

## Operating Instructions

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► **Read these Safety instructions before using the switch for the first time and follow the Operating instructions.**

### **Safety instructions**

1. The installation, initial operation and maintenance should only be carried out by a qualified expert with electrical know-how.
2. Comply with the local and statutory rules and/or the VDE0100.
3. Before electrical connection, check the specifications on the data plate and the technical data of this manual.
4. A fuse must be connected in series to the supply voltage, according to the Standard and Normative documents.
5. Protect the signal contacts of the limit switch against voltage peaks when inductive or capacitive loads are connected.
6. The device may be put into operation only if the electrical connection is correct. To secure the type of protection, the sealing cap and the gasket must be placed correctly and the screw nut of the cable gland has to be fixed and fastened to the cable entry.
7. The earth connection of the device has to be installed in such a way that mechanical damage will be excluded.
8. For a correct use of the level switch, the counterweight must not touch the bottom of the tank and it is necessary to ensure the free movement of the counterweight.
9. Switch off the power supply, before disconnecting the device.

## Operating instructions

### 1. Specification

#### 1.1 Intended use

The float level switch B-1 is used to keep between 2 points the level of liquid like water, oil, chemical products, etc., conductive or not, in tanks or recipients at atmospheric pressure.

#### 1.2 Function

The B-1 bases its work due to the movement of a float. When the level of liquid rises up, the float reaches the mechanical stop and pull up the lower counterweight. This enables the action of the lever and reverses the position of the switch.

The adjustment of the commutation of the switch is obtained adjusting the mechanical stops at the desired cable point. If the float is blocked with the mechanical stops, it can be obtained only one punctual signal.

#### 1.3 Technical data

<b>Manufacturer</b>	Talleres Filsa, S.A.U.	
<b>Address</b>	Bernat Metge, 33 08100 Mollet del Vallès (Barcelona)	
<b>Name</b>	Float switch	
<b>Type</b>	<b>B-1</b>	ref: <b>2505</b>
	<b>B-1 2P</b>	ref: <b>2505-2P</b>
	<b>B-1P</b>	ref: <b>2505-P</b>
<b>Cable length</b>	Standard 2.000 mm	
(Other lengths under request)		
<b>Product density</b>		
	<b>B-1</b>	0.5 kg/l
	<b>B-1 2P</b>	0.7 kg/l
	<b>B-1P</b>	0.8 kg/l
<b>Tank pressure</b>	Atmospherical	
<b>Cable entry</b>	3 of M20x1.5	
<b>Switching voltage</b>	240 V AC	
<b>Switching function</b>	1 NO + 1 NC Double-Pole Double-Throw (DPDT)	
<b>Capacity of the contact</b>	3 A / 240 V AC (for resistive loads)	
For inductive or capacitive loads, reduce at 50%		
<b>Liquid temperature</b>		
	<b>B-1 and B-1 2P</b>	-20 °C ... +300 °C
	<b>B-1P</b>	-20 °C ... +60 °C
<b>Switch temperature</b>	-20 °C ... +70 °C	
<b>Protection</b>	IP66 according DIN EN60529	
<b>Weight</b>	0.30 kg	

#### Float weight

<b>B-1</b>	0.18 kg
<b>B-1 2P</b>	0.10 kg
<b>B-1P</b>	0.23 kg

#### Counterweight weight

0.16 kg

#### 1.4 Materials

**Switch** Aluminium

#### Float

<b>B-1 and B-1 2P</b>	Stainless Steel 1.4401
<b>B-1P</b>	Low pressure Polyetilene

