

Membrane level indicator

Level limit switches for bulk goods

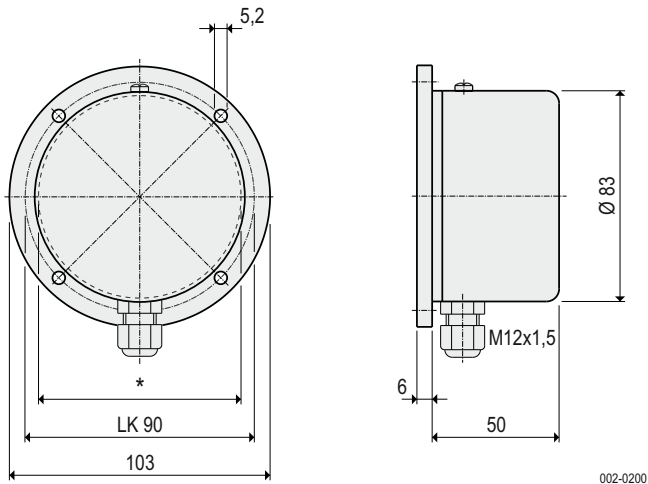
MF

Appliance information

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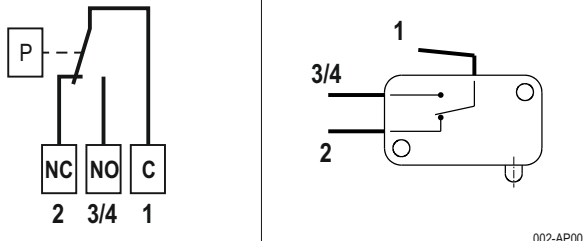
Appliance information

Dimensions



* Hole Ø in the vessel max. 80 mm

Wiring connection



Use

The membrane level indicator observes the level as limit switch in silos, hoppers and vessels. There it is used as level indicator for dusty, powdery, granulated and grained bulk goods with a maximum grain size of 30 mm and a bulk density from 0.3 t/m³ ... 1.0 t/m³.

Mode of operation

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

Construction

The plastic housing carries the membrane. The membrane is transferring the pressure via a tappet onto a microswitch. Sensitivity is adjustable by a spring.

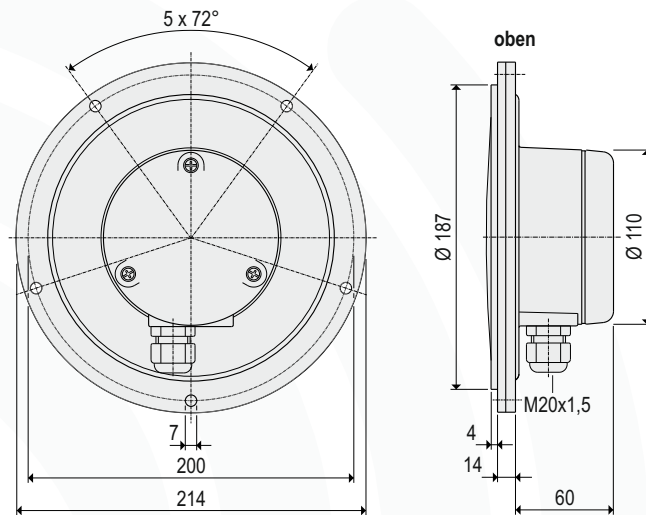
Technical data

Materials	Housing	ABS
	Membrane	Nitrile
Temperature range	Ta	-10 °C ... +60 °C
Signal contact	Contact	change-over contact, potentialfree
Capacity of the contact		2 A / 250 V ~ (AC)
Switching voltage		24 V...250 V AC or 12 V...65 V DC
Response delay		none
Sensitivity		adjustable from 20 g ... 60 g
Cable connection		flat connection 4,8x0,8
Cable entry		Gland M12x1.5
Type of protection	IP	IP44 acc. to DIN EN 60529
Weight		0.2 kg
Maintenance		none
Installation		any position

Subject to modification

Appliance information

Dimensions

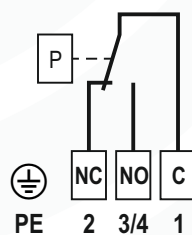


002-0205

Type selection

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

Wiring connection



002-AP01

Use

The membrane level indicator observes the level as limit switch in silos, hoppers and vessels. There it is used as level indicator for dusty, powdery, granulated and grained bulk goods with a maximum grain size of 100 mm and a bulk density from 0.3 t/m³ ... 2.5 t/m³.

