PRODUCT SPECIFICATION

1. SCOPE

1.1. Content

This specification covers the performance, tests and quality requirements for the AMP* commercial BNC 50 ohm plug terminator.

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. 501-118 : Test Report

3. REQUIREMENTS

3.1. Design and Construction

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

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Product Code: 3347

LTR	REVISION RECORD	APP	DATE
0	Release per ECN AJ-5135	FR	10/1/90

DR Fred Reinhardt 9/11/90
CHK [signature] 9/20/90
APP [signature]

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TITLE TERMINATOR, PLUG, COMMERCIAL BNC

3.2. Material

A. Contact: Brass 100-110, gold or silver or tin-lead plating over nickel plating
B. Dielectric: Polyethylene
C. Shell: Brass, silver or nickel plating over copper plating
D. Press fit cap: (where applicable) Noryl N-190

3.3. Ratings

A. Voltage: 500 vac
B. Current: 1 / 100 milliampere
C. Temperature:
(1) -65° to 165°C wring cable with polytetrafluorethylene dielectric
(2) -55° to 85°C wring cable with polyethylene dielectric
D. Characteristic Impedance: 50 ohms
E. Frequency Range: 0-500 MHz

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.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Resistance	50 ohms ± 10%	Measure plug terminator resistance; 1 watt maximum, see Figure 5; AMP Spec 109-25.
Voltage Standing Wave Ratio (VSWR)	1.30 maximum.	Measure VSWR between 0 and 500 MHz; AMP Spec 109-9-2.
Permeability	2 Mu maximum.	Measure permeability using 2 Mu pellet; AMP Spec 109-88.

Figure 1 (cont)

Test Description	Requirement	Procedure
MECHANICAL		
Vibration Sinusoidal High Frequency	See note (a).	Subject mated connectors to 15 G's, 10-2000 Hz traversed in 20 minutes; 4 hours in each of 3 mutually perpendicular planes; AMP Spec 109-21-3.
Physical Shock	See note (a).	Subject mated connector to 50 G's sawtooth shock pulses of 11 millisecond duration; 3 shocks in each direction applied along the 3 mutually perpendicular planes total 18 shocks; AMP Spec 109-26-7.
Coupling Nut Retention	Coupling nut shall not be damaged or dislodge from the connector body.	Body and coupling mechanism of the plug shall be secured to the lower and upper jaws, respectively of a tensile testing machine. An axial force applied at a rate 40 pounds/minute, shall be held for 1 minute at a value of 40 pounds.
Durability	See note (a).	Mate and unmate connector assemblies for 500 cycles at a maximum rate of 500 cycles/hour; AMP Spec 109-27.
ENVIRONMENTAL		
Thermal Shock	See note (a).	Subject unmated connector to 5 cycles between -55° and 85°C; AMP Spec 109-22.

Figure 1 (cont)

Test Description	Requirement	Procedure
Humidity-Temperature Cycling	See note (a).	Subject mated or unmated connectors to 10 humidity temperature cycles between 25° and 65°C at 95% RH; AMP Spec 109-23, method III, cond A, cold shock at -10°C.
Industrial Mixed Flowing Gas	See note (a).	Precondition connectors to 10 durability cycles 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, test level 3, test duration A.

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

Figure 1 (end)

3.6. Product Qualification and Requalification Tests

Test or Examination	Test Group (a)				
	1	2	3	4(c)	5
	Test Sequence (b)				
Examination of Product	1,7	1,5	1,5	1,7	1
Resistance	2,6	2,4	2,4	2,6	
Voltage Standing Wave Ratio					3
Permeability					2
Vibration	4				
Physical Shock	5				
Coupling Nut Retention				5	
Durability	3				
Thermal Shock				3	
Humidity-Temperature Cycling				4	
Industrial Mixed Flowing Gas			3(d)		
Temperature Life		3(d)			

(a) See Para 4.1.A
(b) Numbers indicate sequence in which tests are performed
(c) Group 4 applies only to products with an insulating system
(d) Precondition samples with 10 cycles durability

Figure 2

3.7. Retention of Qualification Tests

Test or Examination	Test Group (a)	
	1	2
	Test Sequence	
Examination of product	1,6	1,6
Resistance	2,5	2,5
Durability		3
Thermal Shock	3	
Humidity-Temperature Cycling	4	4

(a) See Para 4.1.A
(b) Numbers indicate sequence in which tests are performed

Figure 3

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. Test groups 1-5 shall consist of 5 jacks and 5 plugs. The jacks shall be crimped to 12 inch lengths of RG-58 C/U coaxial cable. All coaxial cable shall conform to MIL-C-17.

