

PRODUCT SPECIFICATION

1. SCOPE

1.1. Content

This specification covers the performance, tests and quality requirements for the AMP* INNERGY* connector system. This modular wiring system provides a means of supplying power to modular office work stations. The system is installed in the modular office panels and provides power for operating business machines and lighting.

1.2. Qualification

When tests are performed on the subject product line, the procedures specified in AMP 109 series specifications shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

2. APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. 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. AMP Documents

- A. 109-1: General Requirements for Test Specifications
- B. 109 Series: Test Specifications as indicated in Figure 1. (Comply with MIL-STD-202, MIL-STD-1344 and EIA RS-364)
- C. Corporate Bulletin 401-76: Cross-reference between AMP Test Specifications and Military or Commercial Documents
- D. 114-6039 : Application Specification
- E. 501-108 : Test Report
- F. IS 3210 : Instruction Sheet

2.2. Commercial Standards (if applicable)

- A. UL 1286: Standard for Office Furnishings
- B. C.22.2 No. 203-M1986 Modular Wiring System for Office Furniture.

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Product Code: 2421

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				NO 108-1234		REV 0	LOC B
0	Release per ECN AA-6943	<i>FR</i>	6/29 90	PAGE 1 OF 7	TITLE CONNECTOR SYSTEM INNERGY		
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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. Material

A. Contact: High strength copper alloy with selectively plated tin at duplex outlet and duplex to junction box interface, and silver stripe at power connector to junction box and power connector to line connector interfaces

B. Housing: Polycarbonate UL 94V-0

3.3. Ratings

A. Voltage: 125/250 vac

B. Current: See Figure 2 for applicable current carrying capability

C. Operating temperature: 0° to 75°C.

3.4. Performance and Test Description

The product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1. All tests are performed at ambient temperature unless otherwise specified.

3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Examination of Product	Meets requirements of product drawing and AMP Spec 114-6039.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Termination Resistance, Dry Circuit	2.5 milliohms maximum initial termination resistance. ΔR change in resistance final 5.50 milliohms	Measure potential drop of mated contacts assembled in housing, see Figure 4; AMP Spec 109-6-1 calculate resistance.
Dielectric Withstanding Voltage	1.5 kvac dielectric withstanding voltage, one minute hold.	Test between adjacent contacts of mated connector assemblies; AMP Spec 109-29-1.

Figure 1 (cont)

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Test Description	Requirement	Procedure
Insulation Resistance	100 megohms minimum initial. 10 megohms minimum final.	Test between adjacent contacts of mated connector assemblies; AMP Spec 109-28-4.
Temperature Rise vs Current	Maximum temperature rise at specified current, 30°C. Reference Figure 2.	Measure temperature rise vs current; AMP Spec 109-45-1.
MECHANICAL		
Vibration Sinusoidal Low Frequency	No discontinuities greater than 1 microsecond. See note (a).	Subject mated connectors to 10-55-10 Hz traversed in 1 minute at 0.06 inches total excursion; 2 hours in each of 3 mutually perpendicular planes; AMP Spec 109-21-1.
Mating Force of Power Connector to Junction Box Interface	5 pounds maximum initial per contact.	Measure force necessary to mate connector assembly with locking latches, incorporating free floating fixtures at a rate of 0.5 inch/minute; AMP Spec 109-42, cond A, calculate force per contact.
Unmating Force of Power Connector to Junction Box Interface	3/4 pounds minimum final per contact. 3 pounds maximum per contact	Measure force necessary to unmate connector assembly with locking latches released, at a rate of 0.5 inch/minute; AMP Spec 109-42, cond A, calculate force per contact.
Durability	See note (a).	Mate and unmate connector assemblies for 20 cycles; AMP Spec 109-27.
ENVIRONMENTAL		
Thermal Shock	See note (a).	Subject mated connectors to 5 cycles between -40° and 85°C; AMP Spec 109-22

