

CLUSTER CONNECTORS, .090" dia PIN.

1 SCOPE

1.1 Content

This specification covers the general description and performance requirements for AMP* Cluster block assemblies designed for .090 inch diameter pins. The assembly consists of a 3 circuit housing accepting terminals with 16-18 AWG wire range & 1.5-2.6 mm dia. Insulation range.

1.2 Qualification

When tests are performed on the subject product line, procedures specified in Figure 1 shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

2 APPLICABLE DOCUMENTS

The following AMP documents form a part of this specification to the extent specified herein. Unless otherwise specified, the latest edition of the document applies. 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.

- A. 109-1: General Requirements for Test Specifications
- B. 109 Series: Test specifications as indicated in Figure 1
- C. 114-2019 Application Specification
- 114-20107:

3 REQUIREMENTS

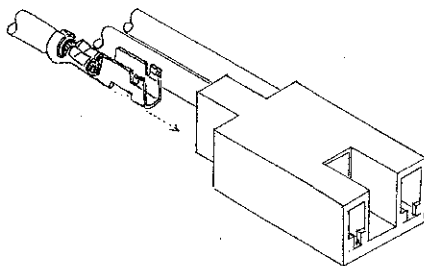
3.1 Design and Construction

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

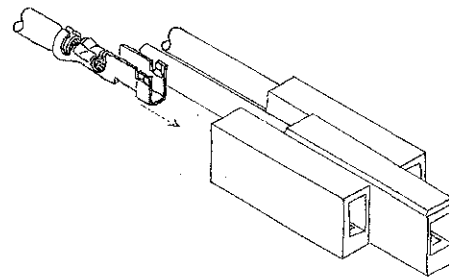
Product involved

CLUSTER BLOCK HOUSING:
P/N: 281006-0; 281006-2; 281006-3; 281006-4
RECEPTACLE CLUSTER CTC.:
P/N: 62131-3

CLUSTER BLOCK REVERSE HOUSING:
P/N: 284406-1
SPECIAL RECEPTACLE CLUSTER CTC:
P/N: 284633-1



Standard version



Reverse version

C1	REVISED FOR ET00-0096-01	H.Y.	29 MAR 2001	CT	29 MAR 2001
C	REVISED & RETYPED FOR ET00-0073-01	H.Y.	01 MAR 2001	C.T.	01 MAR 2001
rev letter	rev. record	DR	Date	CHK	Date
DR.	DATE	APVD	DATE		
H. YAALI	16 FEB 2001	C. TARTARI	16 FEB 2001		

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3.2 Materials

CLUSTER BLOCK

PBT Unfilled for standard version

PBT Glass Fiber Filled for reverse version

CLUSTER REC. CONTACT Tin Plated Phosphor Bronze.

3.3 Ratings

A. Voltage: 115/230 volts at 60Hz

B. Current: the maximum rating current that can be carried by this product is limited by the maximum operating temperature of the housings and the temperature rise of the contacts. Variables which shall be considered for each application are wire size, connector size, contact material and ambient temperature.

3.4 Performance and Test Description

Product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1. Unless otherwise specified, all tests shall be performed at ambient environmental conditions per AMP Specification 109-1.

3.5 Test requirements and Procedures Summary

Test description	Requirement	Procedure
Examination of product	Meets requirements of product drawing and AMP Spec 114-2019.	Visual, dimensional and functional per applicable inspection plan.

E L E C T R I C A L

Test description	Requirement	Procedure
Dielectric withstanding voltage.	2700 V max. AC at see level. 1 second hold.	IEC 60512-4-1. Test between adjacent terminals of mated samples.
Impulse voltage	3000 V max.	IEC 60512-2. Test between two terminals of mated samples, covering all combinations.

M E C H A N I C A L

Test description	Requirement		Procedure
Crimp tensile.	Stranded wire Size (AWG) 18 16	Tensile (N. min.) 111 164	IEC 60512-16-4. Determine crimp tensile at a rate of 25 mm per minute.
Contact retention in housing.	22 N min. for standard version. 30 N min. for reverse version.		AMP Spec. 109-30. Apply an axial load to crimped contacts in housing by gripping the wire.

Mating force onto fusite counterpart.	133 N. maximum per Cluster block assembly using typical pin shape (See Figure 3). 150 N maximum per Cluster block assembly using alternative pin shape (See Figure 4). As I° IN	AMP Spec. 109-35. Measure force necessary to mate fusite counterpart using appropriate gage (3 pin .090" dia. equally spaced on a .530 +/- .001 inch diameter circle) from header. (See Figures 3 & 4)
Unmating force from fusite counterpart.	39 N min. per Cluster block assembly, as I° OUT & V° OUT	AMP Spec. 109-35. Measure force necessary to unmate appropriate gage (3 pin .090" dia. equally spaced on a .530 +/- .001 inch diameter circle) from header. (See Figure 3 & 4)
Contact separating force from pin gage (for ref. only).	9 N min. per single contact. As I° OUT & V° OUT	AMP Spec. 109-35. Measure force necessary to separate appropriate pin gage from contact (See Figure 5)

