



## 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)

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.

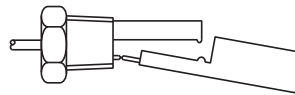
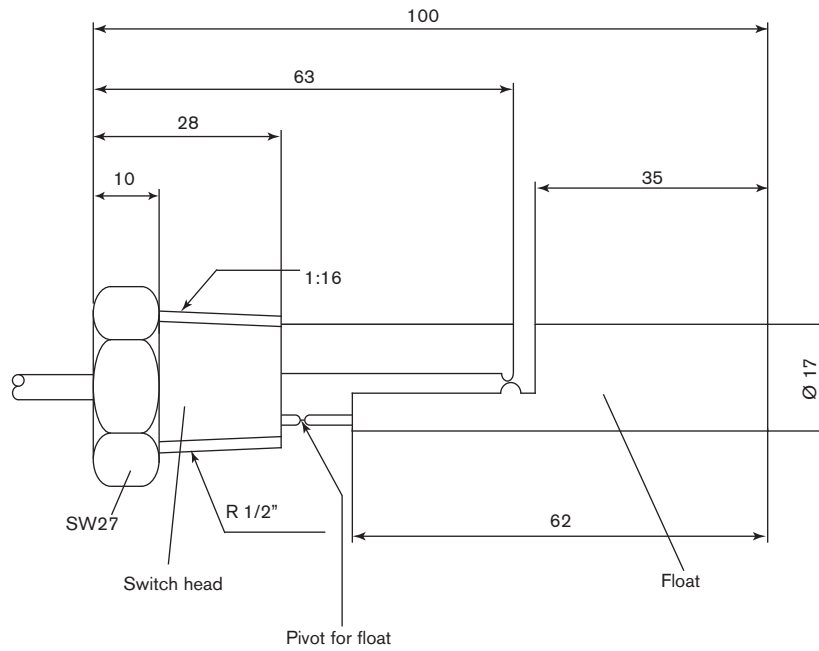
Different versions are available depending on material (PP or stainless steel), mounting position (horizontal or vertical) and equipment (relay).

### Technical data - TCL001

<b>Switching point</b>	at tilt of $7^\circ \pm 3^\circ$ (8.5 mm $\pm$ 3 mm)
<b>Switching function</b>	normally closed/open or alternating
<b>Normally closed/open</b>	
Switching voltage	max. 250 V
Switching current	max. 1 A
Contact rating	max. 50 W / VA
<b>Alternating</b>	
Switching voltage	max. 150 V
Switching current	max. 0.25 A
Contact rating	max. 3 W / VA
<b>Electrical connections</b>	PVC cable, 3 m long (other cable lengths on request)
<b>Protection class</b>	IP67
<b>Operating temperature</b>	-25 up to +105°C
<b>Probe material</b>	PP (PVDF on request)
<b>Mounting position</b>	horizontal
<b>Thread</b>	R1/2"

