
British Standard Specification for

Industrial platinum resistance thermometer sensors

Capteurs industriels à résistance thermométrique de platine — Spécifications

Meßfühler für Platinwiderstandsthermometer für die industrielle Anwendung

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National foreword

This British Standard has been prepared under the direction of the Industrial-process Measurement and Control Standards Committee. It is identical with IEC Publication 751 : 1983 'Industrial platinum resistance thermometer sensors' published by the International Electrotechnical Commission (IEC). It supersedes BS 1904 : 1964, which is withdrawn.

Terminology and conventions. The text of the international standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is drawn especially to the following.

In table 1 the comma has been used as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Wherever page numbers are quoted, they are IEC page numbers.

Cross-references. The Technical Committee has reviewed

the provisions of IEC Publication 258, to which reference is made in the text, and has decided that they are acceptable for use in conjunction with this standard.

Textual errors. When adopting the text of the international standard, the textual errors listed below were discovered. They have been marked in the text and have been reported to IEC in a proposal to amend the text of the international standard.

In table 1, in the right-hand column heading, 'EIPT' should read 'IPTS'.

In 4.3.3.1, in paragraph 1, line 1, 'thermometer' should read 'temperature'. In paragraph 2, line 1, 'temperature' should read 'thermometer'.

In figure B2, the words 'gaz cylinder or other' are superfluous (and 'gaz' should read 'gas').

NOTE. In 4.3.6, in paragraph 1, line 2, 'equipement' should read 'equipment'.

Compliance with a British Standard does not of itself confer immunity from legal obligations.



AMD 5671

Amendment No. 1 to IEC 751 : 1983

Amendment No. 1
published and effective from 30 September 1987
to BS 1904 : 1984

Industrial platinum resistance
thermometer sensors

NOTE. This amendment brings into effect Amendment No. 1 to IEC Publication 751 : 1983. The opportunity has also been taken of making a consequential amendment to the national foreword.

Revised text

AMD 5671
September 1987

National foreword

In line 4, after '1983', insert 'including Amendment No. 1, '.

Delete the paragraph headed 'Textual errors,' and consequent asterisks in the text and associated footnotes on pages 4, 5, 9 and 17.

AMD 5671
September 1987

Clause 3.1

Delete paragraph 3 and substitute the following.

' For resistance thermometers satisfying the above relationships the temperature coefficient α , defined as:

$$\frac{(R_{100} - R_0)}{100 \times R_0}, \text{ is } 0.003\,850 \cdot ^\circ\text{C}^{-1}$$

where:

R_{100} = resistance at 100 °C

R_0 = resistance at 0 °C '

AMD 5671
September 1987

Table 1

At the head of the table, delete ' $\alpha = 0,003\,850$ ' and substitute ' $\alpha = 0.003\,850 \cdot ^\circ\text{C}^{-1}$ '.

At the top of the right-hand column, delete 'E IPT-68' and substitute 'IPTS-68'.

Delete the entries for the values -23 °C, 230 °C and 812 °C, which are '90,93', '186,32' and '379,06' respectively, and substitute '90,98', '186,82' and '379,08' respectively.

AMD 5671
September 1987

Clause 3.6

In line 1, between 'resistance' and 'class', insert a comma.

AMD 5671
September 1987

Clause 4.3.3.1

In line 1 of paragraph 1, delete 'thermometer' and substitute 'temperature'.

In line 1 of paragraph 2, delete 'temperature' and substitute 'thermometer'.

AMD 5671
September 1987

Clause 4.3.6

In line 2 of paragraph 1, delete 'équipement' and substitute 'equipment'.

AMD 5671
September 1987

Figure B.2

Delete 'gaz' and substitute 'gas'.

Amendment No. 2
published and effective from 15 June 1992
to BS 1904 : 1984

Industrial platinum resistance
thermometer sensors

NOTE. This amendment is being published to effect the implementation of CENELEC HD 459 S2.

Revised text

AMD 7049
June 1992

Front cover

Underneath the English title, insert the following text.
'(Implementation of CENELEC HD 459 S2)'.

AMD 7049
June 1992

National foreword (as amended by Amendment No. 1)

Insert the following text between the second and third sentences of the first paragraph.
'It also implements Harmonization Document HD 459 S2,
published by the European Committee for Electrotechnical
Standardization (CENELEC).'

British Standard Specification for

Industrial platinum resistance thermometer sensors

1. Scope

This standard specifies requirements for industrial platinum resistance thermometer sensors whose electrical resistance is a defined function of temperature. The standard covers thermometers suitable for all or part of the temperature range $-200\text{ }^{\circ}\text{C}$ to $+850\text{ }^{\circ}\text{C}$ with two tolerance classes. It is primarily concerned with sheathed elements suitable for immersion in the medium whose temperature is to be measured.

Methods of test to prove compliance with this standard and suitable apparatus for some of the tests are also described.

2. Definitions

2.1 Platinum resistance thermometer sensor

A temperature-responsive device consisting of a sensing resistor within a protective sheath, internal connecting wires and external terminals to permit connection of electrical measurement devices. Mounting means or connection heads may be included. Typical constructions are shown in Figure 1.

Notes 1. — This resistance thermometer sensor is referred to as a thermometer in subsequent clauses of this standard.

2. — This definition excludes any separable pocket or well provided with the thermometer.

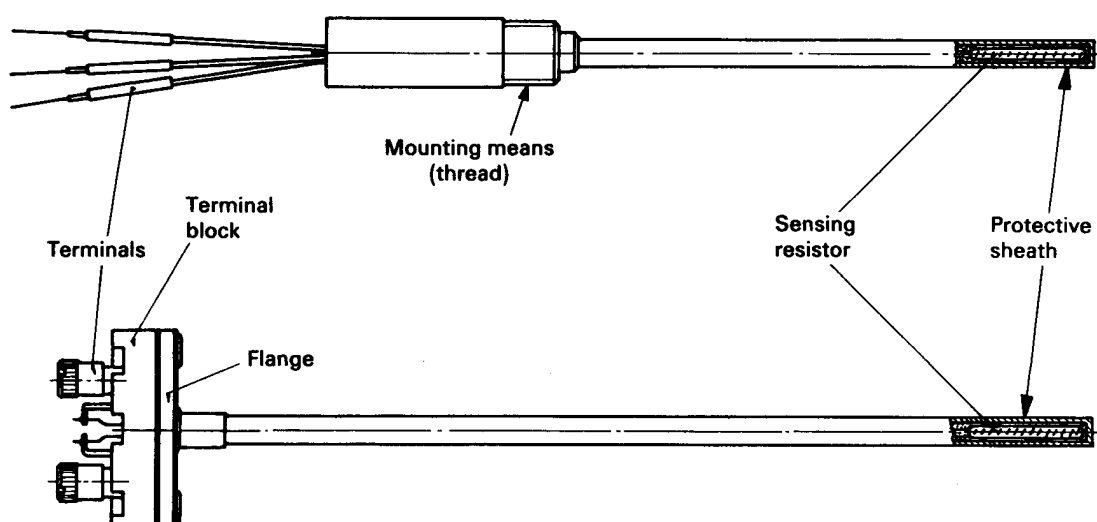


FIG. 1. — Typical construction of resistance thermometer sensor