

PRODUCT SPECIFICATION

1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for LAN-LINE* Tap Adapter of the N and BNC series. These adapters are intended for use in connecting appropriate coaxial plugs in a data network line and accepting a suitably configured transceiver device with its mating receptacle.

1.2. Qualification

When tests are performed on subject product line, procedures specified in AMP 109 series specifications shall be used. All inspections shall be performed using 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 Specifications

- 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. 501-113: Test Report

3. REQUIREMENTS

3.1. Design and Construction

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

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Product Code: 3580

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				NO	108-12100	REV A	LOC B
A	Revised per ECN AJ-5974	BAB	1/13/92	PAGE 1 OF 6	TITLE ADAPTER, TAP, LAN-LINE, N AND BNC SERIES		
LTR	REVISION RECORD	APP	DATE				

3.2. Materials

- A. Contact: N, BNC and vertical BNC, phosphor bronze with gold surfaces
- B. Housing: Polycarbonate, UL 94V-0
- C. Shell: Zinc, nickel over copper plating
- D. Cover: Polyvinylchloride, N series only
- E. Dielectric: Polyethylene, N and BNC series, Polytetrafluoroethylene for vertical BNC

3.3. Ratings

- A. Operating Temperature: 0 to 50°C
- B. Normal Impedance: Network line, 50 ohms; Tap, 100 ohms
- C. Frequency Range: 0 to 50 MHz

3.4. Performance and Test Description

Tap assemblies shall be designed to meet electrical, mechanical and environmental performance requirements specified in Figure 1.

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 inspection plan.																
ELECTRICAL																		
Contact resistance.	<table border="0"> <tr> <td>Line</td> <td>Milliohms</td> </tr> <tr> <td>Network</td> <td>maximum</td> </tr> <tr> <td>A to B</td> <td>10</td> </tr> <tr> <td>C to D</td> <td>10</td> </tr> <tr> <td>Tapping</td> <td>10</td> </tr> <tr> <td>Circuit</td> <td></td> </tr> <tr> <td>A to F</td> <td>20</td> </tr> <tr> <td>C to E</td> <td>10</td> </tr> </table>	Line	Milliohms	Network	maximum	A to B	10	C to D	10	Tapping	10	Circuit		A to F	20	C to E	10	Measure potential drop of mated contacts assembled in housing. Calculate resistance, use single point measurement for vertical style BNC. See Figure 3. AMP Spec 109-25.
Line	Milliohms																	
Network	maximum																	
A to B	10																	
C to D	10																	
Tapping	10																	
Circuit																		
A to F	20																	
C to E	10																	
Dielectric withstanding voltage.	2.5 kvac dielectric withstanding voltage. 1 minute hold. No breakdown or flashover.	Test between center contact and shell (casting) of unmated adapter. AMP Spec 109-29-1.																
Insulation resistance.	5000 megohms minimum initial. 200 megohms minimum 5 minutes after humidity-temperature cycling.	Test between adjacent contacts of unmated connector assembly. AMP Spec 109-28-4.																
Capacitance.	2 picofarads maximum of the inner tap contact.	Test between adjacent posts of unmated connector. AMP Spec 109-47, except using 20 MHz test frequency.																

Figure 1 (cont)

AMP	AMP Incorporated Harrisburg, PA 17105-3608	PAGE	NO	REV	LOC
		2	108-12100	A	B

Test Description	Requirement	Procedure
MECHANICAL		
Vibration, random.	No discontinuities greater than 1 microsecond. See Note (a).	Subject mated connectors to 10.2 G rms. See Figure 4. AMP Spec 109-21-6. Test level C. 15 minutes duration.
Physical shock.	No discontinuities greater than 1 microsecond. See Note (a).	Subject mated connectors to 100 G's half-sine shock pulses of 6 millisecond duration. 3 shocks in each direction applied along 3 mutually perpendicular planes. Total 18 shocks. AMP Spec 109-26-3.
Durability, network line contacts.	Mating-ummating. No physical damage.	Mate and unmate connector assemblies for 100 cycles using appropriate coaxial plugs. AMP Spec 109-27.
Assembly strength.	Must withstand 20 pounds tensile for tee adapters and 10 pounds pullout for BNC adapter with no sign of failure. Failure being defined as no relative motion between plastic housing and connector.	Attach appropriate plugs having 6 to 12 inch leads to both female coax ends and apply tensile loading. Attach clamping device to outer trunk shells and housing and apply tensile loading so as to pull shell assemblies out from housing. See Figure 4.
ENVIRONMENTAL		
Thermal shock.	See Note (a).	Subject mated connectors to 5 cycles between -65 and 85°C. AMP Spec 109-22.
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 with cold shock at -10°C.

