



# BUSBAR CONNECTIVITY

## QUICK REFERENCE GUIDE

### THINGS TO CONSIDER WHEN CHOOSING BUSBAR PRODUCTS

**Application:** Properties like dimensions, shape, isolation, plating, base material, and use of connectors should be considered when choosing a busbar product.

**Current and Voltage:** Does the connector require power only, or a combination of power and signal? How much current is required in the application? Keep in mind that busbar products performance is usually measured in amperes (or amps). The voltage is also highly important as it defines the spacing between the contacts and is related to safety requirements.

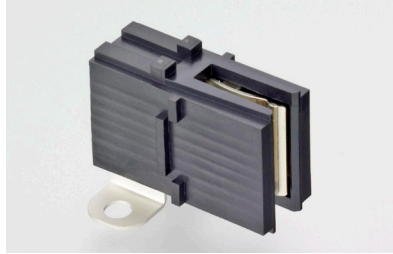
**Hot-Pluggability:** Will the application be mated while under electrical load? If so, a hot-pluggable connector is required. Many of the products in this guide have been approved for use in hot-plug applications.

### TYPICAL POWER CONNECTOR APPLICATIONS

- Busbar based power distribution
- Power racks
- Rack mounted switching power supplies
- Core network energy systems
- Cellular base stations
- PSU power distribution
- Servers, storage & network routers
- Industrial
- Computer
- Modular power supply
- Alternative (green) energy systems
- Power inverters

## CROWN CLIP Connectors

### CROWN CLIP Jr. Connectors

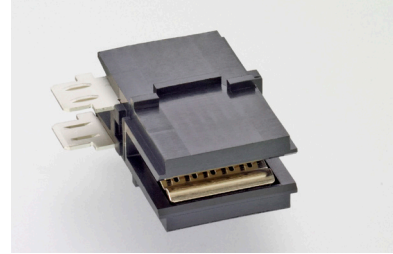


**Screw Mount**

**Reference Part Numbers\***

1982995-1 | 1982995-2

- Mates directly to a power busbar
- Provides a space efficient interconnection in solder or screw mount configurations
- Low insertion/extraction forces
- Ideal for power supply/distribution applications
- Busbar misalignment:  $\pm .75\text{mm}$



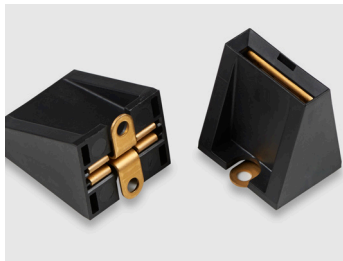
**Solder Tail**

**Reference Part Numbers\***

2178410-1 | 2178411-1 | 1551953-1

- Blind mate
- Hot pluggable
- Copper busbar, plated nickel or suitable alternative
- Current = 170A
- Anti-overstress feature
- Mating busbar thickness:  $3.0 \pm 0.1\text{mm}$

### CROWN CLIP Senior Connectors



**CROWN CLIP Sockets**

**Reference Part Number\***

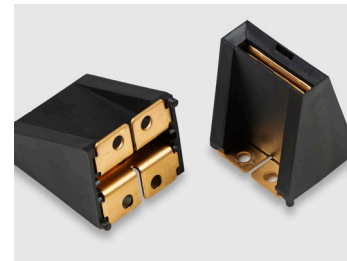
1643906-1



**CROWN CLIP II Sockets**

**Reference Part Number\***

1643903-1



**Dual CROWN CLIP Sockets**

**Reference Part Number\***

1926671-1

**CROWN CLIP Sockets Features:**

- Compact, high-current, blind-mate design. Supports true hot-plug, complies with safety regulatory requirements for current interruption under load.
- Utilizes the well-known ELCON CROWN BAND contact technology.
- CROWN CLIP connector could mate with the solid busbar blade (CROWN CLIP Std) or laminated busbar blade (CROWN CLIP II and Dual CROWN CLIP).
- CROWN CLIP Std is a single pole, and floating mount socket. CROWN CLIP II is a dual pole, floating mount socket, offering  $\pm 1.0\text{mm}$  floating contact and  $\pm 6^\circ$  misalignment capability. Dual CROWN CLIP is a dual-pole, feed-through socket, allowing insertion of mating blade from both top or bottom of socket.
- Mating busbar blades to be  $.125''$  (3.18mm) or  $.118''$  (3.00mm) thick. Insertion length  $.650''$  (16.50mm) minimum,  $1.00''$  (25.40mm) maximum.

