | | Stem and fitting | Float | Min. | Max. |
| 586 051 | RTM/MNR 6/I | AISI 316 L | AISI 316 L | 500 | 1000 |
| 586 101 | RTM/MNR 7/PVC | PVC | PP | 250 | 1500 |
| 586 201 | RTM/MNR 7/PP | PP | PP | 250 | 1500 |
| 586 301 | RTM/MNR 7/PVDF | PVDF | PVDF | 250 | 1500 |
| 586 401 | RTM/MNR 7/I | AISI 316 L | AISI 316 L | 250 | 2000 |
| 586 501 | RTM/MAG/SFA | AISI 316 L | - | <i>For MAGTOP or SFA equipment</i> | |
| Accessories | | | | | |
| 601 333 | T2FR-5333 | 2-wire transmitter; 4-20 mA | | | |
| 600 002 | MONT-T2F | Calibration and mounting of T2F on RTM | | | |

DIMENSIONS



Measuring height = (Total height L) - (Sum of dead zones) **

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Continuous level transmitter
RTM

12-02-2020

D-586.01-EN-AB

NIV

586-01 /2

Hydrostatic level transmitter NIVAPRESS SGE-25

- Measuring ranges up to 500 m H₂O
- Probe: AISI 316 L
- Diaphragm: Hastelloy
- Protection against overloads
- ATEX or DNV certification



APPLICATIONS

Hydrostatic level transmitter NIVAPRESS SGE-25 is convenient for measuring clear liquids, stored in opened tanks and wells. It is recommended for monitoring and control of submersible pumps.

DESCRIPTION

The NIVAPRESS SGE25 probe is immersed in the liquid. The pressure on the sensor increases proportionally with the depth of immersion.

The pressure is measured at the immersion depth of diaphragm, connected to atmosphere through a capillary inside the cable. The active sensing element is a piezoresistive type isolated by a very strong hastelloy diaphragm. An electronic amplifier operating in connection with the sensor, converts the measurement into a 4-20 mA or 0-10 V analog signal.

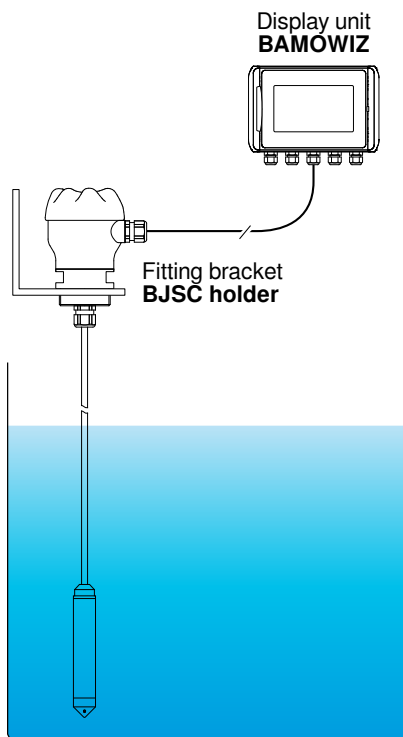
The anti-surge circuit protects the instrument from damages caused by atmospheric disturbances or high power devices.

Precautions for installation:

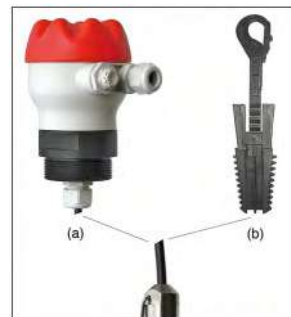
The installation of the NIVAPRESS SGE-25 is simplified by the use of a fastening system, such as a suspension clip (a) or/and a BJSC holder (b). The probe can hang freely at the end of the cable or lie down at the bottom of the tank.

The junction box BJSC with pressure compensation, allows to fix the sensor and ensures the balancing of atmospheric pressure through an integrated vent on the front of the housing. It significantly reduces the risk of entry of dust and moisture. It is also recommended to extend the life of the probe cable.

A cable extension could be done with a standard cable. For large cable distances it is necessary to use the box junction BPS102 (wall mount) with surge protection device.



Standard installation



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Hydrostatic level transmitter
NIVAPRESS SGE-25

08-04-2019

D-590.03-EN-AD

NIV

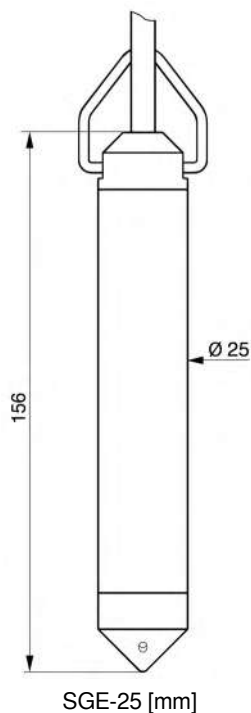
590-03/1

TECHNICAL FEATURES

| Measuring ranges | 1 m WC | 4 m WC | 0...10 / 500 m WC |
|---------------------------|--|---------------|---|
| Acceptable override | 40 times F.S. | 25 times F.S. | 10 times F.S. (700 m WC max.) |
| Accuracy | 0.6 % | 0.3 % | 0.2 % |
| Temperature error | 0.3 %/ 10 °C (average) 0.4 %/ 10 °C (max.) | | 0.2 %/ 10 °C (average) 0.3 %/ 10 °C (max.) |
| Long time stability | 0.1 % or 1 cm WC/ year | | |
| Hysteresis | 0.05 % | | |
| Temperature compensation | 0... +40 °C | | |
| Operating temperature | -25 ... +40 °C | | |
| Output signal/ supply | Analogue 4-20 mA 2-wire; Supply: 8 to 36 V DC (9 to 28 V DC for EEx version) | | |
| Protection | IP68 | | |
| Body | AISI 316 L | | |
| Diaphragm | Hastelloy C276 | | |
| Cable | PUR (polyurethane) | | |
| OPTIONS | | | |
| Version i.s. (4-20 mA) | II 1G EEx ia IIC T4 / T5 / T6 | | |
| Version 0-10 V | 0-10 V 3-wire; Supply: 15 to 30 V DC; No anti-surge protection; Not available in EEx version | | |
| Marine Certification (MR) | DNV GL | | |
| Temperature compensation | -10 ... +70 °C | | |
| Cable | PTFE | | |

