

NUMBER GS-12-1669	TYPE GENERAL PRODUCT SPECIFICATION	Amphenol ICC	
TITLE Pluggable Power Connector_BarKlip BK200		PAGE 1 of 6	REVISION A
		AUTHORIZED BY Andy Lu	DATE 2021 Mar 22
		CLASSIFICATION UNRESTRICTED	

1.0 Objective

This specification defines the performance, test, quality and reliability requirements of the Pluggable Power Connector BarKlip BK200 product.

2.0 Scope

This specification is applicable to the termination characteristics of the BarKlip connector family of products which provides a separable interface when mated to 3.0mm thick Bus Bar.

3.0 Ratings

- 3.1 Operating Voltage Rating = 54 V_{DC} (Entire connector will take one path current, voltage depend on the application)
- 3.2 Operating Current Rating = 200 Amperes
- 3.3 Operating Temperature Range = -55 °C to +105 °C¹

Note 1: includes the terminal temperature rise when powered

4.0 Applicable Documents

- 4.1 AFCI Specifications
 - 4.1.1 Engineering drawings 10157266
 - 4.1.2 Application specification GS-20-0684
 - 4.1.3 Package specification GS-14-2376
- 4.2 National or International Standards
 - 4.3.1 EIA 364: Electrical Connector/Socket Test Procedures Including Environmental Classifications.
 - 4.3.2 IEC 60512: Connectors for Electronic Equipment – Tests and Measurement
- 4.3 AFCI Laboratory Reports - Supporting Data
DL-2020-10-020A-CR.
- 4.4 Safety Agency Approvals
UL/CSA File #: E66906 Vol. 1 Sec. 152.

5.0 Requirements

5.1 Qualification

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

NUMBER GS-12-1669	TYPE GENERAL PRODUCT SPECIFICATION	Amphenol ICC	
TITLE Pluggable Power Connector_BarKlip BK200		PAGE 2 of 6	REVISION A
		AUTHORIZED BY Andy Lu	DATE 2021 Mar 22
		CLASSIFICATION UNRESTRICTED	

5.2 Material

Power Contacts – High Performance Copper Alloy
Guide Shell – Stainless Steel
Nut – Stainless Steel

5.3 Finish

Power contact: Silver plating over nickel underplating
Guide Shell: No plating
Nut: No plating

5.4 Design and Construction

Connectors shall be of the design, construction, and physical dimensions specified on the applicable product drawing. There shall be no cracks, burrs, or other physical defects that may impair performance.

