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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.

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## Nector S Bus Bar for North American Market

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### 1. SCOPE

#### 1.1. Content

This specification covers performance, tests and quality requirements for the TE Connectivity Nector S Bus Bar intended for the North American market. The connector system is specifically designed for lighting industry applications and similar purposes from low voltage to 125 volts. Product mates to Nector S Plugs. Product terminates to UL SPT-2 type 18 AWG 2 conductor cable.

#### 1.2. Qualification

When tests are performed on the subject product line, procedures specified in Figure 1 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.

#### 2.1. Documents

- [114-20131](#): Nector S Line Bus Bar Connector Application Specification
- [114-20140](#): Nector S Line Free Hanging Connector for SVT Cable Application Specification
- [114-20141](#): Nector S Line Free Hanging Connector for SPT-2 Cable Application Specification
- [108-18030](#): Micro Quadlock System Product Specification
- [108-20294](#): Nector S Line for North American
- [501-134048](#): Qualification Test Report

#### 2.2. Industry Document

- EIA-364: Electrical Connector/Socket Test Procedures Including Environmental Classifications
- IEC-60529: Ingress Protection Rating
- IEC 60320-1: Appliance couplers for household and similar general purposes.

#### 2.3. Reference Document

- [109-197](#): Test Specification (Tyco Electronics Test Specifications vs EIA and IEC Test Methods)

### 3. REQUIREMENTS

#### 3.1. Design and Construction

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

### 3.2. Ratings

Product Type	Part Numbers	Continuous Current	Continuous Voltage	Wire/Cable Type notes
Wire applied-IPC	2213222 Bus Bar	6.0 A	125 VAC	UL SVT SPT-2 Cable 18AWGx2 conductor 300V 105°C.
		7.0 A	42 VDC	

Operating Temperature: -40 to + 85°C

### 3.3. 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 and Application Specification 114-20131.	EIA-364-18. Visual and dimensional (C of C) inspection per product drawing.
Final examination of product.	Meets visual requirements.	EIA-364-18. Visual inspection.
<b>ELECTRICAL</b>		
Low Level Contact Resistance (LLCR).	$\Delta R$ of 10 milliohms maximum for all connectors	EIA-364-23. Subject mated male and female contacts to 20 millivolts open circuit at 100 milliamperes maximum. See Figure 3.
Insulation Resistance	5 megohms minimum.	EIA-364-21. Test at 500 Vdc for 1 minute. Test between adjacent contacts, and between contacts connected together and the body.
Dielectric Withstanding Voltage	One minute hold with no breakdown or flashover.	EIA-364-20, Condition I. 1250 VAC (rms) at sea level. Test between adjacent contacts of mated plug and outlet.
Temperature rise vs. current	45°C maximum temperature rise	EIA-364-70, Method 1. Stabilize at a single current level until 3 readings at 5 minute intervals are within 1°C.
<b>MECHANICAL</b>		
Vibration	No discontinuities greater than 1 microsecond.	EIA-364-28, Test Condition VII, Level D. Subject mated plug and outlet to random vibration, 20-500 Hz, 3.10 grams, for 30 minutes in each of 3 mutually perpendicular axis. See Figure 4.

Figure 1 (cont.)

Test Description	Requirement	Procedure
Mechanical shock	No discontinuities of 1 microsecond or longer duration. See Note.	EIA-364-27, Condition H. Subject mated plug and outlet to 30 G's half-sine shock pulses of 11 milliseconds duration. Three shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks. See Figure 4
Durability	See note	EIA-364-9. Subject mated plug and outlet to 10 mating and un-mating cycles at a rate 10mm/sec.
Connector Mating Force	57.0 N maximum for first mating cycle of plug and outlet. Two position connector to be tested.	EIA-364-13. Measure force necessary to mate plug and outlet. Mate specimens at a maximum rate of 25.4 mm per minute
Connector Un-mating Force	10.0 N minimum on 10th un-mating cycle. Two position connector to be tested.	EIA-364-13. Measure force to un-mate plug and outlet. Un-mate specimens at a maximum rate of 25.4 mm per minute
<b>ENVIRONMENTAL</b>		
Thermal shock	See Note	EIA-364-32, Test Condition VIII. Subject unmated specimens to 10 cycles between -40 and 105°C with 30 minute dwells at temperature extremes and 1 minute transition between temperatures.
Humidity/temperature cycling	See Note	EIA-364-31, Method IV. Subject unmated specimens to 10 cycles (10 days) between 25 and 65°C, 80 to 100%RH.
Temperature life	See Note	EIA-364-17, Method A, Test Condition 3(85°C), Test Time Condition A (96 hrs.)
Ingress Protection	Protection Degree = IPX7	IEC 60529: Immersion of samples in one meter of water for 30 minutes.


