

"U-P HEADER CONN." (RIGHT ANGLE AND STRAIGHT ANGLE VERSION)


1. SCOPE

This product specification covers the performances, test and quality requirements for "U.-P HEADER CONN." Manufactured by AMP Italy.

2. PRODUCT NUMBER AND DESCRIPTION

Table 1

PART NUMBER	DESCRIPTION
282357-1	12 POS. U-P HEADER ASS'Y, RIGHT ANGLE
282358-1	12 POS. U-P HEADER ASS'Y, STRAIGHT ANGLE
282360-1	18 POS. U-P HEADER ASS'Y, RIGHT ANGLE
282361-1	18 POS. U-P HEADER ASS'Y, STRAIGHT ANGLE
282326-1	24 (9+15)POS. U-P HEADER ASS'Y, RIGHT ANGLE
282327-1	24 (9+15)POS. U-P HEADER ASS'Y, STRAIGHT ANGLE
282328-1	30 (12+18)POS. U-P HEADER ASS'Y, RIGHT ANGLE
282329-1	30 (12+18)POS. U-P HEADER ASS'Y, STRAIGHT ANGLE
176276-,,	9 POS. PLUG HSG.
176278-,,	12 POS. PLUG HSG.
176279-,,	15 POS. PLUG HSG.
176280-,,	18 POS. PLUG HSG.
175151-2	REC. CTC. WIRE RANGE 26-22 AWG (0.12-0.35 mm2) INS. DIA. 1.2-2.0 mm.
175152-2	REC. CTC. WIRE RANGE 20-16 AWG (0.50-1.50 mm2) INS. DIA. 2.0-3.3 mm.

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				DR. R. DEPETRIS <i>[Signature]</i> 09 AUG. 94		 AMP ITALIA S.p.A. Corso F.lli Cervi, 15 Collegno (TORINO)							
				CHK. G. VIGNOLI <i>[Signature]</i> 09 AUG. 94									
				APP. <i>[Signature]</i>		LOC. I	NUMBER 108-20145	REV. A					
A	ACTIVE	<i>[Signature]</i>	0179-95	G.V.	12/09 95	SHEET NAME U-P HEADER CONNECTOR (English Translation)							
0	FIRST ISSUE	R. D.	09 Aug 1994	G.V.	09 Aug 1994					1 OF 7			
REV LTR	REVISION RECORD	DR	DATE	CHK	DATE								

3. PRODUCT DESCRIPTION

This product consists of a header conn. with solder posts, right angle and straight posts exit, suitable to meet free hanging plug hsgs. as shown on Table 2.

To reduce mating/unmating forces, headers 24 pos. is suitable to meet free hanging plug hsgs. 9 pos. and 15 pos.; header 30 pos. is suitable to meet free hanging plug hsgs. 12pos. and 18 pos.

4. MATERIAL AND FINISH

Rec. Contact:	Pre- Tinned Brass
Header Conn.:	P.B.T. Glass Filled, UL94 V-0
Solder Post:	Brass, Post Tinned
Plug hsg.:	PA 6.6, UL94 V-0, In the following colours:
	-1 Natural
	-2 Red
	-4 Yellow
	-6 Blue
	-9 Black

5. APPLICABLE P.C.B.

Board Thickness:	1.6 mm
Hole Diameters:	1.1 mm +/- 0.05 mm

6. RATINGS

6.1 Temperature Rating: -20°C / +105°C (Temperature rising due to loaded current is included)


6.2 Current Rating: (see Table 2)

Table 2

N.Pos Plug Hsg.	Contact PN 175152-2			Contact PN 175151-2		
	16 AWG	18 AWG	20 AWG	22 AWG	24 AWG	26 AWG
9	8A	6A	5A	4A	2A	2A
12	8A	5A	4A	3A	2A	2A
15	7A	5A	4A	3A	2A	1A
18	7A	4A	3A	3A	2A	1A

7. PRODUCT DIMENSIONS

Product feature, construction and dimensions, according to dwgs. shown on Table 1

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8. SAMPLE PREPARATION

Test samples to be employed for test shall be prepared in accordance with the relevant AMP Application Specification

9. TEST CONDITIONS

Unless otherwise specified, all the tests shall be performed under any combination of the following test condition:

- 9.1 Temperature: 23°C +/- 5°C
- 9.2 Relative Umidity: 45-70 %
- 9.3 Atmosphere Pressure: 860-1060 mbar
- 9.4 Phisical Performance: (See Table 3)
- 9.5 Electrical and Environmental Performance: (See Table 4)


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9.4 PHYSICAL PERFORMANCE

Table 3

TEST DESCRIPTION	TEST CONDITIONS	LIMITS
9.4.1 Dimensions and Tolerances		See dwgs as shown on table 1
9.4.2 Material and Finish		See dwgs as shown on table 1
9.4.3 Connector Mating Force (contacts loaded)	Speed <100 mm/minute	9 Pos..≤ 100 N 12 Pos..≤120 N 15 Pos..≤130 N 18 Pos..≤140 N Initial and after 25th IN/OUT
9.4.4 Connector Unmating Force (contacts loaded)	Speed <100 mm/minute	9 Pos. > 15 N 12 Pos. > 20 N 15 Pos. > 25 N 18 Pos. > 30 N Initial and after 25th IN/OUT
9.4.5 Contact Insertion Force		< 7 N
9.4.6 Single Contact Retention Force	Speed <100 mm/minute	> 40 N
9.4.7 Crimp Tensile Strength	Speed <100 mm/minute	26 AWG ≥ 20 N 24 AWG ≥ 30 N 22 AWG ≥ 50 N 20 AWG ≥ 60 N 18 AWG ≥ 70 N 16 AWG ≥ 80 N
9.4.8 Hsg. Retention Force	Speed <100 mm/minute	> 45 N

