TITLE **Terminal and Housing for Car Number Plate Bulb Lighting.**

1. SCOPE

1.1 Content

This specification covers the performance, tests and quality requirements for the AMP* Terminal and Housing for Car Number Plate Bulb Lighting.

1.2 Qualification

When tests are performed on the subject product line, the procedures specified in AMP 109 Series Specification 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. 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, the specification shall take precedence.

2.1 AMP Documents

A.	109-1	:	General Requirements for Test Specifications
B.	109 Series	:	Test Specifications as indicated in Figure 1
C.	114-22009	:	Application Specification
D.	IEC 512-2	:	Electromechanical components for electronic equipment; basic testing procedures and measuring methods.

3. REQUIREMENTS

3.1 Design and Construction

Terminals shall be of the design, construction and physical dimensions specified on the applicable product drawing.

3.2 Materials

Housing PN 737898: Polyamide 6.6
Terminal PN 737899: Phosphor Bronze Tin Plated

3.3 Ratings

A Current/Voltage: 12 vac at 0.5 amperes maximum.
B Operating temperature: -10 ºC to 50 ºC

3.4 Performance and Test Description

Terminals shall be designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1.

3.5 Test Requirements and Procedures Summary

TEST DESCRIPTION	REQUIREMENT		PROCEDURE
Examination of Product	Meets requirements of product drawing and AMP Specification 114-22009		Visual, dimensional and functional per applicable inspection plan
ELECTRICAL			
Termination resistance, millivolt level method	Test current	Resistance milliohms maximum initial	Measure potential drop of the contact, see Figure 3. IEC 512-2 test 2, calculate resistance.
	<100 mA	5 mΩ	
MECHANICAL			
Contact Insertion Force	30 N maximum per contact		Insert the terminal crimped with single wire seal into housing.
Contact Retention	50 N minimum		Apply axial load of 50 N to crimped contacts inserted into housings; AMP Spec 109-30 except grip wire.
Crimp Tensile	Wire Size (mm2)	Crimp Tensile	Determine Crimp Tensile at a rate of 25 mm/min; AMP Spec. 109-16.
	0,35 0,50 1,00	➢ 50 N ➢ 60 N ➢ 100 N	

Figure 1

3.5 Terminal Test and Sequences

TEST OR EXAMINATION	Test Group (a)					
	1	2	3			
	Test Sequence (b)					
Examination of product	1	1	1			
Termination Resistance, millivolt level method.	2					
Contact Insertion Force		2				
Contact Retention		3				
Crimp Tensile			2			

(a) See paragraph 4.1.A
(b) Numbers indicate the sequence in which tests are performed

Figure 2

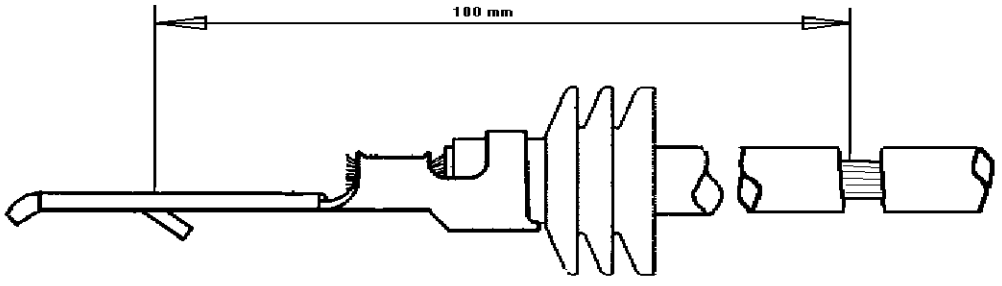

Figure 3: Measurement points

4. QUALITY ASSURANCE PROVISIONS

4.1 Qualification Testing

A. Sample Selection

Connector housings and contacts shall be selected at random from current production and prepared in accordance with Application Specification. Each test group shall consist of 20 samples.

B. Test Sequence

Qualification inspection shall be verified by testing samples as specified in Figure 2.

C. Acceptance

(1) Requirements put on test samples, as indicated in the requirements portion of Figure 1, exist as either the upper or lower statistical tolerance limit (95% confidence, 99% reliability). All samples tested in accordance with this specification shall meet the stated tolerance limit.

(2) Failures attributed to equipment, test set up, or operator deficiencies shall not disqualify the product. When product failure occurs, corrective action shall be taken and samples resubmitted for qualification.

4.2 Requalification Testing

Requalification shall be established by the cognisant divisional Engineering function and may consist of all or any part of the overall qualification program provided that it is conducted within the required time period.

4.3 Quality Conformance Inspection

The applicable AMP quality inspection plan will 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.