CE Marks: EN 60079-02: 2006 – EN 50303: 2004 – EN 60079-26: 2007 – EN 60079-11: 2007

DIMENSIONS



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Hydrostatic level transmitter
NIVAPRESS SGE-25

08-04-2019

D-590.03-EN-AD

NIV

590-03/2

CODE NUMBERS AND REFERENCES

- Standard models available from stock:

| Code | Reference | Description |
|---------|----------------|--|
| 590 711 | SGE-25-K-1-003 | NIVAPRESS SGE-25, 4-20 mA output, range 0 ... 1 m WC, 3m long cable |
| 590 721 | SGE-25-K-2-004 | NIVAPRESS SGE-25, 4-20 mA output, range 0 ... 2 m WC, 4m long cable |
| 590 731 | SGE-25-K-3-007 | NIVAPRESS SGE-25, 4-20 mA output, range 0 ... 5 m WC, 7m long cable |
| 590 741 | SGE-25-K-4-012 | NIVAPRESS SGE-25, 4-20 mA output, range 0 ... 10 m WC, 12 m long cable |

Accessories

| | | |
|---------|---------------|---------------------------------|
| 590 799 | BJSC | Holder (see data-sheet 590-04) |
| 590 798 | Bracket | PVC angle bracket |
| 520 620 | CE200 2" G PP | PP Counter-nut, 2" G |
| 590 831 | BPS 102 | Extension box, surge protection |
| 520 919 | Cable clip | Suspension clip for 2 cables |

- Customized models:

Model

Outputs

- K** 4-20 mA (2-wire)
- H** 0-10 V (3-wire)
- X** 4-20 mA (ATEX)

Measuring range

- 1** 0... 1 m WC
- 2** 0... 2 m WC
- 3** 0... 5 m WC
- 4** 0... 10 m WC
- 5** 0... 25 m WC
- 6** 0... 40 m WC
- 7** 0... 60 m WC
- 8** 0... 100 m WC
- 9** Other scale (500 m Water Column max.)

Cable length

- 00 1** 1 m
- 01 2** 12 m
- 1 0 0** 100 m

(Any length from 1 to 500 m, may be supplied, on request)

SGE-25 K 4 01 2

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Hydrostatic level transmitter
NIVAPRESS SGE-25

08-04-2019

D-590.03-EN-AD

NIV

590-03/3

Junction box, atmospheric pressure balanced BJSC



- Head housing in PBT
- Screwed tap
- Protection IP 65
- Filtering aerator for atmospheric pressure balance
- Fitting BSP 2"

APPLICATIONS

BJSC is designed to hold cable suspended sensors; With its integrated atmospheric pressure balanced housing, it is convenient for hydrostatic level sensors NIVAPRESS, INTERNIV and BAMONIV.

DESCRIPTION

The fixing of the suspended sensors is carried out by means of the cable gland, centered below the fitting. For aggressive chemicals, it is recommended to use the model BJSC-A with a PVDF cable gland.

A vent filter on the front of housing, insures a good balance with atmospheric pressure for hydrostatic level sensors.

BJSC includes inside the head:

- A cable tie to secure the cable.
- A terminal with screw connectors on a PCB to connect the sensor cable and the extension cable to PLC.

TECHNICAL FEATURES

| | |
|---------------------|---|
| Head housing | PBT glass fiber reinforced |
| Protection | IP 65 (EN 60.529) |
| Fitting | BSP 2", polyethylene (black color) |
| Ambient temperature | -20 to +60 °C |
| Connections | Screw connectors, for cables 2.5 mm ² max. |
| Cable glands | M20 x 1.5 (cable Ø 5 ... 9 mm); 2 cable glands |
| Materials: | |
| | BJSC: Polyamide with seal in elastomere (standard) |
| | BJSC-A: PVDF with seal in FPM (acid version) |

Aggressive chemicals: Standard BJSC is not recommended. Use the model BJSC-A with cable gland in PVDF (FPM seal).

CODE NUMBERS AND REFERENCES

| Code | Reference | Description |
|---------|--------------|--|
| 590 799 | BJSC | Junction box BJSC, (polyamide cable gland) |
| 590 797 | BJSC-A | Junction box BJSC-A (PVDF cable gland) |
| 755 501 | SP/330 | Stainless steel 316 support |
| 590 798 | SE/PVC/2" | Angle bracket, PVC |
| 520 620 | CE200 2"G PP | PP fixing nut, BSP 2" |



Application example

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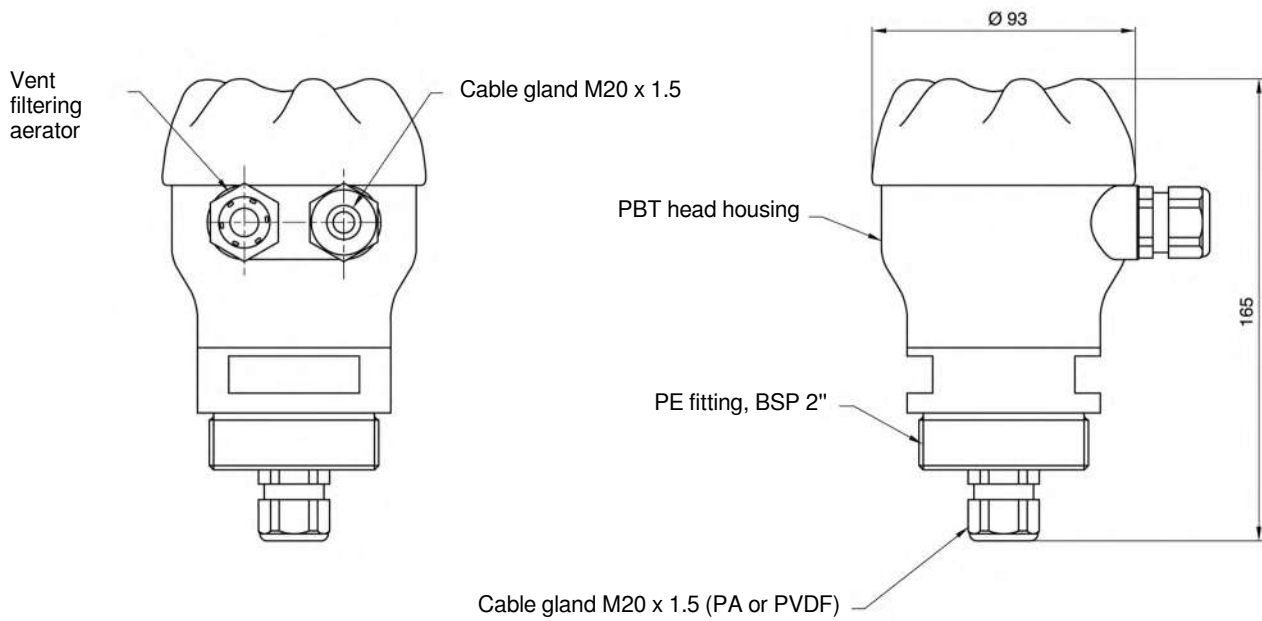
Junction box, atmospheric
pressure balanced
BJSC

