Fluid Level Measurement
Fluid Level/Temperature Gauges
Reservoir Equipment

A proven solution for tank oil level measurement

Universal fixing designed for front or rear tank mounting

Fluid level/temperature gauges are available in 3 sizes each with 2-hole mounting at 76mm, 127mm and 254mm mounting centres. The high-visibility viewing lens is a one-piece design for added security, moulded in shatterproof, transparent polyamide.

Product Features:

- 3 sizes of fluid level/temperature gauge. 2 hole mounting.
- 76mm, 127mm and 254mm mounting centres.
- A one-piece design, high-visibility viewing lens for added security.
- Moulded in shatterproof, transparent polyamide.

Contact Information:

Parker Hannifin
Hydraulic Filter Division Europe

European Product Information Centre
Freephone: 00800 27 27 5374
(from AT, BE, CH, CZ, DE, EE, ES, FI, FR, IE, IT, PT, SE, SK, UK)
filtrationinfo@parker.com

www.parker.com/hfde
Specification

Construction:
- Lens: Transparent polyamide.
- Lens base: Nylon 66.
- Shroud: High impact polystyrene. No aluminium content.

Bolts: Steel.
Seals: Nitrile.

Maximum working pressure: 1 bar.
Working temperature: -30°C to +90°C.
Fluid compatibility: Mineral and petroleum based oils.

Note:
- A 500mm model with metal shroud finished in black available.
- Recommended bolt tightening torque: 10 Nm maximum.
- Thermometer scale range: +30°C to +90°C.
- Temperature Indicator: Blue alcohol.

Note:
1. Locate seals in mounting recess before fitting.
2. Select the size required by studying the installation details to determine a part number.

Size 1 Installation Details

For ‘through hole’ mounting:

<table>
<thead>
<tr>
<th>Hole size</th>
<th>M10</th>
<th>M12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred</td>
<td>11.0</td>
<td>13.0</td>
</tr>
<tr>
<td>Maximum</td>
<td>13.0</td>
<td>14.0</td>
</tr>
</tbody>
</table>

Torque = 10Nm max

For tapped holes:
Holes to be tapped square to mounting face.
Tolerance on hole centres: +0.5 -0.2

For welded back nuts:
The above details should be combined.

Installation and Application Information

Simple to Install
The universal fixing is designed for either front or rear fixing. Just two holes in the tank – threaded for front fixing – and the gauge is ready to install. After positioning the gauge the bolts are simply tightened to provide a secure seal. There is no fear of leakage with the square section seals and the two-point mounting system eliminates problems with tank distortion. M10 and M12 bolt thread options are available.

Easy to Read
The high-visibility lens is one-piece for added security and moulded in shatterproof, transparent polyamide for an accurate and clear oil level and temperature indication. Further gauge protection is provided by a specially designed shroud moulded in high-impact, black polystyrene.

Size 1 Ordering Information

Standard products table

<table>
<thead>
<tr>
<th>Part number</th>
<th>Supersedes</th>
<th>Description</th>
<th>Centres</th>
<th>Thread</th>
<th>Max temp</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>FL69121</td>
<td>FLT.121</td>
<td>Fluid level/temp</td>
<td>76mm</td>
<td>M10</td>
<td>90°C</td>
<td>0.13Kg</td>
</tr>
<tr>
<td>FL69123</td>
<td>FLT.123</td>
<td>Fluid level/temp</td>
<td>76mm</td>
<td>M12</td>
<td>90°C</td>
<td>0.13Kg</td>
</tr>
<tr>
<td>FL69111</td>
<td>FL.111</td>
<td>Fluid level</td>
<td>76mm</td>
<td>M10</td>
<td>90°C</td>
<td>0.13Kg</td>
</tr>
<tr>
<td>FL69113</td>
<td>FL.113</td>
<td>Fluid level</td>
<td>76mm</td>
<td>M12</td>
<td>90°C</td>
<td>0.13Kg</td>
</tr>
</tbody>
</table>

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Note 2: Alternate displayed part number selection will require you to contact Parker Filtration for availability.
Fluid Level/Temperature Gauges
Reservoir Equipment

Size 2 Installation Details

![Diagram of Size 2 Installation Details]

Size 2 Ordering Information

<table>
<thead>
<tr>
<th>Standard products table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part number</td>
</tr>
<tr>
<td>FL69221</td>
</tr>
<tr>
<td>FL69223</td>
</tr>
<tr>
<td>FL69211</td>
</tr>
<tr>
<td>FL69213</td>
</tr>
</tbody>
</table>

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Size 3 Installation Details

![Diagram of Size 3 Installation Details]

Size 3 Ordering Information

<table>
<thead>
<tr>
<th>Standard products table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part number</td>
</tr>
<tr>
<td>FL69321</td>
</tr>
<tr>
<td>FL69323</td>
</tr>
<tr>
<td>FL69311</td>
</tr>
<tr>
<td>FL69313</td>
</tr>
</tbody>
</table>

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Reservoir Float & Level Switches
Reservoir Equipment

Cost effective reservoir solution

Float switches designed for on-site adjustment

A range of high quality, adjustable float switches. A reliable design using reed switches and available in 3 lengths – 500mm, 1000mm and 1500mm. Additionally a capacitive level switch is available designed to detect the loss of fluid below its position in the tank.

