

PRODUCT SPECIFICATION

TOP ENTRY TERMI-BLOK CONNECTOR

1. SCOPE

This specification describes the general requirements for the top entry TERMI-BLOK connector assembly.

2. TYPE

The assembly consists of shell, cage and spring. The cage forms a single circuit and is available with either 3 or 6 common. Assemblies are available in 2 sizes - Series 3 and 4. Series 3 permits 3 circuits for approximately each lineal inch of track space. Series 4 allows 4 circuits in the same track space. One size of track accepts both series. In addition, Series 3 has a taller, thicker nylon housing than Series 4 to offer increased creepage distance, for application where insulator resistance, flashover voltage or moisture resistance is a critical factor.

3. PRODUCT DESCRIPTION

3.1. Design and Construction

The design, construction, and physical dimensions are specified on the appropriate product drawing.

3.2. Material

A. Shell

The shell is molded of nylon and is available in 10 colors and natural for circuit color coding.

B. Cage

The cage is fabricated of brass, conforming to ASTM B-36, Copper Alloy #260, or equivalent and tin-plated.

C. Spring

The spring is fabricated of stainless steel, conforming to ASTM A-167, or equivalent.

D. Track and Lock

The track is fabricated of aluminum conforming to ASTM B-221 or equivalent, and may be plain or nylon insulated. The lock is fabricated of aluminum conforming to ASTM B-209 or equivalent.

E. Terminals


Use PIDG or Plasti-Grip Terminals.

NUMBER 108 J12

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A	Revise per ECN		<i>3/18/87</i>	LOC	A	NO. 108-1012	REV A
	G-2342			B			
0	Was 21-2300-1			SHEET		NAME	
3B	REVISION RECORD	DR	CHK	DATE	1 OF 5	Top Entry TERMI-BLOK Connector	

3.3. Current Rating

35 amperes continuous current or maximum wire temperature of 105°C.

3.4. Operating Temperature

The maximum operating temperature is 105°C (221°F).

4. TEST REQUIREMENTS AND TEST METHODS

4.1. Electrical Test

A. Potential Drop

(1) Test Requirement

When tested as specified in Para. 4.1.A.(2), the potential drop at the specified test current shall not be greater than values listed in Figure 1.

Maximum Potential Drop in Millivolts			
Wire Size	Test Current (Amperes)	Potential Drop (Millivolts)	
		Before Test	After Test
22	9.0	8.0	10.0
20	11.0	8.0	10.0
18	16.0	8.0	10.0
16	22.0	9.0	11.0
14	32.0	11.0	13.0
12	41.0	11.0	13.0
10	55.0	12.0	14.0

FIG. 1

(2) Test Method

The potential drop shall be measured at the test currents specified in Figure 1. The potential drop shall be measured as shown in Figure 2 and the values given after each test are one half of V_2 plus V_1 .

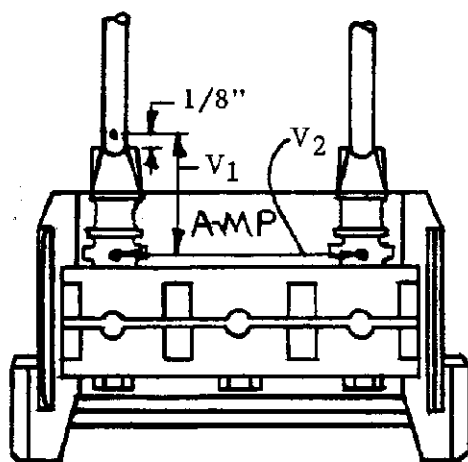


FIG. 2

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B. Current Cycling Qualification

(1) Test Requirement

When tested as specified in Para. 4.1.B.(2), the test samples shall withstand 50 cycles of 125 percent overload current without exceeding the "after test" potential drop values listed in Figure 1.

(2) Test Method

The potential drop shall be measured at test currents specified in Figure 1 after the test assembly has returned to room temperature. Test samples terminated with 3 foot lengths of appropriate wire shall be subjected to 50 current cycles. Each cycle shall consist of 30 minutes at 125 percent of the test current specified, followed by 15 minutes at no load.

