
**Receptacle, AMP-LATCH* Ultra Novo, Flat Cable Round
Conductor**

1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for the AMP-LATCH* Ultra Novo flat cable round conductor connector receptacles. Receptacle contacts are crimped to 0.635 mm [.025 in] centerline ribbon cable conductors (30 AWG solid and stranded). Complete assemblies mate to 0.635 mm [.025 in] square posts on 2.54 mm [.100 in] centerline with equivalent post length of 5.33 ± .089 mm [.210 ± .035 in].

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. Tyco Electronics Documents

- 109-1: General Requirements for Test Specifications
- 109 Series: Test Specifications as indicated in Figure 1
- 114-40056: Application Specification
- 501-399: Qualification Test Report

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

- Contact: Copper alloy
- Ground plate: Copper alloy
- Housing: Thermoplastic, UL94V-0

3.3. Ratings

- Current: Signal application only, .5 ampere maximum per contact. Continuous current rating for individual contacts cannot be applied directly to the number of contacts as they are dependent on thermal and physical properties of the materials. System design shall ensure that continuous current rating does not create internal hot spots that exceed temperature designated by connector specification during steady state or transient conditions.
- Temperature: -65 to 105°C unless limited by temperature rating of cable used

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 per Test Specification 109-1.

3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Examination of product.	Meets requirements of product drawing and Application Specification 114-40056.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Termination resistance.	30 milliohms maximum.	AMP Spec 109-6-1. Subject mated contacts assembled in housing to 50 mv maximum open circuit at 100 ma maximum. See Figure 3.
Insulation resistance.	1000 megohms minimum.	AMP Spec 109-28-4. Test between adjacent contacts within a row and contacts in adjacent row of unmated and unterminated samples.
Dielectric withstanding voltage.	200 volts DC at sea level. 1 minute hold with no breakdown or flashover.	AMP Spec 109-29-1. Test between adjacent contacts within a row and contacts in adjacent row of unmated and unterminated samples.
MECHANICAL		
Vibration, random.	No discontinuities of 1 microsecond or longer duration. See Note.	AMP Spec 109-21-7. Subject wired and mated samples to 3.13 G's rms between 5-500 Hz. 15 minutes in each of 3 mutually perpendicular planes. See Figure 4.

Figure 1 (cont)

Test Description	Requirement	Procedure
Mechanical shock, specified pulse.	No discontinuities of 1 microsecond or longer duration. See Note.	AMP Spec 109-26-1, except 30 G's. Subject mated samples to 30 G's half-sine shock pulses of 11 milliseconds duration. 3 shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks. See Figure 4.
Durability.	See Note.	AMP Spec 109-27. Mate and unmate samples for 75 cycles at a maximum rate of 150 cycles per hour.
Mating force.	340 g [12 oz] maximum per contact.	AMP Spec 109-42, Condition A. Measure force necessary to mate samples at a maximum rate of 12.7 mm [.5 in] per minute.
Unmating force.	42.5 g [1.5 oz] minimum per contact.	AMP Spec 109-42, Condition A. Measure force necessary to unmate samples at a maximum rate of 12.7 mm [.5 in] per minute.

ENVIRONMENTAL

Thermal shock.	See Note.	AMP Spec 109-22. Subject unmated and unwired samples to 25 cycles between -65 and 105°C.
Humidity-temperature cycling.	See Note.	AMP Spec 109-23-3, Condition B. Subject unmated samples to 10 cycles between 25 and 65°C at 95% RH.
Temperature life.	See Note.	AMP Spec 109-43. Subject mated and wired samples to temperature life at 105°C for 500 hours.
Mixed flowing gas.	See Note.	AMP Spec 109-85-3. Subject mated samples to environmental class III for 20 days.

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)			
Examination of product	1,9	1,5	1,5	1,8
Termination resistance	3,7	2,4	2,4	
Insulation resistance				2,6
Dielectric withstanding voltage				3,7
Vibration	5			
Mechanical shock	6			
Durability	4			
Mating force	2			
Unmating force	8			
Thermal shock				4
Humidity-temperature cycling				5
Temperature life		3(c)		
Mixed flowing gas			3(c)	

NOTE

- (a) See paragraph 4.1.A.
- (b) Numbers indicate sequence in which tests are performed.
- (c) Precondition samples with 10 cycles durability.

Figure 2

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Sample Selection

Samples shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. All test groups shall consist of minimum of 5 connectors. 10 contact circuits in each connector shall be randomly selected and identified, contact selection shall include ends of the connector. These contacts shall be used for all measurements unless otherwise specified.

B. Test Sequence

Qualification inspection shall be verified by testing samples 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. When product failure occurs, corrective action shall be taken and samples 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.

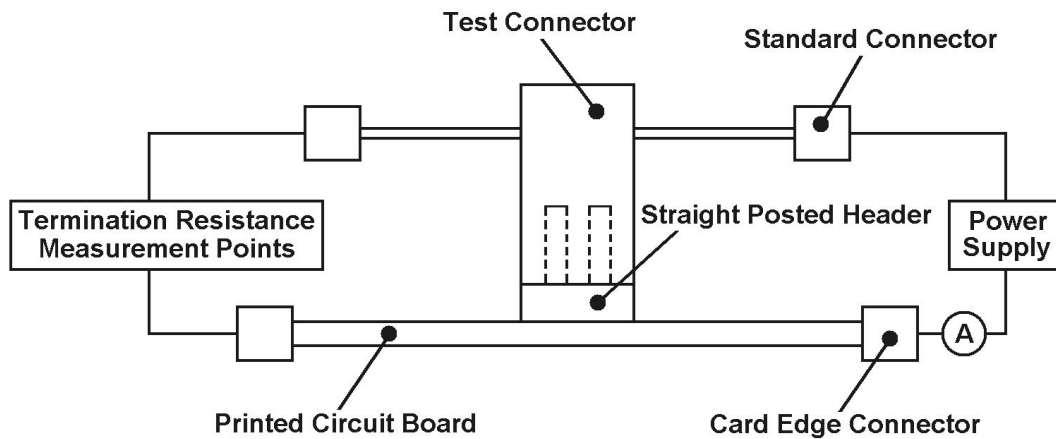


Figure 3
Termination Resistance Measurement Points

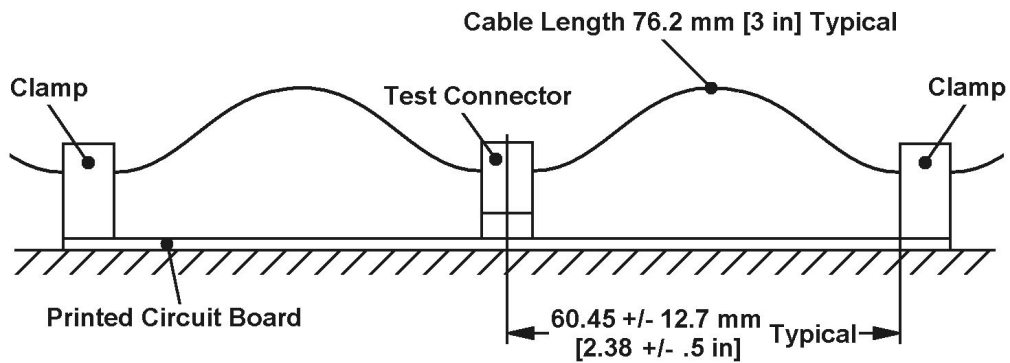


Figure 4
Vibration & Mechanical Shock Mounting Fixture