

PRODUCT SPECIFICATION

1. SCOPE

1.1. Content

This specification covers the performance, tests and quality requirements for the AMPMODU* Mod IV male interconnection system. This miniature system consists of Mod IV pin contacts crimped to wire and inserted into a flame retardant housing. It is designed to be mated with any of the AMPMODU systems which utilizes receptacle contacts that mate with a .025 square post.

1.2. Connector Configuration (Housing and Contact Spacing)

Crimped pin contacts having a wire range of 22 thru 26 AWG wire fitted into insulator housings having .100, .125 and .150 contact centers. Finished assemblies mate with appropriate AMPMODU Mod II, Mod IV or mass terminated (M.T.) connector systems.

1.3. 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 reference 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. 114-25016: Contact, Male, AMPMODU Mod IV, Application of

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		APP <i>Edward J. ...</i> 7/20/84		LOC B	NO 108-25019
				REV 0	
DIST	0	Release per ECN	PK 7-24 84	SHEET 1 OF 6	TITLE INTERCONNECTION SYSTEM, AMPMODU MOD IV, MALE
25	LTR	AR 0325			
		REVISION RECORD	APP	DATE	

2.2. Military Specifications

- A. MIL-G-45204: Gold Plating, Electrodeposited
- B. MIL-T-10727: Tin Plating, Electrodeposited

2.3. Federal Specifications

- A. QQ-B-750: Phosphor Bronze
- B. QQ-N-290: Nickel Plating, Electrodeposited

3. REQUIREMENTS

3.1. Design and Construction

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

3.2. Materials

- A. Terminals: Phosphor bronze
- B. Housings: Nylon, glass filled, UL 94V-0

3.3. Ratings

- A. Current: 3 amperes maximum
- B. Operating temperature: -65° to 105°C

3.4. Performance and Test Description

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

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3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure																				
Examination of Product	Meets requirements of product drawing and AMP Spec 114-25016.	Visual, dimensional and functional per applicable inspection plan.																				
ELECTRICAL																						
Dielectric Withstanding Voltage	Test Voltage (rms) .100 & .150 Altitude <u>.125 CL</u> <u>CL</u> <u>Feet</u> 750 1000 Sea Level 300 400 50,000 275 275 70,000 No breakdown or flashover, 1 minute hold.	Test between adjacent contacts of unmated connector and contacts to mounting hardware; AMP Spec 109-29-1.																				
Insulation Resistance	5000 megohms minimum initial.	Test between adjacent contacts of unmated connector assembly; AMP Spec 109-28-4.																				
Crimp Resistance	<table border="0"> <tr> <td>Wire Size, AWG</td> <td>Test Current, ampere</td> <td colspan="2">Resistance, milliohms, maximum</td> </tr> <tr> <td></td> <td></td> <td>Initial</td> <td>Final</td> </tr> <tr> <td>26</td> <td>2.0</td> <td>4.5</td> <td>6.5</td> </tr> <tr> <td>24</td> <td>3.0</td> <td>4.0</td> <td>6.0</td> </tr> <tr> <td>22</td> <td>3.0</td> <td>3.0</td> <td>5.0</td> </tr> </table>	Wire Size, AWG	Test Current, ampere	Resistance, milliohms, maximum				Initial	Final	26	2.0	4.5	6.5	24	3.0	4.0	6.0	22	3.0	3.0	5.0	Measure potential drop of mated contacts, see Figure 3, after temperature of wire has stabilized; calculate crimp resistance.
Wire Size, AWG	Test Current, ampere	Resistance, milliohms, maximum																				
		Initial	Final																			
26	2.0	4.5	6.5																			
24	3.0	4.0	6.0																			
22	3.0	3.0	5.0																			
Current Cycling	Crimp resistance, see Figure 3.	Subject mated contacts to 50 cycles at 125% rated current for 30 minutes "ON" - 15 minutes "OFF"; AMP Spec 109-51, cond B, test method 3.																				
MECHANICAL																						
Contact Retention	5 pounds minimum.	Apply axial load of 5 pounds to crimped contacts; AMP Spec 109-30, except grip wire.																				

