



ATEX INSTRUCTIONS MANUAL
Bimetal Thermometers
 (complement to the mounting/setting leaflet)
T7000 ... Series



SAFETY PRECAUTIONS

You must read carefully all the instructions of this manual. You must not start the installation before taking these instructions into account.

This equipment might receive some hazardous voltages. If you do not consider these instructions, you risk facing serious corporal and/or material injuries.

Before setting up your installation, check the model suit your application. The wiring of this equipment must be executed with the in force rules by a qualified staff.

1 GENERAL WARNINGS

1.1 INSTRUMENTS MEASURING RANGE

Verify that measuring range of the instrument is suitable with working conditions of the circuit/plant. Maximum process temperature must remain within the instrument measuring range, identified on dial with two black triangles.

1.2 ADMITTED OVER TEMPERATURES

Accidental over temperatures are admitted for short periods, provided that they remain within the values indicated in the catalogue.

1.3 AMBIENT TEMPERATURE

Instruments are designed to work with an ambient temperature between -20°C/+60°C (-4°F/+140°F). Different ambient temperatures could give wrong indications or to damage the instrument. IT is recommended to verify that the instrument installation position is not subject to direct heat sources, both for convection or radiation: if this is not possible, please foresee a protective screen.

1.4 MECHANICAL VIBRATIONS

Verify that chosen position for the installation is not subjected to continuous mechanical vibrations, because this will cause accuracy errors and shorter working life of instrument. If this is not possible, it is recommended to use instruments filled with dampening liquid.

WARNING The instrument can be installed in potentially explosives atmospheres only if on dial are indicated the markings showed on figure 1. The temperature classification of the instrument depends only from the working conditions (maximum measured temperature). The bimetal thermometers series T7000 does not contain any potential ignition source. In potentially explosives areas the instrument must be mounted exclusively with thermowell.

1.5 INSTALLATION IN POTENTIALLY EXPLOSIVES ATMOSPHERES (GAS AND DUST)

Figure 1 – Dial markings



Table 1 – Temperature classification

Ambient temperature	Max operating temperature	Temperature class (Gas)	Temperature class (Dust)
-20°C/+60°C	85°C	T6	T85°C
	100°C	T5	T100°C
	135°C	T4	T135°C
	200°C	T3	T200°C
	300°C	T2	T300°C
	450°C	T1	T450°C

2 INSTALLATION

2.1 PROCESS INSTALLATION

The thermometers must be installed in a thermowell that is suitable to the line or to the tank where we want to know the temperature. It is also necessary to verify that the thermowell is suitable for to install the thermometer. With reference to the figure 3 is necessary to verify that:

- 1.The minimum length "S" (see under table 3) guarantee that the sensing element is totally immersed into dimension "U" of thermowell and consequently into the piping, for best sensibility.
- 2.Bulb diameter **d** must be maximum 1mm. less than the bore diameter of thermowell.
- 3.Thermowell thread must be suitable with thermometer thread.

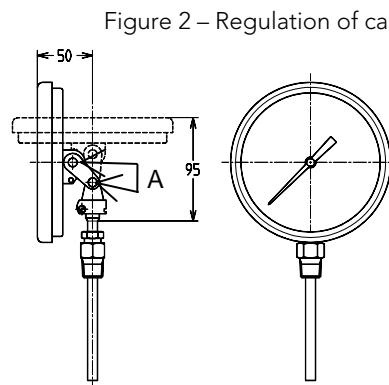
Then insert the instrument bulb till the bottom of thermowell, screw the rotating connection of thermometer on thermowell thread and orient the instrument in a position that permit an easy reading. Then tighten with suitable key the rotating nut and verify the solidity of the mounting.

NOTE: In the event that the tolerance between bulb diameter and bore diameter of thermowell is more than 1mm. fill the thermowell bore with suitable transmission fluid such as silicone oil or graphite dust: this will improve the instrument performances.

WARNING: Absolutely do not use the instrument case to tighten it on thermowell. This can cause damages to the instrument.

3 REGULATION OF THE INSTRUMENT IN "EVERY ANGLE" VERSION

Instrument case could be oriented before installation, to the required inclination, up to a maximum of 90°. For to do this is necessary to unscrew the two "A" screws, place the case in the required inclination and then screw again the two "A" screws.(see Figure 2)



4 CALIBRATION AND CHECK

As good practice, is better to make a complete check of the instruments twice per year.

The calibration check is normally made by using suitable thermostatic bath and test instruments.

Check is carried out by checking the accuracy on the main divisions of the dial. Proceed as follow:

Insert both the thermometer bulb and the test instrument into a stable and uniform thermostatic bath.

Verify that immersion length of both instrument into the thermostatic bath are the same.