Mode of operation

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.

Construction

The aluminium housing carries a membrane which is held in place by a mounting ring. The membrane is transferring the pressure via a tappet onto a switch. Sensitivity is adjustable by a spring.

Technical data

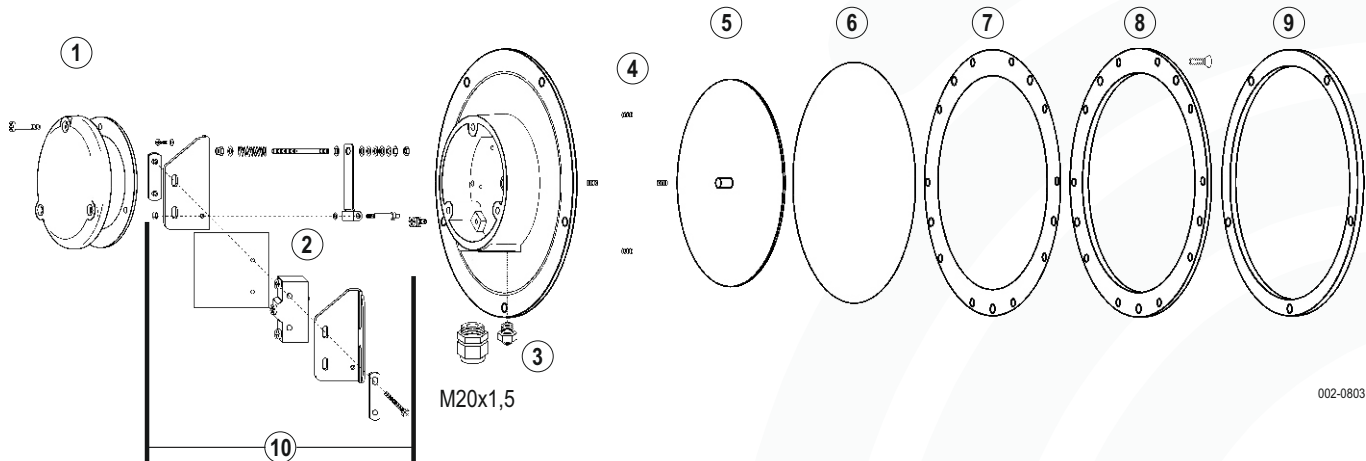
Materials	Housing	Aluminium
	Membrane	- N . NBR
	Membrane	- V . VITON
	Membrane	- E . Stainless steel 1.4301 / 304
	Mounting ring	- A . Aluminium
	Mounting ring	- E . Stainless steel 1.4301 / 304
Bulk goods temperature	NBR	-20 °C ... +80 °C
	VITON	-20 °C ... +150 °C
	Stainless steel 1.4301 / 304	-25 °C ... +200 °C
Ambient temperature		T_a -20 °C ... +80 °C
Signal contact		change-over contact, potentialfree
Capacity of the contact		4 A / 250 V ~ (AC)
Switching voltage		24 V...250 V AC or 12 V...125 V DC
Response delay		none
Sensitivity	with Membrane made of	NBR adjustable from 100 g ... 200 g
		VITON adjustable from 100 g ... 200 g
		Stainless steel 1.4301 / 304 adjustable from 200 g ... 500 g
Cable entry		Gland M20x1.5
Type of protection	DIN EN 60529	IP40
		IP53 if cable gland is downwards
		IP66 with stainless steel membrane
Weight		1.85 kg
Maintenance		none
Installation		any position

