

PRODUCT SPECIFICATION

108 - 61036

ECU 121P CONNECTOR - BOSCH TYPE

1. Scope :

This specification covers the requirements for product performance, test methods and quality assurance provisions of ECU 121P Connector(BOSCH TYPE).

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. Drawings

2.1.1 AMP Drawings

A. Header Part

121 Pos Header Ass'y : P/N 368255-1, 2, 3(121 Pos) / 1-368255-1, 2, 3(81Pos)

121 Pos Header Housing : P/N 0-368256-1, 2(12Pos) / 1-368255-1, 2 (81Pos)

121 Pos Jointer Housing : P/N 368257-1, -2

0.63 Sq Tab (Signal) : P/N 368258

2.8mm Tab (Power) : P/N 368259

B. Harness Part

81 Pos JPT & MQS Ass'y Connector : P/N 368190 / 40 Pos JPT & MQS Ass'y Connector : P/N 368319

81 Pos Cover Housing : P/N 368291 / 40 Pos Cover Housing : P/N 368320

81 Pos JPT & MQS RECHousing : P/N 368292 / 40 Pos JPT & MQS RECHousing : P/N 368321

MQS Receptacle Housing Type "A" : P/N 368293 / MQS Receptacle Housing Type "A" : P/N 368322

MQS Receptacle Housing Type "B" : P/N 368294/ MQS Receptacle Housing Type "B" : P/N 368323

81 Pos Slide Lever Housing : P/N 368295 / 40 Pos Slide Lever Housing : P/N 368324

5 Pos Retainer Housing : P/N 368296 / 8 Pos Retainer Housing : P/N 368325

76 Pos Retainer Housing : P/N 368297 / 32 Pos Retainer Housing : P/N 368297

81 Pos Rubber Seal : P/N 368879 / 40 Pos Rubber Seal : P/N 368887

C B A O LTR	REVISED (RD01-069)	CS	JUN.12 JAN.26 DATE	ORG	AMP		AMP MFG KOREA	
	REVISED (RD01-033)	CS		CHK	16 Oct '02			
	REVISED (RD00-080)	CS		APP	NO	108 - 61036	REV C	LOC DS
	RELEASED (RD99-019)	CS		PAGE	ECU 121P CONNECTOR(BOSCH TYPE)			
REVISION RECORD				APP	1 OF 9			

JPT Receptacle : P/N 927771-3 & 927768-3

MQS Receptacle : P/N 963715-1 & 928999-1

2.2 AMP Specification

2.2.1. 109-1 General Requirements for test specification .

2.2.2. 114-18050

Application specification for JPT Receptacle 927771-3 (0.5~1.0 SQ)

927668-3 (1.0~2.5 SQ)

2.2.3. 114-18021-1

Application specification for clean body MQS receptacle 963715-1 (0.75SQ)

928999-1 (0.2 - 0.5SQ)

AVX-F: MAX 0.5mm

AVSS-X: MAX 0.75mm

3. Requirements

3.1 Design and Construction:

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

3.2 Materials

3.2.1 Contacts

A. Header part

0.63 SQ (Signal) : PHOS Bronze (C5191W - P/N 368258)

2.8 mm (Power) : Brass (C2600R - H - P/N 368259)

- Finish Signal : Pre- Tin Lead Plating
- Power : Post- Tin Plating
- Finish Spec Signal : SnPb 3um (MIN)
- Power : Sn 2-5um, SuPb 5~10 um

B. Harness part

JPT Receptacle : PHOS PHOR Bronze C5111R Temp H04 (P/N 927771-3 & 927768-3)

MQS Receptacle : Stol76 CuNiSi C19010 F58 (P/N 963715-1 & 928999-1)

