



Nano MAG-MATE* Terminals

1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for Nano MAG-MATE* terminals. These terminals are designed for general use as a magnet wire to external circuit interface. Termination is compatible with copper magnet wire in sizes 30 through 40 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.

1.3. Qualification Test Results

Successful qualification testing on the subject product line was completed on 29-May-20. The Qualification Test Report number for this testing is 501-78769.

2. APPLICABLE DOCUMENTS AND FORMS

The following documents forms 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. TE Documents

- [114-78037](#): Application Specification
- [501-78769](#): Qualification Test Report
- [109-197](#): Test Specification (TE Test Specification vs EIA and IEC Test Methods)

2.2. Industry Documents

- EIA-364: Electrical Connector/Socket Test Procedures Including Environmental Classifications

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

Materials used in the construction of this product shall be as specified on the applicable product Drawing.

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.

3.4. Ratings

Voltage: 50V (AC/DC)

Current: Meets all standard industry applied wire size current rating requirements

Temperature: -40°C to +105°C

3.5. Test Requirements and Procedures Summary

TEST DESCRIPTION	REQUIREMENT	PROCEDURE						
Initial examination of product.	Meets requirements of product drawing.	Visual and dimensional (C of C) inspection per product drawing. EIA-364-18						
Final examination of product	Meets visual requirements.	Visual inspection. EIA-364-18						
ELECTRICAL								
Low Level Contact Resistance (LLCR).	<table border="1"> <thead> <tr> <th>Wire size (AWG)</th> <th>Resistance (mΩ max.)</th> </tr> </thead> <tbody> <tr> <td>30 to 34</td> <td>14.1</td> </tr> <tr> <td>36 to 40</td> <td>22.5</td> </tr> </tbody> </table>	Wire size (AWG)	Resistance (mΩ max.)	30 to 34	14.1	36 to 40	22.5	Subject terminals inserted into housing to 100mA maximum and 20mV maximum open circuit voltage. See Figure 3. EIA-364-23
Wire size (AWG)	Resistance (mΩ max.)							
30 to 34	14.1							
36 to 40	22.5							
MECHANICAL								
Vibration, sinusoidal.	No discontinuities of 10 microseconds or longer duration. See Note.	Subject terminals inserted into housing 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. EIA-364-28						
Retention force.	9.8N minimum.	Measure the force required to pull terminal from cavity (PBT 30% glass-filled). EIA-364-5						
ENVIRONMENTAL								
Thermal shock.	See Note	Subject terminals inserted into housing to 25 cycles between -55°C and 125°C EIA-364-32						
Humidity, steady state.	See Note	Subject terminals inserted into housing to 40°C and 95% RH for 4 days. EIA-364-31						
Temperature life.	See Note	Subject terminals inserted into housing to 118°C for 33 days. EIA-364-17						



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.

3.6. Product Qualification and Requalification Test Sequence

TEST OR EXAMINATION	TEST GROUP (a)				
	1	2	3	4	5
	TEST SEQUENCE (b)				
Initial examination of product	1	1	1	1	1
Low level contact resistance (LLCR)	2, 4	2, 4	2, 4	2, 4	
Vibration, sinusoidal			3		
Retention force					2
Thermal shock	3				
Humidity, steady state		3			
Temperature life				3	
Final examination of product	5	5	5	5	



NOTE

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

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Specimen Selection

Specimens shall be prepared in accordance with applicable Instruction Sheet 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

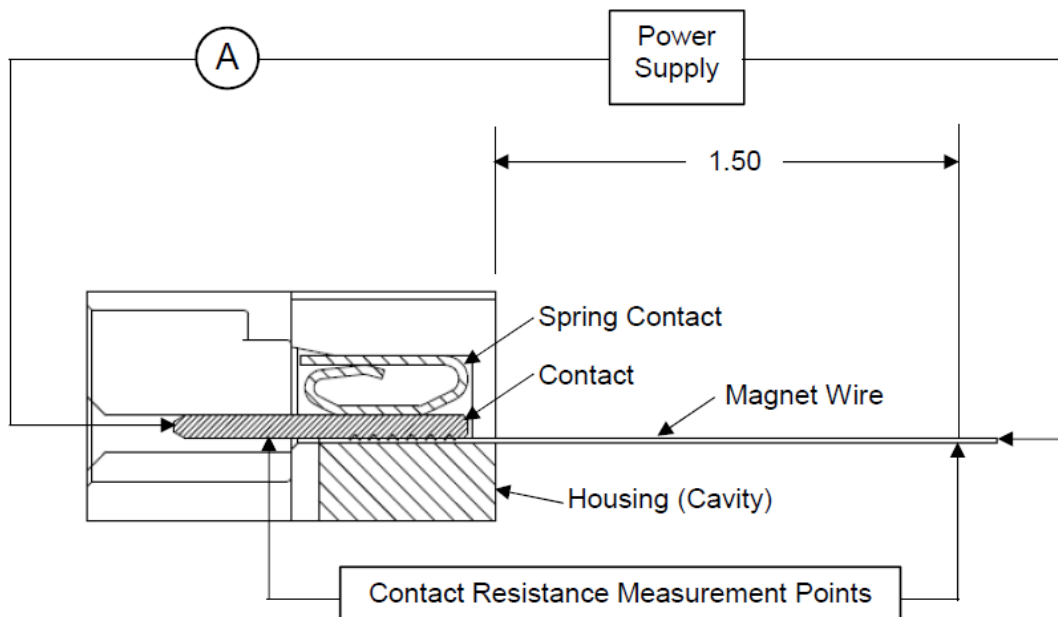
If changes that significantly affecting form, fit or function are made to product or manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequence as determined by development/product, quality and reliability engineering.

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 re submittal.

4.4. Quality Conformance Inspection

The applicable TE 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 Magnet wire.

Figure 3
Low Level Contact Resistance (LLCR) Measurement Points