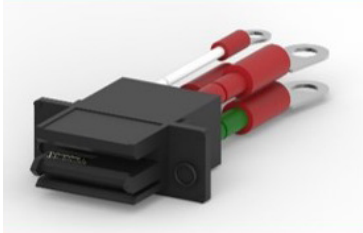
	Part Number	Length (mm [in1])	Width (mm [in1])	Comment	Rated Current	Current Interruption
<b>CROWN CLIP</b>	1643906-1	36.45 [1.435]	25.40 [1.000]	Single Pole	300A	100A at 48V 200A at 42V
<b>CROWN CLIP II</b>	1643903-1	36.45 [1.435]	25.40 [1.000]	Dual Pole	300A	100A at 48V 200A at 42V
<b>Dual CROWN CLIP</b>	1926671-1	35.56 [1.400]	25.40 [1.000]	Single OR Dual Pole	350A	100A at 60V 200A at 5V
	2204899-1	30 [1.18]	20.6 [0.81]			
<b>CROWN CLIP Jr.</b>	1982995-1 1982995-2 2178410-1 2178411-1 2178531-1 1551953-1	35.56 [1.400]	26.67 [1.050]	Feed Through	170A	-

\*Part numbers listed are examples of some available samples, please visit website for additional and mating part numbers

## Features

- Board-to-Busbar, Wire-to-Busbar
- Silver plated Copper alloy
- Mate with .125" or .062" thick plated busbar providing a separable connection that eases assembly, inspection, and troubleshooting
- Ideal for computer, industrial control, modular power supply or other applications that demand low millivolt drop and reliable separation. Commonly used in rack-mounted equipment with busbar architecture.
- Blind mateable (misalignment up to + .060" [1.52mm] for both series)

## Busbar Connector Overview



**50A Connector**  
2204288-1



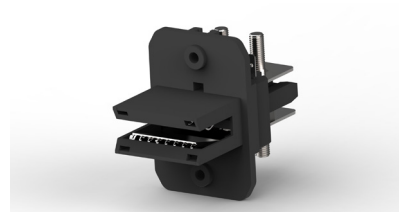
**200A Connector**  
2204080-1



**300A Connector**  
2204761-1



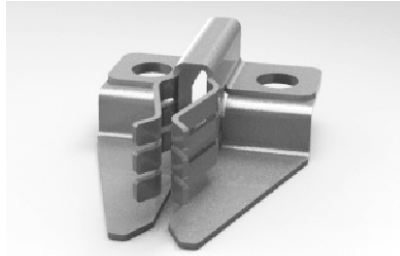
**500A Connector**  
2204273-2



**Dual Pole 500A Connector**  
2204866-1

Part Number	Power Rating	Busbar Mating Width	Application
2204761-1	12V or 48V, 300A	3mm	Power Shelf, BBU Shelf, Cubby Shelf
2204288-1	12V or 48V, 50A	3.56mm	Power Shelf, BBU Shelf, IT Tray
2204600-1	12V or 48V, 125A	3mm	Power Shelf, BBU Shelf, IT Tray
2204273-1	12V or 48V, 500A	3mm	Power Shelf, BBU Shelf, Cubby Shelf
2204080-1	12V or 48V, 200A	3mm	Power Shelf, BBU Shelf, IT Tray
2204866-1	12V or 48V, 500A	6mm	BBU Shelf, IT Tray
2204761-1	12V or 48V, 300A	3mm	Power Shelf, BBU Shelf, IT Tray

## 125 Series



**Reference Part Number\***  
104502-1



**Reference Part Number\***  
104501-1



**Reference Part Number\***  
213647-1

- Contact Rated Current = 500A
- 100 mating cycles minimum
- 1" [25.4mm] minimum width busbar

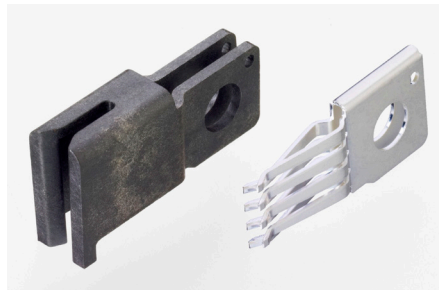
Series	Part Number	Dimensions		
		"A" (Width)	"B" (Height)	"C" (Length)
125 Series Fits Busbar .125 [3.18] Thick	104502-1*	<b>2.290</b> 58.17	<b>1.141</b> 28.99	<b>3.200</b> 81.28
	104501-1*	<b>.850</b> 21.59	<b>1.122</b> 28.5	<b>3.294</b> 83.67
	213647-1	<b>1.250</b> 31.75	<b>1.141</b> 28.99	<b>1.993</b> 50.61
	2212011-1	<b>1.25</b> 31.8	<b>1.01</b> 25.8	<b>2.00</b> 50.9

\*Busbar or Cable Power Feed

## 062 Series



**Reference Part Number\***  
104729-1



**Reference Part Number\***  
104742-2

Series	Part Number	Dimensions		
		"A" (Width)	"B" (Height)	"C" (Length)
062 Series Fits Busbar .062 [1.57] Thick	104729-1	<b>1.360</b> 34.54	<b>.705</b> 17.91	<b>1.342</b> 34.09
	104742-2	<b>.356</b> 9.04	<b>.705</b> 17.91	<b>1.342</b> 34.09