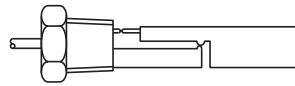
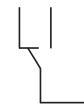
Technical data - 8181		
General data	Type 8181 standard	Type 8181 with relay module
<b>Switching point</b>	at tilt of $7^\circ \pm 3^\circ$ (8.5 mm $\pm$ 3 mm)	at tilt of $7^\circ \pm 3^\circ$ (8.5 mm $\pm$ 3 mm)
<b>Mounting position</b>	Horizontal or vertical	Horizontal or vertical
<b>Thread</b>	G1/4" (only for PP-horizontal version) or G1/8" for leads version and G3/4" for cable version	G3/4"
<b>Materials</b> Housing, cover / Contact Stem, float Circlip (only vertical version) Cable plug, cable gland	- PP or stainless steel 304 (316L on request) PP or stainless steel 304 PA (if one)	PC / AgNi 90/10 PP or stainless steel 304 (316L on request) PP or Stainless steel 304 PA
<b>Float density</b>	approx. 0.7 <sup>1)</sup>	approx. 0.7 <sup>1)</sup>
<b>Acceptable pressure</b> PP version Stainless steel version	1 bar (vertical or horizontal mounting position) 10 bar (vertical mounting position) 5 bar (horizontal mounting position)	1 bar (vertical or horizontal mounting position) 10 bar (vertical mounting position) 5 bar (horizontal mounting position)
<b>Medium temperature</b> PP version Stainless steel version	-10 to +80°C -40 to +120°C	-10 to +80°C -40 to +120°C
<b>Electrical connection</b>	Leads 300 mm or cable 5m	Positionable M12 and EN175301-803 cable plug
<b>Electrical cable</b>	0.25 mm <sup>2</sup> min. cross section leads or PVC covering cable, 0.25 mm <sup>2</sup> min. cross section, 2 wires + shielding	-
Electrical data	Type 8181 standard	Type 8181 with relay module
<b>Output type</b>	Reed contact	1 single change-over contact
<b>Switching function</b>	Normally closed/open	Normally closed/open
<b>Voltage</b>	Switching: max. 48 V AC/DC	Max. 250 V AC / 30 V DC
<b>Current</b>	Switching: max. 0.25 A	Max. 3 A
<b>Breaking power</b>	66 VA AC/DC (only for PP-vertical version) 50 VA AC/DC	-
<b>Contact resistance</b>	Max. 150 mΩ Max. 200 mΩ (only for stainless steel horizontal version)	-
<b>Breakdown voltage</b>	min. 310 V AC (only for PP-vertical version) 600 V DC	-
<b>Insulating resistance</b>	Min. 10 MΩ	-
<b>Number of cycles</b>	-	100 000 acc. to standard VDE 0435
<b>Current consumption</b>	-	< 3 mA
Environment	Type 8181 standard	Type 8181 with relay module
<b>Ambient temperature</b>	- 10 to +80°C (operation and storage)	- 10 to +80°C (operation and storage)
Standards, directives and approvals	Type 8181 standard	Type 8181 with relay module
<b>Protection class</b>	IP65	IP65
<b>Vibrations and shocks</b>	20G (for stainless steel version)	-

