Vibro level indicators
Level limit switches for bulk goods

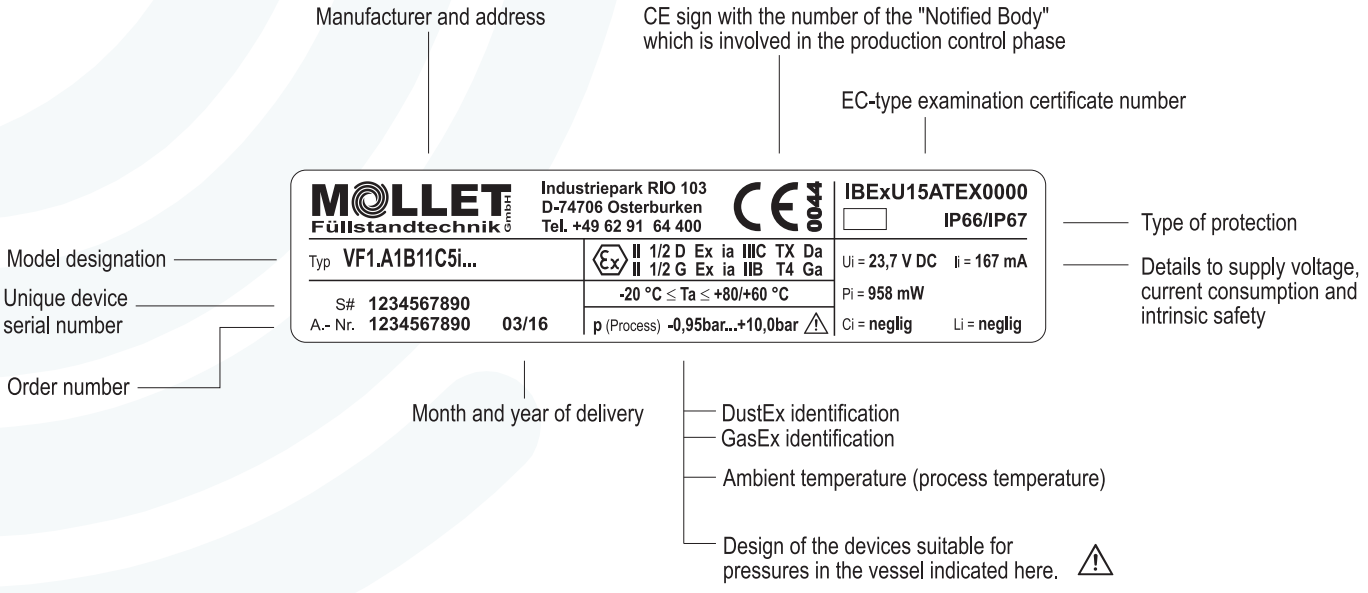
VF10

Gas+ Dust

Explosion protection information
and supplement to the operating instructions

Type plate details with option B11

Gas+Dust



MOLLET
Competence in explosion protection

Marking in accordance with ATEX and DIN EN 60079-0:2009

Vibro level indicator for use at the boundary from zone 20 to zone 21.

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

/ = Level indicators,
which are installed on the boundary between different zones

Type of explosive atmosphere **D** = Dust

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

i = Protection by intrinsic safety

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

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

TX maximum surface temperature

The marking extensions **Da** are a repetition of the already above explained characters and signs:
D for dust, **a** for „very high“ protection standard and so on.

Vibro level indicator for use at the boundary from zone 0 to zone 1.

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

/ = Level indicators,
which are installed on the boundary between different zones

Type of explosive atmosphere **G** = gas

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

i = Protection by intrinsic safety

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

IIB for all flammable gases except hydrogen, acetylene or carbon disulphide

Temperature class **T4** = 135 °C

The marking extensions **Ga** are a repetition of the already above explained characters and signs:
G for dust, **a** for „very high“ protection standard and so on.

The „very high“ protection standard of the devices permits although the use complete in zone 20 and zone 0. Please request further information if needed.

Order code **VF12A1B11C5i...** and **VF13A1B11C5i...**

Marking: **II 1/2 D**
II 1/2 G

Gas+Dust Ex

Equipment category appropriation by zones

Vibro level indicator for use at the boundary from zone 20 to zone 21 and for use at the boundary from zone 0 to zone 1.

Ambient temperatures Ta

The ambient temperature **Ta** defines the maximum operating temperature of the indicators. Inside the vessel this is process temperature (the air or the bulk goods temperature) nearby the device.

