PRODUCT SPECIFICATION

VERTICAL TERMI-BLOK CONNECTOR

1. SCOPE

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

2. TYPE

The assembly consists of a shell, cap, spacer, and cage. There are 4 types of cages available as shown in Figure 1.

Type of Cage Circuit	Shell and Cap Color Code
Single Circuit (4 Common)	Red
2 Circuit (2 Sets of 2 Common)	Yellow
4 Circuit (Single Cages Uncommon)	Natural
3 Circuit (One Common Set, 2 Single)	Natural Shell, Black Cap

FIG. 1

3. PRODUCT DESCRIPTION

3.1. Design and Construction

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

3.2. Material

A. Housing

The shell, cap and spacer are molded of nylon.

B. Cage

The cage is fabricated of phosphor bronze conforming to ASTM B-103, Copper Alloy #510 (Federal QQ-B-750) or equivalent and is tin plated.

C. Track and Lock

The track is fabricated of aluminum conforming to ASTM B-221 or equivalent. The lock is fabricated of aluminum conforming to ASTM B-209 or equivalent.

D. Terminals

Use PIDG or Plasti-Grip Terminals.

3.3. Current Rating

20 amps 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 shown in Figure 2.

Maximum Potential Drop in Millivolts			
Wire Size	Test Current (Amperes)	Potential Drop (Millivolts)	
		Before Test	After Test
22	9.0	12.0	14.0
20	11.0	11.0	13.0
18	16.0	10.0	12.0
16	22.0	9.0	11.0

FIG. 2

(2) Test Method

The potential drop shall be measured at the test currents specified in Figure 2. The potential drop shall be measured as shown in Figure 3 and the values given after each test are one half of V_2 plus V_1.

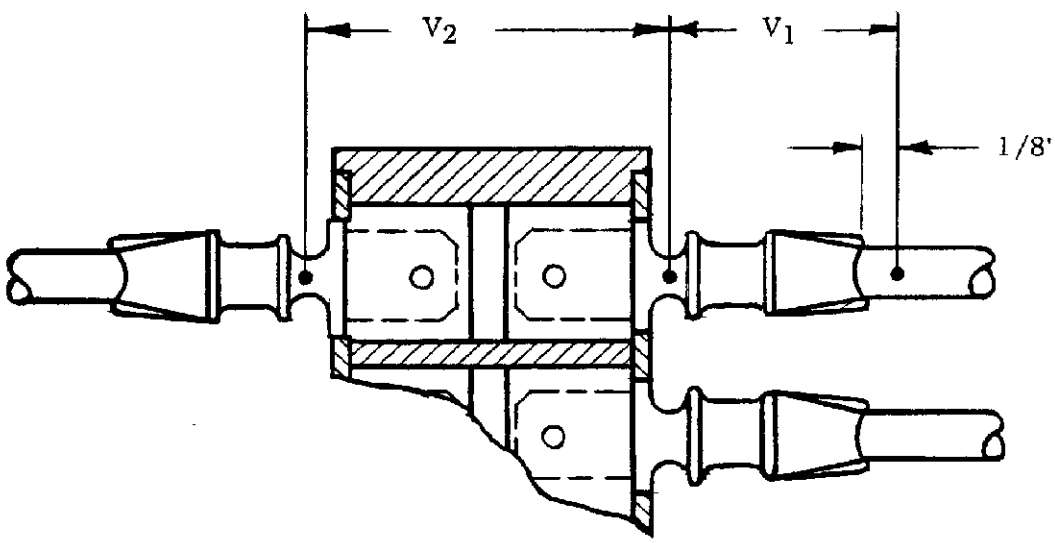

FIG. 3

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 2.

(2) Test Method

The potential drop shall be measured at test currents specified in Figure 2 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 4.

Maximum Potential Drop in Millivolts			
Wire Size	Test Current (Amperes)	Potential Drop (Millivolts)	
		Before Test	After Test
22	9.0	15.0	17.0
16	22.0	16.0	18.0

FIG. 4

(2) Test Method

Terminals shall be attached to a suitable length of wire and inserted into an assembly, and the assembly mounted on the vibration 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 shall then be vibrated in accordance with MIL-STD-202, Method 201 for 18 hours, on each of the perpendiculars to the axis 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 4.

D. Dielectric Strength

(1) Test Requirement

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

(2) Test Methods

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, 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 Methods

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 humidity shall be tested 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 5.

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

FIG. 5

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. Hypot Dielectric Meter, Model 422.

5.2. Bethlehem Humidity Chamber, Model AM b/200 TH 4-6.

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 2 PF 136.

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 Amplifer.