Wait for three minutes for a stable indication, and then verify that thermometer shows the same temperature of test instrument, with foreseen tolerance.

Regulate, if necessary, the instrument indication using the external micrometric adjustment on the back side of the case or, in some cases, using the micrometric adjustment on the pointer.

Then remove the thermometer from thermostatic bath.

Figure 3 and table of minimum bulb length

Range	Stem Ø 6mm or Ø 6.4mm	Stem Ø 8mm or Ø 10mm	Stem Ø 12mm
0 / 60°C	150mm	135mm	130mm
0 / 80°C	135mm	110mm	105mm
0 / 100°C	115mm	110mm	105mm
0 / 120°C	110mm	100mm	95mm
0 / 160°C			
----- Up to ----- 0 / 500°C	100mm	90mm	90mm

5 MAINTENANCE

The instrument doesn't need any particular maintenance.

Do not lubricate the moving parts because this could attract dust and to form particles and impurities that could produce malfunctions or accuracy errors.

WARNING :

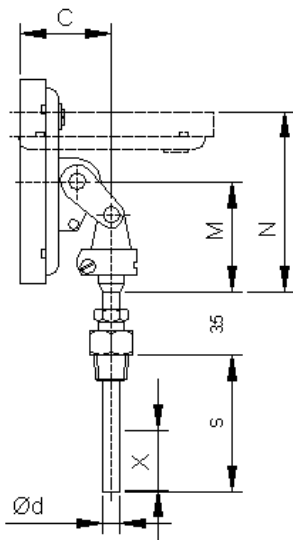
In event of accidental breaking of instrument transparent, it is necessary to substitute it immediately, taking care of removing all the small pieces into the case. The substitution of transparent is mandatory if instrument is mounted in potentially explosives atmospheres with dust.

The instruments that are mounted in potentially explosives atmospheres due to burnable dust, must be periodically externally cleaned for to avoid the dust accumulation.

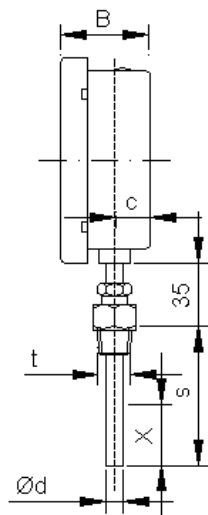
6 DISMOUNTING AND DEMOLITION

The instrument is essentially made in stainless steel. Therefore, after removing transparent, gasket, plugs and after removing all the process fluid traces from the wetted parts (especially if fluid is dangerous for people or ambient) the instrument could be recycled or scraped.

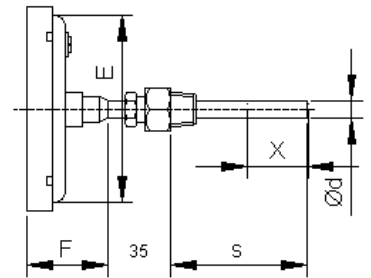
7 DIMENSIONS (MM)



every angle



lower connection



back connection

Case diameter	a	b	B	C	E	F	M	N	S
100	111	23.8	48	56.5	100	32	60	108	Depending on scale range and bulb diameter
125	129				119	34			
150	161				149	34			



DECLARATION DE CONFORMITE
STATEMENT OF CONFORMITY



We, **REGULATEURS GEORGIN - 14/16 rue Pierre SEMARD - 92320 CHATILLON - FRANCE**

Declare under our own responsibility that **Bimetal thermometers series T7000**, manufactured according technical specification SP 01 Rev 01 of 28/09/07 comply to the essential requirements of Directive **ATEX 94/9/CE**

The instruments T7000 does not contain potential source of ignition. Their maximum surface temperature depends only from the operating conditions (maximum measured temperature)

The conformity to the Directive is evaluated with form VIII (manufacturing internal checks);

The technical file N° 07/001 was deposited on 19/12 /2007 at the notified body :

IMQ [Number: 0051]
Via Quintiliano 43
20138 Milan - Italy
Receipt: IMQ.07.ATEX.FT.0016
The instruments are classified as :

Type	Marquage / Marked	Normes / Standards
T7000	II 2GD c T(see table) IP65 T(see table)	EN 13463-1 prEN 13463-5

The temperature classification depends only from the operating conditions, according the following table :

Ambiant temperature	Maximum operative temperature	Temperature class (Gas)	Temperature class (Dust)
-20 ... +60°C	85	T6	T 85°C
	100	T5	T 100°C
	135	T4	T 135°C
	200	T3	T 200°C
	300	T2	T 300°C
	450	T1	T 450°C

Châtillon, le 13/12/07

The Product Manager
Cyril LINTANFF