



ANSI/EIA-364-24B-1998  
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# EIA STANDARD

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## TP-24B

### Maintenance Aging Test Procedure for Electrical Connectors

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## EIA-364-24B

(Revision of EIA-364-24A)

MAY 1998

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**ELECTRONIC INDUSTRIES ALLIANCE**  
**ENGINEERING DEPARTMENT**



EIA-364-24B

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This standard is based upon the major technical content of International Electrotechnical Commission standard 512-5, test 9d, durability of contact retention system and seals (maintenance aging), 1992-08. It conforms in all essential respects to this IEC standard.

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## TEST PROCEDURE No. 24B

### MAINTENANCE AGING TEST PROCEDURE FOR ELECTRICAL CONNECTORS

(From EIA Standards Proposal No. 3990, formulated under the cognizance EIA CE-2.0 Committee on National Connector Standards.)

#### **1 Introduction**

##### 1.1 Scope

This standard establishes a test method to assess the ability of a component to withstand stresses caused by repeated insertion and extraction of contacts during maintenance. This test procedure applies only to connector assemblies containing removable contacts and is to be used where a connector is to be stressed in the area of contact retention and conductor sealing.

#### **2 Test resources**

##### 2.1 Equipment

2.1.1 Test equipment shall consist of the insertion and removal tools specified.

2.1.2 A force gage of suitable range for the force being measured, so that the reading shall lie in the middle 50 percent of the scale, where practicable, with a nominal accuracy of  $\pm 2$  percent.

#### **3 Test specimen**

##### 3.1 Description

A test specimen shall consist of a connector with all contacts installed and wired according to the referencing document.

##### 3.2 Preparation

All rear hardware or accessories should be loosened or removed to permit extraction and insertion of contacts. The accessories shall remain loose or removed during the test.

#### **4 Test procedure**

4.1 Unless otherwise specified, select 20% of the contacts, but no fewer than six, at random from each specimen for test. For connectors having six or fewer contacts, all contacts shall be used for the test. At least one contact shall be in or near the center of the connector. Unless otherwise specified, there shall be ten extraction and insertion cycles for each contact. The force required to insert and remove each contact in and from the connector shall be measured during the initial and final maintenance aging cycle in accordance with EIA-364-05.

4.1.1 Record the following initial measurements, if specified

4.1.1.1 Contact retention force.

4.1.1.2 Contact insertion and extraction force.

4.1.2 Record the following final measurements, if specified

4.1.2.1 Contact retention force.

4.1.2.2 Contact insertion and extraction force.

4.1.2.3 Visual examination for damage to wire seals, etc.

#### **5 Details to be specified**

The following details shall be specified in the referencing document:

5.1 Design or type of insertion and extraction tools; see 2.1.1

5.2 Test specimen preparation; see 3.1

5.3 Number of test cycles, if other than 10; see 4.1

5.4 Number of samples to be tested

5.5 Requirements for initial measurements

5.6 Requirements for final measurements

5.7 Degradation allowed due to maintenance aging test



## **6 Test documentation**

Documentation shall contain the details specified in clause 5, with any exceptions, and the following:

6.1 Title of test

6.2 Sample description, including fixturing if applicable

6.3 Test equipment used, and date of last and next calibration

6.4 Test procedure

6.5 Values and observations

6.6 Name of operator and date of test





