
Mini MAG-MATE* Terminal

1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for AMP* mini MAG-MATE* terminals. These terminals are designed for general use as a magnet wire to external circuit interface. Terminal is compatible with copper magnet wire in sizes 30 through 52 AWG.

1.2. Qualification

When tests are performed on the subject product line, procedures specified in Figure 1 shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

2. APPLICABLE DOCUMENTS

The following AMP 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

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. Materials

- A. Terminal: Brass, post-tin plated, phosphor bronze, post-tin plated
- B. Housing: Nylon, 30% glass filled

3.3. 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.	AMP Spec 109-1. Visual, dimensional and functional per applicable inspection plan.												
ELECTRICAL														
Dry circuit resistance.	<table border="1"> <thead> <tr> <th>Wire Size (AWG)</th> <th>Wire Type</th> <th>Resistance (milliohms maximum)</th> </tr> </thead> <tbody> <tr> <td>30 to 34</td> <td>Mag</td> <td>14.1</td> </tr> <tr> <td>36 to 44</td> <td>Mag</td> <td>22.5</td> </tr> <tr> <td>22</td> <td>Fused</td> <td>22.7</td> </tr> </tbody> </table>	Wire Size (AWG)	Wire Type	Resistance (milliohms maximum)	30 to 34	Mag	14.1	36 to 44	Mag	22.5	22	Fused	22.7	AMP Spec 109-6-7. Subject terminals inserted into housing PN CP76-7040 to 25 milliamperes maximum and 30 millivolts maximum open circuit voltage. See Figure 3.
Wire Size (AWG)	Wire Type	Resistance (milliohms maximum)												
30 to 34	Mag	14.1												
36 to 44	Mag	22.5												
22	Fused	22.7												
MECHANICAL														
Vibration, sinusoidal.	No discontinuities of 10 microseconds or longer duration. See Note.	AMP Spec 109-21-1. Subject terminals inserted into housing PN CP76-7040 to 10-55-10 Hz traversed in 1 minute with 0.06 inch maximum total excursion. 2 hours in each of 3 mutually perpendicular planes.												
Insertion force.	40 pounds maximum.	Measure force necessary to insert terminal into housing PN CP76-7040 and strip magnet wire.												
Retention force.	20 pounds minimum.	Measure force required to pull terminal from housing PN CP76-7040.												
	7 pounds minimum.	Measure force required to pull bare 22 AWG lead conductor (fused or solid) from locking position of terminal in housing PN CP76-7040.												
ENVIRONMENTAL														
Thermal shock.	See Note.	AMP Spec 109-22. Subject terminals inserted into housing PN CP76-7040 to 25 cycles between -55 and 125°C.												
Humidity, steady state.	See Note.	AMP Spec 109-23-2, Condition A. Subject terminals inserted into housing PN CP76-7040 to 40°C and 95% RH for 4 days.												
Temperature life.	See Note.	AMP Spec 109-43. Subject terminals inserted into housing PN CP76-7040 to 118°C for 33 days.												

Figure 1 (cont)

Test Description	Requirement	Procedure
Mixed flowing gas with chlorine.	See Note.	Subject terminals inserted into housing PN CP76-7040 to 1,000 hours of exposure to 200 ppb each of sulphur dioxide, nitrogen dioxide, hydrogen sulphide, and 50 ppb of chlorine.

NOTE *Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification and Requalification Test Sequence shown in Figure 2.*

Figure 1 (end)

3.6. Product Qualification and Requalification Test Sequence

Test or Examination	Test Group (a)					
	1	2	3	4	5	6
	Test Sequence (b)					
Initial examination of product	1	1	1	1	1	1
Dry circuit resistance	2,4	2,4	2,4	2,4	2,4	
Vibration			3			
Insertion force						2
Retention force						3
Thermal shock	3					
Humidity, steady state		3				
Temperature life				3		
Mixed flowing gas with chlorine					3	

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

Figure 2

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Specimen Selection

Specimens shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. All test groups shall each consist of 10 interconnect terminal assemblies per magnet wire size.

