



## Installation and Maintenance Instruction for Flexible Connections in Explosion-prone Areas

- a) The flexible connections may only be used in explosion-prone areas or for transport of explosive atmosphere if the connection materials are resistant against mechanical and / or chemical stress or corrosion under the prevailing environmental conditions in such a way that explosion prevention is still given.

*Explanation:*

*The belt must be chemically stable under the prevailing environmental conditions in such a way that no leakages occur through which explosive atmosphere may reach from the channel into the facility.*

- b) For the transport of explosive atmosphere with flow speeds over 10 m/s only flexible connections with stainless steel flange frames are to be used, irrespective of the nature of the explosive atmosphere.
- c) The use of flexible connections with galvanized steel frames to transport explosive atmosphere of explosion category IIC is only permissible if no aluminum particles with a volume of  $\geq 0.15 \text{ mm}^3$  or a diameter of  $\geq 0.6 \text{ mm}$  are to be expected in the flow medium.
- d) The flange frames of the flexible connections are to be grounded.
- e) When the flexible connections are employed the user must bear mind that the surface temperature depends on the environmental temperature or the medium flowing through the connections.
- f) The user must ensure that no objects hit products that can generate ignitable impact sparks.
- g) The use of the products in atmospheres with flammable gases such as carbon disulfide, carbon monoxide and ethylene oxide must be excluded.
- h) The flexible connections for use in explosion-prone areas are marked as follows.

 II 2G Ex h IIC T6...T1 Gb X  
 II 2D Ex h IIIC T85°C...T450°C Db X  
-20 °C < T<sub>amb</sub> < +70 °C

The characterization is detailed on the next page.

## Page 2 of the Installation and Maintenance Instruction

The Ex-characterization means:

- II Product of device category II („Non-mining“)
- 2G Product of device category 2G, the use is permissible in zone 1 (and zone 2).  
The permission applies to indoor and outdoor use.
- 2D Product of device category 2D, the use is permissible in zone 21 (and zone 22).  
The permission applies to indoor and outdoor use.
- Ex Marking for Ex standards of the series EN 60079 or DIN EN ISO 80079.
- h Basic labeling includes types of protection, structural safety "c", ignition source monitoring "b" and liquid encapsulation "k".
- IIC The flexible connectors may be used for channels in which explosive atmosphere with materials of category IIC (this includes explosion categories IIB and IIA) is transported as well as in explosive areas in which explosive materials of category IIC (this includes explosion categories IIB and IIA) may cause explosion.
- IIIC The flexible connectors may be used for channels in which explosive atmosphere with materials of category IIIC (this includes explosion categories IIIB and IIIA) is transported as well as in explosive areas in which explosive materials of category IIIC (this includes explosion categories IIIB and IIIA) may cause explosion.
- T6...T1 There is no need to specify a specific temperature class, since the maximum possible surface temperature depends on that of the environment or that of the flow-through medium. No self-heating occurs.
- Gb/Db EPL (Equipment Protection Level)  
Gb = category II (gas etc.), protection level high (conform to zone 1 (and zone 2))  
Db = category III (dust), protection level high (conform to zone 1 (and zone 2))
- X For the safe use of the product in explosion-prone areas specific conditions are to be observed.
- T<sub>amb</sub> Permissible ambient temperature.