



Simple float switch

- Switch for neutral and aggressive liquids
- NO/NC, alternating
- Reed contact
- Vertical or horizontal mounting
- Molded lying leads (Type 8181) or cable (Type TCL001)

Product variants described in the data sheet may differ from the product presentation and description.

Type description

Float switch with hermetically sealed reed contacts in a fixed switch part, switching triggered by magnets in floating switch part, reed contact implemented as alternator or normally open/closed; for neutral and aggressive liquids; not sensitive to dirt particles in the medium; cylindrical threading for simple installation in side of container. Different versions are available depending on material (PP or stainless steel), mounting position (horizontal or vertical) and equipment (relay).

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1. General technical data

1.1. Type TCL001

| Product properties | |
|------------------------------|---|
| Dimensions | Detailed information can be found in chapter "2. Dimensions" on page 4. |
| Switching point | At tilt of $7^\circ \pm 3^\circ$ (8.5 mm \pm 3 mm) |
| Switching function | Normally closed/open or alternating |
| Operating temperature | -25...+105 °C |
| Probe material | PP (PVDF on request) |
| Thread | R 1/2" |
| Electrical data | |
| Normally closed/open | |
| Switching voltage | Max. 250 V |
| Switching current | Max. 1 A |
| Contact rating | Max. 50 W / VA |
| Alternating | |
| Switching voltage | Max. 48 V |
| Switching current | Max. 0.25 A |
| Contact rating | Max. 3 W / VA |
| Approvals and certificates | |
| Protection class | IP67 |
| Product connections | |
| Electrical connections | PVC cable, 3 m long (other cable lengths on request) |
| Environment and installation | |
| Mounting position | Horizontal |

