



By use in explosive hazardous areas read and follow the

## special conditions and instructions for safe application

of the attached

## explosive protection information

# B0



first and take notice of the operating instructions.

## Operating instructions

### 1. Description

#### 1.1 Intended use

The level indicator observes the filling level as a limit switch in silos and vessels. 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 100 mm and with a bulk density of 0.3 t/m<sup>3</sup>... 2.5 t/m<sup>3</sup>.

#### 1.2 Function

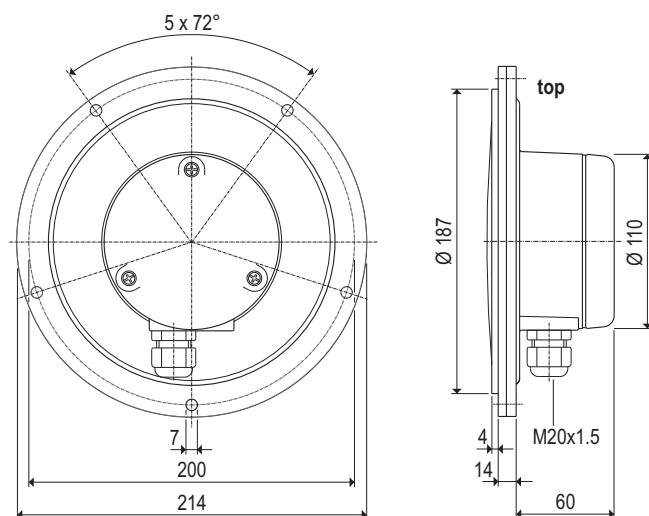
The bulk goods presses with its weight against the membrane. A tappet directly transfers the pressure from the membrane to the switch. When the bulk goods are decreasing, pressure is taken off the membrane and the switch will be interconnected.

#### 1.3 Technical data

<b>Manufacturer</b>	<b>MOLLET</b>
	<b>Füllstandtechnik GmbH</b>
<b>Address</b>	Industriepark RIO 103 74706 Osterburken
<b>Name</b>	Membrane level indicator
<b>Type</b>	<b>MFB-B0</b>
<b>Bulk goods</b>	NBR
<b>temperature</b>	VITON
	Stainless steel 304
<b>Ambient temperature</b>	<b>T<sub>s</sub></b> -20 °C ... +80 °C
	-20 °C ... +150 °C
	-30 °C ... +200 °C
<b>Signal contact</b>	<b>T<sub>a</sub></b> -20 °C ... +80 °C
<b>max. Switching voltage</b>	change-over contact, potentialfree
<b>max. Braking capacity</b>	see Type plate
	<b>Contact</b> see Type plate

<b>Response delay</b>	none
<b>Cable entry</b>	Cable gland M20x1.5
<b>Cable connection</b>	Scrwe M4 for cable socket
<b>Type of protection</b>	<b>IP40</b>
acc. to DIN EN 60529	<b>IP53</b> if cable gland is downwards
	<b>IP65</b> with stainless steel membrane
<b>Overpressure safety</b>	up to 5 bar
<b>Weight</b>	1.85 kg
<b>Maintenance</b>	none
<b>Mounting position</b>	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

<b>Housing</b>	Aluminium
<b>Type</b>	<b>Membrane</b>
<b>MFB-NA</b>	= NBR
<b>MFB-NE</b>	= NBR
<b>MFB-VA</b>	= VITON
<b>MFB-VE</b>	= VITON
<b>MFB-EA</b>	= Stainless steel 304
<b>MFB-EE</b>	= Stainless steel 304
	<b>Mounting ring</b>
	Aluminium
	Stainless steel 1.4301 / 304
	Aluminium
	Stainless steel 1.4301 / 304
	Aluminium
	Stainless steel 1.4301 / 304

## 2. Installation

### 2.1 Preparation

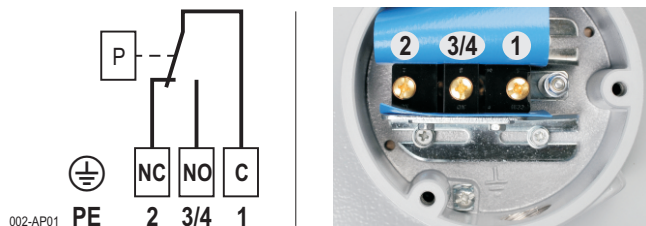
- Check the membrane of visual transport damage.
- Read and follow the safety instructions and the operating instructions, before handling with the device !

