

NUMBER GS-12-453	CATEGORY PRODUCT SPECIFICATION	Amphenol FCI	
TITLE Metal® B Receptacle Connector		PAGE 1 of 14	REVISION C
		GUARDIAN (VERIFIED BY) Nick Zhang	DATE 03/08/16
		APPROVED BY Tim Yao	
		CLASSIFICATION : UNRESTRICTED	

1.0 OBJECTIVE

This specification defines the performance, test, quality and reliability requirements of the modular metric Metral® B receptacles connector.

2.0 SCOPE

This specification is applicable to the termination characteristics of the Metral® B receptacle family of products which provides a separable interconnect for printed circuit boards, and includes press-fit & solder to board receptacle connector.

3.0 GENERAL

This document is composed of the following sections:

Paragraph	Title
1.0	OBJECTIVE
2.0	SCOPE
3.0	GENERAL
4.0	APPLICABLE DOCUMENTS
5.0	REQUIREMENTS
5.1	Qualification
5.2	Definitions
5.3	Material
5.4	Finish
5.5	Design and Construction
6.0	TEST METHODS AND REQUIREMENTS
6.1	ELECTRICAL CHARACTERISTICS
6.2	MECHANICAL CHARACTERISTICS
6.3	ENVIRONMENTAL CONDITIONS
7.0	QUALITY ASSURANCE PROVISIONS
7.1	Equipment Calibration
7.2	Inspection Conditions
7.3	Sample Quantity and Description
7.4	Acceptance
7.5	Qualification Testing
7.6	Requalification Testing
TABLE 1	QUALIFICATION TEST SEQUENCE MATRIX
8.0	RECORD RETENTION

4.0 APPLICABLE DOCUMENTS

The following documents, of the issue in effect on the date of the latest revision of this specification, shall form a part of this specification to the extent specified herein.

NUMBER GS-12-453	CATEGORY PRODUCT SPECIFICATION	Amphenol FCI	
TITLE Metal® B Receptacle Connector		PAGE 2 of 14	REVISION C
		GUARDIAN (VERIFIED BY) Nick Zhang	DATE 03/08/16
		APPROVED BY Tim Yao	
		CLASSIFICATION : UNRESTRICTED	

4.1 Scope: This product line performance is defined in several external industry standards as identified in this section. Only performance standards exceeding or not defined in these external standards will be covered in this document

4.2 Industry Product Performance Standards

IEC 512: Electromechanical components for electronic equipment, basic testing procedures and measuring.

IEC 707: Method of test for the determination of the flammability of solid electronic insulating material exposed to an igniting source

EIA-IS64: 2mm two-part connector for printed wiring boards and backplanes

EIC-364-04: Normal Force test procedure for electrical connectors

Bell core GR-1217-CORE: Generic Requirements for Separable Electrical Connectors Used in Telecommunications Hardware.

4.3 AFCl Specifications:

- (a) General requirements from test specifications
- (b) Engineer Drawings
- (c) Process Drawings
- (d) GS-20-001/ BUS-20-059 Heat stake Application Specification
- (e) BUS-03-108 Crosstalk
- (f) BUS-03-110 Characteristic Impedance
- (g) BUS-03-111 Propagation Delay
- (h) BUS-03-113 Inductance
- (i) BUS-03-114 Capacitance
- (j) BUS-20-059 Application Specification
- (k) GS-15-002 NXT™ - Electrodeposited Amorphous Nickel With Gold Overplate
- (l) GS-15-011 GXT® & GXT+™ - Electrodeposited Deposited Palladium-Nickel Alloy With Gold Overplate

4.4 Military Specifications

4.5 Military Standards:

- (a) MIL-STD-202F: Test methods for electrical and electronic components
- (b) MIL-STD-1344A: Test methods for electrical connectors.
- (c) MIL-G-45204: Gold Plating (electro-deposited)
- (d) MIL-P-81728: SnPb Plating

