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Discipline
Engineering Standard – NSW

Category
Signalling

Title
Field Paralleling of Signalling Contacts

Reference Number
SMP 13 – (RIC Standard: SC 00 52 00 13 SI)

Document Control

Status	Date	Prepared	Reviewed	Endorsed	Approved
Issue 1 Revision 1	Mar 05	Standards and Systems	Standards Engineer	GM Infrastructure Strategy & Performance	Safety Committee
		Refer to Reference Number	H Olsen	M Owens	Refer to minutes of meeting 12/08/04

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About This Standard

This Standard defines the signalling procedures to be used when field paralleling signalling contacts.

Document History

Primary Source – RIC Standard SC 00 52 00 13 SI Version 2.0

List of Amendments –

ISSUE	DATE	CLAUSE	DESCRIPTION
1.1	14/03/2005	Disclaimer	Minor editorial change

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1 General

Signalling maintainers may connect spare contacts of signalling trackside equipment in parallel with existing contacts (of the same type and setting) in a given circuit on the authority of the Signal Engineer, provided that the additional wiring is run directly from the terminals of the existing contact in circuit to the terminals of the spare contact, and is not run to or from other circuit terminals. It is not necessary that an approved design be issued for this, however, the Signal Engineer must authorise this change and arrange for the circuit books to be updated.

Each additional wire (two per contact) shall be fitted with beads labelled 'PC' or otherwise securely labelled as a 'parallel contact' wire.

The signalling maintainer must test the parallel pair in circuit before allowing the additional contact to be used in service for the running of trains. (eg: with the circuit energised over both contacts closed, check that the adjacent series contact either side of the parallel pair de-energises and re-energises the circuit function when each is opened and closed in turn; then check that it takes both of the parallel contacts to be open before the circuit will de-energise and that either one closed will energise the circuit).

When contacts are paralleled in the field the existing local circuit books are to be marked with the amendment by the signalling maintainer who is to sign and date the sheet next to the amendment.

Contacts in parallel can improve reliability by reducing the series contact resistance, and by helping maintain a low resistance under conditions that cause contacts to vibrate.

It can be also advantageous for maintenance if the contacts of trackside apparatus which require cleaning and tension checking are paralleled; if the contact is closed the tension and cleaning could still be checked one contact at a time without the risk of changing signal aspects in the face of trains. (Otherwise such closed contacts are only to be broken during maintenance when there are no trains approaching the signals that would be affected or else they are to be maintained when the contacts are in their open position. Closed normal contacts of train stops or semaphore signals at stop are similarly not to be broken with a train approaching the signal as, although signal aspects would not be changed, approach locking would be applied).

Reliable, low contact resistance is particularly important for input circuits to SSI trackside TFM modules which operate over very low voltages (5 volt) and use a coded circuit current. Loss of voltage or code through high or varying contact resistance can cause the TFM module to shut down.