PRELIMINARY

PRODUCT SPECIFICATION.

1. SCOPE

1.1. Contents

This specification covers the performance and test requirements for the AMP* Latch Receptacle interconnection system.

1.2. Connector Assembly Definition

A. Receptacle : Receptacle contacts in housings crimped to .050 inch centerline ribbon cable, conductors AWG 30 solid or AWG 28 stranded. Completed assemblies mated to goldplated .025 square posts on .100 centerlines.

B. Paddle Board: Pin contacts in housings crimped to .050 inch centerline ribbon cable, conductors AWG 30 solid or AWG 28 stranded. Completed assemblies are soldered to printed circuit board.

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. I.E.C. Specifications

I.E.C. 130, Connectors used for frequencies below 3 MHz (Mc/s)

I.E.C. 68, Basic environmental testing procedures for electronic components and electronic equipment.

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LTR	REVISION RECORD	DR	CHK	DATE
A	Par. 4.3 changed	RV	B	4/4

DR [signature] DATE 29-1-79
CHK [signature] DATE 1-2-79
APP [signature] DATE

AMP-HOLLAND N.V. 's-HERTOGENBOSCH HOLLAND

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2.2. Military and Federal Specifications

A. MIL-G-45204 : Gold Plating, Electrodeposited

B. MIL-P-46161 (MR): Molded Plastics, Polyterephthalate Thermoplastic, Glass Fiber Reinforced.

C. MIL-STD-105 : Sampling Procedures and tables for inspection by attributes.

D. QQ-B-750 : Phosphor Bronze

E. QQ-N-290 : Nickel Plating, Electrodeposited.

2.3. Applicable product drawings

3. DESIGN AND CONSTRUCTION

3.1. General

Connector assemblies shall be of the design, construction and physical dimensions as specified on the applicable product drawings.

3.2. Material and finish

A. Housings : The houses are molded of thermoplastic polyester, flammability rating 94 V0 (SE-0).

B. Contacts : Connector contacts shall be fabricated of phosphor bronze confirming QQ-B-750. They shall be goldplated with nickel underlayer.

3.3. Application

By this connector system, connections between printed circuit boards and ribbon cable can be made either permanently soldered by means of paddle board connectors or removable by using receptacle connectors mated to male connectors soldered on the p.c. board.

4. PERFORMANCE AND TEST DESCRIPTION

4.1. Temperature rating

Each assembly shall be capable of continuous operation throughout an ambient temperature range of -65°C to 105°C.

4.2. Current rating

The maximum permissable current shall be 1.0 Amperes per contact.

4.3. Dielectric withstanding voltage

The dielectric withstanding voltage shall be greater than 500 Volts R.M.S.

4.4. Test conditions

Unless specifically stated, tests and examinations required by this specification shall be executed under any combination of conditions as specified in I.E.C. 68-1 clause 5.3.

4.5. Test samples

The samples submitted to tests shall include receptacle connectors crimped on wire and mating male connectors soldered to p.c. board as well as paddle board connectors crimped on wire and soldered to p.c. boards.

4.6. Test Groups

Test group I

The samples contained in this group shall consist of a minimum of 8 receptacle connectors each of 26 contacts minimum of the following versions mated to male connectors which are soldered to p.c. boards.

-Standard pressure version terminated on AWG 30 cable.

-Standard pressure version terminated on AWG 28 cable.

Test group II

The samples of this group shall consist of a minimum of 8 receptacle connectors of 26 contacts minimum of the following version mated to male connectors which are soldered to p.c. boards :

-High pressure version terminated to AWG 28 cable.

Test group III

The samples of this group shall consist of a minimum of 4 paddle board connectors each of 26 contacts minimum of the following versions soldered to p.c. board.

-Terminated on AWG 30 cable.

-Terminated on AWG 28 cable.

Test group IV

The samples of this group shall consist of a minimum of 8 paddle connectors of 26 contacts minimum not terminated to cable, not soldered.

Test group V

The samples of this group shall consist of 4 receptacle connectors of minimum 26 positions crimped on AWG 28 cable, unmated.

Test group VI

The samples of this group shall consist of 4 paddle board connectors minimum 26 positions, crimped on AWG 28 cable, not soldered to p.c. board,

5. QUALITY ASSURANCE PROVISIONS

5.1. Qualification Inspection

5.1.1. Sample selection.
Connector assemblies and contacts shall be prepared in accordance with applicable Product- and Customer drawings. They shall be selected at random from current production. Number of testsamples in accordance with I.E.C. 130-1 clause 9.