Subject to modification

ATEX option
with stainless steel membrane only

B0 **Dust**  **II 3D IIIB**

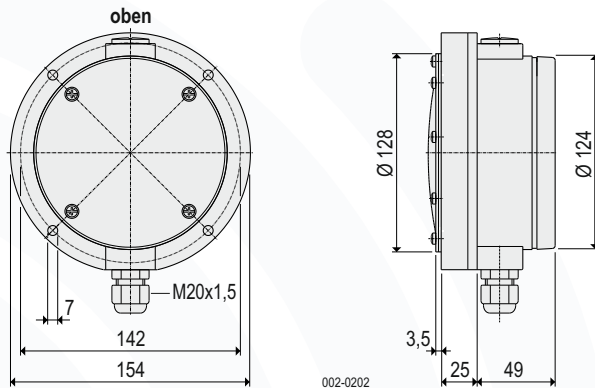
Single parts



Item	Reference	Order code	Material
1	Cap seal	MFB-DS01	EDPM
2	Switch	Z-15G-B	
3	Filter	395028-AVS	Brass
4	Spring	MFB-FR01	Spring steel
5	Membrane V . Membrane N .	MFB-MB-VI	VITON
		MFB-MB-NR	NBR
6	Membrane E .	MFB-MB-VA	Stainless steel 304
7	Seal ring	MFB-DS02	
8	Mounting ring . E Mounting ring . A	MFB-HR-VA	Stainless steel 304
		MFB-HR-AL	Aluminium
9	Gasket	MFB-FD01	NBR foam
10	Spare part kit incl. switch for MFB-E .	MFB-EP11	
10	Spare part kit incl. switch for MFB-V . / MFB-N .	MFB-EP12	

Appliance information

Dimensions

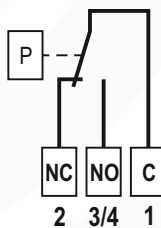


002-0202

Type selection

Type	Membrane	Mounting ring
MFD-NN	= NBR	Steel, galvanized
MFD-NE	= NBR	Stainless steel 1.4301 / 304
MFD-VN	= VITON	Steel, galvanized
MFD-VE	= VITON	Stainless steel 1.4301 / 304

Wiring connection



002-AP02

Use

The membrane level indicator observes the level as limit switch in silos, hoppers and vessels. There it is used as level indicator for dusty, powdery, granulated and grained bulk goods with a maximum grain size of 30 mm and a bulk density from 0.3 t/m³ ... 2.5 t/m³.

Mode of operation

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

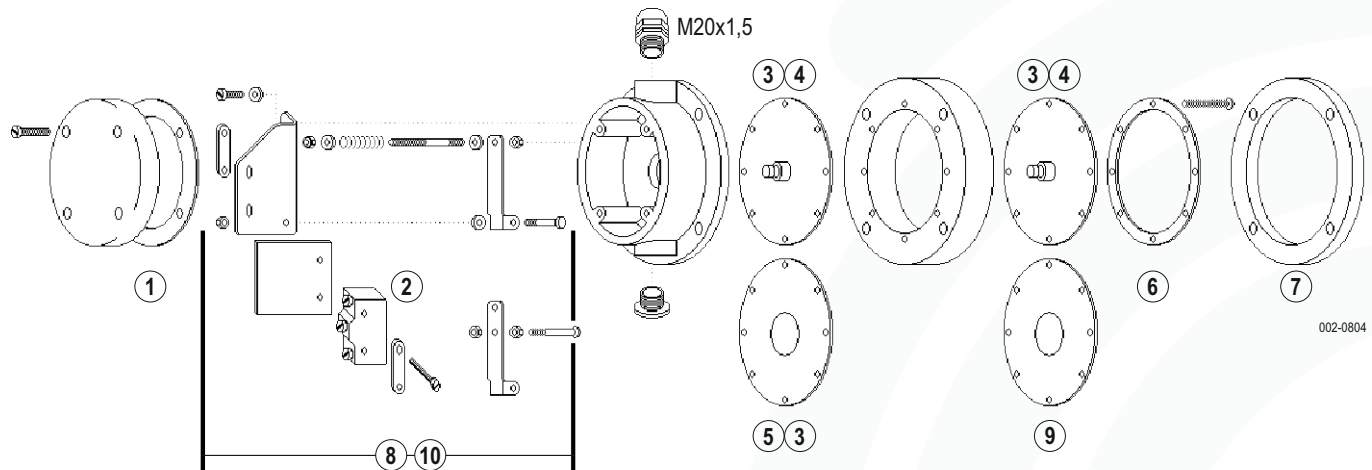
Construction

The housing, made of glass-fibre reinforced plastic, carries the two membranes which are held in place by mounting rings. The membranes are transferring the pressure via a tappet onto a switch. Sensitivity is adjustable by a spring.