B. Test Sequence

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

4.2. Requalification Testing

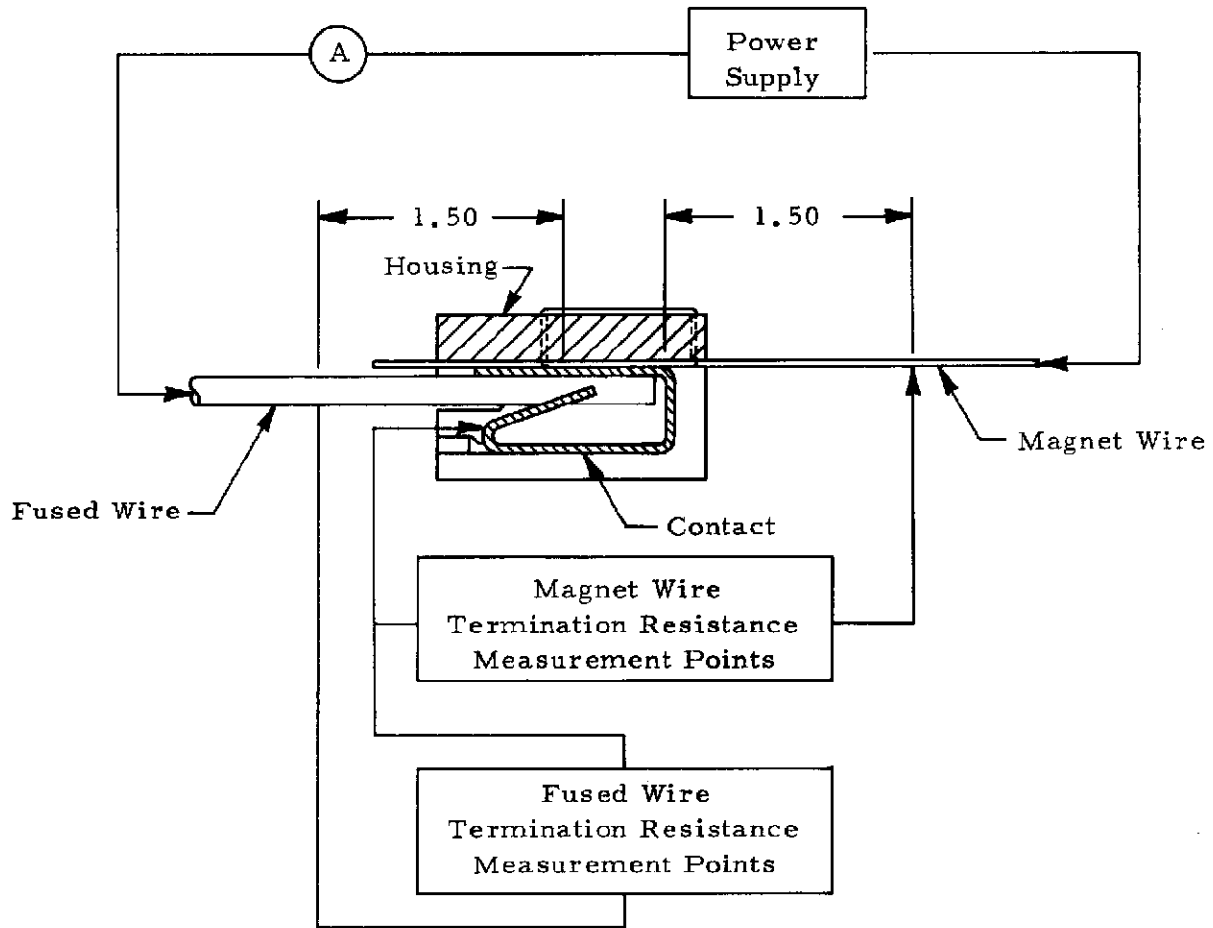
If changes significantly affecting form, fit or function are made to the product or manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequence as determined by development/product, quality and reliability engineering.

4.3. Acceptance

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

4.4. Quality Conformance Inspection

The applicable AMP quality inspection plan shall 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.



NOTE Termination resistance equals millivolts divided by test current less resistance of 1.5 inches of wire.

Figure 3
Termination Resistance Measurement Points