

Membrane level indicator

Level limit switches for bulk goods

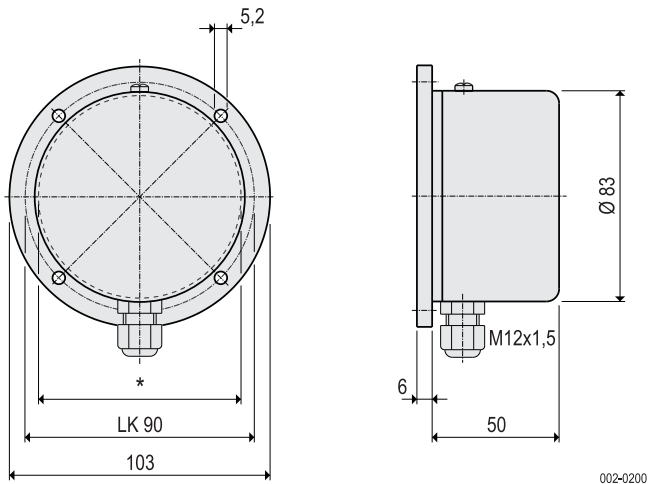
MF

Appliance information

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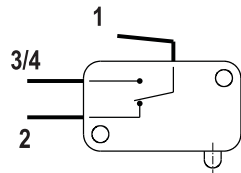
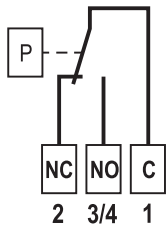
Appliance information

Dimensions



* Hole Ø in the vessel max. 80 mm

Wiring connection



002-AP00

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.

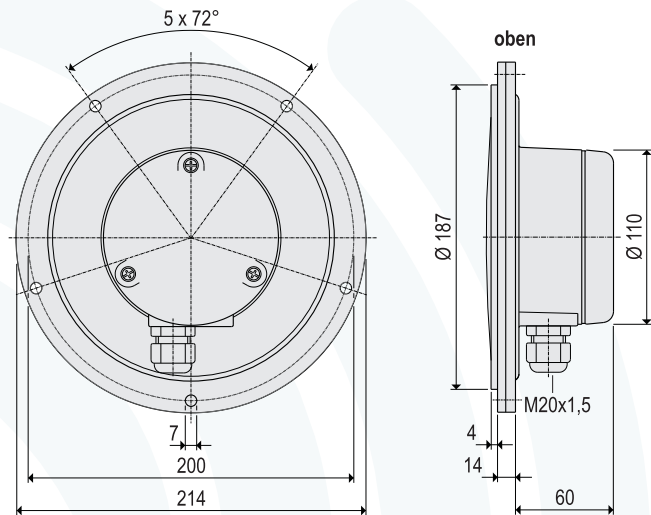
Technical data

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

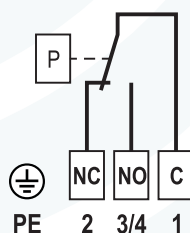


002-0205

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

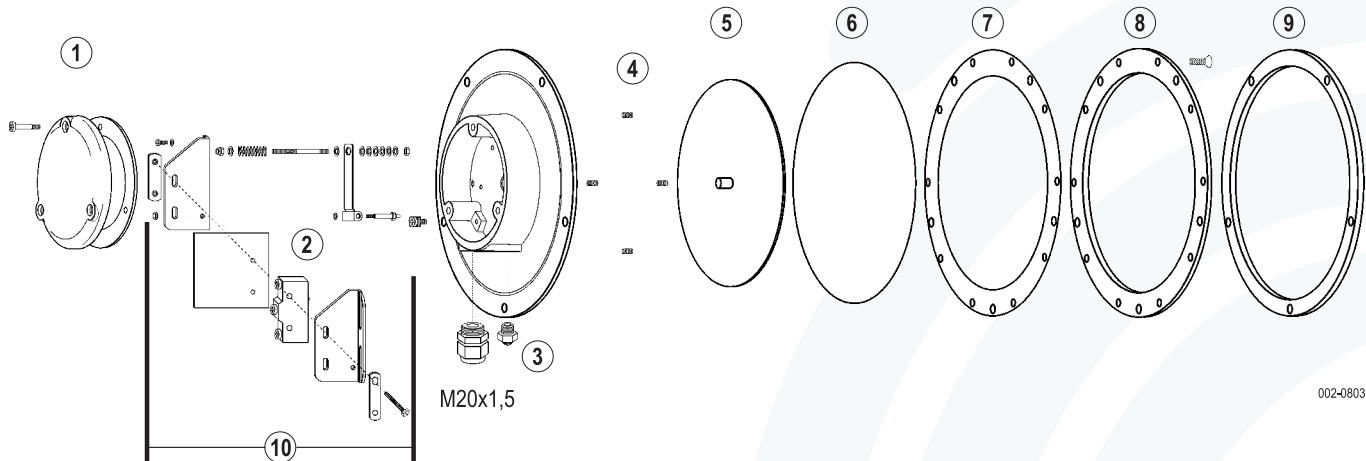
Materials	Housing	Aluminium
	Membrane	- N . NBR
	Membrane	- V . VITON
	Membrane	- E . Stainless steel 1.4301 / 304
	Mounting ring	- A . Aluminium
	Mounting ring	- E . Stainless steel 1.4301 / 304
Bulk goods temperature	NBR	-20 °C ... +80 °C
	VITON	-20 °C ... +150 °C
	Stainless steel 1.4301 / 304	-20 °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
		IP65 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 Ex tc IIIC T80 °C**