Technical data

Materials	Housing	GFK (glass-fibre reinforced plastic)
	Membrane - N	NBR
	Membrane - V	VITON
Mounting ring	- N	Steel, galvanized
	- E	Stainless steel 1.4301 / 304
Temperature range	Ta	-20 °C ... +70 °C
Signal contact		change-over contact, potentialfree
Capacity of the contact		4 A / 250 V ~ (AC)
Switching voltage	Contact	24 V...250 V AC or 12 V...125 V DC
Response delay		none
Sensitivity		adjustable from 60 g ... 200 g
Cable entry		Gland M20x1.5
Type of protection	IP	IP65 acc. to DIN EN 60529
Weight		0.73 kg
Maintenance		none
Installation		any position

Single parts

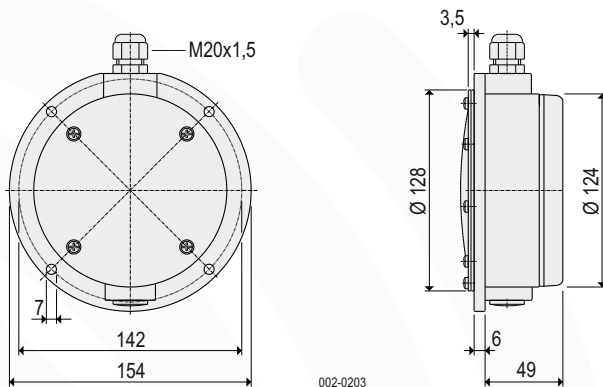


002-0804

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

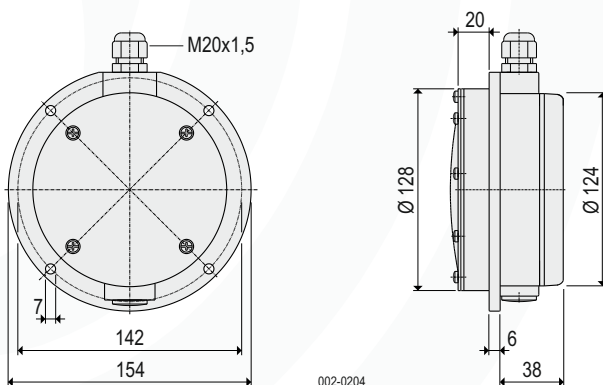
Appliance information

Dimensions MFE



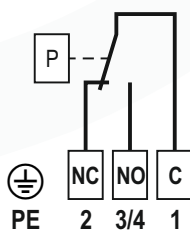
002-0203

Dimensions MFEF



002-0204

Wiring connection



002-AP01

Use

The membrane level indicator observes the level as limit switch in silos, hoppers and vessels. There it is used as level indicator for dusty, powdery, granulated and grained bulk goods with a maximum grain size of 30 mm and a bulk density from 0.3 t/m³ ... 2.5 t/m³.

Mode of operation

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.

Construction

The housing carries a membrane which is held in place by a mounting ring. The membrane is transferring the pressure via a tappet onto a switch. Sensitivity is adjustable by a spring.

