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**Industrial SCSI Connector**

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**1. Scope**

1.1 Contents

This specification covers the requirements for product performance, test methods and quality assurance provisions of SCSI Connector.

**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.

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2.1 TE Specifications:

A. 501-137364: Qualification Test Report

2.2 Commercial Standards and Specifications:

A. EIA364 series

**3. Requirements:**

3.1 Design and Construction:

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

3.2 Materials:

A. Contact:

Material: Copper alloy

Finish: Nickel plating all over

Contact area: Au plating

Soldering area: Tin plating

B. Housing:

Material: High Temperature Thermo plastic, Glass Filled

Flammability: UL94 V-0

C. Shell:



## Product Specification

**108-137364**  
21AUG2018 Rev. A

Material: Steel

Finish: Nickel plating

### 3.3 Ratings:

- A. Voltage Rating: 250V AC (rms)
- B. Current Rating: 1A
- C. Temperature Rating:  $-55^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$

### 3.4 Performance Requirements and Test Descriptions:

The product shall be designed to meet the electrical, mechanical and environmental performance requirements specified in Fig.1.

#### 3.4.1 Test Environment

All tests shall be performed in the environmental conditions listed below,  
Unless otherwise specified.

Temperature:  $15^{\circ}\text{C}$  to  $35^{\circ}\text{C}$

Humidity: 20% to 80% RH

Atmospheric Pressure: 760 Torr (mm of mercury)



3.5 Test Requirements and Procedures Summary

Para	Test Items	Requirements	Procedures
3.5.1	Examination of Product	Meets requirements of product drawing.	Visual inspection No physical damage.
<b>Electrical Requirements</b>			
3.5.2	Contact Resistance (Low Level)	40mΩ Max. (Initial) 55mΩ Max. (After Test)	Subject a voltage of 20mV Max open circuit at 100mA on mated contacts assemblies per EIA364-23
3.5.3	Insulation Resistance	500MΩ Min. (Initial) 100MΩ Min. (After)	500V DC for 1minute between adjacent circuits of mated connectors. EIA364-21
3.5.4	Dielectric withstanding Voltage	No creeping discharge or flashover shall occur. Leak current: 0.5mA Max.	500V AC for 1minute between adjacent circuits of mated connectors. EIA364-20 Method B
3.5.5	Temperature Rising	Temperature rise shall not exceed 30°C after 20 hours (45 minutes ON and 15 minutes OFF per hour). Ambition condition is 25°C at still air.	Wire all contacts as a series for loading 1A DC current. Subject specimens to do test Per EIA 364-70B
<b>Mechanical Requirements</b>			
3.5.6	Connector Mating Force	735.5 mN (Initial) per contact Max.	Operation speed: 25mm/min. Measure force necessary to mate samples without locking latches. EIA364-13E, test method: A Calculate the value for a contact.
3.5.7	Connector Un-mating Force	196.1 mN (Initial) per contact Min.	Operation speed: 25mm/min. Measure force necessary to un-mate samples without locking latches. EIA364-13E, test method: A Calculate the value for a contact.
3.5.8	Reseating	Show no physical damage.	(manually plug/unplug 3 times)
3.5.9	Durability (Repeated Mate/Un-mating)	See note.	Operation Speed :40cycles/hour No. of Cycles: 500cycles. EIA364-09
3.5.10	Vibration (Random)	No electrical discontinuity greater than 1μsec shall occur.	Subject mated connectors to 10-55-10 Hz traversed in 1 minute at 1.52mm amplitude 2 hours each of 3 mutually perpendicular planes. EIA364-28



Fig.1 (CONT.)

