

# TECHNICAL INSTRUCTION

TI 164  
Issue 1  
10/01/2012  
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NETWORK RAIL - SIGNAL ENGINEERING

## 650V / 400V IT Signalling Power Supplies

**Relevant Standard:** NR/L3/SIG/10663

### Purpose

This TI gives details of a new enhanced preventative maintenance specification (NR/SMS) for 650V / 400V IT signalling power supplies in trackside apparatus cases and equipment rooms.

### Scope

Enhanced Annual Inspection of a 650V/400V IT Signal Supply Point and associated signal supply location case/supply terminal pillar (including Functional Supply Points (FSPs)).  
(This inspection can be used as part of the alternative supply monitoring regime where Bender insulation monitoring devices are installed (up to the location of transformers)).

### Compliance Requirements

This NR/SMS shall be used when preventative maintenance of 650V power supplies in trackside apparatus cases and equipment rooms is undertaken by signalling staff.

### Background

This maintenance specification has been drafted to allow a preventative maintenance regime to be formally introduced for 650/400V IT signalling power supplies as an alternative to 5 yearly LV testing where system insulation monitoring equipment is installed.

### Action Required

Signalling staff scheduled to undertake preventative maintenance on 650V signalling power supplies shall follow this specification.

### Staff to be Briefed

| Role                                   | Responsible for Briefing               |
|----------------------------------------|----------------------------------------|
| Head of Asset Management [S&T]         | Author                                 |
| Route Asset Managers [Signalling]      | Head of Asset Management [S&T]         |
| Signal & Telecoms Maintenance Engineer | Route Asset Managers [S&T]             |
| Section Manager (Signals)              | Signal & Telecoms Maintenance Engineer |
| Signalling Technicians                 | Section Manager (Signals)              |

### Expiry Date

This TI will expire on the compliance date of the next issue of NR/L3/SIG/10663.

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## NR/SMS/EL41: Signalling Power Supplies; Frequency 0364 Days

### Safety:



Work on or in the vicinity of signalling power supply systems (including the location cases and supply cables and cable routes) where a first earth fault is indicated shall only be done with a full isolation or by using hot work techniques. (Refer to and implement the controls from Risk Control Sheet – NR/L3/MTC/RCS0216/DP10 Issue 1 Section C – Live Working). Lone working on a system with a first earth fault is prohibited.

### Warning:



When hot working insulated tools (BS EN 60900), insulated gloves (BS EN 60903) and insulated material/matting (BS 921) are required to cover exposed and earthed metal parts.



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## SERVICE B



### 1. Insulation Readings

- 1.1 Before going to site check the system insulation reading. If no reading is available, adopt hot working techniques and take a reading before work starts.



### 2. Visual Inspection

- 2.1 Open the cabinet (and terminal pillar where separate) and visually [Examine](#) the location case fittings for tightness, integrity, rodent damage, signs of damp and overheating including the following:
- Terminals
  - Cables and cable glands
  - Fuse/MCB holders and cases
  - Barriers and insulation
- 2.2 [Check](#) for the following:
- Missing components (covers, screws etc)
  - Identification and warning signs for presence, satisfactory condition and security.