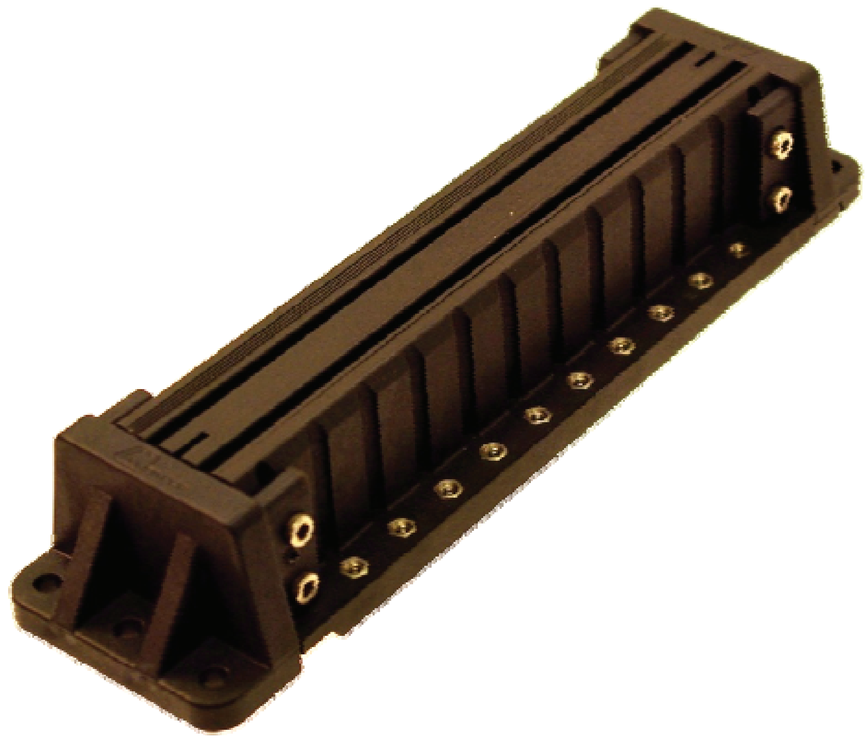
PowerRail 200A



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

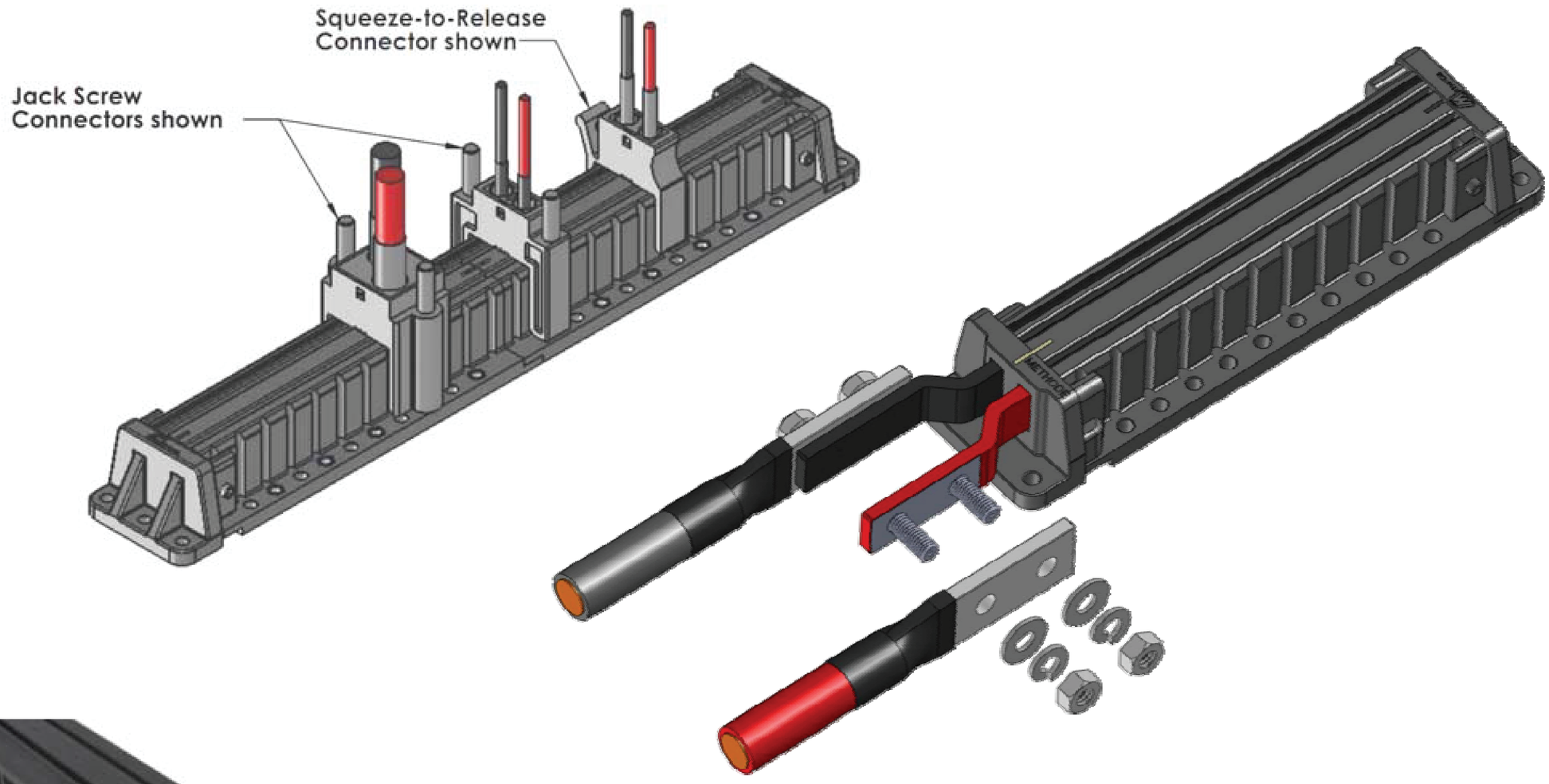
- Easy installation; lowers system installation cost by reducing connection time
- Standard product eliminates development time and tooling costs
- Cost-effective
- High power density
- Eliminates discrete connectors
- Fast power connection – simply click the mating connector into place
- Reliable connection: 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