Single parts

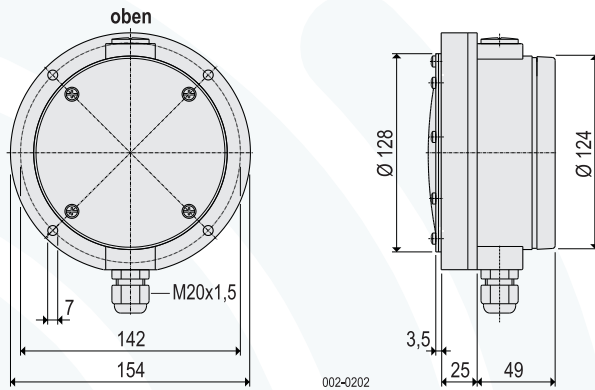


002-0803

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 MFB-MB-NR	VITON 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 MFB-HR-AL	Stainless steel 304 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

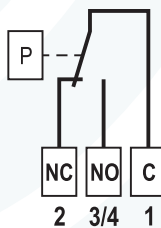
Dimensions



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

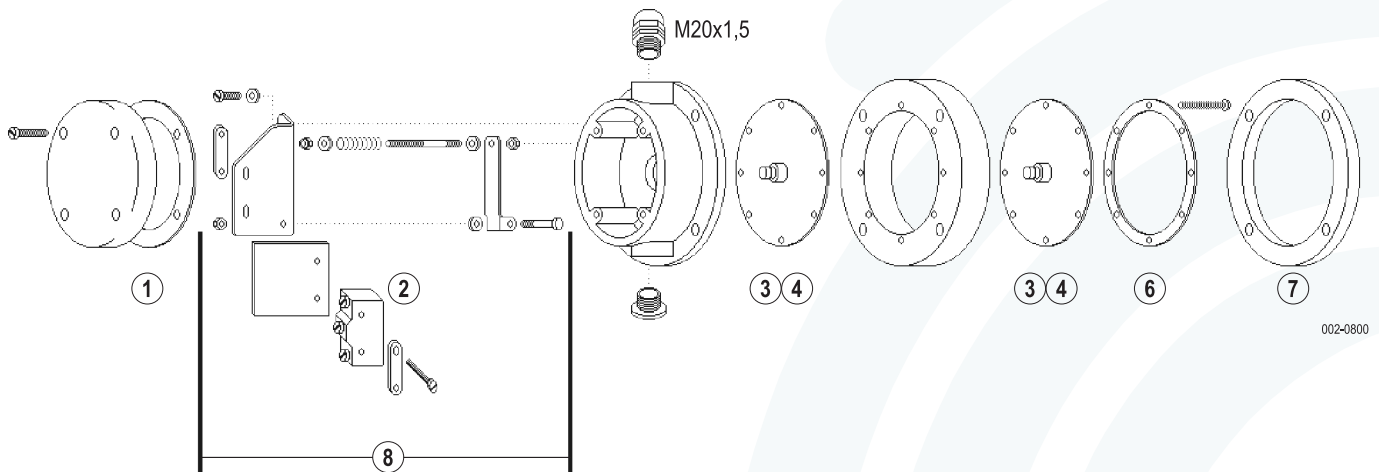
Materials	Housing	GFK (glass-fibre reinforced plastic)
	Membrane	- N . NBR
	Membrane	- V . VITON
Mounting ring	- N	Steel, galvanized
	- E	Stainless steel 1.4301 / 304
Temperature range	Ta	-20 °C ... +70 °C
Signal contact		change-over contact, potentialfree
Capacity of the contact		4 A / 250 V ~ (AC)
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

