
Undercarpet Power System Transition Block

1. SCOPE

1.1. Content

This specification defines performance, tests, and quality requirements for the undercarpet power system transition block used with size 12 AWG type FCC cable.

1.2. Qualification

When tests are performed on the subject product line, procedures specified in Figure 1 shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

Successful qualification testing on the subject product line was completed on May 31, 1996. The test file number for this testing is ACL 1260-274. The file is kept available from the Americas North Laboratory.

2. APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the latest edition of the document applies. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

2.1. TE Documents

- 109-1 General Requirements For Testing
- 109-21-1 Vibration
- 109-22 Thermal Shock
- 109-29-1 Withstanding Voltage (Voltage Proof)
- 109-45-1 Temperature Rise vs Current
- 109-51 Current Cycling
- 109-197 Test Specifications vs EIA and IEC Test Methods
- 114-6008 Undercarpet Power System
- 501-416 Transition Block, Undercarpet Power System

3. REQUIREMENTS

3.1. Design and Construction

Product shall be of the design, construction, and physical dimensions specified on the applicable product drawing.

3.2. Materials

Materials used in the construction of this product shall be as specified on the applicable product drawing.

3.3. Ratings

Voltage/Current: 300 Vac at 20 amperes maximum

Operating Temperature: 0° to 60°C

3.4. Performance and Test Description

Product is designed to meet the electrical, mechanical, and environmental performance requirements specified in Figure 1. Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Examination of Product	Meets requirements of product drawing and application specification 114-6008.	Visual, dimensional, and functional per applicable quality inspection plan.
Electrical		
Dielectric Withstanding Voltage	2000 Vac at sea level. 1-minute hold with no break-down or flash-over.	109-29-1 Test between adjacent terminals of mated samples.
Temperature Rise vs Current	30°C maximum temperature rise at specified current.	109-45-1 Measure temperature rise vs current.
Current Cycling	Stability factor shall not exceed ± 10 .	109-51 Subject terminated samples to 500 cycles at 125% of rated current for 60 minutes on and 60 minutes off.
Mechanical		
Sinusoidal Vibration	No discontinuities of 10 microseconds or longer duration. See Note.	109-21-1 Subject terminated samples to 10-55-10 Hz traversed in 1 minute with .06 inch maximum excursion. 2 hours in each of 3 mutually perpendicular planes.
Environmental		
Thermal Shock	See Note.	109-22 Subject terminated samples to 20 cycles between 0° and 60°C

i **NOTE** *Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the product qualification and re-qualification test sequence given in Figure 2.*

Figure 1

3.6. Product Qualification and Re-Qualification Test Sequence

TEST OR EXAMINATION	TEST GROUP (a)			
	1	2	3	4
	TEST SEQUENCE (b)			
Examination of Product	1,3	1,3	1,5	1,5
Dielectric Withstanding Voltage	2			
Temperature Rise vs Current			2,4	2,4
Current Cycling			3	

Sinusoidal Vibration		2		
Thermal Shock				3

(a) See paragraph 4.1.A.

(b) Numbers indicate sequence in which tests are performed.

Figure 2

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Specimen Selection

Specimens shall be prepared in accordance with applicable instruction sheets and shall be selected at random from current production. All test groups shall each consist of 10 transition blocks.

Test group 1 shall be assembled using 12-inch lengths of 5-position size 12 AWG flat conductor cable.

Test group 2 shall be assembled using 6-inch lengths of 5-position size 12 AWG flat conductor cable.

Test groups 3 and 4 shall be assembled using 5-position size 12 AWG flat conductor cable with the transition blocks located on each end 36 inches apart.

B. Test Sequence

Qualification inspection shall be verified by testing specimens as specified in Figure 2.

4.2. Re-Qualification Testing

If changes that significantly affecting form, fit, or function are made to the product or manufacturing process, product assurance shall coordinate re-qualification testing consisting of all or part of the original testing sequence as determined by development/product, quality, and reliability engineering.

4.3. Acceptance

Acceptance is based on verification that the product meets the requirements of Figure 1. Failures attributed to equipment, test setup, or operator deficiencies shall not disqualify the product. If product failure occurs, corrective action shall be taken and specimens re-submitted for qualification. Testing to confirm corrective action is required before re-submittal.

4.4. Quality Conformance Inspection

The applicable quality inspection plan shall specify the sampling acceptable quality level to be used. Dimensional and functional requirements shall be in accordance with the applicable product drawing and this specification.