PowerRail 200A

The PowerRail™ 200A is an easy-to-install bus bar and cable-interconnect system. It allows rapid connect/disconnect, increasing equipment uptime. The Methode 200 Amp PowerRail is available in lengths ranging from 6 inches to 6 feet. The standard 200A version is a two conductor system and a variety of interconnect options are available.

Key specs:
- Bus Bar-equivalent performance: Very low resistance, essentially the same as a conventional bus bar
- Connect to bus bar, cable or another connector
- Uses 12 AWG through 4 AWG cable
- Locking connectors available in squeeze-to-release or jack screw and panel mount style
- Keyed housing ensures proper mating polarity
- Mounting options available for front or rear attachment
- Cable or bus bar connections available for input and/or output
- Rated for 600V
- Silver over nickel plating
- Full power is available anywhere along the rail

Features and benefits:
- Easy installation; lowers system installation cost by reducing connection time
- Standard product eliminates development time and tooling costs
- Cost-effective
- High power density
- Eliminates discrete connectors
- Fast power connection – simply click the mating connector into place
- Reliable connection: The mating connector is locked in place with squeeze-to-release finger-actuated clips or jack screw locking mechanism
- Low voltage drop results in better system performance
- Universal configuration - One rail will accommodate different wire gauges and different width bus bar tabs
- Realize the benefits of both conventional bus bar and PowerRail by mounting one to the other

PowerRail 200A Construction
- Plated and heat treated Be/Cu louver contacts
- Formed plated copper rail
- Injection molded glass-filled nylon housing
Interconnect options

The upper left illustration shows the conventional attachment method using squeeze-to-release or jack screw connectors.

The two lower illustrations show an optional blade assembly that extends from the end of the PowerRail rather than plugging into the top. This allows easy connection to power cables, especially to Methode’s dual-bolt FusionLug connector.

**Interconnect Part Numbering System**

Example:

D-TAB-200-STR-8

- 4, 8, 10 and 12 AWG
- (STR) Squeeze-to-release
- (JCK) Jack Screw
- (200) 200 amp
- (TAB) Tab Blade Connector
- (D) Double

Consult the factory for blade contact termination

**Rail Part Numbering System**

Example:

D–CPR–200 – 48.00IN – S – BLK

- (BLK) Black
- (S) Silver over nickel plating
- (48IN) 48 inches, in 6” increments or mm, in 152.4mm increments
- Standard prefix for 200A PowerRail
### Electrical specifications*

<table>
<thead>
<tr>
<th>Description</th>
<th>Condition</th>
<th>Value/limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current rating</td>
<td>PowerRail conductor, Power louvered contact</td>
<td>200A continuous, 50A per linear inch</td>
</tr>
<tr>
<td>Interconnect resistance</td>
<td>Interface between Power Blade and PowerRail louvered contact</td>
<td>0.2 mΩ max</td>
</tr>
<tr>
<td>Conductivity</td>
<td>C11000 copper alloy, 20°C</td>
<td>100% IACS 0.591 MegaSiemens/cm (about 99% that of pure copper)</td>
</tr>
<tr>
<td>Resistivity</td>
<td>C11000 copper alloy, 20°C</td>
<td>10.3 ohms-cmil/ft, 1.71 microhm-cm</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>EIA-364-21, Apply 500 VDC between terminals and ground.</td>
<td>5 X 10^9 Ω min</td>
</tr>
<tr>
<td>Operating voltage</td>
<td></td>
<td>600VDC max</td>
</tr>
<tr>
<td>Dielectric strength</td>
<td>EIA 364-20, apply 1500 VDC for 1 minute between terminals and ground</td>
<td>No breakdown</td>
</tr>
<tr>
<td>Inductance</td>
<td></td>
<td>≤ 500nH / meter</td>
</tr>
</tbody>
</table>