5.1.2. Test sequence.
Qualification inspection shall be verified by testing the samples to the test sequence as specified under 6.2.

5.1.3. Acceptance.
When testing the samples as specified, all results will fall within the specification limts 99% of the time with a confidence level of 95%. Failures attributed to equipment, test set-up or operator deficiences will not disqualify the product. When product failure occurs, corrective action will be taken and samples shall be re-submitted for qualification.

5.1.4. Test Report.
A report conatining test data-analysis and product performance evaluation shall be issued at the completion of the qualification test program.

5.2. Quality Conformance Inspection

Sampling procedures shall be in accordance with MIL-STD-105. The applicable AMP Quality Inspection Plan will specify the Sampling and Acceptance Quality Level to be used. Dimensional and functional requirements will be in accordance with the applicable Product drawings.

6. TEST SCHEDULE FOR TYPE TEST

6.1. The test schedule, Table I on pages 6-7-8 shows all tests, conditions of tests as well as the requirements to be met.

6.2. The testsequence, Table II on pages 9-10, shows the order in which the tests shall be carried out.

6.3. Test lots, the various test groups shall be divided into the following number of test lots

Group I and II : 4 lots each, equally divided

Group III - IV - V and VI : 2 lots each, equally divided.

TABLE I

Test Description	Clause of I.E.C.130-1	Conditions of test	Requirements
Examination of Product	11-12		Meets requirements of product drawings
Termination Resistance (Low level)	14.1 14.1.3	The E.M.F. of the measuring circuit shall not exceed 20 mV. I = 100 mA max. Measuring points see fig. 1 page 11.	15 milliohm max.
Termination resistance (Rated Current)		All contacts shall be loaded with 1A, measurements shall be taken after temperature stabilisation is reached.	15 milliohm max.
Insulation Resistance	14.4	Measuring Voltage 500 ± 15 V	5000 Megohm min. initial 1000 Megohm min. after damp heat
Voltage Proof	14.5	1 minute 500 V	No breakdown or flashover
Damp Heat accelerated	18.2.2	I.E.C. 68-2-4, Test D Not under mechanical and electrical load, 6 cycles.	
Damp Heat Long Term	18.3	I.E.C. 68-2-3, Test C Severity: 21 days half lot mated, half lot unmated. Not under mech. and electrical load.	
Damp Heat Steady State	18.3	I.E.C. 68-2-3, Test C Severity: 4 days	

TABLE I (continued)

Test description	Clause of I.E.C.130-1	Conditions of test	Requirements
Rapid Change of temperature	18.4	I.E.C. 68-2-14; Test Na, $-65^{o}C/+105^{o}C$; 6 cycles $\frac{1}{2}$ hour/$\frac{1}{2}$ hour. Not under mechanical and electrical load	
Industrial Gas (Sulphur dioxide)	18.7	I.E.C. 68-2-42 Test Kc 10 days, mated condition 25 P.P.M. SO_2	
Salt Mist	18.7	I.E.C. 68-2-11, Test Ka 1 x 48 hrs (5% NaCl) mated condition	
Insertion/Extraction Force	16.1	Measuring force to insert and extract male contacts in female connector assemblies.	2,20 N max/contact stand.pressure 3,40 N max/contact high pressure 0,30 N min/contact stand.pressure 0,40 N min/contact high pressure
Mechanical Endurance	19	Number of operations:150 Frequency of operations: 150/hr	
Vibration	16.4	I.E.C. 68-2-6, Test Fc Procedure B4; 10-55 Hz Displacement 0,75 mm peak 100 mA current applied.	No discontinuity above 1 microsec. no physical damage.
Physical Shock		I.E.C. 68-2-27, Test Ea 100 g, 11 milleseconds pulse duration, halve sine wave form.	No discontinuity above 1 microsec. no physical damage.

TABLE I (continued)

Test description	Clause of I.E.C.130-1	Conditions of test	Requirements
Solderability	15.3	I.E.C.68-2-20 Test T Solder bath method.	5% max. dewetting of functional area
Resistance to Soldering Heat	15.3	I.E.C.68-2-20 Test Tb Method 1A	Nu functional damaging

