

MQUAD Power Connector



Overview

Utilizing the efficient high-current design of the PowerBud® contact technology, the MQUAD power connectors carry high power in a small package and features self-aligning contacts enabling blind-mating in hidden engagement applications. Contact terminations can be crimp wire, wired lugs, or bus bar attached.

Key Specifications

- High current capacity - up to 265 A per contact when bus terminated
- Low insertion force
- Low voltage drop
- Low contact resistance
- Low contact wear
- High cycle life
- Available in 2 sizes - 6.4mm & 9.1mm
- Multiple points of contact - low loss
- UL Standard 1977 Compliant
- CSA Standard C22.2 No. 182.3-M1987 Compliant
- RoHS compliant

MQUAD Power Connector

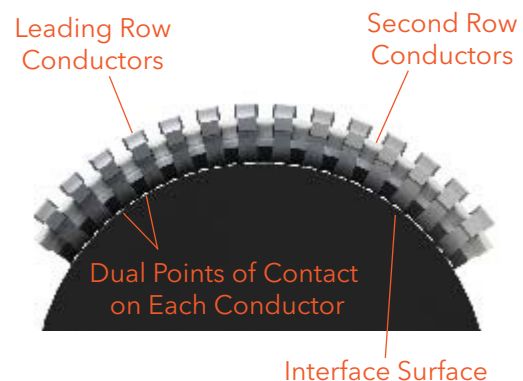
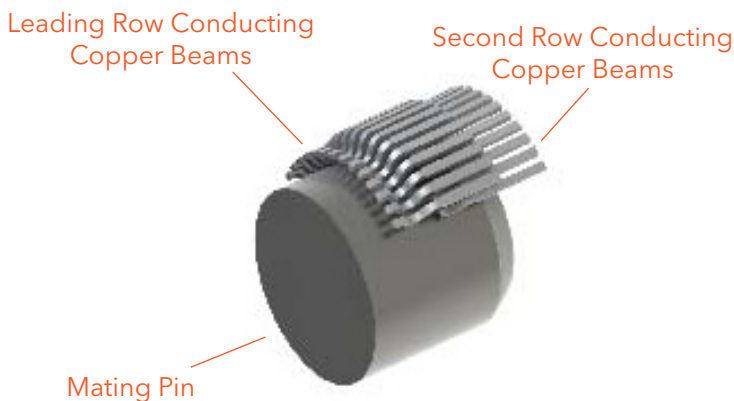
The PowerBud® Contact System

Methode's PowerBud® power contacts use an innovative, multiple contact point design that creates lower insertion force, lower temperature rise, lower power loss and higher cycle life than conventional power connectors. This unique design uses two rows of performance-engineered copper-alloy conductors arranged one over the other, which creates highly redundant contact points. This feature lowers both contact resistance and normal contact force. The PowerBud's insertion force is three to five times lower than equivalently rated electrical connectors. Less metal-on-metal wear during mating and unmating translates to a typical 10,000 cycle life. Additionally, PowerBud's power connector contact resistance is two to three times lower than equivalently-rated power connectors.



How Does It Work?

The PowerBud uses two rows of conductors arranged one over the other. The material of the beams is a proprietary performance-engineered copper alloy which is substantially better than the more commonly used beryllium copper alloy.



Each copper alloy beam includes a slight indentation in the finger tip to create dual contact points, adding to the massively parallel contact points.

MQUAD Power Connector

Identification:

MQUAD Pin Diameter	Termination Type	Part Number			
		Pin		Socket	
		Housing	Contact	Housing	Contact
6.4 mm	Bus Bar, M5 Thread	6316-06648-01100	9104-06655-02104	6315-06649-01100	9303-06656-01104
	Crimp, 4 AWG		9104-06454-02104		9303-06442-01104
	Crimp, 8AWG		9104-07303-02104		9303-07304-01104
9.1 mm	Bus Bar, M6 Thread	6316-07080-01100	9104-07215-02104	6315-07078-01100	9303-07081-01104
	Crimp, 2/0 AWG		9104-06933-02104		9303-07207-01104

Electrical & Mechanical Specifications:

