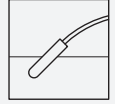




# Float Switch

LFL4-\*K-A2-\*\*\*\*\*



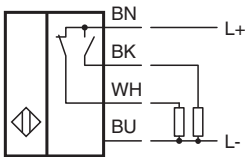
- Switch element: float switch with initiator, **mercury-free**
- Electrical connection with PNP output stage
- Limit value detection for fluids
- Sleeve design: small diameter, mounting through G1 tap hole possible
- Ball design: high buoyancy



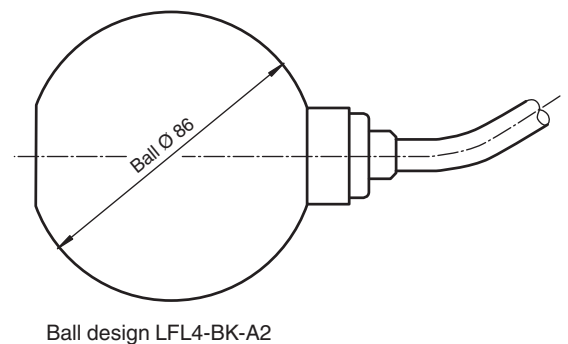
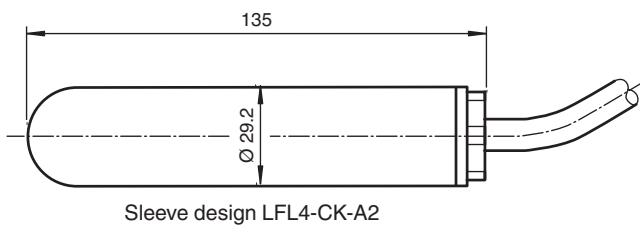
## Function

The device has an initiator built into a PP float. This initiator switches in in the event of deviation from the horizontal position. A switching ball moves along an axis in the float and generates the switching operation in the initiator inductively. The switching output of the device has a PNP output stage.

## Connection



## Dimensions



## Technical Data

### General specifications

Construction type	Proximity switch with operation ball
Series	LFL4

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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## Technical Data

<b>Supply</b>		
Rated voltage	U <sub>r</sub>	10 ... 30 V
Current consumption		< 10 mA at 24 V
Reverse polarity protection		yes
<b>Output</b>		
Connection		PNP NO/NC
<b>Directive conformity</b>		
Electromagnetic compatibility		
Directive 2014/30/EU		EN IEC 60947-5-2:2020
<b>Conformity</b>		
Degree of protection		IEC 60529:2014
<b>Operating conditions</b>		
Installation conditions		
Installation instructions		<p>range of application and minimum length between mounting and float:</p> <ul style="list-style-type: none"> <li>- PUR version: ≥ 100 mm (4 inch), preferred for fuels, heating oils, oily fluids</li> <li>- CSM/CM version: ≥ 100 mm (4 inch), preferred for many acids and lyes</li> <li>- TPK version: ≥ 100 mm (4 inch), preferred for many acids and lyes</li> </ul> <p>mounting:</p> <ul style="list-style-type: none"> <li>- The float switch is mounted either from sideways through a cable gland ≥ G1A into the vessel or</li> <li>- by means of a counter weight or rods (e. g. float switch combination) from the top. The pivot of the cable should always be horizontal.</li> </ul>
Process conditions		
Process pressure (static pressure)		<p>sleeve design: ≤ 3 bar at 20 °C (68 °F)</p> <p>ball design: ≤ 2 bar at 20 °C (68 °F)</p>
<b>Ambient conditions</b>		
Ambient temperature		<p>TPK version: 5 ... 70 °C (41 ... 158 °F)</p> <p>PUR version: -20 ... 70 °C (-4 ... 158 °F)</p> <p>CSM/CM version: -20 ... 70 °C (-4 ... 158 °F)</p>
Storage temperature		-25 ... 70 °C (-13 ... 158 °F)
Altitude		≤ 2000 m above MSL
<b>Mechanical specifications</b>		
Degree of protection		IP68
Dimensions		<p>float:</p> <ul style="list-style-type: none"> <li>- sleeve design: Ø29.2 x 135 mm</li> <li>- ball design: Ø86 mm</li> </ul> <p>Cable:</p> <ul style="list-style-type: none"> <li>- PUR cable: Ø4.8 mm</li> <li>- CSM/CM cable: Ø6.7 mm</li> <li>- TPK cable: Ø6.9 mm</li> </ul>
<b>Mechanical construction</b>		
Material		<p>float: PP (Polypropylene)</p> <p>cable:</p> <ul style="list-style-type: none"> <li>- PUR version: PUR cable, highly flexible (4 x 0.50 mm<sup>2</sup>)</li> <li>- CSM/CM version: CSM/CM cable (4 x 0.75 mm<sup>2</sup>)</li> <li>- TPK version: TPK cable (4 x 0.75 mm<sup>2</sup>)</li> </ul>
Switching point		<p>switch angle, measured against the horizontal:</p> <ul style="list-style-type: none"> <li>- upper switch point +15° ±5°</li> <li>- lower switch point -15° ±5°</li> </ul>
<b>General information</b>		
Supplementary information		Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .
<b>Accessories</b>		
Designation		<ul style="list-style-type: none"> <li>- LFL-Z231, counter nut, G1A, PVC</li> <li>- LFL-Z32, counter weight, grey cast iron with plastic coating (Polycarbonate)</li> <li>- LFL-Z33, counter weight, grey cast iron with ECTFE coating (Halar)</li> <li>- LFL-Z131, gland screw connection G1A, PVC</li> <li>- LFL-Z132, gland screw connection G1A, brass</li> <li>- LFL-Z161, gland screw connection G2A, PVC</li> <li>- LFL-Z431, gland screw connection 1 NPT, PVC</li> <li>- LFL-Z461, gland screw connection 2 NPT, PVC</li> </ul>

