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EIA STANDARD

TP-01B

Acceleration Test Procedure for Electrical Connectors

EIA-364-01B

(Revision of EIA-364-01A)

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Electronic Components, Assemblies & Materials Association

ELECTRONIC COMPONENTS, ASSEMBLIES & MATERIALS
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This standard is based upon the major technical content of International Electrotechnical Commission standard 512-4, test 6a, acceleration, steady state, 1976, first edition. It conforms in all essential respects to this IEC standard.

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(From Standards Proposal Number 4416, formulated under the cognizance of the CE-2.0 National Connector Standards Committee.)

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TEST PROCEDURE No. 01B
ACCELERATION TEST PROCEDURE
FOR
ELECTRICAL CONNECTORS

(From EIA Standards Proposal No. 4416, formulated under the cognizance EIA CE-2.0 Committee on National Connector Standards, and previously published in EIA-364-01A.)

1 Introduction

1.1 Scope

This standard establishes test methods to determine the ability of an electrical connector and sockets to withstand a specified acceleration force without damage detrimental to its specified performance.

2 Test resources

2.1 Equipment

Unless otherwise specified, the acceleration test apparatus shall be the centrifuge - type and shall be capable of subjecting the test specimen to the value of acceleration (g_n) as specified in 4.2. The acceleration gradient across the specimen shall not exceed 15 percent of the specified g_n level.

3 Test specimen

3.1 Description

A test specimen shall consist of a plug, a receptacle, or mated plug and receptacle, as specified in the referencing document.

3.2 Preparation

All contacts shall be wired as specified. The wires shall be bundled into harnesses and secured to the acceleration table or arm not less than 25.4 centimeters (10 inches) from the rear of the connector half to that they are attached. Any extension of the harnesses shall be secured to prevent uncontrolled motion during the test. Provisions shall be made for all electrical connections to be secured.

3.3 Mounting

Unless otherwise specified, provisions shall be made to permit rigid mounting of the specimen by the normal mounting means so that the specimen can be tested in two directions, 180 degrees apart, along each of three mutually perpendicular axes.

4 Test procedure

Each specimen under test shall be mounted in a rigid position as specified in 3.3 and subjected to the acceleration levels specified in table 1, as applicable.

4.1 Electrical tests

The specimen shall be electrically energized. Any circuit interruption in excess of 1 microsecond shall be recorded.

4.2 Test conditions

The specimen shall be subjected to 5 minutes acceleration of the specified g_n level in both directions of each of three mutually perpendicular axes for a total of 30 minutes at the specified g_n level. The acceleration measured at any point of the component part shall not vary from the selected “ g_n ” level by more than 15 percent. The specimen shall be brought from zero to the specified acceleration level at a linear rate in not less than 1 minute.

Table 1 - Acceleration levels

Test condition letter	Acceleration level g_n (gravity units)
A	50
B	100
C	250
D	500

4.3 Post test examinations

Examination for the following defects shall be made at the completion of the test.

4.3.1 Unintended separation of mated connectors.

4.3.2 Inability to mate or unmate counterpart connector within specified mating and unmating force values.

4.3.3 Cracked, broken, or bent parts.

4.3.4 Loosening of parts.

4.3.5 Missing parts.

5 Details to be specified

The following details shall be specified in the referencing document:

5.1 Type specimens to be tested and whether mated; see 3.1

5.2 Wiring of contacts; see 3.2

5.3 Mounting of specimen, if other than herein; see 3.3

5.4 Acceleration level, applicable test condition letter; see table 1

5.5 Electrical tests; see 4.1

5.6 Post test examination, if other than herein; see 4.3

5.7 Number of specimens to be tested

6 Documentation

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

6.1 Title of test

6.2 Specimen description, including fixturing if applicable (photographs may be used)

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

6.4 Test and procedure

6.5 Values and observations

6.6 Name of operator and date of test

EIA Document Improvement Proposal

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