MQUAD Pin Diameter	Termination Type	Operating Current Per Contact @ 30°C T-Rise	Typical Contact Resistance	Voltage Rating	Dielectric Withstand Voltage	Typical Connector Mating Force	Blind Mate Gatherability	Temperature Rating	
6.4 mm	Bus Bar, M5 Thread	175 A	60 μΩ	600 VAC & 600 VDC	2200 VAC & 2200 VDC	21 N (5 lbs)	2.5 mm	- 40 to 130° C	
	Crimp, 4 AWG	100 A	70 μΩ						
	Crimp, 8 AWG	60 A	70 μΩ						
9.1 mm	Bus Bar, M6 Thread	265 A	45 μΩ			26 N (6 lbs)	2.5 mm		
	Crimp, 2/0 AWG	180 A	55 μΩ						

Materials & Finishes:

Description	Material	Finish
Insulators	Polyester (PBT), UL 94 V-0	-
Socket Contacts	Copper Alloy and Stainless Steel	Silver over Nickel
Pin Contacts	Copper Alloy	Silver over Nickel

Regulatory Specifications:

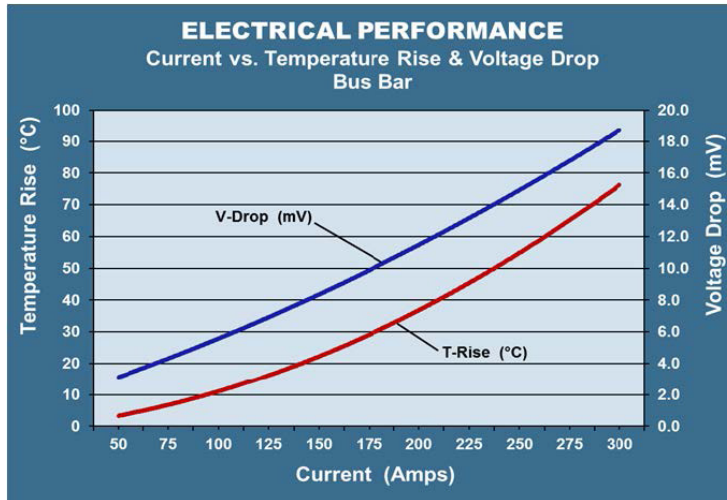
SAFETY: UL Standard 1977, CSA Standard C22.2 No. 182.3-M1987

UL file Number E303434

RoHS: IEC Directive 2002/95/EC

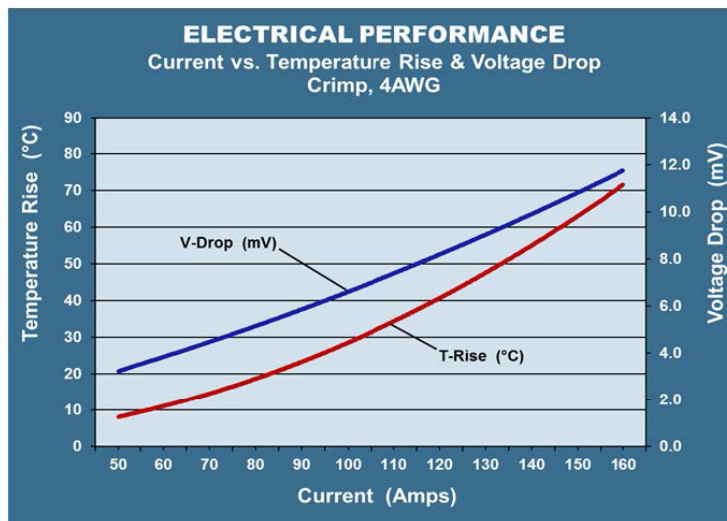
MQUAD Power Connector

Electrical Performance:



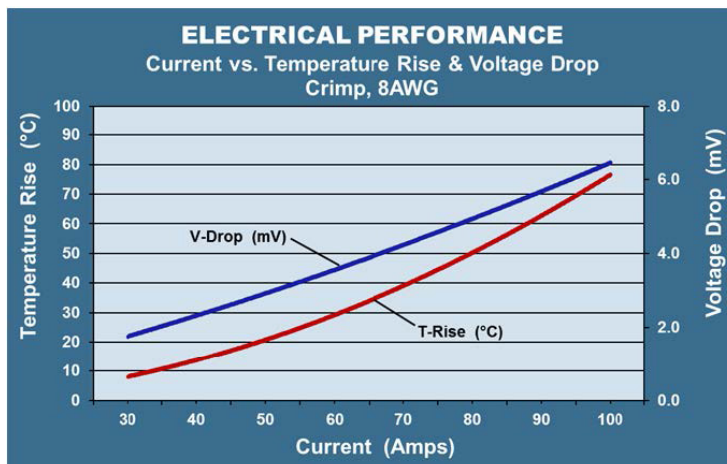
TEST CONDITION:

