

**Silo pressure detector**  
with aluminium housing

**MSD-A**

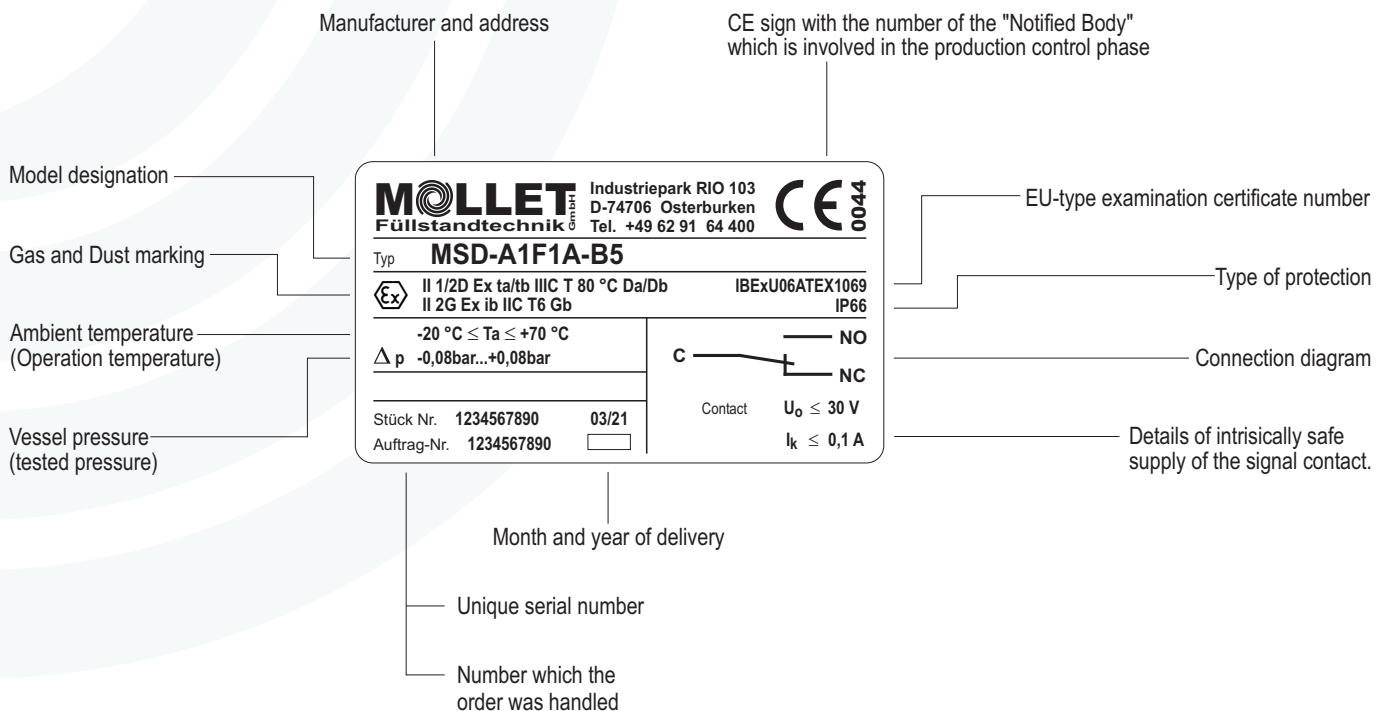
Gas+  
Dust



**Explosion protection information**  
and supplement to the operating instructions

**Type plate details**

Gas+Dust  and **hybrid mixtures**



**Marking in accordance with ATEX and DIN EN IEC 60079-0**

Silo pressure detector for use on the boundary from zone 20 to zone 21.

 **II 1/2 D Ex ta/tb IIIC T80°C Da/Db**

Equivalent to **valid ATEX-Product-Directive**

Equipment group **II** = everything except mining

Equipment category **Category 1** for zone 20, 21 and 22  
**Category 2** for zone 21 and 22

**/** = Silo pressure detectors, which are installed on the boundary between different zones

**D** = Dust - Type of explosive atmosphere

the **Ex** - symbol according to DIN EN IEC 60079-0

**t** = Protection by enclosure

**a** = Device with „very high“ protection standard. . . .for zone 20, 21 and 22

**b** = Device with „high“ protection standard. . . . .for zone 21 and 22

**IIIC** for flammable conductive dust, flammable non-conductive dust and flammable fibres and flyings

**T..°C** maximum surface temperature

**Equipment Protection Level (EPL)**

**D** = Dust - Type of explosive atmosphere

**a** = Device with “very high level of protection” for use in potentially explosive atmospheres where in normal operation, foreseeable or infrequent faults/malfunctions no ignition hazard is given.

