

# Vibro level indicators

## Level limit switches for bulk goods

# VF1.

Gas+  
Dust



# Explosion protection information

## and supplement to the operating instructions

### Type plate details with option B11

Gas+Dust

Manufacturer and address

CE sign with the number of the "Notified Body" which is involved in the production control phase

EU-type examination certificate number

Model designation

Unique device serial number

Order number

<b>MOLLET</b> Füllstandtechnik GmbH		Industriepark RIO 103 D-74706 Osterburken Tel. +49 62 91 64 400	<b>CE</b> 0044	IBExU19ATEX1053X IP66/IP67
Typ VF1.A1B11C5i...	II 1/2 D Ex ia IIIC TX Da/Db II 1/2 G Ex ia IIB T4 Ga/Gb	-20°C ≤ Ta ≤ +80°C/+60°C	Ui = 23,7 V DC Pi = 985 mW Ci = neglig	li = 167 mA Li = neglig
S# 1234567890 A.- Nr. 1234567890	03/19	p (Process) -0,95bar...+10,0bar		

Type of protection

Details to supply voltage, current consumption and intrinsic safety

Month and year of delivery

DustEx identification

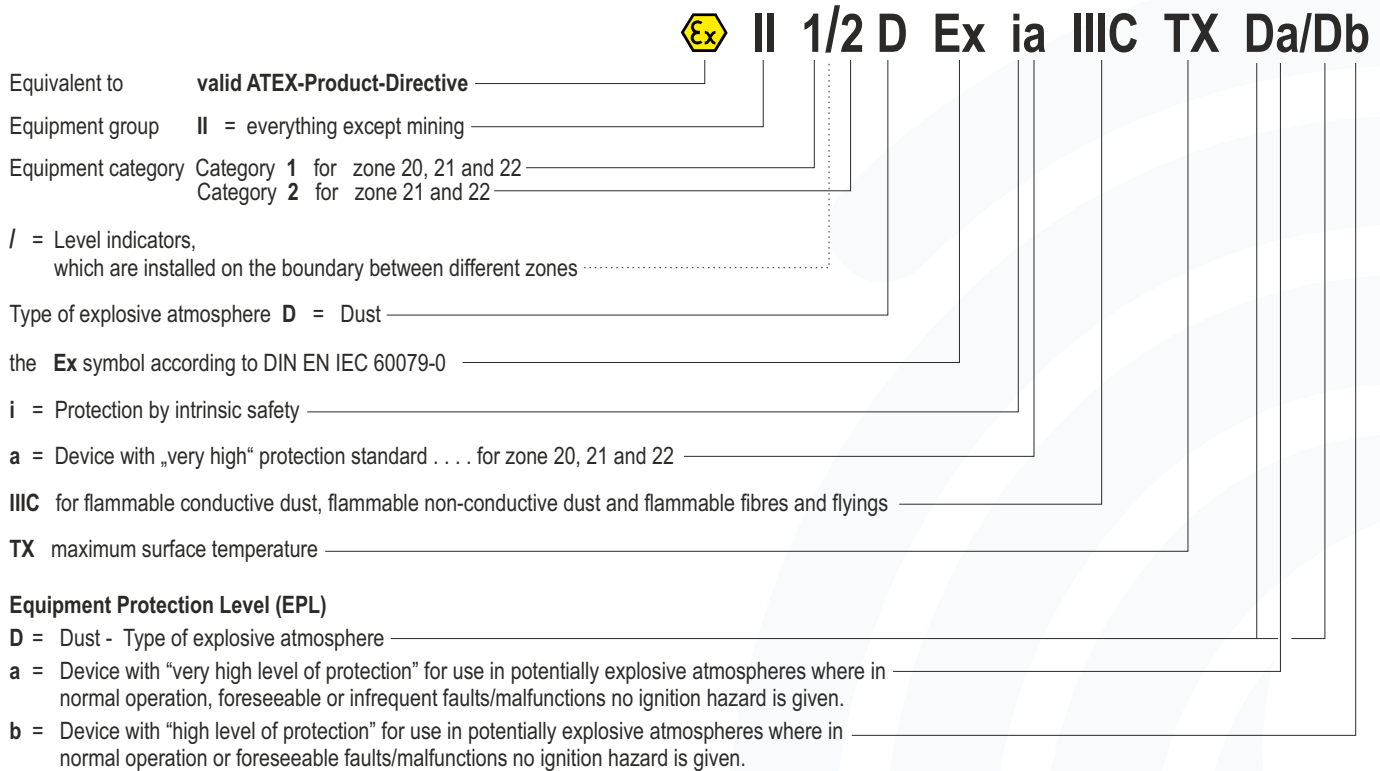
GasEx identification

Ambient temperature (process temperature)

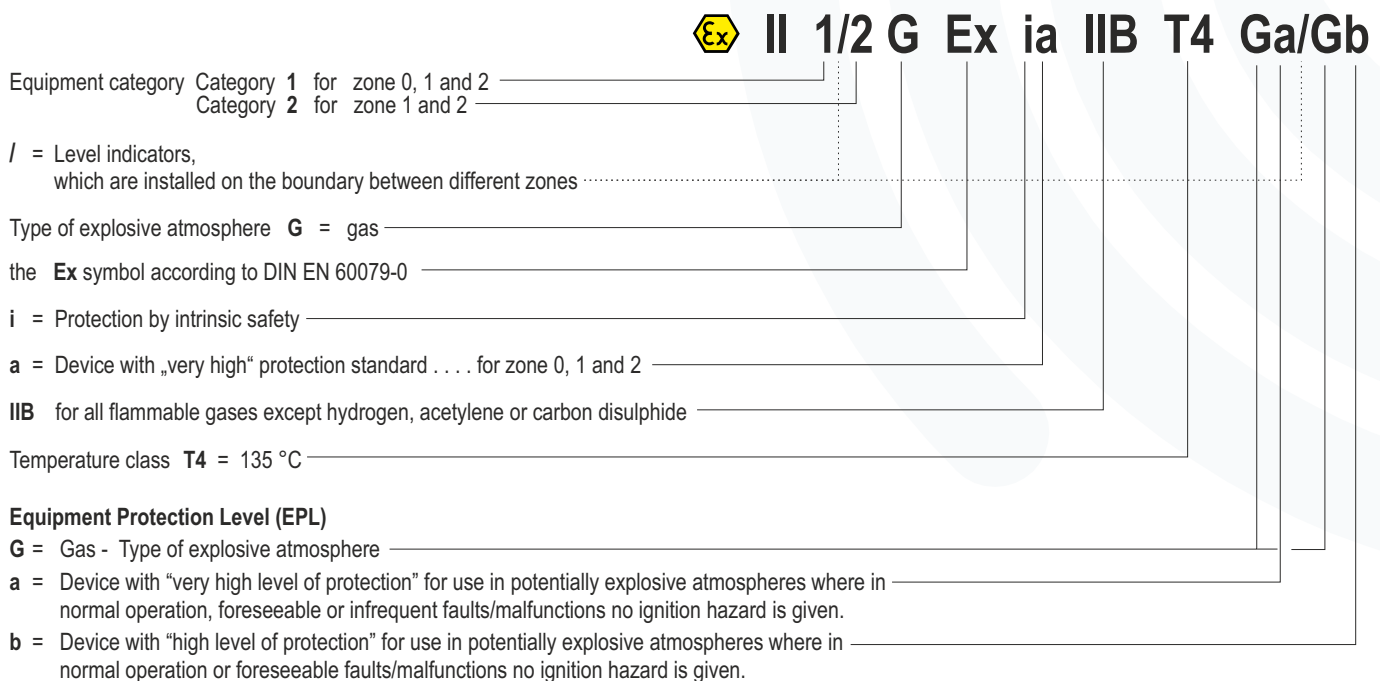
Design of the devices suitable for pressures in the vessel indicated here.

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

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



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



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



## 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 $T_a$

The ambient temperature  $T_a$  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 **T4**.

