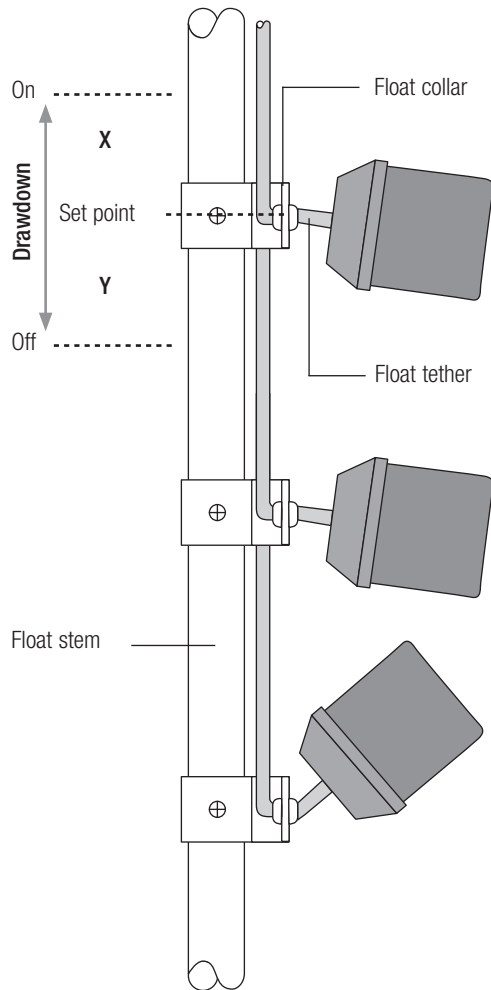


Float Switch Assemblies

Applications

Float switches are used to signal liquid level positions for alarm and pump control applications. Orenco float switch assemblies can be mounted in pump vaults, effluent screens, pump basins, and risers.



The "On" and "Off" positions describe normally open floats. For normally closed floats, the functions are reversed.

Materials of Construction

Float housing	Impact-resistant, noncorrosive PVC plastic for use in liquids up to 140° F (60° C)
Float cord, A and T models	Flexible 2-conductor (UL, CSA) SJ00W; Super Vu-Tron® Supreme, yellow
Float cord, All other models	Flexible 2-conductor (UL, CSA) SJ0W; water-resistant (CPE); neoprene coating
Float collar	ABS

General

All models listed are UL listed and CSA certified for use in water or sewage. "A" model float switches are also CE certified for sale in European Union countries. Non-mercury float switches (models B, C, D, L, N, P, V and X) are used where components containing mercury are prohibited.

Float switches are typically ordered in assemblies that include one or more switches mounted on a 1-inch PVC float stem. ABS float collars are used to provide secure mounting that is easily adjustable. "A" and "T" model float switches use Super Vu-Tron® electrical cords for superior chemical and water resistance.

Standard Models

A, B, C, D, G, L, N, P, T, V, X

Product Code Diagram



Cord length option:
 Blank = 10 ft (3 m), standard
 20 = 20 ft (6 m)
 30 = 30 ft (9 m)
 50 = 50 ft (15 m)

Application:
 FS = field set
 FTL = elbow-style (base-inlet filters only)
 PB = pump basin
 V = pump vault (standard float settings)
 VC = pump vault (custom float settings)

Float stem length:
 Blank = no float stem (floats and collars only)
 19, 21, 27, 33, 37, 39, 45, 51, 57, 66 = stem length, in.
 5, 11 = stem length, in. (for elbow-style float brackets)

Float color code and function:
 Blank = no color code
 B = blue (pump on)
 G = green (pump or override timer on/off)
 P = purple (lag pump on/enable)
 R = red (pumps/ timer on/off)
 W = white (redundant off, low level alarm)
 Y = yellow (high level alarm)
 YG = yellow-green (high level alarm, override timer on/off)
 YP = yellow-purple (high level alarm, lag pump on/enable)

Float switch models (listed in order from the top of the float stem down):
 A, B, C, D, G, L, N, P, T, V, X

Number of float switches (when using multiples of the same float switch model):
 Blank = no multiples of the same float switch model

Float switch assembly

When ordering float switch assemblies, remember to list float switches from the top of the float stem down. An "MFABT-" nomenclature indicates one "A" switch at the top of the stem, one "B" in the middle of the stem, and one "T" switch at the bottom of the stem; an "MF2AT-" indicates "A" switches at the top and middle of the stem, and one "T" switch at the bottom of the stem.