Technical data

Materials	Housing	GFK (glass-fibre reinforced plastic)
	Membrane - N	NBR
	Membrane - V	VITON
	Membrane - E	Stainless steel 1.4301 / 304
	Mounting ring - N	Steel, galvanized
	Mounting ring - E	Stainless steel 1.4301 / 304
Temperature range	Ta	-20 °C ... +60 °C
Signal contact	Contact	change-over contact, potentialfree
	Capacity of the contact	4 A / 250 V AC
	Switching voltage	24 V...250 V AC or 12 V...125 V DC
Response delay		none
Sensitivity	with Membrane made of	NBR adjustable from 60 g ... 1000 g
	VITON	adjustable from 60 g ... 1000 g
	Stainless steel 1.4301 / 304	adjustable from 150 g ... 2000 g
Cable entry		Gland M20x1.5
Type of protection	IP	IP40 DIN EN 60529
		IP53 if cable gland is upwards
		IP65 with stainless steel membrane
Weight	MFE	0.48 kg
	MFEF	0.49 kg
Maintenance		none
Installation		any position

Änderung vorbehalten

ATEX option
with stainless steel membrane only

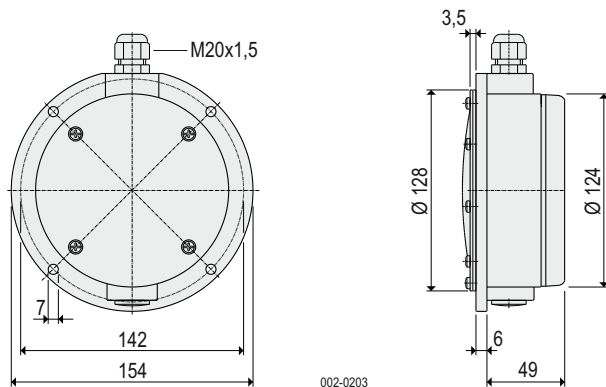
B3



II 1/3D III C

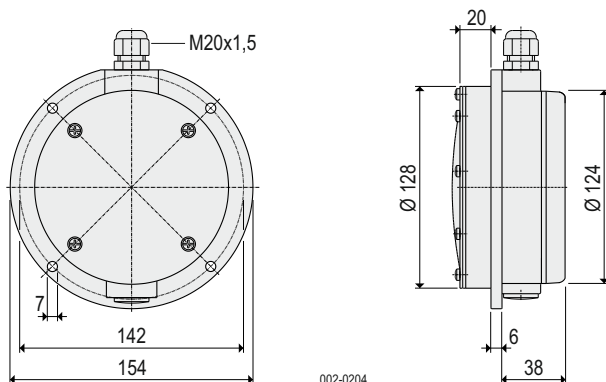
Appliance information

Dimensions MFE-A



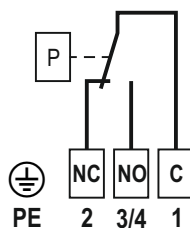
002-0203

Dimensions MFEF-A



002-0204

Wiring connection



002-AP01

Use

The membrane level indicator observes the level as limit switch in silos, hoppers and vessels. There it is used as level indicator for dusty, powdery, granulated and grained bulk goods with a maximum grain size of 30 mm and a bulk density from 0.3 t/m³ ... 2.5 t/m³.

Mode of operation

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.

Construction

The housing carries a membrane which is held in place by a mounting ring. The membrane is transferring the pressure via a tappet onto a switch. Sensitivity is adjustable by a spring.

Technical data

Materials	Housing - A	Aluminium
	Membrane - N	NBR
	Membrane - V	VITON
	Membrane - E	Stainless steel 1.4301 / 304
	Mounting ring - N	Steel, galvanized
	Mounting ring - E	Stainless steel 1.4301 / 304
Temperature range	Ta	Aluminium -25 °C ... +80 °C
Signal contact	Contact	change-over contact, potentialfree
Capacity of the contact		4 A / 250 V AC
Switching voltage		24 V...250 V AC or 12 V...125 V DC
Response delay		none
Sensitivity	with Membrane made of NBR	adjustable from 60 g ... 1000 g
	VITON	adjustable from 60 g ... 1000 g
	Stainless steel 1.4301 / 304	adjustable from 150 g ... 2000 g
Cable entry		Gland M20x1.5
Type of protection	IP	IP40 DIN EN 60529
		IP53 if cable gland is upwards
		IP66 with stainless steel membrane
Weight	MFE-A	0.95 kg
	MFEF-A	1.00 kg
Maintenance		none
Installation		any position

