DESIGN OBJECTIVES

This product described in this document has not been fully tested to insure conformance to the requirements outlined below. Therfore, AMP do Brasil makes no representation or warranty, express or implied, that the product will comply with these requirements. Further, AMP do Brasil may change these requirements based on the results of additional testing and evaluation. Contact AMP Engineering for further details.

1. SCOPE

1.1. CONTENT

This specification covers the performance, tests and quality requirements of AMP Positive Mate Series Connector.

1.2. QUALIFICATION

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

2.1. AMP DOCUMENTS

A. 109-1 Rev C: General Requirements for Test Specifications

B. 109 Series : Test Specifications as indicated in Table 4. (Comply with MIL-STD-202 Rev of 1 Apr 80, MIL-STD-1344 Rev of 31 Oct 73 and EIA RS-364 Rev of 17 Aug 71).

C. Corporate Bulletin 401-76: Cross-reference between AMP Test Specifications and Military or Commercial Documents

AMP SECURITY CLASSIFICATION:

DIST

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0	Release	Y.P.J.	SEP 93	SHEET 01 OF 08	TITLE AMP POSITIVE MATE SERIES		
LTR	REVISION RECORD	APP	DATE				

3. PRODUCT PART NUMBERS AND DESCRIPTIONS

The products of the following part numbers shall be governed under this specification.

PART NUMBER	DESCRIPTION
881517	Housing 4 Posn., Pos. Mate Rec.
881518	Housing 4 Posn., Pos. Mate Tab
881519	Housing 2 Posn., Pos. Mate Tab
881520	Housing 2 Posn., Pos. Mate Rec.
881521	Housing 5 Posn., Pos. Mate Rec.
880140	Housing 5 Posn., Pos. Mate Tab
881574	Pos. Mate Terminal Rec.
881575	Pos. Mate Terminal Rec.
880533	Pos. Mate Terminal Tab
880109	Pos. Mate Terminal Tab
626273	Pos. Mate Terminal Tab

TABLE 1

4. REQUIREMENTS

4.1. DESIGN AND CONSTRUCTION

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

4.2. MATERIALS

A. Housing : Poliamide 6.6

4.3. TEST CONDITIONS

4.3.1. TEMPERATURE RATING

Temperature rating shall be within the range of -40oC to +105oC. This rating includes ambient temperature and rise in temperature due to current loading.

4.3.2. CABLE RANGE

CONTACT	WIRE RANGE (mm2)
881574	0,65 - 2,0
881575	3,0 - 5,3
880533	0,5 - 1,0
626273	1,0 - 2,5
880109	3,0 - 5,0

TABLE 2

4.3.3. CURRENT RATING

A mated pair of connectors are subject to testing by applying a test current as specified in Table 3.

WIRE SIZE (mm2)	TEST CURRENT (A)
0,5	6
1,0	11
1,5	14
2,0	16
2,5	20
3,0	23
4,0	28

TABLE 3

4.4. PERFORMANCE AND TEST DESCRIPTION

The product is designed to meet the electrical, mechanical and environmental performance requirements specified in Table 4. All tests are performed at ambient environmental conditions per AMP Specification 109-1 Rev C unless otherwise specified.

4.5. TEST REQUIREMENTS AND PROCEDURES SUMMARY

TEST DESCRIPTION	REQUIREMENT	PROCEDURE
Examination of Product	Meets requirements of product drawings.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Insulation Resistance	200 megohms minimum initial	Test between adjacent contacts of mated or connector assembly; AMP Spec 109-28-4 Rev B
Dielectric Withstanding Voltage	1.0 KVAC	Test between adjacent contacts of mated connector assemblies; AMP Spec 109-29-1 Rev C
Voltage Drop	5 m V/A max.	Measure potential drop of mated contacts; see Figure 1. AMP Spec 109-25 Rev B

TABLE 4 (CONT.)

TEST DESCRIPTION	REQUIREMENT	PROCEDURE
	MECHANICAL	
Vibration Sinusoidal High Frequency	No discontinuities greater than 1 microseconds	Subject mated connectors to 10 G's, between 10-500-10 Hz traversed in 15 min; 3 h in each of 3 muttually perpendicular planes; AMP Spec 109-21-2 Rev D; See Figure 2.
Mating Force	2 Posn. - 40 N max. 4 Posn. - 70 N max. 5 Posn. - 80 N max.	Measure force necessary to mate connector assembly with locking latches at a rate of 25 mm/min; AMP Spec 109-42 cond. A Rev A
Unmating Force	2 Posn. - 15 N min. 4 Posn. - 30 N min. 5 Posn. - 40 N min.	Measure force necessary to unmate connector assembly with locking latches removed or released at a rate of 25 mm/minute AMP Spec 109-42 cond. A Rev A
Contact Insertion Force	10 N maximum per contact	Measure force to insert contact into housing; AMP Spec 109-41 Rev A
Contact Retention	Contacts shall not dislodge	Apply axial load of 60 N to the wire. AMP Spec 109-30 Rev C
Crimp Tensile	Wire Size mm2 / Force N (min) 0,5 / 65 1,0 / 130 1,5 / 160 2,0 / 190 2,5 / 220 3,0 / 235 4,0 / 245	Determine crimp tensile at a rate of 25 mm /min; AMP Spec 109-16 Rev A
Housing Lock Strength	150 N minimum	Determine strength of housing locking mechanism at a rate of 25 mm/min AMP Spec 109-50 Rev 0
	ENVIRONMENTAL	
Thermal Shock	See Note (a)	Subject mated connectors to 50 cycles between 110 ± 5oC for 1 hour. Max time of changing ambient 5 min. AMP Spec 109-22 Rev A