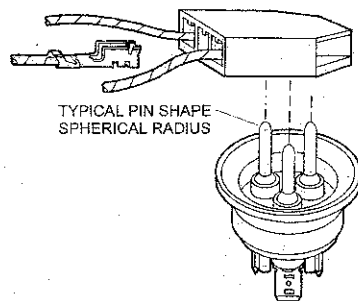


Figure 3

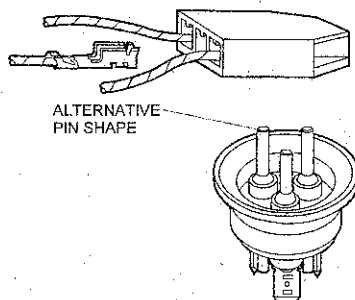


Figure 4

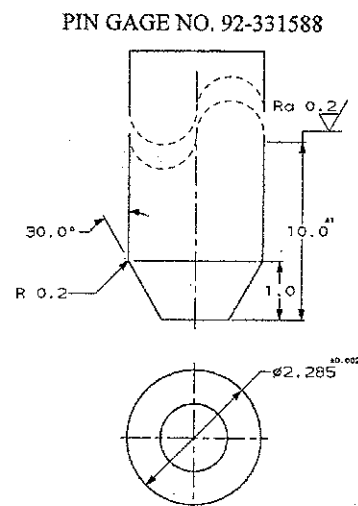


Figure 5

E N V I R O N M E N T A L

Test description	Requirement	Procedure
Heat resistance.	No signs of blistering, delamination or degradation of physical properties.	Subject connector housings to 163°C for 6 hours.
Weight loss.	15 milligrams maximum for 1 or 2 piece Cluster block assembly. 5 milligrams maximum for cover plate.	Determine weight loss as the average of no less than 12 samples using the following procedure: <ol style="list-style-type: none"> 1. Suspend the samples in a vacuum oven and bake at 149°C for 6 hours to remove moisture. 2. Remove the samples from the oven and quickly place them in a desiccator containing anhydrous magnesium perchlorate to cool for 1 hour. 3. Weight the sample lot. 4. Replace the samples in the vacuum oven and bake at 121°C for 24 hours. 5. Remove the samples from the oven and quickly place them in a desiccator containing anhydrous magnesium perchlorate to cool for 1 hour. 6. 6weight the sample lot. 7. Calculate the average weight loss by subtracting the value recorded in step 3 from the value recorded in step 6 and dividing by the number of the samples.
Ethanol test see note (c)	Characterizing method of paraffin oil, vegetable and animal oil, additive and other non miscible compounds with coolant HFC-134a, for plastic (raw material and finish products).	See Embraco aspera product engineering norm NTB02353 dated 15 MAR 99
Miscibility/flocculation test of lubricating, protective, ecc. oil. see note (c)	Test method to determine the Miscibility/flocculation point of paraffin oil, vegetable and animal oil, additive and other. Over -35°C no solid pulp or liquid precipitation.	See Embraco aspera product engineering norm NTB01549 dated 17 MAR 99

3.6 Product test sequence

Test or examination	Test Group; see note (a)									
	1	2	3	4	5	6	7	8	9	10
	Test Sequence; see note (b)									
Examination of product	1	1	1	1	1	1	1	1	1	1
Dielectric withstanding voltage	2									
Impulse voltage		2								
Crimp tensile					2					
Contact retention in housing			2							
Mating force onto fusite				2						
Unmating force from fusite				3						
Contact separating force from pingage							2			
Heat resistance								2		
Weight loss						2				
Ethanol test. see note (c)									2	
Miscibility/flocculation test. see note(c)										2

- NOTE (a) See paragraph 4.1.A.
 (b) Numbers indicate sequence in which tests are performed.
 (c) Test to be performed for P/N.s 281006-4 & 284406-1 only

Figure 2

4 QUALITY ASSURANCE PROVISIONS

4.1 Qualification Testing

- A. Sample Selection
 Samples shall be prepared in accordance with applicable instruction Sheets and shall be selected at random from current production. All test groups shall each consist of 10 Cluster block housings or assemblies, 1 assembly per wire size.
- B. Test sequence
 Qualification inspection shall be verified by testing samples as specified in Figure 2.

4.2 Requalification Testing

If changes significantly affecting form, fit or function are made to the product or manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequence as determined by development/product, quality and reliability engineering.

4.3 Acceptance

Acceptance is based on verification that the product meets the requirements of Figure 1. Failures attributed to equipment, test setup or operator deficiencies shall not disqualify the product. If product failure occurs, corrective action shall be taken and specimens resubmitted for qualification. Testing to confirm corrective action is required before resubmittal.

4.4 Quality Conformance Inspection

The applicable quality inspection plan shall 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.