Para	Test Items	Requirements	Procedures
3.5.11	Physical Shock	No electrical discontinuity greater than 1µsec shall occur.	Accelerated Velocity: 50G Waveform: Half-sin wave Duration: 11 milliseconds. Number of drops: 3 drops each to normal and reversed directions of X, Y and Z axes, totally 18 drops. EIA364-27
3.5.12	Solder ability	Solderable area shall have a solder coverage of 95% min.	Eutectic solder Solder Temperature: 235±5° C Immersion Duration: 3±0.5 sec. Lead-Free solder (Sn-Ag-Cu) Solder Temperature: 245±5° C Immersion Duration: 3±0.5 sec. MIL-STD-202 Method 208
3.5.13	Connector Tensile Strength	After testing, no breakage shall occur in locking area and cable retention area.	Apply an axial pull-off load of 98.1 N the cable terminated on the plug connector, which is mated with the header and the locking device is set in effect.
3.5.14	Repeated Bending of Cable:	No breakage of conductor shall occur	With the free end of the terminated cable securely fixed, repeat bending of the to 60° both sides with tension load of 4.9 N applied, for 2,000 cycles reciprocating, by moving the connector side Fig.3
3.5.15	Resistance to Soldering Heat	No physical damage shall occur.	Test connector on PCB. Solder Temperature: 260±5° C Immersion Duration : 10±0.5 sec. In case of manual soldering iron, apply it as 360±10° C for 3±0.5° C seconds without forcing pressure to affect the tine of contact. Test contact per EIA364-56
<b>Environmental Requirements</b>			
3.5.16	Temperature Life (Heat Aging)	See note.	Mated connector 105°C, 500 Hours EIA364-17, Method A, Condition III



3.5.17	Humidity (Steady State)	See note.	Mated connector 90-95% Relative Humidity at 40 °C 96 hours EIA364-31, Method II, Condition A
3.5.18	Thermal Shock	See note.	Mated connector - 55°C / 30 min. +105°C / 30 min. Making this a cycle, repeat 10 cycles. EIA364-32, Condition I
3.5.19	Humidity-Temperature Cycling	Insulation Resistance (Final) 100MΩ min. LLCR (Low Level) (Final) 55mΩ Max.	Subject mated connectors to 10 cycles of humidity-temperature change between 25°C and 65°C at 95% R.H. EIA364-31, Method IV.

**NOTE**

*Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification and Re qualification Test Sequence shown in Figure 2.*

Fig. 1 (END)

3.5 Product Qualification Test Sequence

Test Examination	Test Group												
	1	2	3	4	5	6	7	8	9	10	11	12	13
	Test Sequence(a)												
Examination of Product	1,9	1,6	1,3	1,3	1,5	1,7	1,5	1,5	1,5	1,7	1,3	1,3	1,8
Low level Contact Resistance	2,8	2,5			2,4		2,4	2,4	2,4				2,4,6
Dielectric withstanding Voltage						2,5				2,5			
Insulation Resistance						3,6				3,6			
Vibration		3											
Physical Shock		4											
Temperature Rising													7
Conn. Mating Force	3, 6												
Conn. Un-mating Force	4, 7												
Durability	5 (b)												
Reseating (manually plug/unplug 3 time)													5
Solder ability												2	
Resistance to Solder Heat											2		



Thermal Shock							3						
Humidity-Temperature Cycling					3	4							
Humidity (Steady State)									3	4			
Temperature Life(Heat Aging)								3					3
Connector Tensile Strength			2										
Repeated Bending of Cable				2									

FIG 2

- (a) Numbers indicate sequence in which tests are performed.
- (b) Preconditioning, 20 cycles for the 50-durability cycle requirement, 50 cycles for the 500-durability cycle requirement. The mating and un-mating cycle is at the maximum rate of 200 cycles per hour.

**4. QUALITY ASSURANCE PROVISIONS**

4.1 Qualification Testing

A. Specimen Selection

Plugs and jacks shall be prepared in accordance with applicable Instruction Sheet and shall be selected at random from current production. Each test group shall consist of a minimum of 5 specimens unless otherwise stated.

B. Test Sequence

Qualification inspection shall be verified by testing specimens as specified in figure 3.

4.2 Requalification testing

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



### 4.3 Acceptance

Acceptance is based on verification that the product meets the requirements of Figure 2. Failures attributed to equipment, test setup or operator deficiencies shall not disqualify the product. If product failure occurs, corrective action shall be taken and samples resubmitted for qualification. Testing to confirm corrective action is required before resubmitted.