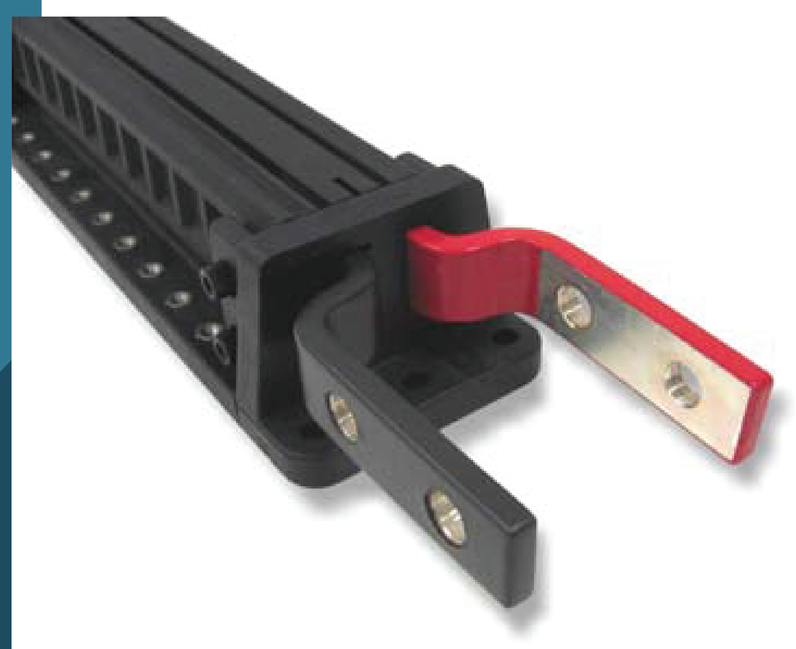
PowerRail 200A Construction

Plated and heat treated Be/Cu louver contacts

Formed plated copper rail

Injection molded glass-filled nylon housing





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*

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

Mechanical specifications

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

Environmental specifications*

Description	Condition	Value/limits
Temperature range	Operating Non-operating Absolute max, any part of the PowerRail assembly	+10°C to +90°C -40°C to +105°C +105°C
Humidity range	Operating, non-condensing Non-operating, non-condensing	10%-90% RH 5%-93% RH
Altitude	Operating Non-operating	0 to 2000 meters 0 to 12,000 meters
Random vibration	EIA-364-28D test condition VII, letter D, Mate connectors with rail and vibrate 15 minutes each axis.	No damage
Mechanical Shock	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).	No damage
Humidity	EIA-364-31B, Mate connectors with rail, expose to 40°C +/-2°C with relative humidity of 90-95% for 96 hours.	No visible damage Contact resistance change +106%
Thermal Shock	EIA-364-32, mate connectors with rail, expose to 5 cycles from –55°C to +125°C	No visible damage