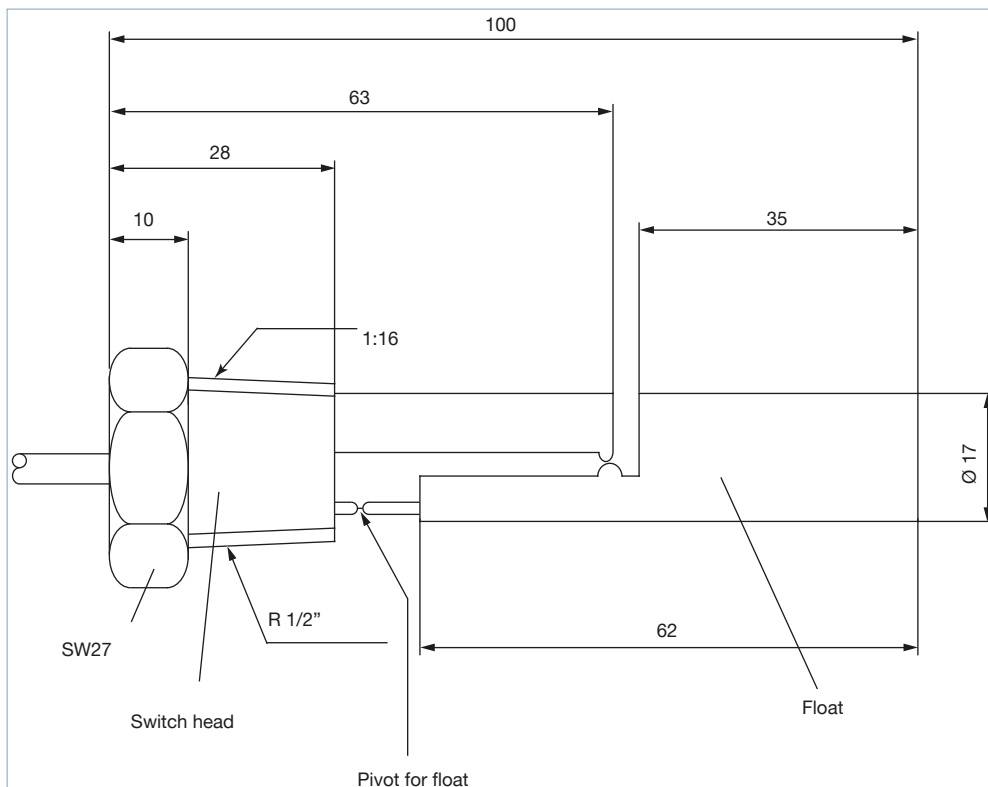
1.2. Type 8181

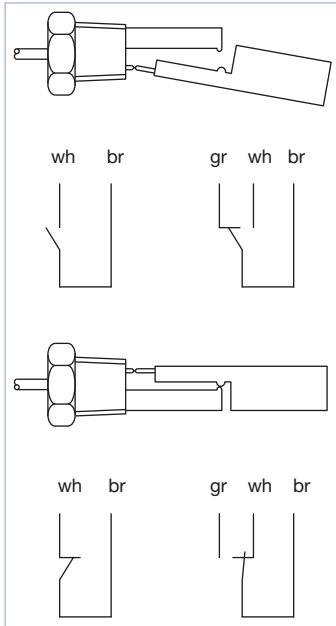
| Product properties | Type 8181 Standard | Type 8181 with relay module |
|-----------------------------------|--|--|
| Dimensions | Detailed information can be found in chapter "2. Dimensions" on page 4. | |
| Switching point | At tilt of $7^\circ \pm 3^\circ$ (8.5 mm \pm 3 mm) | At tilt of $7^\circ \pm 3^\circ$ (8.5 mm \pm 3 mm) |
| Switching function | Normally closed/open | Normally closed/open |
| Materials | | |
| Housing, cover / contact | - | PC / AgNi 90/10 |
| Stem, float | PP or stainless steel 304 (316L on request) | PP or stainless steel 304 (316L on request) |
| Circlip (only vertical version) | PP or stainless steel 304 | PP or stainless steel 304 |
| Female cable plug/male fixed plug | - | Body, contact holder and cable gland in PA and cable gland seal and flat seal in NBR |
| Cable gland | PA (if one) | PA |
| Thread | G 1/4" (only for PP-horizontal version) or G 1/8" for leads version and G 3/4" for cable version | G 3/4" |
| Float density | Approx. 0.7 | Approx. 0.7 |
| Acceptable pressure | | |
| PP version | 1 bar (vertical or horizontal mounting position) | 1 bar (vertical or horizontal mounting position) |
| Stainless steel version | 10 bar (vertical mounting position) 5 bar (horizontal mounting position) | 10 bar (vertical mounting position) 5 bar (horizontal mounting position) |
| Medium data | | |
| Medium temperature | | |
| PP version | -10...+80 °C | -10...+80 °C |
| Stainless steel version | -40...+120 °C | -40...+120 °C |
| Electrical data | | |
| Output type | Reed contact | 1 single change-over contact |
| Switching function | Normally closed/open | Normally closed/open |
| Voltage | Switching: max. 48 V AC/DC | Max. 250 V AC / 30 V DC |

| Product properties | Type 8181 Standard | Type 8181 with relay module |
|------------------------------|---|--|
| Current | Switching: max. 0.25 A | Max. 3 A |
| Breaking power | 66 VA AC/DC (only for PP-vertical version) 50 VA AC/DC | – |
| Contact resistance | Max. 150 mΩ Max. 200 mΩ (only for stainless steel horizontal version) | – |
| Breakdown voltage | Min. 310 V AC (only for PP-vertical version) 600 V DC | – |
| Insulating resistance | Min. 10 MΩ | – |
| Number of cycles | – | 100 000 acc. to standard VDE 0435 |
| Current consumption | – | <3 mA |
| Approvals and certificates | | |
| Protection class | IP65 | IP65 |
| Vibrations and shocks | 20G (for stainless steel version) | – |
| Product connections | | |
| Electrical connection | Leads 300 mm or cable 5 m | Positionable M12 and EN175301 - 803 cable plug |
| Electrical cable | 0.25 mm ² min. cross section leads or PVC covering cable, 0.25 mm ² min. cross section, 2 wires + shielding | – |
| Environment and installation | | |
| Ambient temperature | - 10...+80 °C (operation and storage) | - 10...+80 °C (operation and storage) |