TABLE II

Test or examination	Group	I - II				III		IV		V-VI	
	Lot	1	2	3	4	5	6	7	8	9	10
Examination of product		x	x	x	x	x	x	x	x	x	x
Termination Resistance (Low Level)		x	x	x	x	x	x				
Termination Resistance (Rated current)		x	x			x					
Insulation Resistance										x	x
Voltage Proof										x	x
Insertion-Withdrawal force		x	x								
Damp Heat Long Term (21 days)					x		x				x
Rapid change of temperature				x		x				x	
Mechanical Endurance		x	x								
Insertion-Withdrawal force		x	x								
Termination Resistance (Low Level)		x	x	x	x	x	x				
Insulation resistance										x	x
Voltage Proof										x	x
Salt Mist		x									
Industrial Gas			x								
Termination Resistance (Low Level)		x	x								
Vibration				x		x					
Physical Shock				x		x					
Termination Resistance (Low Level)				x		x					
Damp heat accelerated				x		x				x	
Termination resistance (Low Level)				x		x					
Insulation resistance										x	

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Table II

Test or examination	Group	I - II				III		IV		V-VI	
	Lot	1	2	3	4	5	6	7	8	9	10
Voltage Proof										x	
Damp Heat steady state 4 days								x			
Solderability								x			
Resistance to soldering heat									x		
Examination of product		x	x	x	x	x	x	x	x	x	x

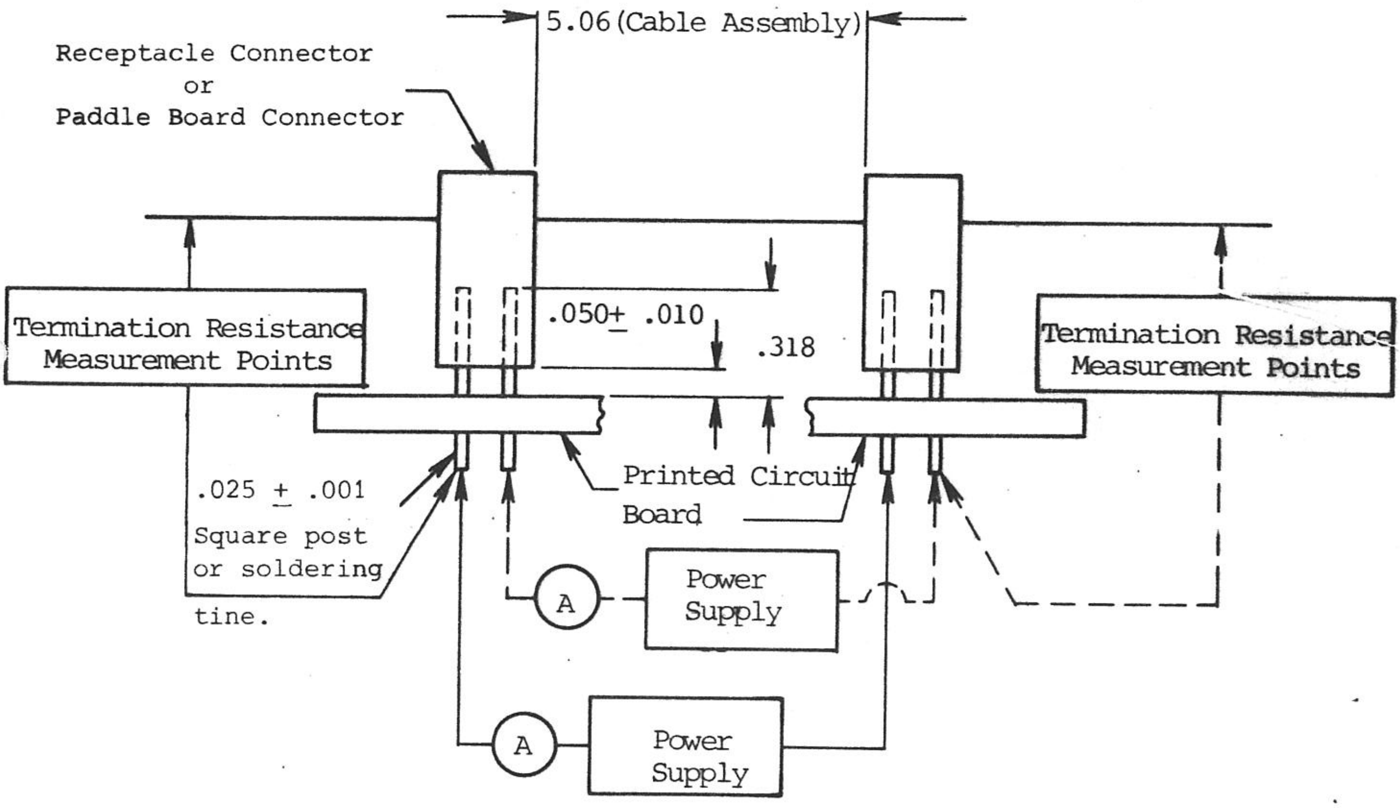

Figure 1.

Termination Resistance Measurement Points

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