FL-LL – Ultrasonic Liquid Level Sensors

Ultrasonic liquid level sensors are a non invasive, non contact sensor typically mounted on the top of a tank or vessel. These sensors use ultrasonic sound waves to calculate the depth of a liquid. Ultrasonic level sensors are also capable of continuous level measurement in addition to point-level monitoring. Another advantage over more traditional float switches. The FL-LL is widely used in environmental applications, like detecting rising flood levels. These sensors are ideal because they continuously measure fluid levels and can quickly detect and relay any data for agencies to act fast, all in the interest of public safety and conservation.

FL-LL

Made from 316 stainless steel, these ultrasonic sensors are available with switched relay or digital outputs

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Switch Type</th>
<th>Max Switching Current</th>
<th>Max Switching Voltage</th>
<th>Max Temp</th>
<th>Max Pressure</th>
<th>Specific Gravity</th>
</tr>
</thead>
<tbody>
<tr>
<td>FL-LL25</td>
<td>Relay Output (NO/NC)</td>
<td>0.5 Amps</td>
<td>5 to 30 VDC</td>
<td>80° C</td>
<td>250 psig</td>
<td>N/A</td>
</tr>
<tr>
<td>FL-LL50</td>
<td>Relay Output (NO/NC)</td>
<td>0.5 Amps</td>
<td>5 to 30 VDC</td>
<td>80° C</td>
<td>250 psig</td>
<td>N/A</td>
</tr>
<tr>
<td>FL-LL5K</td>
<td>Relay Output</td>
<td>2 Amps</td>
<td>5 to 30 VDC</td>
<td>80° C</td>
<td>1000 psig</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Specifications:
- **Repeatability:** 2 mm or better
- **Delay:** 0.5 seconds
- **Input Power:** 5 VDC to 30 VDC
- **Leakage Current:** Less than 50 µA
- **Outputs:**
  - **Sourcing:** 100 mA /Max
  - **Sinking:** 100 mA /Max
  - **Relay:** 1 amp SPST (NO/NC)
- **Protection:** Transient, reverse polarity
- **Sensor:** 316 LSS Standard
- **Temperature:** -20°F to 176°F (-29°C to 80°C)
- **Cable Length:** 12” (305 mm) longer lengths available

Applications:
- Pump Protection
- Storage Tanks
- Compressors
- Hydraulic Supply Lines
- Oil Film Detection
- Coolant Reservoirs
- Etc
FL-LL25

PVC Jacket Cable

Leads: 12” [304.8 mm]

0.75” [19.17 mm]

0.29” [7.44 mm]

1.98” [50.36 mm]

Electropolish this area to 10 u RA

FL-LL50

PVC Jacket Cable

1/2” NPT

Leads: 12” [304.5 mm]

2.36” [59.94 mm]

0.40” [10.16 mm]

0.38” [9.65 mm]

0.62” [15.87 mm]

Electropolish this area to 10 u RA

FL-LL5K

Cable

3/4” NPTF Pipe Fitting

Sensor Housing 316L SST

Sensor Tip

0.18” [4.77 mm]

0.66” [16.94 mm]

2.80” [71.12 mm]

1.62” [41.27 mm]

0.18” [4.77 mm]
Typical Wiring Diagram

Sourcing Output

- + 5 VDC - 30 VDC
- Source
- Ground (-)
- Green
- Chassis Ground

Jumper White wire to Red wire (+)

Sinking Output

- + 5 VDC - 30 VDC
- Sink
- Ground (-)
- Green
- Chassis Ground

Jumper Brown wire to Black wire (-)

Relay Output

- + 5 VDC - 30 VDC
- Relay Output (see below)
- Ground (-)
- Green
- Shield
- Chassis Ground

Product Configuration

**FL-LL XX - XX**

<table>
<thead>
<tr>
<th>Fitting</th>
<th>Electronic Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>25: 1/4” Threads</td>
<td>Sensor Mount &amp; Activation Point</td>
</tr>
<tr>
<td>50: 1/2” Threads</td>
<td>03 - LL25 (NO)</td>
</tr>
<tr>
<td>5K: 3/4” Threads</td>
<td>13 - LL25 (NC)</td>
</tr>
</tbody>
</table>

www.fluidswitch.com