

# MUSBR Rugged USB

## Product Specification S6056C Rev 1.3

Amphenol

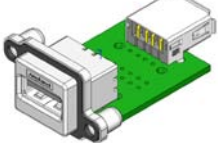
*Now you're connected!*

**About Amphenol Commercial Products**  
Amphenol's commercial connector products are used in a variety of end user applications including networking, telecom, server & computer, storage & HDD, consumer electronics and entertainment, professional audio & Industrial & Military/Aerospace.

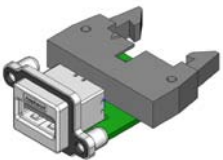
### Related Products

MUSB/MUSBR OPTIONS:

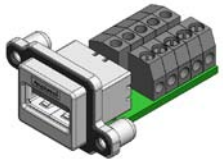
#### With matching USB



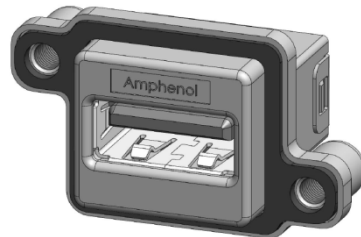
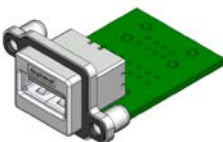
#### With Cable Header



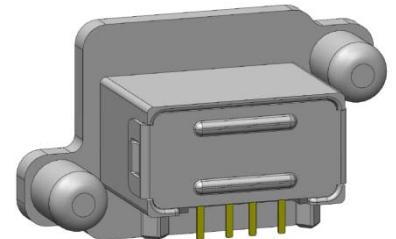
#### With Terminal Block



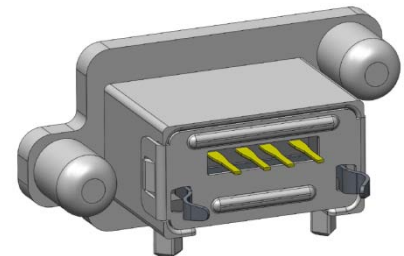
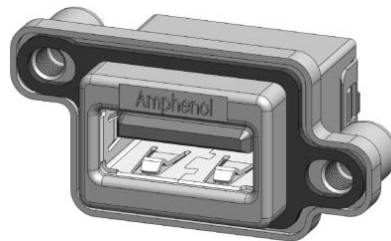
#### With PCB for wiring



MUSBR-A111-30  
SERIES A, RIGHT ANGLE  
STANDARD PROFILE



MUSBR-A511-40  
SERIES A, VERTICAL  
LOW PROFILE



### Overview

This Product Specification defines the general use and performance parameters for Amphenol's MUSBR series of connectors.

Availability: Series A right angle & vertical mount connectors are available now. Mini-B and series Mini-AB with right angle and vertical PCB tails are coming soon. Right angle connectors mounted on a PCB with matching USB, cable headers or terminal blocks are available for all series. Dust covers for enhanced mating area protection are also available.

### Usage

These connectors meet Military shock & vibration levels and IP68 per IEC 60529 in mated and unmated conditions. The connector system is designed to provide a standard USB interface for enclosures exposed to harsh environments. Connectors mate with any standard USB 2.0 plug. Achieves data rates up to 480 Mb/s (USB 2.0).

### Applications

Intended for use in applications such as:

- Medical equipment
- Microwave transmitters
- GPS, positioning equipment
- Military vehicles, radios, computers
- Test equipment
- Mobile entertainment systems
- Traffic control & monitoring systems

# Now you're connected!

## About Amphenol Commercial Products

Amphenol's commercial connector products are used in a variety of end user applications including networking, telecom, server & computer, storage & HDD, consumer electronics and entertainment, professional audio & Industrial & Military/Aerospace.

## Related Products

### MDBR



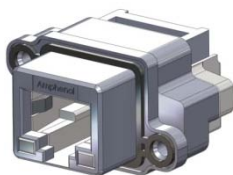
9 POSITION CONNECTOR SHOWN

### MUSBK



MUSB-K152-30  
SERIES MICRO-AB  
RIGHT ANGLE, PCB TAIL

### MRJR



MRJR-5380-01 SHOWN  
RIGHT ANGLE, PCB TAIL,  
8 POSITION RJ45

## Connector Electrical Characteristics

Parameter	Series A & B	Series Mini-B & Mini-AB
Current rating:	1.5A per contact	1.0A per contact
Contact resistance:	30 mΩ max	50 mΩ max
Insulation resistance:	1000 MΩ min	100 MΩ min
DWV:	500V AC @ sea level	100V AC @ sea level

## Connector Mechanical Characteristics

Thermal Shock: 5 cycles @ -40° to +125° C

Physical Shock: Per EIA364-27 Condition H (11ms 30G)

Humidity: Per EIA364-31 Condition C, method III

Vibration: Per EIA364-28 per Condition V, Letter A

Salt spray: Per EIA364-26, 250 Hrs

## Process Characteristics

Recommended soldering process: Hand or wave soldering peaked at 260°C for 8 seconds max.