Subject to modification

ATEX option
with stainless steel membrane only

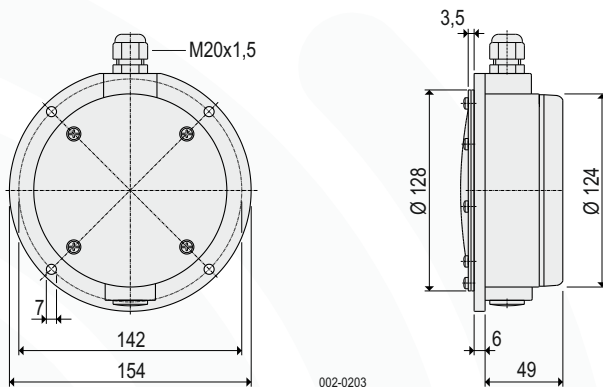
B1

Dust  II 1/2D III C

Appliance information

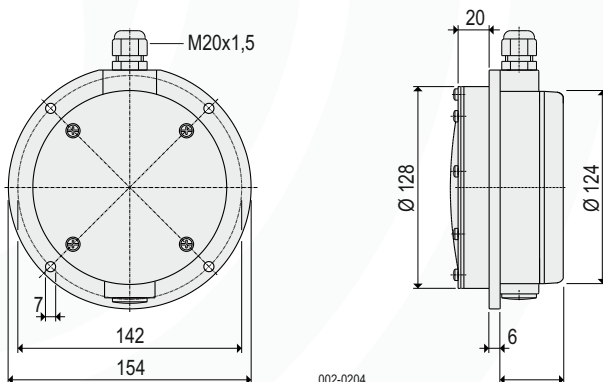
for potentially gas and dust explosive atmospheres

Dimensions MFE-A



002-0203

Dimensions MFEF-A



002-0204

Use

The membrane level indicator observes the level as limit switch in silos, hoppers and vessels. There it is used as level indicator for dusty, powdery, granulated and grained bulk goods with a maximum grain size of 30 mm and a bulk density from 0.3 t/m³ ... 2.5 t/m³.

Mode of operation

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.

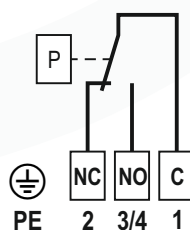
Construction

The housing carries a membrane which is held in place by a mounting ring. The membrane is transferring the pressure via a tappet onto a switch. Sensitivity is adjustable by a spring.

Technical data

Materials	Housing - A	Aluminium
	Membrane - E	Stainless steel 1.4301 / 304
	Mounting ring - E	Stainless steel 1.4301 / 304
Temperature range	Ta	-25 °C ... +80 °C
Signal contact	Contact	change-over contact, potentialfree
	max. Switching voltage	$U_i \leq 30 \text{ V}$
	max. Braking capacity	$I_i \leq 0.1 \text{ A}$
		} intrinsically safe
Response delay		none
Sensitivity		adjustable from 150 g ... 2000 g
Cable entry		Gland M20x1.5
Type of protection	IP	IP66 DIN EN 60529
Weight	MFE-A	0.95 kg
	MFEF-A	1.00 kg
Maintenance		none
Installation		any position

