

Contact Form

Most switch actions on our Float Switches can be changed from Normally Open to Normally Closed by refitting and reversing the float on its stem. See individual specifications for details. For cable tether type floats specification on the contact type required (Normally Open or Normally Closed) should be given by the customer, in order for us to supply the correct type for your application. Normally Open and Normally Closed refer to the switches position at rest in a dry tank.

Customization

Overleaf you will find our most common types of Float Switches available. If you require something different to those shown (longer length vertical or horizontal stem or longer cable length), then simply ask our sales office who will be pleased to help you with your application.

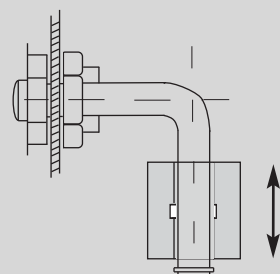
Material Selection

Stainless Steel: Ideal for high pressures, high temperatures and in corrosive environments such as food equipment, industrial tanks or where durable long life in general use is required.

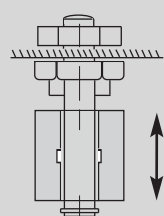
General Use Plastics: Polypropylene, PVC and Polycarbonate are a good choice for use in acids or food applications, or just for general use. They are generally the most economic option, and can be easily custom moulded with additional features for OEM applications.

OPERATION

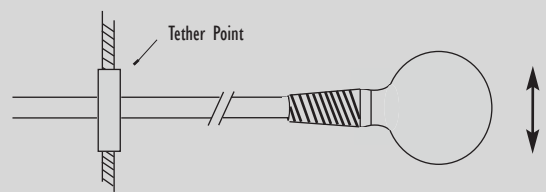
Side Mounting



Vertical Mounting



Cable Tether



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SPECIFIC GRAVITY

Liquid	Temp. °C	SG	Liquid	Temp. °C	SG	Liquid	Temp. °C	SG
Tap Water (reference)	15	1.0	Glycerin	25	1.263	Pyridine	25	0.982
Beer	15	1.01	Glycerol	25	1.129	Sea Water	25	1.028
Carbon Tetrachloride	15	1.59	Kerosene	15	0.78 - 0.82	Sodium Chloride 5%	15	1.037
Corn Oil	15	0.924	Lard Oil	15	0.91 - 0.93	Sodium Hydroxide	15	1.22
Crude Oil	15	0.79	Linseed Oil	25	0.932	Sorbalddehyde	25	0.898
Caster Oil	25	0.959	Mercury	25	13.63	Stearic Acid	25	0.941
Citric Acid	25	1.665	Methane	-164	0.466	Styrene	25	0.906
Cocunut Oil	15	0.927	Milk	15	1.02 - 1.05	Sulphuric Acid 20%	15	1.14
Creosote	15	1.070	Olive Oil	15	0.703	Sulphuric Acid 95%	15	1.839
Diesel	15	0.88 - 0.94	Peanut Oil	15	0.92	Terpinene	25	0.850
Ethane	-89	0.572	Phenol	25	1.075	Toluene	25	0.865
Ether	25	1.10	Propane	-40	0.585	Triethylene Glycol	15	1.125
Gasoline (Petrol)	15	0.68 - 0.74	Propylene Glycol	25	0.968	Turpentine	25	0.871

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Float Switches

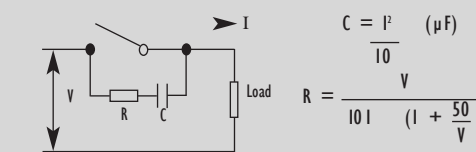
DESCRIPTION

Reed Float Switches are designed to fit into tanks or containers containing liquid. They are operated by a magnet fitted into the float assembly and a Reed Switch fitted into the stem of the float body. When the float moves past the Reed Switch inside the float body, the reed contacts operate (open or close). When the float moves back to its original position the reed switch contacts will also return to their original state. In conjunction with a pump, this principle allows control over the liquid level. The cable tether type float switches use either Mercury or a Mercury free contact in place of a Reed Switch, and it is the differential angle of the Tilt Switch inside the float that determines the point at which the contacts will operate (open or close).