Dimensions [mm] Type TCL001



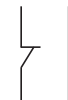
wh br

gr wh br



wh br

gr wh br

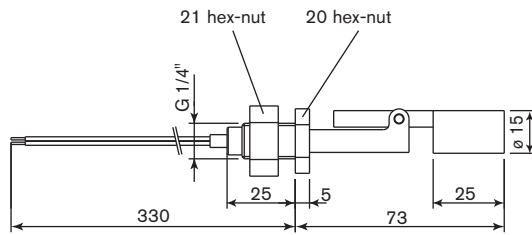


gr = green  
wh = white  
br = brown

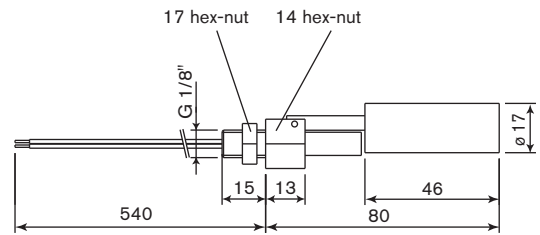
Dimensions [mm] Type 8181

Switch with leads

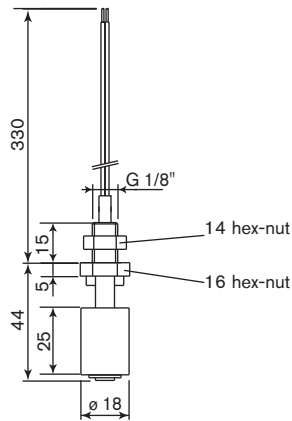
Horizontal, PP version



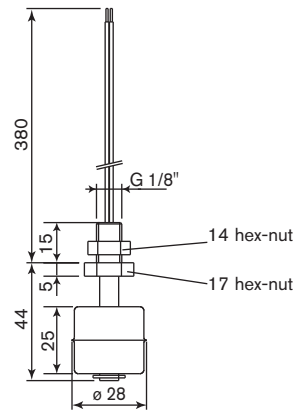
Horizontal, stainless steel version



Vertical, PP version

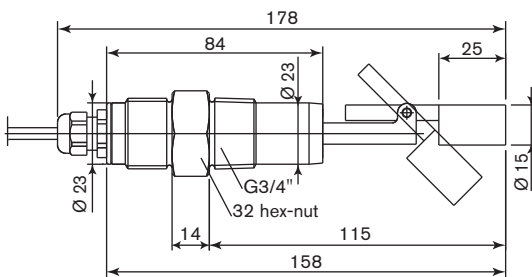


Vertical, stainless steel version

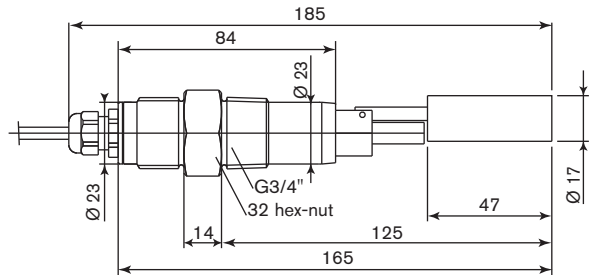


Switch with 5 m cable

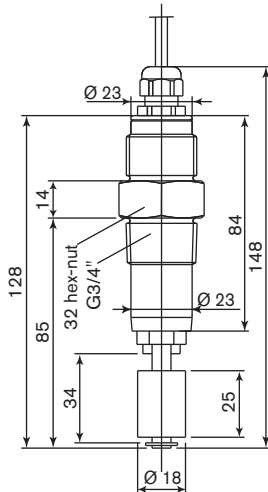
Horizontal, PP version



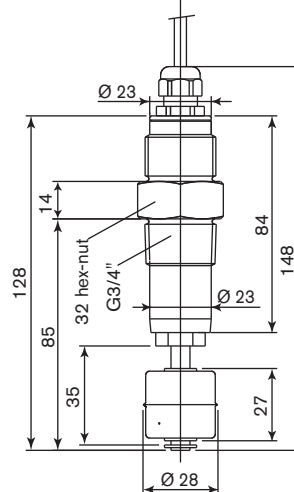
Horizontal, stainless steel version



Vertical, PP version



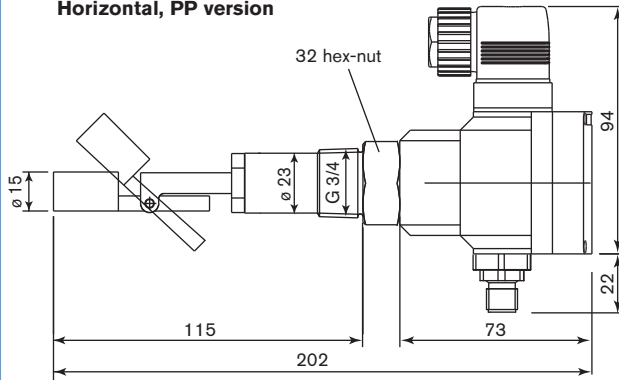
Vertical, stainless steel version



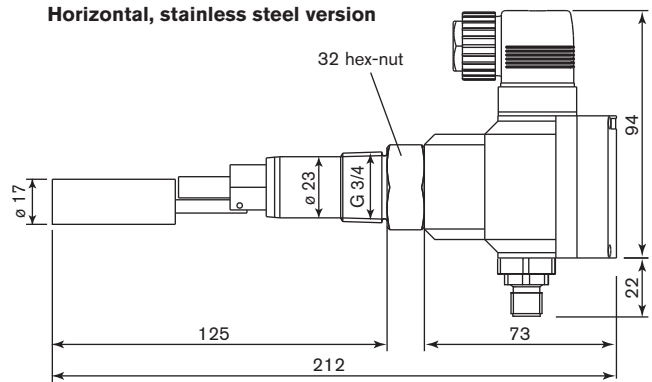
Dimensions [mm] Type 8181

Switch with relay module

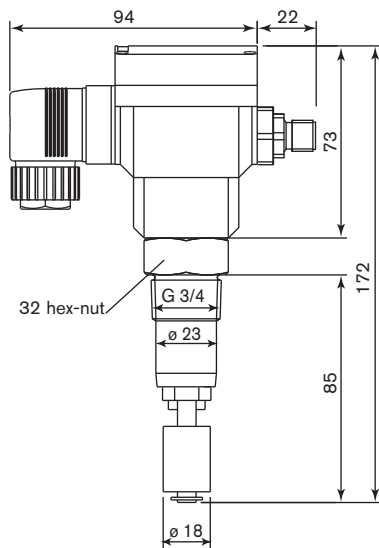
Horizontal, PP version



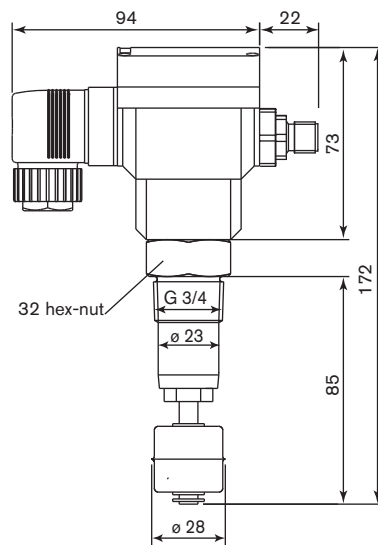
Horizontal, stainless steel version



Vertical, PP version



Vertical, stainless steel version



## Ordering chart

Type	Connection	Material	Version	Switching current	Switching voltage	Switching function	Electrical connection	Item no.