3.2.2 Housing

A. Header part

121 POS Header Housing : PA 66 +GF 50% (P/N 368256)

121 POS Jointer Housing : PA 66 +GF 50% (P/N 368257)

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B. Harness part

81 POS Cover Housing : PP -M30 (P/N 368291)
81 POS JPT & MQS REC Housing : PBT + GF 20% (P/N 368292)
MQS Receptacle Housing "Type A" : PBT-GF 20% (P/N 368293)
MQS Receptacle Housing "Type B" : PBT-GF 20% (P/N 368294)
81 POS Slide Lever Housing : NYLON 66 GF 30 (P/N 368295)
5 POS Retainer Housing : PA66 GF 15% (P/N 368296)
76 POS Retainer Housing : PA66 GF 15% (P/N 368297)
81 POS Rubber Seal : SILICON (P/N 368897)

40 POS Cover Housing : PP -M30 (P/N 368291)
40 POS JPT & MQS REC Housing : PBT + GF 20% (P/N 368292)
MQS Receptacle Housing "Type A" : PBT-GF 20% (P/N 368293)
MQS Receptacle Housing "Type B" : PBT-GF 20% (P/N 368294)
40 POS Slide Lever Housing : NYLON 66 GF 30 (P/N 368295)
8 POS Retainer Housing : PA66 GF 15% (P/N 368296)
32 POS Retainer Housing : PA66 GF 15% (P/N 368297)
40 POS Rubber Seal : SILICON (P/N 368897)

4. Performance Test Descriptions:

The product is designed to meet the electrical, mechanical and environmental performance requirements specified in Fig.1 All tests are performed at ambient temperature of AMP Test Spec unless otherwise specified.

4.1 Test Requirements and Procedures Summary:

Test Items	Requirements	Procedures
Confirmation of Product	Product shall be conforming to the requirements of applicable product drawing and Application Specification.	Visually, dimensionally and functionally inspected per applicable quality inspection plan.
Electrical Test		
Voltage drop	JPT ; Before test : 3m V/A MAX. After test : 10m V/A MAX. MQS; Before test : 10m V/A MAX. After test : 20m V/A MAX.	Measure by applying applying 1 A at 12 VDC to contacts in mated connectors by probing at 75 mm apart from wire crimp after temperature becomes stabilized AMP Spec. 109-5311-2
Low Level resistance	JPT ; Before test : 3 mΩ MAX. After test : 10 mΩ MAX. MQS ; Before test : 10 mΩ MAX. After test : 20 mΩ MAX.	Measure by applying applying 10mA at 20mV to contacts in mated connectors by probing at 75 mm apart from wire crimp after temperature becomes stabilized AMP Spec. 109-5311-2
Dielectric Strength	No creeping discharge and no flashover shall occur.	Measured after applying 1.0 KVAC for 1 minute. Test between adjacent circuits of mated connectors. AMP Spec. 109-5301
Insulation Resistance	100 MegaOhm MIN (Final)	Measured after applying 500VDC to adjacent connected circuit and mated connector ass'y. AMP Spec. 109-5302
Current Leakage	3mA Max	12V dc 60°C / Humidity -90 ~ 95%/1hr AMP SPEC : 109-5312

Fig 1.(to be continued)

MECHANICAL TEST

Test Items	Requirements	Procedures
Connector Mating Force	81Pos : 18kgf (max) 40Pos : 10kgf (max)	Operation speed : 25mm/min Connectors to be mated by applying a measured force to the slide lock
Connector Extraction force	81Pos : 18kgf (max) 40Pos : 10kgf (max)	Operation speed : 25mm/min Connectors to be unmated by applying a measured force to the slide lock.
Locking Force	10kgf (min)	Measure the force required to extract the locked connector AMP SPEC : 109-5210
Contact Retention Force (Primary interlock only)	40N Minimum- MQS clean body 80N Minimum - JPT	Apply an axial pull-off load to crimped wire Operation speed : 100mm/min AMP SPEC : 109-5212
Contact Retention Force (Secondary interlock only)	60 N Minimum - MQS clean body 100 N Minimum - JPT	Measure contact retention force with secondary lock set in effect Operation speed : 100mm/min