Normalized graph shows MQuad 6.4mm connector mated pair electrical performance for temperature rise and voltage drop from 50 amps to 300 amps through individual contacts. Current is 175 amps at a temperature rise of 30°C and calculated resistance was 60 $\mu\Omega$. Contacts have M5 internal threads terminated onto a 25.4mm x 3.2 mm copper bus conductor. Contacts are hooked up in series applying equivalent current through all simultaneously.



TEST CONDITION:

Normalized graph shows MQuad 6.4mm connector mated pair electrical performance for temperature rise and voltage drop from 50 amps to 160 amps through individual contacts. Current is 100 amps at a temperature rise of 30°C and calculated resistance was 70 $\mu\Omega$. Contacts have 4 gauge crimp barrels terminated onto PowerFlex 1000, 4 AWG stranded cable. Contacts are hooked up in series applying equivalent current through all simultaneously.

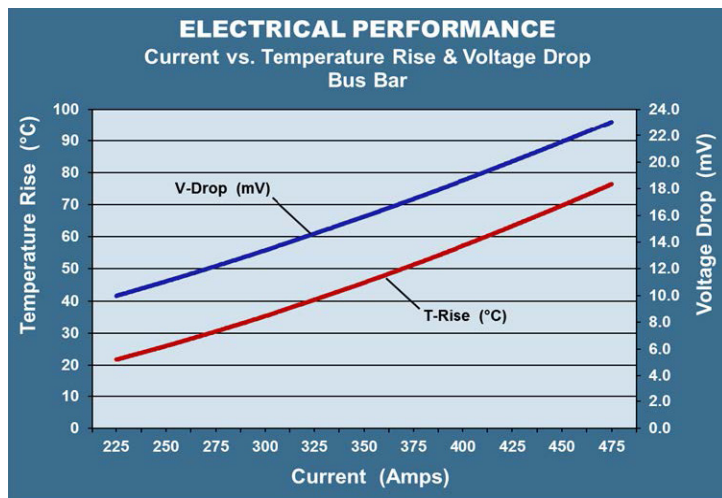


TEST CONDITION:

Normalized graph shows MQuad 6.4mm connector mated pair electrical performance for temperature rise and voltage drop from 30 amps to 100 amps through individual contacts. Current is 60 amps at a temperature rise of 30°C and calculated resistance was 70 $\mu\Omega$. Contacts have 8 gauge crimp barrels terminated onto PowerFlex 1000, 8 AWG stranded cable. Contacts are hooked up in series applying equivalent current through all simultaneously.

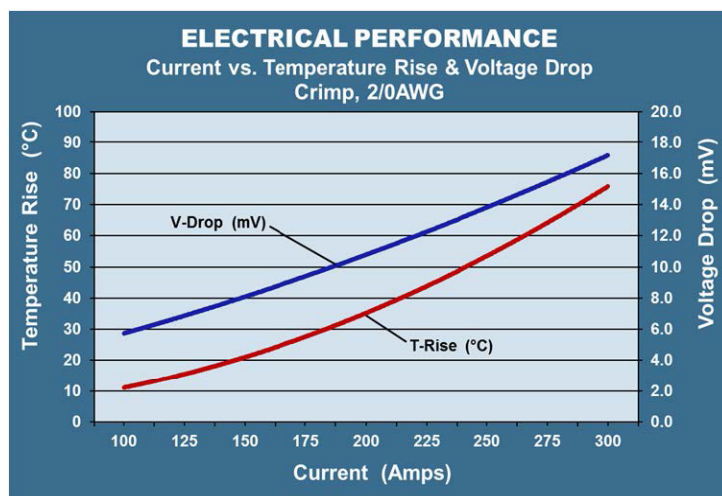
MQUAD Power Connector

Electrical Performance:



TEST CONDITION:

Normalized graph shows MQuad 9.1mm connector mated pair electrical performance for temperature rise and voltage drop from 225 amps to 475 amps through individual contacts. Current is 265 amps at a temperature rise of 30°C and calculated resistance was 45 $\mu\Omega$. Contacts have M6 internal threads terminated onto a 38.1mm x 4.8 mm copper bus conductor. Contacts are hooked up in series applying equivalent current through all simultaneously.