## Safety Information

Users should take appropriate precautions when using accessories in explosion-hazardous areas. The counter weights LFL-Z32 and LFL-Z33 must not be used in explosion-hazardous area.

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 **PEPPERL+FUCHS**

## Type Code

This overview does not mark options which are mutually exclusive.

L	F	L	4	-	(1)	K	-	A	2	-	(2)	-	(3)
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<b>LFL4</b>	<b>Device</b>
LFL4	Switching contact with switching ball

<b>(1)</b>	<b>Float</b>
B	Ball
C	Sleeve

<b>K</b>	<b>Float material</b>
K	Plastic PP

<b>A2</b>	<b>Electrical output</b>
A2	PNP output stage

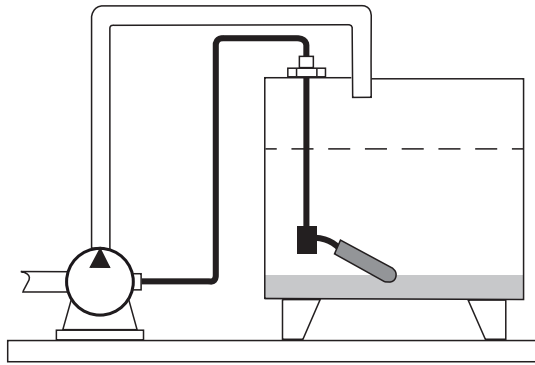
<b>(2)</b>	<b>Cable material</b>
CSM	CSM/CM
PUR	PUR
TPK	TPK

<b>(3)</b>	<b>Cable length</b>
03	3 m
05	5 m
06	6 m
10	10 m

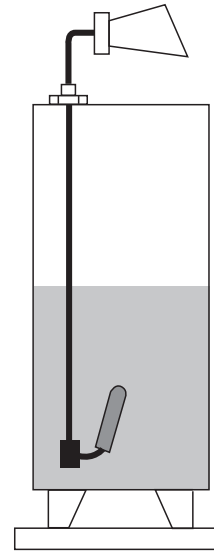
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**Application**

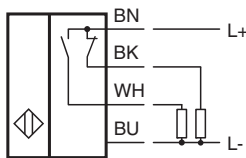
Level control via pump



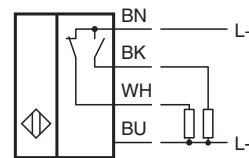
Level message via switching signal



Minimum fail safe mode connection



Maximum fail safe mode connection



**Mounting**

Mount the float switch in the following way:

- Insert the float switch into the tank through a tapped hole G1A.
- Screw the float switch with the gland screw connection G1A.
- If it is installed from above, use the counter weight LFL-Z32 or LFL-Z33 for mounting.



*The fulcrum of the cable should always be horizontal.*

*The cable length between the fixture and the floating body is dependent on the cable type.*

*When using the counter weight, place an extra strain relief (e. g. a knot in the cable) behind the gland screw connection – on the outside of the tank.*

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