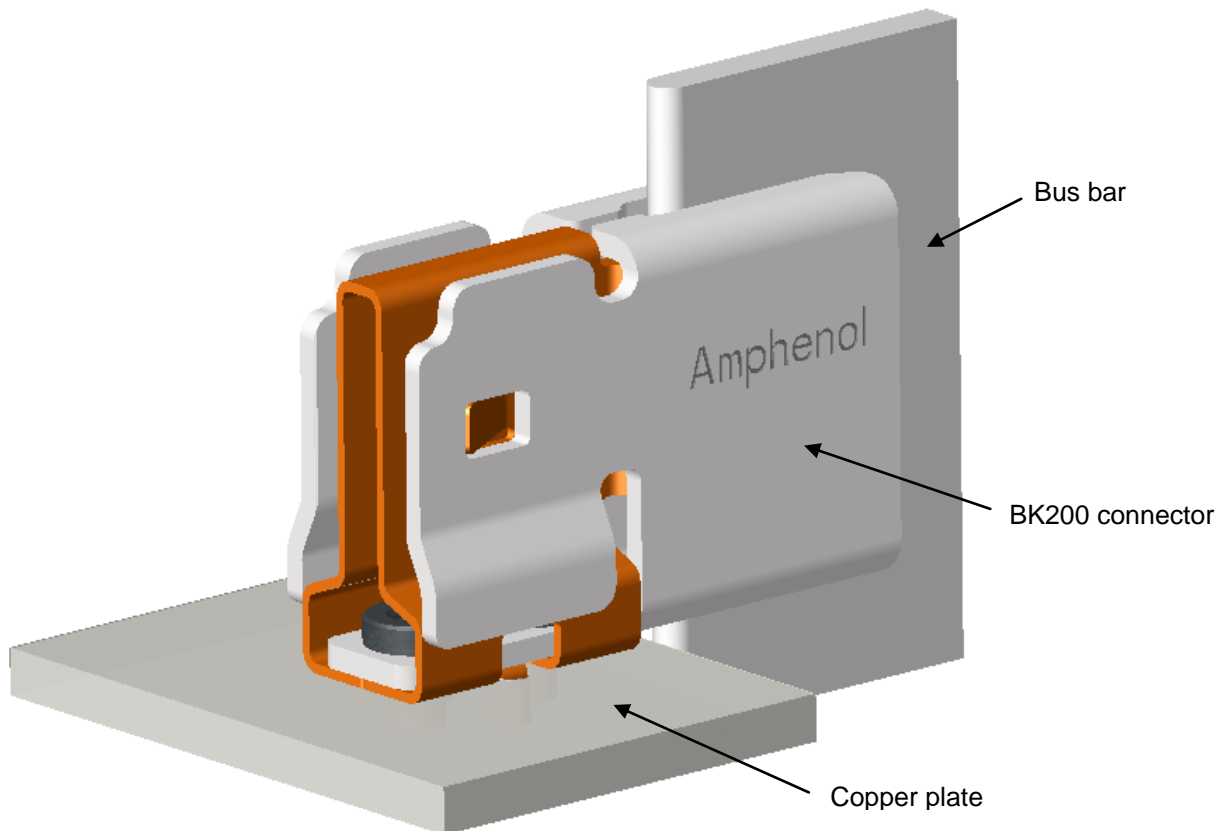



Figure 1

NUMBER GS-12-1669	TYPE GENERAL PRODUCT SPECIFICATION	Amphenol ICC	
TITLE Pluggable Power Connector_BarKlip BK200		PAGE 3 of 6	REVISION A
		AUTHORIZED BY Andy Lu	DATE 2021 Mar 22
		CLASSIFICATION UNRESTRICTED	

6.0 Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Initial examination of product	Meets requirements of product drawing, applicable instructions on customer drawing, and application specification.	EIA-364-18. Visual and dimensional (C of C) inspection per product drawing.
Final examination of product	Meets visual requirements.	EIA-364-18. Visual inspection.
ELECTRICAL		
Low level contact resistance	0.1 milliohms maximum (initial and final).	EIA-364-23. Subject specimens to 100 milliamperes maximum and 20 millivolts maximum open circuit voltage.
Contact resistance at rated current	0.1 milliohms maximum (initial and final).	EIA-364-6. 30°C temperature rise result at rated current.
Temperature rise vs current.	30°C maximum temperature rise at specified current.	EIA-364-70, Method II. Stabilize at a single current level until 3 readings at 5 minute intervals are within 1°C.
MECHANICAL		
Vibration	No discontinuities of 1 microsecond or longer duration. See Note.	EIA-364-28, Test Condition V, letter C. Duration 120 minutes in each of three mutually perpendicular planes.
Durability	See Note	EIA-364-09. Mate and un-mate specimens with a bus bar conductor for 50 cycles at a maximum rate of 500 cycles per hour.
Mating force	30 N Maximum	EIA-364-13. Measure force necessary to mate specimens at a maximum rate of 12.7 mm [.5 in] per minute.
Unmating force	3 N Minimum	EIA-364-13. Measure force necessary to unmate specimens at a maximum rate of 12.7 mm [.5 in] per minute.
ENVIRONMENTAL		
Temperature life	See Note.	EIA-364-17, Method A, Condition 4. Subject mated specimens to 105°C for 1000 hours.
Mixed flowing gas.	See Note.	EIA-364-65, Class IIA. Subject specimens mated for 480 hours(20 days);

NUMBER GS-12-1669	TYPE GENERAL PRODUCT SPECIFICATION		
TITLE Pluggable Power Connector_BarKlip BK200		PAGE 4 of 6	REVISION A
		AUTHORIZED BY Andy Lu	DATE 2021 Mar 22
		CLASSIFICATION UNRESTRICTED	

Note: Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the qualification test table shown in paragraph 7.7.

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 ANSI Z-540 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 deg C
- b. Relative Humidity: 30% to 60%
- c. Barometric Pressure: Local ambient

7.3 Sample Quantity And Description

The sample size and description for each test is listed in table 1.

7.4 Acceptance

7.4.1 Electrical and mechanical requirements placed on test samples as indicated in paragraphs 6.0 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.

7.5 Qualification Testing

Qualification testing shall be performed on sample units produced with equipment and procedures normally used in production. The test sequences shall be as shown in the qualification test table. Data shall be provided with the samples noting production history: production lot codes for components and assemblies, components and assemblies produced to print revision, verification of plating composition and thickness, etc.

7.6 Re-Qualification Testing

If any of the following conditions occur, the responsible product engineer shall initiate requalification testing consisting of all applicable parts of the qualification test matrix.

NUMBER GS-12-1669	TYPE GENERAL PRODUCT SPECIFICATION	Amphenol ICC	
TITLE Pluggable Power Connector_BarKlip BK200		PAGE 5 of 6	REVISION A
		AUTHORIZED BY Andy Lu	DATE 2021 Mar 22
		CLASSIFICATION UNRESTRICTED	

- 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

Test or Examination	Test sequence
Initial examination of product	1
Low level contact resistance	3,7,9,11
Contact resistance @Current rated	13
Temperature rise	4,12
Vibration	10
Durability	5
Mating force	2
Un-mating force	14
Temperature life	8
Mixed flowing gas	6
Final examination of product	15
Sample size	5 pcs

Table 1

NUMBER GS-12-1669	TYPE GENERAL PRODUCT SPECIFICATION	Amphenol ICC	
TITLE Pluggable Power Connector_BarKlip BK200		PAGE 6 of 6	REVISION A
		AUTHORIZED BY Andy Lu	DATE 2021 Mar 22
		CLASSIFICATION UNRESTRICTED	

REVISION RECORD

Rev	Page	Description	EC#	Date
A	All	Initial release	N/A	2021-03-22