**b** = Device with “high level of protection” for use in potentially explosive atmospheres where in normal operation or foreseeable faults/malfunctions no ignition hazard is given.

Silo pressure detector for use in zone 1.

 **II 2G Ex ib IIC T6 Gb**

Equipment category **Category 2** for zone 1 and 2

**G** = Gas - Type of explosive atmosphere

**i** = Protection by intrinsically safe

**b** = Device with „high“ protection standard. . . . .for zone 1 and 2

**IIC** for all flammable gases

Temperature class **T6** = 85°C

**Equipment Protection Level (EPL)**

**G** = Gas - Type of explosive atmosphere

**b** = Device with “high level of protection” for use in potentially explosive atmospheres where in normal operation or foreseeable faults/malfunctions no ignition hazard is given.

Silo pressure detector for use in zone 20.

 **II 1D Ex ta IIIC T<sub>200</sub> 80 °C Da**

Equipment category **Category 1** for zone 20, 21 and 22

Silo pressure detector for use in zone 0.

 **II 1G Ex ia IIC T6 Ga**

Equipment category **Category 1** for zone 0, 1 and 2

**i** = Protection by intrinsically safe

**a** = Device with „very high“ protection standard. . .for zone 0, 1 and 2

Order code **B5**

Marking: II 1D / 2D

II 2G

Gas+Dust **Ex** and **hybrid mixtures**

### Equipment category appropriation by zones

Silo pressure detector for use in zone 1 and at the boundary from zone 20 to zone 21.

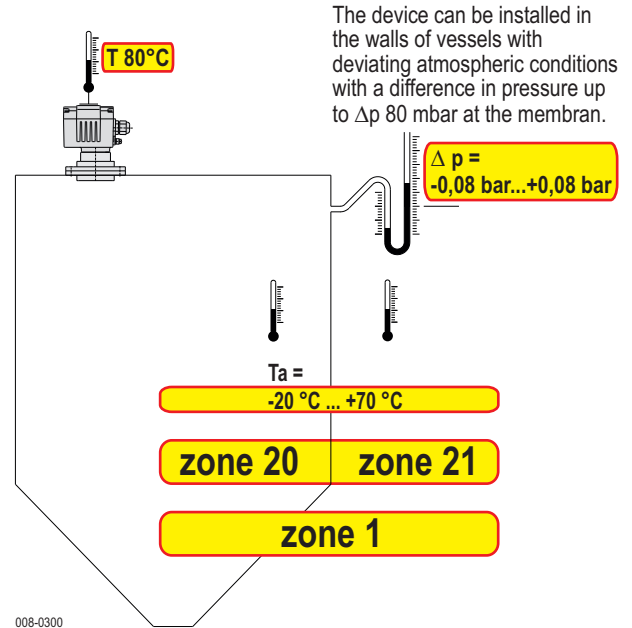
#### Ambient temperatures $T_a$

The ambient temperature  $T_a$  defines the maximum operating temperature of the detectors. Inside the vessel this is process temperature (the air or the bulk goods temperature) nearby the device.

#### maximum surface temperature **T**

The maximum surface temperature means the hottest point at the equipment. The device matches with temperature class **T6**.

<b>MOLLET</b> Füllstandtechnik GmbH		Industriepark RIO 103 D-74706 Osterburken Tel. +49 62 91 64 400		CE 0044
Typ <b>MSD-A1F1A-B5</b>				
<b>Ex</b>	II 1/2D	Ex ta/tb	IIIC <b>T 80 °C</b>	Da/Db
	II 2G	Ex ib	IIIC <b>T 6</b>	Gb
<b>-20 °C ≤ <math>T_a</math> ≤ +70 °C</b>		C — NO		
<b>Δ p -0,08bar...+0,08bar</b>		C — NC		
Stück Nr.	1234567890	01/11	Contact	$U_o \leq 30 V$
Auftrag-Nr.	1234567890			$I_k \leq 0,1 A$



The device can be installed in the walls of vessels with deviating atmospheric conditions with a difference in pressure up to  $\Delta p$  80 mbar at the membran.

Order code **B22**

Marking: II 1D

II 1G

Gas+Dust **Ex** and **hybrid mixtures**

### Equipment category appropriation by zones

Silo pressure detector for use in zone 0 and zone 20.

