

Pressure device
protects silos during pneumatic filling

MSD

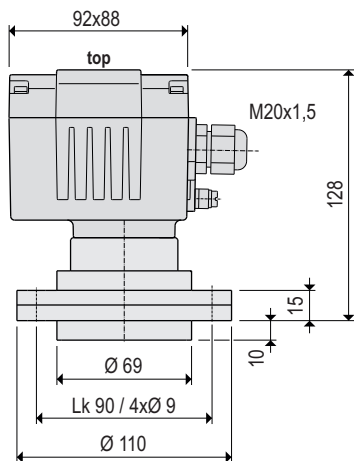
Appliance information

Index	Page
Pressure switch MSD-A for use in potentially dust explosive atmospheres	02
Pressure switch MSD-A for use in potentially gas and dust explosive atmospheres	03
Pressure switch MSD	04
Pressure transmitter MSD-A...4.. with continuous output signal	05
Pressure transmitter MSD-4.. with continuous output signal	06

Appliance information

for potentially dust explosive atmospheres

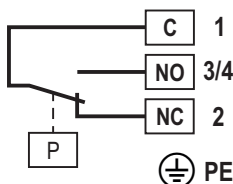
Dimensions



008-0201

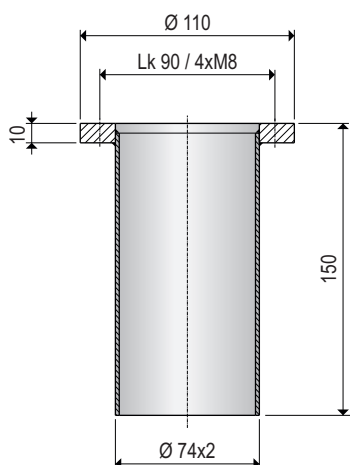
Flange gasket

Electrical connection



008-AP00

Accessories Flange tube



Use

The silo pressure detector is used as limit switch to control the pressure in silos and vessels, being filled by a pneumatic conveying system. If the pressure is reaching the switching point, the pressure detector will give a signal. Consequently it protects silos and vessels against to high pressure during the pneumatic filling process.

Mode of operation

Using the increasing pressure in the silo or vessel. Increases the pressure to the membrane, the signal switch registers the pressure difference and evaluates it.

Technical data

Materials	Housing A1	Aluminium
	Housing A2	Stainless steel 1.4408 / 316
	Flange F1A	Aluminium
	Flange F1I	Stainless steel 1.4571 / 316 Ti
	Membrane	Stainless steel 1.4301 / 304
Protruding nozzle	Steel	
Bulk goods temperature	T_s	-25 °C ... +80 °C
Ambient temperature	T_a	-20 °C ... +70 °C
Signal-contact	Contact	change-over contact, potentialfree
Capacity of the contact	Switching voltage	4 A / 250 V AC
		24 V...250 V AC or 12 V...125 V DC
Switching point	SP	40 mbar = 0.04 bar = 400 mm WS
Overpressure safety		up to 0.5 bar
Cable entry		Gland M20x1.5
Type of protection	IP	IP66 acc. to DIN EN 60529
Weight	A1F1A	1.2 kg
	A1F1I	2.1 kg
	A2F1I	2.9 kg
Maintenance		none
Installation		vertical

