MUSB Rugged USB

Product Specification S6046C Rev 1.2

Amphenol

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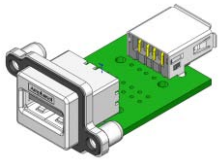
About Amphenol Commercial Products

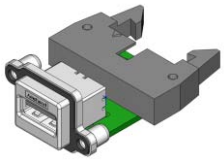
Amphenol's commercial connector products are used in a variety of end user applications including networking, telecom, server & computer, storage & HDD, consumer electronics and entertainment, professional audio & Industrial & Military/Aerospace.

Related Products

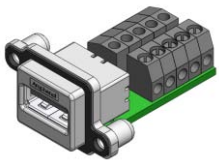
With matching USB



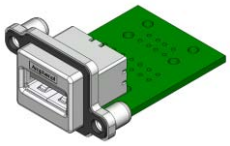
With Cable Header

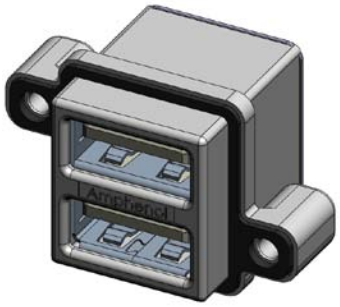


With Terminal Block



With PCB for wiring

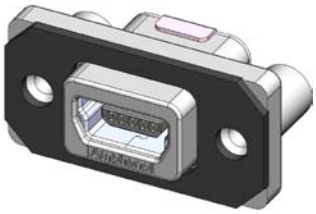




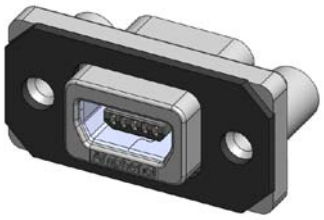
MUSB-C111-30
SERIES A, RIGHT ANGLE, STACKED

MUSB-A511-00
SERIES A, VERTICAL

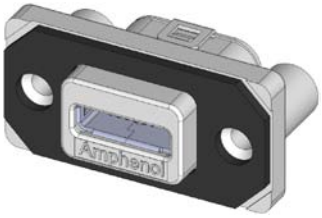
MUSB-D111-30
SERIES B, RIGHT ANGLE



MUSB-B151-34
SERIES MINI-B, RIGHT ANGLE



MUSB-E151-04
SERIES MINI-AB, RIGHT ANGLE



MUSB-K152-X0
SERIES MICRO-AB, RIGHT ANGLE

Overview

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

Availability: Series A (single & stacked), series B, series Mini-B, series Mini-AB, series Micro-AB with right angle and vertical PCB tails. 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 IP67 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

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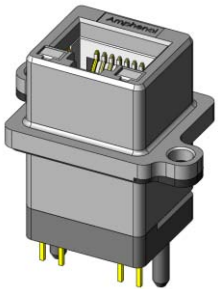
Related Products

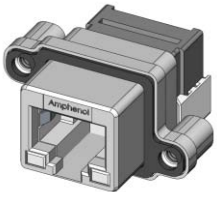
MDB

9 POSITION CONNECTOR SHOWN

MRJ



MRJ-5480-01 SHOWN VERTICAL, PCB TAIL, 8 POSITION RJ45



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

Connector Electrical Characteristics

Parameter	Series A & B	Series Mini-B & Mini-AB	Series Micro-AB
Current rating:	1.5A per contact	1.0A per contact	Up to 1.8A per contact (see dwg)
Contact resistance:	30 mΩ max	50 mΩ max	30 mΩ max
Insulation resistance:	1000 MΩ min	100 MΩ min	100 MΩ min
DWV:	500V AC @ sea level	100V 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)
10000 (Series Micro-AB)