**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 (end)

3.4. Product Qualification and Requalification Test Sequence

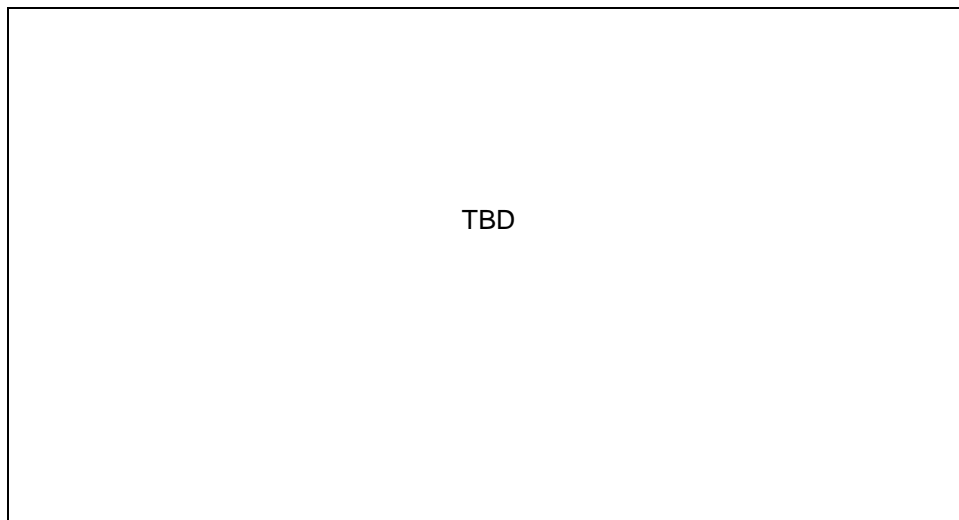
Test	Test Group(a)			
	1	2	3	4
	Test Sequence(b)			
Initial examination of product	1	1	1	1
LLCR	3,6,8			2,6
Insulation resistance			2,6	
Dielectric Withstanding voltage			3,7	3,5
Temperature rise vs current		2,6		
Vibration	5			
Mechanical shock	7			
Durability	4	3		
Mating force	2			
Un-mating force	9			
Thermal shock			4	
Humidity/temperature cycling		4	5	
Temperature life		5		
Ingress Protection				4
Final examination of product	10	7	8	7



**NOTE**

- a) All test groups shall consist of a minimum of 6 Nector S connectors terminated to the appropriate wire size and type. Specimens shall be selected at random from current production.
- b) Numbers indicate sequence in which tests are performed.

