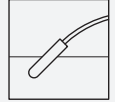




# Float Switch

## LFL2-\*\*-U



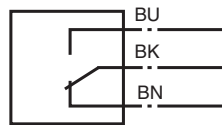
- Switch element: microswitch, **mercury-free**
- Limit value detection for fluids
- Sleeve design: small diameter, mounting through G1 tap hole possible
- Ball design: high buoyancy



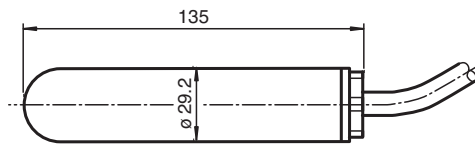
### Function

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.

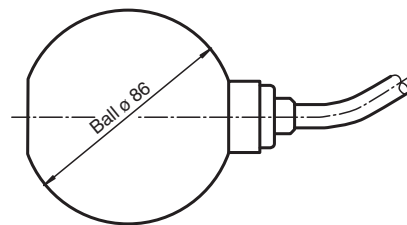
### Connection



### Dimensions



Sleeve design LFL2-CK-U



Ball design LFL2-BK-U

### Technical Data

#### General specifications

Construction type	microswitch with switching ball, change-over contact
Series	LFL2-**-U

#### Electrical specifications

Contact loading	250 V AC/3 A; 150 V DC/0.25 A resistive load; 60 V DC/1 A resistive load
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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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## Technical Data

Rated insulation voltage	300 V
Pulse withstand voltage	4 kV
Electrical life	≥ 5 x 10 <sup>4</sup> switching cycles
<b>Output</b>	
Connection	volt-free change-over contact
<b>Directive conformity</b>	
Low voltage	
Directive 2014/35/EU	EN 60947-5-1:2017
<b>Conformity</b>	
Degree of protection	IEC 60529:2001
<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>	
Installation conditions	
Installation instructions	range of application and minimum length between mounting and float: - PVC version: ≥ 50 mm (2 inch), preferred for water - PUR version: ≥ 100 mm (4 inch), preferred for fuels, heating oils, oily fluids - CSM/CM version: ≥ 100 mm (4 inch), preferred for many acids and lyes - TPK version: ≥ 100 mm (4 inch), preferred for many acids and lyes mounting: - The float switch is mounted either from sideways through a cable gland ≥ G1A into the vessel or - 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.
Process conditions	
Process pressure (static pressure)	sleeve design: ≤ 3 bar at 20 °C (68 °F) ball design: ≤ 2 bar at 20 °C (68 °F)
Density	sleeve design: ≥ 0.8 g/cm <sup>3</sup> ball design: ≥ 0.6 g/cm <sup>3</sup>
<b>Ambient conditions</b>	
Ambient temperature	PVC version: 5 ... 70 °C (41 ... 158 °F) PUR version: 5 ... 70 °C (41 ... 158 °F) CSM/CM version: -20 ... 70 °C (-4 ... 158 °F) TPK version: 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
<b>Mechanical construction</b>	
Material	float: PP (Polypropylene) cable: - PVC version: PVC cable, highly flexible (3 x 0.75 mm <sup>2</sup> ) - PUR version: PUR cable, highly flexible (3 x 0.50 mm <sup>2</sup> ) - CSM/CM version: CSM/CM cable (chlorinated polyethylene, (3 x 0.75 mm <sup>2</sup> )) - TPK version: TPK cable, (3 x 0.75 mm <sup>2</sup> )
Switching point	switch angle, measured against the horizontal: - upper switch point +25° ±10° - lower switch point -14° ±10°
<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	- LFL-Z231, counter nut, G1A, PVC - LFL-Z32, counter weight, grey cast iron with plastic coating (Polycarbonate) - LFL-Z33, counter weight, grey cast iron with ECTFE coating (Halar) - LFL-Z131, gland screw connection G1A, PVC - LFL-Z132, gland screw connection G1A, brass - LFL-Z161, gland screw connection G2A, PVC - LFL-Z431, gland screw connection 1 NPT, PVC - LFL-Z461, gland screw connection 2 NPT, PVC

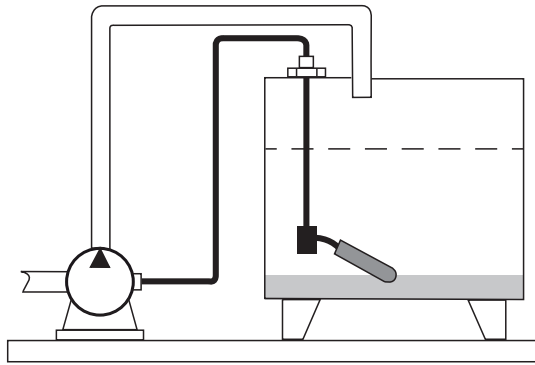
## Type Code

This overview does not mark options which are mutually exclusive.

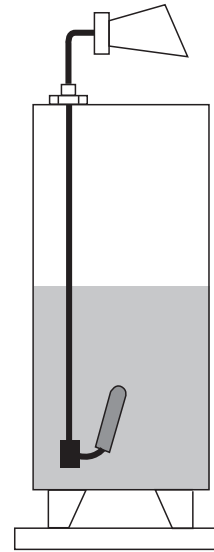
<b>L</b>	<b>F</b>	<b>L</b>	<b>2</b>	<b>-</b>	<b>(1)</b>	<b>K</b>	<b>-</b>	<b>U</b>	<b>-</b>	<b>(2)</b>	<b>(3)</b>
<b>LFL</b>		<b>Device</b>									
LFL		Float switch									
<b>2</b>		<b>Switching element</b>									
2		Micro switch with switching ball									
<b>(1)</b>		<b>Float</b>									
B		Ball									
C		Sleeve									
<b>K</b>		<b>Float material</b>									
K		Plastic PP									
<b>U</b>		<b>Electrical output</b>									
U		Changeover contact, 250 V AC, 150 V DC									
<b>(2)</b>		<b>Cable material</b>									
CSM		CSM/CM									
PUR		PUR									
PVC		PVC									
TPK		TPK									
<b>(3)</b>		<b>Cable length</b>									
03		3 m									
05		5 m									
10		10 m									

**Application**

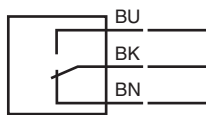
Level control via pump



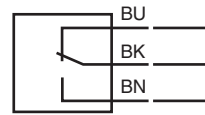
Level message via switching signal



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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