

Madison Company offers the most extensive line of liquid level sensor solutions and customer support. We can provide a stock float switch the same day, or design a customized OEM float switch in 5 business days. [Click here to view In-Stock products available for same-day shipping »](#)

Float Switch Operation

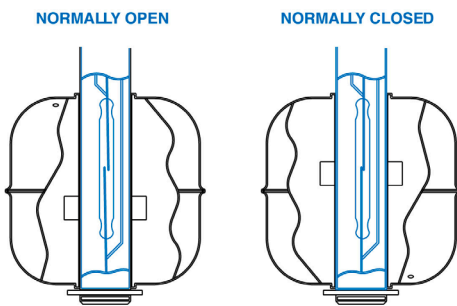
A magnetic float travels up and down the stem between float stops actuating or de-actuating a dry contact reed switch encapsulated inside the stem. When the magnetic field comes in close proximity to the reed switch, the float switch contact closes. These reed switch based float switches typically activate with a 1/16" of movement, with overtravel to keep the in proper setting as the liquid level rises or falls.

Float Switch operation is determined in a dry condition (Empty Tank) with the installation fitting up and the float at rest against the lower float stop for vertical float switches. For horizontally mounted float switches, the float switch assembly can be rotated 180 degrees for normally open or normally closed operation.

Normally Closed (NC): Float Switch is closed circuit before fluid is present and will open on the rise of liquid level.

Normally Open (NO): Float Switch open circuit before fluid is present at the float and will close on the rise of liquid level.

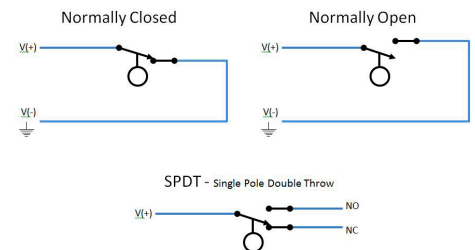
NOTE: *Madison Company vertical float switches are supplied in the normally closed (NC) position, unless otherwise specified.*



Vertical Float Switch Position



Horizontal Float Switch Position



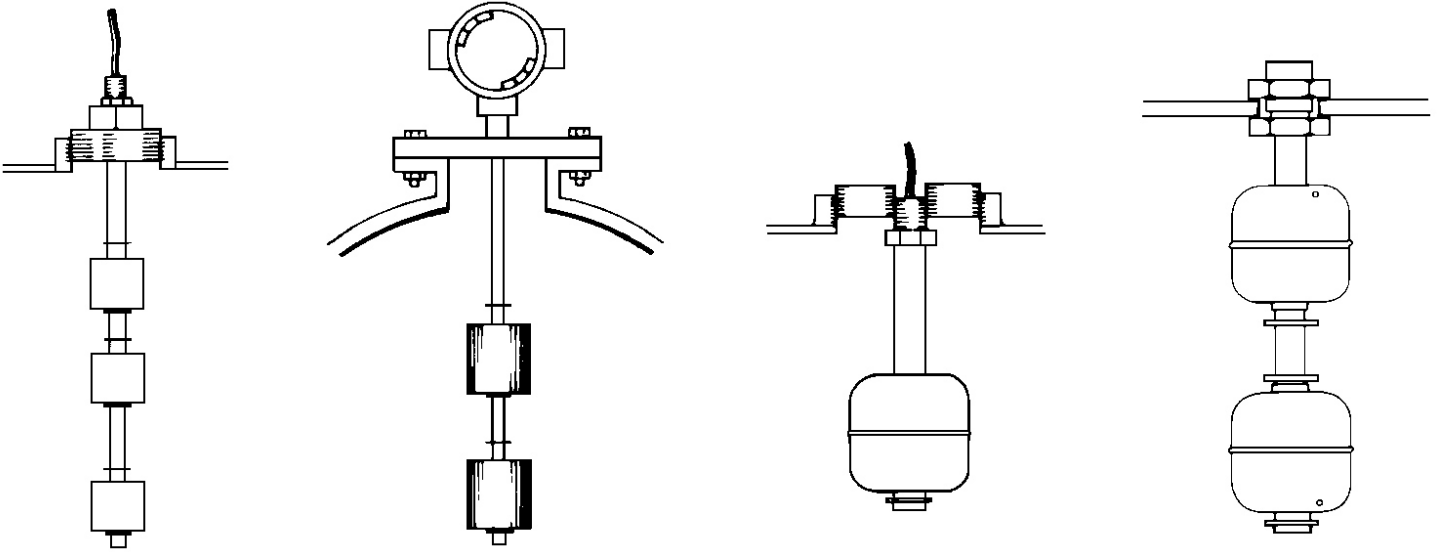
Electrical Circuit Diagram

Sensor Reference Information

Float Switch Guide and Float Switch Products

Typical Float Switch Installation Fittings

Madison multi-point float switches are available with bulkhead, male thread, male pipe plug or flange mounting. These float switches may be mounted with the stem at up to a 30° angle from the vertical position.



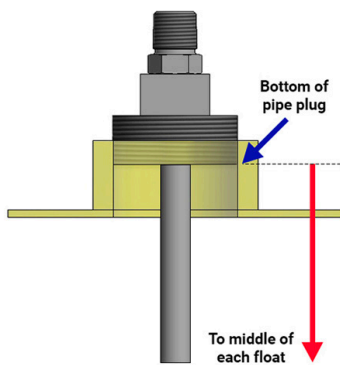
Sensor Reference Information

Float Switch Guide and Float Switch Products

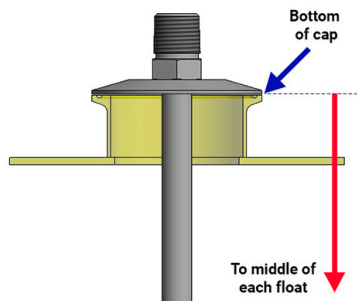
How to Measure Switch Points (Single and Multi-Point Float Sensors)

Measure from fitting where indicated (mounting dependent) to middle of each float.

