
Mechanical Signal Box

Includes:	All types of Mechanical Lever Frame Signal Box, including Mechanical Lever Ground Frames.
Excludes:	Mechanical Frame Interlocking testing
Related Test Specifications:	NR/L2/SIG/30014/D120/TS6-11, TS7-11, TS10-11.
Related Standards:	GK/RT0039 Semaphore and Mechanical Signalling, NR/L2/SIG/10064 General Instruction to Staff Working on S & T Equipment, NR/L3/SIG/11303 Signalling Installation, NR/GN/SIG/19014 SIGTAN014 Mechanical Handbook Note: all relevant Technical Instructions and Notice Boards are to be checked for new instructions.
Related Design details:	Scheme plan, Loc area plan, SB/REB/Location drawings.
Recording of Testing:	Completion of tests shall be by application of the Check Marks and recording of values on Test Copy diagrams, by recording of values on the appropriate record card, and by signing the appropriate Test Certificate.
Pre-requisites:	SB / REB / Location case and Cable tests complete prior to function testing.

General

This test specification is formed of the following sections, which correlate to the competency levels identified in NR/L2/SIG/30014/B410 for this type of equipment or testing.

1. Inspection
2. Wire Count and Continuity
3. Changeovers Preparation and On site
4. Power Supplies - Earthing and Function Tests
5. Function Tests
6. Mechanical Set Up and Test
7. Principles Test

General definitions of terms are given in NR/L2/SIG/30014/E110, however terms specific to this specification are defined in the last section of this specification.

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1. INSPECTION

1.1. *Check* the correct Signal Box identity is clearly visible.

1.2. *CHECK* for *CORRECT TYPE*:

NOTE: Wiring and wiring routes shall be considered as equipment.

1.2.1. *Check* all equipment fitted on the operating floor at the signal box is as specified in the plans or wiring diagrams.

1.2.2. *Check* all equipment fitted under the operating floor at the signal box is as specified in the plans or wiring diagrams.

1.2.3. *Check* all equipment fitted to the frame is the correct type as specified in the wiring diagrams and "dog charts".

1.2.4. *Check* all electric locks are the correct "position" (e.g. N lock, NBDR lock) as specified in the diagrams.

1.2.5. *Check* all circuit controller bands are the correct "position" as specified in the diagrams.

1.3. *CHECK* for *NO DAMAGE*:

1.3.1. *Check* all equipment for no damage.

1.3.2. *Check* all wiring is secured clear of any moving parts, including removable covers, and is suitably protected.

1.4. *CHECK* for *CORRECT POSITION*:

1.4.1. *Check* all equipment on the block shelf is positioned as specified on the plans and wiring diagrams.

1.4.2. *Check* all equipment fitted on and under the operating floor is fitted as specified in the plans or wiring diagrams.

1.4.3. *Check* the trunking meets the requirements for mechanical, electromagnetic interference and electrical segregation of wiring in accordance with NR/GI/E005.

1.5. *CHECK* for *CORRECT LABELLING*:

1.5.1. *Check* all equipment on the block shelf is labelled as specified on the plans and wiring diagrams.

1.5.2. *Check* all equipment fitted on the operating floor is labelled as specified in the plans or wiring diagrams.

1.5.3. *Check* all equipment fitted underneath the operating floor is labelled as specified in the plans or wiring diagrams.

1.5.4. *Check* all equipment on the frame is labelled correctly as specified in the wiring diagrams and locking tables.

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1.5.5. Check as applicable:

- HV warning labels on equipment housing doors and all equipment with High Voltages.
- Use of Radio / Telephone / Transmitters warning labels.
- ESD warning labels.

1.6. Check for correct installation and security of all equipment:

1.6.1. No bare wire or cable ends are left exposed; [NR/GI/E052](#) specifies the protection methods.

1.6.2. All equipment is properly secured by use of nut/bolt, thumbscrew or retaining clips as appropriate.

1.6.3. All cables are clamped with the appropriate size of clamp at the cable entry point and further supported (clamp or tie-wrap) as necessary.

1.6.4. Equipment housing is secured by the correct type of key lock / padlock as appropriate. Check smooth operation of locking mechanism and Check it is clean and lightly oiled.

1.6.5. All fittings, lids and fastenings on the frame are secure.

1.6.6. Complete Operating Floor Inspection Checks:

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| 1.6.6.1. | Lever painting - Correct colours. | |
| 1.6.6.2. | Pull Plates - Intact and correct. | |
| 1.6.6.3. | Description plates - Intact and correct descriptions. | |
| 1.6.6.4. | Quadrant plates - Unbroken (on LMS frames) | |
| 1.6.6.5. | Catch handles - Securely pinned. | |
| 1.6.6.6. | Catch blocks - Operation and wear. | |
| 1.6.6.7. | Catch springs - Intact and operation. | |
| 1.6.6.8. | Footboard - Sound. | |
| 1.6.6.9. | Foot plungers - Intact and operation. | |
| 1.6.6.10. | Gravity locks - Mountings and locks secure. | |
| 1.6.6.11. | Gravity locks - Lids present, intact and locked. | |
| 1.6.6.12. | Gravity lock tappets - Securely pinned and guarded. | |
| 1.6.6.13. | Lever operated economisers - Sound. | |
| 1.6.6.14. | Wiring to locks and economisers – Sound, double insulated. | |
| 1.6.6.15. | Lever lock - Notches correctly positioned on quadrants | |
