

Pendulum level indicator

Level limit switches for bulk goods

PF/PS

Pendulum switch

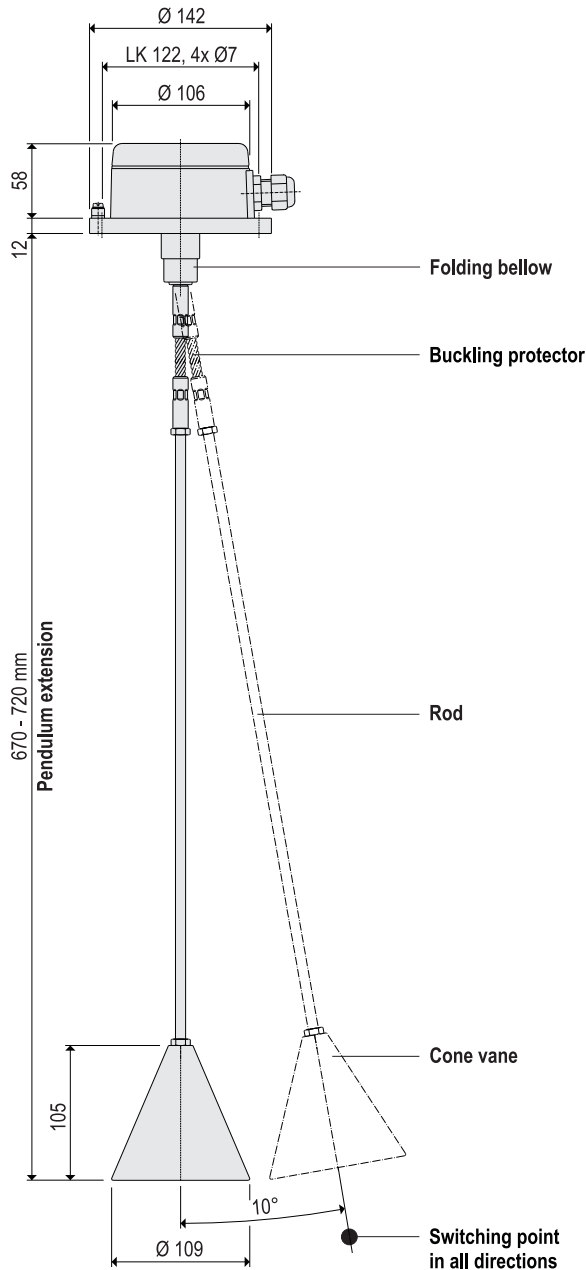
Monitoring device for bulk solids in motion

Appliance information

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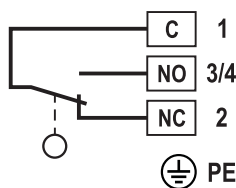
Appliance information

Dimensions



003-0200

Wiring connection



003-AP00

Use

The pendulum level indicator observes the level as limit switch in silos and vessels. It is used as full indicator for powdery, granulated and grainy bulk goods with a grain size up to 100 mm and a bulk density from 0.3 t/m³ ... 3.0 t/m³. It is preferred for mechanically filled silos and containers, for example with screw conveyors, feeders, elevators and so on.

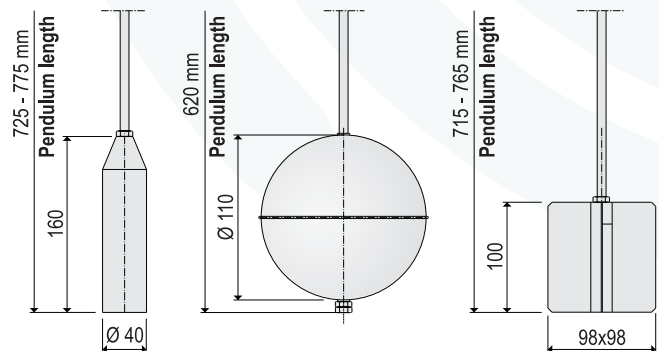
Mode of operation

Using the dumping cone of the bulk goods. The bulk goods, being dumped besides the pendulum, are moving the pendulum more and more aside, as the filling level increases. A signal switch registers this movement and evaluates it.