High Temperature Life test	EIA-364-17, Mate connectors with rail, expose to 250 hours at +105°C Check – this was on the data sheet: (EIA-364-17)	No visible damage, Contact resistance change ±9%
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

Description	Condition	Value/limits
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

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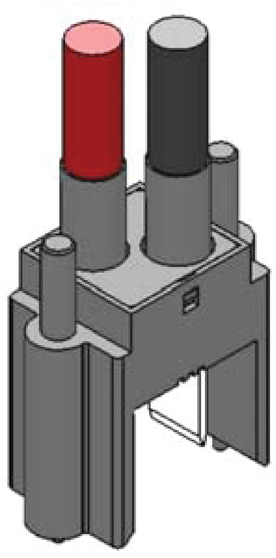
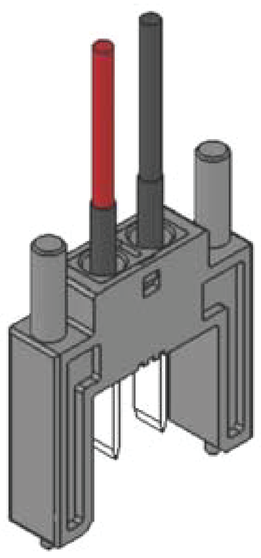
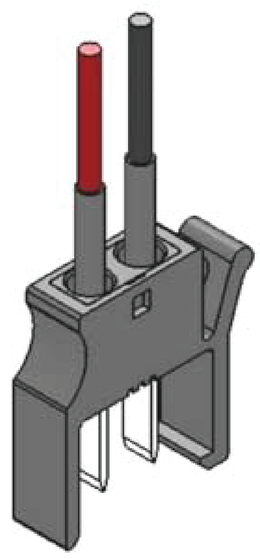
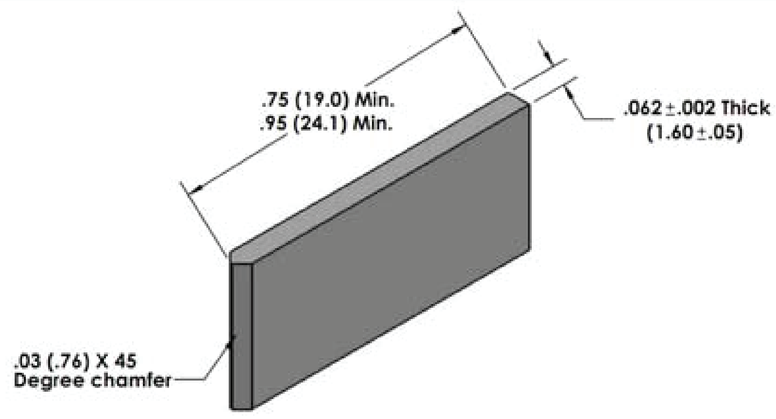
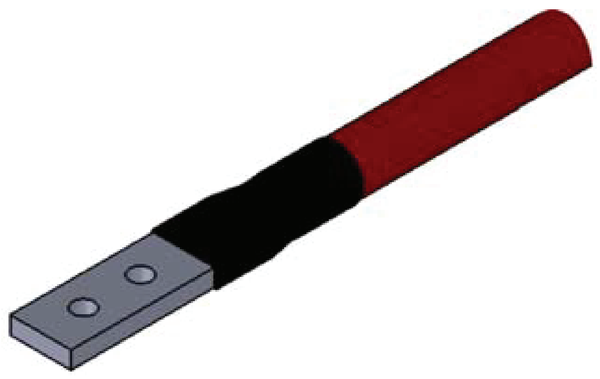
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>Jack screw connector (JCK) Suitable for 4 AWG and 6 AWG wire</td><td>Jack screw connector (JCK) Suitable for 8 AWG, 10 AWG, and 12 AWG wire</td><td>Squeeze-to-release connector (STR) Suitable for 8 AWG, and 10 AWG, 12 AWG wire</td></tr>
<tr><td colspan="2"> 
</td><td>  </td></tr>
<tr><td colspan="2">Recommended Mating Blade Detail</td><td>Methode FusionLug™ can be used to provide a connection to the PowerRail</td></tr>
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PowerRail 200A configuration