Maximum surface temperature T, TX

The maximum surface temperature **T** means the hottest point at the equipment.
The device equates to temperature class **T 4**

Note:

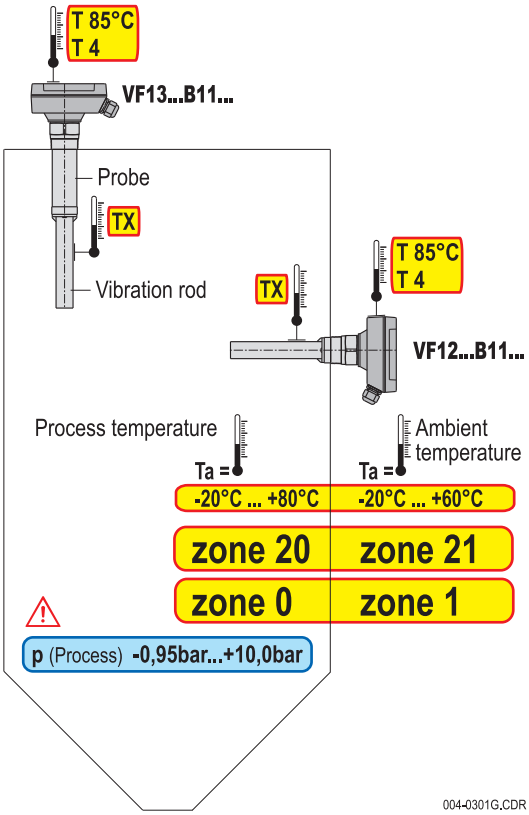
Probe and vibration rod produce no increase of temperature, but they are able to take high temperatures from inside of the vessel and forward it.

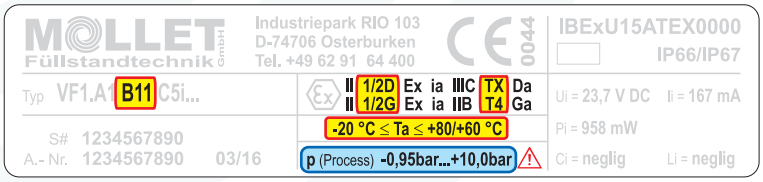
Due to this, the surface temperature **TX** has to be determined according to the process temperature (temperature of bulk solids or ambient) inside of the vessel.

Pressure, vacuum

Design of the devices is suitable for indicated pressures in the vessel.

These pressures are outside of the range for atomospheric conditions defined in the guidance to the ATEX-Product-Directive.





maximum authorised process temperature

$-20\ °C \leq Ta \leq \overbrace{+80\ °C}/\overbrace{\leq +60\ °C}$

maximum authorised ambient temperature at the electronic housing

Order code **VF15A1B11C5i...**

Marking: **II 1/2 D**
II 1/2 G

Gas+Dust Ex

Equipment category appropriation by zones

Vibro level indicator for use at the boundary from zone 20 to zone 21 and for use at the boundary from zone 0 to zone 1.

Ambient temperatures Ta

The ambient temperature **Ta** defines the maximum operating temperature of the indicators. Inside the vessel this is process temperature (the air or the bulk goods temperature) nearby the device.

Maximum surface temperature T, TX

The maximum surface temperature **T** means the hottest point at the equipment. The device equates to temperature class **T 4**

Note:

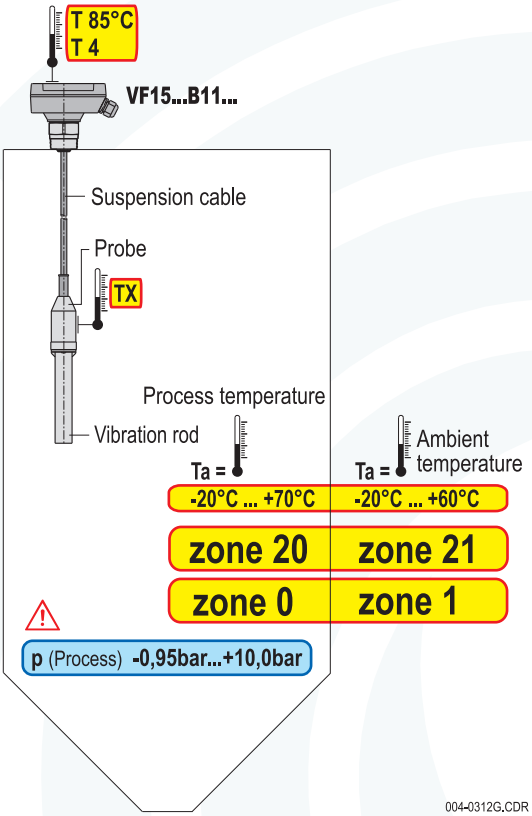
Probe and vibration rod produce no increase of temperature, but they are able to take high temperatures from inside of the vessel and forward it.