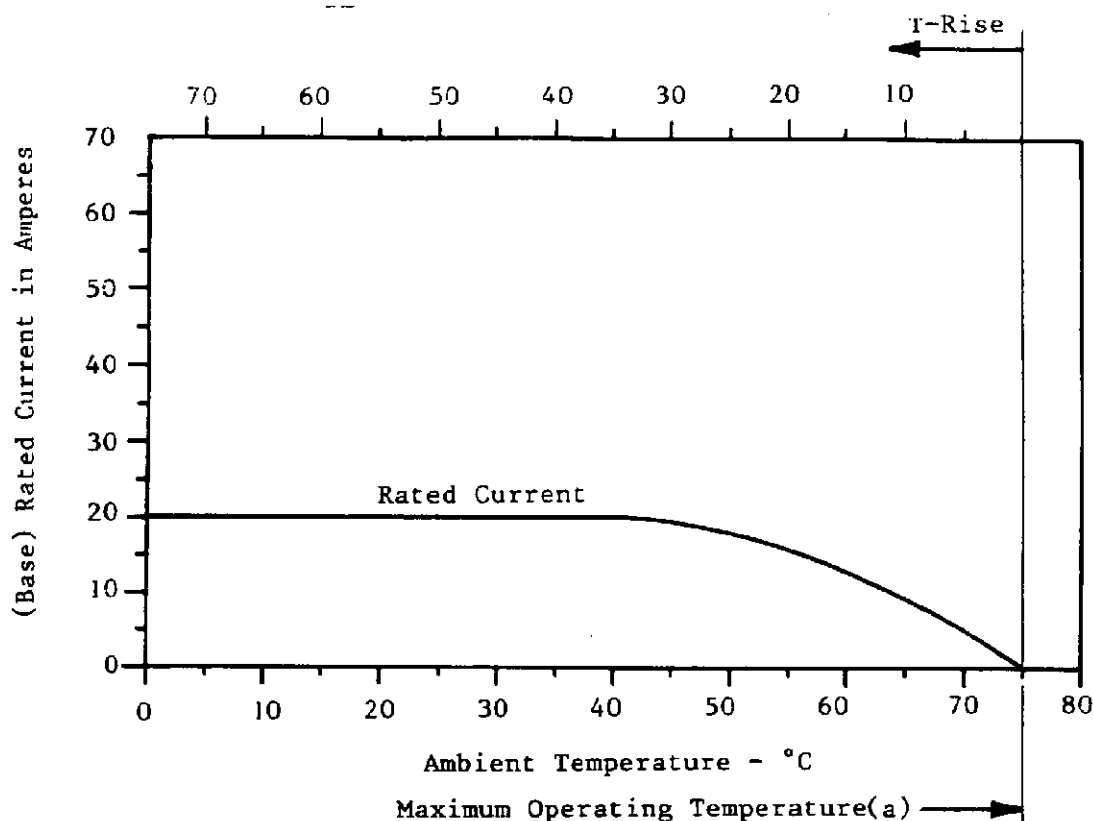
Figure 1 (cont)

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Test Description	Requirement	Procedure
Humidity-Temperature Cycling	See note (a).	Subject mated connectors to 10 humidity-temperature cycles between 25° and 65°C at 95% RH; AMP Spec 109-23, method III, condition B. Less steps 7a and 7b.
Industrial Mixed Flowing Gas	See note (a).	Subject mated connectors to environmental class II for 20 days; AMP Spec 109-85-2.
Temperature Life	See note (a).	Subject mated connectors to temperature life; AMP Spec 109-43, 75°C test duration 360 hours.

(a) Shall remain mated and show no evidence of damage, cracking or chipping.

Figure 1 (end)



(a) Operating temperature = ambient temperature + temperature rise. Based on 6 conductors being energized.

Figure 2
Current Carrying Capability

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3.6. Product Qualification

Test or Examination	Test Group (a)		
	1	2	3
	Test Sequence (b)		
Examination of Product	1,8	1,9	1,8
Termination Resistance, Dry Circuit	3,6	2,7	
Insulation Resistance			2,6
Temperature Rise vs Current		3,8	
Vibration, Discontinuity	5		
Vibration, Energized		6 (c)	
Mating Force	2		
Unmating Force	7		
Durability	4		
Thermal Shock			4
Humidity-Temperature Cycling			5
Industrial Mixed Flowing Gas		4	
Temperature Life		5	
Dielectric Withstanding Voltage			3,7

(a) See Para 4.1.A

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

(c) Energize per AMP Specification 109-151.