CONTACT PROTECTION

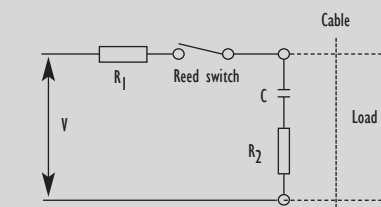
Inductive Loads

A reverse voltage is generated by stored energy in an inductive load when reed contacts open. This voltage can reach very high levels and is capable of damaging the contacts. An RC network may be used as shown below to give protection.



Capacitive Loads

Unlike inductive loads, capacitive and lamp loads are prone to high inrush currents which can lead to faulty operation and even contact welding. When switching charged capacitors (including cable capacitance) a sudden unloading can occur, the intensity of which is determined by the capacity and length of the connecting leads to the switch. This inrush peak can be reduced by serial resistors. The value is dependent on the particular application but should be as high as possible to ensure that the inrush current is within the allowable limits.

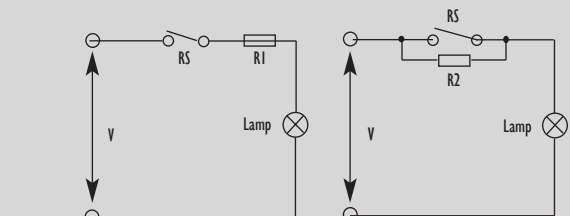


The above diagram illustrates a resistor/capacitor network for protecting a Reed Switch against high inrush currents. R1 and/or R2 are used depending upon circuit conditions.

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Lamp Loads

With lamp load applications it is important to note that cold lamp filaments have a resistance 10 times smaller than already glowing filaments. This means that when being turned-on, the lamp filament experiences a current flow 10 times greater than when already glowing. This high inrush current can be reduced to an acceptable level through the use of a current-limiting resistor. Another possibility is the parallel switching of a resistor across the switch. This allows just enough current to flow to the filament to keep it warm, yet not enough to make it glow.

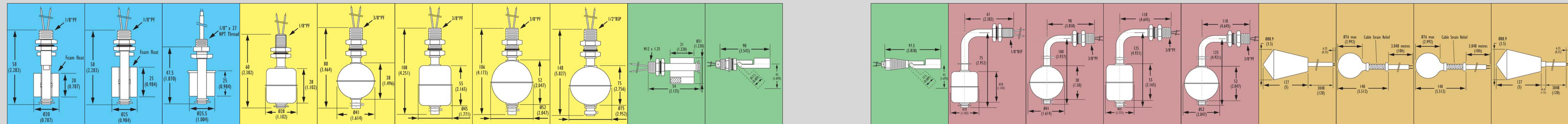


Lamp load with parallel or current limiting resistor across the switch

Switch Ratings

The load switching capacity of most float switches can be significantly increased with the addition of Relay Units, ask our sales office for details.