### 2.2 Mounting in the vessel

Position the level indicator with the gasket at the provided flange and fix it with 5 washers and screws M6.

### 2.3 Electrical connection

Circuit diagram



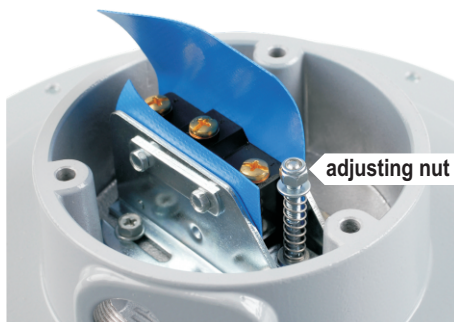
002-AP01

### 2.4 Cable gland

- After electrical connection, tighten the cable gland.
- Screw the cap nut, until the cable entry is closed tightly.

## 3. Commissioning

- Put the level indicator into operation only, if the installation and the electrical connection have been done correctly.
- The level indicator is presetted at sensitive.
- With the adjusting nut the device can be adjustable insensitive. Clockwise insensitive.



## 4. Utilization

### 4.1 Normal operation

- Use the level indicator in its intended application only.
- The level indicator is provided for use in silos or vessels with pressureless operation.
- Comply with the specifications 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.
- Damaged devices have to put out of operation immediately.

### 4.2 Inexpert handling

- Ignoring of the safety instructions and the operating instructions.
- 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 informations

- Do maintenance work only, if the silo or the vessel 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 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 have immediately replaced with similar.
- Until the complete reconstruction of the proper function, the level indicator must not be used any more.

## 6. Storage

- Store the level indicator dry and dust-free.
- Protect the membrane against pointed objects and ultraviolet radiation.

## 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.



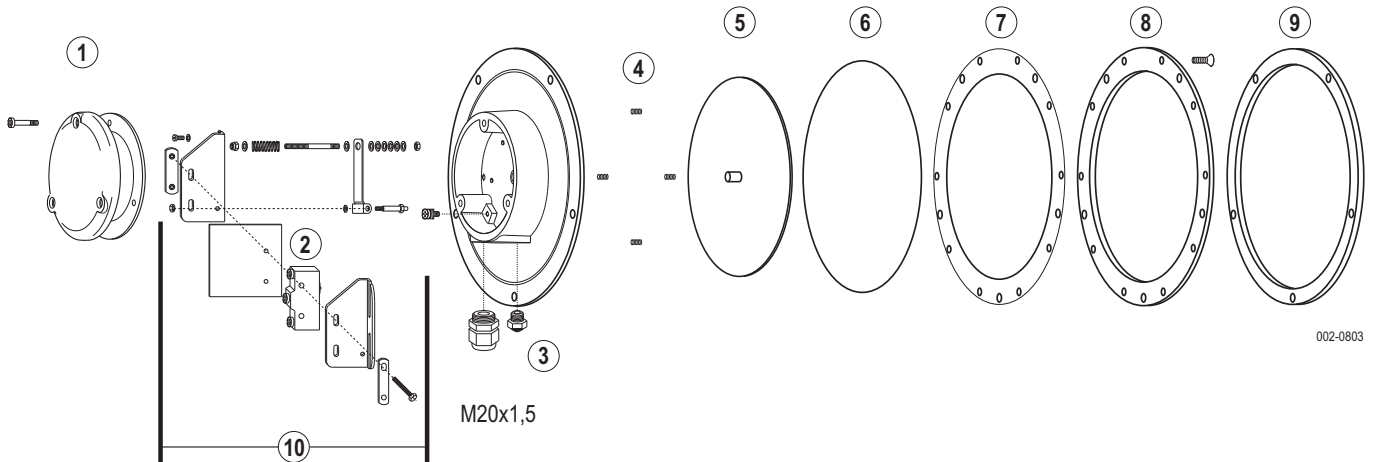
## Special conditions and instructions for safe application

