

108-60062-1

Product Specification HD-22 Amplimite Connector

(Restricted for Matsushita Electric Industrial Co.,Ltd.)

1. SCOPE.

1.1 Content.

This specification covers the requirements for product performance, test methods and quality assurance provision of AMPLIMITE CONNECTOR/HD22 V/T TYPE. Applicable product description and part numbers are as shown in Appendix.

1.2 Qualification.

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

2. APPLICABLE DOCUMENTS.

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, latest edition of the documents applies. In the event of conflict between the requirements in this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements in this specification and referenced documents, this specification shall take precedence.

2.1 Tyco Documents.

- A. 109-5000 Test Specification, General Requirements for Test Methods
- B. 501-60036 Test Report: Qualification Test Report.

2.2 Tyco Drawings.

- C-292469 HD-22, RCPT. V/T, 15PIN AMPLIMITE CONNECTOR.
- C-1932144 HD-22, RCPT. V/T, 15PIN AMPLIMITE CONNECTOR.

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				APP Steven Yao 08SEP2006	DOC NO.	108-60062-1	REV B	LOC ES
				PAGE 1 of 6	TITLE Receptacle V/T 15P Amplimite Connector			
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2.3 Commercial Standards and Specifications:

A. MIL-STD-202 Test Methods for Electronics and Electrical Component Parts.

3. REQUIREMENT

3.1 Design and Construction.

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

3.2 Material and Finish.

A. Contacts:

Material: Copper alloy.

Finish: Gold over nickel plating on contact area, tin over nickel plating on solder area.

B. Housing and Tine Plate:

Material: Thermoplastic Compound.

C. Front shell and Rear shell:

Material: Carbon Steel.

Finish: Tin over copper plating all over.

D. Screw & Board lock

Material: Steel.

Finish: Tin over copper plating all over.

3.3 Ratings.

A. Voltage: 125 VAC.

B. Current: 2 Amperes.

C. Temperature: -55°C to +105°C.

3.4 Performance Requirements and Test description:

The product is designed to meet electrical, mechanical and environmental performance specified in this paragraph as tested per test sequence specified in para. 3.6.

Unless otherwise specified, all tests are performed at ambient environmental conditions.

3.5 Test Requirements and Procedures Summary

VISUAL			
Para.	Test Description	Performance Requirements or Severity	Procedures
3.5.1.	Confirmation of Product	product shall be conforming to the requirements of applicable product drawing and Application Specification.	Visually, dimensionally, and functionally per applicable inspection plan.
ELECTRICAL REQUIREMENTS			
Para.	Test Description	Performance Requirements or Severity	Procedures
3.5.2.	Termination resistance (Low Level)	25mΩ Max. (initial), 30mΩ Max.(Final)	Subject mated contacts assembled in housing to 20mv Max open circuit at 10mA. EIA 364-23B.
3.5.3.	Insulation resistance	5000MΩ MIN. (initial), 1000MΩ MIN.(Final)	Impressed voltage 500VDC. Test between adjacent circuits of unmated connectors. EIA 364-21C

3.5.4.	Dielectric withstanding Voltage	No creeping discharge nor flashover shall occur. Current leakage:0.5 mA Max.	500V AC for 1 minute. Test between adjacent circuits of unmated connectors. EIA 364-20C Condition I
3.5.5.	Temperature-rise	30 °C Max. Under loaded rating current	Contact series-wired,apply test current of loaded rating current to the circuit,and measure the temperature becomes atabilized deduct ambient temperature from the measured value.
MECHANICAL			
3.5.6.	Contact retention in housing	Requirements: 9.8N(1kgf) Min.	Apply an axial pull-off load operation speed : 25.4mm/min.
3.5.7.	Vibration (Low Frequency)	No electrical discontinuity greater than 0.1 microsecond sec shall occur.	Subject mated connectors to 10-55-10 Hz traversed in 1 minute at 1.5mm amplitude 2 hours each of 3 mutually perpendicular planes. EIA 364-28D Condition I
3.5.8.	Durability (Repeated Mate /Unmating)	30mΩ Max.(Final)	Mate and unmate connectors at 300 cycles per hour. No. of cycles :500 cycles. EIA 364-9C.
3.5.9.	Connector mating Force	0.341kgf / Pin Max.	Operation Speed: 25.4 mm/min. Measure the force required to mated connectors. (Diameter of test using pin: 0.76+/-0.02mm.) EIA 364-13B.
3.5.10.	Connector unmating Force	0.021kgf / Pin Min.	Operation Speed: 25.4 mm/min. Measure the force required to unmated connectors. (Diameter of test using pin: 0.76+/-0.02mm.) EIA 364-13B.
3.5.11.	Resistance to Soldering Heat	No Physical damage shall occur.	Test connector on PCB. Pre-Heat : 100 °C~110 °C 30sec Solder Temperature : 260±3 °C 10±1sec (Under the Parts up to 1.6mm) EIA 364-56A.
3.5.12.	Solderability	Immersion duration : 3s Wet solder coverage:95% Min.	Solder temperature : 255±2 °C Flux : Tamura CF-110VH-2A. Preconditioning : PCT 105 °C,100 %RH 8 hours, JIS C0053 Solder Paste : Sn-Cu (Japan Speria: SN100C) or Sn-3.0Ag-0.5Cu (Senju Metal Industry Co.,Ltd. M705) EIA 364-52 Condition I.