B. Test Sequence

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

4.2. Retention of Qualification

If, in a three-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 3. 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.

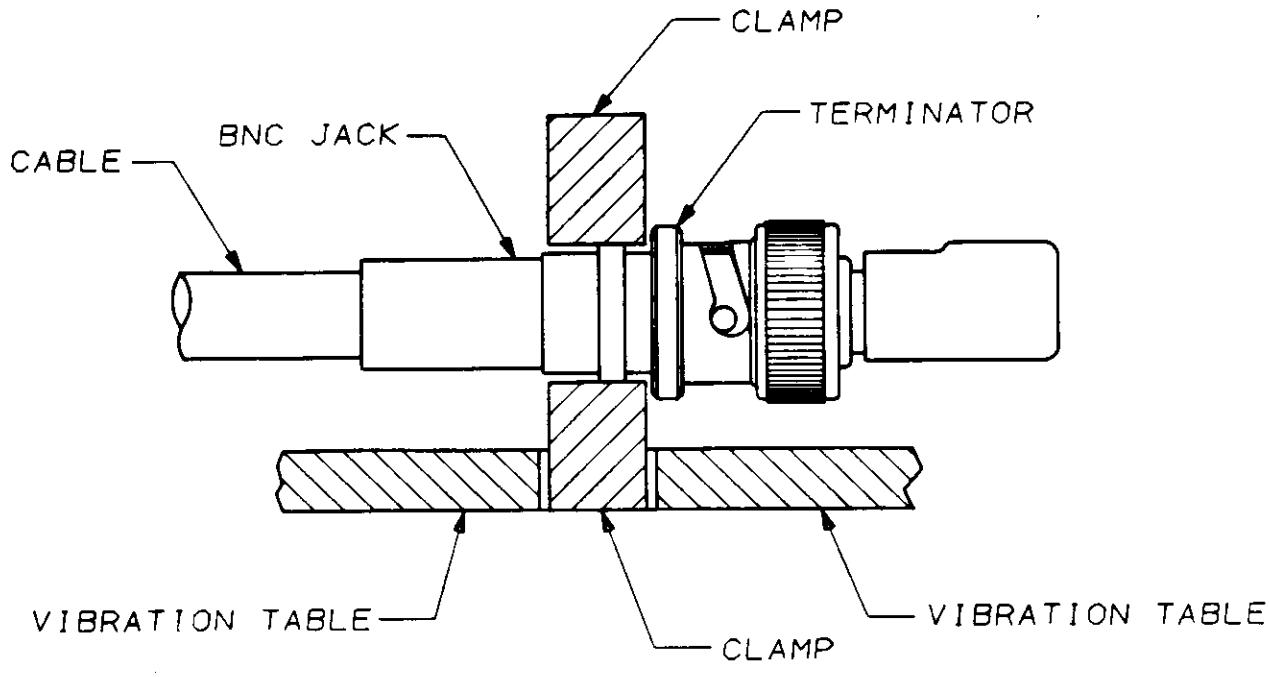

Figure 4
Vibration and Shock

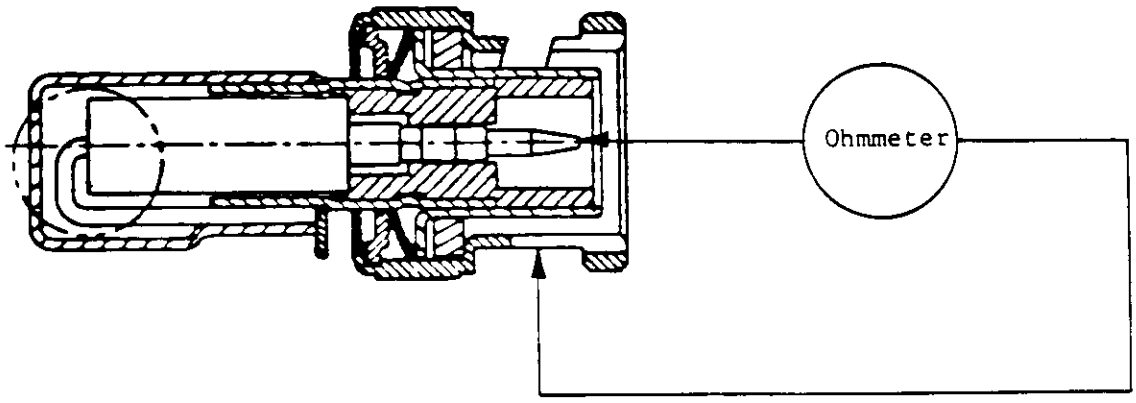

Figure 5
Resistance Measurement Points, Typical