Wiring connection



002-AP01

Subject to modification

ATEX option

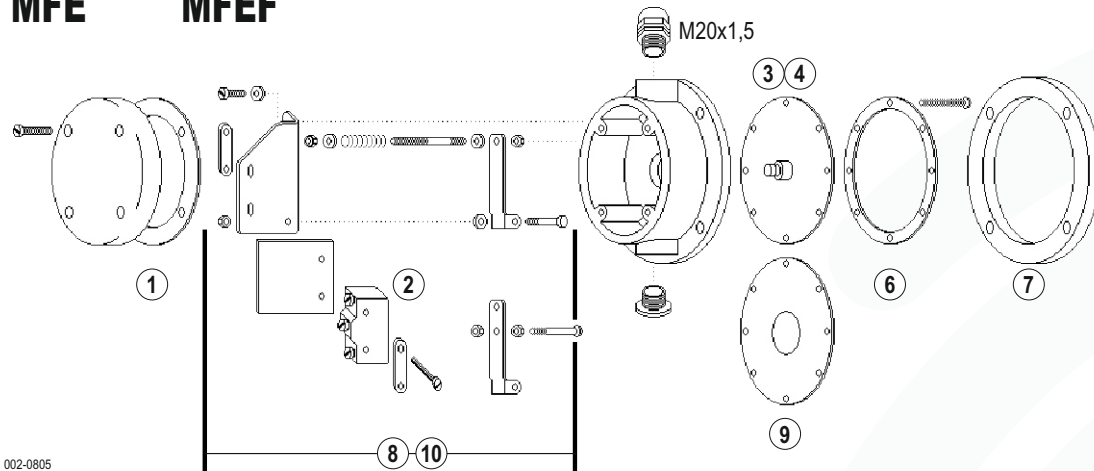


II 1/2D IIIC
and
II 2G IIC

B5

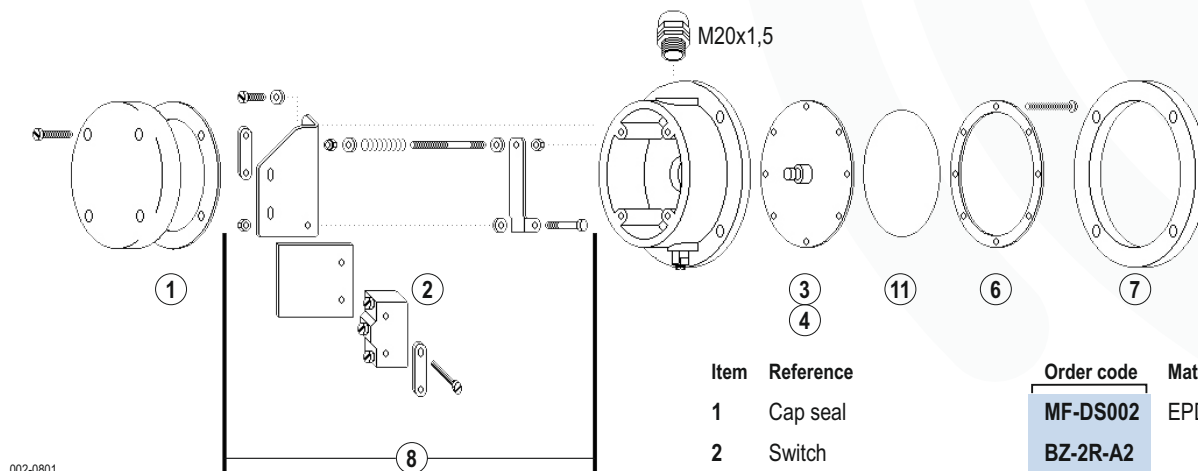
Single parts

MFE MFEF



Item	Reference	Order code	Material
1	Cap seal	MF-DS001	NBR
2	Switch	BZ-2R-A2	
3	Tappet	MF-WE001	Aluminium
4	Membrane N .	MF-MB-NR	Bulk solids touching membrane made of NBR
6	Mounting ring . N Mounting ring . E	MF-HR-ST MF-HR-VA	Steel, galvanized Stainless steel 304
7	Gasket	MF-FD-NR	NBR foam
8	Spare part kit incl. switch	MF-EP001	Design for bulk solids touching membrane made of NBR
9	Membrane V .	MF-MB-VI	Bulk solids touching membrane made of VITON
10	Spare part kit incl. switch	MF-EP002	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	MF-DS002	EPDM
2	Switch	BZ-2R-A2	
3	Tappet	MF-WE001	Aluminium
4	Sealing	MF-MB-NR	NBR
6	Mounting ring . E	MF-HR-VA	Stainless steel 304
7	Gasket	MF-FD-NR	NBR foam
8	Spare part kit incl. switch	MF-EP001	
11	Membrane E .	MF-MB-VA	Stainless steel 304