

► 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. 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. 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 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 30 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

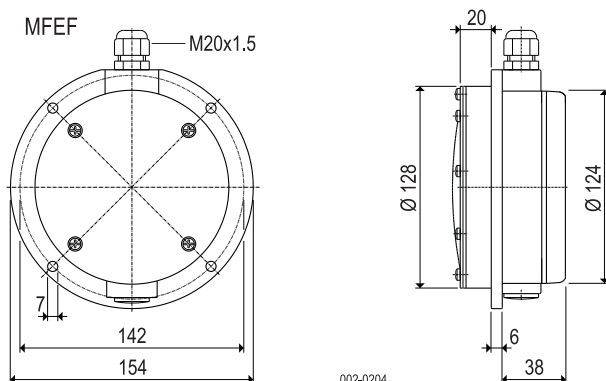
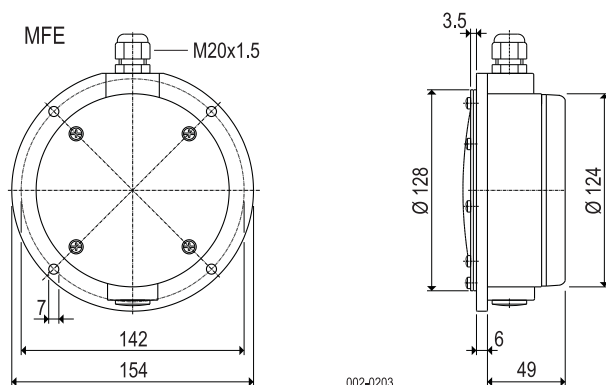
<b>Manufacturer</b>	<b>MOLLET</b> Füllstandtechnik GmbH
<b>Address</b>	Industriepark RIO 103 74706 Osterburken
<b>Name</b>	Membrane level indicator
<b>Type</b>	<b>MFE</b> (GFK) and <b>MFE-A</b> (Alu) <b>MFEF</b> (GFK) and <b>MFEF-A</b> (Alu)
<b>Temperature range</b>	GFK   Aluminium <b>Ta</b> -20 °C ... +60 °C   -25 °C ... +80 °C
<b>Signal contact</b>	change-over contact, potentialfree
<b>Capacity of the contact</b>	<b>Contact</b> 4 A / 250 V AC
<b>Switching voltage</b>	24 V ... 250 V AC or 12 V ... 125 V DC
<b>Response delay</b>	none
<b>Cable connection</b>	Screw M4
<b>Cable entry</b>	Cable gland M20x1.5
<b>Type of protection</b> acc. to DIN EN 60529	<b>IP</b> <b>IP40</b> <b>IP53</b> if cable gland is upwards <b>IP65</b> with stainless steel membrane <b>IP66</b> with aluminium housing
<b>Overpressure safety</b>	up to 1 bar
<b>Weight</b>	<b>MFE</b> 0.48 kg <b>MFE-A</b> 0.95 kg <b>MFEF</b> 0.49 kg <b>MFEF-A</b> 1.00 kg
<b>Maintenance</b>	none
<b>Mounting position</b>	any position

#### 1.4 Materials

Type	Housing
<b>MFE(F)- . .</b>	= GFK (glass-fibre reinforced plastics)
<b>MFE(F)-A . .</b>	= Aluminium

Type	Membrane	Mounting ring
<b>MFE(F)- . NN</b>	= NBR	Steel, galvanized
<b>MFE(F)- . VN</b>	= VITON	Steel, galvanized
<b>MFE(F)- . NE</b>	= NBR	Stainless steel 1.4301 / 304
<b>MFE(F)- . VE</b>	= VITON	Stainless steel 1.4301 / 304
<b>MFE(F)- . EE</b>	= 304	Stainless steel 1.4301 / 304

#### 1.5 Dimensions



## 2. Installation

### 2.1 Preparation

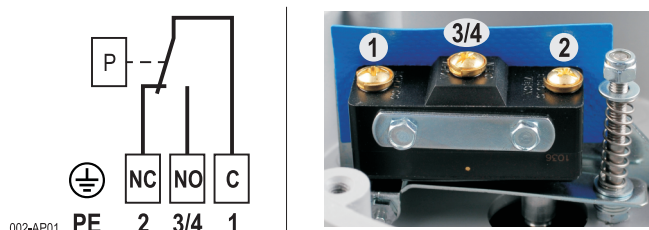
- Check the membrane of visual transport damage.
- Read and follow the safety instructions and the operating instructions, before handling with the device !

### 2.2 Mounting in the vessel

Position the level indicator with the gasket at the provided flange and fix it with 4 washers and screws M6.

### 2.3 Electrical connection

Circuit diagram



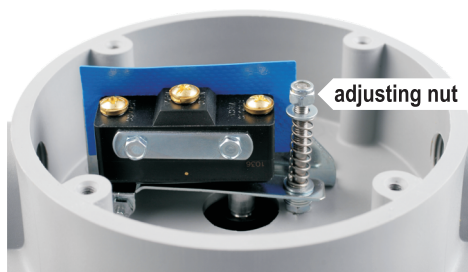
### 2.4 Cable gland

- 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.
- **Sensitivities** with membrane:
 

NBR	60 g ... 1000 g
VITON	60 g ... 1000 g
Stainless steel 1.4301 / 304	150 g ... 2000 g



