

## 3.18 mm [.125 in] Diameter Pin Receptacle

### DESIGN OBJECTIVES

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

#### 1. SCOPE

##### 1.1. Content

This specification covers performance, tests and quality requirements for Tyco Electronics terminals with a barrel receptacle designed to mate with 3.18 mm [.125 in] diameter pins mounted in a hermetic header.

##### 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

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

##### 2.1. Tyco Electronics Documents

- 114-13244: Application Specification (3.18 mm Diameter Pin Receptacle Terminals)
- 501-TBD: Qualification Test Report ( 3.18 mm [.125 in] Diameter Pin Receptacle)

##### 2.2. Industry Document

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

##### 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, construction 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: 115/230 volts AC at 50/60 Hz
- Current: The maximum rated current that can be carried by this product is limited by the temperature rise of the contacts (see Figure 3) and, if inserted into a housing, the maximum operating temperature of the housing. Variables which shall be considered for each application are wire size, connector size, contact material and ambient temperature.

### 3.4. Performance and Test Description

Product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1. Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

### 3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure										
Initial examination of product.	Meets requirements of product drawing and Application Specification 114-13244.	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.										
ELECTRICAL												
Temperature rise vs current.	30°C maximum temperature rise at specified current.	EIA-364-70, Method 1. Stabilize at a single current level until 3 readings at 5 minute intervals are within 1°C. See Figures 3 and 4.										
MECHANICAL												
Wire retention.	<table><tr><th>Stranded Wire Size (mm<sup>2</sup> [AWG])</th><th>Retention (N [lbf] Min)</th></tr><tr><td>2.00 [14]</td><td>290 [65]</td></tr><tr><td>3.32 [12]</td><td>400 [90]</td></tr><tr><td>5.26 [10]</td><td>450 [100]</td></tr><tr><td>8.35 [8]</td><td>500 [112]</td></tr></table> See Notes 1 and 2.	Stranded Wire Size (mm <sup>2</sup> [AWG])	Retention (N [lbf] Min)	2.00 [14]	290 [65]	3.32 [12]	400 [90]	5.26 [10]	450 [100]	8.35 [8]	500 [112]	EIA-364-8. Determine wire retention at a maximum rate of 25.4 mm [1 in] per minute.
Stranded Wire Size (mm <sup>2</sup> [AWG])	Retention (N [lbf] Min)											
2.00 [14]	290 [65]											
3.32 [12]	400 [90]											
5.26 [10]	450 [100]											
8.35 [8]	500 [112]											
Contact engaging force onto pin.	110 N [25 lbf] maximum.	EIA-364-37. Measure force necessary to fully engage the contact onto the pin at a maximum rate of 25.4 mm [1 in] per minute. See Figure 5.										
Contact separating force from pin.	30 N [7 lbf] minimum.	EIA-364-37. Measure force necessary to completely remove the contact from the pin at a maximum rate of 25.4 mm [1 in] per minute. See Figure 5.										

#### NOTE

1. For wire sizes between those shown, the minimum retention is equal to the next lowest size (e.g. 6 mm<sup>2</sup> wire has a minimum retention of 450 N [100 lbf].
2. All values are based on using an "F" crimp per Applications Specification 114-13244.

Figure 1

### 3.6. Product Qualification and Requalification Test Sequence

Test or Examination	Test Group (a)		
	1	2	3
	Test Sequence (b)		
Initial examination of product	1	1	1
Temperature rise vs current	2		
Wire retention			2
Contact engaging force onto pin		2	
Contact separating force from pin		3	
Final examination of product	3	4	3

**NOTE**

(a) See paragraph 4.1.A.

(b) Numbers indicate sequence in which tests are performed.

Figure 2

## 4. QUALITY ASSURANCE PROVISIONS

### 4.1. Qualification Testing

#### A. Specimen Selection

Specimens shall be prepared in accordance with Application Specification 114-13244 and shall be selected at random from current production. Each test group shall consist of a minimum of 12 receptacles per wire size except for contact engaging and separating force testing that are not wire size dependent.

