

Installation, Operation & Maintenance Instructions

FOR BIMETAL & GAS EXPANSION THERMOMETERS—EN 13190





 Models GB/AB, (Bimetal temperature Gauge),
Models GE-GI/AE-AI (Gas Filled Thermometer),
Models 37xxx (special construction)


ATEX CONFORMITY

The DELTA MOBREY Ltd company is able to delivery, when required, instruments manufactured in accordance with the directive and regulation.

2014/34/EU & S.I. 2016/1107 (as amended)

in compliance with

 II 2 G Ex h IIC T6 ...T1Gb X
 II 2 D Ex h IIIC T85°C...600°C Db X

 Each temperature gauge ATEX Certified is supplied with an adhesive label with the below information, and cannot be removed:

- Manufacturer address
- Model/series number
- UKCA & ATEX marking
- Year of manufacturing



The below information are marked on the dial of the gauge:

- Serial number
- Manufacturer
- Material & sensing element and other information according EN13190


Non observance of the instructions marked :  May result in loss of explosion protection

BIMETALLIC THERMOMETERS

INSTALLATION



The installation should be carried out by suitable trained personnel in accordance with all relevant Local and National regulations and codes and following the requirements of the ATEX directive and regulation (e.g. IEC 60079-11, IEC 60079-10 and IEC 60079-14). The safe working practices for the media & processes concerned shall be followed during installation.

 The responsibility for the classification of zones lies with the plant operator and not the manufacturer/supplier of the equipment

It is a good practice to install the bimetallic dial thermometers assembled with a suitable thermowell which guarantees mechanical protection (i.e. speed and pressure of process fluid) as well as chemical (aggressive process fluid) and to facilitate removal of the thermometer for maintenance or replacement without disturbing the process.

If it is the first installation, and the thermometer is supplied with a thermowell, first install the thermowell into the process and proceed then to the installation of the thermometer into the thermowell. As standard the thermometers are fitted with rotating/sliding compression fitting above the bulb. Loosen the two nuts of the compression fitting, fit the bulb entirely into the thermowell bore, tighten with the correct size spanners the threaded connection to the thermowell and then tighten the upper compression nut to lock the temperature sensing bulb in position.


With the centre back stem or for every angle type of thermometers, before the compression nut is tightened, ensure to align the dial to the required readable position.

For fix threaded connection thermometers make sure, before starting the installation, that the bulb dimensions are suitable for thermowell bore and length and taking into account the thread length necessary for the assembly.

In case of installation of replacement thermometers is suggested to check before the installation of the new thermometer into the existing installed thermowell that the bulb dimensions are suitable (diameter and immersion length) to avoid damage.

Do not tighten the instrument by turning the thermometer case as this operation may damage the inner components of the thermometer.

USE

 Avoid as much as possible thermometer installations where high vibration are generated by the application, because this will cause pointer swing, making accurate reading of the Thermometer difficult and will increase the wear

Fill	None	Silicone	Glycerine	Fluorolube
Ta Min.	-30°C (-22°F)	-45°C (-49°F)	+10°C (+50°F)	-50°C (-58°F)



of the inner components.

On the DELTA MOBREY Ltd production program are available thermometers with the case liquid filled for those applications with severe vibrations. The filling liquid will depend on the minimum ambient temperature (Ta) in the table below. The maximum ambient temperature is +60°C (+140° F).

(*) available only on limited version. Please consult factory.

The gauge selection and installation should ensure that the case & mechanism temperature does not exceed +70°C (+158°F).

MAINTENANCE

Aside from periodical accuracy testing carried out by suitable trained personnel with suitable test equipment, little or no maintenance is required.

RE – CALIBRATION

Usually the thermometers are fitted with micrometric zero adjustment, occasionally this zero setting is required to align the thermometers pointer and has to be done by suitable trained personnel with appropriate equipment.

TEMPERATURE CHECK

It is recommended that the check is carried out with a proper thermostatic bath, controlled with a test thermometer, making sure the correct immersion of the bulb into the fluid bath as well as the proper immersion time of few minutes, to get the reading stabilised.

Never attempt to test the thermometers in air at room temperature.

Air is considered a poor conductor of heat and there is always the danger of cold currents influencing the thermometer reading.

On the bimetallic thermometers “every angle” type, the standard EN 13190 accepts a minor indicating variation, which is due to the rotation of the thermometers on their axis.

WORKING TEMPERATURE

The working temperature must be within the limits indicated by the two black triangles printed on dial.

GAS FILLED THERMOMETERS

The Recommendations and Notes given above for bimetallic dial thermometers, are applicable for gas filled thermometers with the following

additional details :

INSTALLATION OF THERMOMETER WITH DISTANT READING CAPILLARY

The case of the thermometer should be installed at a location where it can be easily read and the capillary line has to be securely fixed. The capillary should be laid so that it will not be exposed to extreme temperature, such as alongside steam pipes, ovens or other heated/cooled surfaces and minimum bend radius of 50mm, avoiding sharp bends. Any surplus capillary must not cut, but is to be coiled with 100mm minimum diameter to avoid the damage of the complete system.

ALL THERMOMETERS

THERMOMETERS FITTED WITH ELECTRICAL CONTACT

DELTA MOBREY Ltd will supply upon request, the conformity declaration relating to electrical contact assembled to the thermometers :

- snap action contacts – conformity to 2014/35/EU;
- electronic contacts – TURK conformity N° 2070M;
- inductive contacts – PTB 99 ATEX 2219 X.

WARNING:

DELTA MOBREY Ltd declines all responsibility for any direct or indirect damage to property or person as well as for the consequences, for example, of lost production resulting from failure to observe the instructions in this leaflet, and all information in our catalogue, see our web site.



SPECIAL CONDITION OF USE (X condition):

Observe the surface temperature limits for ATEX application. The permissible medium temperature depends also by the ignition temperature of the gas, vapour or dust. Take this information into account during installation. (See section on ‘USE’) Install the instrument in such a way that, taking into account the ventilation and influence of convection and heat radiation, no deviation can occur, above or below the permissible ambient temperature.



Clean the thermometer with moist cloth and be sure that no electrostatic charge is generated.



The instrument is earthed via the process connection. Electrically conductive sealings should be used at the process connection. Alternatively, take other measures for grounding.



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