

Specification for

Thermographs (Liquid-filled and vapour pressure types) —

For use within the temperature
range – 20 °F to 220 °F (– 30 °C to 105 °C)

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:

- Association of Scientific Workers
- British Ceramic Research Association
- British Clock and Watch Manufacturers' Association
- British Electrical and Allied Industries Research Association
- British Electrical and Allied Manufacturers' Association*
- British Industrial Measuring and Control Apparatus Manufacturers' Association*
- British Iron and Steel Federation*
- British Nautical Instrument Trade Association
- British Railways, The British Transport Commission
- British Scientific Instrument Research Association*
- Council of British Manufacturers of Petroleum Equipment
- Electricity Council, the Generating Board and the Area Boards in England and Wales*
- Engineering Equipment Users' Association*
- Gauge and Tool Makers' Association
- Institute of Physics
- Institution of Chemical Engineers
- Institution of Electrical Engineers*
- Institution of Heating and Ventilating Engineers*
- Institution of Mechanical Engineers*
- Iron and Steel Institute
- Meteorological Office
- Ministry of Health
- Ministry of Housing and Local Government
- Ministry of Supply*
- National Coal Board
- National Physical Laboratory (D.S.I.R.)*
- Oil Companies' Materials Association*
- Radio Industry Council
- Scientific Instrument Manufacturers' Association*
- Society of Instrument Technology
- 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 British Standard:

- Admiralty
- Air Ministry
- British Coal Utilization Research Association
- Gas Council
- Ministry of Power
- Ministry of Works
- Physical Society
- Refrigerated Cargo Research Council
- Society of Chemical Industry
- Individual manufacturers and users

This British Standard, having been approved by the Instrument Industry Standards Committee and endorsed by the Chairman of the Engineering Divisional Council, was published under the authority of the General Council on 30 November 1959

© BSI 12-1999

The following BSI references relate to the work on this standard:
Committee references INE/4 and INE/4/7
Draft for comment CZ(INE) 3463

ISBN 0 580 34119 4

Amendments issued since publication

Amd. No.	Date	Comments

Contents

	Page
Co-operating organizations	Inside front cover
Foreword	ii
1 Scope	1
2 Materials	1
3 Design and construction	1
4 Temperature range	1
5 Accuracy	1
6 Compensation	2
7 Lag	2
8 Testing	2
9 Marking	2
10 Packaging	3
Appendix A Precautions to be taken when the twin-pen instrument is to be used as a wet and dry bulb hygrograph	4
Appendix B Testing of thermographs	5
Appendix C Recommendations for despatch by manufacturer and subsequent movement by customer from site to site	5
Figure 1 — Typical identification plate	3
Table 1 — Maximum error in computed per cent relative humidity	5

Foreword

This standard makes reference to the following British Standards:

BS 1133, *Packaging code*.

BS 1986, *Dimensional features of measuring and control instruments and panels for industrial purposes*.

BS 2548, *Wood wool for general packaging purposes*.

BS 2770, *Recommendations for the pictorial marking of handling instructions for non-dangerous goods*.

This British Standard is one of a series prepared under the authority of the Instrument Industry Standards Committee at the request of the Temperature Measuring Instruments Sub-committee of the Joint Equipment Standardization Committee. It is intended to cover Service requirements for a distant reading thermograph, either as a wet and dry bulb hygrograph or as a twin (or single) dry bulb thermograph, as well as requirements for certain industrial and marine uses.

For determining the relative humidity of the air the instrument is used as a wet and dry bulb hygrograph and the relative humidity is calculated using the appropriate hygrometric tables¹⁾ or slide rule²⁾. When used as a hygrograph several precautions must be taken in order to obtain accurate results; these are discussed in Appendix A. These precautions must be taken if the performance of the instrument, as laid down in the body of this specification, is to be attained.

NOTE Where metric equivalents have been given, the figures in British units are to be regarded as the standard. The metric conversions are approximate. More accurate conversions should be based on the tables in BS 350, "*Conversion factors and tables*".

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 6 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

¹⁾ *Meteorological Office booklet M.O. 265*, H.M.S.O., for non-aspirated wet bulbs with ventilation rates 3 to 6 ft/sec (1 to 2 m/sec). *Guide to current practice*, Institution of Heating and Ventilating Engineers, 1959, for aspirated wet bulbs with ventilation rates greater than 15 ft/sec (5 m/sec).

²⁾ Meteorological Office humidity slide rule, for °F or °C, conforming to the current Meteorological Office specification.