Subject to modification

ATEX option

B0 **Dust**  II 3D Ex tc IIIC T80 °C

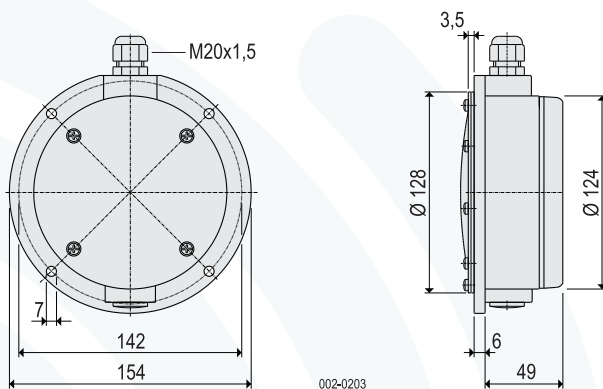
Single parts



Item	Reference	Order code	Material
1	Cap seal	MF-DS001	NBR
2	Switch	BZ-2R-A2	
3	Tappet	MF-WE001	Aluminium
4	Membrane N . Membrane V .	MF-MB-NR MF-MB-VI	NBR VITON
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	

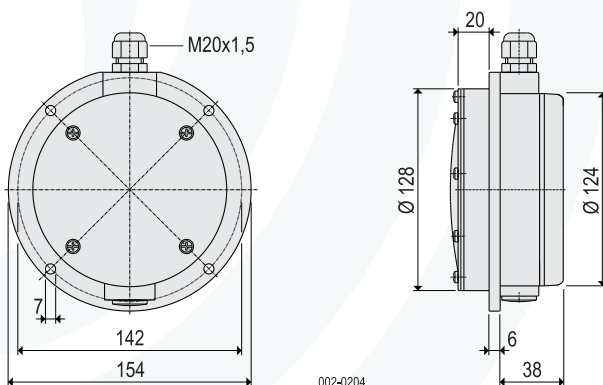
Appliance information

Dimensions MFE



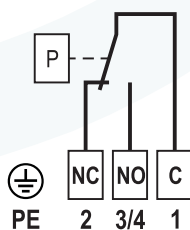
002-0203

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

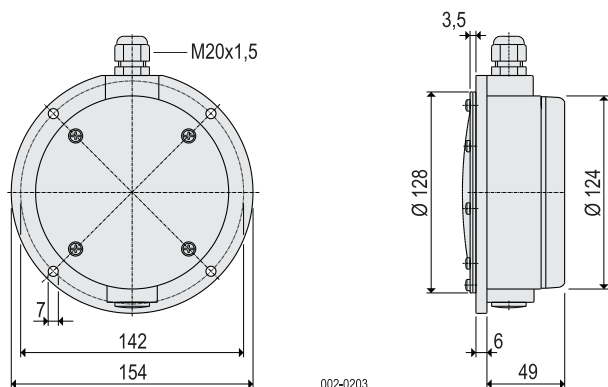
Änderung vorbehalten

ATEX option
with stainless steel membrane only

B3 **Dust** **Ex** II 1/3D Ex ta/tc III B T63 °C

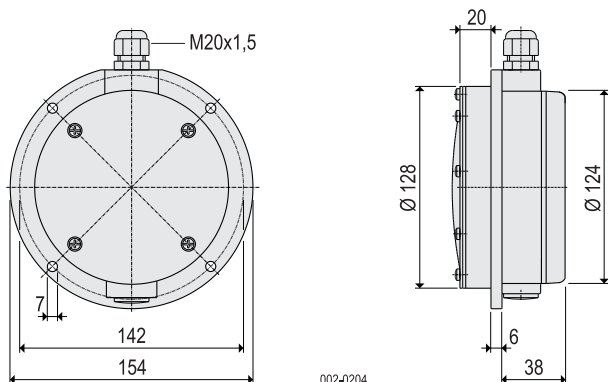
Appliance information

Dimensions MFE-A



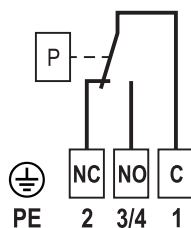
002-0203

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