Technical data

Materials	Housing	GAL, RAL7001 coated
	Folding bellow	NBR, black
	Buckling protector	Stainless steel 1.4301 / 304
	Rod	Aluminium, optional 1.4301 / 304
	Cone vane KF	Aluminium
	Pipe vane RF	Aluminium, optional 1.4301 / 304
	Ball vane OF	Stainless steel 1.4301 / 304
	Cross vane XF	Stainless steel 1.4301 / 304
Bulk goods temperature	T_s	-25 °C ... +80 °C
Ambient temperature	T_a	-20 °C ... +70 °C
Signal contact	Contact	change-over contact, potential free
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
Overpressure safety		up to 0.5 bar
Cable entry		Gland M20x1.5
Type of protection	IP	IP66 acc. to DIN EN 60529
Weight		1,3 kg
Maintenance		none
Mounting position		vertical

Dimensions of the vanes



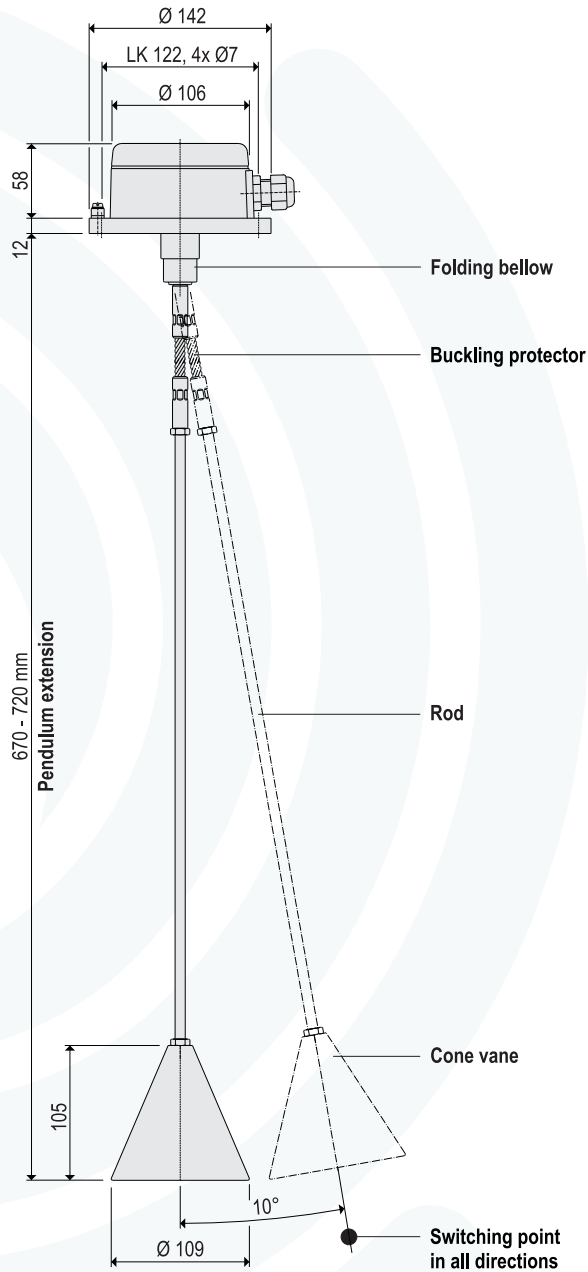
003-0292

Subject to modification

Appliance information

for potentially dust explosive atmospheres

Dimensions



Use

The pendulum level indicator observes the level as limit switch in silos and vessels. It is used as full indicator for powdery, granulated and grainy bulk goods with a grain size up to 100 mm and a bulk density from 0,3 t/m³ ... 3,0 t/m³. It is preferred for mechanically filled silos and containers, for example with screw conveyors, feeders, elevators and so on.

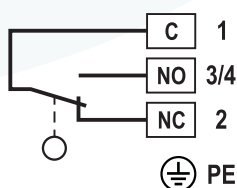
Mode of operation

Using the dumping cone of the bulk goods. The bulk goods, being dumped besides the pendulum, are moving the pendulum more and more aside, as the filling level increases. A signal switch registers this movement and evaluates it.