Figure 1 (cont)

AMP AMP Incorporated Harrisburg, PA 17105-3608	PAGE 3	NO 108-12100	REV A	LOC B
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Test Description	Requirement	Procedure
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 1, Duration A, 65°C for 96 hours.

- (a) Shall meet visual requirements, show no physical damage, and shall meet requirements of additional tests as specified in Figure 2.

Figure 1 (end)

3.6. Adapter Qualification and Requalification Test Sequence

Test or Examination	Test Group (a)(c)					
	1	2	3	4	5	6
	Test Sequence (b)					
Examination of product	1,8	1,5	1,10	1,5	1,8	1,5
Termination resistance, dry circuit	2,6	2,4		2,4		2,4
Dielectric withstanding voltage			4,9		3,7	
Insulation resistance			3,8		2,6	
Capacitance			2,7			
Vibration	3					
Physical shock	4					
Durability	5					
Assembly strength	7					
Thermal shock			5		4	
Humidity-temperature cycling			6		5	
Mixed flowing gas				3		3
Temperature life		3				

- (a) See Para 4.1.A.
 (b) Numbers indicate sequence in which tests are performed.
 (c) Test groups 5 and 6 are for retention of qualification only.

Figure 2

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. Each test group shall consist of 5 pieces.

B. Test Sequence

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

4.2. Requalification Testing

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

4.3. Acceptance

Acceptance is based on verification that product meets requirements of Figure 1. Failures attributed to equipment, test setup, or operator deficiencies shall not disqualify product. When product failure occurs, corrective action shall be taken and samples resubmitted for qualification. Testing to confirm corrective action is required before resubmittal.