#### B. Test Sequence

Qualification inspection shall be verified by testing specimens as specified in Figure 2.

### 4.2. Requalification Testing

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

### 4.3. Acceptance

Acceptance is based on verification that the product meets the requirements of Figure 1. Failures attributed to equipment, test setup or operator deficiencies shall not disqualify the product. If product failure occurs, corrective action shall be taken and specimens resubmitted for qualification. Testing to confirm corrective action is required before resubmittal.

### 4.4. Quality Conformance Inspection

The applicable quality inspection plan shall specify the sampling acceptable quality level to be used. Dimensional and functional requirements shall be in accordance with the applicable product drawing and this specification.

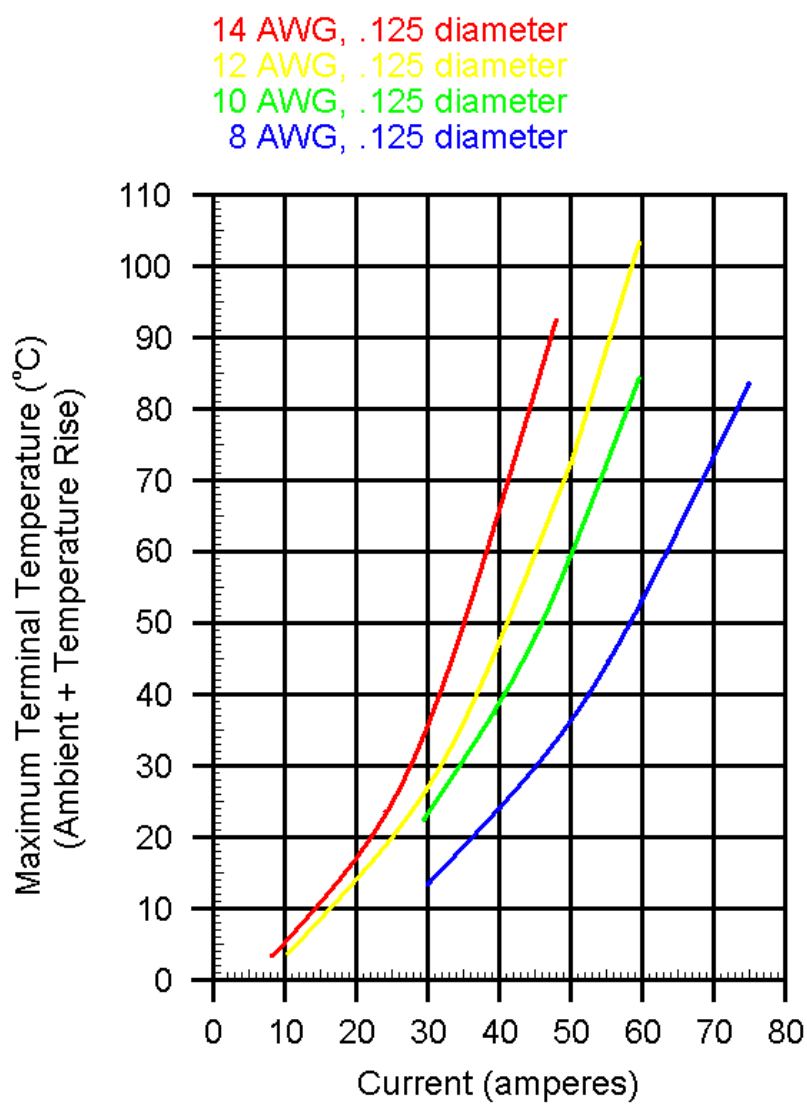


Figure 3  
Temperature Rise vs Current

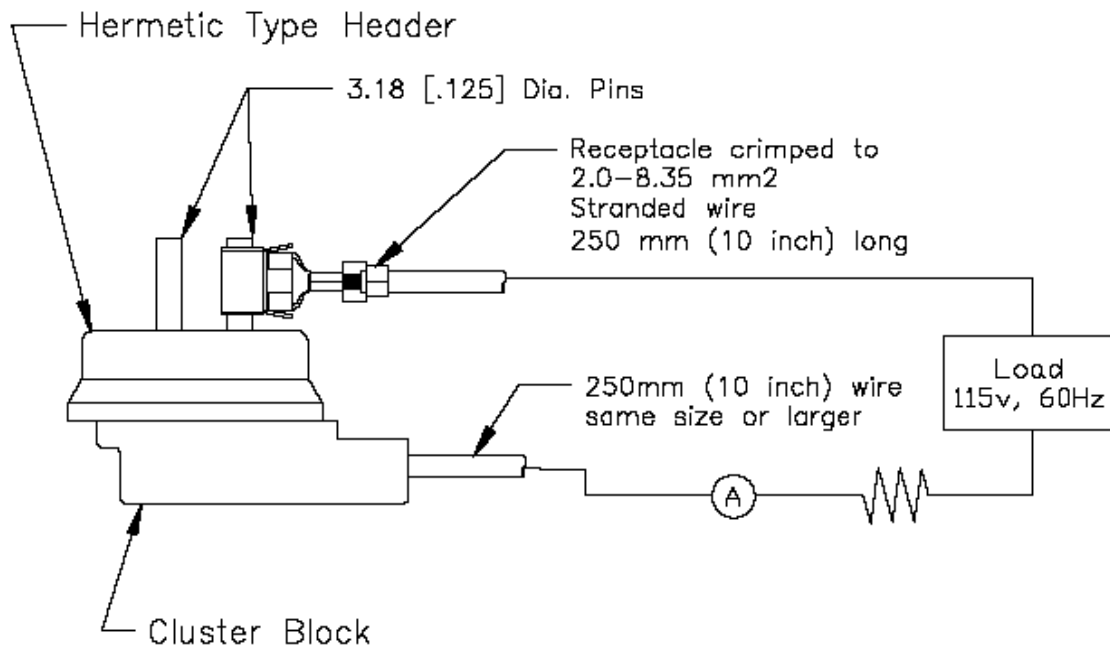
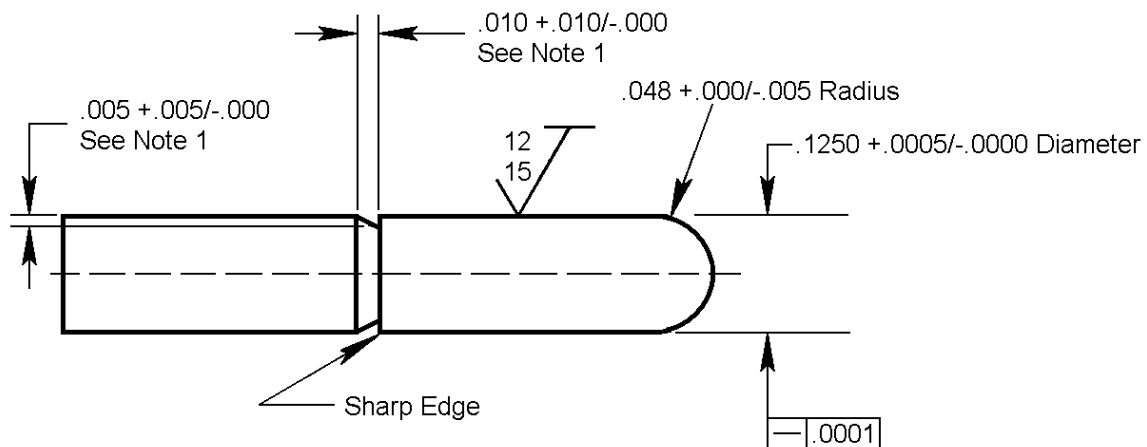


Figure 4  
Temperature Rise vs Current Setup



**NOTE**

1. Chamfer is optional
2. Material shall be steel alloy, Rockwell C60-65

Figure 5  
Engaging/Separating Force Pin

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