3.96 mm [.156 in] Diameter SHUR-PLUG* Plug and Receptacle Contact

1. SCOPE

1.1. Content

This specification covers the performance requirements for the 3.96 mm [.156 in] diameter SHUR-PLUG* plug and receptacle contacts.

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 TE Connectivity (TE) 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.

- 109-1: Test Specification (General Requirements For Testing)
- 109 Series: Test Specifications as indicated in Figure 1
- 114-2042: Application Specification (SHUR-PLUG* .156 Diameter Terminals and Receptacle Contacts)

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/Current: 110 volts at specified amperes, see paragraph 3.5.
- Operating Temperature: -40 to 85°C

3.4. Performance and Test Description

Product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1.

3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Examination of product.	Meets requirements of product drawing and Application Specification 114-2042.	Visual, dimensional and functional per applicable inspection plan.
ELECTRICAL		
Termination resistance, specified current.	Wire Size (AWG) / Test Current (amperes) / Resistance (milliohms max initial) 14 / 20.7 / 2.24 16 / 17.4 / 1.76 18 / 15.0 / 1.40	TE Spec 109-25, calculate resistance. Measure potential drop of mated contacts. See Figure 4.
Temperature rise vs current.	Temperature rise, see Figure 2. Termination resistance, specified current.	TE Spec 109-45. Temperature rise at specified current.
Termination resistance, dry circuit.	1.15 milliohms maximum initial.	TE Spec 109-6, Condition A. Subject mated contacts to 50 millivolt open circuit at 100 milliamperes maximum. See Figure 4.
Current cycling.	Temperature rise vs current. Termination resistance, specified current. Wire Size (AWG) / Test Current (amperes) / Resistance (milliohms max initial) 14 / 20.7 / 3.00 16 / 17.5 / 2.60 18 / 15.0 / 2.28	TE Spec 109-51, Condition C, Test Method 2. Subject mated contacts to 500 current cycles at 150% of specified current for 15 minutes ON and 15 minutes OFF.
MECHANICAL		
Mating force.	83 N [18.6 lbf] maximum initial. 59 N [13.2 lbf] maximum after durability.	TE Spec 109-42. Measure force necessary to manually mate plug and receptacle contact.
Unmating force.	26.6 N [6 lbf] minimum final. 9.7 N [2.2 lbf] minimum after durability.	TE Spec 109-42. Measure force necessary to manually unmate plug and receptacle contact.
Crimp tensile.	Wire Size (AWG) / Crimp Tensile (N [lbf] minimum) 14 / 300 [67] 16 / 230 [52] 18 / 160 [36]	TE Spec 109-16. Determine crimp tensile at a rate of 1 inch per minute.
Durability.	Mating/unmating force. 0.88 milliohms maximum termination resistance, dry circuit.	TE Spec 109-27. Manually mate and unmate plug and receptacle contacts for 6 cycles.

Figure 1 (continued)

Test Description	Requirement	Procedure
	ENVIRONMENTAL	
Thermal shock.	Termination resistance, dry circuit. Wire Size (AWG) — Resistance (milliohms max final) 14 — 5.75 16 — 4.33 18 — 4.90	TE Spec 109-22. Subject mated contacts to 25 cycles between -65 and 125°C.
Humidity/temperature cycling.	Termination resistance, dry circuit. Wire Size (AWG) — Resistance (milliohms max final) 14 — 3.35 16 — 2.65 18 — 1.55	TE Spec 109-23, Method III, Condition B, less steps 7a and 7b. Subject mated contacts to 10 humidity/temperature cycles between 25 and 65°C at 95% RH.

Figure 1 (end)