Figure 1 (cont)

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Test Description	Requirement	Procedure
Crimp Tensile	Wire shall not pull-out from contact. Wire Crimp Size, Tensile, AWG <u>pounds minimum</u> 26 4.0 24 7.0 22 11.0	Determine crimp tensile at a rate of 1 inch/minute; AMP Spec 109-16.

ENVIRONMENTAL

Thermal Shock (a)	Dielectric withstanding voltage.	Subject mated connectors to 5 cycles between -65° and 105°C; AMP Spec 109-22.
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(a) Shall remain mated and show no evidence of damage, cracking or chipping.

Figure 1 (end)

3.6. Connector Tests and Sequences

Test or Examination	Test Group (a)	
	1	2
	Test Sequence (b)	
Examination of Product	1	1
Dielectric Withstanding Voltage	3,6	
Insulation Resistance	2,5	
Crimp Resistance		2,4
Current Cycling		3
Contact Retention	7	
Crimp Tensile		5
Thermal Shock	4	

(a) See Para 4.1.A.

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

Figure 2

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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 prepared at random from current production. Test group 1 shall consist of 1 connector of any plating configuration having 40 or more positions. Test group 2 shall consist of 30 contacts of each plating configuration crimped to 22, 24, and 26 AWG wire, see Figure 4. All contacts shall be crimped in accordance with AMP Specification 114-25016.

B. Test Sequence

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

C. Acceptance

- (1) All samples tested in accordance with this specification shall meet the stated tolerance limit.
- (2) 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.

4.2. Quality Conformance Inspection

The applicable AMP 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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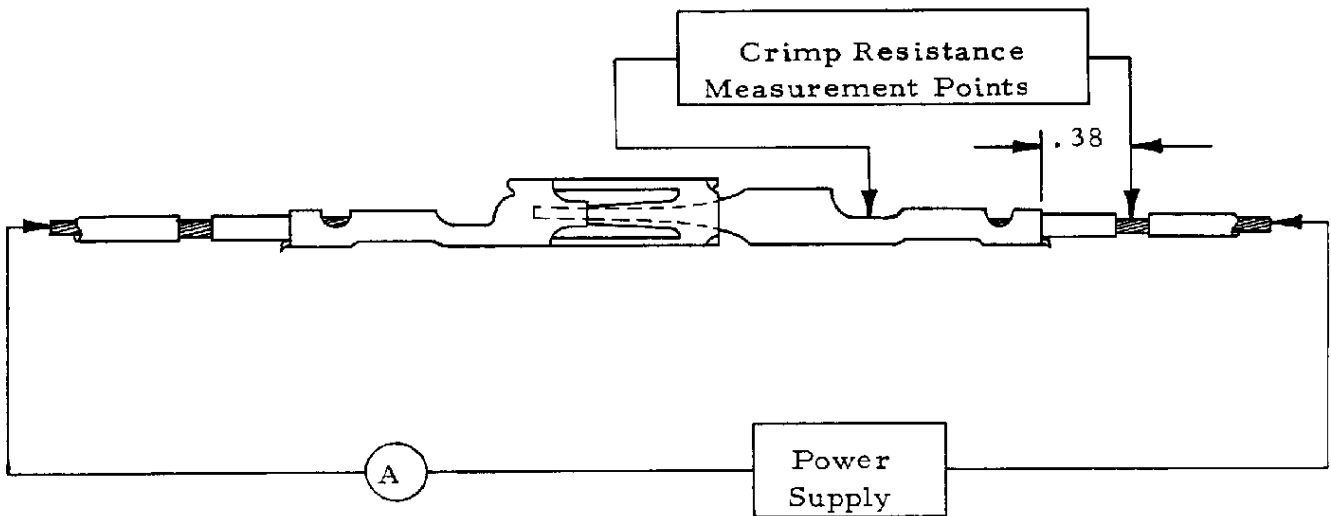


Figure 3

Resistance Measurement Points, Typical

Test Group	Plating Configuration (Thickness in Microinches)
1 & 2	30 Au/50 Ni
	15 Au/50 Ni
	100/200 Bright Sn

Figure 4

Plating Configuration

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