REFERENCE

EN 13190
ANSI B 40.200
IS 3624

CERTIFICATE

ISO 9001 : 2008
ISO 14001 : 2004
BS OHSAS 18001 : 2007
ATEX

1 WARNING

Temperature gauges is a fabricated instrument of a control and measurement system, Temperature gauges should be selected and installed by this the possibility of failure resulting in injury or damage caused by misuse or misapplication is can eliminate or minimized. For correct selection and use of gauges, refer to standard EN 13190 .

2 Important factors for proper gauge selection are:

Process: Wetted parts must be compatible / suitable with the measured media.

Temperature range: The Temperature Range of the Gauge should be follow as per standard EN13190. The working temperature in all cases should be limited to 75% of the gauge full scale range. Where alternating Temperature and pulsation are encountered, working temperature should be limited to 2/3 of the gauge range.

Vibration: vibration could result in fatigue failure of the measuring system. Therefore, dampening provisions such as liquid filling of the gauge, spring mounting devices, remote mounting through capillary from the vibration source should be considered.

Temperature limit: Excessive temperature exposure may result in damage to the measuring system and/or gauge outer parts, case, gasket, and window. Preventive temperature lowering devices should be considered.

3 Others instruction:

The devices are only to be used for the intended purpose as described by the manufacturer. The devices are used for direct display of temperatures.

For each use scenario, the corresponding set-up regulations must be respected. The use in explosion risk areas is not permitted.

The gauge is to be stored in dry, clean conditions, within. a temperature range of -20 to +60°C. protected against direct exposure to sunlight and protected against impact damage.

Safety instructions for proper operation of the device must be respected. They are to be provided by the operator for use by the respective personnel for installation, servicing, inspection and operation.

Alteration works or other technical alterations to the device by the customer are not permitted. This also applies to installation of spare parts. Possible conversations or alterations may only be carried out by the manufacturer.

The operator Is responsible for all specified servicing, Inspection and installation works being carried out by authorized and qualified authorities.

The gauge and its surrounding packaging carry markings. These markings show the article number, measurement range and manufacturer. The gauge can be provided with additional signs and safety markings advising on special conditions

4 GENERAL

4a Purpose of this Manual:

This Operating Manual contains fundamental and essential advice to be followed for the installation, operation and servicing of the device. It must be read without fail before assembly and start-up of the device by the fitter, the operator and the specialist personnel responsible for the device. This Operating Manual must be available at the point of use of the device at all times.

Transport inspection 4b

The delivery is to be checked for completeness and damage during transport. In the event of damage during transport, the delivery is not to be accepted, or only accepted subject to reservation of the scope of the damage being recorded and, if necessary complaint initiated.

Environmental protection 4c

This device may optionally contain a filling liquid (e.g. silicone oil). The provisions set out in the REACH regulation on production and use of chemicals must be respected, and the relevant safety data sheets from the manufacturers of the chemicals are available on our website for download .

Construction and function 4d

I*mportant Parts list*

1. Bi-metal helix
2. Stem
3. Shaft
4. Process connection
5. Case
6. Dial
7. Pointer
8. Window
9. Ring

Description of function 4e

The temperature is transferred through thermal conduction onto the bi-metal helix, which is firmly gripped on one side. Due to its construction, using 2 metals with different coefficients of thermal expansion, it rotates proportionally to the temperature change. This rotary motion is transferred via a shaft to the pointer. The angle of rotation for the complete range is approx. 270°.

Description of components 4f

Stem

The stem, with a diameter of 6.6.35,8.0,9.5,10,12 & 14 mm and a length of 100-1500 mm, contains the bi-metal helix on the side facing away from the case. Its active length is approx. 50 mm. The stem must not be subjected to pressure without a supplementary thermowells.

Dial with pointer

The gauge is equipped with a dial and pointer pursuant to EN 13190. ·

Instrument connection

The instrument connection is located on the underside of the gauge and can be executed as a threaded or flanged connector. Union instrument connections permit the case to be oriented according to the point of installation.

Accessories

Please contact the factory or near distributers regarding special tools and accessories.

INSTALLATION 5

Safety

Thermowells must be used for all processes and flowing media subjected to pressure. They protect the thermometer stem against corrosion and mechanical damage , and permit the thermometer to be removed without leaks.

Preparations (requirements for the installation location)

A check on suitability of the device and of the thermowell that may be required for the medium to be measured, the arrangements in the scope of measurement range and the extent of the protection against special conditions such as vibrations .A bracket must be installed to support the gauge if the metering pipe is not able to provide adequate support. The operating temperature range is -20°C to+ 600°C.

Mounting

Using appropriate accessories, the device can be installed on flat walls, mounting plates, on pipes or in panels or boards. If the installation location deviates from the vertical (max. ±5°), the zero setting on the indicator must be corrected.

Every angle connection

Only adjust the every angle connection if this is necessary during fitting or removal. Use the every angle connection to place the sensor in the correct position prior to installation, proceeding as follows:

Position the thermometer housing in a straight alignment. Using the screws, loosen until the joint can be turned freely through 180° on the lower part of the housing and the sensor. Hold the thermometer / Temperature gauge housing firmly with one hand, and with the other hand turn the joint piece until the inner part of the joint is showing in the desired direction of bend. Firmly tighten the above-mentioned screws again. Loose the side screws and move the joint into the desired direction of bend. Firmly tighten the above-mentioned Screws again.

Process connection

Connection only to be undertaken by authorized and qualified specialist staff /operator. Use only with the mechanical process connection provided - regarding the configuration, see order code on the device type label. When connecting the device without using a thermowell , the pipes must be depressurized . Do not allow any mechanical force to be applied to the stem; in particular, pay attention to matching the stem lengths of the thermometer and the thermowell, to avoid contact against the base of the thermowell.

A thermal transfer medium (heat conducting paste) in the thermowell improves the reaction time and reduces the measurement error caused by the thermal transfer.

Safety notice: Only mount using the correct open-jawed wrench, and do not twist the device itself. Do not insert moist or oily stems into hot thermowells .

Starting up

The precondition for start-up is correct installation. All connecting lines must be laid such that no mechanical forces can act on the device.

Zero point adjustment

On thermometers with an external adjustment option, rotate using a screw driver until the pointer is showing the desired temperature on the scale. On thermometers with a bayonet ring, remove the ring, take hold of the pointer using two fingers on the broader part close to the pointer bearing, and use a small screwdriver to rotate the bearing by an estimated angle. Then let go of the pointer and read off the value displayed. Repeat this operation until the desired value is being displayed. Then seal the housing tightly again using the bayonet ring, the glass and the sealing ring.

5 MAINTENANCE

The device is maintenance-free . However, to ensure ·reliable operation and a long lifetime for the device, we recommend that it is Checked regularly .

Safety

When undertaking servicing work on the device fitted without a thermowell, the lines must be depressurized and the plant secured against being switched on again.

Check on function, and re-calibration

The check on function and re-calibration is carried out at regular intervals, depending on the application. The precise testing cycles should be adjusted in line with the operating conditions and ambient conditions. Check on display. Check the thermowell for damage and seal.

Cleaning and maintenance

Cleaning is carried out using a non-aggressive cleaning agent, respecting the protection category of the device .

Conduct in the event of faults

All defective or faulty devices are to be taken out of service. If a repair is required, the device is to be sent directly to our Repairs Department. We request that all returns of devices are agreed with our Service Department.

Possible situations indicating a fault:

- Jerky or random movement of the pointer
- No correspondence between the measured value being displayed and actual temperature
- Bent or loose pointer
- Cracked window
- Damage to housing

In these instances, replacement of the gauge is always required.