4.6 U.S. Federal Specifications

- (a) QQ-N-290: Nickel Plating (electro-deposited)
- (b) UL-STD-498: Standard for attachment plugs and receptacles
- (c) UL-STD-94: Test for flammability of plastic materials

NUMBER GS-12-453	CATEGORY PRODUCT SPECIFICATION	Amphenol FCI	
TITLE Metal® B Receptacle Connector		PAGE 3 of 14	REVISION C
		GUARDIAN (VERIFIED BY) Nick Zhang	DATE 03/08/16
		APPROVED BY Tim Yao	
		CLASSIFICATION : UNRESTRICTED	

5.0 REQUIREMENTS

5.1 Qualification U.S. Federal Specifications

Connectors furnished under this specification shall be capable of meeting the qualification test requirements specified herein.

5.2 Definitions:

5.2.1 Receptacle Signal Contact Solder to Board

A dual beam female right angle contacts with a solder tail for termination to the printed circuit board

5.2.2 Receptacle Power Contact Solder to Board

A dual beam female right angle contacts with a solder tail for termination to the printed circuit board

5.2.3 Receptacle Insulator Housing

The plastic modules in which the female contacts are retained

5.3 Material: the material for each parts shall be specified herein

5.3.1 Metallic Parts:

Receptacle Contact Body: The receptacle shall be phosphor bronze alloy CuSn6 or SuSn5.

5.3.1 Insulator Parts:

All receptacle housing material shall be liquid Crystal Polymer 30% glass standard IEC 707, category FV-1

5.4 Finish

Contact Area:

The finish for applicable components shall be as specified herein or equivalent. Reference BUS-02-057. The receptacle terminals shall be plated with 30u" minimum thickness of either gold or GXT™ over 50u" minimum thickness nickel under plate .The gold deposit shall meet the requirements of MIL-G-45204, type II, Grade C and the nickel deposit shall meet the requirements of QQ-N-290, class 2. Connectors shall be of the design, construction, and physical dimensions specified on the applicable product drawing. The intended application of product to a PCB is via compliant methods

CONTACT PLATING:

2.0 Micron gold / 1.3 micron min. Nickel
1.3 Micron gold / 1.3 micron min. Nickel
0.8 Micron gold / 1.3 micron min. Nickel
0.8 Micron GXT / 1.3 micron min. Nickel

Solder Tail Area: Tin/Lead plating or Matte Tin plating with Nickel under-plated.

5.5 Design and Construction:

The receptacle connector shall be a multi –piece assembly having 4(or 5) rows of contacts with solder tail terminations for installation in 1.48mm to 2.57mm thick printed circuit boards. The receptacle contacts shall interface with a 0.5mm male pin on a 4 or 5 row 2mm grid.

NUMBER GS-12-453	CATEGORY PRODUCT SPECIFICATION	Amphenol FCI	
TITLE Metal® B Receptacle Connector		PAGE 4 of 14	REVISION C
		GUARDIAN (VERIFIED BY) Nick Zhang	DATE 03/08/16
		APPROVED BY Tim Yao	
		CLASSIFICATION : UNRESTRICTED	

5.5.1 Mating:

The receptacle connectors shall be capable of mating with any appropriately constituted male connector of the same population without any degradation in performance.

5.5.2 Workmanship:

Connectors shall be uniform in quality and shall be free from burrs, scratches, cracks, voids, chips, blisters, pin holes, sharp edge, and other defects that will adversely effects life or serviceability.