### Note:

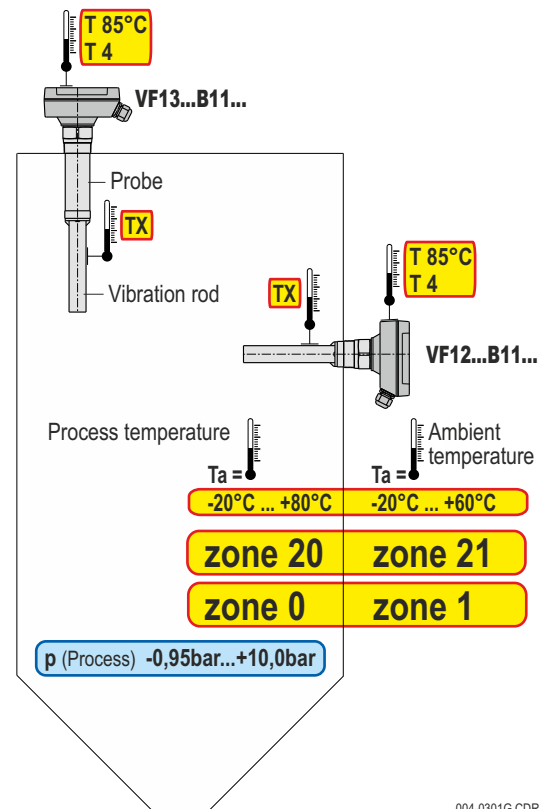
Probe and vibration rod produce no increase of temperature, but they are able to take high temperatures from inside of the vessel and forward it.

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 atmospheric conditions defined in the guidance to the ATEX-Product-Directive.



004-0301G.CDR

<b>MOLLET GmbH</b> Füllstandtechnik		Industriepark RIO 103 D-74706 Osterburken Tel. +49 62 91 64 400		CE 0044	IBExU19ATEX1053X IP66/IP67
Typ	VF1.A <b>B11</b> C5i...	Ex II 1/2D Ex II 1/2G	Ex ia IIC Ex ia IIB	<b>TX</b> T4	Ui = 23,7 V DC Ii = 167 mA
S#	1234567890	$-20\text{ °C} \leq T_a \leq +80/+60\text{ °C}$			Pi = 985 mW
A.-Nr.	1234567890 03/19	$p$ (Process) -0,95bar...+10,0bar			Ci = neglig Li = neglig

maximum authorised process temperature

$$-20\text{ °C} \leq T_a \leq +80\text{ °C} / \leq +60\text{ °C}$$

maximum authorised ambient temperature at the electronic housing

Order code **VF15A1B11C5i...**

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



## 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:

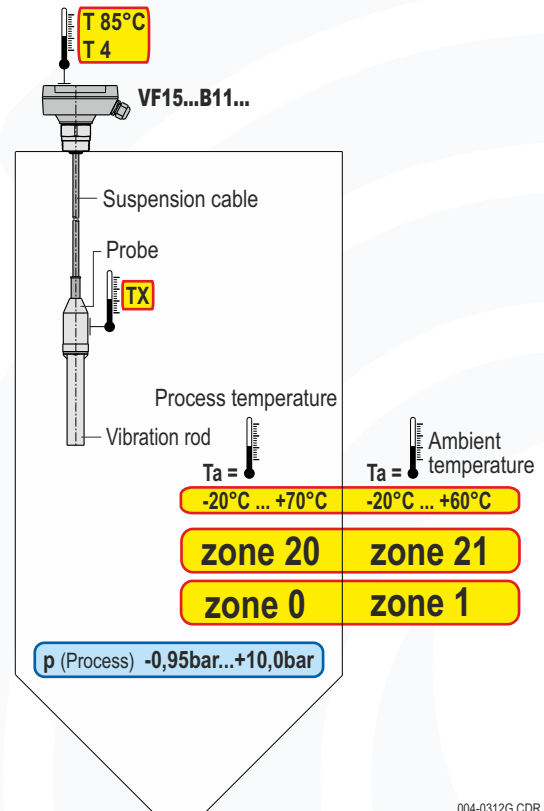
Probe and vibration rod produce no increase of temperature, but they are able to take high temperatures from inside of the vessel and forward it.

