

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.

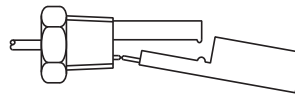
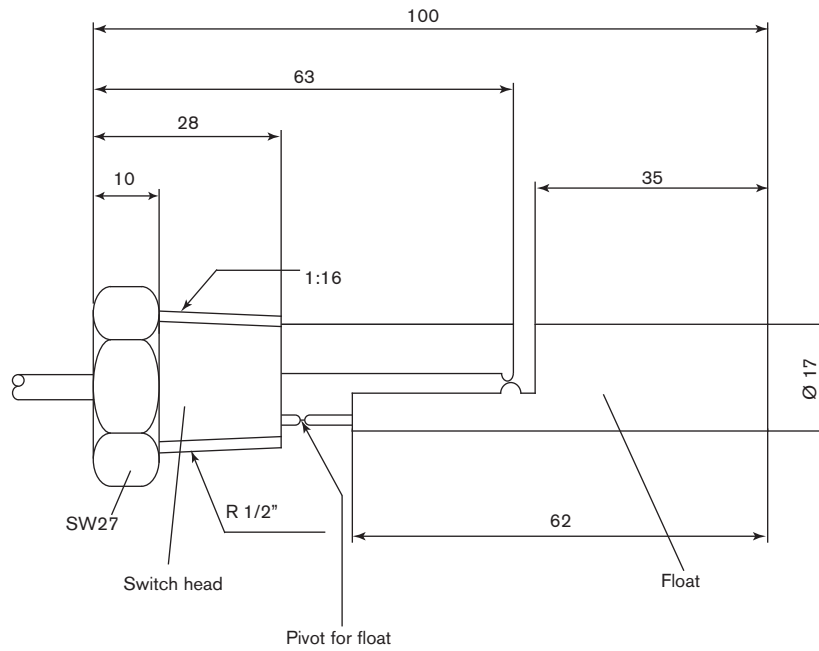
Different versions are available depending on material (PP or stainless steel), mounting position (horizontal or vertical) and equipment (relay).

Technical data - TCL001

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

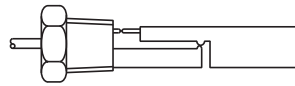
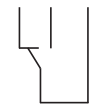
Technical data - 8181		
General data	Type 8181 standard	Type 8181 with relay module
Switching point	at tilt of $7^\circ \pm 3^\circ$ (8.5 mm \pm 3 mm)	at tilt of $7^\circ \pm 3^\circ$ (8.5 mm \pm 3 mm)
Mounting position	Horizontal or vertical	Horizontal or vertical
Thread	G1/4" (only for PP-horizontal version) or G1/8" for leads version and G3/4" for cable version	G3/4"
Materials 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
Float density	approx. 0.7 ¹⁾	approx. 0.7 ¹⁾
Acceptable pressure 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)
Medium temperature PP version Stainless steel version	-10 to +80°C -40 to +120°C	-10 to +80°C -40 to +120°C
Electrical connection	Leads 300 mm or cable 5m	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	-
Electrical data	Type 8181 standard	Type 8181 with relay module
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
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
Environment	Type 8181 standard	Type 8181 with relay module
Ambient temperature	- 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
Protection class	IP65	IP65
Vibrations and shocks	20G (for stainless steel version)	-