6.0 TEST METHODS AND REQUIREMENTS

Unless otherwise specified, all inspections shall be performed under the following ambient

- Temperature ----- 20°C ~ 30°C
- Humidity ----- 30% ~ 60%
- Pressure ----- Local Ambient

6.1 ELECTRICAL CHARACTERISTICS

Item	Test Description	Requirements		Test Methods	
6.1.1	Visual Examination	Product shall meet the requirements of product drawings. Visual Examination performed under 10X magnification. Parts should be free from blistering, discoloration, cracks, etc		EIA-364-18B <u>Visually and functionally inspected. Under 10X magnification.</u>	
6.1.2	LL Contact Resistance	Signal	Initial Resistance (Milliohms Maximum) Row A 25 mΩ Row B 35 mΩ Row C 40 mΩ Row D 45 mΩ Row E 45 mΩ After test : $\Delta R \leq 10 \text{ m}\Omega$	SEE EIA-304-23C a) <u>Test Voltage-20 mV DC max open circuit voltage.</u> b) <u>Test Current – Not to exceed 100 mA.</u>	
		Power	All Row	10 mΩ	SEE EIA-IS-64 for contact resistance measurement points.
		Shorting contact	30 mΩ After all mechanical and environmental tests		
6.1.3	Current Carrying Capacity	Signal Pin	1.5 A The current carrying capacity of a mated signal pair is rated at 1.5 ampere with current applied to all contacts [24 (4 row) or 30(5 row) contacts]	SEE EIA-364-70 <u>Ambient still air is 25°C</u>	
		Power Pin	3.0 A The current carrying capacity of a mated power pair is rated at 3 ampere with current applied to all contacts [24 (4 row) or 30(5 row) contacts]	SEE EIA-364-70 <u>Ambient still air is 25°C</u>	

NUMBER GS-12-453	CATEGORY PRODUCT SPECIFICATION	Amphenol FCI	
TITLE Metal® B Receptacle Connector		PAGE 5 of 14	REVISION C
		GUARDIAN (VERIFIED BY) Nick Zhang	DATE 03/08/16
		APPROVED BY Tim Yao	
CLASSIFICATION : UNRESTRICTED			

6.1.4	Insulation Resistance	Initially: $5 \times 10^3 \text{ M}\Omega$ After Tests : $1 \times 10^3 \text{ M}\Omega$	Measured in accordance with EIA 364-21. The following details shall apply: a. <u>Test Voltage - 500 volts DC</u> b. <u>Electrification Time - 1 minute</u> c. <u>Points of Measurement - Between adjacent contacts and between contacts and metal shields</u>
6.1.5	Dielectric Withstanding Voltage	<u>There shall be no evidence of arc-over, insulation breakdown, or excessive leakage current (> 0.5 milliampere)</u>	Accordance with EIA 364-20. The following details shall apply: a. <u>Test Voltage - 1000 VDC, 60Hz.</u> b. <u>Test Duration - 60 seconds.</u> c. <u>Voltage: Applied at a rate of 1000 volts per second.</u> d. <u>Points of Measurement - Between adjacent contacts and between contacts and the metal shields</u>
6.1.6	Capacitance	The capacitive coupling between adjacent rows of contacts shall not exceed 3pF. The capacitive coupling between adjacent contacts within a row shall not exceed 2pF.	The following details apply per BUS-03-114 a) <u>Connectors shall be mated and mounted onto test boards.</u> b) <u>Test condition: 1 MHz at 1 nsec rise time.</u> c) <u>Measurement equipment: Impedance analyzer or other suitable equipment capable of measuring capacitance at 1 MHz.</u>
6.1.7	Inductance	The inductance between adjacent contacts shall be no greater than 25nH, and between one contact and all other surrounding contacts grounded shall be no greater than 15nH.	The following details apply per BUS-03-113. a) <u>Connectors shall be mated.</u> b) <u>Measurements shall be made from tail tip to tail tip.</u> c) <u>Test conditions 1 ns rise time pulse (0.0 V to 1.0 V), with a 50 Ohm termination.</u> d) <u>Measurements equipment : Sampler/TDR/Scope equipment with a 50 Ohm reference impedance.</u>
6.1.8	Propagation Delay	The maximum propagation delay shall not exceed 225 psec, and the maximum row-to-row delay shall not exceed 40 psec	The following details apply per BUS-03-111 a) <u>Connector shall be mated.</u> b) <u>Measurements shall be made from tail tip to tail tip.</u>