09-04-2019

D-590.04-EN-AB

590-04 /1

DIMENSIONS



Accessories:

The stainless steel holder is designed for an horizontal surface and the PVC angle bracket for wall mounting.



BJSC
Stainless steel holder



BJSC
PVC angle bracket

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Junction box, atmospheric
pressure balanced
BJSC

09-04-2019

D-590.04-EN-AB

590-04/2

Electronic gauge for diesel INTERNIV 590

- For storage tanks of diesel (fuel oils)
- Measuring ranges: Up to 3 m
- Output signal: 4-20 mA, power 8 ... 32 V DC
- Compact, robust probe (stainless steel)
- PVC cable compatible with diesel



APPLICATIONS

The level gauge INTERNIV is dedicated for continuous level measurement of fluids in storage tanks, opened to atmosphere and with a fill height up to 3 m.

The gauge is perfectly adapted for monitoring and control of diesel level in storage tanks.

The optional display module allows the operator to read instant level and to set up level alarm thresholds.

DESCRIPTION

The gauge INTERNIV 590, is in immersion in the liquid. The hydrostatic pressure is proportional to the depth of immersion.

Pressure is measured on the diaphragm, differential with atmospheric pressure is assumed through a capillary tube all along the cable. A built-in amplifier convert the measurement in a 4-20 mA signal.

This amplifier is protected against short circuits and reverse polarity for a safe installation.

Precautions:

Installation of gauge INTERNIV 590 is simplest by use of a fitting on tank and/or a junction box BJSC.

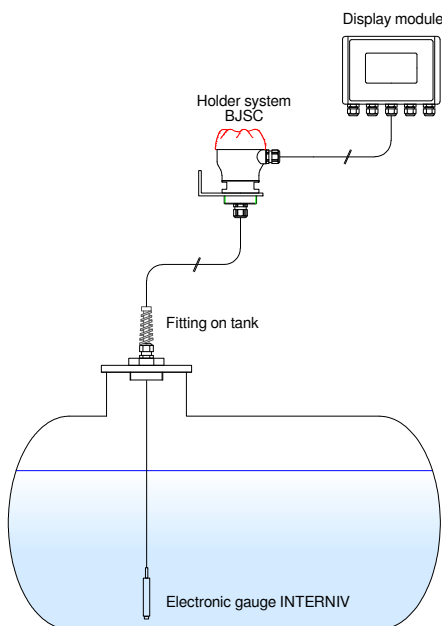
The probe may be freely suspended.

It is recommended not to let the probe laying down on the tank bottom to avoid deposits on the diaphragm.

Junction box BJSC, pressure compensated, hold the gauge (cable is secured) and a vent filter allows the balance with atmospheric pressure. BJSC is highly recommended to protect the gauge cable.

A complete measuring system includes:

- 1 Gauge INTERNIV
- 1 Display module:
 - BAMOWIZ: Digital and graphical display (data-sheet 217-01)
 - ITU: Versatile indicator (data-sheet 222-04)
 - BMG 72: Galvanometric indicator (data-sheet 206-01)
- 1 Tank fitting, and, 1 holder



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Electronic gauge for diesel INTERNIV 590

09-04-2019

D-590.06-EN-AD

NIV

590-06 /1

TECHNICAL FEATURES

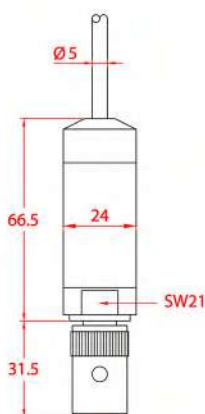
| | | | |
|-----------------------------|--|------------------------------|------------------------------|
| Measuring range | 1 m WC (1190 mm of diesel) | 1.6 m WC (1900 mm of diesel) | 2.5 m WC (2975 mm of diesel) |
| Pressure | 100 mbar | 160 mbar | 250 mbar |
| Overpressure limit | 1 bar | | |
| Accuracy | ≤ ± 1 % F.S. | | |
| Long term stability | ≤ ± 0.2 % F.S./ year (standard operating conditions) | | |
| Temperature limits | -10...+70 °C | | |
| Temperature compensation | 0...+70 °C | | |
| Error due to temperature | ≤ ± 0.3 % F.S./ 10 °C | | |
| Output signal; Power supply | Analogue 4-20mA, 2-wire; Power supply: 8 ... 32 V DC | | |
| Response time | ≤ 10 ms | | |
| Protection | IP 68 | | |
| Materials | Body: AISI 304; Diaphragm: AISI 316L; Seal: FPM | | |
| Cable | PVC (compatible with diesel, 6 m long) | | |
| CE conformity | Directive EMC: 2014/30/EU | | |

CODE NUMBERS AND REFERENCES

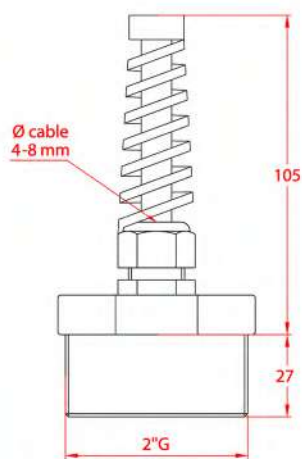
| Code | Reference | Description |
|-----------------------------|------------------------|---|
| 590 850 | INTERNIV 590-6-100 | Electronic gauge 100 mbar (1190 mm of diesel) |
| 590 852 | INTERNIV 590-6-160 | Electronic gauge 160 mbar (1900 mm of diesel) |
| 590 854 | INTERNIV 590-6-250 | Electronic gauge 250 mbar (2975 mm of diesel) |
| Mounting accessories | | |
| 590 799 | BJSC | Junction box, gauge holder |
| 590 798 | Angle bracket PVC (2") | Angle bracket PVC 2" BSP F |
| 520 620 | CE200 PP 2" FG | Fixing nut PP 2" BSP F |
| 590 860 | RI20-PVC | Tank fitting PVC 2" BSP M |
| 590 861 | RI15-PVC | Tank fitting PVC 1" 1/2 BSP M |
| 590 862 | RI20-Inox | Tank fitting AISI 2" BSP M |
| 520 919 | PIN-ANC | Suspension clip |

