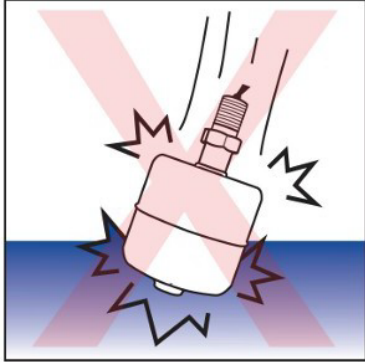


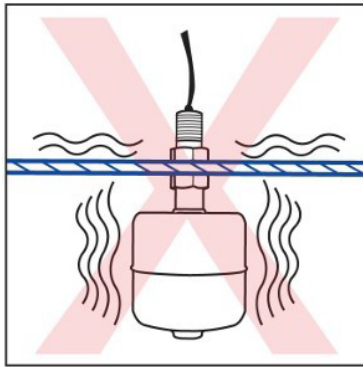
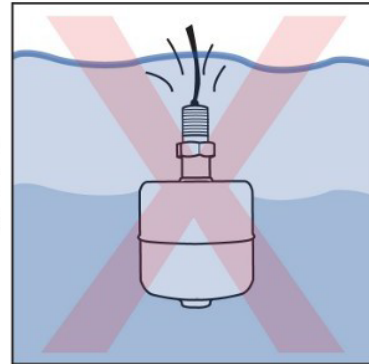
## Liquid Level - Float Switch Handling



**Handle With Care**  
Avoid dropping float.  
Could effect sensor

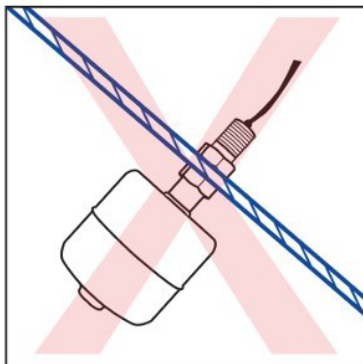
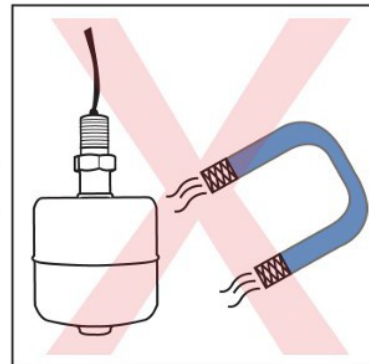


**Do Not Dip/Submerge  
Float Cables In Any Fluid**  
May cause insulation issues



**Mounting Tip:**  
Vibration may cause chattering

**Keep Switches Away  
From Magnetic Field**  
Might cause mis-operation.



**Mounting Tip:**  
Do not mount on a slant.  
Affects accuracy of float

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## Magnetic Reed Switch Technology and Protection

Magnetic reed switch technology has been a proven technology for more than 50 years to dependably and safely sense a wide range of liquids and positioning. The internal switches are hermetically sealed and capable of switching 1/8" accuracy and 1/32" repeatability for standard vertical switches. Magnetic reed switches, when used to electrical specification, can switch reliably for millions of cycles unaffected by everyday shock and vibration for years of dependable operation.

Magnetic reed switch operation is simple but reliable. The float moves a sealed permanent magnet along the stem as the fluid rises and falls. As the magnets pass over the switch, the reeds are pulled together to create a highly reliable contact. The sealed stem encapsulates the hermetically sealed reed switch and its wires from the liquid environment.

Most SMD Float Switches can be configured for either Normally Open (NO) or Normally Closed (NC) switching by changing the float orientation. NO and NC refer to the switches position at rest in a "DRY" tank! Single Pole Double Through (SPDT) contacts are also available. Each SMD Float switch is tested 100% before shipment for guaranteed performance!

### Reed Switch Protection

One of the greatest failures of reed switches is caused by over current conditions. Most electrically listed products are rated for the "Steady State" operating power. This is the time when normal operation occurs and does not take into account the "turn-on" or "shut-down" loads associated with capacitive or inductive devices. The power created by these devices at "turn-on" or "shut-down" can be 5 to 10 times the "Steady State" current given as part of the power rating.

The power spikes created at these moments can cause arcing which can weld or completely burn open the reed contacts. SMD reed switches list the UL resistive power ratings for the reed switches, and maximum currents and voltages to be switched. In most high power applications an inexpensive relay can be used to isolate your switch from heavier loads. Improper wiring is often the cause of switch failure. When wiring your switch and relay combination (as shown in figure 6) remember to tie the load and the switch as close as possible to the ground source to reduce any load spikes from traveling through the switch.

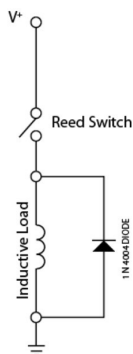


Figure 1: DC Load Protection

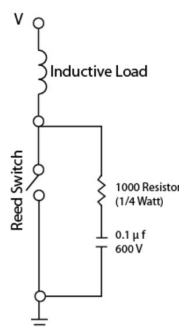


Figure 2: AC Load Protection

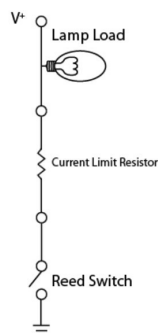


Figure 3: Lamp Load

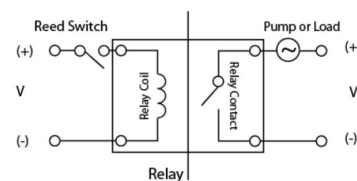


Figure 4: Relay Switch Protection

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## Thread Sealing and Engagement

In order to create a properly sealed environment, care must be taken to properly thread and seal your float switch. Here are a few words of advice to assist you. Always be sure to consider the thread engagement or mounting type when selecting your actuation levels.

Gasket and seal materials should be selected with both fluid and environmental considerations in mind. Be sure to use the proper torque for the selected fittings. Excessive torque is the most common cause of seal failure.

NPT threads are tapered threads designed to compress for a waterproof, pressure-tight seal. To ensure proper thread fit and seal a Teflon tape or compatible thread sealant should be applied to the threads before installation. The proper torque should be applied using the following guidelines;

**Plastics NPT** – Install the threads till handing tight, then using the proper wrench, tighten the hex an additional 3/4 to 1 turns. Be careful not to over-torque. If leaking appears, increase by 1/4 turn at a time until a proper seal is created.

**Metal NPT** – After applying a thread tape or sealant, start the threads by hand, then tighten until approximately 3 to 4 threads are engaged. If leaking appears, increase by 1/4 turn at a time until the proper seal is created.

## Material Selection and Chemical Resistance Information

Choosing the correct switch materials can often mean the difference between years of dependable service and equipment failure. Materials that work well in oils or petroleum products may not be the best for common detergents or hot water.

**Stainless Steel** – Ideal for high temperatures, high pressures and corrosive environments such as food equipment, industrial tanks or durable general use.

**Brass, Nylon or PBT stems with Buna-N Float** – Good for petroleum products, oils and wastewaters. Buna-N floats have superior buoyancy and can be configured for oil-water interface detection.

**General Use Plastics** – Polypropylene, PVC and Polycarbonate good to 105 degrees Good choice for general use, acids or food applications. Can be designed economically or custom molded with additional features for OEM applications.

## Thank you for your Order!

If you require any further technical assistance, please contact one of our engineers:

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