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 atmospheric conditions defined in the guidance to the ATEX-Product-Directive.**



004-0312G.CDR

<b>MOLLET</b> Füllstandtechnik GmbH		Industriepark RIO 103 D-74706 Osterburken Tel. +49 62 91 64 400		CE 0044	IBCExU19ATEX1053X IP66/IP67
Typ	VF15A1 <b>B11</b> C5i...	Ex ia IIC <b>TX</b> Da/Db Ex ia IIB <b>T4</b> Ga/Gb	-20 °C ≤ Ta ≤ +70/+60 °C	Ui = 23,7 V DC li = 167 mA Pi = 985 mW Ci = neglig Li = neglig	
S#	1234567890	p (Process) -0,95bar...+10,0bar			
A.-Nr.	1234567890 03/19				

maximum authorised process temperature

$$-20\text{ °C} \leq Ta \leq \overbrace{+70\text{ °C}}^{\text{maximum authorised process temperature}} / \underbrace{\leq +60\text{ °C}}_{\text{maximum authorised ambient temperature at the electronic housing}}$$

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



### 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 T4

**Note:**

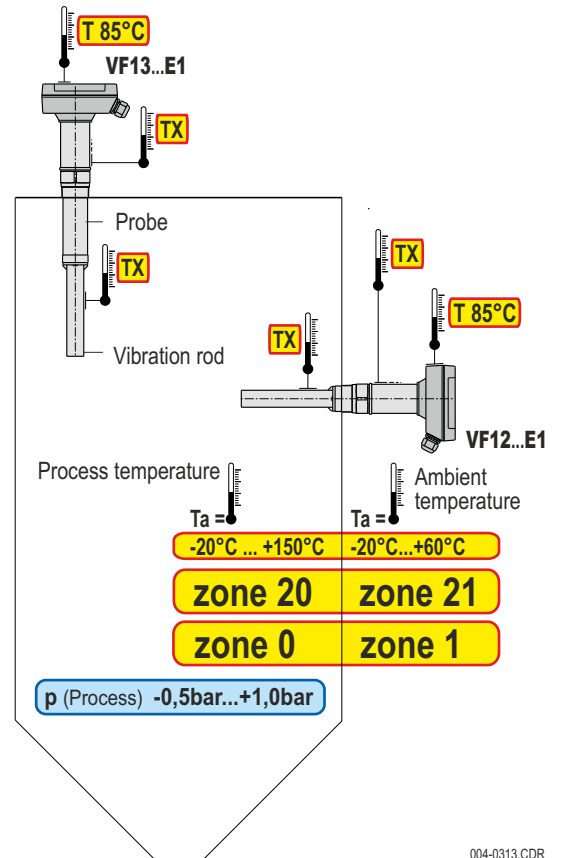
Probe and vibration rod produce no increase of temperature, but they are able to take high temperatures from inside of the vessel and forward it.

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 atmospheric conditions defined in the guidance to the ATEX-Product-Directive.



004-0313.CDR

<b>MOLLET GmbH</b> Füllstandtechnik		Industriepark RIO 103 D-74706 Osterburken Tel. +49 62 91 64 400		0044	IExU19ATEX1053X IP66/IP67
Typ	VF1. A B11 C5i... E1...	II 1/2D Ex ia IIC TX Da/Db II 1/2G Ex ia IIB T4 Ga/Gb	$-20^{\circ}\text{C} \leq \text{Ta} \leq +150/+60^{\circ}\text{C}$		
S#	1234567890	$\text{p (Process)} -0,95\text{bar...}+10,0\text{bar}$		Ur = 23,7 V DC Ii = 167 mA	Pi = 985 mW Ci = neglig Li = neglig
A.-Nr.	1234567890 03/19				