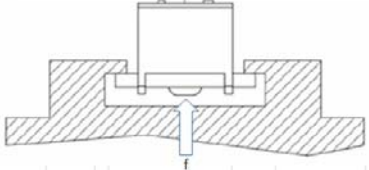
NUMBER GS-12-453	CATEGORY PRODUCT SPECIFICATION	Amphenol FCI	
TITLE Metal® B Receptacle Connector		PAGE 6 of 14	REVISION C
		GUARDIAN (VERIFIED BY) Nick Zhang	DATE 03/08/16
		APPROVED BY Tim Yao	
CLASSIFICATION : UNRESTRICTED			

			<u>c) Test Condition: 250 psec rise time pulse (0.0 V and 2 V) with a 50 Ohm termination.</u> <u>d) Measurements equipment: Sampler/pulse generator/scope equipment with a 50 Ohm reference impedance and 250 psec rise time</u>
6.1.9	Cross Talk	Adjacent active/quiet near end cross talk shall not exceed 5% in any row or column combination. The far end cross talk shall nt exceed 2.5%.	The following details apply per BUS-03-108 <u>a) Connectors shall be mated.</u> <u>b) Measurements shall be made from tail tip to tail tip.</u> <u>c) Test Condition: 1 ns rise time pulse (0.0 V to 2.0 V) with a 50 Ohm termination.</u> <u>d) Measurements equipment: Sampler/Pulse Generator/Scope equipment with 50 Ohm reference impedance.</u>
6.1.10	Characteristics Impedance	The mated connector characteristic impedance shall be within the range of 50-60 Ohms.	The following conditions apply per BUS-03-110 <u>a) Sample documentation;</u> <u>b) Sample test conditions.</u>

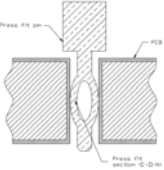
6.2 MECHANICAL CHARACTERISTICS

Item	Test Description	Requirements		Test Methods
6.2.1	Contact Retention to Housing	Contact Type	Axial Force (Minimum) 5 Newton	Measured in accordance with EIA-364-29. <u>A force is applied to a contact in either direction along the axis of retention</u>
		Receptacle	<u>There shall be no loosening of the contact or damage to the contact or damage to the connector</u>	
6.2.2	Total Mating /Unmating Force	Contact Type	Mating/Unmating Force/ Per Contact	Reference – IEC 60512-13-2 or EIA- 364-13. <u>a. Cross Head Speed 25.4 mm per minute.</u> <u>b. Lubrication – No</u> <u>c. Utilize free floating fixtures.</u>
		Signal	≤ 0.45 Newton/Per Contact ≥ 0.15 Newton/Per Contact <u>The total force to mate a female connector with an appropriately populated male header shall not exceed the above values times the number of contacts.</u>	
		Power	≤ 1.5 Newton/Per Contact ≥ 0.30 Newton/Per Contact <u>The total force to mate a female connector with an appropriately populated male header shall not</u>	

NUMBER GS-12-453	CATEGORY PRODUCT SPECIFICATION	Amphenol FCI	
TITLE Metal® B Receptacle Connector		PAGE 7 of 14	REVISION C
		GUARDIAN (VERIFIED BY) Nick Zhang	DATE 03/08/16
		APPROVED BY Tim Yao	
CLASSIFICATION : UNRESTRICTED			

