

**Rules for the Preparation of Detail
Specifications for**

All-or-nothing Electromechanical Relays of Assessed Quality —

Full and Basic Assessment Levels

UDC 621.318.5

Co-operating organizations

The Telecommunication 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 Broadcasting Corporation	Institution of Electrical and Electronic Technician Engineers
British Electrical and Allied Manufacturers' Association*	Institution of Electrical Engineers
British Radio Equipment Manufacturers' Association	Institution of Electronic and Radio Engineers
British Radio Valve Manufacturers' Association	Institution of Production Engineers
British Railways Board	Ministry of Aviation Supply*
Cable and Wireless Limited	Ministry of Defence
Crown Agents for Oversea Governments and Administrations	Ministry of Defence, Army Department
Department of Employment (HM Factory Inspectorate)	Ministry of Defence, Navy Department
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Electronic Valve and Semi-Conductor Manufacturers' Association*	Scientific Instrument Manufacturers' Association
Home Office	Society of British Aerospace Companies Ltd.
Independent Television Authority	Telecommunication Engineering and Manufacturing 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:

Association of Consulting Engineers	National Coal Board
Engineering Equipment Users' Association	United Kingdom Atomic Energy Authority

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8 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 Introduction

An all-or-nothing relay is one intended to be energized by a quantity having a value either higher than that at which it pulls in (or operates) or lower than that at which it drops out (or releases).

This British Standard shall be read and used in conjunction with Section 2 of BS 9150:1971, *“Electrical relays Of assessed quality”*, which gives the general rules for the preparation of detail specifications for relays.

The object of all general rules given in Section 2 of BS 9150 is to ensure that detail specifications for relays are broadly similar as regards their subject matter and presentation.

The object of the additional rules given in this standard is to ensure that all detail specifications for all-or-nothing electromechanical relays are closely similar (see also BS 9150, Appendix C).

2 Scope

This British Standard lists the ratings, characteristics, inspection requirements and supplementary information for all-or-nothing electromechanical relays which are to be included as minimum mandatory requirements, in accordance with the general rules given in Section 2 of BS 9150, in any detail specification for these relays. A complete detail specification is, therefore, a combination of the requirements of both documents. Its purpose is to describe fully the particular relay so that the detail specification can be used for contractual purposes in the procurement of relays, for acceptance test purposes and for circuit design and equipment maintenance purposes. Requirements for both full and basic assessment levels are covered in this standard.

The rules given in this standard do not apply to relays for specialized applications. The rules for such specialized applications are given in other standards in the series BS 9152 – BS 9199.

3 Ratings (see 2.1.5 of BS 9150)

The following ratings shall be given:

- 1) **Coil(s)** (as in 2.1.5 of BS 9150)
 - a) Rated voltage and/or current for each coil variant at 20 °C unless otherwise stated. Optionally for a family of relays of the same basic form rated nominal coil power [see Section 1.1.3 item 27)] may be given for each different contact action.

- b) Rated range of voltage and/or current for each coil variant at 20 °C unless otherwise stated. Optionally for a family of relays of the same basic form rated range of nominal coil power [see Section 1.1.3 item 27)] may be given for each different contact action.

- c) Resistance for d.c. relays or impedance for a.c. relays with tolerance, referred to 20 °C unless otherwise stated.

- d) Frequency for a.c. relays.

- e) Insulation resistance and measurement voltage.

- f) Voltage proof test voltages (see BS 9150, Procedure 1002).

2) Contacts (resistive load) as 2.1.5 of BS 9150.

- a) Number and description of contact units.

- b) The minimum and maximum contact voltage.

- c) The minimum and maximum contact current.

- d) The maximum rated load at which b and c apply: in W for d.c. relays and V A for a.c. relays

- e) The insulation resistance and measurement voltage.

- f) Voltage proof test voltage.

3) Special operating circuit conditions, if any.

4) Environmental limitations (as required by tests in Table 1 or Table 2)

- a) Climatic category.

- b) Shock.

- c) Acceleration.

- d) Vibration.

- e) Low air pressure (including voltage limitations).

- f) Any other limitations

4 Characteristics (see 2.1.6 of BS 9150)

The following characteristics, at 20 °C or as otherwise stated, shall be given:

- 1) Performance values and limits as required (see BS 9150, Procedure 1005).
- 2) Contact-circuit resistance, and points of measurement.
- 3) Maximum speed of operating and duty cycle.
- 4) Mass.

The remaining characteristics shall be as given in 2.1.6 of BS 9150 with the addition of:

Maximum speed of operation and duty cycle, where applicable.