4.4. Quality Conformance Inspection

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

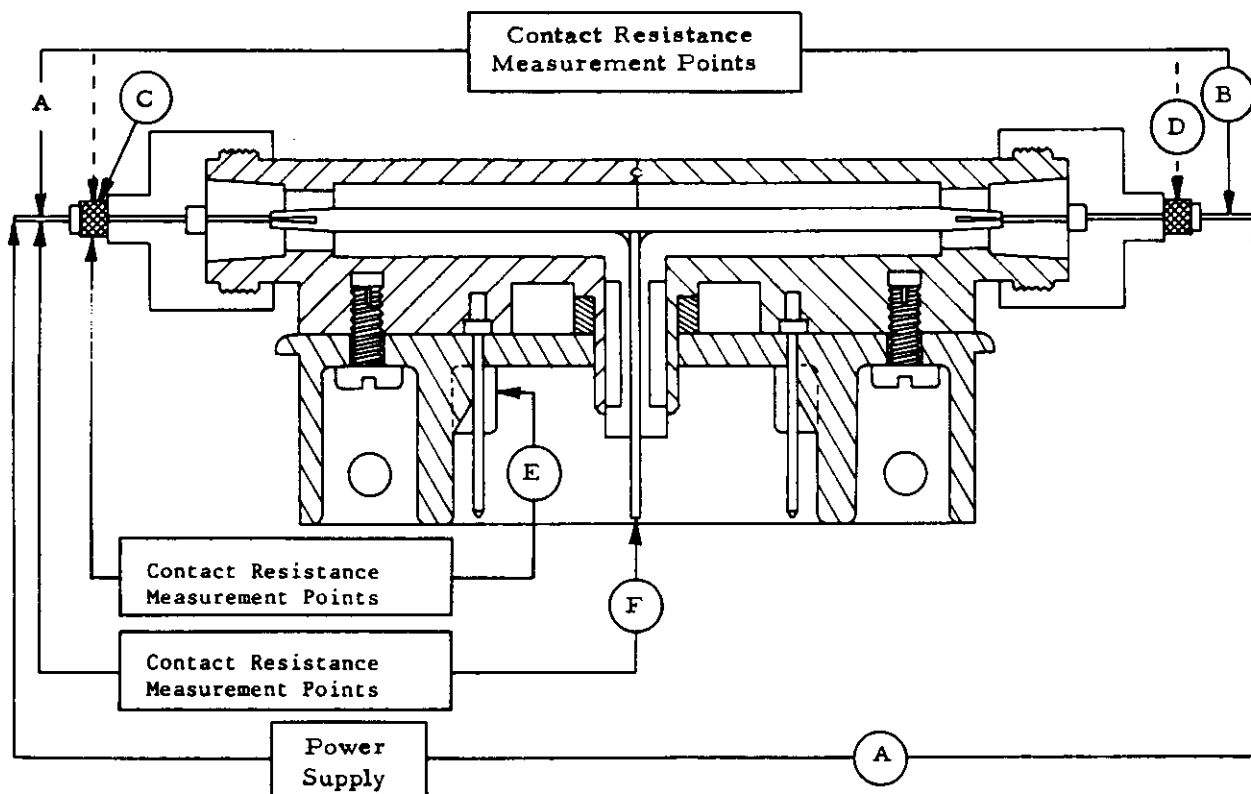


Figure 3
Resistance Probe Points

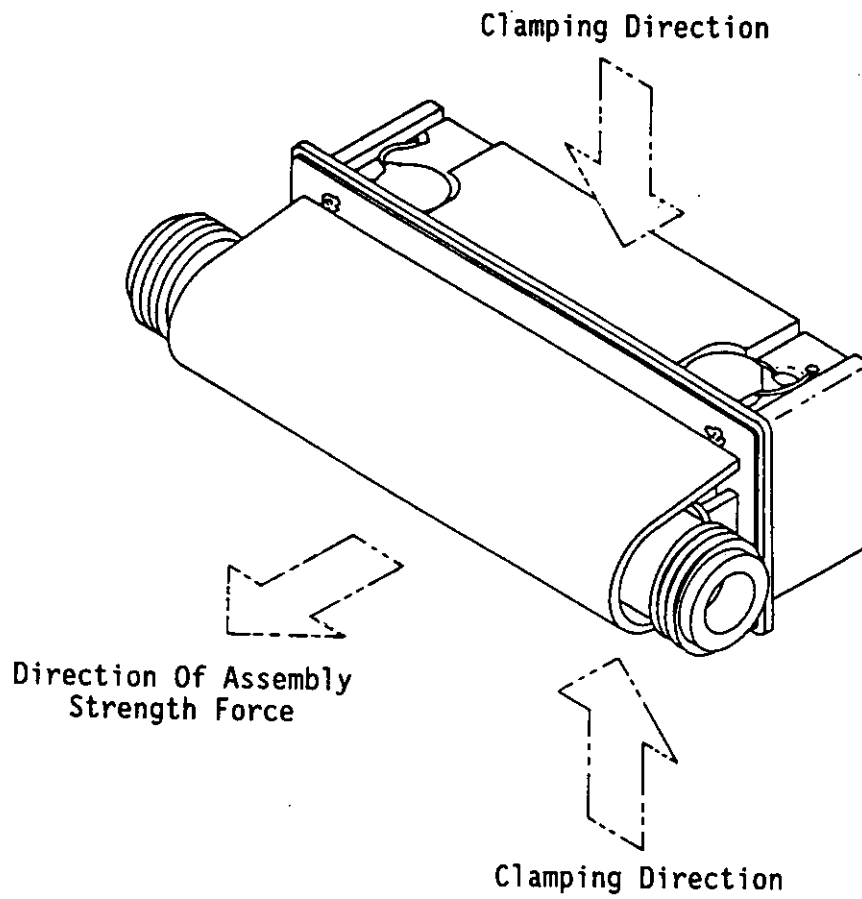


Figure 4
Vibration And Physical Shock

AMP	AMP Incorporated Harrisburg, PA 17105-3608	PAGE	NO	REV	LOC
		6	108-12100	A	B