
STRAO-THERM* Un-Insulated, No-Insulation Support, Heat Resistant Terminals

1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for nickel plated STRATO-THERM* un-insulated, no-insulation support, heat resistant terminals. Terminals covered by this specification are intended for the termination of stranded, nickel plated wire conforming to Mil-W-22759.

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.

1.3. Qualification Test Results

Successful qualification testing on the subject product line was completed on 28Jan05. Additional testing was completed on 24Aug06. The Qualification Test Report number for this testing is 501-600. This documentation is on file at and available from Engineering Practices and Standards (EPS).

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 Connectivity (TE) Documents

- 109-197: Test Specification (TE Test Specifications vs EIA and IEC Test Methods)
- 501-600: Qualification Test Report (STRAO-THERM* Un-Insulated, No-Insulation Support, Heat Resistant Terminals)

2.2. Industry Standard

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

2.3. Government Standard

MIL-W-22759: Wire Electrical, Fluoropolymer-Insulated, Copper or Copper Alloy

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

- Current: See Figure 3 for applicable current carrying capability
- Temperature: -75 to 150°C

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. | 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 | | |
| Voltage drop. | See Figure 3. | EIA-364-6. Measure millivolt drop of terminated specimens. Voltage probe test points shall be at the intersection of the tongue and barrel of the terminal; and the current carrying conductor 1/16 inch back from the wire receiving end of the terminal with access to the wire made by puncturing the insulation with the probe tip. |
| MECHANICAL | | |
| Vibration, sinusoidal. | No discontinuities of 1 microsecond or longer duration. See Note. | EIA-364-28, Test Condition I. Subject terminated specimens to 10 to 55 to 10 Hz traversed in 1 minute with 1.5 mm [.06 in] maximum total excursion. 18 hours in each of 2 mutually perpendicular planes. |
| Termination tensile strength. | See Figure 3. | EIA-364-8. Apply axial load to specimen at a maximum rate of 25 ± 6 mm per minute until failure. |

Figure 1 (continued)

| Test Description | Requirement | Procedure |
|----------------------|-------------|---|
| ENVIRONMENTAL | | |
| Thermal shock. | See Note. | EIA-364-32. Subject specimens to 50 cycles of the following: 30 minutes at -75°C, 30 minutes at room temperature, 30 minutes at 150°C, 30 minutes at room temperature. |
| Salt spray. | See Note. | EIA-364-26. Subject terminated specimens to 5% salt spray for 48 hours. |

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)

3.6. Product Qualification and Requalification Test Sequence

| Test or Examination | Test Group (a) | | | |
|--------------------------------|-------------------|---|---|---|
| | 1 | 2 | 3 | 4 |
| | Test Sequence (b) | | | |
| Initial examination of product | 1 | 1 | 1 | 1 |
| Voltage drop | 3 | 3 | 3 | |
| Vibration, sinusoidal | | 2 | | |
| Termination tensile strength | | 5 | 5 | 2 |
| Thermal shock | 2 | | | |
| Salt spray | | | 2 | |
| Final examination of product | 4 | 4 | 4 | |

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 applicable Instruction Sheets and shall be selected at random from current production. All test groups shall each consist of 10 terminals of each wire size.

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.

| Wire Size | Test Current | Terminal Millivolt Drop (maximum) | Tensile Strength (pounds minimum) |
|-----------|--------------|-----------------------------------|-----------------------------------|
| 8 | 73 | 5.0 | 225 |
| 6 | 101 | 5.0 | 300 |
| 4 | 135 | 5.0 | 400 |
| 2 | 181 | 5.0 | 550 |
| 1/0 | 245 | 5.0 | 700 |

Figure 3
Millivolt Drop & Tensile Strength Requirements