Material Requirements

MUSB 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-MUSB-A211-XX	MUSB rugged Series A, Right Angle, on PCB with R/A cable header. Thread & Dust cover option
P-MUSB-A511-XX	MUSB rugged Series A, Vertical PCB mount
P-MUSB-B151-XX	MUSB rugged Series Mini-B, right angle PCB tail
P-MUSB-CA11-XX	MUSB rugged Series A, stacked, Right angle, on PCB. Thread & Dust cover options
P-MUSB-D411-3X	MUSB rugged Series B, Right Angle, on PCB with terminal block
P-MUSB-E151-XX	MUSB rugged Series Mini-AB, Right Angle PCB tail, Thread & Dust Cover options
P-MUSB-K152-X0	MUSB rugged Series Micro-AB, Right Angle PCB tail, Thread options

Contact factory, authorized Amphenol representative or website www.amphenolcanada.com for additional configurations

Quality Test Reports

QTR9300377	Series Mini-B & Mini-AB
QTR9300378	Series A & B
QTR9300482	Series Micro-AB

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Product Numbering System

MUSB	-	X	X	X	X	-	X	X	X

MUSB	Rugged USB Receptacle, Generation 1

	Receptacle Type Per USB 2.0
	A – Standard A Series
	B – Mini B Series
	C – Standard A Series Stacked
	D – Standard B Series
	E – Mini AB Series
	K – Micro AB Series[1]

	Termination Style
	1 – Right Angle
	2 – Right Angle on PCB with Right Angle Cable Header[2]
	3 – Right Angle on PCB with Right Angle Matching USB Type Connector[2]
	4 – Right Angle on PCB with Terminal Blocks[2]
	5 – Vertical[2]
	8 – Right Angle on PCB with Vertical Cable Header[3]
	A – Right Angle on PCB with Holes for Wiring (Style 3 PCB)[2, 4]
	B – Right Angle on PCB with Vertical Single Row Isolated Header[5]
	D – Right Angle on PCB with Vertical Dual Row Isolated Header[6]
	E – Right Angle on PCB with Vertical Matching USB Type Connector[7]

	Number of Contacts
	1 - Standard 4 per Port for Types A, C & D
	5 - Standard 5 per Port for Types B, E & K

	Insulator Housing Colour
	1 – Black for Types A, B, C & E, White for Type D
	2 – Grey for Type K

	Rear Shield and Thread Options[8, 9]
	0 – No Rear Shield, Unified Thread
	3 – With Rear Shield, Unified Thread
	M – With Rear Shield, Metric Thread
	N – No Rear Shield, Metric Thread

	Dust Cover Options[10]
	0 – With No Dust Cover[11]
	1 – With Grey Dust Cover
	5 – With Black Dust Cover

	Unique Special Code[12]
	No Digit – Standard part defined by previous 10 digits
	1 to 9 – Unique special feature

Notes

1) Receptacle type K (Micro AB) is a generation 2 epoxy free design. It is currently available in right angle only. Consult with Amphenol for the availability of the vertical version.
2) Termination styles 2, 3, 4, 5 & A are currently available for receptacle types A, B, C, D & E only.
3) Termination style 8 is currently available for receptacle types A, C & D only.
4) Termination style A uses the pcb from termination style 3.
5) Termination style B is currently available for receptacle types A & D only.
6) Termination style D is currently available for receptacle type C only.
7) Termination style E is currently available for receptacle types A & C only.
8) Rear shields are optional for receptacle types B & E (Mini B & Mini AB) with right angle termination style. Rear shields are required for all other types with right angle terminations. Rear shields are not available for vertical termination style.
9) For receptacle types A, C & D (Standard A & B Series), the unified thread is #4-40UNC and the metric thread is M3x0.5. For receptacle types B, E & K (Mini B, Mini AB & Micro AB), the unified thread is #2-56UNC and the metric thread is M2.5x0.45.
10) When dust covers are supplied with the connector, they are not installed. They are supplied in bulk inside each package of connectors. For receptacle type C (Standard A Series Stacked), two dust covers are supplied per connector.
11) For receptacle types B & E (Mini B & Mini AB), dust cover code 4 is frequently used. Code 4 connectors are identical to code 0. For example, part number MUSB-B151-34 is identical to MUSB-B151-30.
12) Consult with Amphenol for additional termination styles, solder cup contacts, mounting styles, conductive gaskets or other requirements of interest. See catalogue Accessories pages for dust cover options.

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