2. Dimensions

2.1. Type TCL001

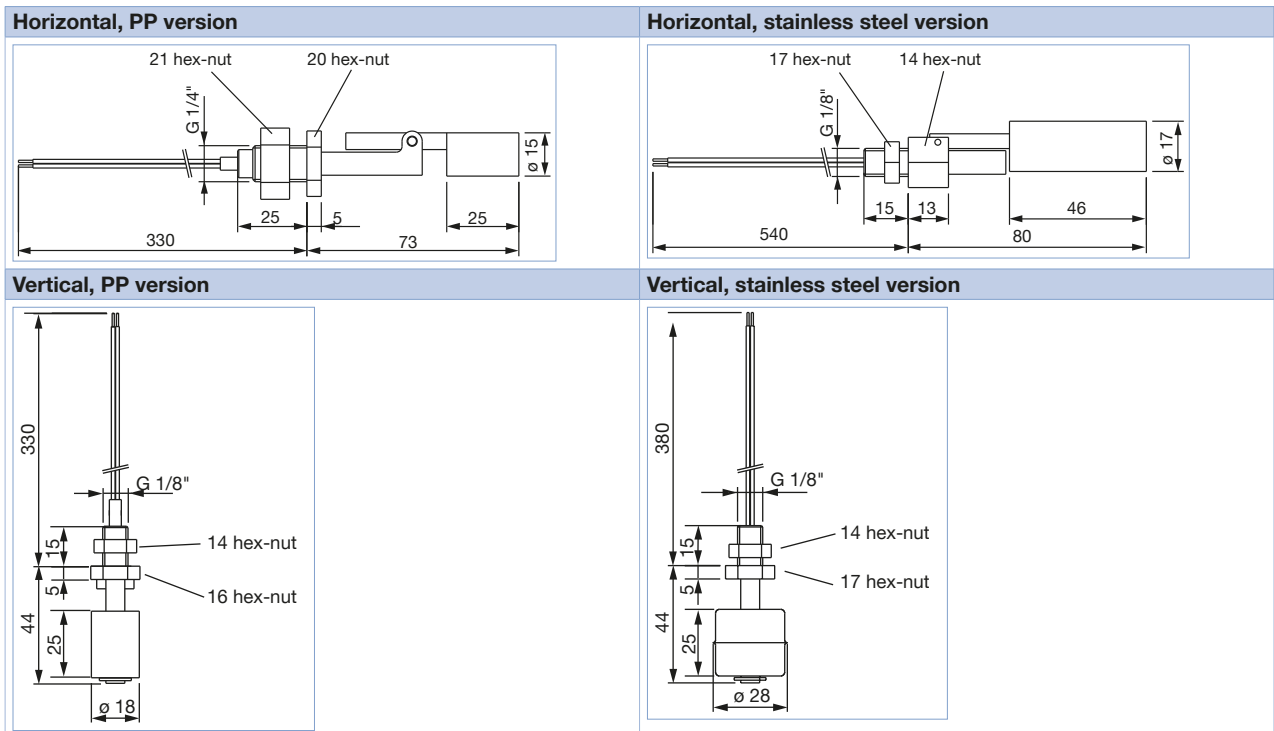




| Abbreviation | Color |
|--------------|-------|
| gr | green |
| wh | white |
| br | brown |