DIMENSIONS

Electronic gauge



INTERNIV 590



Tank fitting
590 860

Mounting accessories



Strength clip
520 919

Junction box BJSC
590 799

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Electronic gauge for diesel
INTERNIV 590

09-04-2019

D-590.06-EN-AD

NIV

590-06/2

Hydrostatic level transmitter, PVDF BAMONIV



- Level measurement on aggressive fluids
- Measuring cell: ceramic (96 %)
- Accuracy: 0.35 % F.S.
- Ranges from 0 ... 0.6 m up to 0 ... 10 m WC
- Fitting 1 1/2" in PVDF

APPLICATIONS

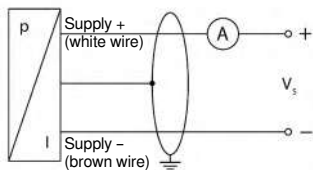
- Diesel, lubricating oils
- Viscous, pasty liquids
- Corrosive, acids and bases liquids

DESCRIPTION

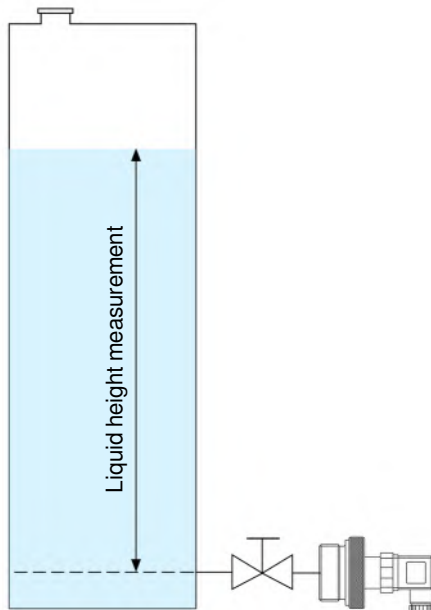
BAMONIV is designed for level measurement on aggressive, viscous or contaminated liquids in non-pressurized tanks.

It operates according to the principle of hydrostatic pressure measurement. The pressure on the sensor increases proportionally with the height of liquid. BAMONIV integrates ceramic cell and delivers a 4-20 mA signal proportional to the level.

To be mounted at the bottom of a non-pressurized tank; BAMONIV to be ordered or with a connector or with a cable output (PVC cable).



Electrical diagram



TECHNICAL FEATURES

| | |
|---------------------|--------------------------------|
| Measuring ranges | 0... 0.6 / ... / 0 ... 10 m WC |
| Long term stability | ≤ ± 0,1 % FS / year |
| Accuracy | ≤ 0.35 % FS |

| | |
|----------------|---|
| Materials: | |
| Measuring cell | Ceramic Al ₂ O ₃ 96 % |
| Fitting | PVDF |
| Fitting type | BSP 1 1/2" - DIN 3852 |

| | |
|---------------------------|---|
| Seal | FPM |
| Connection | Or on a connector ISO 4400, or with cable output (2 m long PVC cable) |
| Power supply | 9 ... 32 V DC |
| Output signal | 4...20 mA ; 2-wire |
| Load | At 20 mA, R _{max} . = [(Vs - Vs min) / 0,02] |
| Electrical protections | Reverse polarity, overload, short circuit |
| Emissions & interferences | In conformity with EN 61326 |
| Response time | ≤ 7 s |
| Overpressure | Less than 8 times the FS |
| Liquid temperature | -40 ... +125 °C |
| Temperature compensation | -20 ... + 80 °C |
| Temperature incidence | ± 0.1 % FS / 10 K |
| Ambient temperature | -40 ... + 85 °C |
| Storage temperature | -40 ... +100 °C |
| Mass | About 200 g |

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

For the electrical connection, a shielded cable is recommended.

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Hydrostatic level transmitter,
PVDF
BAMONIV

19-02-2020

D-591.02-EN-AD

NIV

591-02/1

CODE NUMBERS AND REFERENCES

| Code | Description |
|---------|--|
| 591 400 | BAMONIV, connector BSP 1 1/2" |
| 591 500 | BAMONIV, cable output; PVC cable, 2 m long |

Reference according the measuring scale

Model

Connection type

- 4** Connector ISO 4400
- 5** Cable output, 2 m

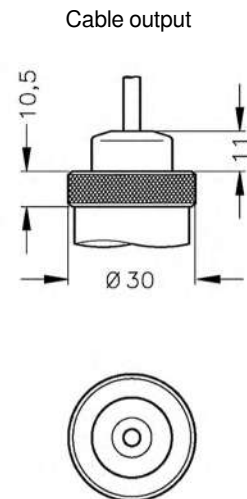
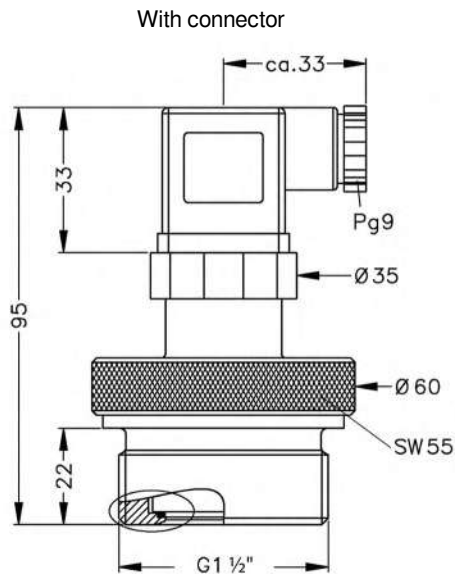
Measuring scales (Water Column)