Technical data

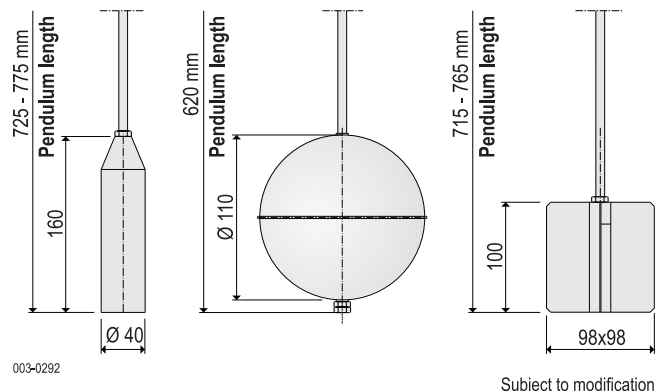
Materials	Housing	GAL, RAL7001 coated
	Folding bellow	NBR, black
	Buckling protector	Stainless steel 1.4301 / 304
	Rod	Aluminium, optional 1.4301 / 304
	Cone vane KF	Aluminium
	Pipe vane RF	Aluminium, optional 1.4301 / 304
	Ball vane OF	Stainless steel 1.4301 / 304
	Cross vane XF	Stainless steel 1.4301 / 304
Bulk goods temperature	T_s	-25 °C ... +80 °C
Ambient temperature	T_a	-20 °C ... +70 °C
Signal contact	Contact	change-over contact, potential free
	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
Overpressure safety		up to 0.5 bar
Cable entry		Gland M20x1.5
Type of protection	IP	IP66 acc. to DIN EN 60529
Weight		1.35 kg
Maintenance		none
Mounting position		vertical

Wiring connection



003-AP00

Dimensions of the vanes



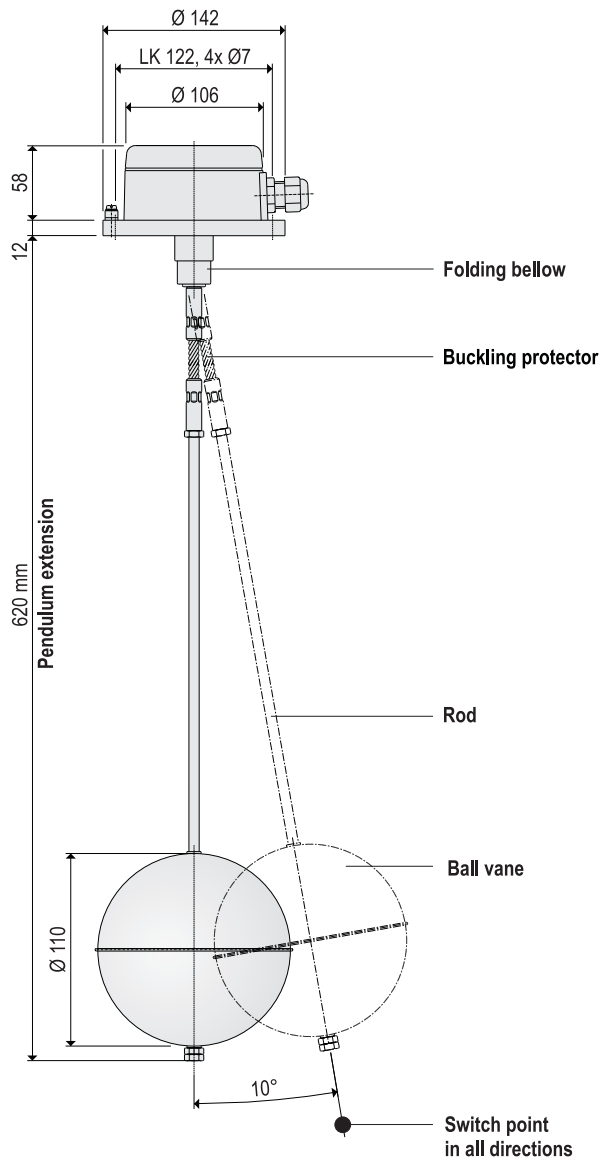
ATEX option

B1 **Dust**  II 1/2D Ex ta/tb IIIC T 80 °C

Appliance information

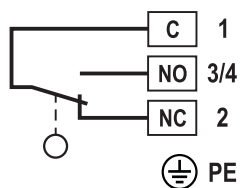
for potentially gas and dust explosive atmospheres