Subject to modification

ATEX option

B1
or
B2

Dust

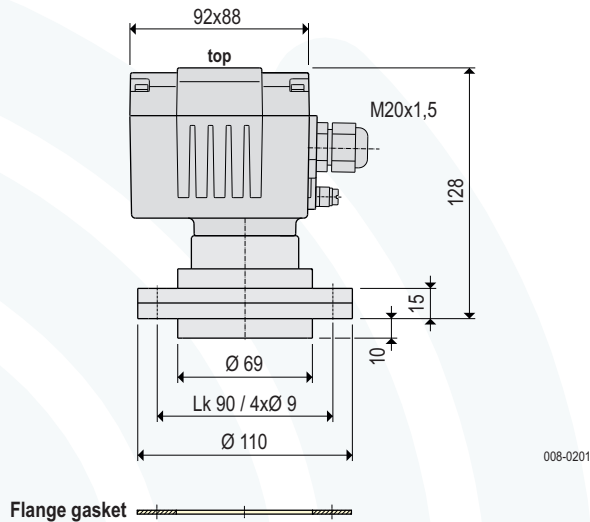


II 1/2D Ex ta/tb IIIC T80 °C
or
II 1D Ex ta IIIC T80 °C

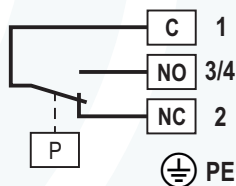
Appliance information

for potentially gas and dust explosive atmospheres

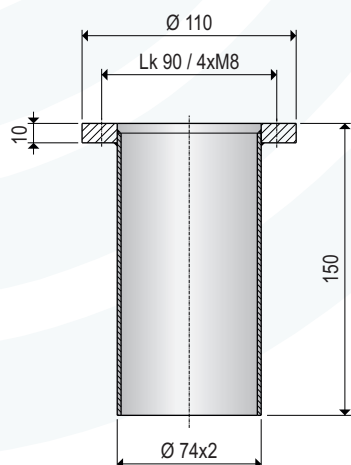
Dimensions



Electrical connection



Accessories Flange tube



Use

The silo pressure detector is used as limit switch to control the pressure in silos and vessels, being filled by a pneumatic conveying system. If the pressure is reaching the switching point, the pressure detector will give a signal. Consequently it protects silos and vessels against to high pressure during the pneumatic filling process.

Mode of operation

Using the increasing pressure in the silo or vessel. Increases the pressure to the membrane, the signal switch registers the pressure difference and evaluates it.

Technical data

Materials	Housing A1	Aluminium
	Housing A2	Stainless steel 1.4408 / 316
	Flange F1A	Aluminium
	Flange F1I	Stainless steel 1.4571 / 316 Ti
	Membrane	Stainless steel 1.4301 / 304
	Protruding nozzle	Steel
Bulk goods temperature	T_s	-25 °C ... +80 °C
Ambient temperature	T_a	-20 °C ... +70 °C
Signal-contact	Contact	change-over contact, potentialfree
Maximum switching voltage	U_i ≤ 30 V Maximum breaking capacity I_i ≤ 0.1 A	} intrinsically safe
Switching point		
Overpressure safety		up to 0.5 bar
Cable entry		Gland M20x1.5
Type of protection	IP	IP66 acc. to DIN EN 60529
Weight	A1F1A	1.2 kg
	A1F1I	2.1 kg
	A2F1I	2.9 kg
Maintenance		none
Installation		vertical

Subject to modification

ATEX option

B5
or
B22

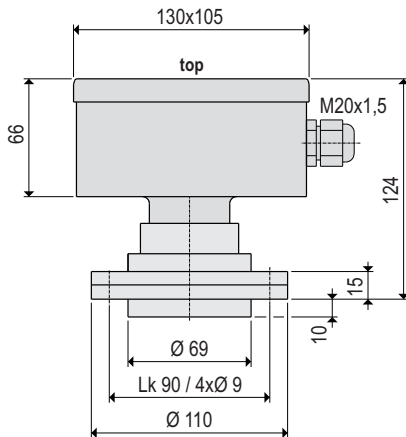


II 1/2D Ex ta/tb IIIC T80 °C
II 2G Ex ib IIC T6
or
II 1D Ex ta IIIC T80 °C
II 1G Ex ia IIC T6

Appliance information

Dimensions

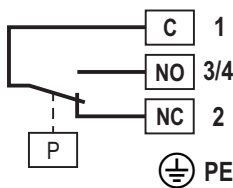
Plastic-housing



008-0200

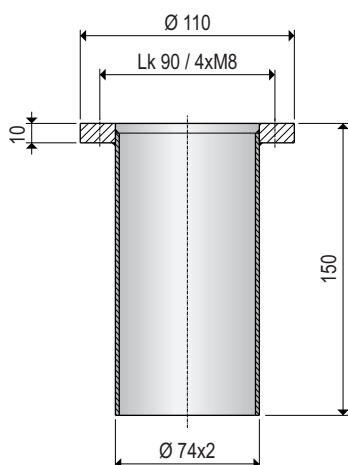
Flange gasket

Electrical connection



008-AP00

Accessories Flange tube



Use

The silo pressure detector is used as limit switch to control the pressure in silos and vessels, being filled by a pneumatic conveying system. If the pressure is reaching the switching point, the pressure detector will give a signal. Consequently it protects silos and vessels against to high pressure during the pneumatic filling process.