- 01** 0... 0.06 bar / 0 ... 0.6 m WC
- 02** 0... 0.10 bar / 0 ... 1.0 m WC
- 03** 0... 0.16 bar / 0 ... 1.6 m WC
- 04** 0... 0.25 bar / 0 ... 2.5 m WC
- 05** 0... 0.40 bar / 0 ... 4.0 m WC
- 06** 0... 0.60 bar / 0 ... 6.0 m WC
- 07** 0... 1.0 bar / 0 ... 10 m WC

BAMONIV 4 03

DIMENSIONS

Assembly: hand tightening



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Hydrostatic level transmitter,
 PVDF
BAMONIV

19-02-2020

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NIV

591-02/2

Hydrostatic level transmitter BAMONIV TPS

- Level measurement of aggressive liquids
- Measuring cell: ceramic (99.9 %)
- Accuracy: 0.35 % (option: 0.25 %)
- Measuring ranges up to 50 m Water Column
- Body: PVDF or PP

APPLICATIONS

- Chemical industry
- Electroplating plants
- Waste water plants
- Neutralization process

DESCRIPTION

BAMONIV-TPS is designed for hydrostatic level measurement in aggressive media that is clear or slightly contaminated. Wet parts are of PVDF or PP, the seal of FPM and the cable of FEP.

It measures the level according to the principle of hydrostatic pressure measurement. The probe is suspended with its cable, down to the tank bottom. The probe is in immersion in the liquid and delivers a 4-20 mA signal proportional to the immersion depth.

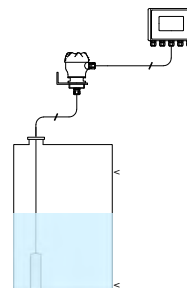
TECHNICAL FEATURES

| | |
|--------------------------|---|
| Power supply | 9 ... 32 V DC |
| Output signal | 4 ... 20 mA; 2-wire |
| Current limit | 21 mA max. |
| Load limit | Rmax. = 450 Ω |
| Electrical protections | Against reversed polarity, short circuit |
| Accuracy | < ± 0.35 % F.S. - According IEC 60770 |
| Temperature limits | -25 ... 100 °C (depends of configuration) |
| Temperature compensation | 0 ... +70 °C |
| Temperature incidence | < ± 0.1 % FS / 10 K |
| Response time | ≤ 0.2 s |
| Measuring cell | Ceramic Al ₂ O ₃ 99.9 % (aluminum oxide) |
| Measuring ranges | From 0...1 up to 0...50 m water column (See the table " Codes and references") |
| Body | PVDF or PP |
| Seal | FPM (EPDM on request) |
| Cable | FEP (standard; Limits: -25 ... 70 °C PUR; Limits: -25 ... 70 °C TPE; Limits: -25 ... 100 °C |
| Protection | IP 68 |

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



BJSJ junction box
(recommended option)



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Hydrostatic level transmitter
BAMONIV TPS

13-03-2020

D-591.03-EN-AI

NIV

591-03/1

CODE NUMBERS AND REFERENCES

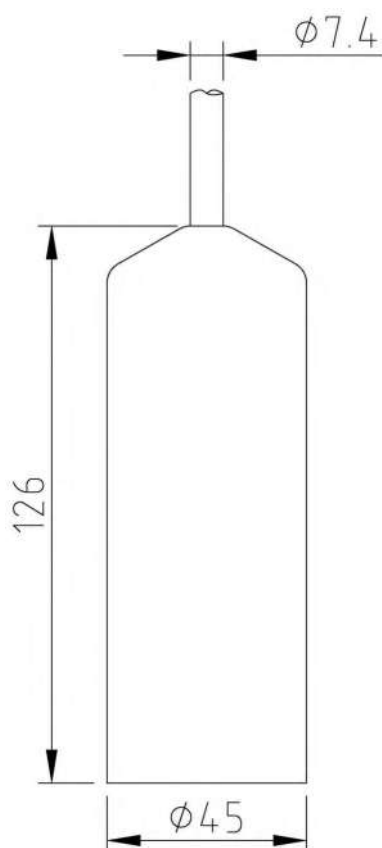
| Code | Reference | Body | Range (Water Column) | Cable length |
|---------|------------------|-----------------|----------------------|--------------|
| 591 601 | BAMONIV TPS 6 01 | PVDF, FEP cable | 0...1m | 5m |
| 591 602 | BAMONIV TPS 6 02 | PVDF, FEP cable | 0... 1.6 m | 5m |
| 591 603 | BAMONIV TPS 6 03 | PVDF, FEP cable | 0... 2.5 m | 5m |
| 591 604 | BAMONIV TPS 6 04 | PVDF, FEP cable | 0...4m | 6m |
| 591 605 | BAMONIV TPS 6 05 | PVDF, FEP cable | 0...6m | 8m |
| 591 701 | BAMONIV TPS 7 01 | PP, FEP cable | 0...1m | 5m |
| 591 702 | BAMONIV TPS 7 02 | PP, FEP cable | 0... 1.6 m | 5m |
| 591 703 | BAMONIV TPS 7 03 | PP, FEP cable | 0... 2.5 m | 5m |
| 591 704 | BAMONIV TPS 7 04 | PP, FEP cable | 0...4m | 6m |
| 591 705 | BAMONIV TPS 7 05 | PP, FEP cable | 0...6m | 10m |

Other cable lengths on request.

Accessories

| Code | Reference | Description |
|---------|-----------|-------------------------------------|
| 590 797 | BJSC-A | Holder BJSC-A (cable gland in PVDF) |
| 590 799 | BJSC2" | Holder BJSC |
| 590 798 | SE/PVC/2" | PVC angle bracket |
| 520 620 | CE 200 | PP counter nut 2" BSP |

DIMENSIONS



Bottom view of the ceramic cell

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Hydrostatic level transmitter
BAMONIV TPS

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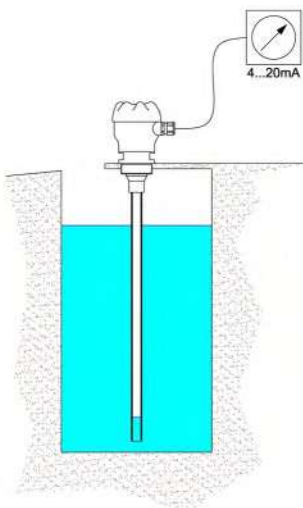
NIV

591-03/2

Hydrostatic level transmitter MEMPRO



MEMPRO A (e.g. rigid tube version)



Application: Example

- Continuous level measurement
- The sensor is not in contact with liquid
- Reliable even with aggressive, viscous, dirty or crystallizing liquids
- Stable measurement with a venting module
- High measuring accuracy

APPLICATIONS

Continuous level measurement for:

- Pressure-free containers
- Aggressive liquids
- Storage tanks
- And more ...