### 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.

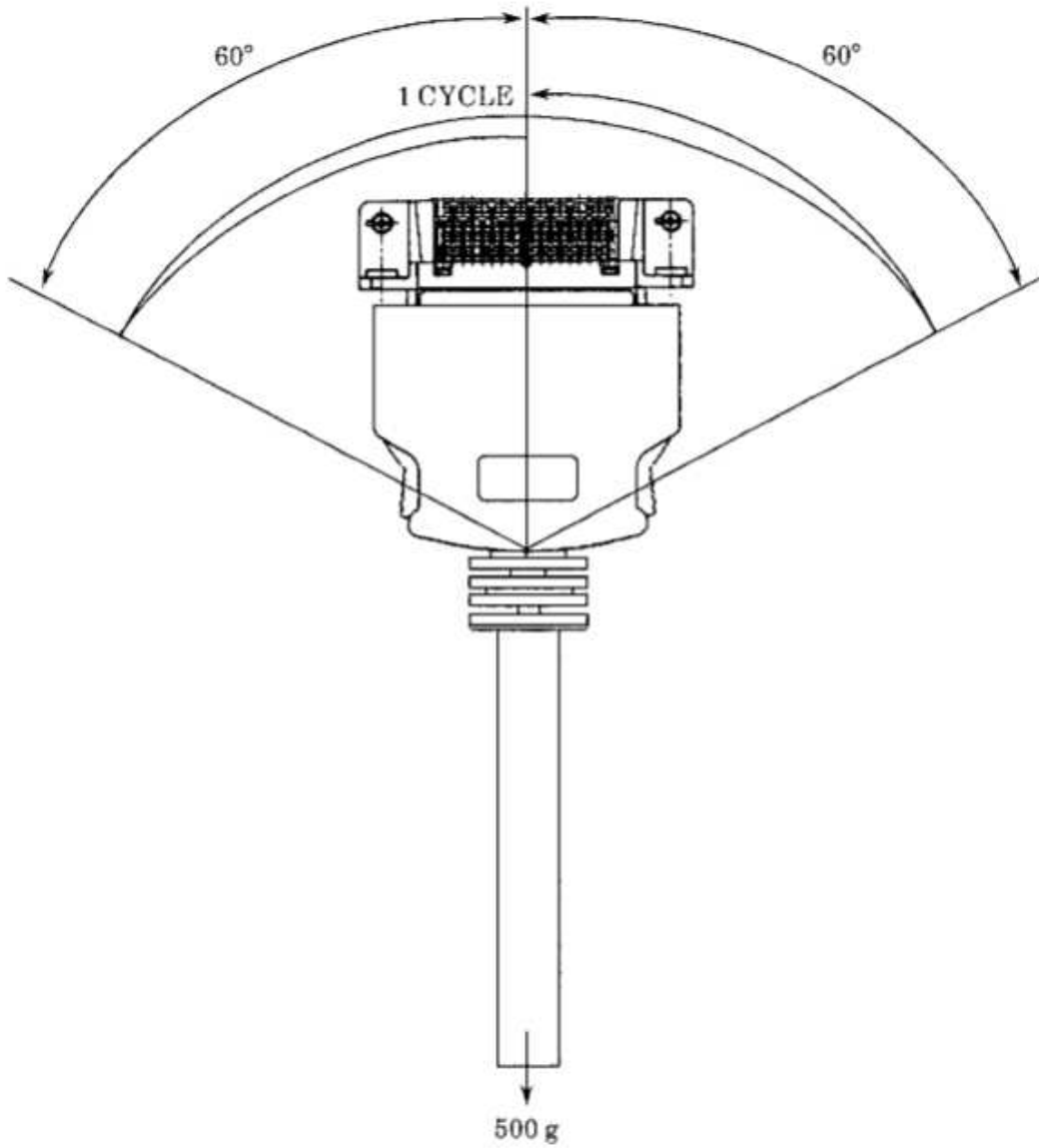


Fig.3