

Specification for

Tractive armature direct current neutral-polar line relays for railway signalling

Co-operating organizations

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

- Admiralty
- Air Ministry
- Association of Consulting Engineers Incorporated
- Association of Supervising Electrical Engineers
- British Electrical and Allied Industries Research Association
- British Electrical and Allied Manufacturers' Association*
- British Electrical Development Association
- British Electricity Authority and Area Boards
- British Railways*
- Cable Makers' Association
- Electric Lamp Manufacturers' Association*
- Electric Light Fittings Association
- Electrical Contractors Association (Incorporated)
- Electrical Contractors Association of Scotland
- Engineering Equipment Users' Association
- General Post Office
- Institution of Electrical Engineers*
- Ministry of Fuel and Power
- Ministry of Labour and National Service (Factory Department)
- Ministry of Supply
- Ministry of Works
- National Physical Laboratory
- North of Scotland Hydro-Electric Board
- Public Transport Association (Incorporated)
- Radio Industry Council

The Government department 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:—

- Crown Agents for the Colonies
- Federation of British Industries
- Institution of Railway Signal Engineers
- Ministry of Transport
- Office of the High Commissioner for New Zealand
- Individual manufacturers of Railway Signalling Apparatus

This British Standard, having been approved by the Electrical Industry Standards Committee and endorsed by the Chairman of the Engineering Divisional Council, was published under the authority of the General Council on 14 July 1950

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Foreword

This standard requires reference to the following British Standard:—

BS 442, *Terminals for electrical, apparatus for railway signalling*.

This British Standard, which was first published in 1933, has been revised as part of a general revision of the series of British Standards for relays for railway signalling.

This standard deals with relays of the type in which a neutral armature is attracted magnetically, against the force of gravity, by current flowing in either direction in the relay coils, and in which a polar armature is attracted to either a “normal” or “reverse” position, according to the direction of the current in the relay coils. The polar armature remains in the position to which it was last attracted until the current in the relay coils is reversed.

The most important amendments made are as follows:—

Four standard types of contact equipment are now specified.

The standard no longer specifies carbon-to-carbon contacts, which are not now generally used. The requirements for contact clearance are now specified in more detail.

The operating values have been amended. The standard now includes, in an Appendix, recommendations on the arrangement and marking of terminals in future designs of relays.

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 8, an inside back cover 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 Scope

This British Standard covers tractive armature direct-current neutral-polar line relays for railway signalling.

The standard provides for relays having up to four neutral contact-arms and up to four polar contact-arms.

2 Definitions

For the purposes of this British Standard the following definitions shall apply:—

2.1

normal position

the position of the polar armature after the magnet of the relay has been energized in the normal direction; that is, with the positive coil terminal connected to the positive terminal of a battery

2.2

reverse position

the position of the polar armature after the magnet of the relay has been energized in the reverse direction, that is with the positive coil terminal connected to the negative terminal of a battery

2.3

pick-up value

the value of the current which is just sufficient to close the front contacts of a relay under the specified conditions

2.4

drop-away value

the value of the current at which the front contacts of a relay just open under specified conditions

2.5

carbon contacts (in the expression “carbon-to-metal contacts”)

a general term covering graphite, and compounds and mixtures of carbon and metals

2.6

arm

the moving part of the contact

2.7

front contact

the fixed part of that contact which is closed by the movement of the neutral armature when the magnet of the relay is energized

2.8

back contact

the fixed part of that contact which is closed by the movement of the neutral armature when the magnet of the relay is de-energized

2.9

normal contact

the fixed part of that contact which is closed when the polar armature is in the normal position

2.10

reverse contact

the fixed part of that contact which is closed when the polar armature is in the reverse position

2.11

polar contact (when used without qualification)

either the normal contact or the reverse contact

2.12

independent contact

a term denoting that the arm may connect to a front or to a back contact, but not to both