

SPECIFICATION FOR  
DIMENSIONS OF  
TEMPERATURE DETECTING  
ELEMENTS AND  
CORRESPONDING POCKETS

THIS BRITISH STANDARD, having been approved by the Instrument Industry Standards Committee, was published under the authority of the Executive Board on 20 June, 1969.

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The Institution desires to call attention to the fact that this British Standard does not purport to include all the necessary provisions of a contract.

In order to keep abreast of progress in the industries concerned, British Standards are subject to periodical review. Suggestions for improvements will be recorded and in due course brought to the notice of the committees charged with the revision of the standards to which they refer.

A complete list of British Standards, numbering over 5000, fully indexed and with a note of the contents of each, will be found in the British Standards Yearbook, price 20s. The BS Yearbook may be consulted in many public libraries and similar institutions.

This standard makes reference to the following British Standards:

BS 10. Flanges and bolting for pipes, valves and fittings.

BS 21. Pipe threads.

BS 970. Wrought steels in the form of bars, billets and forgings, up to 6 in ruling section, for automobile and general engineering purposes. En series.

BS 1041. Code for temperature measurement.

BS 1560. Steel pipe flanges and flanged fittings (nominal sizes  $\frac{1}{2}$  in to 24 in) for the petroleum industry.

BS 1506. Steels for use in the chemical, petroleum and allied industries.

BS 1916. Limits and fits for engineering.

BS 3643. ISO metric screw threads.

BS Handbook No. 18. Metric standards for engineering.

*British Standards are revised, when necessary, by the issue either of amendment slips or of revised editions. It is important that users of British Standards should ascertain that they are in possession of the latest amendments or editions.*

The following BSI references relate to the work on this standard :

Committee references INE/4 and INE/4/4      Draft for comment 68/6626

**Amendment No. 1**  
**published and effective from 1 December 1994**  
**to BS 2765 : 1969**

Specification for dimensions of temperature detecting  
elements and corresponding pockets

**Revised text**

**Contents.** For the entries for tables 1, 2A and 2B, delete the titles and substitute '*Text deleted*'.

**Foreword.** Insert the following new text after paragraph 4.

'Following the publication of BS EN 61152 : 1994 'Dimensions of metal-sheathed thermometer elements' certain tables in BS 2765 : 1969 conflict with BS EN 61152. Amendment 1 to BS 2765 : 1969 has therefore been implemented in order to delete the conflicting tables on the date of withdrawal of conflicting national standards, 1 December 1994, in accordance with CENELEC Internal Regulations.'

**Clause 4.1 Dimensions of the elements.** Delete paragraphs 1 and 2 and substitute 'For dimensions of elements see BS EN 61152.'

**Clause 5.1 Dimensions.** In paragraph 1, delete the first sentence and substitute 'Dimensions are specified in Table 3 and in BS EN 61152.'

In paragraph 3, delete the first three sentences and substitute 'A recommended design suitable for applications of moderate severity is illustrated in Figs. 6, 7 and 8.'

Delete paragraph 4.

**Clause 5.4 Construction.** Delete this clause entirely.

**Tables 1, 2A and 2B.** Delete tables 1, 2A and 2B and substitute '*Text deleted*'.

**Table following figure 7.** Delete the table entitled 'Recommended dimensions of width across flats (K) and bar diameter (B)'.

Delete note 2 under the tables and renumber note 3 as note 2.

**Table following figure 8.** Delete the table entitled 'Recommended dimensions of across flats width K'.

Delete note 2 under the table and renumber note 3 as note 2.



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## CO-OPERATING ORGANIZATIONS

The Instrument Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

- British Clock and Watch Manufacturers' Association
- \*British Electrical and Allied Manufacturers' Association
- \*British Industrial Measuring and Control Apparatus Manufacturers' Association
- British Nautical Instrument Trade Association
- British Railways Board
- British Scientific Instrument Research Association
- \*British Steel Industry
- Council of British Manufacturers of Petroleum Equipment
- Electrical Research Association
- \*Electricity Council, the Generating Board and the Area Boards in England and Wales
- Electronic Engineering Association
- \*Engineering Equipment Users' Association
- Gauge and Tool Makers' Association
- Institution of Chemical Engineers
- \*Institution of Electrical Engineers
- Institution of Heating and Ventilating Engineers
- \*Institution of Mechanical Engineers
- Institution of Production Engineers
- Ministry of Defence, Air Force Department
- \*Ministry of Defence, Army Department
- National Coal Board
- \*National Physical Laboratory (Ministry of Technology)
- \*Oil Companies Materials Association
- \*Scientific Instrument Manufacturers' Association
- Water Resources Board
- Water-tube Boilermakers' Association

The Government departments and scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this standard:

- British Coal Utilisation Research Association
- Gas Council
- Institute of Physics and the Physical Society
- Institute of Refrigeration
- Ministry of Power
- Ministry of Technology
- Ministry of Technology, National Engineering Laboratory
- Society of Chemical Industry

# BRITISH STANDARD SPECIFICATION FOR DIMENSIONS OF TEMPERATURE DETECTING ELEMENTS AND CORRESPONDING POCKETS

## FOREWORD

When this British Standard was first published in 1956 under the authority of the Instrument Industry Standards' Committee its purpose was to present a uniform terminology and dimensioning system. In that context it provided definitions of terms which were relevant to specific temperature-detecting elements.

