
Push-On Push-Grip Wire Connectors

1. SCOPE

1.1. Content

This specification defines performance, tests, and quality requirements for TE Connectivity (TE) Push-On Push-Grip Wire Connectors.

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 2324697-x.

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. TE Documents

114-133071 Push-On Push-Grip Wire Connectors application specification.
408-133072 Push-On Push-Grip Connectors instruction sheet.

2.2. Industry Documents

CSA 22.2 No 188, "Splicing Wire Connectors"
EIA-364, "Electrical Connector/Socket Test Procedures Including Environmental Classifications"
UL 486C, "Standard for Safety, Splicing Wire Connectors"
UL 746C, "Standard for Polymeric Materials - Use in Electrical Equipment Evaluations"

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: 600 V ac rms, 600 V dc
Temperature: -40 to 105 °C
2.5 mm² (14 AWG) to 0.5 mm² (20 AWG) solid.
2.5 mm² (14 AWG) & 1.5 mm² (16 AWG) stranded, 18 strands or less.
1 mm² & 0.75 (18 AWG) mm² stranded, 7 strands or less.

3.4. Performance and Test Description

Product is designed to meet the electrical, mechanical, and environmental performance requirements specified herein. 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 114-133071.	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		
Contact resistance	Initial resistance maximum 25 mΩ initial. Maximum resistance after testing not exceeding 100 mΩ. Open voltage: 20 mV maximum Current 100 mA maximum	EIA-364-23, Option 1
Dielectric Withstand (Insulation Puncture)	One minute hold with no breakdown or flashover.	UL486C, Paragraph 9.5.2 Condition A Wrap connector housing in Copper Foil and apply 3400 V ac between each conductor and the Copper foil.
Dielectric Withstand (Flashover (Flat plate))	One minute hold with no breakdown or flashover.	UL486C, Paragraph 9.5.4 Condition C Apply 3000 V ac between the metal plate and all insulated metal parts of the connector.
Mechanical		
Secureness of Insulation	One minute holdover at 5 lbs force with no damage or separation of the insulation. A temporary distortion of the flexible insulating material during the test is considered acceptable. Tearing or breaking of the insulation is acceptable if the connector meets Dielectric Withstand.	UL486C Paragraph 9.6 Connectors shall be assembled to minimum (0.5 mm ² / 20 AWG) and maximum (2.5 mm ² / 14 AWG) wire sizes and subjected to a 5 lb force. Representative samples shall be tested as received.
Separable Part Securement	Connector insulation consisting of separable parts, such as a body and cap, shall not separate or become detached after being subjected to a 10 lbs force for 1 minute.	UL486C Paragraph 7.14 Each test specimen shall be subjected to a minimum direct pull of 10 lbs. for 1 minute between the separable parts of the insulation in the direction most likely to cause separation of insulation.
Glow-Wire	No ignition after 30 second application.	UL746C Section 73 After 48 hours conditioning at 23 ° ± 2 °C and 50 % ± 5 % Relative Humidity, test samples shall be subjected to Glow Wire testing at 750 °C.
Environmental		
Static Heating Sequence	Connection between the contact and the conductor shall remain intact with no damage to the connector system.	UL486C Paragraph 7.3 The specimen shall carry the current specified in Table 1 for conductor size being tested until stable temperatures are reached without exceeding a 50 °C temperature rise above ambient

		temperature. Upon completion of testing, secureness of insulation and separable part securement tests shall be repeated.
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Figure 1: Qualification tests

Conductor Size		Test Current, Static Heating
AWG	mm ²	Copper Conductor
20	0.50	12 A
18	0.75	17 A
16	1.5	18 A
14	2.5	30 A

Table 1: Test Current, Static Heating

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Specimen Selection

Specimens shall be prepared in accordance with applicable instruction sheets and shall be selected at random from current production. Each test group shall consist of a minimum of 5 specimens.

B. Test Sequence

Test or examination	Test sequence	
	A	B
Initial Examination of Product	1	1
Final Examination of Product	11	4
Contact resistance	2, 4, 6, 8, 10	
Dielectric Withstand (Insulation Puncture)	3	
Dielectric Withstand (Flashover (Flat plate))		2
Secureness of Insulation	5	
Separable Part Securement	7	
Glow-Wire		3

Static Heating Sequence	9	
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Test group A will consist of two group of 2324697-2 with 5 samples with 2.5 mm² (14 AWG) and 5 samples with 0.5 mm² (20 AWG).

Test group B will consist of 5 samples of 2324697-6

4.2. Re-Qualification Testing

If changes that significantly affecting form, fit, or function are made to the product or manufacturing process, product assurance shall coordinate re-qualification 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 re-submitted for qualification. Testing to confirm corrective action is required before re-submittal.

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.