			<u>exceed the above values times the number of contacts.</u>	
6.2.3	Individual Contact Insertion Force	Signal	The individual insertion force shall not exceed 0.45 Newton	Measured in accordance with EIA-364-37 <u>Using a maximum gage (configuration as shown in EIA-IS-64).</u>
		Power	The individual insertion force shall not exceed 1.5 Newton	
6.2.4	Individual Contact Withdrawal Force	Signal	The individual withdrawal force shall be no less than 0.15 Newton	Measured in accordance with EIA-364-37 <u>After 5 insertions of a maximum gage, the force required to withdraw a minimum gage (configuration as shown in EIA-IS-64)</u>
		Power	The individual withdrawal force shall be no less than 0.30 Newton	
6.2.5	Normal Force	The normal force for receptacle contacts only shall be no less than the below data after life test.		Measured in accordance with EIA-364-04.
		Signal	0.4 Newton Minimum	
		Power	0.8 Newton Minimum	
6.2.6	Press Peg Insertion/ Retention Force 	Insertion force	The Insertion force shall not exceed 32 Newton.	Insert a single press peg into a plated through hole in a printed circuit board at a rate of 5.1 mm/minute.
		Retention force	The retention force in an axial direction opposite that of insertion shall not be less than 7 Newton.	Push out at a rate of 1.0mm/minute. 
6.2.7	Compliant Pin Insertion	Compliant Pin Insertion/Retention Force The force required to insert header with compliant pins into plated through holes in a printed circuit board at a rate of 0.5 inches/minute shall not exceed 65 N per pin.		Per EIA-364-5 <u>Measure force necessary to correctly apply a specimen to a printed circuit board at a maximum rate of 12.7mm per minute.</u>

NUMBER GS-12-453	CATEGORY PRODUCT SPECIFICATION	Amphenol FCI	
TITLE Metal® B Receptacle Connector		PAGE 8 of 14	REVISION C
		GUARDIAN (VERIFIED BY) Nick Zhang	DATE 03/08/16
		APPROVED BY Tim Yao	
		CLASSIFICATION : UNRESTRICTED	

6.2.8	<p>PCB Hole Deformation Radius</p> 	<p>The average holes deformation radius of 10 holes shall be no greater than 37.5µm when measured from the finished hole. The absolute maximum deformation radius shall not exceed 50µm.</p>	<p>Reference Telcordia GR-1217-CORE, section 5.1.7. Cross-section should be parallel to board surface. Photograph and measure the holes deformation radius at a point 0.25mm from the surface and at the center of the compliant pin section.</p>								
6.2.9	Compliant Pin Retention	<p>The retention force in an axial direction opposite that of insertion shall not be less than 20 N per pin after 3 insertion/extraction cycles on the same holes.</p>	<p>Per EIA-364-5 <u>Measure force necessary to correctly apply a specimen to a printed circuit board at a maximum rate of 12.7mm per minute.</u></p>								
6.2.10	Durability	<p>Mechanical endurance (number of mate/unmate cycles) by connector class shall be the below data.</p> <table border="1"> <thead> <tr> <th>CLASS</th> <th>CONDITIONS</th> </tr> </thead> <tbody> <tr> <td>CLASS I</td> <td>250 CYCLES MINIMUM</td> </tr> <tr> <td>CLASS II</td> <td>100 CYCLES MINIMUM</td> </tr> <tr> <td>CLASS III</td> <td>30 CYCLES MINIMUM</td> </tr> </tbody> </table>	CLASS	CONDITIONS	CLASS I	250 CYCLES MINIMUM	CLASS II	100 CYCLES MINIMUM	CLASS III	30 CYCLES MINIMUM	<p>Standard laboratory procedure as applicable to the specific product EIA-364-09 <u>Cycling Rate - 5 inches per minute</u></p>
CLASS	CONDITIONS										
CLASS I	250 CYCLES MINIMUM										
CLASS II	100 CYCLES MINIMUM										
CLASS III	30 CYCLES MINIMUM										
6.2.11	Vibration	<table border="1"> <thead> <tr> <th>CLASS</th> <th>CONDITIONS</th> </tr> </thead> <tbody> <tr> <td>CLASS I</td> <td>10 TO 2000 Hz AND 1,5 mm or 20g</td> </tr> <tr> <td>CLASS II</td> <td>10 TO 500 Hz AND 0,35 mm or 5g</td> </tr> <tr> <td>CLASS III</td> <td>N/A</td> </tr> </tbody> </table>	CLASS	CONDITIONS	CLASS I	10 TO 2000 Hz AND 1,5 mm or 20g	CLASS II	10 TO 500 Hz AND 0,35 mm or 5g	CLASS III	N/A	<p>Accordance with Telcordia GR-1217-CORE, November 1995</p> <p><u>a. Vibration Amplitude - 0.06" DA or 10G acceleration</u></p> <p><u>b. Frequency Range - 10 to 500 hertz</u></p> <p><u>c. Duration - 8 hours along each of three orthogonal axes (24 hours total)</u></p> <p><u>d. Mounting - Rigidly mount assemblies</u></p> <p><u>e. No discontinuities greater than 1u second</u></p>
CLASS	CONDITIONS										
CLASS I	10 TO 2000 Hz AND 1,5 mm or 20g										
CLASS II	10 TO 500 Hz AND 0,35 mm or 5g										
CLASS III	N/A										

