1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for the AMPLIMITE* .050 series ACTION PIN* connectors.

1.2. Qualification

When tests are performed on the subject product line, 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. 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. 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. 108-17: Product Specification
E. 108-1228: Product Specification
F. 114-40029: Application Specification
G. 501-134: Test Report
H. 501-155-2: 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. ACTION PIN* connector areas are designed to meet requirements of AMP Specification 108-17.

3.2. Materials

A. Contact: Phosphor bronze, gold plating on mating area, tin-lead plating on ACTION PIN contact area, all over nickel plating
B. Die casting: Zinc, nickel over copper plating
C. Housing: Liquid crystal polymer, black, UL94V-0
D. Shell: Steel, bright tin over copper plating

AMP

3.3. Ratings

A. Voltage: 30 vac per UL and CSA
B. Current: Signal application only
C. Temperature: -65 to 85°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 per AMP Specification 109-1.

3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Examination of product.	Meets requirements of product drawing and AMP Spec 114-40029.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Termination resistance.	25 milliohms maximum.	AMP 109-6-1. Subject mated contacts assembled in housing to 50 mv maximum open circuit at 100 ma maximum. See Figure 3.
MECHANICAL		
Vibration, random.	No discontinuities of 1 microsecond or longer duration. See Note.	AMP Spec 109-21-5, Test Level B. Subject mated samples with 100 ma current applied to 20 minutes in each of 3 mutually perpendicular planes. See Figure 4.
Physical shock.	No discontinuities of 1 microsecond or longer duration. See Note.	AMP Spec 109-26-1, except 30 G's. Subject mated samples to 30 G's half-sine shock pulses of 11 milliseconds duration. 3 shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks. See Figure 4.
Durability.	See Note.	AMP Spec 109-27. Mate and unmate samples without locking latches for 500 cycles at maximum rate of 800 cycles per hour.

Figure 1 (cont)

Test Description	Requirement		Procedure
Mating force.	Connector Position	Pounds Maximum	AMP Spec 109-42, Condition A. Measure force necessary to mate samples without locking latches at maximum rate of 1 inch per minute.
	20 - 40	15	
	42 - 60	20	
	62 - 80	30	
	82 - 100	40	
	102 - 120	50	
Unmating force.	Connector Position	Pounds Minimum	AMP Spec 109-42, Condition A. Measure force necessary to unmate samples without locking latches at maximum rate of 1 inch per minute.
	20 - 40	1.5	
	42 - 60	2.0	
	62 - 80	3.0	
	82 - 100	5.0	
	102 - 120	7.0	

NOTE *Shall meet visual requirements, show no physical damage and shall meet requirements of additional tests as specified in Test Sequence in Figure 2.*

Figure 1 (end)

3.6. Product Qualification and Requalification Test Sequence

Test or Examination	Test Group (a)
	1
	Test Sequence (b)
Examination of product	1,9
Termination resistance	3,7
Vibration	5
Physical shock	6
Durability	4
Mating force	2
Unmating force	8

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

Figure 2

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Sample Selection

Samples shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. Test group 1 shall consist of 5 samples.

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 the product or 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.

4.3. Acceptance

Acceptance is based on verification that 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.

4.4. Quality Conformance Inspection

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

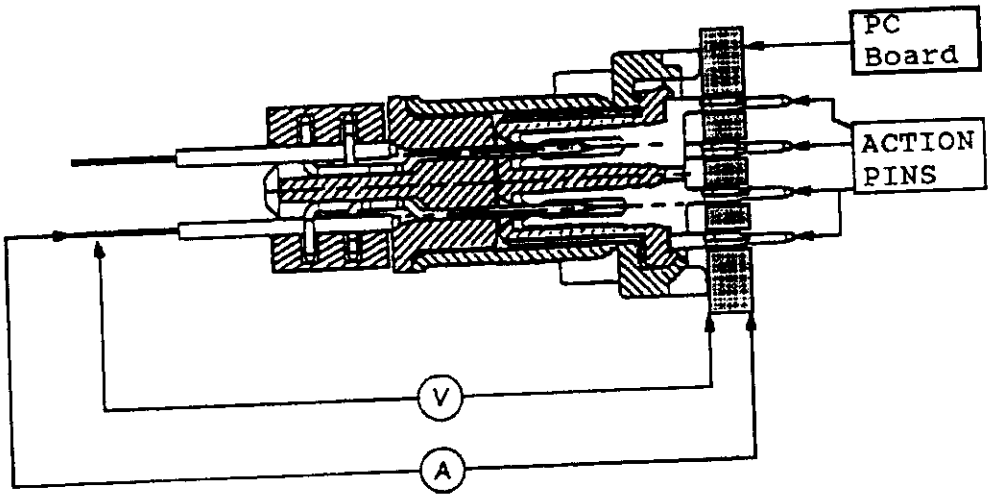

Figure 3
Termination Resistance Measurement Points

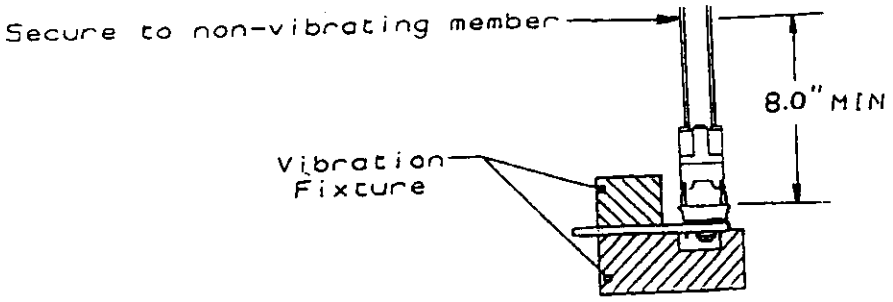

Figure 4
Vibration & Physical Shock Mounting Fixture