

1 Introduction

1.1 Purpose

This Standard describes a set of requirements for the nomenclature, design and development, construction and implementation, testing and commissioning, monitoring and maintenance, modification, decommissioning and disposal of Signalling earthing and surge protection in Australia.

The main purpose of the requirements are to –

- (a) provide a uniform basis to address all identified hazards associated with lightning and electrical surges in railway signalling equipment and railway signalling telecommunications equipment;
- (b) clearly and accurately describe each of the essential requirements (functions, design considerations and constraints, performance, maintainability, monitoring and safety) of signalling earthing and surge protection devices for railway application, and
- (c) promote a consistent or uniform treatment of signalling earthing and surge protection methods across the Australian railway networks.

1.2 Scope

This Standard provides a whole-of-life cycle approach to safety application of signalling earthing and surge protection devices. It covers the general management requirements, design and development, construction and implementation, testing and commissioning, monitoring and maintenance, modification, decommissioning, recovery and disposal of signalling earthing and surge protection devices in Australian rail networks.

The following are covered under this Standard for signalling installations:

- (a) Lightning surges.
- (b) Traction surges.
- (c) Power surges.
- (d) Earth potential rise from power system faults and cloud-to-ground lightning flashes.
- (e) Worker safety risk.
- (f) Signalling system availability risk and possible solutions.
- (g) Signalling computer and data communications system interfaces.
- (h) Standard requirements for products being protected.
- (i) Signalling earthing requirements.
- (j) Coordination between earthing systems and traction
- (k) Earth wiring within location / earth impedance.
- (l) Protection within the electric traction drop zone.