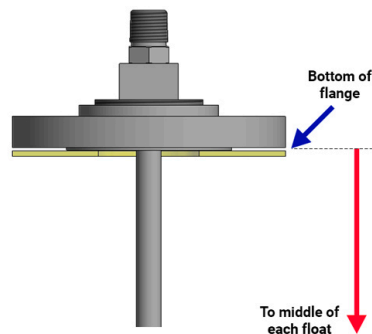
Pipe plug, external mount



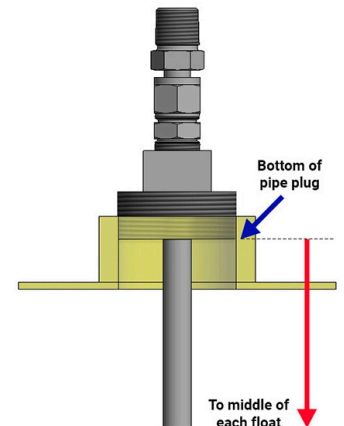
Sanitary fitting, external mount



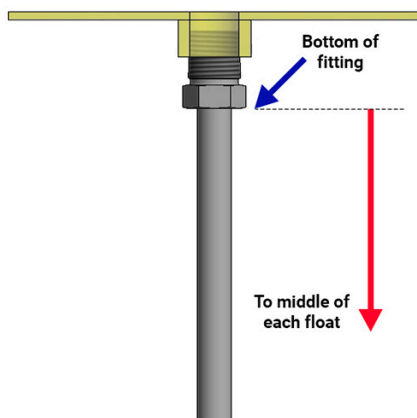
Pipe flange, external mount



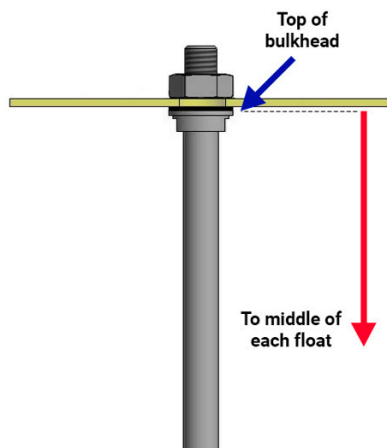
Pipe plug, adjustable, external mount



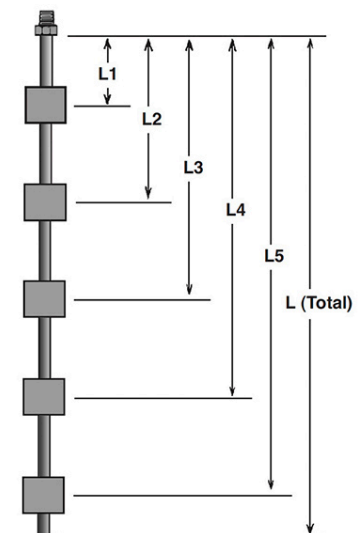
NPT, internal mount



Bulkhead, internal mount



Example

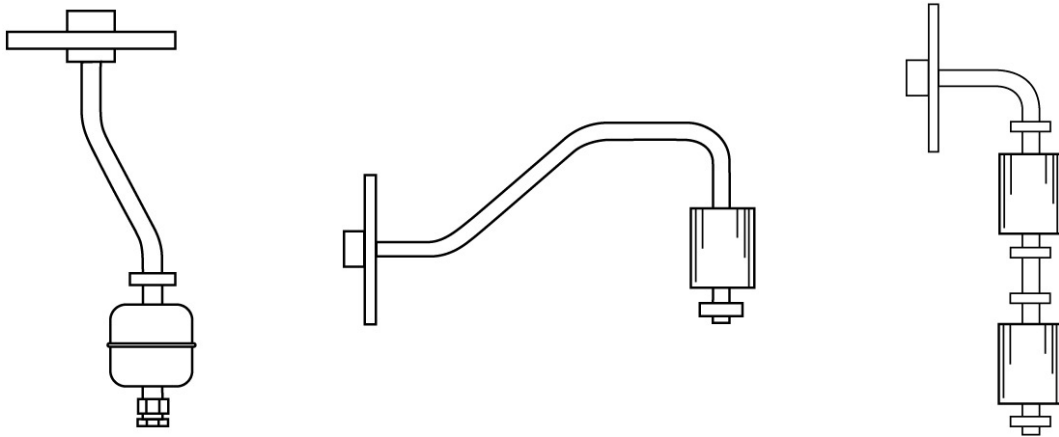


Sensor Reference Information

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Offset Stems

Obstructions in tanks and difficult mountings often require bending the tube to allow proper installation. Madison's engineering staff can design float switches with offset stems to solve many types of installation problems. Most metal stems are available with offset configurations.



Turbulence

Intensive agitation of liquid, boiling fluids and surging due to large inflows of liquid can all cause turbulence and erratic float switch operation. This problem can be eliminated by the use of slosh shields with adequately-sized fluid and vent holes, as illustrated here. Available for vertical, horizontal (side-mounted) and multi-point float switches with full-size or miniature floats, these slosh shields can be supplied in stainless steel, brass, polypropylene, PBT or Kynar.