Signal- and Motor-Rated Float Switch Matrix

Float	State ¹	Type ²	IR ³	Volts	Amps	hp	Tether	X	Y	Drawdown ⁴
Signal-rated mercury floats⁵ (for control switch applications)										
A Model ^a	Normally open	Mercury	Yes	n/a	n/a	n/a	2.00 in.	n/a	n/a	n/a
T Model	Normally closed	Mercury	Yes	n/a	n/a	n/a	2.00 in.	n/a	n/a	n/a
Signal-rated mechanical floats⁵ (for control switch applications)										
L Model ^a	Normally open	Mechanical	Yes	n/a	n/a	n/a	2.00 in.	1.50 in.	1.50 in.	3.00 in.
N Model ^b	Normally closed	Mechanical	No	n/a	n/a	n/a	2.00 in.	1.50 in.	1.50 in.	3.00 in.
P Model ^b	Normally open	Mechanical	No	n/a	n/a	n/a	2.00 in.	1.50 in.	1.50 in.	3.00 in.
V Model ^a	Normally open	Mechanical, small drawdown	Yes	n/a	n/a	n/a	2.00 in.	< 1 in.	< 1 in.	< 1 in.
X Model	Normally closed	Mechanical, small drawdown	Yes	n/a	n/a	n/a	2.00 in.	< 1 in.	< 1 in.	< 1 in.
Motor-rated floats⁵ (for pump switch applications)										
B Model ^b	Normally open	Mechanical	No	120V	13A	1/2 hp	2.00 in. ^c	2.50 in.	1.50 in.	4.00 in.
				240V	13A	1 hp	3.00 in.	3.00 in.	1.50 in.	4.50 in.
C Model ^b	Normally open	Mechanical	No	120V	13A	1/2 hp	4.00 in.	3.25 in.	1.50 in.	4.75 in.
				240V	15A	2 hp	2.00 in.	3.00 in.	2.50 in.	5.50 in.
							3.00 in. ^c	3.50 in.	3.00 in.	6.50 in.
							4.00 in.	4.00 in.	3.50 in.	7.50 in.
D Model ^b	Normally open	Mechanical	No	120V	15A	3/4 hp	5.00 in.	4.50 in.	4.00 in.	8.50 in.
				240V	15A	2 hp	6.00 in.	5.25 in.	4.25 in.	9.50 in.
							2.00 in. ^c	3.00 in.	2.50 in.	5.50 in.
							3.00 in.	3.50 in.	3.00 in.	6.50 in.
G Model	Normally open	Mercury	Yes	120V	15A	3/4 hp	4.00 in.	4.00 in.	3.50 in.	7.50 in.
				240V	15A	2 hp	5.00 in.	4.50 in.	4.00 in.	8.50 in.
							6.00 in.	5.25 in.	4.25 in.	9.50 in.
							2.00 in.	1.50 in.	3.00 in.	4.50 in.
						3.00 in. ^c	1.75 in.	3.00 in.	4.75 in.	
						4.00 in.	2.00 in.	3.50 in.	5.50 in.	

a. Suitable for use with VCOM and MVP.

b. Suitable for use with potable water.

c. Standard tether length

Notes

¹ State: normally open or normally closed

The default state of a float — normally open or normally closed — refers to the contact positions in the float when the float is resting (down). Float switches have an internal contact. The terms “normally open” (N/O) and “normally closed” (N/C) refer to the state of the float switch contact in the down position. A normally open float switch has an open contact (off) in the down position and a normally closed float switch has a closed contact (on) in the down position. Different panel functions require different types of float switches. Most applications require float switches that are normally open. One notable exception is the redundant off and low-level alarm function that requires a normally closed float switch, except with MVP and VCOM panels.

² Type

Floats have mechanical or mercury contactor types. The important distinction between these is that mercury floats are not rated for potable water.

³ IR (intrinsically safe relay)

Approved for use with intrinsically safe, Class I, Division 1 applications, where reliable float switch operation with very low current is required.

⁴ Drawdown

Drawdown (in inches) refers to the difference in liquid level between a float switch's activation and deactivation points. Drawdown can be altered by adjusting the tether length of the float switch cord. When selecting float switches, keep in mind that any float switch that can directly start and stop a pump (one that has no motor contactor in the control panel) should have a drawdown capability, to avoid rapid cycling of the pump.

⁵ Signal-rated or motor-rated

Every float has a maximum amount of current it can handle. Exceeding these limits may cause premature failure. Signal-rated or “control” floats are used to activate pump control panels and alarms. Only low amperage signals pass through these float switches, hence the float switch is “signal-rated.” All Orenco panels that use motor contactors can use signal-rated float switches. In some systems, a float switch is used to directly start and stop a pump. In this application, the current that is running the pump passes through the float switch as well, and the float switch must be “motor-rated.” In most instances, a motor-rated float switch can be used as a signal float switch.