Dimensions



003-0203

Wiring connection



003-AP00

Use

The pendulum level indicator observes the level as limit switch in silos and vessels. It is used as full indicator for powdery, granulated and grainy bulk goods with a grain size up to 100 mm and a bulk density from $0.3 \text{ t/m}^3 \dots 3.0 \text{ t/m}^3$. It is preferred for mechanically filled silos and containers, for example with screw conveyors, feeders, elevators and so on.

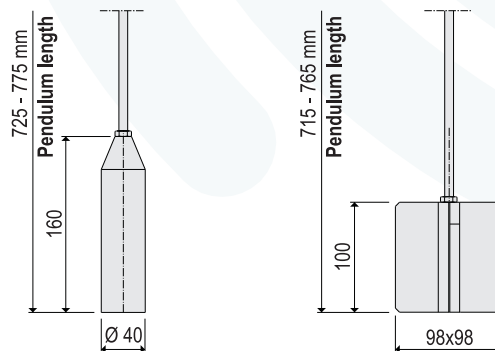
Mode of operation

Using the dumping cone of the bulk goods. The bulk goods, being dumped besides the pendulum, are moving the pendulum more and more aside, as the filling level increases. A signal switch registers this movement and evaluates it.

Technical data

Materials	Housing	GAL, RAL7001 coated
	Folding bellow	NBR, black
	Buckling protector	Stainless steel 1.4301 / 304
	Rod	Stainless steel 1.4301 / 304
	Pipe vane RFE	Stainless steel 1.4301 / 304
	Ball vane OF	Stainless steel 1.4301 / 304
	Cross vane XF	Stainless steel 1.4301 / 304
Bulk goods temperature	T_s	-25 °C ... +80 °C
Ambient temperature	T_a	-20 °C ... +70 °C
Signal contact	Contact	change-over contact, potential free
	max. switching voltage	$U_j \leq 30 \text{ V}$
	max. braking capacity	$I_j \leq 0.1 \text{ A}$
Response delay		none
Overpressure safety		up to 0.5 bar
Cable entry		Gland M20x1.5
Type of protection	IP	IP66 acc. to DIN EN 60529
Weight		1.45 kg
Maintenance		none
Mounting position		vertical

Dimensions of the vanes



003-0292

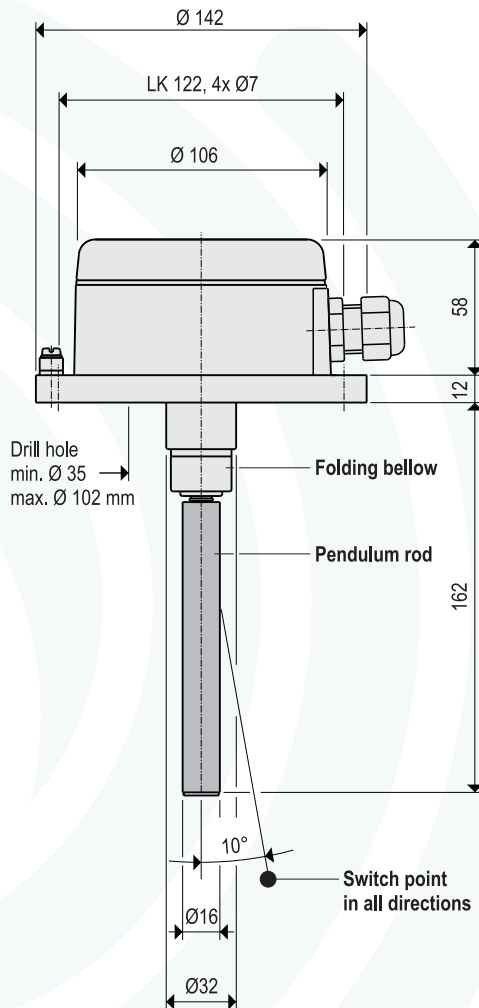
Subject to modification

ATEX option Gas+ Dust **Ex** II 1/2D Ex ta/tb III C T 80 °C and II 2G Ex ib IIB T6