TABLE 4 (CONT.)

TEST DESCRIPTION	REQUIREMENT	PROCEDURE
Temperature Life	See Note (a)	Subject mated connectors to temperature life at 105 ± 2 oC for 96 hours; AMP Spec 109-43 Rev B
Salt Spray Corrosion	See Note (a)	Subject mated connectors to 5 % of concentration NaCl (temperature 35 ± 2 oC). AMP Spec 109-24 Cond A Rev 0
TABLE 4 (END)		

(a) Shall meet visual requirements, show no physical damage and shall meet requirements of additional tests as specified in Test Sequence in Table 5.

5. TEST SEQUENCE

All tests shall be performed in the sequence specified in Table 5.

Note: Numbers indicate in which tests are performed.

Test or Examination	Test Group				
	1	2	3	4	5
	Test Sequence				
Examination of Product	1,6	1,7	1,3	1,7	1,7
Insulation Resistance					3,6
Dielectric Withstanding Voltage		6			
Voltage Drop		2,4		2,4,6	2,5
Vibration		3			
Mating Force	3				
Unmating Force	4				
Contact Insertion Force	2				
Contact Retention	5				
Crimp Tensile			2		
Housing Lock Strength		5			
Thermal Shock				3	
Temperature Life				5	
Salt Spray Corrosion					4

TABLE 5

6. QUALITY ASSURANCY PROVISIONS

6.1. QUALIFICATION TESTING

A - Connector housing and contacts shall be prepared in accordance with the applicable instructions sheets. They shall be selected at random from current production. Each group of the sample contacts shall consist of more than 30 sets of prepared contacts and connector sample group shall consist of more than 5 sets of assembled connectors.

B - Qualification inspection shall be verified by testing samples as specified in Table 4.

C - Acceptance
Failures atributed to equipment, test setup or operator deficiencies shall not disqualify the product. When product failures occurs, corrective action shall be taken and samples resubmited for qualification.

6.2. QUALITY CONFORMANCE INSPECTION

The applicable AMP Quality Inspection Plans will specify the sampling acceptable quality level to be used.
Dimensional and functional requirements shall be in accordance with the applicable product drawing .

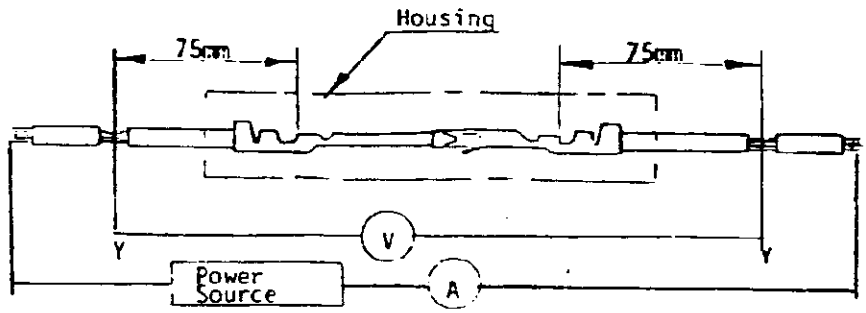

FIGURE 1 - TERMINATION RESISTANCE

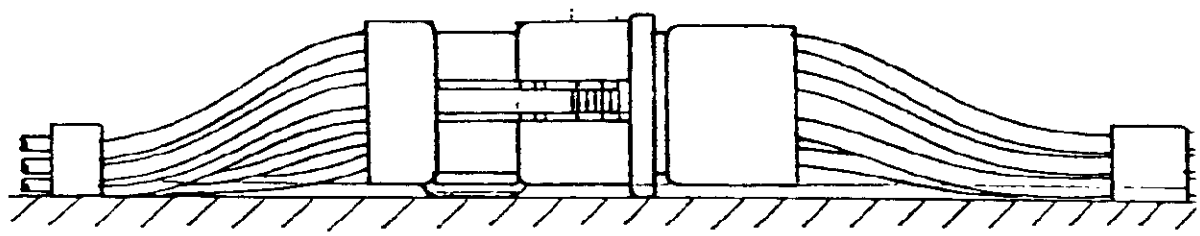

FIGURE 2 - VIBRATION SCHEME