Fig. 1

ENVIRONMENTAL TEST

Test Items	Requirements	Procedures
Temperature Life	Voltage Drop : Power: 10 m V/A Max Signal: 20 m V/A Max	Measured after leaving the sample at 120℃ for 120hrs AMP SPEC : 109-5104
Resistance to Cold	Voltage Drop : Power: 10 m V/A Max Signal: 20 m V/A Max	Measured after leaving the sample at -40℃ for 120hrs AMP SPEC : 109-5108
Vibration	NO electrical discontinuity greater than 1 msec shall occur Voltage Drop : Power: 10 m V/A Max Signal: 20 m V/A Max	Vibration frequency : 20-200 Hz/3min Accelerated Velocity : 4.5 G Vibration Direction : XYZ Cycle : 4hrs (Y) 2hrs(X,Z) AMP SPEC : 109-5202
Temperature Rising	50 degree incresing Max	Measured the temperature rising after applying regular current POWER : Refer to wire size. SIGNAL : Refer to Actual circuit current. Refer to table 1.
Temperature & Humidity Cycling	Voltage Drop : Power: 10 m V/A Max Signal: 20 m V/A Max	Mated connectors at 95% RH: - 40℃ for 4hrs, 2hrs off, 80℃ for 16hrs, 2hrs off. Practice 5 times in 1 cycle AMP SPEC : 109-23
Thermal shock	Voltage Drop : Power: 10 m V/A Max Signal: 20 m V/A Max	-50℃ / 120min . 120℃ / 120Min Practice 5 times in 1 cycle AMP SPEC : 109-5103
Kojiri	Voltage Drop : Power: 10 m V/A Max Signal: 20 m V/A Max	Repeat 30 cycle to insertion & extraction AMP SPEC : 109-5103
Salt spray	Voltage Drop : Power: 10 m V/A Max Signal: 20 m V/A Max	Measured leaving the sample to 5% salt for 48H AMP SPEC : 109-5101

ENVIRONMENTAL TEST

Test Items	Requirements	Procedures
Resistance to Humidity	Voltage Drop : Power: 10 m V/A Max Signal: 20 m V/A Max Allowable current leakage :3 mA Max	Leaving the sample in 90-95% RH at 60℃ / 48hrs AMP SPEC : 109-5104
Environmental test	Voltage Drop : Power: 10 m V/A Max Signal: 20 m V/A Max	After applying regular current, 80℃ ± 3 /16hrs under the contion of 80~95% RH ~2hrs off~ -30degc ±3 /4hrs ~2hrs off :1cycle. Test hour : 300hrs Vibration Frequency : 20~200 Hz /3 Min Accelerated Velocity : 4.5G Vibration direction : xyz.

1. POWER TML (JPT)

WIRE SIZE (sq)	CURRENT (Io)
0.3	6 A
0.5	8 A
0.85	10 A
1.25	14 A
2.0	18 A
3.0	22 A
5.0	25 A
8.0	

PIN NO	K
1	1.0
2.3	0.75
4.5	0.6
6~8	0.55
9~ 이상	0.5

$$I = I_o \cdot K$$

TABLE 1.

2. SIGNAL TML (MQS)

3A MAX. (Refer to Actual circuit)

4.2 Product Qualification Test Sequence

Test or Examination	Test Group													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Test Sequence (a)													
Confirmation of Product	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Termination Resistance			4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.4	2.4
Current Leakage												4		
Dielectric Resistance	2													
Insulation Resistance		2												
Mating Force			2											
Extraction Force			2											
Locking Force			2											
Pin Retention Force			2											
Vibration				3										
Temperature Rising						3								
Temperature Life							3							
Resistance to Cold								3						
Temperature & Humidity Cycling									3					
Salt Spray										3				
Heat Resistance											3			
Kojiri			3											
Resistance to Humidity												3		
Resistance to Humidity													3	
														3

5. Ratings

5.1 Voltage : 6 ~ 18V

5.2 Temperature : -40℃ to 125 ℃

5.3 Relative Humidity : up to 95 %

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