

687 Floatswitch for Pressure Vessels up to 1440 psig

Application

The Model 687 Floatswitch is a float type control which completes an electrical circuit to a pump, valve, alarm, or other device, when the liquid in the vessel rises (or lowers) to a pre-determined point.

Features

- **Corrosion Proof:** Float and Arm is 304 S.S., 2" Cad Plated Steel Vessel Connection or Cast Steel External Cage (Other materials are available for more corrosive liquids).
- **Explosion Proof:** CSA Approved for Class I Group D, Class II Group E, F and G hazardous locations.
- **Variety of Switch Outputs:** The 687 can be obtained with mercury or microswitch outputs and in various combinations, ie. SPDT, SPST, DPDT, etc.
- **Adjustments:** Nothing to adjust or get out of calibration on the mercury switch. Micro switches can be adjusted from the outside when the floatswitch is installed on the vessel.
- **Simple Installation:** On an INTERNAL MOUNT, the float passes through a 2" nipple. On an EXTERNAL MOUNT, install on 1" external pipe riser connected to the pressure vessel above the high level and below the low level control points.
- **Long Life:** Permanently dry-film lubricated S.S. shaft and Teflon® bearing comprise the only pivot point. Due to large bearing surface area, wear is negligible.

Operation

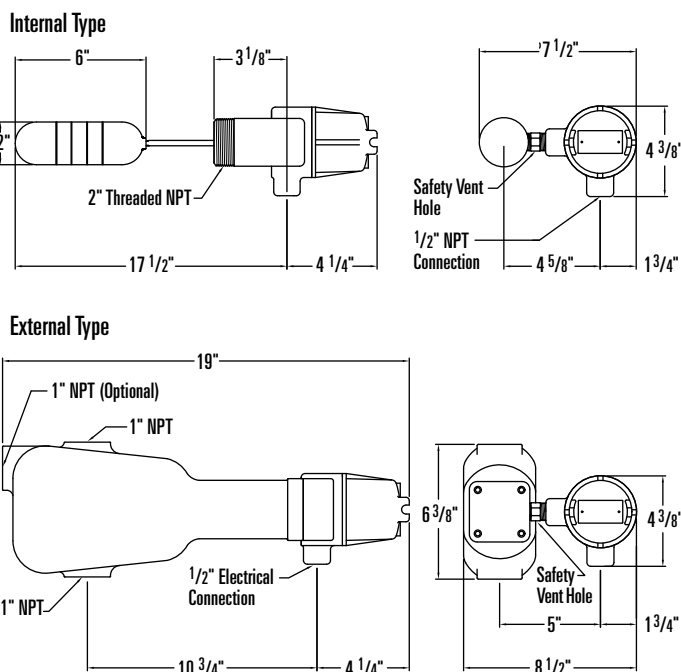
The float and arm are rigidly attached to the dry-film lubricated shaft which rotates in the shaft housing. A bracket at the other end of the shaft actuates the switch. A Viton® o-ring seals against pressure and leakage along the shaft. A Teflon® washer separates the metal parts and provides lubricity. If leakage ever occurs, the liquid in the vessel seeps out of the safety vent hole. Thus, it is impossible for the liquid to ever enter the switch housing. The maximum travel of the float between the switch "make" and "break" is 1" for mercury switches and 1/4" for micro switches.

Specifications

Switch Housing	Explosion Proof Cast Aluminum
Operating Pressure	0 to 1440 psig
Proof Pressure	2000 psig
Operating Temperature	-40°F to +400°F
External Float Housing	Cast Steel
Electrical Connection	1/2" Female Pipe Thread



Dimensional Data



Switch Ratings

687SA, 687SB	SPST Mercury
	10 A @ 120 VAC, 5 A @ 240 VAC
	3 A @ 440 VAC
687SC	SPDT Mercury
	4 A @ 120 VAC, 2 A @ 240 VAC
	1 A @ 440 VAC
687SF	SPDT Micro Switch
	15 A @ 125, 250 or 480 VAC
	1/8 HP-125 VAC, 1/4 HP-250 VAC
	1/2 A @ 125 VDC, 1/4 A @ 250 VDC
687SG	DPDT Micro Switch
	10 A @ 125 or 250 VAC
	0.3 A @ 125 VDC; 0.15 A @ 250 VDC

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Determining the Model Number

Example given: Standard Model 687SA-4A-IN Float Control for Pressure Vessels up to 1440 psig with, SPST (N.O.) Mercury Switch Output, 2" NPT (Cad Plated Steel) Vessel Connection, 304 S.S. Float and Float Arm, for Internal Vessel Mounting.

MODEL 687 SA-4 A-I N,X

- SA • SPST Mercury (N.O.)
- SB • SPST Mercury (N.C.)
- SC • SPDT Mercury
- SF • SPDT Micro Switch
- SG • DPDT Micro Switch

Type of Switch

Options & Additions

- b • Float Arm, (Non-Std.) 304 S.S.
- c • Float Arm, (Non-Std.) 316 S.S.
- m • Manual Override
- s • Tag, Stainless Steel

- 0 • Denotes with External Housing only
- 1 • 2" - 600# ASARF Flange, Cad Plated Steel
- 2 • 2" - 600# ASARF Flange, 304 S.S.
- 3 • 2" - 600# ASARF Flange, 316 S.S.
- 4 • 2" NPT, Cad Plated Steel

Connection

Type of Coating

- N • None Required
- E • Epoxy
- T • Teflon®

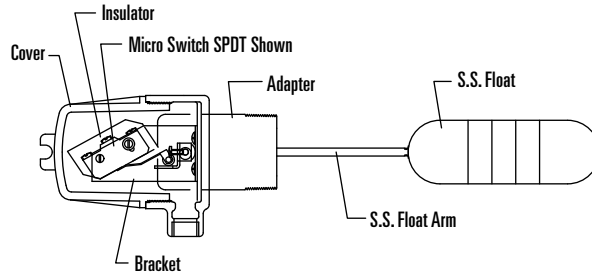
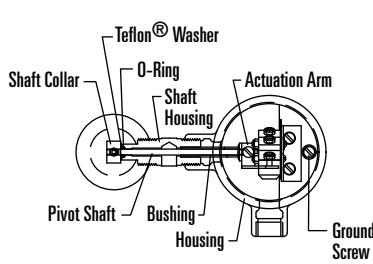
Float Control Housing

- I • Internal
- X • External (Cad Plated Steel) ASTM A-216-47T-GR-WCB

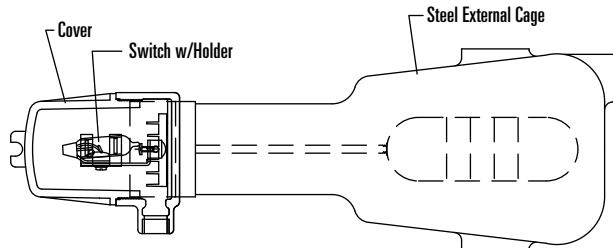
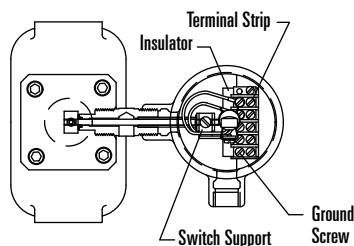
Float & Arm Material

- A • 304 S.S.

Typical Assembly



687 WITH INTERNAL HOUSING, MICRO SWITCH SHOWN



687 WITH EXTERNAL HOUSING, MERCURY SWITCH SHOWN