Figure 3

3.7. Retention of Qualification

Test or Examination	Test Group (a)	
	1	2
	Test Sequence (b)	
Examination of Product	1,7	1,7
Termination Resistance, Dry Circuit		3,6
Dielectric Withstanding Voltage	3,6	
Insulation Resistance	2,5	
Mating Force		2
Unmating Force		4
Humidity-Temperature Cycling	4	
Industrial Mixed Flowing Gas		5(d)

(a) See Para 4.2.A

(b) Numbers indicate sequence in which tests are performed

(c) Group 1 applies only to products with an insulating system

(d) Precondition samples with 20 cycles durability

Figure 4

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Sample Selection

Connector housings and contacts shall be prepared in accordance with applicable Instruction Sheets. They shall be selected at random from current production. All test groups shall consist of 2 junction boxes with 4 power connector cable assemblies.

B. Test Sequence

Qualification inspection shall be verified by testing samples as specified in Figure 3.

4.2. Retention of Qualification

If, in a five-year period, no changes to the product or process occur, the product shall be subjected to the two groups of the testing described in the test sequence, see Figure 4. Test group 1 shall consist of 2 junction boxes with 4 power connector cable assemblies. Test group 2 shall consist of 4 junction boxes with 8 power connector cable assemblies. Justification for exceeding this time limit must be documented and approved by the division manager.

4.3. Requalification Testing

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

4.4. 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. When product failure occurs, corrective action shall be taken and samples resubmitted for qualification. Testing to confirm corrective action is required before resubmittal.

4.5. Quality Conformance Inspection

The applicable AMP quality inspection plan will 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.

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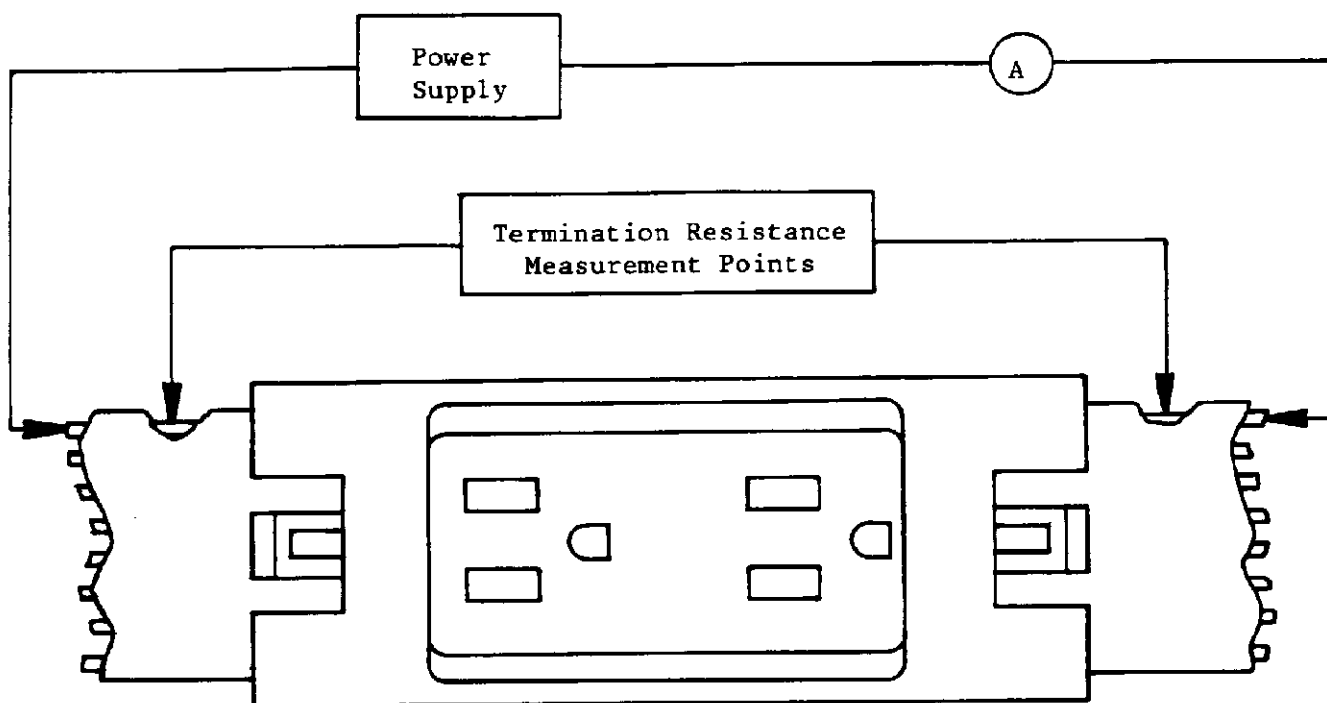


Figure 4
Termination Resistance Measurement Points

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