C. Vibration

(1) Test Requirement


When tested as specified in Para. 4.1.C.(2), the potential drop at the specified test current shall not be greater than values listed in Figure 3.

Maximum Potential Drop in Millivolts			
Wire Size	Test Current (Amperes)	Potential Drop (Millivolts)	
		Before Test	After Test
22	9.0	8.0	10.0
20	11.0	9.0	11.0
18	16.0	10.0	12.0
16	22.0	11.0	13.0
14	32.0	12.0	14.0
12	41.0	13.0	15.0
10	55.0	15.0	17.0

FIG. 3

(2) Test Method

Terminals shall be attached to a suitable length of wire and inserted into an assembly, and the assembly mounted on the vibrating table. The free end of the wire shall be secured to a suitable support 12 inches external to the vibrating table with all slack or tension removed from the wire. The assembly will then be vibrated in accordance with MIL-STD-202, Method 201, for 18 hours, on each of the perpendiculars to the axes of the wire at a total amplitude of .060 inch, at a cycling frequency 10 to 55 to 10 cycles per second. The cycle frequency to be accomplished in one minute. Following this test, the potential drop shall be measured at test currents and on wire sizes as specified in Figure 3.

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D. Dielectric Strength

(1) Test Requirement

When tested as specified in Para. 4.1.D.(2), the assembly must withstand 1500 volts for one minute when mounted in its track. There shall be no arcing breakdown.

(2) Test Method

The connector assembly shall be mounted in its track and held steady by the track end locks. The connector assembly shall be subjected to an insulation resistance test as prescribed in MIL-STD-202, Method 302, applying 1500 volts for a period of one minute. Measurements are to be made between mutually insulated points and between insulated points and ground.

4.2. Insulation Resistance

A. Test Requirement

When tested as specified in Para. 4.2.B., the insulation resistance between adjacent terminals shall be a minimum of 5000 megohms.

B. Test Method

The connector assembly shall be mounted in its track and held steady by the track end locks. The connector assembly shall be subjected to an insulation resistance test per MIL-STD-202, Method 302, Test Condition A. A direct current potential of 100 volts shall be applied between adjacent cavities and between cavities and ground for a period of one minute. The connector assembly shall be tested for humidity absorption in accordance with MIL-STD-202, Method 103, Test Condition B. After the initial state of conditioning, during the test and at the high humidity point, and the drying period, the connector assembly shall be subjected to the insulation resistance test.

4.3. Engagement and Disengagement Forces


A. Test Requirement

When tested as specified in Para. 4.3.B., the average engagement and disengagement forces shall not exceed the values listed in Figure 4.

Average Engagement and Disengagement Values	
Average Engagement (pounds)	Average Disengagement (pounds)
5.0 Min.	5.0 Min.
15.0 Max.	20.0 Max.

FIG. 4

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B. Test Method

Terminals are to be engaged and disengaged from their respective connections 10 times, and the values recorded.

5. EQUIPMENT


The following pieces of equipment were used in the determination of values set forth herein.

- 5.1. Associated Research Dielectric Meter, Model 422.
- 5.2. Bethlehem Humidity Chamber, Model AM b/200 TH4-6.
- 5.3. General Radio Megohm, Model 544 B.
- 5.4. Weston Ammeter, Model 904.
- 5.5. Hewlet-Packard Vacuum Tube Voltmeter, Model 400H.
- 5.6. Superior Variac, Model 117T.
- 5.7. Kenyon Current Transformer.
- 5.8. Calidyne Vibration Machine, Model 162.
- 5.9. Ling Vibration Machine, Model 132.
- 5.10. Endevco Corporation, Accelerometer.
- 5.11. Endevco Corporation, Accelerometer Amplifier.
- 5.12. Sanborn Recorder, Model 296.
- 5.13. Daytronic Load Cell, Model 152A-100.
- 5.14. AMP Insertion Machine.

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