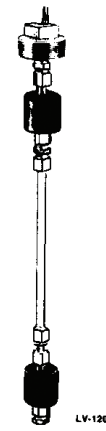




LV-120 SERIES

Custom Switch Kit



INSTRUCTION SHEET

M0469/1214

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GENERAL DESCRIPTION

Versatile OMEGA® LV-120 Series Custom Switch Kits can be assembled and installed vertically in your tank in minutes. Each kit contains all the components for complete assembly of a one or two station level switch for pipe-plug mounting. Additional level stations (up to six) may be added. Normally Open or Normally Closed operation of the single pole single throw switch is selectable when assembling, merely by inverting the float on its stem (see ASSEMBLY INSTRUCTIONS).

Each Kit Contains:

- 2 Level Stations (Switch, Tube, Float)
- 1 Tube Connector (1/2"-3/8" NPT)
- 1 Mounting Plug (2" NPT)
- 2 Extension Tubes (1/2" x 10" long)
- 1 Tube End Fitting (1/2")
- 3 Tube Unions (1/2")

LV-120 SERIES SWITCH KITS

Kit No.	Material	Mfg NPT	Primary Usage
LV-120	Brass Fittings, Buna N Floats	2"	In fuels, water at temperatures below 180°F.
LV-121	All 316 Stainless Steel	2"	High temperature, 275°F, high pressure 750 psi, in corrosive liquids.

OPERATING PRINCIPLE

The LV-120 Series detect high, low or intermediate liquid levels magnetically, with precise accuracy. A magnet-equipped float, moving with liquid level, actuates a dry hermetically sealed reed switch within the unit's liquid level, actuates a dry hermetically sealed reed switch within the unit's central stem at each level station. Switches are wired to trigger a remote warning or indicating device or, using suitable relays, to provide automatic control of pumps and similar equipment.

APPLICATION

LV-120 Series units are being applied in just about every area of industry where accurate detection and indication of liquid level is called for, including automatic control of pumping and other systems.

CONSTRUCTION

All Configurations are extremely rugged and are virtually unaffected by shock, vibration, pressure or vacuum. Stems and fittings can be brass with Buna N floats or fittings and floats can be all 316SS. No gaskets or seals are used, and the float is the only moving part, assuring long, trouble-free service. Corrosion resistance is excellent.

MOUNTING

The Buna N floats are 1-7/8 diameter; the 316 SS floats are 2-1/8" diameter

The LV-120 Series can be mounted from the top, bottom, or side

of a tank. These units should be installed as vertically as possible; however, the LV-120 Series are reliable as much as 30° from vertical. The 2" NPT mounting plug permits the entire unit to be inserted into the tank from outside. A 1/2" NPT-F provides direct electrical conduit connection.

	Brass/Buna N	All 316 SS
Ambient Temp. (Oil)	0°F to 230°F	0°F to 275°F
(Water)	33°F to 180°F	0°F to 275°F
Fluid Pressure (Max.)	150 psi	759 psi
Float Sp. Gr.	.55	.65
Fitting Ferrule Material	Nylon	316 SS
Mounting Thread	2" NPT-M	
Conduit Thread	1/2" NPT-F	
Tube/Fitting Size	1/2" (12.7 mm) o.d. tube	
Max. no. Levels per Stem	6	6
Mounting Attitude	Vertical ±30°	

ELECTRICAL DATA

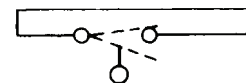
Standard snap-action switch is a 20VA, SPST, hermetically sealed, magnetically actuated, make and break type. Normally open or normally closed operation is selectable by inverting floats on unit stem.

SWITCH RATINGS – MAX. RESISTIVE LOAD

VA	Volts	Amps AC	Amps DC
20	0-30	.4	.3
	120	.17	.13
	240	.08	.06

NOTE: If inductive or capacitive loads are being switched (such as the coil of a magnetic relay), a voltage spike suppression kit is required, part number 1821-101. Without suppression, voltage spikes can cause the reed relay in the switch to fuse in the conducting ("ON") mode, regardless of liquid level. This kit is not required when switching external solid state relays, such as OMEGA's SSR series.

TYPICAL WIRING DIAGRAM



SPST SWITCH N.O. OR N.D.(DRY)
SELECTABLE BY INVERTING FLOAT

All float stations are supplied with 60" of 22 AWG. Teflon-coated wire. Additional lengths of copper wire can be added on in the field.

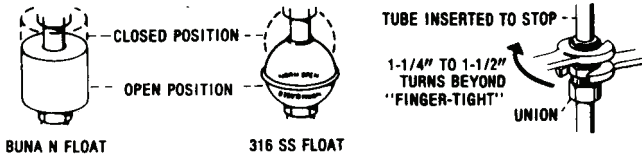
ASSEMBLY INSTRUCTIONS

1. Determine type of assembly required from data on these pages.
2. Assemble unit, observing the following sketches and information.

Extension Tubes when required: Cut to proper length as illustrated. Any 1/2" (12.7 mm) tubing of suitable non-magnetic material may be used.

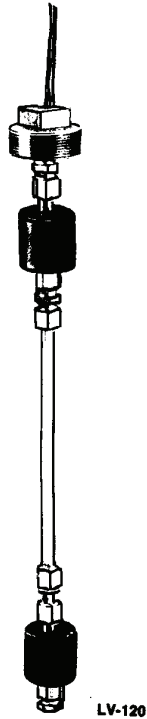
Level Stations: Assemble floats on switch tubes for desired switch

operation as shown. Feed level station wires through switch tubes of each level station toward mounting plug.



NOTE: Floats shown in normally open (dry) position, to reverse operation, invert floats.

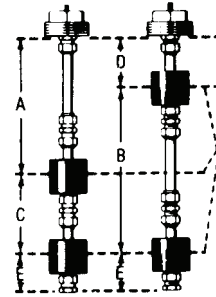
Coupling Components Together: Insert tubes to limit in fittings and tighten "finger-tight". After chacking entire unit, wrench-tighten as illustrated.



3. Install unit in tank through a boss or tapped hole from outside of tank.

4. Electrical leads: Leads are readily identified for connection, (i.e., switch leads nearest mounting end of unit project the farthest, etc.) **CAUTION** See "Switch Ratings" before connecting power to unit.

ACTUATION LEVEL DIMENSIONAL DATA



SWITCH ACTIVATION LEVELS

NOTE: Buna N floats shown. When two or more extension tubes are coupled together for greater length, assemble coupling unions before cutting to length per "A" or "B" (below).

DIM.	DESCRIPTION	SPST SWITCHES	
		With Buna N Floats	With S.S. Floats
A	Min. with tube extension	4 3/4" (120.7 mm)	4 1/2" (114.3 mm)
	Cut tube to desired length "A", minus	2 7/8" (73 mm)	2 5/8" (66.7 mm)
B	Min. with tube extension	6 5/16" (160.3 mm)	6 5/8" (168.3 mm)
	Cut tube to desired length "B", minus	4 15/16" (125.4 mm)	4 11/16" (119.1 mm)
C	Closest that levels can be	4 1/4" (108 mm)	4 1/2" (114.3 mm)
D	Highest possible level	2 5/8" (66.7 mm)	2 3/8" (60.3 mm)
E	Lowest possible level	2 1/8" (54.1 mm)	2 5/8" (66.7 mm)



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If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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RETURN REQUESTS/INQUIRIES

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The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY RETURNS**, please have the following information available BEFORE contacting OMEGA.

1. Purchase order number which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY RETURNS**, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA.

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product and
3. Repair instructions and/or specific problems relative to the product.

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