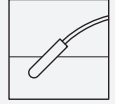




## Float Switch

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



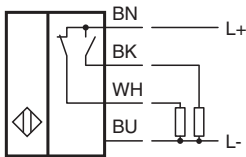
- Switch element: float switch with initiator, **mercury-free**
- Electrical connection with PNP output stage
- Limit value detection for fluids
- Sleeve design: small diameter, mounting through G1 tap hole possible
- Ball design: high buoyancy



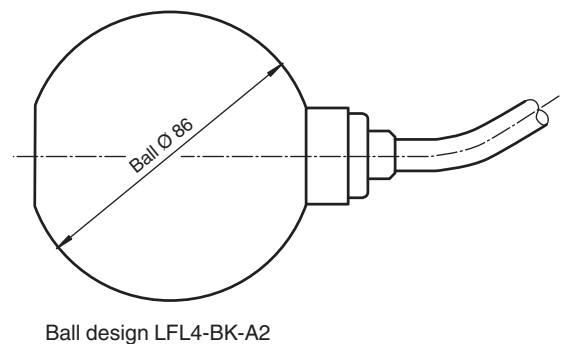
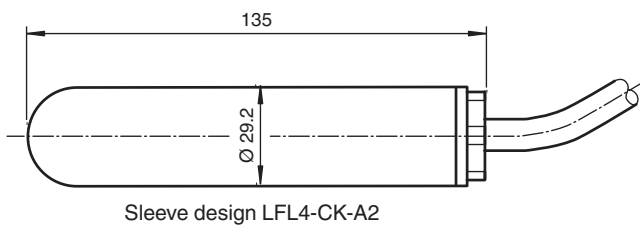
### Function

The device has an initiator built into a PP float. This initiator switches in 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 | Inductive sensor with switching ball |
| Series            | LFL4                                 |

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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>Cable:</p> <ul style="list-style-type: none"> <li>- CSM/CM version: -20 ... 70 °C (-4 ... 158 °F)</li> <li>- PUR version: -20 ... 70 °C (-4 ... 158 °F)</li> <li>- TPK version: 5 ... 70 °C (41 ... 158 °F)</li> <li>- TPKF version: 5 ... 70 °C (41 ... 158 °F)</li> </ul>   |
| 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>- CSM/CM version: Ø6.7 mm</li> <li>- PUR version: Ø4.8 mm</li> <li>- TPK version: Ø6.9 mm</li> <li>- TPKF version: Ø5.9 mm</li> </ul>  |
| <b>Mechanical construction</b>     |                |  |
| Material                           |                | <p>float: PP (Polypropylene)</p> <p>cable:</p> <ul style="list-style-type: none"> <li>- CSM/CM version: CSM/CM cable (4 x 0.75 mm<sup>2</sup>)</li> <li>- PUR version: PUR cable, highly flexible (4 x 0.50 mm<sup>2</sup>)</li> <li>- TPK version: TPK cable (4 x 0.75 mm<sup>2</sup>)</li> <li>- TPKF version: TPK cable, flexible (4 x 0.34 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.

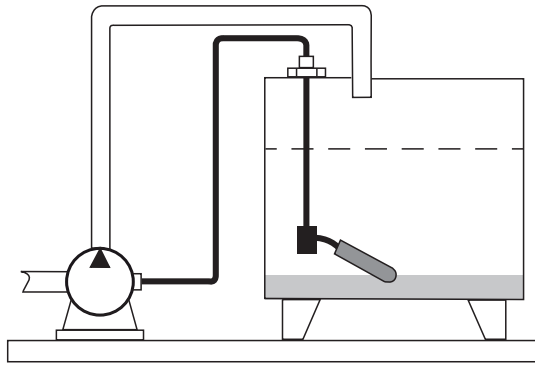
## Type Code

This overview does not mark options which are mutually exclusive.

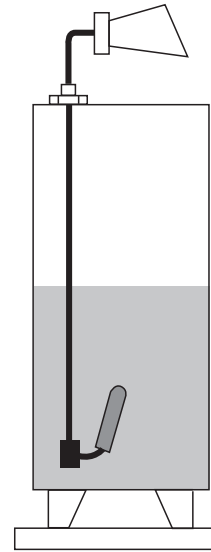
|             |                                       |   |   |   |     |   |   |   |   |   |     |   |     |
|-------------|---------------------------------------|---|---|---|-----|---|---|---|---|---|-----|---|-----|
| L           | F                                     | L | 4 | - | (1) | K | - | A | 2 | - | (2) | - | (3) |
| <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                                   |   |   |   |     |   |   |   |   |   |     |   |     |
| TPKF        | TPK flexible                          |   |   |   |     |   |   |   |   |   |     |   |     |
| <b>(3)</b>  | <b>Cable length</b>                   |   |   |   |     |   |   |   |   |   |     |   |     |
| 03          | 3 m                                   |   |   |   |     |   |   |   |   |   |     |   |     |
| 05          | 5 m                                   |   |   |   |     |   |   |   |   |   |     |   |     |
| 06          | 6 m                                   |   |   |   |     |   |   |   |   |   |     |   |     |
| 10          | 10 m                                  |   |   |   |     |   |   |   |   |   |     |   |     |

**Application**

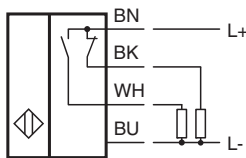
Level control via pump



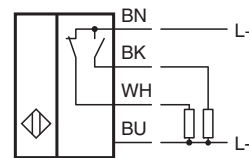
Level message via switching signal



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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