

► Read and follow these safety instructions first and take notice of the operating instructions.

Safety instructions

1. The installation, initial operation and maintenance may be done by a qualified expert with electrical know-how only.
2. For the electrical connection take notice of the local and statutory rules and regulations and/or the VDE 0100.
3. Take notice of the characteristics at the data plate.
4. A fuse (with max. 4A) has to be connected in series to the voltage supply.
5. Protect the signal contact from voltage peaks when inductive loads are connected.
6. The device may put into operation if it is closed, only.
7. Switch off the power supply, before opening the device. (touchdangerous voltage)

Operating instructions

1. Description

1.1 Intended use

The level indicator observes the filling level as a limit switch in silos and containers. It can be used as full, demand and empty indicator for dusty and powdery, granulated and grainy bulk goods with a max. grain size up to 100mm and with a bulk density of 0,3 ... 2,5 t/m³.

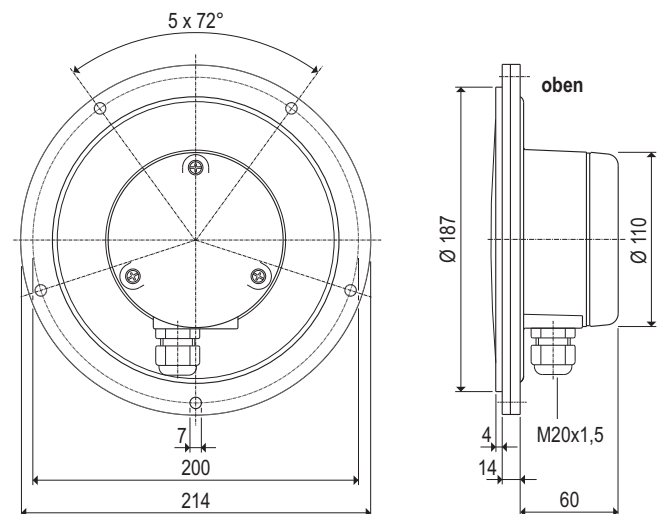
1.2 Function

The bulk material presses with its weight against the membrane. A tappet directly transfers the pressure from the membrane to the switch. When the bulk goods are decreasing, pressure is taken off the membrane and the switch will be interconnected.

1.3 Technical data

Manufacturer	Talleres Filsa, S.A.U.		
Address	Bernat Metge, 33 08100 Mollet del Vallés (Barcelona-Spain)		
Name	Membrane level indicator		
Type	AD		
Bulk goods	NBR	T_s	-20 °C ... +80 °C
temperature	VITON		-20 °C ... +150 °C
	Stainless steel 304		-30 °C ... +200 °C
Ambient temperature		T_a	-20 °C ... +80 °C
Signal contact	change-over contact, potentialfree		
Capacity of the contact	Contact	4 A / 250 V AC	
Switching voltage		24 V ... 250 V AC	
		or	12 V ... 125 V DC
Response delay	none		
Cable entry	Cable gland M20x1,5		
Type of protection	IP	IP40	
acc. to DIN EN 60529		IP53 if cable gland is downwards	
		IP65 with stainless steel membrane	
Overpressure safety	up to 5 bar		
Weight	1,85 kg		
Maintenance	none		
Mounting position	any position		

1.4 Dimensions



002-0205

1.5 Sensitivity adjustable

with membrane	NBR	from 100 g ... 200 g
with membrane	VITON	from 100 g ... 200 g
with membrane	Stainless steel	from 200 g ... 500 g

1.6 Materials

Housing	Aluminium	
Type	Membrane	Mounting ring
AD	= NBR	Aluminium
under petition with:		Stainless steel 304
AD VITON	= VITON	Aluminium
under petition with:		Stainless steel 304
AD INOX	= Stainless steel 304	Aluminium
under petition with:		Stainless steel 304

2. Installation

2.1 Preparation

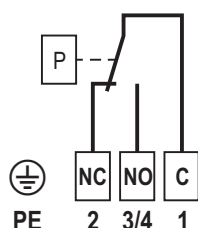
- Read and follow the safety instructions and the operating instructions before handling with the device
- Check the membrane after unpacking by visual inspection if there is no damage in transport.

2.2 Mechanical connections

- Put the membrane level indicator together with the sealing at the flange of the silo or container and screw it tightly with screws M6 and washers.

2.3 Electrical connection

Connection plan



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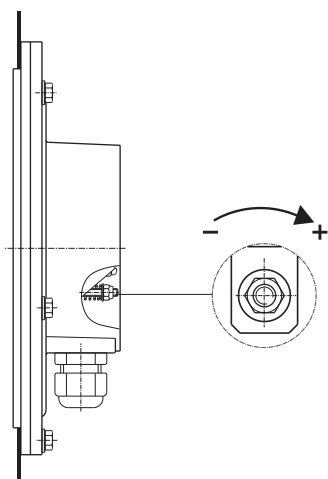
2.4 Cable gland

After the electrical connection

- the cable gland has to be screwed tightly,
- the cap nut has to be screwed until the cable gland is fixed and closed tightly.

3. Putting into operation

- Put the membrane level indicator into operation only, when the installation, in the container or silo has been done correctly and when it has been fixed tightly with the electrical connection.
- The membrane level indicator is preset at sensitive.
- With the adjusting screw the device can be adjustable insensitive.



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4. Utilization

4.1 Normal operation

- Use the membrane level indicator in its intended application only.
- The membrane level indicator is provided for use in silos or containers with pressureless operation.
- Comply with the details about max. temperatures, stated on the data plate. Check the membrane of the level indicator, when the permissible temperature of bulk goods was exceeded or was fallen short off.
- Take the level indicator immediately out of operation if the device is damaged.

4.2 Inexpert handling

- Ignoring of the safety instructions and the operating instructions.
- Utilization of the membrane level indicator in not intended use.
- Mounting of spare parts which are no original parts.
- Violation against applicable law and standards.

5. Maintenance and servicing

5.1 General information

- Do maintenance work at the level indicator only, if the silo or the container is empty and if there is no overpressure or vacuum.
- Use original spare parts only.

5.2 Maintenance

- Inspect in regular intervals if there is any wear or abrasion at the indicator's membrane. Define the control intervals, depending on the characteristics of the bulk goods.
- In case of damage or abrasion, replace the membrane immediately with a new membrane.

5.3 Servicing

- Damaged parts, contacts or connections have to be repaired immediately or being replaced with parts of the same kind.
- Until the complete restoration of the proper function, the membrane level indicator must not be used any more.

6. Storage

- Store the membrane level indicator at a dry place.
- Protect the membrane from pointed objects as well as from strong radiation from the sun.

7. Disposal

- The level indicator can be recycled.
- The disposal applies to the valid environmental guidelines according to the location of the carrier and the local manufacturing conditions.