Mode of operation

Using the increasing pressure in the silo or vessel. Increases the pressure to the membrane, the signal switch registers the pressure difference and evaluates it.

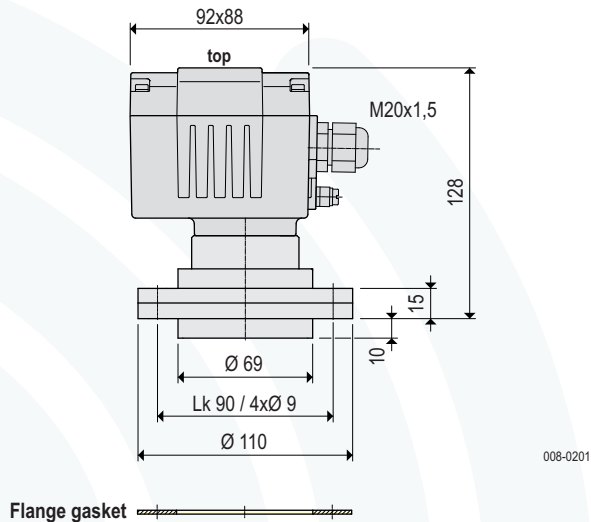
Technical data

Materials	Housing	ABS, grey (high impact plastic)
	Flange	Aluminium
	Membrane	Stainless steel 1.4301 / 304
	Protruding nozzle	Steel
Bulk goods temperature	T_s	-25 °C ... +80 °C
Ambient temperature	T_a	-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
Switching point	SP	40 mbar = 0.04 bar = 400 mm WS
Overpressure safety		up to 0.5 bar
Cable entry		Gland M20x1.5
Type of protection	IP	IP65 acc. to DIN EN 60529
Weight		1.1 kg
Maintenance		none
Installation		vertical

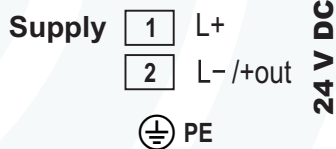
Subject to modification

Appliance information

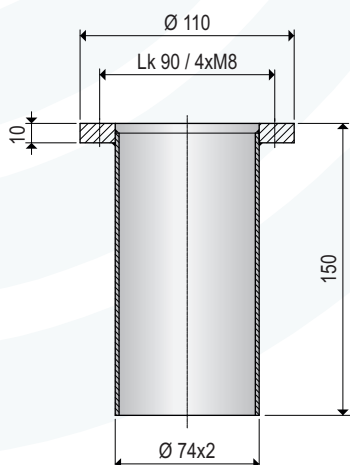
Dimensions



Electrical connection



Accessories Flange tube



Use

The electronic pressure transmitter monitors continuously the increasing pressure in a silo or bin (including the occurrent last torrent) during the pneumatic filling process.

The mechanical pressure is transmitted into a continuous output signal by this pressure measurement device.

Mode of operation

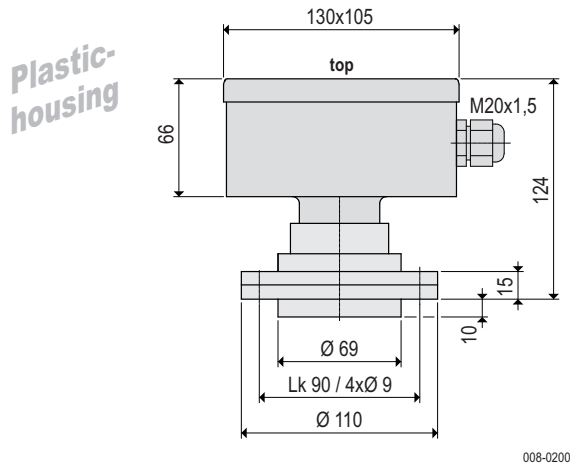
Use of pressure-increase in a silo or bin. Increasing pressure on the membrane is detected and evaluated by the electronic.