### Mechanical specifications

<table>
<thead>
<tr>
<th>Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Rail conductor</td>
<td>ASTM-B-187</td>
<td>Copper alloy</td>
</tr>
<tr>
<td>Plating, rail, rail contact and connector blade contacts</td>
<td>Silver plate per ASTM B700 Nickel plating per SAE-AMS-QQ-N-290</td>
<td>Silver plate over nickel plate</td>
</tr>
<tr>
<td>Rail contact</td>
<td>ASTM-B-194</td>
<td>Beryllium copper alloy</td>
</tr>
<tr>
<td>Rail housing, end caps, main insulator and connectors</td>
<td>U.L. 94</td>
<td>Nylon, 94 V-0 rated</td>
</tr>
<tr>
<td>Blade contacts</td>
<td>ASTM-B-301 or ASTM B16</td>
<td>Copper or brass alloy</td>
</tr>
<tr>
<td>Insertion / extraction force</td>
<td>0.250 inch wide contact</td>
<td></td>
</tr>
<tr>
<td>Blade Insertion</td>
<td>5 lb max</td>
<td></td>
</tr>
<tr>
<td>Blade Retention</td>
<td>8 oz min</td>
<td></td>
</tr>
<tr>
<td>Locking Insulator to Rail</td>
<td>20 lb min</td>
<td></td>
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</table>

### Environmental specifications*

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<tr>
<th>Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Temperature range</td>
<td>Operating, Non-operating, Absolute max, any part of the PowerRail assembly</td>
<td>+10°C to +90°C, -40°C to +105°C</td>
</tr>
<tr>
<td>Humidity range</td>
<td>Operating, non-condensing, Non-operating, non-condensing</td>
<td>10%-90% RH, 5%-93% RH</td>
</tr>
<tr>
<td>Altitude</td>
<td>Operating, Non-operating</td>
<td>0 to 2000 meters</td>
</tr>
<tr>
<td>Random vibration</td>
<td>EIA-364-28D test condition VII, letter D, Mate connectors with rail and vibrate 15 minutes each axis.</td>
<td>No damage</td>
</tr>
<tr>
<td>Mechanical Shock</td>
<td>EIA-364-27, Mate connector with rail and shock at 10g with 1/2 sine waveform (11 milliseconds) shocks in the X, Y, Z axes (18 shocks total).</td>
<td>No damage</td>
</tr>
<tr>
<td>Humidity</td>
<td>EIA-364-31B, Mate connectors with rail, expose to 40°C +/-2°C with relative humidity of 90-95% for 96 hours.</td>
<td>No visible damage, Contact resistance change +106%</td>
</tr>
<tr>
<td>Thermal Shock</td>
<td>EIA-364-32, mate connectors with rail, expose to 5 cycles from −55°C to +125°C</td>
<td>No visible damage</td>
</tr>
</tbody>
</table>
High Temperature Life test  
EIA-364-17, Mate connectors with rail, expose to 250 hours at +105°C  
No visible damage, Contact resistance change ±9%

Check – this was on the data sheet: (EIA-364-17)

Transportation vibration  
ASTM 4169 level 2  
Random vibration for 3 hours  
No visible damage  
Interconnect resistance 0.2 mΩ max

Durability  
EIA-364-09C 250 mating/un-mating cycles at 10 cycles per minute. Measure resistance after 250 cycles.  
No visible wear or damage to plated surfaces; Interconnect resistance 0.2 mΩ max

Safety and regulatory specifications

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</table>
| Safety        | IEC 60950  
EN 60950  
UL 60950  | Ratings specific to application                |
| RoHS          | IEC Directive 2002/95/EC  
(Restriction of Hazardous Substances Directive) | < 0.1% Lead (Pb)  
< 0.1% Mercury (Hg)  
< 0.01% Cadmium (Cd)  
< 0.1% Hexavalent Chromium (Cr [VI])  
< 0.1% Polybrominated Biphenyls (PBB)  
< 0.1% Polybrominated Diphenyl Ethers (PBDE)  
< 0.1% Decabromodiphenyl Ether (DecaBDE) |

*Test report available upon request

Optional connectors

**Jack screw connector (JCK)**  
Suitable for 4 AWG and 6 AWG wire

**Jack screw connector (JCK)**  
Suitable for 8 AWG, 10 AWG, and 12 AWG wire

**Squeeze-to-release connector (STR)**  
Suitable for 8 AWG, 10 AWG, 12 AWG wire

**Recommended Mating Blade Detail**

**Methode FusionLug™** can be used to provide a connection to the PowerRail
U.S. Power Solution Group Design Centers

**Methode Power Solutions Group**

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www.methode.com

Both of these design and engineering centers provide design, development, engineering, sales and support for power cables, power interconnects, PowerRail™ and power system assemblies. Other design and manufacturing centers are found throughout the world:

<table>
<thead>
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