Recommended Torque for #4-40 or M3 Panel Mount Screws: 0.45 to 0.65 Nm (4 – 5.75 in-lbs).

Recommended Torque for #2-56 or M2.5 Panel Mount Screws: 0.23 to 0.34 Nm (2 - 3 in-lbs).

Solder tails suitable for PCB thickness of 1.52mm (.062")

Mating Cycles: 1500 (Series A & B)

5000 (Series Mini-B & Mini-AB)

## Material Requirements

MUSBR connectors are RoHS compliant.

Unless otherwise specified, the materials for each component shall be:

- Contacts: Phosphor Bronze with 30μ" (0.76μm) min Gold over 50μ" (1.27μm) min Nickel
- Housing: Engineering thermoplastic, UL94V-0 rated, Black. White for series B.
- Shell: Die cast Zinc alloy, Nickel plating

Temperature rise: Meets the requirement of 30° C ΔT

Operating temperature -40° to +105° C

## Available Documents

### Drawing Numbers:

P-MUSBR-A111-XX

P-MUSBR-A511-XX

MUSBR rugged Series A, Right Angle PCB Tail, Thread, Shell & Dust Cover Options

MUSBR rugged Series A, Right Angle, Vertical PCB Mount

Contact factory, authorized Amphenol representative or website [www.amphenolcanada.com](http://www.amphenolcanada.com) for additional configurations

## Quality Test Reports

QTR9300491

Qualification Test Report

# Now you're connected!

## Product Numbering System

Product Numbering System		MUSBR	-	X	X	X	X	-	X	X	X
MUSBR	Rugged USB Receptacle Series, Generation 2										
	Receptacle Type Per USN 2.0 <sup>1</sup>										
	A – Standard A Series										
	B – Mini B Series										
	E – Mini AB Series										
	Termination Style										
	1 – Right angle										
	2 – Right angle on PCB with Right Angle Cable Header										
	3 – Right angle on PCB with Right Angle Matching USB Type Connector										
	4 – Right angle on PCB with Terminal Blocks										
	5 – Vertical <sup>2</sup>										
	8 – Right angle on PCB with Vertical Cable Header <sup>2</sup>										
	A – Right angle on PCB with Holes for Wiring (Style 3 PCB) <sup>3</sup>										
	B – Right Angle on PCB with Vertical Single Row Isolated Header <sup>2</sup>										
	E – Right angle on PCB with Vertical Matching USB Type Connector <sup>2</sup>										
	Number of Contacts										
	1 – Standard 4 Contacts per Port for Types A										
	5 – Standard 5 Contacts per Port for Types B & E										
	Colour										
	1 - Black for Types A, B & E										
	Shell & Thread Options <sup>4,5</sup>										
	3 – Standard Shell, Unified Thread										
	4 – Low Profile Shell for Type A, Unified Thread										
	5 – Rear Flange Shell for Types B & E, Unified Thread										
	M – Standard Shell, Metric Thread										
	R – Low Profile Shell for Type A, Metric Thread										
	T – Rear Flange Shell for Types B & E, Metric Thread										
	Dust Cover Options <sup>6</sup>										
	0 - Standard (no dust cover)										
	1 - With grey color dust cover (supplied bulk packed)										
	5 - With black color dust cover (supplied bulk packed)										
	Unique Special Code <sup>7</sup>										
	No Digit – Standard part defined by previous 10 digits										
	1 to 9 - Unique special feature										

### Notes

- For a Micro AB receptacle with epoxy free design, refer to MUSB series receptacle type K.
- Termination styles 8, B & E are currently available for receptacle type A only.
- Termination style A uses the PCB from termination style 3.
- For receptacle type A (Standard A Series), the term standard shell relates to the shell profile. For receptacle types B & E (Mini B & Mini AB), the term standard shell relates to the position of the flange. It is not an indication of connector availability.
- For receptacle type A (Standard A Series), the unified thread is #4-40UNC and the metric thread is M3x0.5. For receptacle types B & E (Mini B & Mini AB), the unified thread is #2-56UNC and the metric thread is M2.5x0.45.
- When dust covers are supplied with the connector, they are not installed. They are supplied in bulk inside each package of connectors.
- Consult with Amphenol for additional termination styles, solder cup contacts, contact tail lengths, mounting styles, non-conductive gaskets or other requirements of interest. See catalogue Accessories page for dust cover option.

Amphenol Canada Corp.  
605 Milner Avenue  
Toronto, Ontario, Canada, M1B 5X6  
+1 416 291 4401

Copyright © Amphenol Corporation 2015 • All rights reserved

Page 3 of 3

www.amphenolcanada.com

**Amphenol**

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION AND SUCH INFORMATION MAY NOT BE DISCLOSED TO OTHERS FOR ANY PURPOSE OR USED FOR MANUFACTURING PURPOSES WITHOUT WRITTEN PERMISSION FROM AMPHENOL CANADA CORP.