NUMBER GS-12-453	CATEGORY PRODUCT SPECIFICATION	Amphenol FCI	
TITLE Metal® B Receptacle Connector		PAGE 9 of 14	REVISION C
		GUARDIAN (VERIFIED BY) Nick Zhang	DATE 03/08/16
		APPROVED BY Tim Yao	
CLASSIFICATION : UNRESTRICTED			

6.2.12	Mechanical Shock	No Damage	<p>Accordance with Telcordia GR-1217-CORE, November 1995 sections 6.3.5 and 9.1.2.1.</p> <p><u>a. Conditions - half-sine 30G, 11 millisecond duration</u></p> <p><u>b. Shocks - 3 shocks along each of three orthogonal axes</u></p> <p><u>c. Mounting - Rigidly mount assemblies</u></p> <p><u>d. Resistance measurements taken after shock in each axis.</u></p>
--------	------------------	-----------	--

6.3 ENVIRONMENTAL CONDITIONS

Item	Test Description	Requirements	Test Methods
6.3.1	Thermal Shock	No Damage	<p>Measured in accordance with EIA 364-32A November 183, Test Condition II</p> <p><u>a. Number of Cycles - 5</u></p> <p><u>b. Temperature Range - Between -55 °C +0°C/-5°C and +85° C +3°C/-5°C</u></p> <p><u>c. Time at Each Temperature - 30 minutes</u></p> <p><u>d. Transfer Time - 5 minutes, maximum</u></p>
6.3.2	Humidity	No Damage	<p>Mated samples are to be exposed to cyclical humidity and temperature in accordance with EIA-364-TP31, Method IV, with the following exceptions. Samples are to be subjected to 50 cycles of 10 hours duration for a total of 500 hours after 24 hours in a conditioning oven at 50+/-2°C. A cycle consists of the following steps:</p> <p><u>1.) Ramp from 25+/-2°C at 80%-98% RH to 65+/-2°C at 94%+/-4% RH in 120 minutes</u></p> <p><u>2.) Dwell at 65+/-2°C at 94%+/-4% RH for 4 hours</u></p>

NUMBER GS-12-453	CATEGORY PRODUCT SPECIFICATION	Amphenol FCI	
TITLE Metal® B Receptacle Connector		PAGE 10 of 14	REVISION C
		GUARDIAN (VERIFIED BY) Nick Zhang	DATE 03/08/16
		APPROVED BY Tim Yao	
CLASSIFICATION : UNRESTRICTED			