#### Counterweight

Stainless Steel 1.4305

#### Mechanical stops

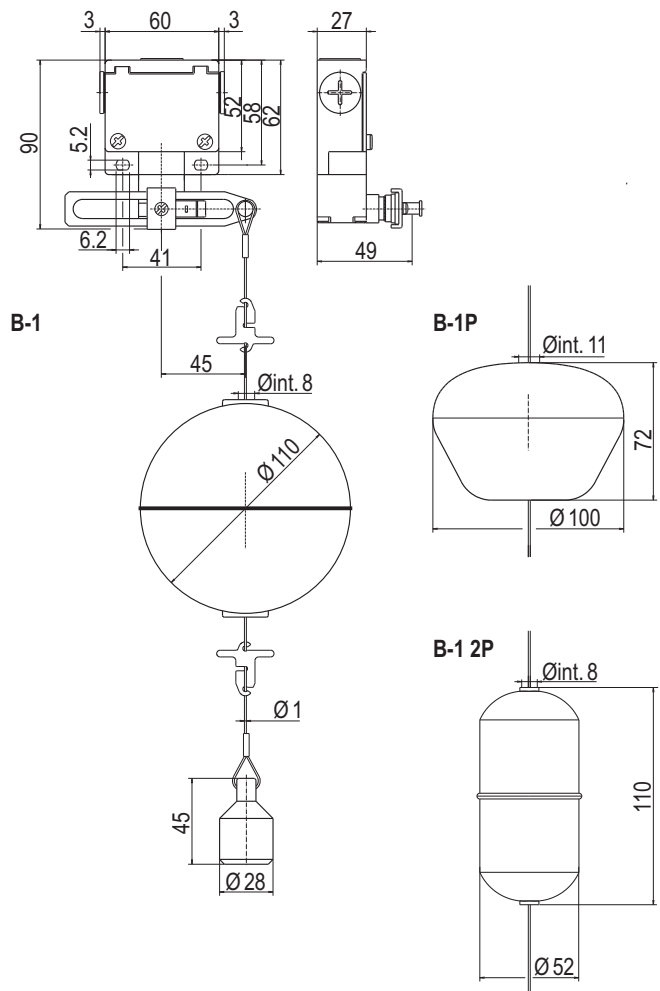
Stainless Steel 1.4301

#### Cable

<b>B-1 and B-1 2P</b>	Stainless Steel 1.4401
<b>B-1P</b>	Nylon

#### 1.5 Dimensions

Approximate measures are given in mm.



B1-001

## 2. Installation

### 2.1 Preparing for use

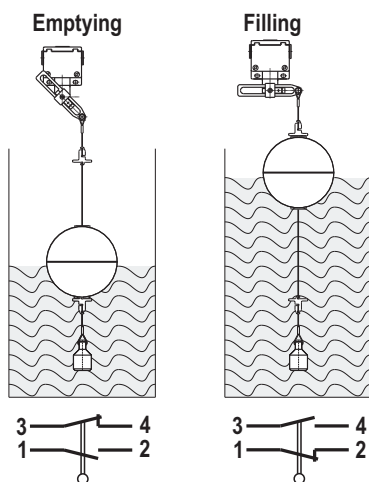
- Read the Safety Instructions and the Operation Instructions before using the controller.
- Verify if you have got all the parts:
  - Housing.
  - Float.
  - Counterweight, cable and mechanical stops.
- The controller has to be mounted in a way that the incoming liquid does not hit the float and does not make turbulence in its side.

### 2.2 Mechanical connection

It is simple: the float must be vertically installed on the top of the tank with an appropriate support to fix it. The tank can have a cap to preserve the liquid against dust. Just a little hole in the cap allows the free movement of the cable.

### 2.3 Electrical connection

#### Connection diagram



B1-002

#### Cable gland

- Fasten the cable gland after making the electrical connection.
- Fix and fasten the screw nut of the cable gland to make sure of the water-tightness.

## 3. Use

### 3.1 Commissioning

- Put the controller into operation only if the installation and the electrical connection have been done correctly.

### 3.2 Normal operation

- Use the float switch in its intended application only.
- Comply with the specifications on the data plate and the technical data of this manual.
- If the controller is damaged, disconnect it immediately.
- It is forbidden to make changes to the device. This violates the Normative.

### 3.3 Inexpert handling

- Ignoring the Safety instructions and the Operating instructions.
- Not intended use.
- Making changes or handling the float switch.
- Violation against applicable Law and Standards.
- Using of non original parts.

## 4. Maintenance, servicing and spare parts

### 4.1 Maintenance

- If used correctly, no specific maintenance is required.

### 4.2 Servicing

- Check and review the state of the switch, the cable, the float, the mechanical stops, the counterweight and the correct commutation of the electrical contact, as well.

### 4.3 Spare parts

- Use only original parts.
- The spare parts of the controllers are the cable, the float, the counterweight and the mechanical stops.

## 5. Storage

- Store the controller in a dry and dust-free environment.

## 6. Disposal

- Switch off the power supply, before disconnecting the device.
- The controller can be recycled.
- The disposal applies to the valid environmental Guidelines according to the location of the carrier and the local manufacturing conditions.

FILSA constantly strives to improve its products and reserves the right to modify designs, materials and data without prior notice.

Keep this manual for further questions!