Technical data

Material	Housing A1	aluminium
	Housing A2	stainless steel 1.4408 / 316 LN
	Flange F1A	aluminium
	Flange F1I	stainless steel 1.4571 / 316 Ti
	Membrane	stainless steel 1.4571 / 316 Ti
	Flange nozzle	steel
Bulk goods temperature	T_s	-25 °C ... +75 °C
Ambient temperature	T_a	-20 °C ... +70 °C
Supply voltage	Supply	24 V DC (12 - 28 V DC)
Apparent ohmic resistance		≤ (U-11) / 0.02 (Ω)
Output signal	Output	4 ... 20 mA
MSD-A...420		RS485 interface
MSD-A...485		
Electrical connection		2-wire
MSD-A...420		RS485 interface
MSD-A...485		
Measuring range relative pressure		0 ... 100 mbar (0 ... 10000 Pa)
Linearity		< 0.5 % FS
Temperature error 0-area		0.02 % FS/K
Temperature error measuring range		0.02 % FS/K
Over-pressure safety		up to 0.5 bar
Relative humidity	acceptable	0 ... 85 %
Cable entry		threaded connection M20x1.5
Type of protection	IP	IP66 according DIN EN 60529
Weight	A1F1A	1.2 kg
	A1F1I	2.1 kg
	A2F1I	2.9 kg
Maintenance		none
Mounting position		vertical

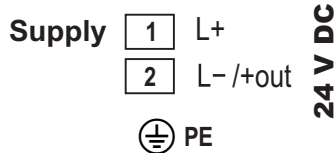
Appliance information

Dimensions



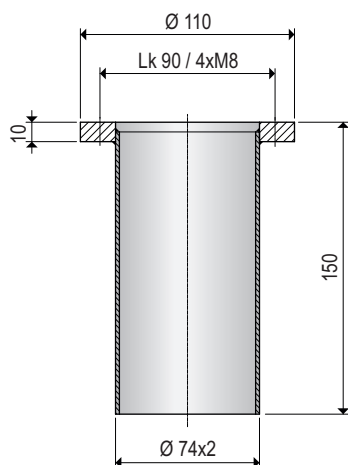
Flange gasket

Electrical connection



008-AP01

Accessories Flange tube



Use

The electronic pressure transmitter monitors continuously the increasing pressure in a silo or bin (including the occurrent last torrent) during the pneumatic filling process.

The mechanical pressure is transmitted into a continuous output signal by this pressure measurement device.

Mode of operation

Use of pressure-increase in a silo or bin. Increasing pressure on the membrane is detected and evaluated by the electronic.

Technical data

Material	Housing	ABS, grey
	Flange	aluminium
	Membrane	stainless steel 1.4571 / 316 Ti
	Flange nozzle	steel

Bulk goods temperature T_s -25 °C ... +75 °C

Ambient temperature T_a -20 °C ... +70 °C

Supply voltage **Supply** 24 V DC (12 - 28 V DC)

Apparent ohmic resistance $\leq (U-11) / 0.02 (\Omega)$

Output signal **Output**
MSD-420 4 ... 20 mA
MSD-485 RS485 interface

Electrical connection
MSD-420 2-wire
MSD-485 RS485 interface

Measuring range relative pressure 0 ... 100 mbar (0 ... 10000 Pa)

Linearity < 0,5 % FS

Temperature error 0-area 0.02 % FS/K

Temperature error measuring range 0.02 % FS/K

Overpressure safety up to 0.5 bar

Relative humidity acceptable 0 ... 85 %

Cable entry hreaded connection M20x1.5

Type of protection **IP** IP65 according DIN EN 60529

Weight 1.1 kg

Maintenance none

Mounting position vertical