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Product Features:

- Adjustable float switches – 3 lengths available.
- Capacitive level switch designed to give a low level alarm.
- High quality, adjustable float switches available in 3 lengths – 500mm, 1000mm and 1500mm.
- Capacitive level switch – rugged construction, simple to install and with no moving components.
- Cost effective reservoir solutions with many applications.
FL Series
Adjustable Float Switch
Reservoir Equipment

Features & Benefits

Float Switch Features Include:
- Float switches can be adjusted on site
- Reliable design using reed switches
- 3 lengths available, 500mm, 1000mm and 1500mm

The FL Series is a range of vertically mounted, single float level switches operating on the proven reed switch and magnet principle.

The FL Series float switch can be tailored by the user for a particular application, by adjusting the length of the float switch tube. It is also possible for the user to select the switching configuration by inverting the float, giving either open on rise or close on rise operation.

The unit is supplied part assembled, with detailed instructions for the user to complete assembly to the specifications of the application and to install the unit.

Typical Specification

Installation
Mounting: 1” BSP threaded header
Gasket: 2.0mm thick sealing washer
Length: Adjustable up to 1500mm

Electrical specification
Supply voltage: 240 Vac maximum
300 Vdc maximum
Switching current: 0.5A

Material specification
Header: Brass
Stem: Brass
Float: Polypropylene
Gasket: Klingsersil grade C4324 to BS7531 grade Y

Other parameters
Fluid types: Any liquids compatible with brass and polypropylene

Installation Drawing

Ordering Information

Standard products table

<table>
<thead>
<tr>
<th>Part number</th>
<th>Supersedes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FL050010R</td>
<td>FL-0500-1-0R</td>
<td>500mm long float level switch</td>
</tr>
<tr>
<td>FL100010R</td>
<td>FL-1000-1-0R</td>
<td>1000mm long float level switch</td>
</tr>
<tr>
<td>FL150010R</td>
<td>FL-1500-1-0R</td>
<td>1500mm long float level switch</td>
</tr>
</tbody>
</table>

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The **CLS46 Liquid Level Switch** is an active device which is designed to give an alarm signal if fluid falls below a preset level. It will only give an output signal after a few seconds of low level to eliminate false alarms due to turbulence. The fact that the **CLS46 Series** has no moving parts and incorporates a built in delay means that it is ideal in applications where mechanically operated switches mis-trigger due to vibration and fluid turbulence.

### Features Include:
- Rugged construction
- Simple to install
- Delay circuitry prevents false alarms
- Purely electronic, no moving components
- Integrated test feature

The **CLS46 Capacitive Level Switch** is designed to detect the loss of fluid below its position in the tank.

The **CLS46 Series** has no moving parts and it is therefore suitable for all applications, particularly where space and access inside a vessel is at a minimum.

The **CLS46 Series** compliments the existing range of level measurement instrumentation supplied by Parker Hannifin.

### Technical Specification

- **Dimensions:** See drawing
- **Electrical rating:**
  - Supply voltage: 7-40 Vdc
  - Supply current: 3.0mA
  - Max. load current: 1.0A
  - Alarm delay time: 10.0 seconds
- **Connections:**
  - V+: Positive power supply
  - GND: Negative power supply or GND
  - Output: Transistor switched to GND on alarm
  - Test: Ground to operate
  - Body: Connected to ground
- **Fluid types:**
  - Mineral oils, typically used in engines or hydraulic actuators compatible with brass, PTFE and NBR.
- **Construction:**
  - Body: Brass
  - Probe: PTFE
  - Terminals: SAE CA210 brass, tin plated
  - Seals: NBR
  - Connector: 30% glass filled nylon 6
- **Environmental ratings**
  - Max. pressure: 5.0 bar (72 PSI)
  - Temp. ranges:
    - Fluid: -40°C to +130°C
    - Ambient: -40°C to +100°C
    - Storage: -50°C to +140°C
  - Sealing: IP67
  - Vibration: 6g 10-50Hz (600-3000rpm)
  - Shock: 50g, 6.3mS
  - Weight: 53g

### Installation Details

![Installation Diagram]

### Ordering Information

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLS46</td>
<td>Capacitive fluid level sensor</td>
</tr>
<tr>
<td>CLS46Connector</td>
<td>Capacitive fluid level sensor connector</td>
</tr>
</tbody>
</table>

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**Note 3:** CLS46 does not include the connector.