ASSOCIATION CONNECTING
ELECTRONICS INDUSTRIES

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Number	
3.6	
Subject	
Insulation Resistance, Connectors	
Date	Revision
7/75	**A**
Originating Task Group	
N/A	

IPC-TM-650
TEST METHODS MANUAL

1.0 Scope

1.1 To determine the resistance to current leakage offered by the insulation materials and the various seals of a connector to a DC potential tending to produce such leakage through or on the surface of these members. The test is especially useful in determining the extent to which insulating properties are affected by deteriorative influences, such as heat, moisture, contamination, or loss of volatile materials.

2.0 Reference Documents

2.1 Information in this section is intended to parallel the test method described in EIA-RS-364/TP-21.

3.0 Test Specimen

3.1 A plug, receptacle, or mated connector as specified in the individual connector specification.

4.0 Apparatus

4.1 Megohmmeter

4.1.1 Resistance measurement accuracy shall be such that the value being measured is accurate to 5 percent.

4.1.2 Test voltage shall be adjustable to within ± 2 percent of required value.

5.0 Procedure

WARNING: POTENTIALS USED DURING THIS TEST MAY PROVE HAZARDOUS TO PERSONNEL. TAKE PRECAUTIONS TO PROTECT PERSONNEL FROM ACCIDENTAL EXPOSURE TO THESE TEST POTENTIALS.

5.1 If, required by the individual connector specification, the plug and/or receptacle shall be cleaned prior to the test to insure that it is free from excess dust, oil, moisture, or other surface contaminants; all observed conditions shall be recorded.

5.2 Samples that have been subjected to environmental conditions shall be measured within 1/2 to 3 hours after removal from the chamber, unless otherwise specified.

5.3 The insulation resistance shall be measured between individual pairs of immediately adjacent contacts and between the shell and/or engaging hardware (if they exist) and the closest individual contact(s).

NOTE: The same contact locations for a given connector shall be used each time the insulation resistance test is performed.

5.4 The specified test potential (or 500 volts DC if no potential is specified) shall be applied for a two-minute period. Immediately after this electrification period, the insulation resistance shall be measured. If, during the two-minute period the instrument indicates that the insulation resistance meets the specified minimum and is steady or increasing, the test may be terminated before the end of the electrification period.

CAUTION: EXERCISE CARE TO AVOID A DIRECT SHORT CIRCUIT OF THE TESTING APPARATUS SINCE DAMAGE TO THE INSTRUMENT MAY RESULT.

6.0 Notes

6.1 Acceptance criteria shall be established as the minimum level of insulation resistance compatible with end-item usage of the connector. This resistance is an inherent characteristic of connector geometry (e.g., contact spacing) and materials.