AUTOMATION PRODUCTS GROUP, INC.

Operator's Manual

LF Series
Model LFP-V
Miniature Level Switch

Rev. 1a, 6/03

Automation Products Group, Inc.
APG...Providing tailored solutions for measurement applications

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• Warranty and Warranty Restrictions

APG warrants its products to be free from defects of material and workmanship and will, without charge, replace or repair any equipment found defective upon inspection at its factory, provided the equipment has been returned, transportation prepaid, within 24 months from date of shipment from factory.

THE FOREGOING WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES NOT EXPRESSLY SET FORTH HEREIN, WHETHER EXPRESSED OR IMPLIED BY OPERATION OF LAW OR OTHERWISE INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

No representation or warranty, express or implied, made by any sales representative, distributor, or other agent or representative of APG which is not specifically set forth herein shall be binding upon APG. APG shall not be liable for any incidental or consequential damages, losses or expenses directly or indirectly arising from the sale, handling, improper application or use of the goods or from any other cause relating thereto and APG's liability hereunder, in any case, is expressly limited to the repair or replacement (at APG's option) of goods.

Warranty is specifically at the factory. Any on site service will be provided at the sole expense of the Purchaser at standard field service rates.

All associated equipment must be protected by properly rated electronic/ electrical protection devices. APG shall not be liable for any damage due to improper engineering or installation by the purchaser or third parties. Proper installation, operation and maintenance of the product becomes the responsibility of the user upon receipt of the product.

Returns and allowances must be authorized by APG in advance. APG will assign a Return Material Authorization (RMA) number which must appear on all related papers and the outside of the shipping carton. All returns are subject to the final review by APG. Returns are subject to restocking charges as determined by APG's "Credit Return Policy".

• Introduction

The miniature magnetic level sensors are used for liquid level detection. They have been designed for reliable operation in small tanks and containers. Their rugged design and careful engineering make them the optimum solution for OEM and large volume applications.

• Specifications

Operational Versions

LFP-V-2A ..... polycetal stem and buna float
LFP-V-2B ..... brass stem and buna float
LFP-V-2F ..... PVDF stem and PVDF float
LFP-V-2P ..... polypropylene stem and polypropylene float

Characteristics

Switch Rating (resistive load) (50 VA):
Max contact rating ..... 50 VA AC; 50 W DC
Max current ..... 0.5 A AC; 0.5 A DC
Max voltage ..... 300 V AC; 300 V DC
Life expectancy ..... 10^7 operations (at 12 VDC, 5 mA)

Max temperature range ..... -14 to 194°F (-10 to 90°C) for LFP-V-2A, LFP-V-2B, and LFP-V-2P
-14 to 212°F (-10 to 100°C) for LFP-V-2F
Max pressure ..... 145 psi (10 bar) for LFP-V-2A, LFP-V-2B, and LFP-V-2F
7 psi (0.5 bar) for LFP-V-2P
Min SG LFP-V-2A (0.6); LFP-V-2B (0.85);

- **Installation**

Environment

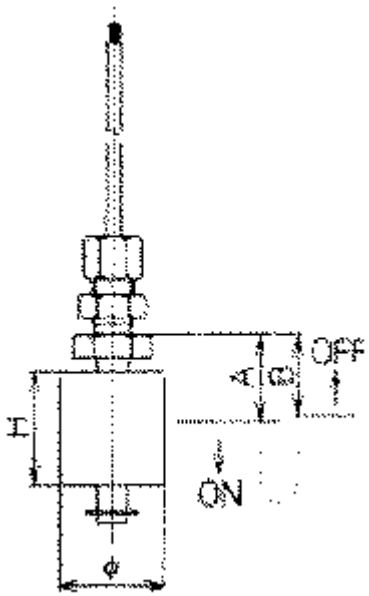
The LFP should be installed in an area that meets the following conditions:

- Within the specified temperature range.
- Located away from any strong magnetic field.
- Located away from drop, splash or vapor around the lead wire egress.
  Note: Apply the proper sealing compound over the lead wire egress if necessary. Liquid penetration may ruin insulation.
- Clean liquid, free from any foreign matter.
- Ample space for maintenance/inspection.

Location

DO NOT locate near liquid inlets/outlets.

If there is surface wave motion, use a time delay relay to dampen the switch action.