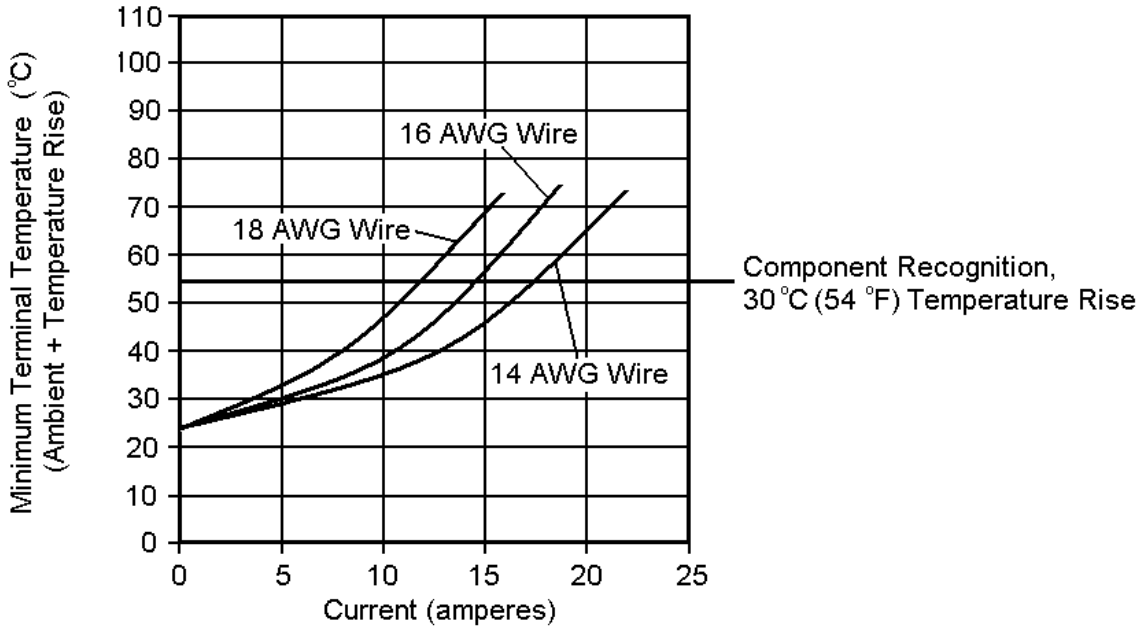


Figure 2

Test or Examination	Test Group (a)			
	1	2	3	4
	Test Sequence (b)			
Examination of product	1	1	1	1
Termination resistance, specified current	3,6			
Temperature rise vs current	2,5			
Termination resistance, dry circuit		3,7	2,4	2,4
Current cycling	4			
Mating force		2,6		
Unmating force		4,8		
Crimp tensile		9		
Durability		5		
Thermal shock				3
Humidity/temperature cycling			3	

NOTE *(a) See paragraph 4.1.A.*
(b) Numbers indicate sequence in which tests are performed.

Figure 3

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Sample Selection

Contacts shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. Each test group shall consist of 13 plug and receptacle contacts per wire size. All contacts shall be crimped in accordance with Application Specification 114-2042.

B. Test Sequence

Qualification inspection shall be verified by testing samples as specified in Figure 3.

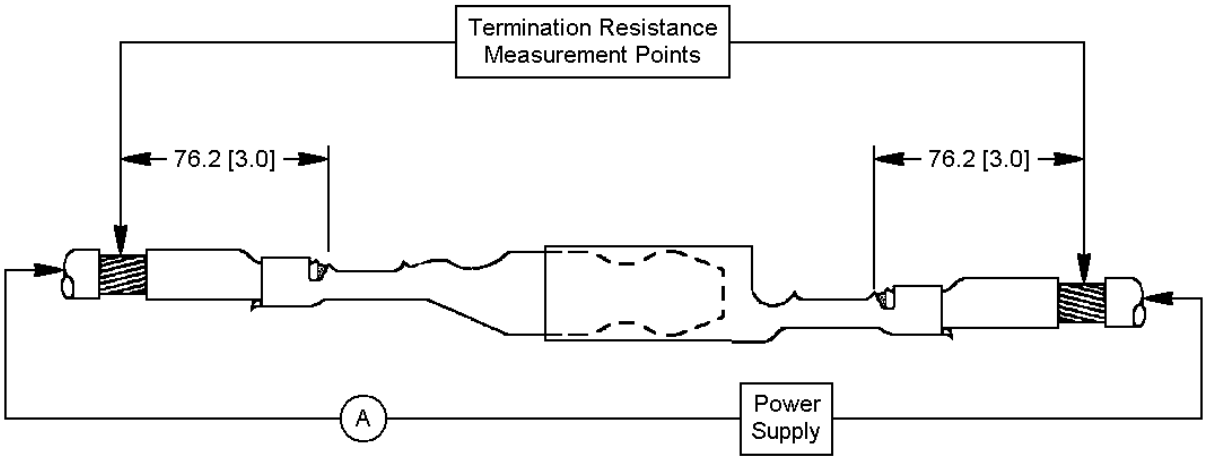
C. Acceptance

(1) Requirements put on test samples, as indicated in the Requirements portion of Figure 1, exist as either the upper or lower statistical tolerance limit (95% confidence, 99% reliability). All samples tested in accordance with this specification shall meet the stated tolerance limit.

(2) Failures attributed to equipment, test setup or operator deficiencies shall not disqualify the product. When product failure occurs, corrective action shall be taken and samples resubmitted for qualification.

4.2. 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.



NOTE *(1) A 30.5 cm [1 ft] minimum length of continuous lead for heat dissipation.*
(2) Termination resistance equals millivolts divided by test current less resistance of 15.2 cm [6 in] of wire.

Figure 4
Termination Resistance Measurement Points

单击下面可查看定价，库存，交付和生命周期等信息

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