



**LV-1301
Liquid Level Switches**

M-4361/0207

LV-1301 Specifications:

These units are intended to be mounted into the side of a tank for sensing high, low or intermediate levels. They are constructed of corrosion resistant materials throughout. They feature an SPDT switch to simplify wiring of control circuits.

Float Material	304 SS
Stem & Fitting Material	304 SS
Other Wetted Materials	Epoxy
Max. Operating Temp.	125°C
Max. Operating Pressure	100 PSIG
Switch Type, Rating	*
Float S.G.	0.6

* Electrical Ratings listed below

Installation Instructions:

NOTE: These switches should be installed in environments that are free of excessive shock loads and highly contaminated fluid.

1. Remove the switch cover by removing the (6) nuts that secure it and lifting the cover and its gasket off.
2. Unthread the brass locknut that secures the switch and plate to the fitting assembly while moving the base plate along with the nut as you unscrew it. Continue until the nut is past the end of the fitting and you can pull the base plate off the fitting. Be sure to save the gasket that is found on the fitting.
3. Apply a suitable thread sealant to the 1-1/2" NPT thread on the float side of the fitting.
4. Feed the float through the tank port until the fitting engages the port threads. Thread the fitting into the port and tighten so that the flat on the outside threaded end of the fitting is facing *down* +/- 15°. This can be checked by holding a small level against the flat.
5. Re-install the switch and base plate and locknut to the outside end of the fitting, in the same manner as described in step 2. Be sure to reinstall the gasket over the threaded end of the fitting first! Be careful to guide the switch arm so that the magnet holder on the end goes against the flat on the fitting. Snug the locknut to the fitting using a punch or screw driver (in one of the notches) and a hammer.
6. Connect a continuity tester across either switch contact. Move the float upwards. Verify that the switch operates before the float reaches the end of its travel. Repeat this test several times.
7. If the switch does not operate correctly, it can be adjusted by slightly loosening the (2) screws that attach it to the bracket and moving it up or down to get proper operation. Be sure to keep the switch arm parallel to the flat on the fitting. Re-test to be sure that the switch is operating correctly. Re-tighten the screws.
8. The cover gasket should be placed over the threaded studs in the base plate.
9. Connect your wiring to the switch terminals. All electrical wiring must be done in accordance with all applicable local codes and requirements. The cover must be drilled as your installation requires for connecting conduit(s). We suggest the use of flexible conduit between the switch and fixed conduit, if possible.
10. Place the cover over the studs and secure it with the supplied nuts. Tighten nuts evenly so you do not damage the gasket!

NOTE:

If the switch is mounted into a port that is larger than 1", using a bushing or other adapter, verify that the float will not be obstructed from moving through its full travel *before* installing it into the tank.

ELECTRICAL RATINGS:

- 20A @ 125, 250, or 480 VAC
- 10A @ 125 VAC INDUCTIVE
- 1 HP @ 125 VAC, 2 HP @ 250 VAC
- 1/2A @ 125 VDC, 1/4A @ 250 VDC

Level Switch Maintenance:

MAINTENANCE

1. **Switch Adjustment** – The switch is set at the factory for correct operation. Over time it may be necessary to adjust it due to wear or other factors. There are two different switch adjustments and they are done as follows:
 - 1.1 **Lateral Adjustment**
 - 1.1.1 Loosen the 2 nuts that secure the switch mounting bracket to the plate.
 - 1.1.2 Move the bracket left or right to center the magnet holder (on the end of the switch arm) on the flat on the bottom of the fitting.
 - 1.1.3 Tighten the nuts.
 - 1.2 **Vertical Adjustment**
 - 1.2.1 Loosen the 2 screws that secure the switch to the bracket.
 - 1.2.2 Move the switch up or down so that the switch arm is parallel with the flat on the fitting and the magnet holder is against the flat. You should feel resistance from the internal spring in the switch, but it must not be pushed down so far that the switch has operated.
 - 1.2.3 Check for correct operation of the switch, then tighten the screws.
2. **Float Removal & Replacement** – If it becomes necessary to replace the float, the float can be un-screwed from its shaft. To remove the float:
 - 2.1 Heat the end of the float shaft with a heat gun, or equivalent, to break the adhesive bond.
 - 2.2 Put a 7/32" open-end wrench on the flats at the float end of the shaft and grasp the float with a strap wrench (or similar tool) and un-screw the float, turning one tool against the other.
 - 2.3 When reinstalling the float, apply LocTite 242 or a suitable thread locking compound to the threads before assembly.
3. **Disassembly & Cleaning** – In applications where there is a large amount of contamination in the fluid, it may be necessary to clean the switch mechanism periodically. This is done by:
 - 3.1 Removing the retaining ring from the float side of the fitting.
 - 3.2 Then, work the Float and Pivot assembly out of the fitting, being sure to catch the locating pin (1/8 dia. X 1/4" long).
 - 3.3 If necessary, the pivot shaft and bushing are disassembled by removing the pivot pin and separating the 2 parts (Be sure to note the orientation of the notch in the pivot bushing to the flat side of the inner end of the shaft).
 - 3.4 Clean the parts and the inside of the switch body with a suitable cleaning solution.
 - 3.5 Re-assemble all of the float and pivot components. Make sure that the mechanism moves freely after re-assembly. Be sure that the notch in the pivot bushing is toward the float and the notch is on the same side as the flat on the inner end of the shaft.
 - 3.6 Insert the pivot assembly into the fitting, being sure to align the notch in the pivot bushing with the mating notch in the fitting.
 - 3.7 Insert the locating pin into the notch and reinstall the retaining ring.
 - 3.8 Test operation as described in Installation step 6.