DESCRIPTION

The MEMPRO works according to the hydrostatic pressure measuring principle. The output signal corresponds to the pressure of the atmosphere inside the measuring tube; The ceramic sensor is not touched by the liquid.

TECHNICAL FEATURES

| | |
|---------------------------------|---|
| Power supply | 12 ... 28 V DC; max. 5% effective ripple |
| Ambient temperature | -20 ... +60 °C |
| Liquid temperature | PVC: 0 ... +60 °C PP: 0 ... +90 °C |
| Output signal | 4-20 mA; 2-wire transmitter |
| Head housing | PBT, glass fiber reinforced Protection: IP 65 according EN 60 529 |
| Process connection | See ordering information |
| Measuring cell | Ceramic with EPDM sealing Capacitive type with temperature compensation Measuring ranges, turndown 1:5 available for the following scales (of WATER): 0- 1,000 mm 0- 2,500 mm 0- 4,000 mm 0- 10,000 mm |
| Accuracy | < 1% F.S. |
| Materials | Fitting BSP 2": PVC or PP Measuring tube: Same as fitting (or PVC or PP) Measuring hose: EPDM Sensor seal: EPDM |
| Connection for venting function | Female thread BSP 1/4" and hose nipple for Ø 4x1 mm hose |
| Accessories | Automated venting module MEMPRO BL |

EC Conformity

The instrument meets the legal requirements of the current European Directives

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Hydrostatic level transmitter
MEMPRO

18-12-2019

D-592.01-EN-ABb

LEV

592-01 /1

PRECAUTIONS

Due to the hydrostatic pressure measurement the reading depends on the liquids density; Therefore, the device may be not convenient when the density is strongly fluctuating. In such a case, the reading of level is affected; The use of an average value of the density may be a proper correction.

Please note:

For osmosis and deionized water level measurements, where degassing phenomena occur, the MEMPRO must not operate without its ventilation function set up (see: MEMPRO BL venting unit).

For measurements close to the maximum of a scale and for liquids with density > 1 kg/dm³, the scale just above must be selected.



Vent valve



Venting unit MEMPRO BL

ORDERING INFORMATION

Article-No. for all MEMPROs is: 592 700

Hydrostatic level transmitter

Output signal

A 4-20 mA; 2-wire

Process connection

- R** Head with fixed measuring tube Ø20
- K** Head prepared for tube connection Ø20
- V** Head with hose fitting and mounting bracket

Material:

- 1** PVC
- 2** PP

Measuring scales:

- 1** 1,000 mm water column
- 2** 2,500 mm water column
- 4** 4,000 mm water column
- 10** 10,000 mm water column

Presetting:

X None

Fitting length/hose length:

L= mm

MEMPRO

(*): Distance from sealing surface

Fittings BSP: 1", 1¼" or 1½" on request

MEMPRO A -R... : available on request as "silicone free version" (restrictions apply)

Accessories:

Counterweights for EPDM flexible hose

- SW1** PVC counterweight
- SW2** PP counterweight

MEMPRO

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Hydrostatic level transmitter
MEMPRO

LEV

592-01 /2

18-12-2019

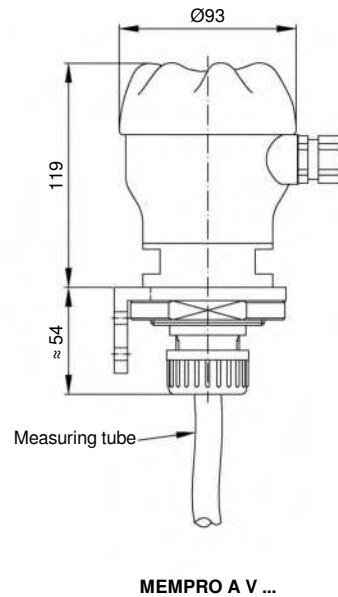
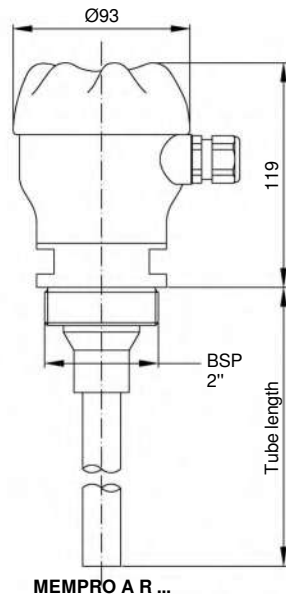
D-592.01-EN-ABb

ORDERING INFORMATION (continued)

| Code | Reference | Description |
|---------|------------------|---|
| 592 110 | MEMPRO A R 1 1 X | PVC model BSP 2"; PVC measuring tube; Scale 1000mm Water column |
| 592 130 | MEMPRO A R 1 2 X | PVC model BSP 2"; PVC measuring tube; Scale 2500mm Water column |
| 592 140 | MEMPRO A R 1 4 X | PVC model BSP 2"; PVC measuring tube; Scale 4000mm Water column |
| 592 210 | MEMPRO A R 2 1 X | PP model BSP 2"; PP measuring tube; Scale 1000mm Water column |
| 592 230 | MEMPRO A R 2 2 X | PP model BSP 2"; PP measuring tube; Scale 2500mm Water column |
| 592 240 | MEMPRO A R 2 4 X | PP model BSP 2"; PP measuring tube; Scale 4000mm Water column |

Please specify the required tube length with the order (from sealing surface)

DIMENSIONS



HOSE TYPE



Counterweights

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Hydrostatic level transmitter
MEMPRO

18-12-2019

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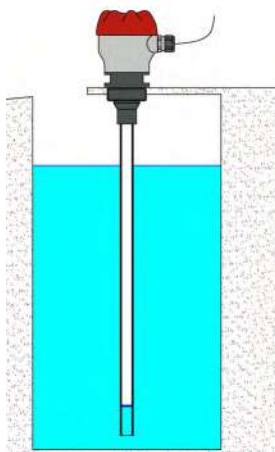
LEV

592-01 /3

Hydrostatic level controller, 4 switching points MEMPRO S6.6



MEMPRO S6.6 (PVC tube version)



Example

- 4 Adjustable relay outputs, N.O. or N.C.
- The sensor is not in contact with liquid
- Adjustable hysteresis and delay time for each channel
- Automatic calibration for max. level
- Integrated timer for the venting function

APPLICATIONS

- Universal level control for pressureless containers
- For aggressive fluids
- Storage container monitoring
- Batching operations
- And more ...