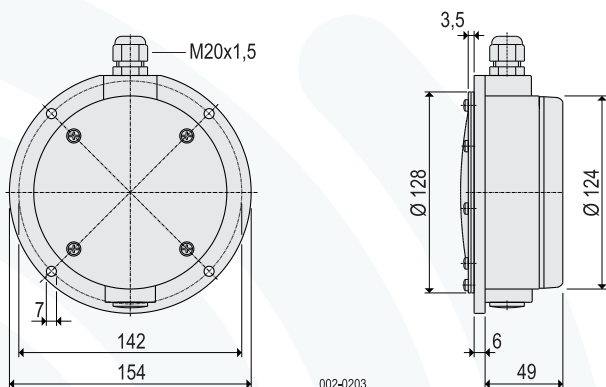


II 1/2D Ex ta/tb IIIC T83 °C

Appliance information

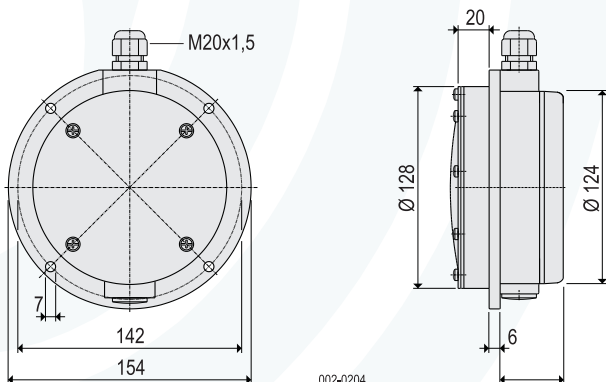
for potentially gas and dust explosive atmospheres

Dimensions MFE-A



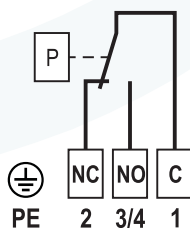
002-0203

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 - 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

Subject to modification

ATEX option

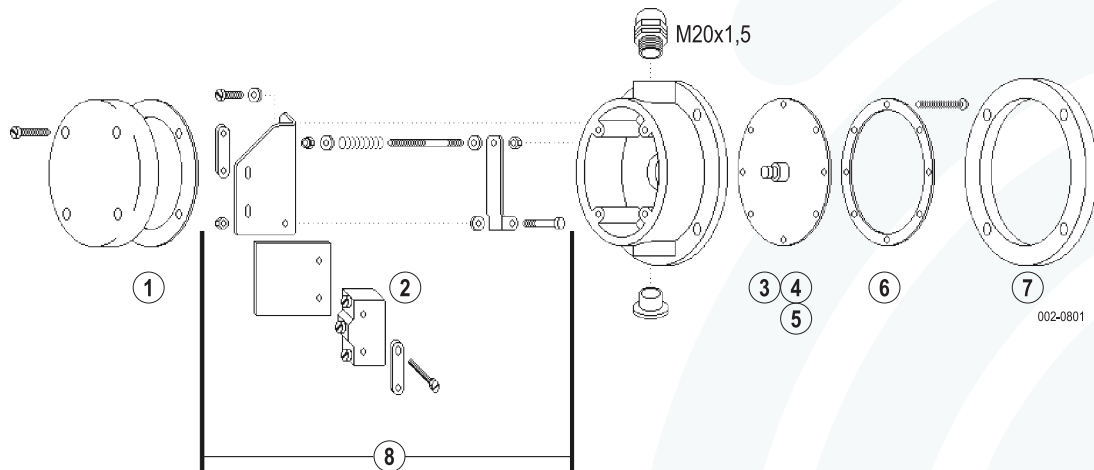
Gas+
Dust



II 1/2D Ex ta/tb III C T83 °C
 and
 II 2G Ex ib IIC T6

B5

Single parts



Item	Reference	Order code	Material
1	Cap seal	MF-DS001	NBR
2	Switch	BZ-2R-A2	
3	Tappet	MF-WE001	Aluminium
4	Membrane N . Membrane V .	MF-MB-NR MF-MB-VI	NBR VITON
5	Membrane E .	MF-MB-VA	Stainless steel 304
6	Mounting ring . N Mounting ring . E	MF-HR-ST MF-HR-VA	Steel, galvanized Stainless steel 304
7	Gasket	MF-FD-NR	BR foam
8	Spare part kit incl. switch	MF-EP001	