This revision has been prepared as a result of investigating the possibility of rationalizing the leading dimensions of thermometer pockets and temperature detecting elements and reducing the range of sizes to a minimum compatible with the requirements of most users. Diametral tolerances have been especially selected so as to ensure rapid response to temperature changes. The terminology in Section One of the 1956 edition has been retained but only insofar as it provides definitions of the more general terms.

In the light of the impending adoption of the metric system of measurement in the United Kingdom, it is considered appropriate that values which relate to the compatibility of detecting elements and pockets should be given in metric units.

In order to provide for attachment of pockets to plant, recommended external connection sizes are included.

## SPECIFICATION

### 1. SCOPE

This British Standard describes a dimensioning system for, and specifies dimensional requirements of, screwed and flanged thermometer pockets so as to ensure both interchangeability between temperature detecting elements of the same nominal dimensions and a proper fit of such elements into the corresponding pockets. Dimensions which are not required to ensure such interchangeability and fit are not mandatory. A recommended design suitable for applications of moderate severity is illustrated. The pocket itself can be regarded as an integral part of the plant and since it should be designed so as to conform to the more usual methods of fixing employed in machinery and process plant, the means of attachment recommended in this standard are in inch units.

It should be noted that the inclusion of a particular size in this standard does not imply that it is suitable for use with all types of detecting element. The

availability of sizes and limitations on immersion length should be determined by consulting instrument manufacturers.

A pocket material considered suitable for most applications is also recommended.

No recommendations are given regarding sheaths; guidance on this subject will be found in BS 1041\*.

## 2. DEFINITIONS

For the purposes of this British Standard, the following definitions apply:

(1) *Thermometer*. A measuring instrument for ascertaining, and exhibiting in some suitable manner, the temperature of the substance presented to it. Essentially, it includes a detecting element and a measuring element with some form of connecting means interposed (see Fig. 1).

NOTE. A temperature transmitter is a thermometer since it includes both a detecting and a measuring element, the value of the temperature being made available for transmission in the form of a variation of a conveniently measurable physical quantity which can operate a suitable receiver.

(2) *Detecting element*. The part of the thermometer which responds directly to the temperature of the substance presented to it, and which comprises a sensitive portion which may or may not be mounted on an extension.

NOTE. When a detecting element is intended for attachment to a pocket, it includes the entire assembly which is attached. Thus, if a resistance thermometer or thermocouple is mounted in a connection head, the head being separated from the pocket by an extension piece, both head and extension piece are parts of the detecting element (see Fig. 5b).

(3) *Sensitive portion*. The part of the detecting element which includes the temperature-sensitive material, or, if there is no enclosure, the temperature-sensitive material itself.

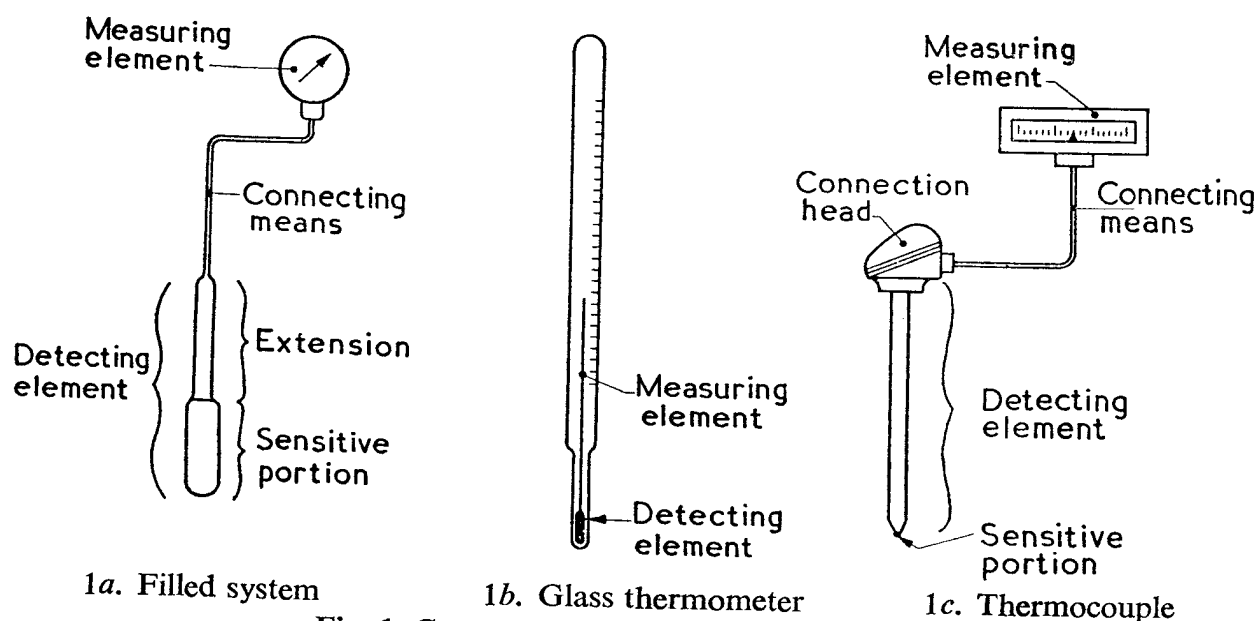


Fig. 1. Component parts of plain thermometers

\* BS 1041, 'Code for temperature measurement'.