

Operating instruction



II 2G Ex h IIC T6...T1 Gb X
II 2D Ex h IIIC T6...T1 Db X

Gas pressure thermometer according to directive 2014/34/EG (ATEX)

Types:

G20-G21

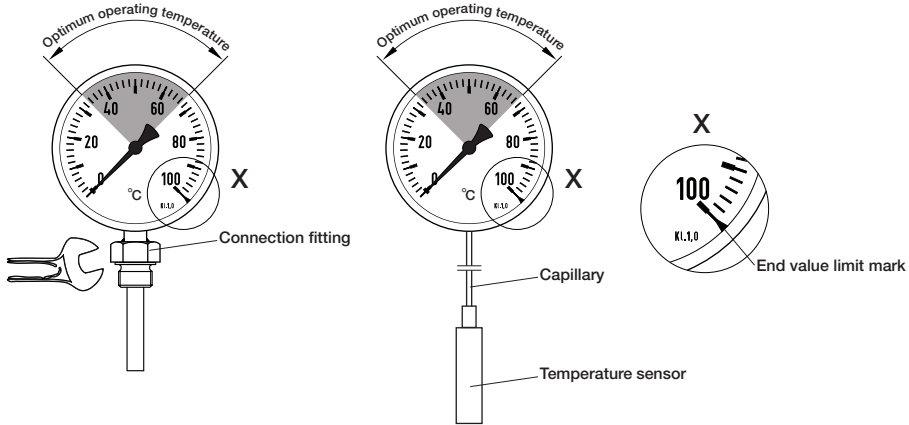
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These thermometers comply with EN 13190, DIN 43772 and DIN 16179.

- The user must ensure that the correct temperature measuring device is selected with regard to the effect of the medium on the material used, the display range and design. The display range of the temperature measuring instrument is optimally selected when the operating temperature is in the middle third of the display range.
- As a rule, a temperature measuring instrument is mounted with the dial vertical. In case of deviations, the position mark on the dial must be observed.



The temperature measuring point should be prepared according to the specifications for screw-in holes or thermowells. Further instructions can be found in VDE/VDI guidelines 3511 and 3512 sheet 2. Sealing washers to DIN 7603A are suitable for sealing. The correct tightening torque depends on the material and shape of the seal used. It should not exceed 80 Nm. When screwing in and unscrewing temperature gauges, do not tighten on the housing, but only on the wrench flats of the connection fitting.

- Temperature measuring devices must be galvanically connected to the plant system via the process connection!
- Temperature measuring instruments without glycerine or oil filling must be mounted vibration-free. If this is not possible, the frequency range $<150\text{Hz}$ at $0.7g = 7\text{m/s}^2$ acceleration must not be exceeded. Measuring instruments should be arranged so that they are easy to read.
- Temperature measuring instruments with glycerine or oil filling must be mounted vibration-free. If this is not possible, the frequency range $<150\text{Hz}$ at $2g = 20\text{m/s}^2$ acceleration must not be exceeded. The devices have a venting screw which must be operated in accordance with the information plate on the measuring device housing.
- We recommend suitable thermowells between the temperature measuring point and the temperature measuring device, which allow the measuring device to be replaced or a zero point check to be carried out.
- The temperature measuring device must be mounted in such a way that the permissible operating temperature (environment/material to be measured) is neither exceeded nor fallen short of, also taking into account the influence of convection and thermal radiation on the housing. For this purpose, the temperature measuring instruments must be protected by sufficiently long measuring lines, siphons or thermowells.

Permissible temperatures

- **Environment:** $-40 \dots +60^\circ\text{C}$. It should be noted that in hybrid mixtures special properties change the ignition temperature. To avoid additional heating the devices must not be exposed to direct sunlight during operation.

- **Medium:** The permissible medium temperature depends not only on the device design but also on the ignition temperature of the surrounding gases and vapors or dusts.

- **Caution!**

In the case of gaseous substances, the temperature may increase due to heat of compression. In such cases, the rate of pressure change may have to be throttled or the permissible medium temperature reduced.

- **Safety:**

A heat reflux from the process which exceeds the ignition temperature of the surrounding explosive atmosphere is not permissible and must be prevented by suitable thermal insulation!

Temperature grade	Max. surface temperature
T6	+65°C
T5	+80°C
T4	+105°C
T3	+160°C
T2	+240°C
T1	+250°C (+360°C for devices without filling)

In explosive atmosphere (dust), the permissible surface temperature is $\leq 2/3$ of the minimum ignition temperature in °C. In the case of dust deposits $\leq 5\text{mm}$ thick, the temperature distance between surface and dust layer must be min. 75K, for thicker dust layers higher temperature safety distances must be minded.

Materials	Type G20-G21
Wetted parts:	CrNi-Steel
Pointer mechanism:	CrNi-Steel
Dial and pointer:	Aluminium
Viewing glass:	Floatglas/Multi layer safety glass

Maintenance and cleaning

- The temperature measuring devices are maintenance-free.
- The accuracy of the display should be checked approximately once a year. The device has to be disconnected from the system and checked with a test fixture.
- The temperature measuring devices must be cleaned with a damp cloth.
- Repairs must only be carried out by the manufacturer or qualified personnel.

Caution!

Residual media in the measuring systems of the devices can endanger personnel, environment and equipment! Precautionary measures must be taken in accordance with the safety data sheet of the medium!



Warning!

It must be ensured that the medium temperature for filled instruments does not exceed 250°C.

