
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.

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

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 volts AC rms, 600 volts DC

Temperature: -40 to 105°C

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 | | |
| 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 Vac 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 Vac 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 (22 AWG) and maximum (12 AWG) wire sizes and subjected to a 5 lb force. Representative samples shall be tested as received, assembled before oven conditioning at 136°C for 168 hours and assembled after oven conditioning at 100°C for 168 hours. |
| 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. |

FIGURE 1

TABLE 1. TEST CURRENT FOR STATIC HEATING

| Conductor Size | | Test Current, Static Heating |
|----------------|--------------------|------------------------------|
| AWG | (mm ²) | (Copper Conductor) |
| 22 | 0.32 | 9 A |
| 20 | 0.52 | 12 A |
| 18 | 0.82 | 17 A |
| 16 | 1.3 | 18 A |
| 14 | 2.1 | 30 A |
| 12 | 3.3 | 35 A |

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

Qualification inspection shall be verified by testing specimens as specified in Figure 1.

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.