

JIS

JAPANESE INDUSTRIAL STANDARD

**Method of temperature
measurement by filled-system
thermometers and
bimetallic thermometers**

JIS Z 8707—1992

Translated and Published

by

Japanese Standards Association

**In the event of any doubt arising,
the original Standard in Japanese is to be final authority.**

1. Scope

This Japanese Industrial Standard specifies the general methods to measure temperature with filled-system thermometers and bimetallic thermometers (hereafter referred to as the "thermometers").

Remarks: Applicable Standards:

JIS B 7528-Mercury Filled Thermometers

JIS B 7529-Vapour Pressure Thermometers

JIS B 7542-Bimetallic Thermometers

2. Definitions of terminology

Definitions of terms used in this standard comply with the following:

- (1) filled-system thermometer The thermometer that utilizes the change of inside pressure or saturated vapour pressure in the metallic parts filled with liquid, gas, or liquid with its vapour by temperature change.
- (2) bimetallic thermometers The thermometer that utilizes the moving of the free end of bimetal whose other end fixed by temperature change.
- (3) indicating mechanism The mechanism to indicate the temperature by the movement of pressure transformer or the free end of bimetal.
- (4) heat sensor The part touching to the measuring object and should keep the same temperature to it.
- (5) pressure transformer The free end of Bourdon's tube or bellows connected to the heat sensor by a duct and moved by the expansion of liquid sealed in it or by the change of pressure of gas or saturated vapour pressure of liquid.
- (6) bimetal Two kinds of thin metallic plates being stuck, whose thermal expansion ratio is different.
- (7) duct A small metallic tube connecting the heat sensor and the pressure transformer.
- (8) pressure system A series of instruments to transform temperature to visible displacement, consisting of the heat sensor, the pressure transformer, and a duct.
- (9) magnifying mechanism That which transmits the displacement of the free end of the pressure transformer to the pointer magnifying, and consists of a rick mechanism, a pinion, a sector gear, accompanied a hair spring, a moving lever, a pin and so on.
- (10) pointer regulating mechanism The mechanism to move the pointer having no relationship with temperature of the heat sensor, to regulate the indication with a precise thermometer.
- (11) temperature compensating apparatus The apparatus to compensate the error of liquid or gas in the pressure transformer and duct caused by the surrounding temperature.