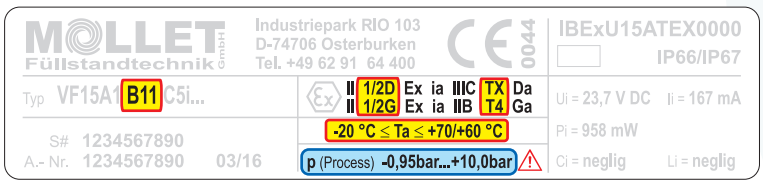
Due to this, the surface temperature **TX** has to be determined according to the process temperature (temperature of bulk solids or ambient) inside of the vessel.

Pressure, vacuum

Design of the devices is suitable for indicated pressures in the vessel.

These pressures are outside of the range for atomospheric conditions defined in the guidance to the ATEX-Product-Directive.





maximum authorised process temperature

$-20\ °C \leq Ta \leq \overbrace{+70\ °C}^{} / \leq \overbrace{+60\ °C}^{}$

maximum authorised ambient temperature at the electronic housing

Inside high process temperature, outside ambient temperature

Order code **VF12A1B11C5i...E1...** and **VF13A1B11C5i...E1...**

Marking: II 1/2 D
II 1/2 G
Gas+Dust Ex

Equipment category appropriation by zones

Vibro level indicator for use at the boundary from zone 20 to zone 21 and for use at the boundary from zone 0 to zone 1.

Ambient temperatures Ta

The ambient temperature **Ta** defines the maximum operating temperature of the indicators. Inside the vessel this is process temperature (the air or the bulk goods temperature) nearby the device.

Maximum surface temperature T, TX

The maximum surface temperature **T** means the hottest point at the equipment.
The device equates to temperature class T 4

Note:

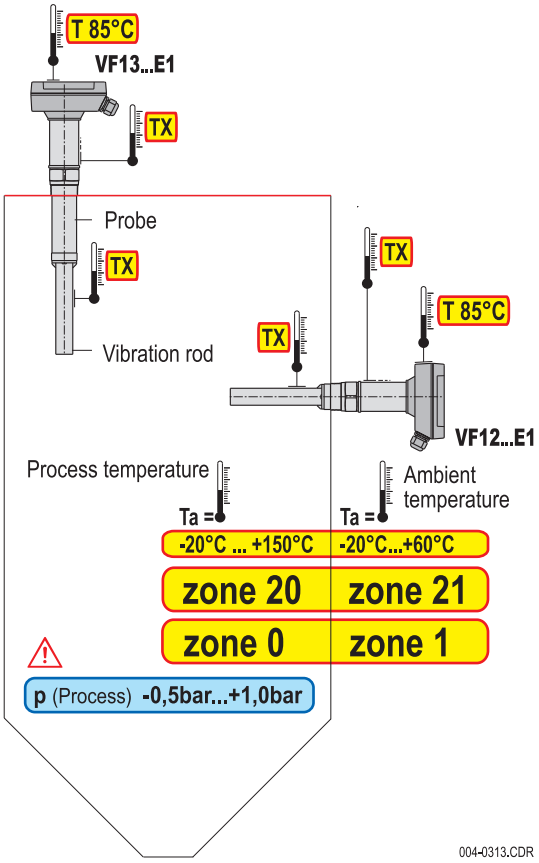
Probe and vibration rod produce no increase of temperature, but they are able to take high temperatures from inside of the vessel and forward it.

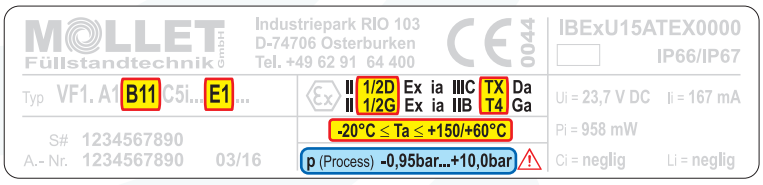
Due to this, the surface temperature TX has to be determined according to the process temperature (temperature of bulk solids or ambient) inside of the vessel.

Pressure, vacuum

Design of the devices is suitable for indicated pressures in the vessel.

