

Plug-in and Interchangeable Railway Signalling Equipment

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Synopsis

This standard specifies the requirements necessary to ensure safe interchangeability of plug-in and plug-coupled railway signalling equipment.

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Part A

Issue Record

This Standard will be updated when necessary by distribution of a complete replacement.

Amended or additional parts of revised pages will be marked by a vertical black line in the adjacent margin.

Issue	Date	Comments
1	October	New document

Responsibilities

Railway Group Standards are mandatory on all members of the Railway Group * and apply to all relevant activities that fall into the scope of each individual's Railway Safety Case. If any of those activities are performed by a contractor, the contractor's obligation in respect of Railway Group Standards is determined by the terms of the contract between the respective parties. Where a contractor is a duty holder of a Railway Safety Case then Railway Group Standards apply directly to the activities described in the Safety Case.

* The Railway Group comprises Railtrack and the duty holders of the Railway Safety Cases accepted by Railtrack

Compliance

The provisions of this Railway Group Standard are mandatory and compliance is required from 6 February 1999.

Health and Safety Responsibilities

In issuing this Standard, Railtrack PLC makes no warranties, express or implied, that compliance with all or any Railway Group Standards is sufficient on its own to ensure safe systems of work or operation. Each user is reminded of its own responsibilities to ensure health and safety at work and its individual duties under health and safety legislation.

Supply

Controlled and uncontrolled copies of this Standard may be obtained from the Industry Safety Liaison Dept, Safety and Standards Directorate, Railtrack PLC, Railtrack House, DP01, Euston Square, London, NW1 2EE.

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Part B

1 Purpose

This standard defines the requirements necessary to ensure safe interchangeability of plug-in and plug-coupled railway signalling equipment in order to minimise the risks associated with the connection of incompatible equipment.

2 Scope

This standard covers the interchangeability requirements of railway signalling equipment, designed to connect or be connected to fixed wiring by means of a plug-in or plug-coupled connection. It does not contain any information on the other functional requirements of the equipment.

3 Definitions

Pin-code

A series of locating pins assembled in a pattern to ensure the item bearing the pins can only be connected to a corresponding item of equipment containing a matching pattern of holes. The pin-code may sometimes be referred to as the "registration pin-code".

4 Requirements

Where equipment is designed to be exchanged for maintenance, renewal, ease of disconnection, etc. and it is connected to the fixed wiring by plug-coupling or a plugboard, appropriate control measures shall be taken to ensure that connection of an item of equipment with a different functionality is prevented.

Where the means of applying the control measure is mechanical (e.g. coding pins and corresponding receptor into which they couple), it shall be of sufficient mechanical strength to prevent the connection of incompatible equipment under the application of any reasonably foreseeable force.

The means of preventing the interconnection of incompatible equipment shall be demonstrated as part of the product acceptance process.

The specification of each item of equipment produced in accordance with this Railway Group Standard shall be documented.

5 Pin-Codes

The most common method of achieving compliance with the requirement is by pin-coding the plug-coupled connection.

Railtrack Line shall ensure that where pin-coding is used, the allocation of pin-codes is controlled to ensure that the allocation of each pin-code is unique to a particular application.

The receptor shall be provided with only the minimum number of holes required for the allocated pincode.

Where a change is made to the equipment specification so that items configured to the revised specification are not interchangeable with items configured to previous versions of the same specification, a different pin-code shall be allocated.

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Where variants are permitted within a single equipment specification, e.g. relays with different operating voltages, contact arrangements or fixed timing characteristics, each variant shall be allocated a different pin-code unless it can be demonstrated that no reduction in safety would result from the different variants being interchanged. In order to comply with this requirement, generally the following shall apply:

- a) Equipment of the same style/specification but with either single or double wound coils or single or double inputs, may use an identical pin-code.
- b) Equipment with the same pin-code but different input, output or contact configurations shall only be permitted if no risk arises, e.g. where the input, output or contact types are consistent or are replaced by unused positions.
- c) Equipment of the same style/specification but with different operating voltages shall not be allocated the same pin-code.