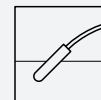




## Float Switch

### LFL2-BK-U-PUR15-EMS

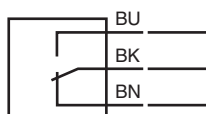
- Switch element: microswitch, **mercury-free**
- Limit value detection for fluids
- Ball design: high buoyancy



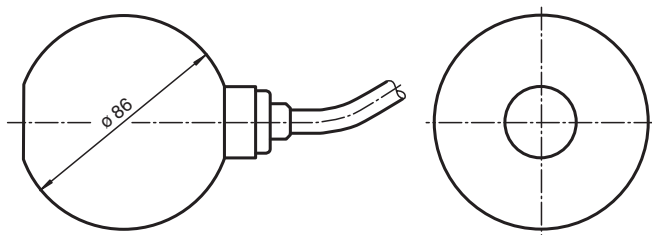
## Function

The microswitch (change-over contact) is integrated in a PP float and is activated in the event of deviations from the horizontal position. The switching ball in the float, which moves along an axis, activates the microswitch.

## Connection



## Dimensions



## Technical Data

### Electrical specifications

|                          |                                                                          |
|--------------------------|--------------------------------------------------------------------------|
| Contact loading          | 250 V AC/3 A; 150 V DC/0.25 A resistive load; 60 V DC/1 A resistive load |
| Rated insulation voltage | 300 V                                                                    |

Release date: 2020-10-05 Date of issue: 2020-10-05 Filename: 70124504\_eng.pdf

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

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0002  
pa-info@us.pepperl-fuchs.com

Germany: +49 621 776 2222  
pa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091  
pa-info@sg.pepperl-fuchs.com

 **PEPPERL+FUCHS**

## Technical Data

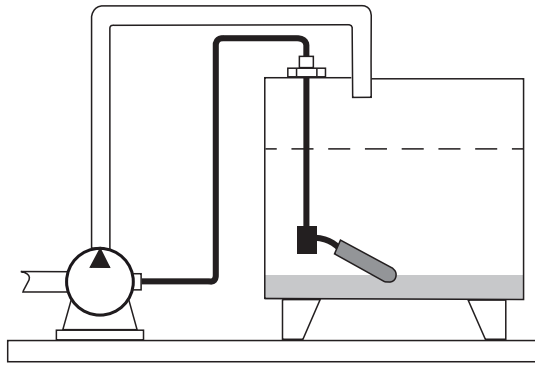
|                                    |                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pulse withstand voltage            | 4 kV                                                                                                                                                                                                                                                                                                                            |
| Electrical life                    | ≥ 5 x 10 <sup>4</sup> switching cycles                                                                                                                                                                                                                                                                                          |
| <b>Directive conformity</b>        |                                                                                                                                                                                                                                                                                                                                 |
| Low voltage                        |                                                                                                                                                                                                                                                                                                                                 |
| Directive 2014/35/EU               | EN 60947-5-1:2004 + Cor.:2005 + A1:2009                                                                                                                                                                                                                                                                                         |
| <b>Conformity</b>                  |                                                                                                                                                                                                                                                                                                                                 |
| Degree of protection               | IEC 60529:2001                                                                                                                                                                                                                                                                                                                  |
| <b>Application</b>                 |                                                                                                                                                                                                                                                                                                                                 |
| Description                        | microswitch with switching ball, change-over contact                                                                                                                                                                                                                                                                            |
| <b>Function and system design</b>  |                                                                                                                                                                                                                                                                                                                                 |
| Equipment architecture             | This device may be used with any sequential circuit, as long as the circuit can support the electrical circuit values of the switching elements.                                                                                                                                                                                |
| <b>Operating conditions</b>        |                                                                                                                                                                                                                                                                                                                                 |
| <b>Installation conditions</b>     |                                                                                                                                                                                                                                                                                                                                 |
| Installation instructions          | range of application and minimum length between mounting and float:<br>≥ 100 mm (4 inch), preferred for fuels, heating oils, oily fluids<br>mounting:<br>The float switch is mounted by means of a counter weight or rods (e. g. float switch combination) from the top.<br>The pivot of the cable should always be horizontal. |
| <b>Process conditions</b>          |                                                                                                                                                                                                                                                                                                                                 |
| Process pressure (static pressure) | ≤ 2 bar (29 psi) at 20 °C (68 °F)                                                                                                                                                                                                                                                                                               |
| Density                            | ≥ 0.6 g/cm <sup>3</sup>                                                                                                                                                                                                                                                                                                         |
| <b>Ambient conditions</b>          |                                                                                                                                                                                                                                                                                                                                 |
| Ambient temperature                | 5 ... 70 °C (41 ... 158 °F)                                                                                                                                                                                                                                                                                                     |
| Storage temperature                | -25 ... 70 °C (-13 ... 158 °F)                                                                                                                                                                                                                                                                                                  |
| Altitude                           | ≤ 2000 m above MSL                                                                                                                                                                                                                                                                                                              |
| <b>Mechanical specifications</b>   |                                                                                                                                                                                                                                                                                                                                 |
| Degree of protection               | IP68                                                                                                                                                                                                                                                                                                                            |
| Cable                              |                                                                                                                                                                                                                                                                                                                                 |
| Length                             | L 15 m                                                                                                                                                                                                                                                                                                                          |
| <b>Mechanical construction</b>     |                                                                                                                                                                                                                                                                                                                                 |
| Material                           | float: PP (Polypropylene)<br>cable: PUR, highly flexible (3 x 0.50 mm <sup>2</sup> )                                                                                                                                                                                                                                            |
| Switching point                    | switch angle, measured against the horizontal:<br>- upper switch point +25° ±10°<br>- lower switch point -14° ±10°                                                                                                                                                                                                              |
| <b>General information</b>         |                                                                                                                                                                                                                                                                                                                                 |
| Supplementary information          | Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .                                                                                                     |

## Accessories

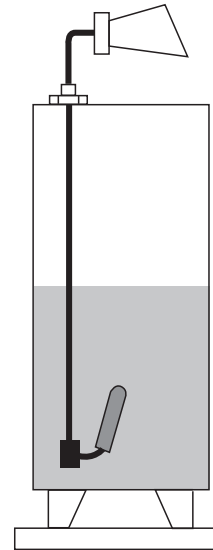
|                                                                                     |                     |                                 |
|-------------------------------------------------------------------------------------|---------------------|---------------------------------|
|  | <b>LFL-Z132-EMS</b> | Gland screw connection          |
|  | <b>LFL-Z32-EMS</b>  | Ballast weight for float switch |

## Application

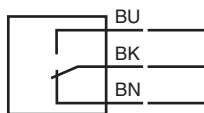
Level control via pump



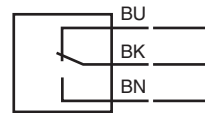
Level message via switching signal



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.*