Appliance information

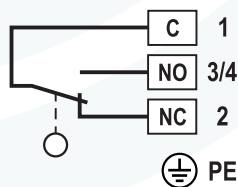
for potentially dust explosive atmospheres

Dimensions



003-0202

Electrical connection



003-AP00

Use

The pendulum switch is a universal monitoring device for bulk solids in motion with versatile capabilities. It can be used as robust limit switch, as counter for sacks on conveyor belts, as jam detector in delivery pipes, at the final point of a pneumatic conveying system, as safety switch in conveying screws and elevators or for monitoring the loading height on conveying belts.

Mode of operation

As soon as the pendulum rod is moved in any direction out of the basic position, the switch detects this movement and gives a signal.

Technical data

Materials	Housing	GAL, RAL7001 coated
	Folding bellow	NBR, black
	Pendulum rod	NBR, black with aluminium core
Bulk goods temperature	T_s	-25 °C ... +80 °C
Ambient temperature	T_a	-20 °C ... +70 °C
Signal contact	Contact	change-over contact, potential free
	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
Overpressure safety		up to 0.5 bar
Cable entry		Gland M20x1.5
Type of protection	IP	IP66 acc. to DIN EN 60529
Weight		1.2 kg
Maintenance		none
Mounting position		any

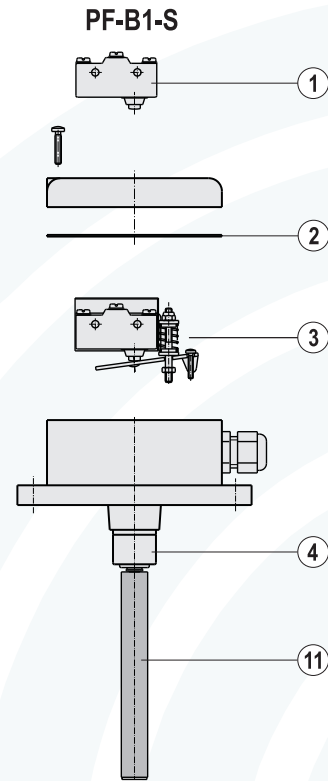
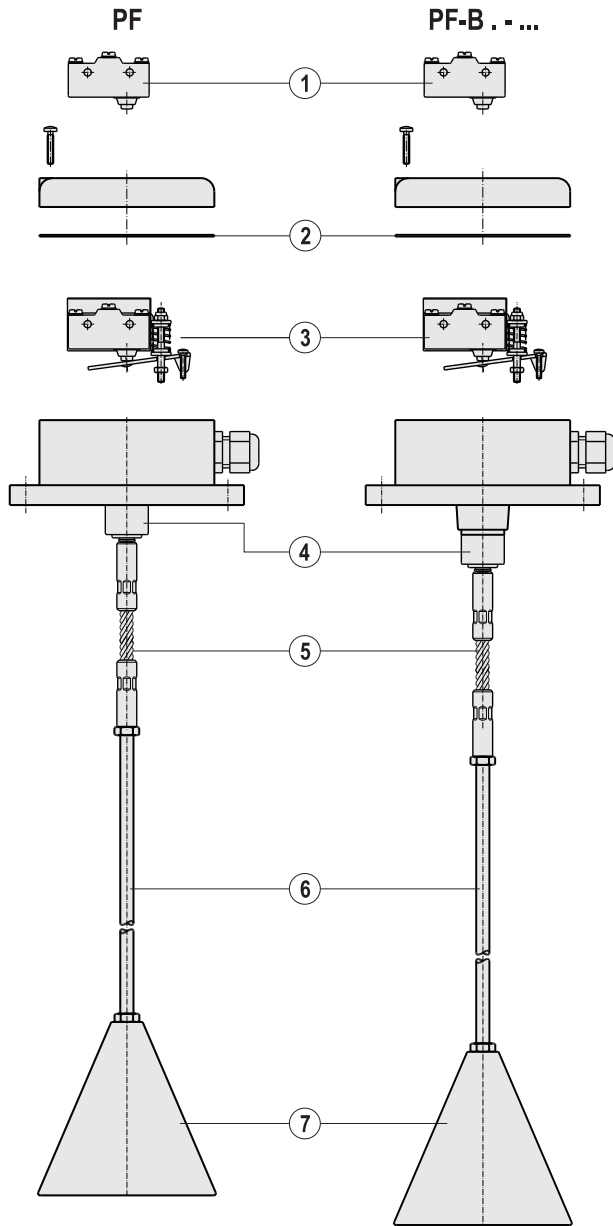
Subject to modification

