Operator’s Manual

LFE Series
Industrial OEM Low Cost Liquid Level Switches

Doc #9004721; Part #200430
Rev. A2, 11/19
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• **Warranty and Warranty Restrictions**

This product is covered by APG’s warranty to be free from defects in material and workmanship under normal use and service of the product for 24 months. For a full explanation of our Warranty, please visit [https://www.apgsensors.com/about-us/terms-conditions](https://www.apgsensors.com/about-us/terms-conditions). Contact Technical Support to receive a Return Material Authorization before shipping your product back.

Scan the QR code below to read the full explanation of our Warranty on your tablet or smartphone.
• 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

LFE-11P-0A ............................... for water - PP, 10 VA, NC
LFE-11P-0B ............................... for water - PP, 10 VA, NO
LFE-11P-1A ............................... for water - PP, 50 VA, NC

LFE-11R-0B ............................... for oil - Buna, 10 VA, NO
LFE-11R-1A ............................... for oil - Buna, 50 VA, NC

LFE-12P-0A ............................... for water - PP, 10 VA, NC

LFE-12R-0A ............................... for oil - Buna, 10 VA, NC
LFE-12R-0B ............................... for oil - Buna, 10 VA, NO
• Specifications (continued)

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 ........................... 10⁷ operations (at 12 VDC, 5 mA)

Switch Rating (resistive load) (10 VA):
Max contact rating ...................... 10 VA AC; 10 W DC
Max current ............................... 0.2 A AC; 0.2 A DC
Max voltage ............................... 100 V AC; 100 V DC
Life expectancy ........................... 10⁷ operations (at 12 VDC, 5 mA)

Max temperature range .................. -14 to 194°F (-10 to 90°C)
Max pressure .............................. Polypropylene float: 145 psi (10 bar)
                                   Buna float: 145 psi (10 bar)
Min SG ....................................... Polypropylene float: 0.9
                                   Buna float: 0.7
Max viscosity ............................ 0.5 Pa s
Max humidity ............................ 95% RH
Max impact ............................... 10 G
• **Installation Location**

Locate the LFE where the change in liquid level will actuate the switch. **DO NOT** locate near liquid inlets/outlets. If there is turbulence, use a time delay relay to dampen the switch action.

![Figure A](image1.png) ![Figure B](image2.png)

**LFE-XXX-XA (Switch closes as level falls), see Figure A**

<table>
<thead>
<tr>
<th>Close as level falls</th>
<th>LFE-11R</th>
<th>LFE-12R</th>
<th>LFE-11P</th>
<th>LFE-12P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>18</td>
<td>28</td>
<td>15</td>
<td>25</td>
</tr>
<tr>
<td>Open as level rises</td>
<td>16.5</td>
<td>26.5</td>
<td>13.5</td>
<td>23.5</td>
</tr>
</tbody>
</table>

**LFE-XXX-XB (Switch closes as level rises), see Figure B**

<table>
<thead>
<tr>
<th>Close as level rises</th>
<th>LFE-11R</th>
<th>LFE-12R</th>
<th>LFE-11P</th>
<th>LFE-12P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>17</td>
<td>26</td>
<td>14</td>
<td>23</td>
</tr>
<tr>
<td>Open as level falls</td>
<td>18.5</td>
<td>27.5</td>
<td>15.5</td>
<td>24.5</td>
</tr>
</tbody>
</table>
• **Wiring**

Wiring shall be in accordance with all local codes. Lead wires are #22 AWG, UL listed (UL1430). APG recommends the use of solderless lugs for connection.

![Diagram of electrical connections]

**Black**
- Switch Rating (Resistive)
  - Max capacity 50 VA, 50 W
  - Max current 0.5 A AC, 0.5 A DC
  - Max voltage 300 VAC, 300 VDC

**Yellow**
- Switch Rating (Resistive)
  - Max capacity 10 VA, 10 W
  - Max current 0.2 A AC, 0.2 A DC
  - Max voltage 100 VAC, 100 VDC

**Note:** Max pull-load of the lead wire is 19.6 N. Excessive pulling or kinking of the lead wire may break the switch.

**Caution!**

**Protection for electrical surges:**
- **Overvoltage**
  Reed switches are not designed for the direct starting of inductive loads such as motors, contactors, solenoid valves, and so on. They are susceptible to damage from overvoltages. DO NOT EXCEED THE CONTACT RATINGS. Contact should be wired to miniature relays, suppressors or similar devices.
- **Overcurrent**
  Momentary surge current may be produced by switching lamps or stray capacity from long cable length, consequently welding the reed switch. Contact should be wired to a relay unit, coils in series, or suppressors.