			<p>3.) Ramp down to 25+/-2°C at 80%-98% RH in 120 minutes</p> <p>4.) Dwell at 25+/-2°C at 80%-98% RH for 2 hours</p>																	
6.3.3	High Temperature Life	No Damage	<p>Telcordia GR-1217-CORE Method A, Test Condition 3. Headers and receptacles shall be mated w/o any electrical load</p> <p>a. Test Temperature - 85 degree C +/- 2 degree C</p> <p>b. Test Duration - 500 hours</p>																	
6.3.4	Mixed Flow Gas	No Damage	<p>Samples are to be exposed to industrial gas mixture in accordance with Telcordia GR-1217-CORE, November 1995, Section 9.1.3. The headers only are to be exposed for 10 days to the gas mixture detailed below, with interim resistance measurements made after the 5th and 10th days. The samples are then mated with the appropriate receptacle and exposed to an additional 10 days with resistance measurements taken after the 15th and 20th days of exposure. The test chamber is to be maintained at a temperature of 30°C+/-1°C with a relative humidity of 70%+/-2%. Specific please see right table</p>																	
	<p style="text-align: center;">Central Office</p> <table border="0"> <tr> <td>Gas Constituent</td> <td>Gas Concentration</td> </tr> <tr> <td>NO2</td> <td>200 ppb</td> </tr> <tr> <td>CL2</td> <td>10 ppb</td> </tr> <tr> <td>H2S</td> <td>10 ppb</td> </tr> <tr> <td>SO2</td> <td>100 ppb</td> </tr> </table> <p>8.4.1 Gas concentrations per Central Office</p> <p style="text-align: center;">Uncontrolled Environment</p> <table border="0"> <tr> <td>Gas Constituent</td> <td>Gas Concentration</td> </tr> <tr> <td>NO2</td> <td>200 ppb</td> </tr> <tr> <td>CL2</td> <td>20 ppb</td> </tr> <tr> <td>H2S</td> <td>100 ppb</td> </tr> <tr> <td>SO2</td> <td>200 ppb</td> </tr> </table> <p>8.4.2 Gas concentrations per Uncontrolled Environment</p>	Gas Constituent		Gas Concentration	NO2	200 ppb	CL2	10 ppb	H2S	10 ppb	SO2	100 ppb	Gas Constituent	Gas Concentration	NO2	200 ppb	CL2	20 ppb	H2S	100 ppb
Gas Constituent	Gas Concentration																			
NO2	200 ppb																			
CL2	10 ppb																			
H2S	10 ppb																			
SO2	100 ppb																			
Gas Constituent	Gas Concentration																			
NO2	200 ppb																			
CL2	20 ppb																			
H2S	100 ppb																			
SO2	200 ppb																			
6.3.5	Resistance to Solder Heat	Shall meet visual requirements, show no physical damage,	Place the connector on the PCB and expose to the reflow oven. Peak Temp: 260□ for 10sec.																	
6.3.6	Dust Contamination	No Damage	EIA-364-91A <u>Unmated to dust composition #1 for 1 hours</u>																	

NUMBER GS-12-453	CATEGORY PRODUCT SPECIFICATION	Amphenol FCI	
TITLE Metal® B Receptacle Connector		PAGE 11 of 14	REVISION C
		GUARDIAN (VERIFIED BY) Nick Zhang	DATE 03/08/16
		APPROVED BY Tim Yao	
		CLASSIFICATION : UNRESTRICTED	

6.3.7	Solderability (<u>Non Eye of the Needle</u>)	Minimum solder coverage: 95 %	IEC 60512-12-1 or EIA-364-52 or ANSI-J-STD-002 or FCI GS-19-037 <u>a. Test Condition A1 (ANSI-J-STD-002)</u> <u>b. Steam or dry aging 4 hours</u>
6.3.8	Salt Spray	Acceptance criteria – (visual examination requirements and/or LLCR criteria)	EIA-364-26 <u>a. Test Condition :B</u> <u>b. Duration : 48</u>

7.0 QUALITY ASSURANCE PROVISIONS.

7.1 Equipment Calibration

All test equipment and inspection facilities used in the performance of any test shall be maintained in a calibration system in accordance with MIL-C-45662 and ISO 9000.

7.2 Inspection Conditions

Unless otherwise specified herein, all inspections shall be performed under the following ambient conditions:

- a. Temperature: 25 +/- 5 degree C
- b. Relative Humidity: 30% to 60%
- c. Barometric Pressure: Local ambient

7.3 Sample Quantity And Description

Sample quantity for each Test Group in Table 1 shall consist of a minimum of one hundred (100) contacts. The 100 contacts shall be selected from a minimum of four (4) connectors.