1. The installation, maintenance, initial operation, removal and repair have to be controlled resp. checked by an “authorized person” for explosion protection.
2. Comply with the local and statutory rules and regulations and/or the VDE 0100.
3. Take notice of the temperature specifications 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. As soon as the device will be brought into the explosion hazardous area it has to be mounted immediately at the pre-caused place and a cable has to be brought into the cable gland.
7. Please check if the cable gland have loosened during on the mounting or at the transport. When it is loosened, it has to be fitted again with a torsional force of 3.75 Nm.
8. To secure the type of protection, the screw nut of the cable gland has to be fixed at the installation with a torsional force of min. 2.7 Nm.  
**ATTENTION!** If it will be fastened too strong, the IP-protection can be affected.
9. The earth connection of the device has to be installed in such a way that mechanical damage will be excluded.
10. The device may put into operation with built-in cap-sealing and when it is closed, only.
11. Switch off the power supply, before opening the device. (touchdangerous voltage)
12. Depending on the bulk goods characteristics and the wear, the carrier has to define resp. to find out in which intervals the membrane of the level indicator has to be checked for leakage to keep the type of protection (Dust-proof). This inspection has to be repeated regularly. If there is a fault, the membrane has to be replaced with a new membrane.
13. Take notice of the requirements of DIN EN 60079-14, DIN EN 60079-17 and DIN EN 1127-1, especially regarding the dust deposits and temperatures and follow the pertinent rules and regulations.
14. Clean the membrane with a moist towel only. Don't use any pointed objects or solvents.



 Ersatzteile / Spare parts

 **MFB**



Pos. Item	Benennung Reference	Bestellcode Order code	Werkstoff Material
1	Deckeldichtung / Cap seal	<b>MFB-DS01</b>	EDPM
2	Schalter / Switch	<b>Z-15G-B</b>	
3	Filter / Filter	<b>395028-AVS</b>	Messing / Brass
4	Feder / Spring	<b>MFB-FR01</b>	Federstahl / Spring steel
5	Membrane / Membrane <b>V</b> . Membrane / Membrane <b>N</b> .	<b>MFB-MB-VI</b> <b>MFB-MB-NR</b>	VITON NBR
6	Membrane / Membrane <b>E</b> .	<b>MFB-MB-VA</b>	Edelstahl 1.4301 / Stainless steel 304
7	Dichtring / Seal ring	<b>MFB-DS02</b>	
8	Haltering / Mounting ring . <b>E</b> Haltering / Mounting ring . <b>A</b>	<b>MFB-HR-VA</b> <b>MFB-HR-AL</b>	Edelstahl 1.4301 / Stainless steel 304 Aluminium
9	Flanschdichtung / Gasket	<b>MFB-FD01</b>	NBR-Schaumstoff / NBR foam
10	Ersatzteilpaket inkl. Schalter für <b>MFB-E</b> . Spare part kit incl. switch for <b>MFB-E</b> .	<b>MFB-EP11</b>	
10	Ersatzteilpaket inkl. Schalter für <b>MFB-V</b> . / <b>MFB-N</b> . Spare part kit incl. switch for <b>MFB-V</b> . / <b>MFB-N</b> .	<b>MFB-EP12</b>	



## EU-Konformitätserklärung EU-Declaration of Conformity

Wir/We

**MOLLET Füllstandtechnik GmbH**

Industriepark RIO 103  
D-74706 Osterburken  
Tel. 06291 64400 Fax 06291 9846

erklären in alleiniger Verantwortung, dass das Produkt:  
declares under our sole responsibility, that the product:

**Membran-Füllstand-Grenzscharter / Membrane limit switch**  
Membran-Füllstandanzeiger / Membrane level indicator



Typ/Type **MFB...**, **MFD...** und **PS...**

den folgenden Europäischen Richtlinien entspricht:  
conforms with the following European directives:

**Niederspannungsrichtlinie Low voltage directive 2014/35/EU**

Angewandte harmonisierte Normen oder normative Dokumente:  
Applied harmonized standards or normative documents:

**EN 61010-1:2010 EN 60529:1991 + A1:2000 + A2:2013**

Und die Geräte mit  - Kennzeichnung entsprechen zusätzlich der folgenden Europäischen Richtlinie:  
And the devices with  - marking conform additional with the following European directive:

**ATEX-Richtlinie ATEX directive 2014/34/EU**

Angewandte harmonisierte Normen oder normative Dokumente:  
Applied harmonized standards or normative documents:

**EN 60079-0:2012 + A11:2013 EN 60079-31:2014**

Qualitätssicherung:  
Quality assurance:

TÜV NORD CERT GmbH, 30159 Hannover (0044)

Osterburken, den 10.05.2016



Wolfgang Hageleit  
Geschäftsführer / managing director

Diese Erklärung darf nur unverändert weiterverbreitet werden.  
This declaration is only allowed to hand out in unchanged form.