These pressures are outside of the range for atomospheric conditions defined in the guidance to the ATEX-Product-Directive.





maximum authorised process temperature

$-20\ °C \leq Ta \leq \overbrace{+150\ °C}^{} / \leq \overbrace{+60\ °C}^{}$

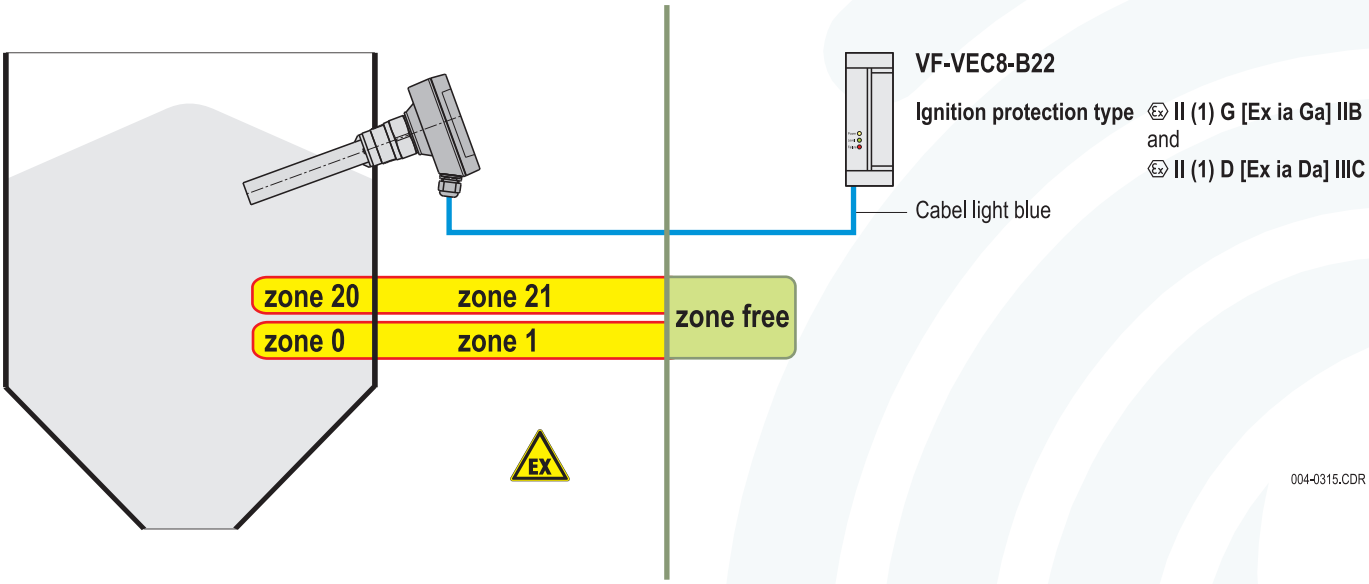
maximum authorised ambient temperature at the electronic housing

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 and has to be done according to the specifications in the operating instructions manual.

2. For the electrical connection you have to take notice of the local and statutory requirements and/or the VDE 0100 as well as the additional requirements for the ignition protection type „i“ - intrinsic safety according EN 60079-14 for associated equipments without galvanic isolation.

3. The power supply must be provided by the associated equipment „Supply and evaluation device VF-VEC8-B22" only.



4. Take notice of the specifications on the data plate.

5. Standards for the connection of intrinsic safe circuits according to EN 60079-14 must be observed.

6. The associated equipment „Supply and evaluation device VF-VEC8-B22" has to be installed in a room without potentially explosive atmosphere (control cabinet).

7. As soon as the device will be brought into the explosion hazardous area it has to be mounted immediately at the intended place and a cable has to be brought into the cable gland.

8. Please check if the cable gland have loosened during mounting process or transport. When it is loosened, it has to be fixed again with a torque of 3.75 Nm.

9. To secure the type of protection, the screw nut of the cable gland has to be fixed at the installation with a minimum torque of 2.7 Nm.
ATTENTION! If it will be fastened too strong, the IP-protection can be affected.

10. The device has to be grounded and the ground connection of the device has to be installed in such a way that mechanical damage will be excluded.

11. The device may put into operation with built-in cap-sealing and when it is closed, only.

12. Remove the dust from the housing before you open it and make sure that no dust turbulences exist.

13. Please check position and intactness of all gaskets before you close the device.

14. Tightening torque of the central fixing srew: 3 Nm and of the lid screw: 3 Nm.

15. The maximum authorised temperatures for process (bulk solids) and ambience have to be observed.

16. Take notice of the requirements of DIN EN 60079-11, DIN EN 60079-17 and DIN EN 1127-1, especially regarding the dust deposits and temperatures and follow the pertinent rules and regulations.