Dimensions [mm] Type TCL001



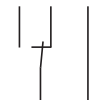
wh br

gr wh br



wh br

gr wh br

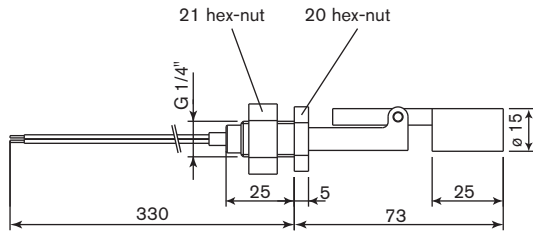


gr = green
wh = white
br = brown

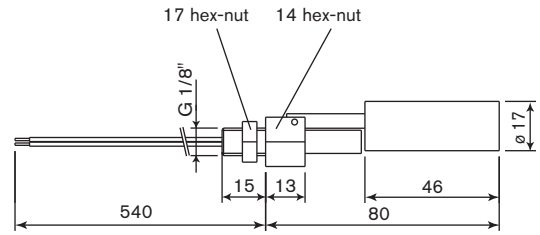
Dimensions [mm] Type 8181

Switch with leads

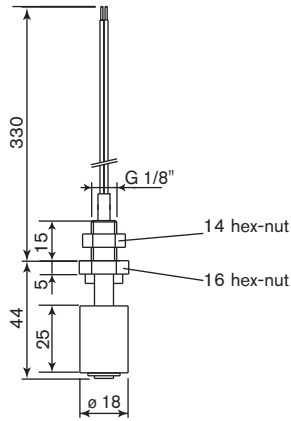
Horizontal, PP version



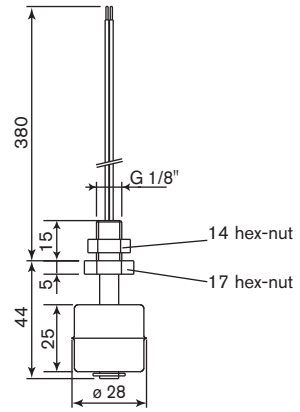
Horizontal, stainless steel version



Vertical, PP version

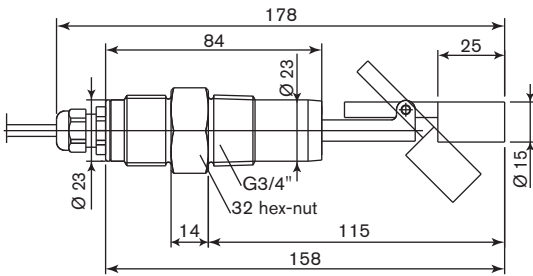


Vertical, stainless steel version

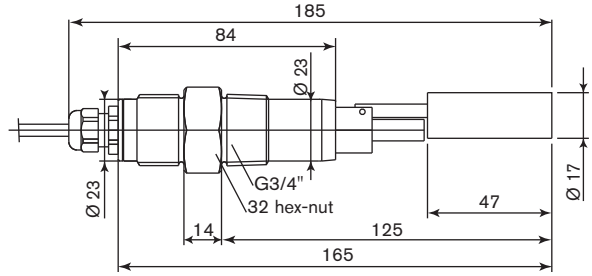


Switch with 5 m cable

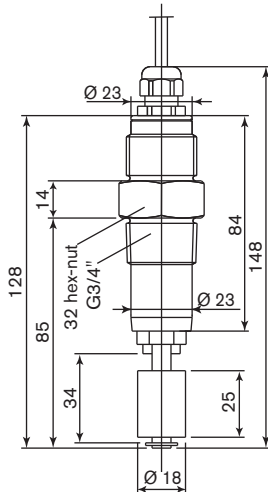
Horizontal, PP version



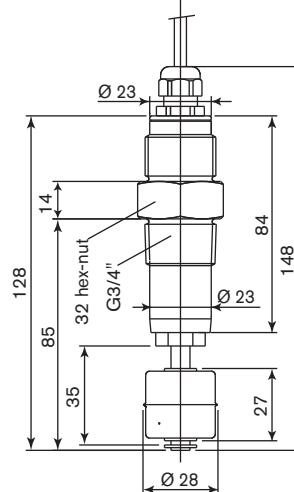
Horizontal, stainless steel version



Vertical, PP version



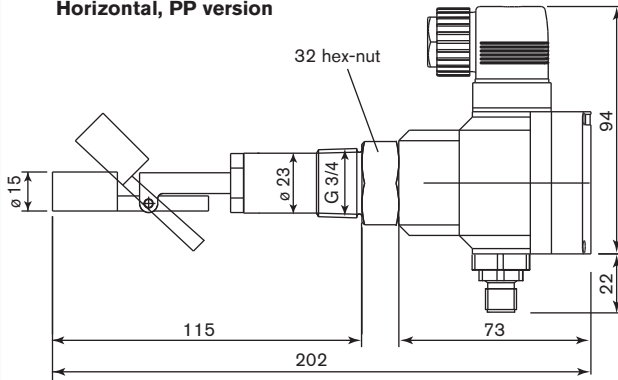
Vertical, stainless steel version



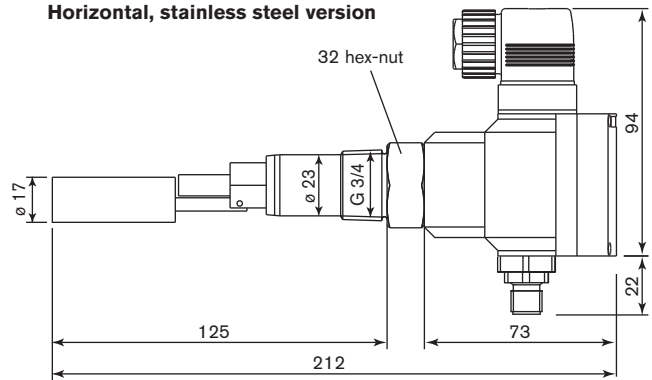
Dimensions [mm] Type 8181

Switch with relay module

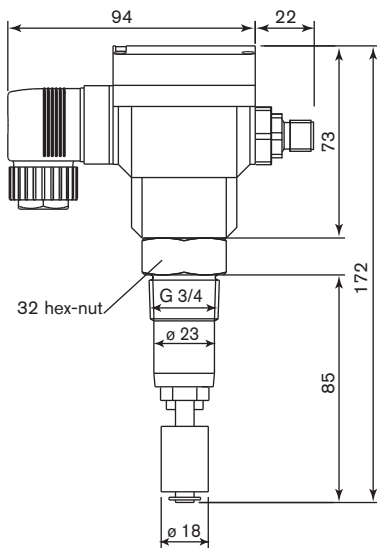
Horizontal, PP version



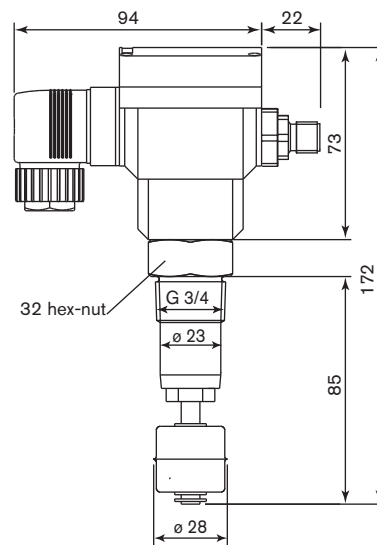
Horizontal, stainless steel version



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	
	St. St.	PP	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.	PP	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.	PP	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

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