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3.5.13.	Physical shock	No electrical discontinuity greater than 0.1 microsecond sec shall occur. 30 mΩ Max.(Final)	Accelerate Velocity : 490 m/s ² (50G) Waveform : Halfsine shock pulses Duration: 11msec. Velocity change : 3.4m/s Number of Drops : 3 drops each to normal and reversed directions of X,Y and Z axes, totally 18drops EIA-364-27B method A
ENVIRONMENTAL			
3.5.14.	Thermal shock	30mΩ Max.(Final)	Subject mated connector to -40 °C/30min, 85 °C/30min Making this a cycle, repeat 200 cycle EIA 364-32C Condition I
3.5.15.	Temperature life (High)	30mΩ Max.(Final)	Subject mated connectors To 85°C,1000 hours EIA 364-17B Method A
3.5.16.	Temperature life (Low)	30mΩ Max.(Final)	Subject mated connectors To -40°C,1000 hours. EIA 364-17B Method A
3.5.17.	Humidity (Steady State)	30mΩ Max.(Final)	Subject mated connectors 90 %R.H.60 °C,1000 hours EIA 364-31B Method II
3.5.18.	Humidity (Electrifying State)	30mΩ Max.(Final)	Subject mated connectors 90 %R.H.60 °C, 1000 hours Current: 2 A EIA 364-31B Method II
3.5.19.	Humidity-Temperature Cycling	Insulation resistance 1000 MΩ Min. (Final) Termination resistance(Final) 30mΩ Max.(Final)	Mated connector, 25 °C - 65 °C, 95 %RH, 24 hours (=1 cycle) Number of cycles : 10 (mated samples) EIA 364-31B Method III
3.5.20.	Industrial Gas (H2S)	30mΩ Max.(Final)	H2S Gas : 3 ppm,40 °C,80 %RH,96 hours

Figure 1 (End)

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3.6 Product Qualification and Requalification Test Sequence

Test Item	Test-Group (a)														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Test Sequence (b)														
Confirmation of product	1	1	1	1	1	1	1,3	1,3	1	1	1	1	1	1	1
Termination resistance		2,4		2,8	2,4	2,4			2,4	2,4	2,4	2,4	2,4	2,4	
Insulation resistance	3,6														
Dielectric withstanding Voltage	2,5														
Temperature-rise															2
Contact retention in housing			2												
Vibration sinusoidal					3										
Durability				5											
Connector mating force				3,6											
Connector unmating force				4,7											
Resistance to soldering heat								2							
Solderability							2								
Physical shock						3									
Thermal shock								3							
Temperature life (high)										3					
Temperature life (low)											3				
Humidity (steady state)										3					
Humidity-Temperature Cycling	4	3													
Humidity-(Electrifying Status)												3			
Industrial Gas (H2S)														3	

Figure 2

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The applicable products descriptions and part numbers are as shown in Appendix.

Part No	Description
292469-1	Receptacle Vertical HD-22 15P
1932144-1	Receptacle Vertical HD-22 15P

Appendix

4. Quality Assurance Provision

4.1 Test Specimens

4.1.1 The Specimens to be used in the test shall be conforming to the applicable product drawings(s).

4.1.2 No samples shall be reused unless otherwise specified

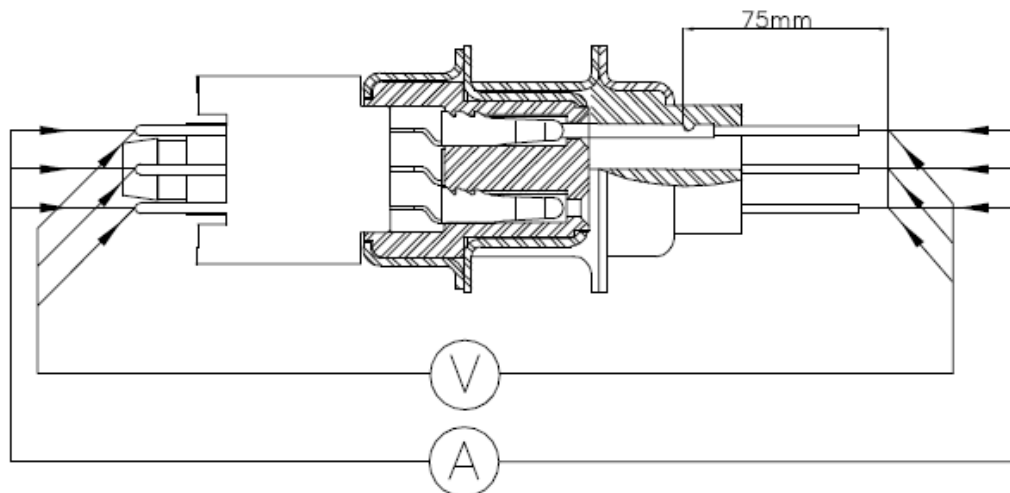
4.2 Test Conditions:

All the tests shall be performed under any combination of the following test conditions.

Temperature : 15~35 °C

Relative humidity : 45~75%

Atmosphere Pressure: 650~800 mmHg



Termination resistance shall be found by subtracting the resistance of 75mm long wire from the Measured value.

Fig.3 Termination Resistance (Low Level) Measuring Point.