



The product described in this document has not been fully tested to ensure conformance to the requirements outlined below. Therefore, TE Connectivity (TE) makes no representation or warranty, express or implied, that the product will comply with these requirements. Further, TE may change these requirements based on the results of additional testing and evaluation. Contact TE Engineering for further details.

**Title: Cable to Board Lug Power Tap Connector**

**1. SCOPE**

1.1. Content

This specification covers performance, test and quality requirements for a TE Connectivity Cable to Board Lug Power Tap Connector.

1.2. Qualification

When tests are performed on the subject product line, procedures specified in this specification shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

**2. APPLICABLE DOCUMENTS AND FORMS**

The following documents and forms constitute a part of this specification to the extent specified herein. Unless otherwise indicated, the latest edition of the document applies. In the event of conflict between the requirements in this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between requirement of this specification and referenced documents. This specification shall take precedence.

2.1. TE Documents

- 114-32129: Application Specification
- 501-128017: Qualification Test Report.
- 109 Series: Test Specifications as indicated in Figure 3.
- 109-197: Test Specification (TE Test Specification vs EIA and IEC Test Methods)

2.2. Industry Documents

EIA-364: Electrical Connector/Socket test Procedures Including Environmental Classifications.

**3. REQUIREMENTS**

3.1. Design and Construction

Product shall be of the design, construction, materials and physical dimensions specified on the applicable product drawing.

3.2. Materials

Materials used in the construction of this product shall be as specified on the applicable product drawing.

3.3. Ratings

Voltage	Current	Temperature
16 V DC	40A	-20 °C to 105°C

### 3.4. Performance and Test Description

Product is designed to meet the electrical, mechanical and environmental performance Requirements specified. Unless otherwise specified, all tests shall be performed at ambient environment conditions per EIA-364.

### 3.5. Test Requirements and Procedures Summary

Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

TEST DESCRIPTION	REQUIREMENT	PROCEDURE
Initial examination of product	Meets requirements of product drawing.	EIA-364-18. Visual and dimensional(C of C) Inspection per product drawing. Document gold plating thickness at contact interfaces.
Final examination of product	Meets visual requirements.	EIA-364-23 Visual inspection.
<b>ELECTRICAL</b>		
Low level contact resistance	1 milliohms maximum	EIA-364-23 Subject specimens to 100 milliamperes max. And 20 millivolts max. open circuit voltage
Insulation resistance	1000 Megohms minimum	EIA-364-21 500 Volts DC, 2 minute hold. Test between adjacent contacts of mated specimens.
Withstanding voltage	2500V DC	EIA-364-20, Condition I 500 volts DC at sea level. Test between adjacent contacts specimens.
Temperature rise & Current	Temperature rise: 30°C maximum over ambient temperature at specified current.	EIA-364-70,Method I Stabilize at a single current level until 3 readings at 5 minute intervals are within 1°C.
<b>MECHANICAL</b>		
Compliant pin insertion	700N[154lbf] Maximum (Per one connector/six EONs)	EIA-364-13 Measure force necessary to mate specimens at a maximum rate of 12.7mm per minute.
Compliant pin retention	80N[17.6lbf] Minimum (Per one connector/six EONs)	EIA-364-13 Measure force necessary to mate specimens at a maximum rate of 12.7mm per minute.
Connector retention force	160 N [35lbf] minimum. Connector need pressed into PCB, and installed the bottom screw.	TE Spec 109-30-1. Measure force necessary to remove a correctly applied specimen from its printed circuit board at a maximum rate of 12.7 mm [.5 in] per minute.
<b>ENVIRONMENTAL</b>		
Thermal shock.	See Note.	EIA-364-32. Subject specimens to 36 cycles between -20 and 105°C.

Humidity-temperature cycling	See Note	EIA-364-31, Method III, Condition B without cold shocks. Subject specimens to 10 cycles (10 days) between 25 and 40°C at 80 to 95% RH.
Temperature life	See Note	EIA-364-17, Method A, Condition 4. Subject specimens to 105°C for 504 hours (21days).
Mixed flowing gas.	See Note	EIA-364-65, Class II A. Subject specimens to environmental Class II A. for 14 days(7 days mated,7days unmated)



**NOTE**

Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification and Requalification Test Sequence shown in Figure 2.

Figure 1

3.6. Product Qualification and Requalification Test Sequence

TEST OR EXAMINATION	TEST GROUP (a)			
	1	2	3(b)	4
	TEST SEQUENCE (c)			
Initial examination of product	1	1	1	1
Low level contact resistance	2,5,7			
Insulation resistance		2,6		
Withstanding voltage		3,7		
Temperature rise & current	3,8			
Compliant pin insertion			2	
Compliant pin retention			3	
Connector retention force				2
Thermal shock		4		
Humidity-temperature cycling		5		
Temperature life	6			
Mixed flowing gas	4			
Final examination of product	9	8	4	3



**NOTE**

- (a) See para 4.1.A
- (b) Split into subgroups as needed for on and off board tests.
- (c) Numbers indicate sequence in which tests are performed.

Figure 2

## 4. QUALITY ASSURANCE PROVISIONS

### 4.1. Qualification testing.

#### A. Sample selection

Samples shall be prepared in accordance with applicable instructions and shall be selected at random from current production.

#### B. Test sequence

Qualification inspection shall be verified by testing samples as specified in para. 3.5

### 4.2. Requalification testing

If changes significantly affecting form, fit or function are made to product or manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of original testing sequence as determined by product, quality and reliability engineering.

### 4.3. Acceptance

Acceptance is based upon verification that product meets requirements of para. 3.5. Failures attributed to equipment, test set-up, applied customer components or operator deficiencies shall not disqualify the product. When product failure occurs, corrective action shall be taken and samples resubmitted for requalification. Testing to confirm corrective action is required before resubmittal.

### 4.4. Quality conformance inspection

Applicable TE Connectivity quality inspection plan will specify sampling acceptable quality level to be used. Dimensional and functional requirements shall be in accordance with applicable product Drawing and this specification.