7.4 Acceptance

- 7.4.1 Electrical and mechanical requirements placed on test samples as indicated in paragraphs 6.1 and 6.2 shall be established from test data using appropriate statistical techniques or shall otherwise be customer specified, and all samples tested in accordance with this product specification shall meet the stated requirements.
- 7.4.2 Failures attributed to equipment, test setup, or operator error shall not disqualify the product. If product failure occurs, corrective action shall be taken and samples resubmitted for qualification.

NUMBER GS-12-453	CATEGORY PRODUCT SPECIFICATION	Amphenol FCI											
TITLE Metal® B Receptacle Connector		PAGE 12 of 14	REVISION C										
		GUARDIAN (VERIFIED BY) Nick Zhang	DATE 03/08/16										
		APPROVED BY Tim Yao											
		CLASSIFICATION : UNRESTRICTED											

7.5 Qualification Testing

Qualification testing shall be performed on sample units produced with equipment and procedures normally used in production. The test sequence shall be as specified in EIA-IS64.

7.6 Requalification Testing

If any of the following conditions occur, the responsible product engineer shall initiate requalification testing consisting of all applicable parts of the Test Schedule Tables in EIA-IS64.

- a. A significant design change is made to the existing product, which impacts the product form, fit or function. Examples of significant changes shall include, but not be limited to, changes in the plating material composition or thickness, contact force, contact surface geometry, insulator design, contact base material, or contact lubrication requirements.
- b. A significant change is made to the manufacturing process, which impacts the product form, fit or function.
- c. A significant event occurs during production or end use requiring corrective action to be taken relative to the product design or manufacturing process.

7.7 Qualification Test Table

7.7.1 Test Table-1 (This table applies to head pins are eye of the needle type)

Test	Para.	Test Group										
		1	2	3	4	5	6	7	8	9	10	11
Visual Examination	6.1.1	1,13	1,11	1,5	1,11	1,8	1,5	1,5	1,3	1,3	1,4	1,4
Low Level Contact Resistance Signal contacts	6.1.2	2,4,6,8,10,12	2,4,6,8,10	2,4	2,4,6,8,10		2,4					
Low Level Contact Resistance Power contacts	6.1.2	2,4,6,8,10,12	2,4,6,8,10	2,4	2,4,6,8,10		2,4					
Current Carrying Capacity (Temperature rise vs current)	6.1.3								2			
Insulation Resistance	6.1.4					2,7						
Dielectric Withstanding Voltage	6.1.5					3,6						
Vibration	6.2.1 1	9										
Mechanical Shock	6.2.1 2	11										
Durability	6.2.1 0	4	5		3,9							
Mating/Unmating Force	6.2.2	3,5										

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [DIN 41612 Connectors](#) category:

Click to view products by [FCT Electronics](#) manufacturer:

Other Similar products are found below :

[09231126901](#) [PCN10F-24P-2.54DS\(72\)](#) [004.767](#) [02221602702](#) [024069](#) [602427301412000](#) [013275](#) [691327-1](#) [74670-0732](#) [74680-0340](#)
[75880-0015](#) [76453-0014](#) [86093159ALF](#) [923454](#) [QLC260R](#) [120X10099X](#) [120X10019X](#) [120X10089X](#) [120X10129X](#) [121A10039X](#)
[121A10309X](#) [122A10019X](#) [122A10029X](#) [122A10249X](#) [122A10669X](#) [122A11089X](#) [122A13089X](#) [121B10409X](#) [122A10089X](#)
[122A10129X](#) [122A10349X](#) [122A13359X](#) [1377391-4](#) [DIN-048CPC-SR1-MH](#) [1393583-2](#) [1393726-7](#) [140X10059X](#) [140X10129X](#) [143-1913-](#)
[000](#) [143-1908-000](#) [1484472-1](#) [173052](#) [2110070-1](#) [2110070-2](#) [CBC20T00-008FDS5-0-1-002VR](#) [983-0SE12-12P6](#) [17041102202](#) [172699-](#)
[5036](#) [173051](#) [20](#) [8457096](#) [010](#) [025](#)