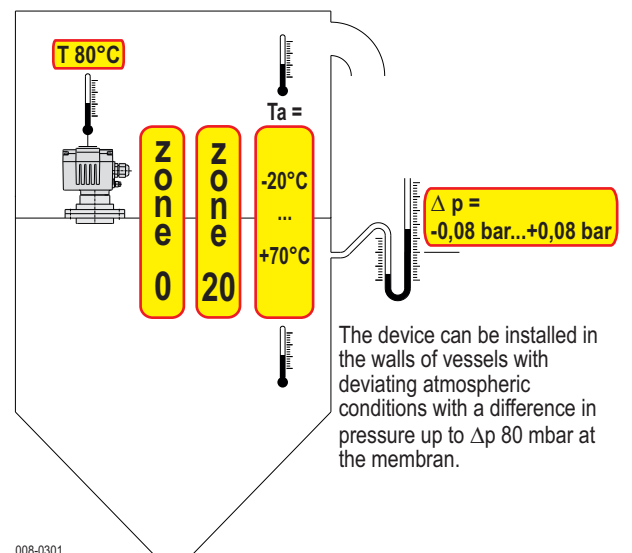
#### Ambient temperatures $T_a$

The ambient temperature  $T_a$  defines the maximum operating temperature of the detectors. Inside the vessel this is process temperature (the air or the bulk goods temperature) nearby the device.

#### maximum surface temperature **T**

The maximum surface temperature means the hottest point at the equipment. The device matches with temperature class **T6**.

<b>MOLLET</b> Füllstandtechnik GmbH		Industriepark RIO 103 D-74706 Osterburken Tel. +49 62 91 64 400		CE 0044
Typ <b>MSD-A2F1I-B22</b>				
<b>Ex</b>	II 1D	Ex ta	IIIC <b>T<sub>200</sub> 80 °C</b>	Da
	II 1G	Ex ia	IIIC <b>T 6</b>	Ga
<b>-20 °C ≤ <math>T_a</math> ≤ +70 °C</b>		C — NO		
<b>Δ p -0,08bar...+0,08bar</b>		C — NC		
Stück Nr.	1234567890	01/11	Contact	$U_o \leq 30 V$
Auftrag-Nr.	1234567890			$I_k \leq 0,1 A$



The device can be installed in the walls of vessels with deviating atmospheric conditions with a difference in pressure up to  $\Delta p$  80 mbar at the membran.



## Special conditions and instructions for safe application

1. The installation, maintenance, initial operation, removal and repair have to be controlled resp. checked by an “authorized person” for explosion protection.
2. For the electrical connection you have to take notice of the local and statutory requirements and/or the VDE 0100.
3. Take notice of the specifications on the data plate.
4. **ATTENTION!** with design **B5**:  
For load limitation a certified barrier or a certified isolation amplifier with an intrinsically safe circuit at least for the category “ib” has to be connected in series, witch is certified for gases of explosion group IIC.
4. **ATTENTION!** with design **B22**:  
For load limitation a certified barrier or a certified isolation amplifier with an intrinsically safe circuit at least for the category “ia” has to be connected in series, witch is certified for gases of explosion group IIC.
5. As soon as the device will be brought into the explosion hazardous area it has to be mounted immediately at the precaused place and a cable has to be brought into the cable gland.
6. Using the device in ambient temperatures > +60 °C, the applied connection cables have to be made for temperatures of min. +80 °C.
7. The cable gland and the plug screw were screwed and protected at the factory. Please check if they have loosened during on the mounting or at the transport. When it is loosened, it has to be fitted again.
8. To secure the type of protection, the screw nut of the cable gland has to be fixed at the installation with a torsional force of min. 5.0 Nm.  
**ATTENTION!** If it will be fastened too strong, the IP-protection can be affected.
9. The earth connection of the device has to be installed in such a way that mechanical damage will be excluded.
10. The device may put into operation with intact cap-sealing and when it is closed, only.
11. Switch off the power supply, before opening the device.
12. Using the Silo pressure detector in the silo wall under deviating atmospheric conditions the maximum differential pressure has not to exceed 80 mbar and the working temperature has not to exceed +80 °C at the membran.
13. In case of existing combustible dusts with a minimum ignition energy less than 3 mJ or with a minimum ignition temperature under +300 °C (BAM assessment), the parts in contact with the dust must be made of stainless steel.
14. In zone 0 all parts in contact with gas and dust must be made of stainless steel.
15. Take notice of the requirements of DIN EN 60079-14, DIN EN 60079-17 and DIN EN 1127-1, especially regarding the dust deposits and temperatures and follow the pertinent rules and regulations.
16. The device with an intrinsically safe electric circuit can be used in dusty explosive hazardous areas.
17. **Hybrid Mixtures**  
The Silo pressure detector is approved for the use in hybrid mixtures.
18. **ATTENTION safety device!**  
Don't modify anything at the device or at the switching point adjusting!