TCL001	R1/2	PP	Horizontal	max 1 A	Max 250V	Normally closed/open*	Cable 3 m	783 793
					Max 150V	Alternating	Cable 3 m	783 794
8181	G1/4	PP	Horizontal	0.5 A	Max 48 V AC/DC	Normally closed/open*	Leads 300 mm	438 141
			Vertical	0.5 A	Max 48 V AC/DC	Normally closed/open*	Leads 300 mm	438 132
	G1/8	St. St.	Horizontal	0.5 A	Max 48 V AC/DC	Normally closed/open*	Leads 300 mm	438 150
			Vertical	0.5 A	Max 48 V AC/DC	Normally closed/open*	Leads 300 mm	438 159
	G3/4	PP	Horizontal	0.5 A	Max 48 V AC/DC	Normally closed/open*	Cable 5 m	438 496
			Vertical	0.5 A	Max 48 V AC/DC	Normally closed/open*	Cable 5 m	438 502
		St. St.	Horizontal	0.5 A	Max 48 V AC/DC	Normally closed/open*	Cable 5 m	438 499
			Vertical	0.5 A	Max 48 V AC/DC	Normally closed/open*	Cable 5 m	438 505
8181 with relay module supplied with 24 V DC	G3/4	PP	Horizontal	3 A	Max. 250 V AC / 30 V DC	Normally closed/open*	Positionable M12 and EN175301-803 cable plug	438 497
			Vertical	3 A	Max. 250 V AC / 30 V DC	Normally closed/open*	Positionable M12 and EN175301-803 cable plug	438 503
		St. St.	Horizontal	3 A	Max. 250 V AC / 30 V DC	Normally closed/open*	Positionable M12 and EN175301-803 cable plug	438 500
			Vertical	3 A	Max. 250 V AC / 30 V DC	Normally closed/open*	Positionable M12 and EN175301-803 cable plug	438 506

\*Depending on mounting orientation