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9.5 ELECTRICAL AND ENVIRONMENTAL PERFORMANCE

Table 4

TEST DESCRIPTION	TEST CONDITIONS	LIMITS
9.5.1 Termination Resistance	Measurements shall be done between a wire point at 1 cm from the plug conn. edge and a solder post point very closed to the header conn. edge. Test current 50 mA max. at open circuit voltage 50 mV max.	< 10 mΩ Initial < 20 mΩ After 25th IN/OUT
9.5.2 Insulation Resistance	Between two adjacent contacts apply 500 Vdc for 1 minute.	> 10 MΩ
9.5.3 Dielectric Strength	Between two adjacent contacts apply voltage for 1 minute	> 2000 Vac
9.5.4 Temperature Rising	Apply test current as shown on table 2 to the mated contacts. Temperature rising shall be measured by using thermocouple probing at the Rec. Contact Crimped Zone	ΔT < 30°C
9.5.5 Vibration	-Three axial directions -2 hours each plain -10-55-10 HZ in a minute. -Amplitude 1.5 mm both sides. -Test Current 100 mA	Termination Resistance < 20 mΩ measured in according to para.9.5.1 No damages admitted. No electrical discontinuity greater than 10 μs shall occur during the test.
9.5.6 Thermal Shock	Connectors shall be exposed under 25 cycles, each cycle consists of the sequence as below shown: 30 minutes -55°C 5 minutes (max.) +25°C 30 minutes +85°C 5 minutes (max.) +25°C After test duration, samples shall be reconditioned in the room temperature for 3 hours.	Termination Resistance < 20 mΩ measured in accordig to para. 9.5.1 Dielectric Strength in according to para. 9.5.3 No damages admitted.



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Table 4 (Continued)

<p>9.5.7 Temperature - Umidity Cycling</p>	<p>Connectors shall be exposed under Temperature-Umidity cycling in the test chamber in accordance with Test Method 106 of MIL-STD-202, where temperature changes between 25 and 65°C are made for 10 cycles with Relative Umidity of 80-98% including 10 cycles of low temperature (-10°C). After conditioning, recondition for 3 hours in the room temperature.</p>	<p>Termination Resistance < 20 mΩ measured in accordig to para. 9.5.1 Insulation Resistance in according to para. 9.5.2 Dielectric Strength in according to para. 9.5.3 No damages admitted.</p>
<p>9.5.8 Salt Spray</p>	<p>Connectors shall be exposed under salt spray conditioning. 48 Hours NaCl 5% Temperature +35°C +/- 5°C After conditioning, samples shall be linsed with tap water, and dried in the room temperature without use of powered ventilation.</p>	<p>Termination Resistance < 20 mΩ measured in accordig to para. 9.5.1</p>
<p>9.5.9 Solderability</p>	<p>After immersing soldering tyne area of post header into flux (Alpha-100 or GX-7) for 3-5 seconds, immerse in soldering tub filled with 60% tin, 40 % lead solder, controlled at 230°C +/-5°C for 3 +/- 0.5 seconds.</p>	<p>More than 95 % of tested area shall appear with fresh coverage of wet solder.</p>
<p>9.5.10 Soldereing Heat Resistivity.</p>	<p>With post header conn. mounted on P.C.B. (epoxy-laminated hardboard paper; thk. 1.6 mm), immerse the tyne area into soldering tub controlled at 260°C +/- 5°C for 10 +/- 0.5 seconds</p>	<p>After testing, the product shall be free from deformation and defects.</p>

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10. TEST SEQUENCE

Table 5

TEST	Paragraph	1	2	3	4	5	6	7	8	9	10	11	12
Visual Examination.	-----	1,3	1,5	1,3	1	1,3	1,4	1,4	1,4	1,4	1,4	1,3	1,3
Conn. Mating Force.	9.4.3		3										
Conn. Unmating Force.	9.4.4		4										
Contact Insertion Force.	9.4.5				2								
Single Contact Retention Force.	9.4.6						5						
Crimped Tensile Strength.	9.4.7	2											
Hsg. Retention Force.	9.4.8			2									
Termination Resistance.	9.5.1		2,6					2	2	2	2		
Insulation Resistance.	9.5.2						2			5			
Dielectric Strength.	9.5.3						3		5	6			
Temperature Rising.	9.5.4					2							
Vibration.	9.5.5							3					
Thermal Shock.	9.5.6								3				
Temperature-Umidity Cycling.	9.5.7									3			
Salt Spray.	9.5.8										3		
Solderability.	9.5.9											2	
Soldering Heat Resistivity.	9.5.10												2

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