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Level 3 Module

Signalling Installation – Track Circuits: General

Endorsement and Authorisation

For endorsement and authorisation, please refer to NR/L3/SIG/11303.

This module is a reformatted version of the previous Signalling Installation Handbook with no change to the content other than correction of terminology.

It represents historic best practice which may no longer be relevant.

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Issue record

Issue	Date	Comments
2	September 2010	Reformatted version of previous document incorporating the text of the installation handbook.
1	August 2000	First issue.

Compliance

This Network Rail standard is mandatory and shall be complied with by Network Rail and its contractors if applicable from 4 December 2010.

When this standard is implemented, it is permissible for all projects that have formally completed GRIP Stage 4 to continue to comply with the Issue of any relevant Network Rail Standards current when GRIP Stage 4 was reached and not to comply with requirements contained herein, unless the designated Standard Owner has stipulated otherwise in the accompanying Briefing Note.

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1 Introduction

General information on track circuits may be found in the appropriate part of the Train Detection Handbook.

2 General Arrangement At Insulated Rail Joints

Figures 1 and 2 show typical arrangements of rail connections either side of an insulated rail joint. In Figure 1, orange pipe of 90mm diameter is used for cable protection, whereas in Figure 2 the cables are clipped to the sleeper top.

In both cases, single core 2.5 mm²(f) cable will be used and terminated on the “four foot” side of the rail.

All track circuit rail connections, including jumpers, will be duplicated if the installation drawings so require. If duplicated rail connections are not required, only those tail cables in sleeper beds No.2 are provided. See Module 2P10 for the method of terminating the cables to the rails.

Duplicated connections can be installed without the use of a disconnection box. This is done by joining a single 2.5 mm²(f) cable to two 2.5 mm²(f) tail cables using a Sigmaform jointing kit (see Module 2A10). Use whichever method is indicated on the installation diagrams.

It is preferable for duplicated leads to a rail not to share a common pipe or sleeper route. However, where this would create an excessive number of track crossings (at multiple tracks in d.c. traction areas, for example), shared pipes are permitted.

Where orange pipe is used, bring out the cable ends through 40 to 50mm diameter holes centred 40mm in from the foot of the rail. Leave sufficient cable slack to allow for movement.

Where feed end relays are used, the rail connections for these should be provided in a similar manner to those shown in Figure 1 or 2 but positioned within the track circuit as shown on the installation drawings. The rail connections will usually be in the next available positions away from the feed connections but the drawings may specify particular dimensions or positions. In rare cases there may be more than one additional relay.

Jointless track circuits use different and special arrangements at track circuit ends.

Also see NR/L2/SIG/19812 - Cross Track Cable Management

3 Track End Connections - Identification

Track end connections should be identified on drawings and labels by the suffix:

- (1) – for the connection nearest to the insulated joint (e.g. TB(1), TN(1), RB(1), RN(1)).