# MUSBR Series Rugged USB Connectors

## Type A, Mini B, Mini AB

## RUGGED USB CONNECTOR FOR HARSH ENVIRONMENT APPLICATION, GENERATION 2

Amphenol's MUSBR series USB Connectors serve many markets and applications across the globe including Automotive, Communications, Consumer, Data, Industrial and Medical.

MUSBR series is a line of Generation 2 ruggedized USB connectors with die cast housings and IP67 sealing, designed for Harsh Environment applications. MUSBR series provide reliable performance in extreme conditions for the most demanding applications, and mate with standard USB plugs.

- IP67 environmental sealing protects against water and dust
- Die cast metal housings protect against mechanical damage
- Compact design saves panel space
- Operating temperature range from –40°C to +105°C for extreme conditions
- RoHS compliant to meet environmental standards




### TARGET MARKETS



### FEATURES

- Internal and external seals made with flexible silicone rubber
- Die cast metal housings
- Improved thermal cycling performance
- Multiple options including USB 3.0, Type A, Mini B, Mini AB series
- Low profile shell design available for Type A series
- Similar in size compared to standard equivalents
- Wide variety of mounting and termination options
- RoHS compliant

### BENEFITS

- Excellent sealing to IP67 and higher protection over wide temperature range
- Protects equipment from water and dust incursion
- Mechanically rugged and stable to protect against shock, vibration and impact
- Prevents distortion
- Suitable for outdoor application with wide operating temperature range
- Suitable for a wide variety of mating connectors which are readily available
- Compact design saves panel space
- Able to replace existing standard parts with little to no changes
- Replace virtually any existing standard connector using standard footprints and mounting hardware
- Meets environmental, health and safety requirements

# TECHNICAL INFORMATION

## MATERIAL

- External Shell: Die Cast Zinc, Nickel Plated
- Insulator Housing: High Temperature Resistant Engineering Thermoplastic, Glass Reinforced, UL94V-0
- Panel Gasket: Conductive Silicone Rubber

## MECHANICAL PERFORMANCE

- IP67
- UL: File E145615, Level DUXR2

## ELECTRICAL PERFORMANCE

- Current Rating: Standard series A & B – 1.5A max. per contact, Mini- 1.0A max. per contact
- Contact Resistance: Standard A- 30mΩ max, Mini-50mΩ max
- Dielectric Withstanding Voltage: Standard A-500VAC rms, Mini-100 VAC rms

## SPECIFICATION

- Amphenol Product Specification: USB 2.0

## ENVIRONMENTAL

- Temperature Life w/o Load: Per EIA-364-17, 105°C, 1000 Hours
- Thermal Shock: Per EIA-364-32, -40°C to +125°C, 5 Cycles
- Humidity: Per EIA 364-31, 10 Cycles, 240 Hrs, 25°C to 65°C 90-95%RH, with -10°C Cold Shock
- Mixed Flowing Gas: Per EIA 364-65 Class IIA (Cl2, NO2, H2S & SO2), 14 Day Exposure
- Salt Spray: Per EIA 364-26, 250 Hours, 5% Salt, 35°C
- Solvent Resistance: Isopropyl Alcohol & 5% Sodium Hydroxide Solution, 24 Hrs Each
- Solderability: Per EIA-364-52, 95% Coverage after Category 2 Steam Aging

## APPROVALS AND CERTIFICATIONS

- RoHS

## PACKAGING

- Box

## TARGET MARKETS/APPLICATIONS



Car Navigation Systems
Display Cluster
Electric Vehicle



AC/DC pluggable power supplies
Base Station
Datacom
Optical Transport
Routers
Switches
Telecom



Home Entertainment Equipment
Refrigerator



Data Center
External Portable Storage
High Density Ethernet switching
Router and Server
Storage System



Chemical Detection System
Industrial Control Equipment
Energy Meter
Gaming Machine
Lighting
Measuring Equipment
Parking Meter
POS Machine
Renewable Energy
Robotics
Smart Meter
Vending Machines



Analyzers
Medical Diagnostics
Ultrasound Equipment



**Disclaimer**
Please note that the above information is subject to change without notice.

# PART NUMBER SELECTOR

| MUSBR | — | X | X | X | X | X | X | X |
|---|---|---|---|---|---|---|---|---|

| USB 2.0 Receptacle | |
|---|---|
| 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 |
| 8 | Right Angle on PCB with Vertical Cable Header |
| A | Right Angle on PCB with Holes for Wiring (Style 3 PCB) |
| B | Right Angle on PCB with Vertical Single Row Isolated Header |
| E | Right Angle on PCB with Vertical Matching USB Type Connector |

| Number of Contacts | |
|---|---|
| 1 | Standard 4 Contacts per Port for Types A |
| 5 | Standard 5 Contacts per Port for Types B & AB |

| Colour | |
|---|---|
| 1 | Black for Types A, B & E |

| Shell & Thread Options | |
|---|---|
| 3 | Standard Shell, Unified Thread |
| 4 | Low Profile Shell for Type A, Unified Thread |
| 5 | Rear Flange Shell for Types B & AB, Unified Thread |
| M | Standard Shell, Metric Thread |
| R | Low Profile Shell for Type A, Metric Thread |
| T | Rear Flange Shell for Types B & AB, Metric Thread |

| Dust Cover Options | |
|---|---|
| 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 | |
|---|---|
| No Digit | Standard part defined by previous 10 digits |
| 1 to 9 | Unique special feature |

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