

Telcordia GR-1089-CORE Issue 4 Topics *Equipment Port Types*

Bourns engages in standards development and produces components that will help customers' products be compliant with published standard requirements. For these reasons, Bourns took part in Issue 3 and Issue 4 revisions of GR-1089-CORE. Bourns has created the Telcordia GR-1089-CORE Issue 4 Topics series to help customers understand the changes in section 4 from Issue 3 to Issue 4. The series author, Mick Maytum, is Bourns standards representative on the IEC, ITU-T, IEEE, ATIS, JEDEC and TIA surge protection committees.

Introduction

GR-1089-CORE Issue 3 classified four types of equipment port; Issue 4 keeps the Issue 3 ports and adds a further four ports to cover outside plant facilities, antennas, AC power feeds and DC power feeds. This document describes the Issue 4 port types, and their section 4 (Lightning and AC Power Fault) surge tests.

Port Types

A port type number describes the connecting cable, location environment, cable service and termination. All ports connect to metallic conductor cables. Table 1 lists the port types.

Table 1. Port Types by connection, equipment location and termination

Port Type #	Connects to	Location or Enclosure Examples	Service
1 (same as Issue 3)	Outside Plant Cable	Central Office Electronic Equipment Enclosures, Controlled Environmental Vaults, Huts	Signal
2 (same as Issue 3)	Internal Cable No Connection to Outside Plant Cable	Central Office Electronic Equipment Enclosures, Controlled Environmental Vaults, Huts	Signal
3 (same as Issue 3)	Outside Plant Cable or Cable that leaves the building	Customer Premises	Signal
4 (same as Issue 3)	Internal Cable No Connection to Outside Plant Cable	Customer Premises	Signal
5 (new in Issue 4)	Outside Plant Cable	Outside Plant Facilities Electronic Equipment Cabinets, Pedestal Terminal Enclosures, Optical Network Units	Signal
6 (new in Issue 4)	Antenna	Mounted External to the Structure	R.F.
7 (new in Issue 4)	Commercial AC Power Source	Facilities with and without AC Surge Protective Devices on the Source	Power
8 (new in Issue 4)	DC Local Power Source	Outside Plant Facilities Electronic Equipment Cabinets, Pedestal Terminal Enclosures, Optical Network Units	Power

Note: Signal Cables may also provide remote powering as a secondary function

Section 4 (Lightning and AC Power Fault) Surge Tests

This clause provides a cross-reference between the tests of section 4 and the port type to which they are applied. For simplicity, the test list is split into three tables. Table 2 covers ports that are connected to outside plant cable or cable that leaves the building (Port Types 1, 3 and 5), Table 3 covers ports that are connected to internal cable (Port Types 2 and 4) and Table 3 covers antenna and power ports (Port Types 6, 7 and 8).

Table 2. Surge Tests for Port Types 1, 3 and 5 (outside plant cable connected)

Section # (PDF file page #)	Test Title	Tested Port Type		
		1	3	5
4.6.5 (p 120)	Short-Circuit Tests	Yes	Yes	Yes
4.6.6 (p 120)	First-Level Lightning Surge Tests	Yes	Yes	Yes
4.6.7 (p 124)	First-Level Lightning Protection	Yes	Yes	Yes
4.6.8 (p 126)	Second-Level Lightning Surge	Yes	Yes	Yes
4.6.10 (p 134)	First-Level AC Power Fault Tests	Yes	Yes	Yes
4.6.11 (p 137)	Current-Limiting Protector Tests for Equipment to be Located at Network Facilities	Yes		
4.6.12 (p 143)	Second-Level AC Power Fault Tests for Equipment to be Located at Network Facilities	Yes		
4.6.13 (p 146)	Second-Level AC Power Fault Tests for Series-Type Equipment to be Located at Network Facilities	Yes		
4.10.2 (p 178)	Short-Circuit Tests (Coaxial Cable)	Yes	Yes	Yes
4.10.3.1 (p 179)	First-Level Lightning and Power Fault Tests (Coaxial Cable)	Yes	Yes	Yes
4.10.3.2 (p 180)	Second-Level Lightning and Power Fault Tests (Coaxial Cable)	Yes	Yes	Yes
4.10.4.1 (p 182)	First-Level Lightning and Power Fault Tests (Coaxial Cable)	Yes	Yes	Yes
4.10.4.2 (p 183)	Second-Level Lightning and Power Fault Tests (Coaxial Cable)	Yes	Yes	Yes
4.6.14 (p 147)	Fusing Coordination Tests for Equipment to be Located on Customer Premises and Outside Plant Facilities		Yes	Yes
4.6.15 (p 149)	Second-Level AC Power Fault Tests for Equipment to be Located on Customer Premises and Outside Plant Facilities		Yes	Yes
4.6.16 (p 154)	Second-Level AC Power Fault Tests for Series-Type Equipment to be Located on Customer Premises and Outside Plant Facilities		Yes	Yes
4.7 (p 156)	Lightning Protection Tests for Equipment to be Located in High-Exposure Customer Premises and Outside Plant Facilities		Yes	Yes
4.8 (p 158)	Criteria for Equipment Interfacing with Agreed Primary Protection		Yes	Yes
4.9 (p 162)	Criteria for Equipment with Integrated Primary Protection		Yes	Yes
4.10.6 (p 186)	Additional Criteria for Equipment Intended for the Outside Plant (Coaxial Cable)†			Yes

† Issue 4 Appendix B: Application Guidelines allocates the clause 4.10.6 test to port types 1, 3 and 5. As the test is for Outside Plant Equipment, it can only apply to port type 5.

Table 3. Surge Tests for Port Types 2 and 4 (internal cable connected)

Section # (PDF file page #)	Test Title	Tested Port Type	
		2	4
4.6.9 (p 128)	First-Level Intra-Building Lightning Surge Tests	Yes	Yes
4.10.5 (p 185)	First-Level Intra-Building Surge Tests (Coaxial Cable)	Yes	Yes
4.6.17 (p 155)	Second-Level Intra-Building AC Power Fault Tests for Equipment to be Located on Customer Premises		Yes

Table 4. Surge Tests for Port Types 6, 7 and 8 (antenna or power cable connected)

Section # (PDF file page #)	Test Title	Tested Port Type		
		6	7	8
4.11 (p 187)	Lightning Criteria for Equipment Interfacing with Antennas	Yes		
4.12 (p 188)	Lightning Criteria for Equipment Interfacing with AC Power Ports		Yes	
4.13 (p 191)	Lightning Criteria for Equipment Interfacing with DC Power Ports			Yes

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