## 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

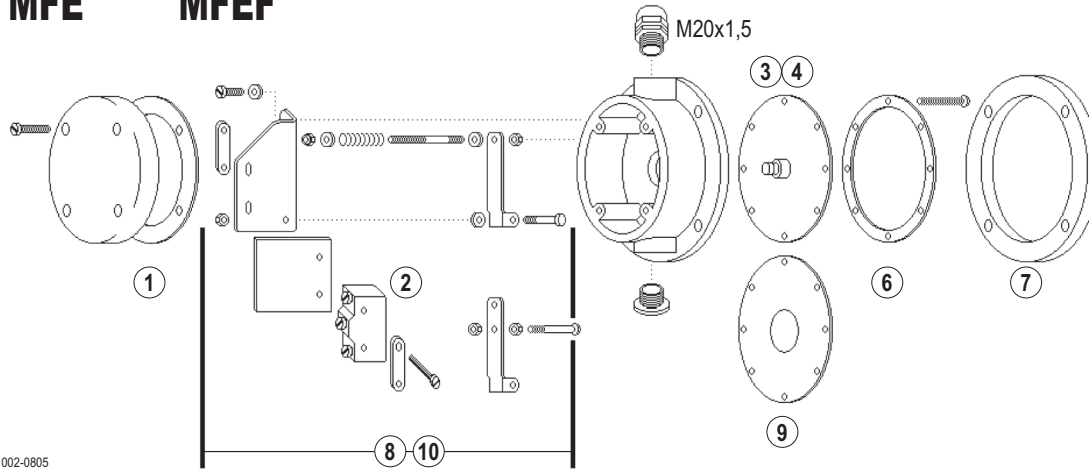
- Store the level indicator dry and dust-free.
- Protect the membrane against pointed objects and ultraviolet radiation.

## 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.

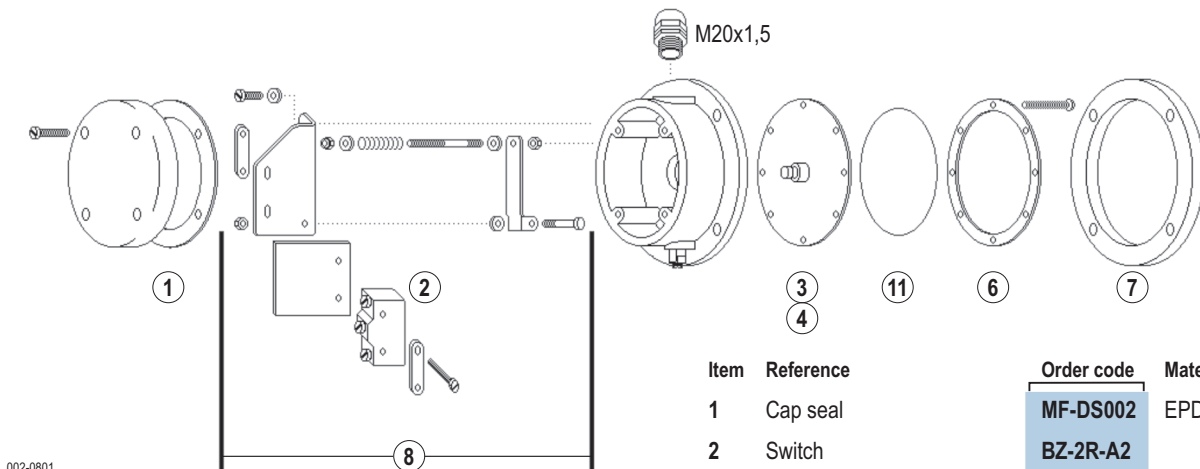
## Single parts

### MFE MFEF



Item	Reference	Order code	Material
1	Cap seal	<b>MF-DS001</b>	NBR
2	Switch	<b>BZ-2R-A2</b>	
3	Tappet	<b>MF-WE001</b>	Aluminium
4	Membrane N .	<b>MF-MB-NR</b>	Bulk solids touching membrane made of NBR
6	Mounting ring . N Mounting ring . E	<b>MF-HR-ST</b> <b>MF-HR-VA</b>	Steel, galvanized Stainless steel 304
7	Gasket	<b>MF-FD-NR</b>	NBR foam
8	Spare part kit incl. switch	<b>MF-EP001</b>	Design for bulk solids touching membrane made of NBR
9	Membrane V .	<b>MF-MB-VI</b>	Bulk solids touching membrane made of VITON
10	Spare part kit incl. switch	<b>MF-EP002</b>	Design for bulk solids touching membrane made of VITON

### MFE-EE-B3 MFEF-EE-B3 MFE-AEE MFEF-AEE



Item	Reference	Order code	Material
1	Cap seal	<b>MF-DS002</b>	EPDM
2	Switch	<b>BZ-2R-A2</b>	
3	Tappet	<b>MF-WE001</b>	Aluminium
4	Sealing ring	<b>MF-MB-NR</b>	NBR
6	Mounting ring . E	<b>MF-HR-VA</b>	Stainless steel 304
7	Gasket	<b>MF-FD-NR</b>	NBR foam
8	Spare part kit incl. switch	<b>MF-EP001</b>	
11	Membrane E .	<b>MF-MB-VA</b>	Stainless steel 304

## 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 **MFE...**

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:

**DIN EN 61010-1:2020**      **DIN EN 60529:2014**

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**

Je nach Ausführungsvariante angewandte harmonisierte Normen oder normative Dokumente:  
Depending on the design applied harmonized standards or normative documents:

**DIN EN IEC 60079-0:2019**      **DIN EN 60079-11:2012**      **DIN EN 60079-31:2014**

EU-Baumusterprüfbescheinigungsnummer:  
EU-Type Examination Certificate:

**IBExU06ATEX1068**

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Qualitätssicherung:  
Quality assurance:

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Osterburken, den 03.03.2020



**Wolfgang Hageleit**  
Geschäftsführer / Managing director

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