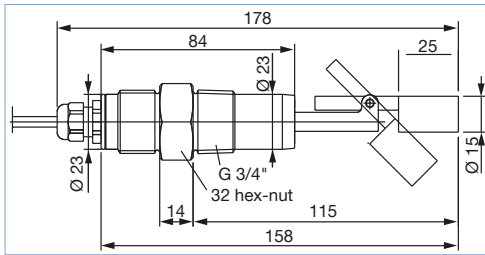
2.2. Type 8181

Switch with leads

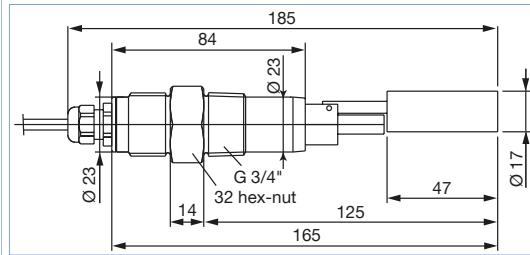


Switch with 5 m cable

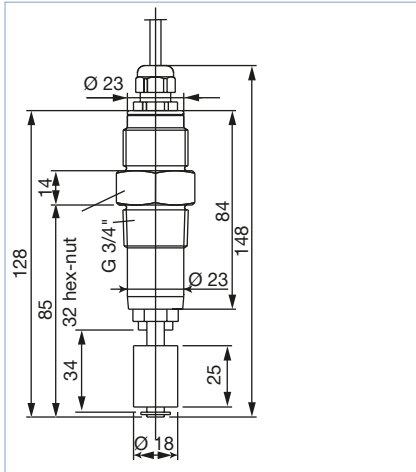
Horizontal, PP version



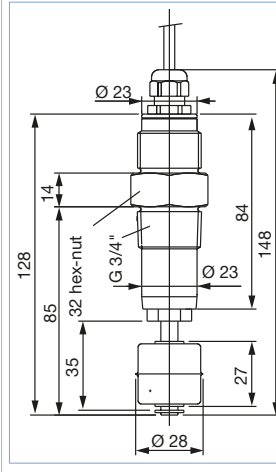
Horizontal, stainless steel version



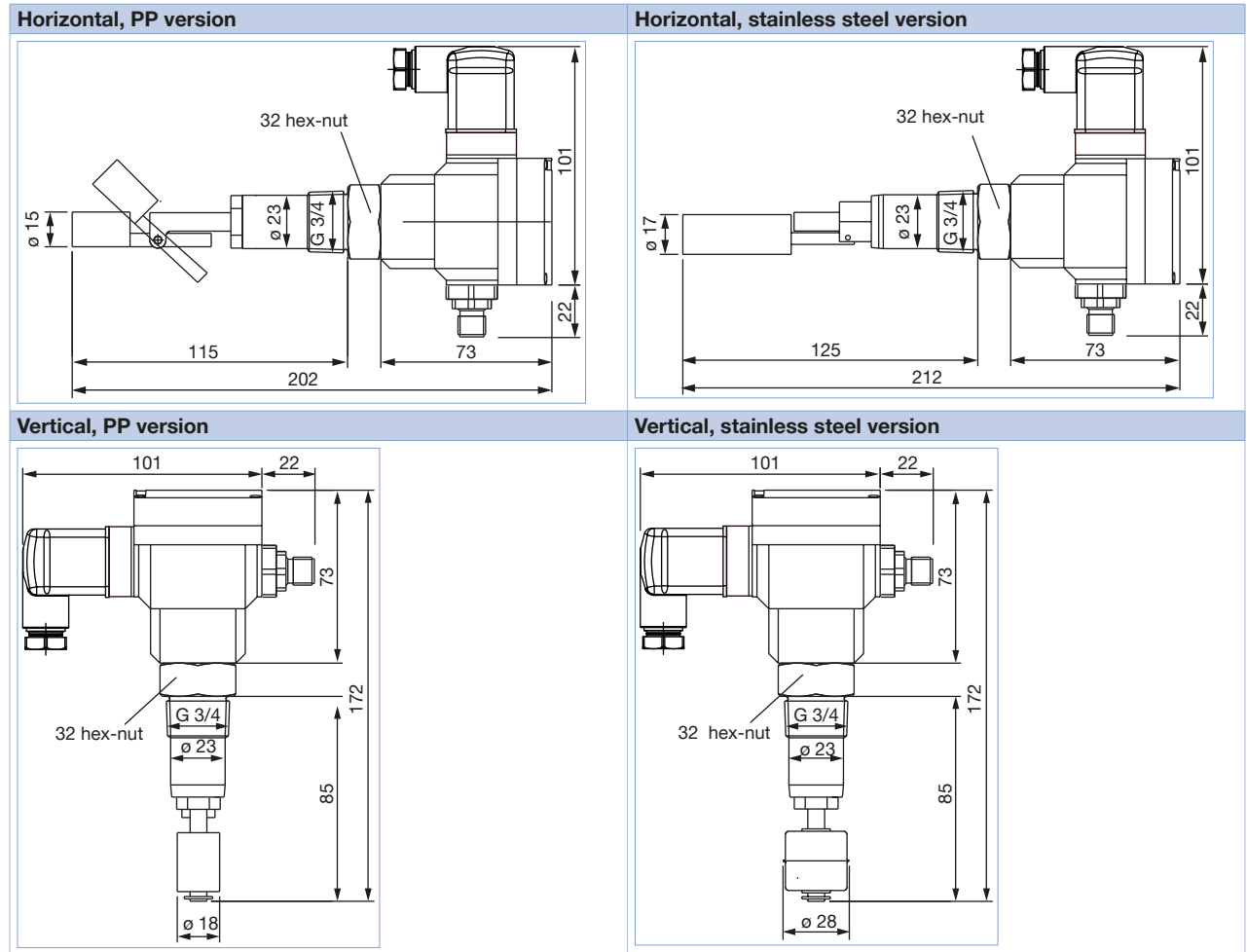
Vertical, PP version



Vertical, stainless steel version



Switch with relay module



3. Ordering information

3.1. Bürkert eShop – Easy ordering and quick delivery




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3.2. Bürkert product filter

















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3.3. Ordering chart

| Type | Connection | Material | Version | Switching current | Switching voltage | Switching function | Electrical connection | Article no. |
|--|------------|----------|------------|-------------------|-------------------------|-------------------------------------|--|--|
| TCL001 | R ½ | PP | Horizontal | Max. 1 A | Max. 250 V | Normally closed/open ^{1.)} | 3 m cable | 783793  |
| | | | | | Max. 48 V | Alternating | 3 m cable | 783794  |
| 8181 | G ¼ | PP | Horizontal | 0.5 A | Max. 48 V AC/DC | Normally closed/open ^{1.)} | 300 mm leads | 438141  |
| | | | Vertical | 0.5 A | Max. 48 V AC/DC | Normally closed/open ^{1.)} | 300 mm leads | 438132  |