maximum authorised process temperature

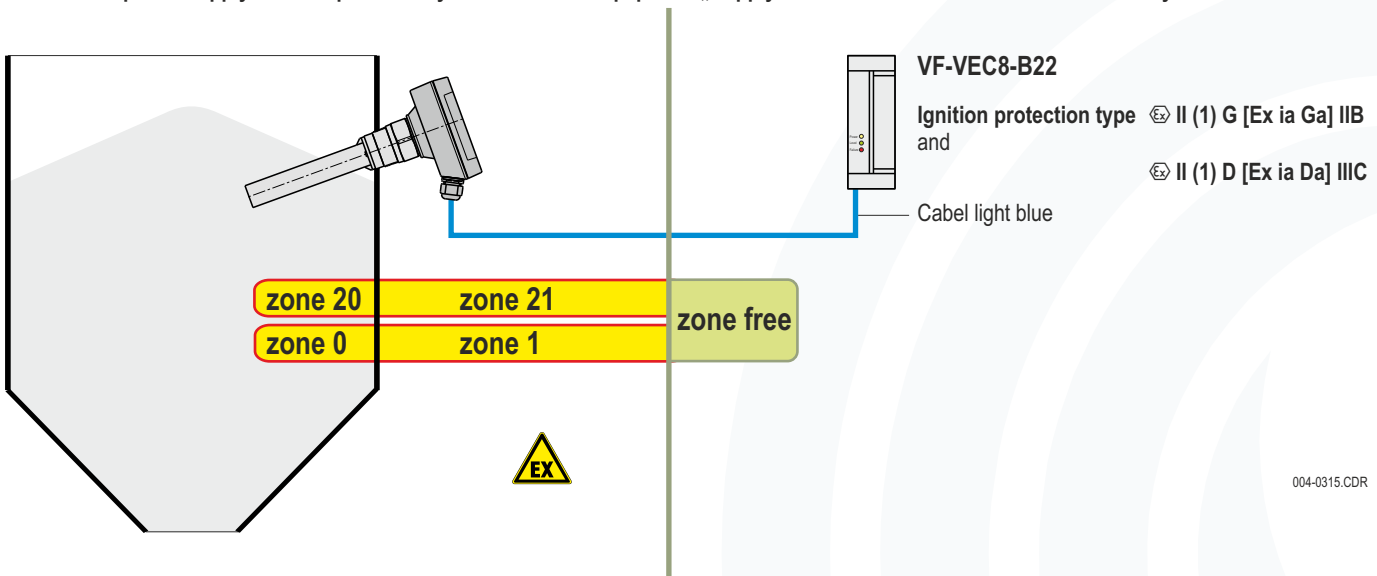
$$-20^{\circ}\text{C} \leq \text{Ta} \leq +150^{\circ}\text{C} / \leq +60^{\circ}\text{C}$$

maximum authorised ambient temperature at the electronic housing



## Special conditions and instructions for safe application

- 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.
  - According to DIN EN 61010-1 a main switch for the supply and evaluation device has to be installed nearby and has to be made visible as such. It must be able to interrupt the power supply and relay circuit with this main switch.
  - For protection against surge voltages a overvoltage filter has to be installed accordingly.
- 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.
  - The vibro level indicator is a category 1 equipment that has to be installed in such a way that sparks can not be generated by shocks onto or friction at the aluminium housing.
- The power supply must be provided by the associated equipment „Supply and evaluation device VF-VEC8-B22“ only.



- Take notice of the specifications on the data plate.
- Standards for the connection of intrinsic safe circuits according to EN 60079-14 must be observed.
- The associated equipment „Supply and evaluation device VF-VEC8-B22“ has to be installed in a room without potentially explosive atmosphere (control cabinet).
- 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.
- 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.
- 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.
- 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.
- The device may put into operation with built-in cap-sealing and when it is closed, only.
- Remove the dust from the housing before you open it and make sure that no dust turbulences exist.
- Please check position and intactness of all gaskets before you close the device.
- Tightening torque of the central fixing srew: 3 Nm and of the lid screw: 3 Nm.
- The maximum authorised temperatures for process (bulk solids) and ambience have to be observed.
- 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.

**Type plate details**

