

Vertical Liquid Level Switches Class 9034 Type LLV

Type	
Miniature	Full Size
LLV50 LLV80	LLV56

Retain for future use.

INTRODUCTION

This bulletin contains installation and maintenance instructions for Class 9034 Type LLV vertical liquid level switches.

INSTALLATION PRECAUTIONS

Table 1: Electrical Ratings

Type	Voltage	Current (Resistive)
LLV50 LLV80	220 Vac	0.14 A
	110 Vac	0.28 A
	120 Vdc	0.07 A
LLV56	24 Vdc	0.28 A
	220 Vac	0.4 A
	110 Vac	0.5 A
	120 Vdc	0.2 A
	24 Vdc	0.5 A

CAUTION

EQUIPMENT DAMAGE

- Ensure that switches are always operated in accordance with the electrical ratings listed in Table 1.
- Do not exceed the maximum temperature and pressure ratings listed in Table 2.

Ensure that the liquids used are compatible with the switch material, listed in Table 2.

Failure to follow these instructions can result in equipment damage.

⚠ WARNING

HAZARDOUS ATMOSPHERE

To prevent explosion in Type LLV56 switches:

- The switches must be threaded into a suitable explosion-proof enclosure with at least five threads fully engaged.
- Use the switches for factory wiring and installation only.

Explosion can result in death, serious injury, or equipment damage.

Observe the following precautions when installing vertical liquid level switches:

- Mount the switches in a tank area free of severe turbulence or protected from turbulence by appropriate and adequate slosh shields.
- The specific gravities of liquids vary with temperature—be sure to account for shifts in the switch set points as the ambient temperature changes.
- Install switches securely, however, floats must be free to move as the liquid level changes.
- For best results, the stems should be vertical. However, satisfactory operation is possible in most liquids with the stem at up to a 30° angle from vertical.

Table 2: Specifications

Type		Maximum Ratings			Material	Mounting Thread	Approvals
		Temp.	Pressure	Power			
Miniature	LLV50	200 °C	300 psig	30 W	316SS	1/8" NPT	UL recognized, CSA certified
	LLV80	105 °C	100 psig	30 W	Polypropylene		
Full Size	LLV56	200 °C	200 psig	60 W	316SS	1/4" NPT	UL recognized, CSA certified for Hazardous Locations: Class I, Groups A, B, C, D; Class II, Groups E, F, G; Class III

INSTALLATION

DANGER

HAZARDOUS VOLTAGE

Turn off all power supplying this equipment before working on it.

Failure to follow this instruction will result in death or serious injury.

To change contact operation from N.C. to N.O. or from N.O. to N.C., remove the float and reverse it on the stem (see Table 3).

For stainless steel floats (LLV50 and LLV56):

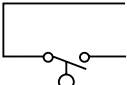
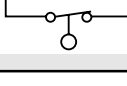
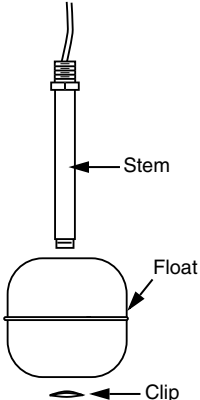
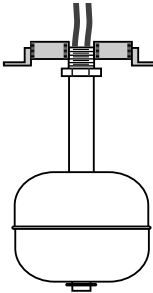
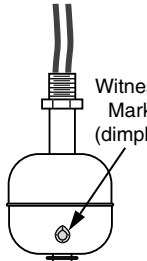
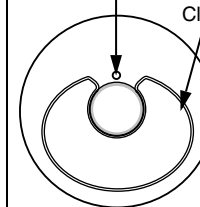
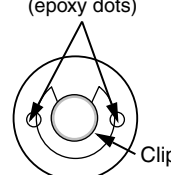
- N.C. dry operation: install the float so that the witness mark faces down.
- N.O. dry operation: install the float so that the witness mark faces up.

For polypropylene floats (LLV80):

- N.C. dry operation: install the float so that the witness marks face up.
- N.O. dry operation: install the float so that the witness marks face down.

The wiring diagrams in Table 3 refer to the level switch in the dry position with the mounting fitting up.

Table 3: Wiring, Installation, and Operation

Wiring Diagrams	Removing a Float	Level Switch Installation	Stainless Steel Float		Polypropylene Float	
			LLV50	LLV56	LLV80	
			Witness Marks— Side View	Witness Marks— Bottom View	Witness Marks— Bottom View	
<div>Typical N.O. Dry SPST</div> <div></div> <div>Typical N.C. Dry SPST</div> <div></div>	<div></div> <div>To remove the float: 1. Remove the clip. 2. Slide the float off the stem.</div>	<div>Dry Position</div> <div></div> <div>Liquid Level</div>	<div>Witness Mark (dimple)</div> <div></div>	<div>Witness Mark (circle)</div> <div>Clip</div> <div></div>	<div>Witness Marks (epoxy dots)</div> <div>Clip</div> <div></div>	
		Witness Mark	Up	N.O.		N.C.
			Down	N.C. (shown)		N.O. (shown)

MAINTENANCE

Excessive contaminants in the liquid may inhibit float operation. Periodically inspect the float to ensure that it is free to move and not coated with any substance that changes its weight or volume. If this occurs, remove the float, then clean the float and stem. Replacement parts are not available; the entire unit must be replaced.

NOTE: Dents or nicks on the float do not usually affect switch operation.

Schneider Electric
8001 Highway 64 East
Knightdale, NC 27545
1-888-SquareD (1-888-778-2733)
www.SquareD.com

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

© 1997–2003 Schneider Electric All Rights Reserved