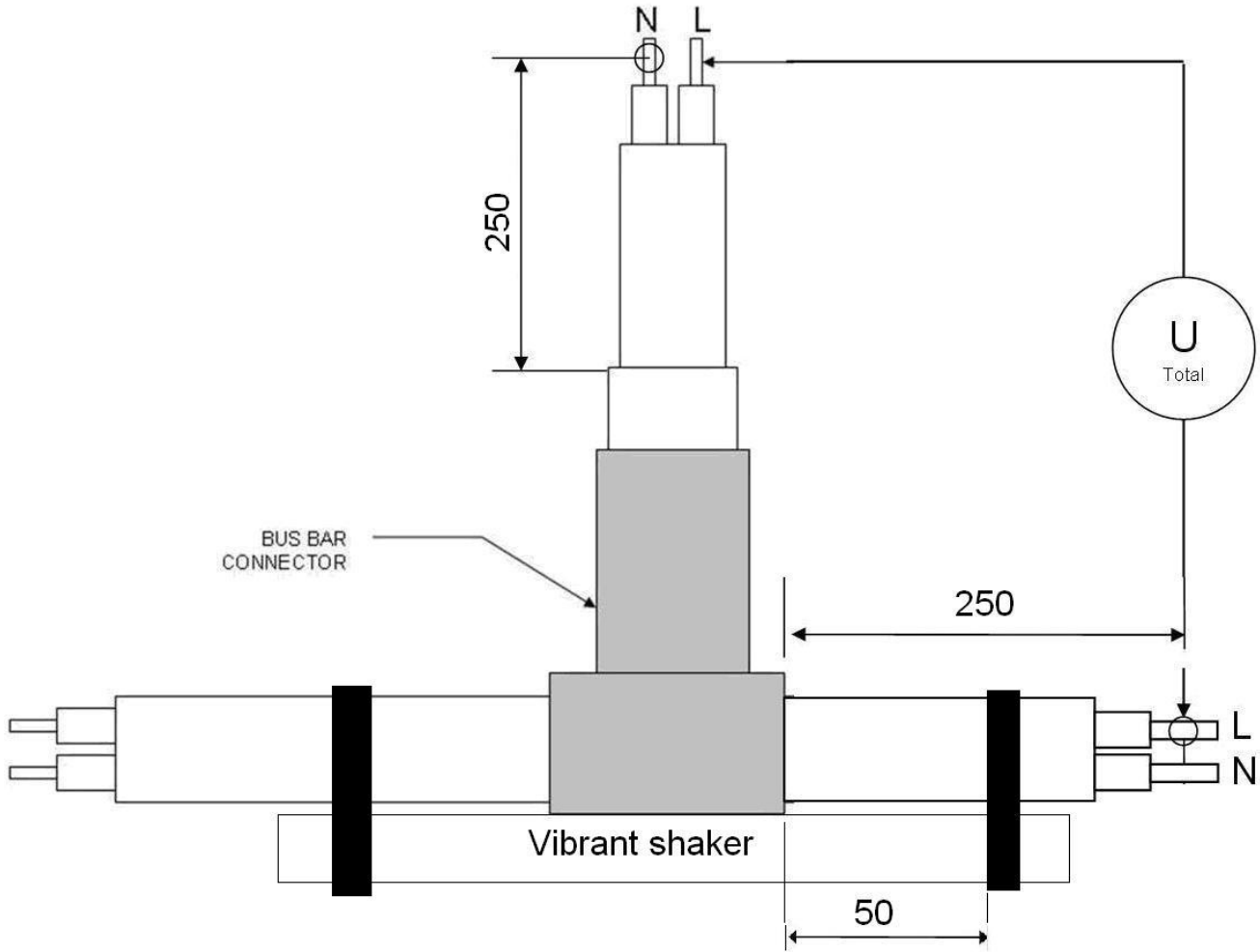
Figure 2



BUSS BAR CONNECTOR

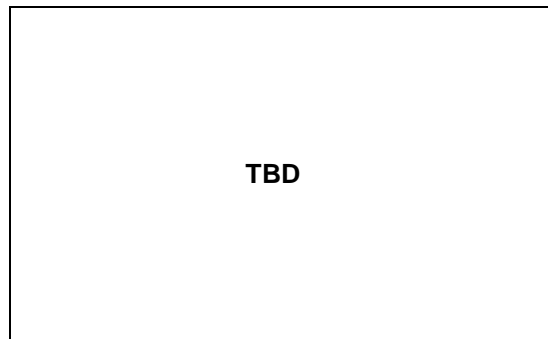
Figure 3

LLCR Measurement Points



BUS BAR CONNECTOR  
Figure 4

Vibration & Mechanical Shock Mounting Fixture



BUS BAR CONNECTOR  
Figure 5

T-RISE @ RATED CURRENT