



RAST 5 Header

1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for the Tyco Electronics RAST 5 Headers. The housing is designed with latching, keying and polarization to the RAST 5 Specification and are available in vertical and right angle versions as well as a standard RAST 5 header and a Positive-Lock version. The standard RAST 5 version uses a tab that conforms to DIN 46244. There is also a Positive-Lock RAST 5 which utilizes a different hole location to latch with a Positive Lock receptacle.

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 in Mar05. The Qualification Test Report number for this testing is 501-607. 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 Documents

- ◆ 109-202: Component Heat Resistance to Wave Soldering
- ◆ 501-607: Qualification Test Report

2.2. Industry Documents

- ◆ DIN 46244: Tabs for Receptacles
- ◆ DIN 50018: Testing in a Saturated Atmosphere in the Presence of Sulfur Dioxide
- ◆ EIA-364: Electrical Connector/Socket Test Procedures Including Environmental Classifications
- ◆ IEC 60695-2-11: Fire Hazard Testing - Part 2 11: Glowing/hot wire Based Test Methods - Glow wire Flammability Test Method for End products
- ◆ IEC 60695-2-13: Fire Hazard Testing - Part 2-13: Glowing/hot-wire Based Test Methods - Glow-wire Ignitability Test Method for Materials
- ◆ IEC/EN 61984: Connectors Safety Requirements and Tests

2.3. Reference Document

- ◆ [109-197](#) Test Specification (TE Test Specification vs EIA and IEC Test Methods)

3. REQUIREMENTS

3.1. Design and Construction

Product shall be of the design, construction, materials 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	Temperature
250 VAC	USR and CNR: 20A for silver plated contacts USR: 20A for tin plated contacts CNR: 16A for tin plated contacts	-40 to 105°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

Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

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		
Withstanding voltage.	1 minute hold with no breakdown or flashover.	EIA-364-20, Condition I. 3000 volts AC at sea level. Test between adjacent contacts.
MECHANICAL		
Solderability.	Solderable area shall have a minimum of 95% solder coverage.	109-202, Method B. Subject contacts to solderability.
Resistance to solder heat.	See Note.	EIA-364-56, Procedure 3, Condition B. Flux shall be Kester 182 (RMA), bath temperature of 260 →C, with an immersion time of 10 seconds.

Contact retention.	26.7 N [6 lbf] minimum.	EIA-364-13. Measure force necessary to remove contact tab from housing at a maximum rate of 12.7 mm [.5 in] per minute. Condition parts prior to testing by drying in an oven at 35°C for 24hrs before testing. Parts must be tested within 2 hours after removing from the oven
Glow wire ignition temperature.	Tested part shall have rating of 750 →C or greater with no flame. Part does not require testing if housing material has rating of 775→C or greater at thickness of 1 mm [.039 in] (housing thickness) and no flame.	IEC 60695-2-11 for part or IEC 60695-2-13 for housing material.

ENVIRONMENTAL

Dry heat.	See Note.	IEC/EN 61984. Subject specimens to 105→C for 168 hours.
Cold.	See Note.	IEC/EN 61984. Subject specimens to -40→C for 2 hours.
Condensed water/changing climate with air containing SO2.	No visible defects detectable with naked eye. See Note.	DIN 50018, KFW 0.2L S. Subject specimens to 1 cycle.



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

3.6. Product Qualification and Requalification Test Sequence

TEST OR EXAMINATION	TEST GROUP (a)				
	1	2	3	4	5
	TEST SEQUENCE (b)				
Initial examination of product	1	1	1	1	1
Withstanding voltage.					5
Solderability, dip test		2			
Resistance to solder heat			2		
Contact retention	2				
Glow wire ignition temperature				2	
Dry heat					3
Cold					2
Condensed water / changing climate with air containing SO ₂					4
Final examination of product	3	3	3	3	6



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. Test group 1 shall consist of a minimum of 10 specimens. Test groups 2, 3, 4 and 5 shall each consist of a minimum of 5 specimens.

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.