AS 7708:2017

Australian STANDARD®

Signalling Earthing and Surge Protection

RISSB
RAIL INDUSTRY SAFETY AND STANDARDS BOARD

Train Control Systems Standard

This Australian Standard® AS 7708 Signalling Earthing and Surge Protection was prepared by a Rail Industry Safety and Standards Board (RISSB) Development Group consisting of representatives from the following organisations:

Queensland Rail	Transport for NSW	Dehn
Erico	Novaris	Siemans
Pivot Electronics		

The Standard was approved by the Development Group and the Train Control Systems Standing Committee in May, 2017. On June 22, 2017 the RISSB Board approved the Standard for release.

This standard was issued for public consultation and was independently validated before being approved.

Development of the Standard was undertaken in accordance with RISSB's accredited process. As part of the approval process, the Standing Committee verified that proper process was followed in developing the Standard.

RISSB wishes to acknowledge the positive contribution of subject matter experts in the development of this Standard. Their efforts ranged from membership of the Development Group through to individuals providing comment on a draft of the Standard during the open review.

I commend this Standard to the Australasian rail industry as it represents industry good practice and has been developed through a rigorous process.

Paul Daly
Chief Executive Officer
Rail Industry Safety and Standards Board

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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.