ATEX option

B1 **Dust**  II 1/2D Ex ta/tb IIIC T 80 °C

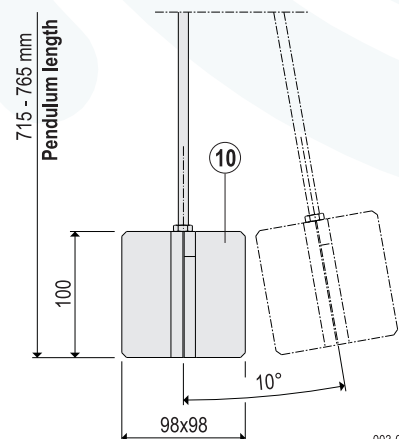
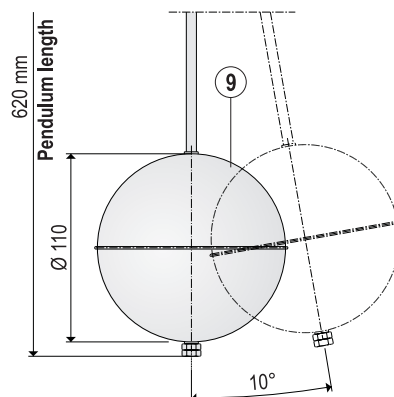
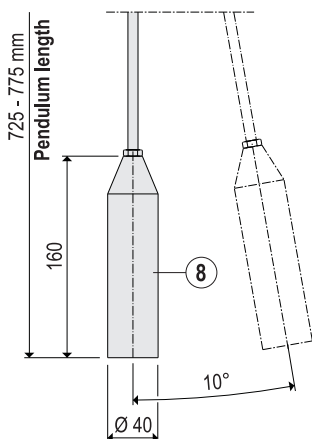
Single parts

Pendulum switch



Item	Reference	Order code	Material
1	Switch	BZ-2RD-A2	
2	Cap seal	PF-DS001	EPDM
3	Spare part kit incl. switch	PF-EP001	
4	Folding bellow	PF-FB001	NBR
5	Buckling protector	PF-KSD01	1.4301 / 304
6	Pendulum rod incl. nuts	PF-WE005-AL	Aluminium
6	Pendulum rod incl. nuts	PF-WE005-VA	1.4301 / 304
7	KF cone vane	PF-KF-AL	Aluminium
8	RFA pipe vane	PF-RF-AL	Aluminium
8	RFE pipe vane	PF-RF-VA	1.4301 / 304
9	OF ball vane	PF-OF-VA	1.4301 / 304
10	XF cross vane	PF-XF-VA	1.4301 / 304
11	Pendulum rod	PF-ST-NR	NBR, aluminium core