| | | St. St. | Horizontal | 0.5 A | Max. 48 V AC/DC | Normally closed/open ^{1.)} | 300 mm leads | 438150  |
| | | | Vertical | 0.5 A | Max. 48 V AC/DC | Normally closed/open ^{1.)} | 300 mm leads | 438159  |
| | G ¾ | PP | Horizontal | 0.5 A | Max. 48 V AC/DC | Normally closed/open ^{1.)} | 5 m cable | 438496  |
| | | | Vertical | 0.5 A | Max. 48 V AC/DC | Normally closed/open ^{1.)} | 5 m cable | 438502  |
| | | St. St. | Horizontal | 0.5 A | Max. 48 V AC/DC | Normally closed/open ^{1.)} | 5 m cable | 438499  |
| | | | Vertical | 0.5 A | Max. 48 V AC/DC | Normally closed/open ^{1.)} | 5 m cable | 438505  |
| 8181 with relay module supplied with 24 V DC | G ¾ | PP | Horizontal | 3 A | Max. 250 V AC / 30 V DC | Normally closed/open ^{1.)} | Positionable M12 and EN175301 - 803 cable plug | 438497  |
| | | | Vertical | 3 A | Max. 250 V AC / 30 V DC | Normally closed/open ^{1.)} | Positionable M12 and EN175301 - 803 cable plug | 438503  |
| | | St. St. | Horizontal | 3 A | Max. 250 V AC / 30 V DC | Normally closed/open ^{1.)} | Positionable M12 and EN175301 - 803 cable plug | 438500  |
| | | | Vertical | 3 A | Max. 250 V AC / 30 V DC | Normally closed/open ^{1.)} | Positionable M12 and EN175301 - 803 cable plug | 438506  |

1.) Depending on mounting orientation

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