Float Switches
Model WFS

Application

- Level measurement for almost all liquid media
- Pump and level control and monitoring for distinct filling levels
- Chemical, petrochemical, natural gas, offshore, shipbuilding, machine building, power generating equipment, power plants
- Process water and drinking water treatment, food and beverage industry

Features

- Large range of application due to the simple, proven functional principle
- For harsh operating conditions, long service life
- Operating limits:
  -Operating temperature: T = -196...+350°C
  -Operating pressure: P = Vacuum to 40 bar
  -Limit density: ρ ≥ 300 kg/m³
- Wide variety of different electrical connections, process connections and materials.
- FM approved version / NEMA 4x or 7/9 housing
- Process connection, guide tube and float from 316L/316Ti stainless steel or plastic
- Universal signal processing: connection direct to a PLC is possible, NAMUR connection, signal amplification / contact protection relays
- Works independently of foaming, conductivity, dielectricity, pressure, vacuum, temperature, steam, condensation, bubble formation, boiling effects and vibrations.

Description

A float with a permanent magnet moves reliably along with the liquid level on a guide tube. Within the guide tube is fitted a reed contact (inert gas contact), which is energised, through the non-magnetic walls of the float and guide tube, by the approach of the float magnet. By using a magnet and reed contact the switching operation is non-contact, free from wear and needs no power supply. The contacts are potential-free. Magnetic float switches are also available with multiple switch points.

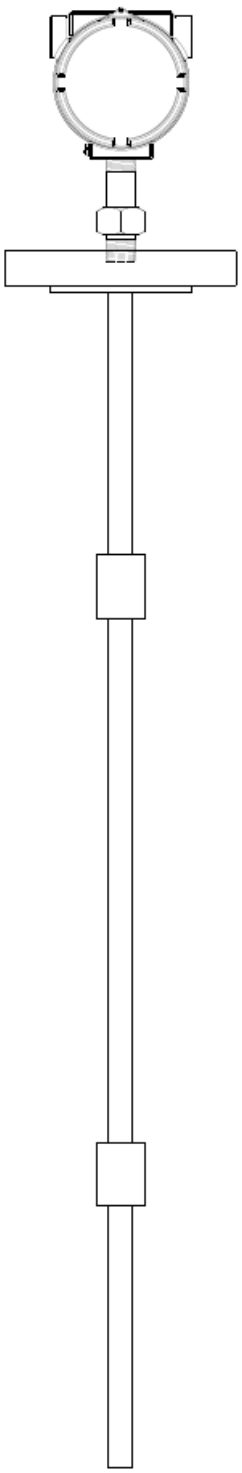
The switch functions always refer to a rising liquid level: SPDT or change-over contact.

Through the use of a float for a max. of 2 switch points a bistable switch operation can be achieved, meaning that the switching status also remains available, when the filling level continues to rise above or drop below the switch point.

The float switch is simple to mount and maintenance-free, so the costs of mounting, commissioning and operation are low.

Options

- Customer-specific solutions
- Special versions for interface layer detection Δ-$\rho \geq 100$ kg/m3
- Process connection, guide tube material and float from stainless steel, titanium, Hastelloy, PP, PVDF, 316L/316Ti (others on request)



Connections

- 6-1” ANSI / 150-600# RF flange
- 2 - 1/2” MNPT
- 60s-10s tri-clamp

Housing

- Polyester NEMA 4x
- Epoxy coated aluminum NEMA 4x or 7/9
- Stainless steel NEMA 7/9

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Appendix

Type code - WFS

1 Type of switch

F	Standard float switch
S	Sanitary float switch (available only in 14mm and 18mm sensor tubes)
P	Plastic float switch (available only in 12mm, 16mm, and 20mm sensor tubes)

2 Sensor tube diameter

08	8mm (only available with S / L material codes)	**12**	12mm (.48”)	**18**	18mm (.70”)
		14	14mm (.55”)		

3 Wetted parts

S	316 Stainless steel	**T**	Titanium
L	316L Stainless steel	**V**	Hard polyvinylchloride (PVC) *(Plastic only, 0°F to 140°F)*
A	316L Stainless steel (polished to 3A requirements)	**P**	Polypropylene (PP) *(Plastic only, 0°F to 175°F)*
C	Hastelloy C	**E**	Teflon (PTFE) *(Plastic only, 0°F to 212°F)*
B	Hastelloy B	**K**	Kynar (PVDF) *(Plastic only, 0°F to 175°F)*

4 Number of switches

--	From 1 to 6 SPDT switches	*Note:* *Only 1 switch in 8mm sensor tube* *Up to 4 switches in 12mm, 14mm, 16mm, and 18mm sensor tubes* *Up to 6 switches in 20mm and 48mm sensor tubes*

5 Units of measure

I	Imperial	**M**	Metric

6 Sensor length

--	Dimension in inches or millimeters. Example: 44” = 0044	*Available lengths per sensor tube diameter: 36” for 8mm, 60” for 12mm plastic, 120” for 12mm, 14mm, 16mm and 18mm (sanitary only), 200” for 20mm, 240” for 18mm, 370” for 48mm*

7 Connection size and type

						Sanitary Sizes			
F10	1.0” ANSI flange	**F40**	4.0” ANSI flange	**N10**	1.0” NPT	**10**	1.0” Tri-clamp	**40**	4.0” Tri-clamp
F15	1.5” ANSI flange	**F50**	5.0” ANSI flange	**N15**	1.5” NPT	**15**	1.5” Tri-clamp	**50**	5.0” Tri-clamp
F20	2.0” ANSI flange	**F60**	6.0” ANSI flange	**N20**	2.0” NPT	**20**	2.0” Tri-clamp	**60**	6.0” Tri-clamp
F25	2.5” ANSI flange	**N05**	1/2” NPT	**NAD**	NPT Adjustable fitting (size varies)	**25**	2.5” Tri-clamp	**AD**	3/4” NPT adjustable fitting with polished float guide tube
F30	3.0” ANSI flange	**N75**	3/4” NPT			**30**	3.0” Tri-clamp		

8 Connection rating

A	150# ANSI	**D**	NPT 1,000 psi
B	300# ANSI	**S**	Sanitary tri-clamp 275 psi
C	600# ANSI	**N**	Sanitary NPT adjustable fitting 275 psi

9 Housing

A4X	Aluminum housing FM approved, NEMA 4X, IS, CI, I, II, III/1/ ABCDEFG/T4	**ABX**	Aluminum housing FM approved, XP/I/1/BCD/T6 DIP/II/EFG/T3C
		SBX	Same as ABX but stainless steel construction

10 Temperature rating

S	Standard (-40°F - 300°F)
L	Low temperature (-300°F - 300°F)
H	High temperature (-40°F - 650°F)

11 Connection rating

1	Plain polished end (no float retention, 14mm only)	**3**	3A approved, this is a T configuration, the float is non-removable
2	Standard drain in place, polished sanitary type	**4**	Flare type, design permits multiple switch points, floats are permanent

Ordering example

1	-	2	-	3	-	4	-	5	-	6	-	7	-	8	-	9	-	10	-	11
Type of switch		Sensor tube diameter		Wetted parts		Number of switches		Units of measure		Sensor length		Connection size and type		Connection rating		Housing		Temperature rating		Connection rating

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