DESCRIPTION

The MEMPRO S6.6 works according to the hydrostatic pressure measuring principle. The output signal corresponds to the pressure of the atmosphere inside the measuring tube.

The ceramic sensor is not touched by the liquid. On site, with the automatic calibration function, the instrument is paired to the tank size in a matter of minutes. Four trigger points can be assigned to level heights through the setting menu. All switching points have an adjustable delay time, an adjustable hysteresis and a switchable N.C./ N.O. function.

For a clogging or degassing liquid, or when the temperature fluctuates, the MEMPRO must be connected to a venting device (MEMPRO BL). The timer for venting function is integrated in the MEMPRO.

TECHNICAL FEATURES

| | |
|---------------------|---|
| Power supply | 24 V DC (9 ... 36 V) |
| Consumption | Max. 1 W |
| Ambient temperature | -20 ... +60 °C (MEMPRO S6.6) -15 ... +60 °C (MEMPRO C S6.6) |
| Liquid temperature | 0... 60 °C, PVC version (MEMPRO S6.6) 0... 90 °C, PP version (MEMPRO S6.6) 0... 90 °C, AISI 316 version (MEMPRO C S6.6) |
| Output relays | 3 contacts + 1 floating limit value contact (3 switches + 1; the fourth relay also usable as a timer output -venting function-) |
| Switching power | Rated: 250 V AC, 2A; 30 V DC, 1A |

Note: The contacts are not protected against overload. Provide external protective devices.

| | |
|-----------------------|---|
| Head housing | PBT, fibre-glass reinforced |
| Protection | IP 65 according EN 60 529 |
| Electrical connection | Screw terminals, max. 1.5 mm ² |
| Measuring cell | Ceramic with EPDM sealing (*) |

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Hydrostatic level controller, 4
switching points
MEMPRO S6.6

13-03-2020

D-592.03-EN-AB

LEV

592-03/1

TECHNICAL FEATURES (continued)

(* Caution

The controller may only be used with fluids for which its vapours are compatible with the EPDM seal of the sensor. When EPDM is only partially resistant to the chemical, care must be taken that the seal never comes into direct contact with the liquid during operation, assembly and maintenance.

| | |
|---------------------------------|--|
| Accuracy | 0.5% ± 0.5 Digit |
| Display in % | Resolution of 1 % |
| Reset hysteresis | Adjustable from 1 to 99 % |
| Signal filter | Adjustable from 1 to 9.9 s |
| Signaling on PCB | 3 digits of 7 segments, LED display, 4 LEDs (relays) |
| Settings | Combined rotary / push switch |
| Connection for venting function | Through a hose (e.g. PVC 4x1mm) or by screwing a compressed air plug BSP 1/4" with tubing. |

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

PRECAUTIONS

Due to the hydrostatic pressure measurement the reading depends on the liquid density; Therefore, the device may be not convenient when the density is strongly fluctuating.

In such a case, the reading of level is affected; The use of an average value of the density may be a proper correction.

Please note:

For osmosis and deionized water level measurements, for process where degassing phenomena occurs, the MEMPRO must not operate without its ventilation function set up (see: MEMPRO BL venting unit).



Vent valve



Venting unit MEMPRO BL

ORDERING INFORMATION

Article Nr: 5892800 for all MEMPRO S6.6

Hydrostatic level controller, 4 trigger points

Process connection:

- R** Head with fixed measuring tube Ø20
- K** Head prepared for tube connection Ø20
- V** Head with hose fitting and mounting bracket

Materials

- 1** PVC
- 2** PP

Measuring scales

- 1** 1000mm Water column
- 2** 2500mm Water column
- 4** 4000mm Water column
- 10** 10000mm Water column

Presetting:

- None

Tube or hose length*: for R & V types

L= mm

MEMPRO S6.6

(*): Distance from sealing surface

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Hydrostatic level controller, 4
switching points
MEMPRO S6.6

13-03-2020

D-592.03-EN-AB

LEV

592-03/2

ORDERING INFORMATION (Continued)

MEMPRO S6.6-R... and MEMPRO S6.6-K... are available on request as "out of silicone" version (restrictions apply).

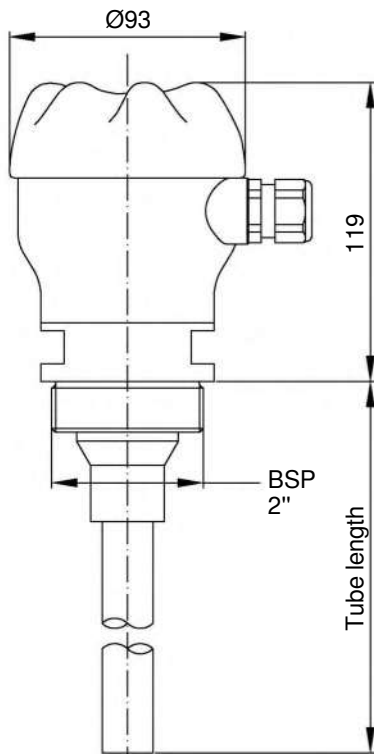
Accessories:

Counterweights for EPDM flexible hose

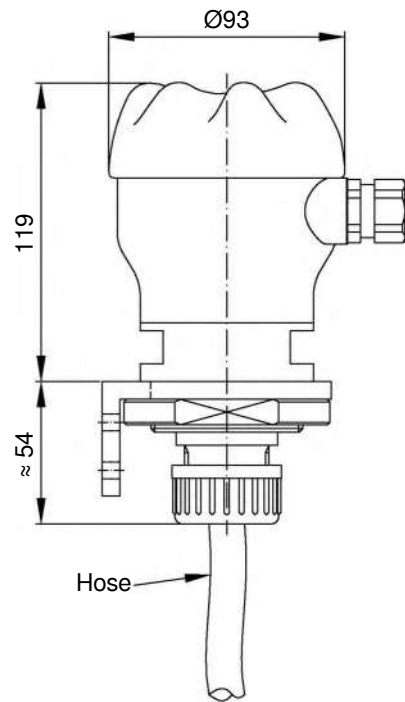
- SW1** PVC counterweight
- SW2** PP counterweight

MEMPRO

DIMENSIONS



MEMPRO S6.6 R...