Float Switches



Options / Features	•Smallest Float			•Also available with longer 70mm shaft					•Highest grade Stainless Steel available		Options / Features		•Highest grade Stainless Steel available					•10 Amp Switching				•Normally open normally closed contacts •Choice of operating angles		•Electronic •10 Amp version available (WFP10-10)	
Mounting Position	Vertical			Vertical					Horizontal		Mounting position		Horizontal					Horizontal							
Type	VFP11	VFP21	P219	VFS30	VFS40	VFS45	VFS50	VFS75	HFP12	HFP21	Type	HFP32	HFS30	HFS40	HFS45	HFS50	FP10 / FP210-13	BF32A-0	WBF31A-0	WFP3-10					
Contact Form / style	Normally Open and Normally Closed	Normally Open and Normally Closed	Normally Open and Normally Closed	Normally Open and Normally Closed	Normally Open and Normally Closed	Normally Open and Normally Closed	Normally Open and Normally Closed	Normally Closed	Normally Open and Normally Closed	Normally Open	Contact Form / Style	Normally Open	Normally Open and Normally Closed	Normally Open and Normally Closed	Reversable	Normally Open and Normally Closed	Open or Closed (Optional) FP10: 1 contact FP210-13: 2 contacts	Open or Closed (Optional) 1 contact	Open or Closed (Optional) 1 contact Mercury Free	Normally Open					
Switching Voltage Max. V	125Vac	240Vac / 200Vdc	400Vac / dc	240Vac / 200Vdc	240Vac / 200Vdc	240Vac / 200Vdc	240Vac / 200Vdc	240Vac / 200Vdc	240Vac / 200Vdc	240Vac / 200Vdc	Switching Voltage Max. V	240Vac / 200Vdc	240Vac / 200Vdc	240Vac / 200Vdc	240Vac / 200Vdc	240Vac / 200Vdc	240Vac	240Vac	1.5 - 50Vdc	280Vac					
Switching Current Max. A	0.5	0.5	2.0	1.0	0.5	0.5	0.5	2.0	0.5	0.5	Switching Current Max. A	0.5	0.5	0.5	1.0	0.5	10	2	0.15	3					
Switching Capacity Max. VA	10	50	40	50	50	50	50	40	50	50	Switching Capacity Max. VA	50	50	50	50	50	10A 120Vac / 3A 240Vdc	BF32A-0: 2A 120Vac 1A 240Vdc BF310A-0: 10A 120Vac 5A 240Vdc	0.12A 12Vac / 0.15A 120Vac	660					
Contact Resistance Max. mohms	200	200	80	200	200	200	200	200	200	200	Contact Resistance Max. mohms	200	200	200	200	200	3	3	3	N/A On-State voltage Vpeak=1.6V					
Suitable specific gravity	0.8	0.8	0.75	0.8	0.7	0.65	0.55	0.45	0.78	0.75	Suitable specific gravity	0.75	0.8	0.7	0.65	0.55	Differential Angle: 10 degrees	Differential Angles: BF32A-0: 8° BF32A25-0: 25° BF32A65-0: 65° BF310A-0: 8°	Differential Angle: 15 deg. Max.	Differential Angle: 15 deg. Max.					
Operating Temp. °C	-20 +80	-20 +80	-20 +80	-10 +120	-10 +120	-10 +120	-10 +120	-10 +120	-20 +80	-20 +80	Operating Temp. °C	-20 +80	-10 +120	-10 +120	-10 +120	-10 +120	70 Max.	70 Max.	70 Max.	70 Max.					
Material	Polypropylene	Polypropylene	Polypropylene	316 Stainless Steel	304 Stainless Steel	304 Stainless Steel	304 Stainless Steel	304 Stainless Steel	Polypropylene	Polypropylene	Material	Polypropylene	316 Stainless Steel	304 Stainless Steel	304 Stainless Steel	304 Stainless Steel	Polyurethane with PVC coating	Polypropylene with PVC coating	Polypropylene with PVC coating	Polyurethane with PVC coating					
Cable	UL1007 AWG 22 30cm (11.81ins)	UL1007 AWG 22 30cm (11.81ins)	0.5mm² PVC 100cm (39.37ins)	XLPE (UL3266 AWG 22) 30cm (11.81ins)	XLPE (UL3266 AWG 22) 30cm (11.81ins)	XLPE (UL3266 AWG 22) 30cm (11.81ins)	XLPE (UL3266 AWG22) 30cm (11.81ins)	XLPE (UL3266 AWG 22) 30cm (11.81ins)	PVC AWG 22 30cm (11.81ins)	XLPE (UL3266 AWG 22) 30cm (11.81ins)	Cable	XLPE (UL3266 AWG 22) 30cm (11.81ins)	XLPE (UL3266 AWG 22) 30cm (11.81ins)	XLPE (UL3266 AWG 22) 30cm (11.81ins)	XLPE (UL3266 AWG 22) 30cm (11.81ins)	XLPE (UL3266 AWG 22) 30cm (11.81ins)	FP10:18/2 Type SJ00W FP210-13:16/4 Type SJ00W	18/2 AWG Type SJ00W	18/2 AWG Type SJ00W	18/2 AWG Type SJ00W					

AWG to mm² Cross Reference table

AWG	mm²
30	0.05
28	0.08
26	0.14
24	0.25
22	0.34
21	0.38
18	0.75
17	1.0
16	1.5
14	2.5
12	4
10	6
8	10
6	16
4	25
2	35
1	50
2/0	70
3/0	95
4/0	120
350MCM	150
350MCM	185
500MCM	240