TEST CONDITION:

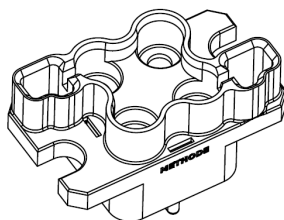
Normalized graph shows MQuad 9.1mm connector mated pair electrical performance for temperature rise and voltage drop from 100 amps to 300 amps through individual contacts. Current is 180 amps at a temperature rise of 30°C and calculated resistance was 55 $\mu\Omega$. Contacts have 2/0 gauge crimp barrels terminated onto PowerFlex 1000, 2/0 AWG stranded cable. Contacts are hooked up in series applying equivalent current through all simultaneously.

MQUAD Power Connector

Specifications

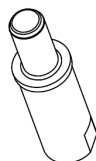
6.4 MM

- PIN CONNECTOR -



PN: 6316-06648-01100
SUBASSEMBLY INSULATOR HOUSING
INCLUDING RETENTION SPRINGS
NO CONTACTS

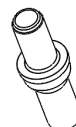
- PIN CONTACTS-



PN: 9104-06655-02104
6.4 MM PIN DIAMETER
M5 THREAD TERMINATION

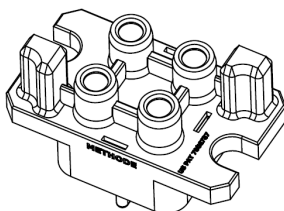


PN: 9104-06454-02104
6.4 MM PIN DIAMETER
4 AWG CRIMP TERMINATION



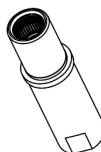
PN: 9104-07303-02104
6.4 MM PIN DIAMETER
8 AWG CRIMP TERMINATION

- SOCKET CONNECTOR -

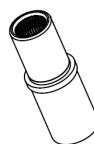


PN: 6315-06649-01100
SUBASSEMBLY INSULATOR HOUSING
INCLUDING RETENTION SPRINGS
NO CONTACTS

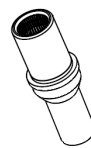
- SOCKET CONTACTS-



PN: 9303-06656-01104
6.4 MM PIN DIAMETER
M5 THREAD TERMINATION



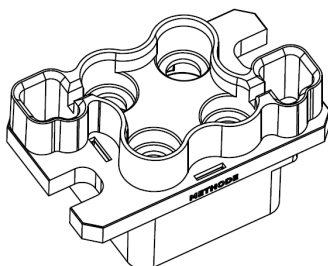
PN: 9303-06442-01104
6.4 MM PIN DIAMETER
4 AWG CRIMP TERMINATION



PN: 9303-07304-01104
6.4 MM PIN DIAMETER
8 AWG CRIMP TERMINATION

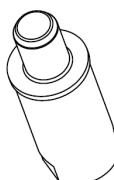
9.1 MM

- PIN CONNECTOR -

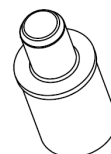


PN: 6316-07080-01100
SUBASSEMBLY INSULATOR HOUSING
INCLUDING RETENTION SPRINGS
NO CONTACTS

- PIN CONTACTS-

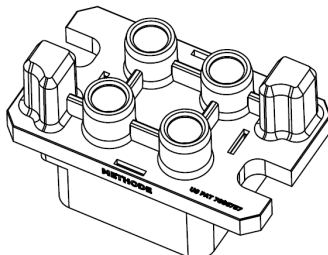


PN: 9104-07215-02104
9.1 MM PIN DIAMETER
M6 THREADED TERMINATION



PN: 9104-06933-02104
9.1 MM PIN DIAMETER
2/0 AWG CRIMP TERMINATION

- SOCKET CONNECTOR -



PN: 6315-07078-01100
SUBASSEMBLY INSULATOR HOUSING
INCLUDING RETENTION SPRINGS
NO CONTACTS

- SOCKET CONTACTS-



PN: 9303-07081-01104
9.1 MM PIN DIAMETER
M6 THREADED TERMINATION



PN: 9303-07207-01104
9.1 MM PIN DIAMETER
2/0 AWG CRIMP TERMINATION

Please contact Methode
for installation instructions.