MEMPRO S6.6 V...

HOSE TYPE



Counterweights

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Hydrostatic level controller, 4
switching points
MEMPRO S6.6

13-03-2020

D-592.03-EN-AB

LEV

592-03/3

Ultrasonic level transmitter for liquids BAMOSONIC



- Measuring range from 0.2 to 8 m (liquids)
- Non-contact level measurement
- Power supply by 4-20 mA Loop
- IP67 Ingress protection
- Option : Plug-in display

APPLICATIONS

BAMOSONIC measures continuously the level of liquid in a tank, without contact with the liquid.

- Storage tanks
- Weirs and open channels
- Waste water lifting units

DESCRIPTION

BAMOSONIC is a high performance ultrasonic compact sensor with integrated transducer. This high reliable sensor is supplied by the 4-20 mA loop.

Installed on the tank roof, or above the liquid surface to be measured, the transmitters give analogue output proportional to liquid level
BAMOSONIC is recommended for liquid level measurement in sumps or tanks, for tank contents measurement, or open channel flow measurement

Four keys provide for programming

With the help of the N-DIS plug-in display a full-parameter programming can be accomplished, the parameters of measurement and output can be set using the alphanumeric display module.

TECHNICAL DATA

| | |
|-----------------------|--|
| Transducer material | PP (Polypropylene) PVDF (Polyvinylidene fluoride) |
| Housing | Plastic PBT |
| Medium temperature | -30°C ... +90°C |
| Ambient temperature | -25°C ... +70°C |
| Pressure* | 0.5 ... 3 bar (abs.) |
| Sealing | EPDM (PP model) FPM (PVDF model) |
| Ingress protection | Transducer IP 68 - Housing IP67 |
| Accuracy | ± (0,2% of measured distance + 0,05% of range) <i>Under optimal operating conditions and stabilized temperature</i> |
| Resolution | Depending on the measured distance < 2 m : 1 mm; 2...5 m : 2 mm; 5...8 m : 5 mm |
| Full beam angle | Between 5 et 7° |
| Power supply | 12...36 V DC / 48 ...720 mW |
| Output | Analogue 4-20 mA |
| Electrical connection | 2 x M20 x 1.5 and 2x 1/2" NPT Cable : Ø6...Ø12 mm wire cross section: max.1.5 mm ² |
| Electrical protection | Class III |

* For vacuum application please contact us

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



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Ultrasonic level transmitter for
liquids
BAMOSONIC

14-09-2018

D-597.06-EN-AF

LEVEL

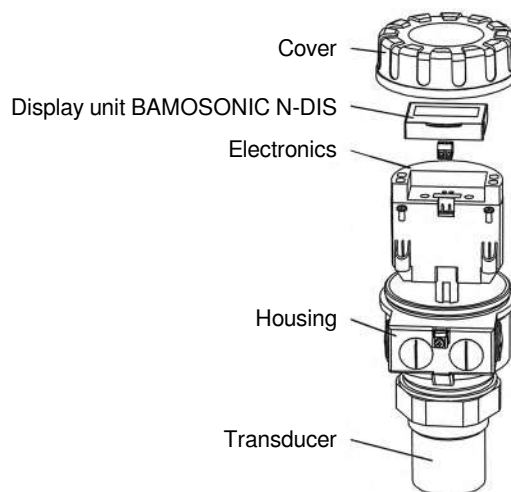
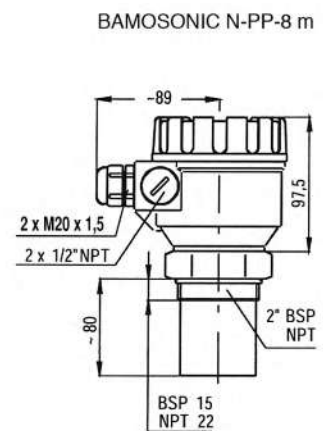
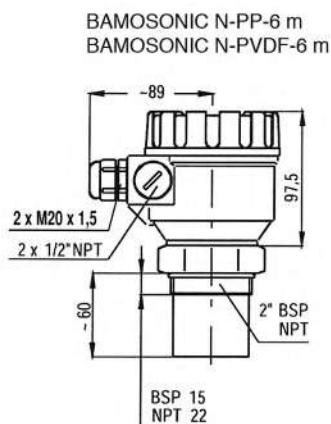
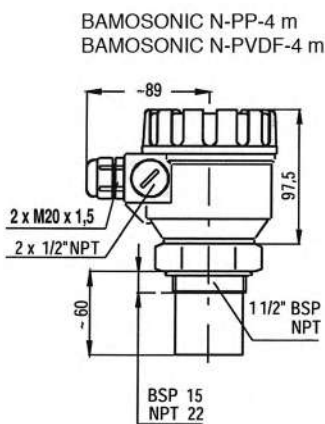
597-06/1

CODE NUMBERS AND REFERENCES

| Code | 597 220 | 597 202 | 597 205 | 597 222 | 597 223 |
|---|----------------------------------|---------|---------|---------|---------|
| Designation (BAMOSONIC-N-xx-xx) | PP-4m | PP-6m | PP-8m | PVDF-4m | PVDF-6m |
| Transducer material | PP | PP | PP | PVDF | PVDF |
| Max. measuring range * | 4 m | 6 m | 8 m | 4 m | 6 m |
| Min. measuring range* | 0,2 m | 0,25 m | 0,35 m | 0,2 m | 0,25 m |
| Beam angle | 6° | 5° | 7° | 6° | 5° |
| Connection | 1 1/2" | 2" | 2" | 1 1/2" | 2" |
| OPTION : Programming display BAMOSONIC DIS - N | | | | | |
| Code | 597 902 | | | | |
| Display | LCD, 6 digits, icons and graphic | | | | |

*From transducer bottom end

DIMENSIONS



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Ultrasonic level transmitter for liquids
BAMOSONIC

14-09-2018

D-597.06-EN-AF

LEVEL

597-06/2