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EIA STANDARD

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Gage Location and Retention Test Procedure for Electrical Connectors

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ELECTRONIC INDUSTRIES ALLIANCE

Electronic Components, Assemblies, Equipment & Supplies Association

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(From Standards Proposal No. 4143, formulated under the cognizance of the CE-2.0 National Connector Standards Committee.)

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TEST PROCEDURE No. 99

GAGE LOCATION AND RETENTION TEST PROCEDURE FOR ELECTRICAL CONNECTORS

(From EIA Standards Proposal No. 4143, formulated under the cognizance EIA CE-2.0 Committee on National Connector Standards.)

1 Introduction

1.1 Scope

This standard establishes a method of determining the gage location and retention of electrical connectors.

1.2 Object

The object of this test procedure is to determine the ability of a connector to comply with specified location and retention measurements through the use of location and retention test gages.

2 Test resources

2.1 Equipment

2.1.1 Retention test gage.

2.1.2 Location test gage.

2.1.3 Measurement device, English or metric, as applicable.

2.1.4 Force gage with accuracy of ± 2 percent.

2.1.5 Test fixture.

3 Test specimen

3.1 Description

A test specimen shall consist of a plug or receptacle.

3.2 Preparation

The cavities to be tested shall be unwired, without accessory hardware, and unmated. All applicable contacts shall be installed.

3.3 Mounting

The unmated test specimen shall be mounted in a position of axial alignment with gage. Sufficient clearance shall be provided under the test specimen to allow for any push through that may occur.

4 Test procedure

4.1 Gage location test

Applicable test gages specified in the referencing document shall be installed in three randomly selected cavities of each contact size of each connector. With the gages fully seated against the contact retention device, the axial location of the front of the gages shall be measured relative to the specified reference point indicated in the reference document.

4.2 Gage retention test

Applicable test gages specified shall be installed in three randomly selected cavities in each connector. The axial load specified shall be applied to the individual test gages in both directions. The load shall be applied at a rate of approximately 0.45 kilogram per second (1 pound per second) until the specified load has been reached. Gage displacement shall be measured with respect to the connector shell after an initial load of 0.91 kilogram (2 pounds) has been applied to assure that all slack has been taken up. The axial displacement of the gage shall not exceed 0.30 millimeter (0.012 inch) or as specified in the referencing document. No damage to gage or insert shall occur.

5 Details to be specified

The following details shall be specified in the referencing document:

5.1 Test gages; see 4.1 and 4.2

5.2 Reference point for gage location measurement; see 4.1

5.3 Maximum allowable displacement after initial load has been applied, if other than specified herein; see 4.2

5.4 Applied axial load; see 4.2

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 Specimen description; include fixture, if applicable

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

6.4 Values and observations

6.4.1 Measured gage displacement

6.5 Name of operator and date of test

EIA Document Improvement Proposal

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