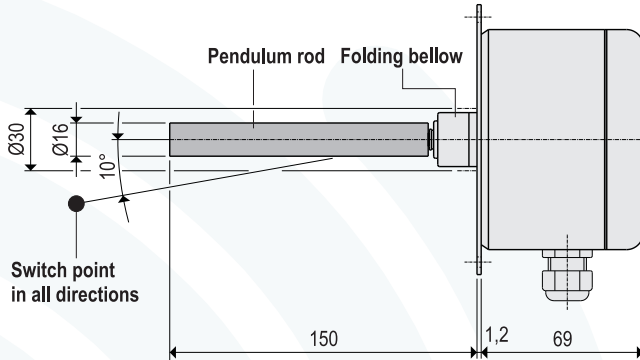
003-0800



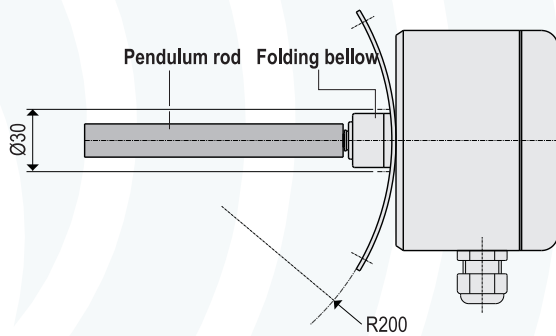
003-0291

Appliance information

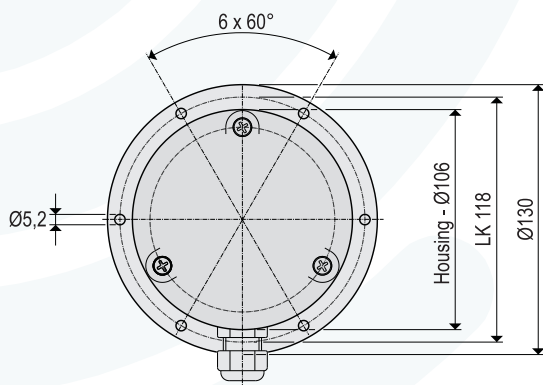
Dimensions PS



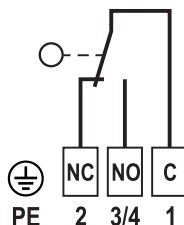
Dimensions PSR



Dimensions flange



Electrical connection



003-AP00

Use

The pendulum switch is a universal monitoring device for bulk solids in motion with versatile capabilities. It can be used as robust limit switch, as counter for sacks on conveyor belts, as jam detector in delivery pipes, at the final point of a pneumatic conveying system, as safety switch in conveying screws and elevators or for monitoring the loading height on conveying belts.

Mode of operation

As soon as the pendulum rod is moved in any direction out of the basic position, the switch detects this movement and gives a signal.

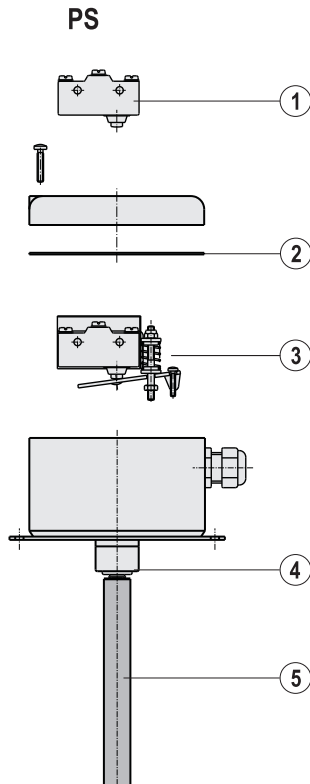
Technical data

Materials	Housing	GAL, RAL7001 coated
	Flange	Steel, galvanized
	Folding bellow	NBR, black
	Pendulum rod	NBR, black with aluminium core
Bulk goods temperature	T_s	-25 °C ... +80 °C
Ambient temperature	T_a	-20 °C ... +70 °C
Signal contact		change-over contact, potential free
Capacity of the contact		6 A / 250 V AC
Switching voltage		24 V...250 V AC or 12 V...125 V DC
Response delay		none
Overpressure safety		up to 0,5 bar
Cable entry		Gland M16x1,5
Type of protection	IP	IP66 acc. to DIN EN 60529
Weight		1,0 kg
Maintenance		none
Mounting position		any

Please use model PF-B1-S for applications in potentially dust explosive atmospheres.

Subject to modification

Single parts



Item	Reference	Order code	Material
1	Switch	BZ-2RD-A2	
2	Cap seal	PF-DS001	EPDM
3	Spare part kit incl. switch	PF-EP001	
4	Folding bellow	PF-FB001	NBR
5	Pendulum rod	PF-ST-NR	NBR with aluminium core

003-0801