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Issue	I
Date	December 2000

Track Circuit Interrupters (formerly RT/E/PS/I 1764)

This temporary front sheet facilitates change to the new Network Rail Standards referencing nomenclature.

The Ref above will be formally allocated to this standard when it is next changed in the meantime the contents, date and issue number of this Network Rail Standard are **UNCHANGED and with immediate effect it should be referred to as “(new ref) formerly (old ref)”.**

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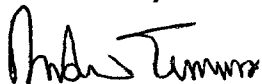


RAILTRACK LINE PRODUCT SPECIFICATION

TRACK CIRCUIT INTERRUPTERS

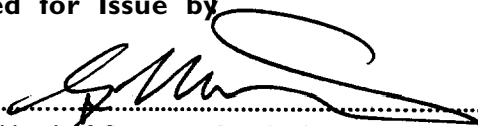
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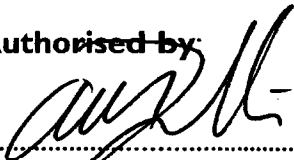
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Summary

This Line Specification states the minimum requirements for track circuit interrupters. It includes lifecycle requirements from design, safety and environmental to installation, testing and maintenance.

Issue/Revision Record

Issue	Date	Comments
1	December 2000	New Specification. The contents have been extracted from Railway Group Code of Practice GK/RC0752 issue 2 which is to be transferred to Railtrack Line in February 2001, plus extra material from former Railway Group Standards GK/RT0011, GK/RT0078, GK/GN0600 and Railtrack Line Standard SSI 8003-75.

Implementation

The requirements of this Specification shall apply to all track circuit interrupters supplied for use on Railtrack controlled infrastructure on or after 3 February 2001. It shall also apply to the alteration and maintenance of existing track circuit interrupters from the same date. The following documents are superseded:

Superseded documents (part only)

GK/RC0752 - issue 2, December 1998 - General Information on Track Circuits

GK/GN0600 - issue 1, April 1999 - Signalling and Operational Telecommunications Design: Technical Guidance

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Track Circuit Interrupters

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I INTRODUCTION

I.1 PURPOSE

This Product Specification gives details of best practice in respect of track circuit interrupters in order to achieve the requirements of RT/E/S/11752.

I.2 SCOPE

The contents of this Product Specification apply to all track circuit interrupters. The more general requirements can be found in RT/E/S/11752. Safety issues specific to track circuit interrupters are included; general safety issues are contained in RT/E/S/11752 and other relevant Railtrack standards.

The situation where each switch in a set of points is operated independently, in order to derail an unauthorised movement when both switches are open (normal), but a signalled move is provided over each switch reverse, is outside the scope of this specification. This is because there is no rail without a signalled move on which a track circuit interrupter could be mounted and unauthorised movements have to be detected with a treadle when both switches are normal and the respective track circuit is occupied.

I.3 INTRODUCTION

Track circuit interrupters are used on lines which are track circuited, at trap or run-back catch points and other locations where trains may be intentionally derailed. The device is designed to interrupt the track circuit in the event of a vehicle leaving the track. This prevents automatic re-energisation of the track circuit after the removal of the train shunt.

Track circuit interrupters may also be used on lines that are not track circuited where adjacent lines could be fouled that are not protected by the system of train detection (or block working) in use. See section 3.1.

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2 APPLICATION AND CONSTRAINTS

2.1 APPLICATION

Track circuit interrupters are used to detect the unauthorised movement of vehicles in the following situations:

- at diverting trap points and catch points,
- at wide-to-gauge trap points and catch points (non-preferred), and
- at buffer stops or other retarding devices.

The following circuit applications are addressed:

- insulated track circuit interrupter connected in series with the track circuit,
- insulated track circuit interrupter feeding an independent relay, which, for a relay interlocking, is cut into the track repeat relay (TPR) circuit.

2.2 CONSTRAINTS

2.2.1 Interrupter Connected in Series with Track Circuit

Track circuit interrupters may be connected in series with the track circuit, subject to all the following conditions:

- a) The track circuit is of the d.c. type.
- b) The interrupter bonding carries no traction current.
- c) The interrupter bonding is of the opposite polarity to that of the rail on which the interrupter is situated, to prevent a wrong side failure from insulation breakdown (or contact with the rail after operation).
- d) The interrupter is cut into the relay end of the track circuit rather than the feed end, to prevent any residual voltage holding up the track relay if the interrupter were struck.
- e) All signals reading over the track circuit concerned are, where practicable, replaced by the track circuit becoming occupied.
- f) The operation of the one track circuit, where practicable, places or maintains at danger the necessary signals on all the adjacent lines.

Where it is not practicable to fulfil conditions e) and f), e.g. in the case of mechanically operated signals, the signals concerned shall be prevented from clearing when the track circuit associated with the interrupter is occupied.