OFF THE SHELF COMPONENTS allow you to assemble a custom level control in minutes...

Each OMEGA Starter Kit Includes:
- 1 - Mounting Plug
- 2 - Switch/Float assembly
- 2 - 1⁄2" Extension Tubes
- 1 - Tube End Fitting
- 3 - Tube Unions
- 1 - Tube Connector

Specifications:

<table>
<thead>
<tr>
<th>Material</th>
<th>Mounting</th>
<th>Temperature</th>
<th>Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>LVK-120</td>
<td>2&quot; NPT</td>
<td>to 180°F in water</td>
<td>150 PSI Max</td>
</tr>
<tr>
<td>LVK-121</td>
<td>2&quot; NPT</td>
<td>0°F to 300°F</td>
<td>500 PSI Max</td>
</tr>
</tbody>
</table>

Accessories:
- BRK-U-12  • 1⁄2" Tube Union, Brass
- SSK-U-12  • 1⁄2" Tube Union, Stainless Steel
- BRK-12-10-0 • 1⁄2" OD Tubing, 12" length, Brass
- SSK-12-10-0 • 1⁄2" OD Tubing, 12" length, Stainless Steel

Float / Switch Assembly

<table>
<thead>
<tr>
<th>Stem Material</th>
<th>Float Material</th>
<th>A DIM</th>
<th>B DIM</th>
<th>Lead Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>LVK-125</td>
<td>Brass Buna N</td>
<td>4.25</td>
<td>1.88</td>
<td>Red</td>
</tr>
<tr>
<td>LVK-126</td>
<td>316 Stainless Steel 316 Stainless Steel</td>
<td>4.45</td>
<td>2.10</td>
<td>Red</td>
</tr>
</tbody>
</table>
Electrical Data

Standard Reed switches are SPST or SPDT. The diagrams below show the typical wiring:

Form A - Single Pole / Single Throw

Normally Open Dry

Normally Closed Dry

Form C SPDT - Single Pole / Double Throw

SPDT Dry Condition

Each individual level switch varies in rating depending on the unit. See the chart below for electrical ratings.

Switch Ratings Max - Resistive Loads

<table>
<thead>
<tr>
<th>Contact Rating</th>
<th>Volts</th>
<th>Amps AC</th>
<th>Amps DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>10VA</td>
<td>0-50</td>
<td>20</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>120</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>240</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td>20VA</td>
<td>0-50</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>120</td>
<td>17</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>240</td>
<td>06</td>
<td>06</td>
</tr>
<tr>
<td>50VA</td>
<td>0-50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>120</td>
<td>41</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>240</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>100VA</td>
<td>120</td>
<td>41</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>240</td>
<td>41</td>
<td>NA</td>
</tr>
</tbody>
</table>

NOTE: Above ratings are for resistive loads only.

Contact Protection

In order to take advantage of the long life, highly reliable characteristics of a reed switch, it is essential to provide protection when switching inductive loads.

When current is interrupted, the inductance of the load generates a high frequency voltage, which appears across the switch contacts. If the voltage is large enough, it can cause arcing. Arcing can cause contacts to weld to each other, resulting in unreliable switching performance. It is essential to protect the circuit by suppressing the voltage to prevent arcing.

This can be accomplished through the use of a diode for DC circuits (figure 1) and a resistor - capacitor network for AC circuits (figure 2).

Figure 1
DC Contact Protection

Figure 2
AC Contact Protection

Often there is a requirement to control significant loads such as pumps and motors, or to perform a control function as simple as the automatic refilling of a tank. These operations can be performed reliably with the selection of one of the following supplemental relays.

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>FUNCTION</th>
<th>TIME DELAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>LVCN-130</td>
<td>PUMP UP PUMP DOWN CONTROLLER</td>
<td>LATCHED 12 AMP SPDT RELAY</td>
<td>.15 TO 60 SECONDS</td>
</tr>
<tr>
<td>LVCN-140</td>
<td>SINGLE SENSOR CONTROLLER</td>
<td>12 AMP SPDT RELAY</td>
<td>.15 TO 60 SECONDS</td>
</tr>
<tr>
<td>LVCN-120</td>
<td>THREE SENSOR CONTROLLER</td>
<td>TWO 12 AMP SPDT OUTPUT RELAY</td>
<td>.15 TO 60 SECONDS</td>
</tr>
<tr>
<td>SSR240AC10</td>
<td>SOLID STATE RELAY</td>
<td>10 AMP AC CONTROL SIGNAL RELAY</td>
<td>NO</td>
</tr>
</tbody>
</table>
**Design Considerations**

- Pressure
- Temperature
- Mounting
- Termination
- Media Characteristics, such as
  - Specific gravity
  - Corrosive characteristics
  - Viscosity
- Actuation Point(s)
- Materials of Construction
- Switch life / Switch load

**General Information**

- Please refer to the current carrying limitations of the reed switches and provide protection when needed.
- Do not exceed pressure and temperature limitations listed at any time.
- Please take into consideration material of construction and chemical / media compatibility when selecting a level switch.
- Temperature changes that affect specific gravity of media may vary actuation points.
- Media that contains debris may cause float to hang up and require more frequent maintenance.
- Care should be taken to provide moisture protection and media isolation at threaded mounting areas and wire termination points.

**Principle of Operation**

The hermetically sealed reed switch located inside the stem is actuated by a magnetic field created by a magnet equipped float. As the float rises and falls with the liquid level, the magnetic field passing the switch causes the switch to either open or close.

Omega switches can be mounted from tank top, tank bottom or can be easily adapted for side mounting. Switches will operate normally with up to a 30 degree tilt from vertical.

**Switch Configuration**

Most single point switches with a SPST (single pole, single throw) switch operate in either a Normally Open (NO) or Normally Closed (NC) mode in the dry condition. All switches are shipped in the Normally Open dry mode. To change from the Normally Open to the Normally Closed mode, carefully remove the clip at the end of the stem, remove the float, reverse the float, then reinstall the float. After replacing the float and end clip, the operation will be Normally Closed. All Teflon switches are non-reversible and must be ordered in either the NC or NO mode.

Single Pole, Double Throw (SPDT), switches offer both NO and NC mode. Selection is made simply by choosing the black and red wire for NO operation or the black and white/red wire for NC operation.

**Maintenance**

Maintenance of the OMEGA level switches is minimal. Floats and stems should be inspected periodically for buildup on the stem which could cause float hangup and or significant buildup on the float that could change specific gravity of the float.
WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of 13 months from date of purchase. OMEGA’s WARRANTY adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that OMEGA’s customers receive maximum coverage on each product.

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; 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.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by the company will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

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RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA’S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

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 under 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.

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