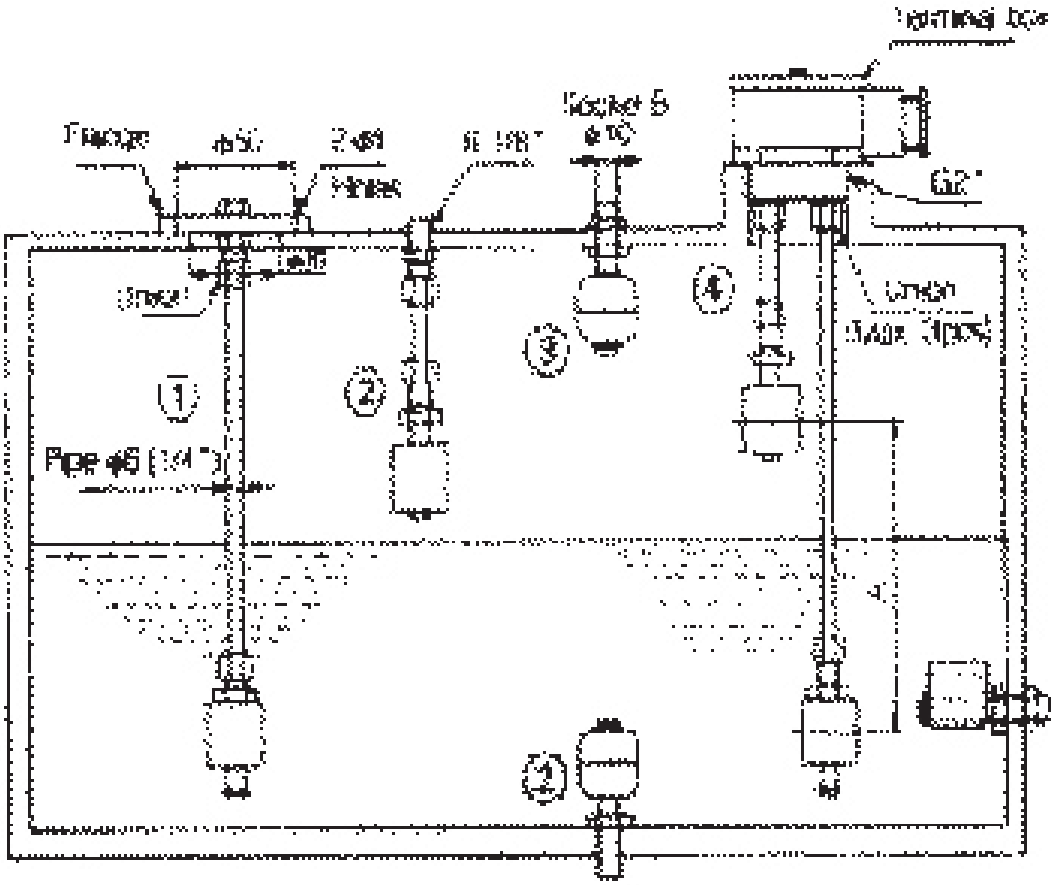
Point of operation in SG = 1.0 (water)

	LFP-V-2A	LFP-V-2B	LFP-V-2P	LFP-V-2F
A: Switch closes at level falls	24.5	21.5	20.0	19.0
B: Switch opens as level rises	23.0	20.0	18.5	17.5
Size of float	ø25 x H25	ø25 x H25	ø25 x H25	ø25 x H25

Note: Standard switch operation is NC (switch closes as the level falls). Switch action can be reversed by inverting the float. The direction of close is marked on the float.

Installation

Install the LFP vertically with the lead wires up and down.



1. LFP Flange: Open holes (as specified) on the tank top. Insert float and tighten the nut. Be sure to use a suitable gasket, O-ring, or thread tape. Use a 1/4" pipe for the extension.
2. Threaded: Provide R1/8" or G1/8" female thread. Use suitable O-ring or thread tape.
3. Bulkhead: Drill a 10 mm hole in tank top. Insert and tighten the nut. Use a suitable O-ring or thread tape.
4. Terminal Box: Provide G2" female mounting boss. Use suitable O-ring or thread tape. Minimum distance of operating pint (A) is 70 mm.

Note: After assembling the extension pipe, check insulation (100 MW or more) and switch operation. Improper assembly or seal may result in damage or injury.

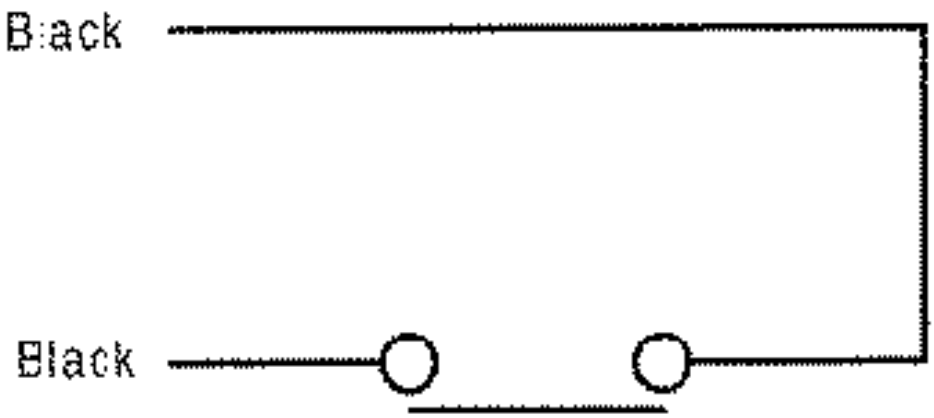
- **Wiring**

Wiring should be in accordance with all local codes. Lead wires are 22 AWG, UL listed. We recommend the use of solderless lugs for connection.

Switch Rating (Resistive)

	AC	DC
Max. Capacity	50 VA	50 W
Max. Current	0.5 A	0.5 A
Max. Voltage	300 V	300 V

NOTE: Max. pull load of the lead wire is 20 N. Excessive pulling or kink the lead wire may break the switch.



Caution: Do not exceed the contact ratings!

1. Overvoltage
   Reed switches are not designed for the direct starting of inductive loads such as motors, contractors, solenoid valves, etc.

2. Overcurrent
   Momentary surge current may be produced by switching lamps or stray capacity from long cable length.