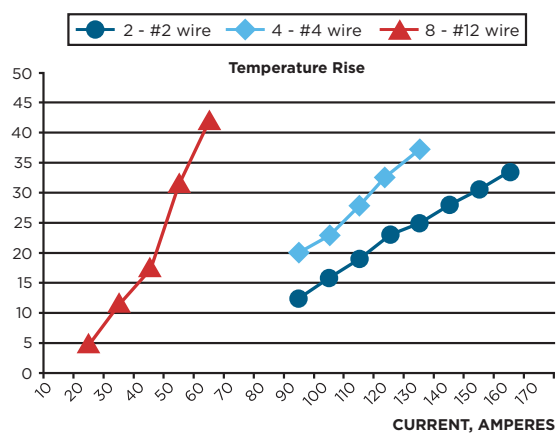
- Contact Rated Current = 250A
- 50 cycle minimum
- ½" [12.7mm] minimum width busbar

\*Part numbers listed are examples of some available samples, please visit website for additional and mating part numbers



## Features

- Replacement for threaded studs
- No loose nuts = no fretting/heat rise
- Quick Connect/Disconnect
- Safety Locking feature
- Currents from 50A to 250A
- Wire sizes from 2.5 to 95mm<sup>2</sup>
- Color coding available
- Straight and right angle versions



## Pin Contacts - Swage Type

Type	Type	Size	Current Rating	Part No
Pin Contact	Swage	#8	50A	6648221-1
Pin Contact	Swage	#4	120A	6648222-1
Pin Contact	Swage	#2	150A	6648223-1
Pin Contact	Swage	12mm	250A	1857523-3

## Socket Connectors - Right Angle

Part No	Size	Wire Size	Current Rating	Color*
6648237-1	#8	AWG #12		Black
6648228-1	#8	AWG #8	50A	Black
1766484-1	#8	AWG #6		Black
6648235-1	#4	AWG #8		Black
6648239-1	#4	AWG #6	110A	Black
6648236-1	#4	AWG #4		Black
6648238-1	#2	AWG #2	150A	Black
6648234-1	#2	AWG #0		Black
1857547-1	12mm	95mm <sup>2</sup>	250A	Red

\*Black, Red and Blue colors available

## Pin Sockets - Screw and Washer Type

Type	Type	Part No	Size	Current Rating
Pin Contact	Screw & Washer	2085957-1	#4	120A
Pin Contact	Screw & Washer	6648226-1	#2	150A

## Insulation Boots

Part No	Size	Color
1651003-1	#4 #8	Black
1651003-2	#4 #8	Red
1651003-3	#4 #8	Grey
1651003-4	#4 #8	Blue
1766600-1	#2	Black
1766600-2	#2	Red
1766600-3	#2	Grey
1766600-4	#2	Blue

## Socket Connectors - Straight

Type	Size	Wire Size	Current Rating	Color	Part No
Plastic locking hood	#8			Black	1643279-1
Plastic locking hood	#8			Red	1643279-2
Plastic locking hood	#8			Blue	1643279-3
Socket contact	#8	#8	50A		6648317-1
Plastic locking hood	#4			Black	1651766-1
Socket contact	#4	#4	120A		6648434-1

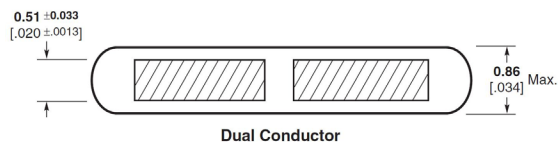
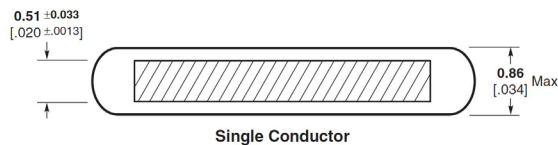
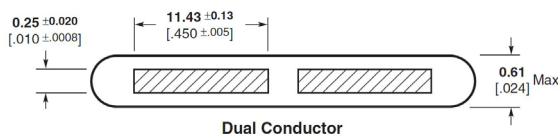
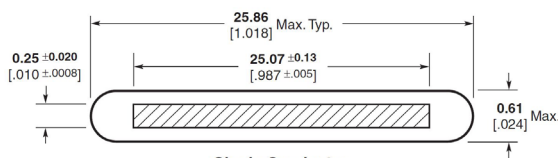
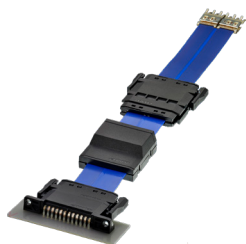
Part numbers listed are examples of some available samples, please visit website for additional and mating part numbers

## Features

- Insulated flat copper cable conductors and associated interface components enable solutions to power distribution challenges through its unmatched packaging flexibility.
- Single and dual conductor cable types with various conductor and insulation thicknesses available. Standard cable types support 80-135 Amps and operating voltages up to 600V.
- Flat power cables offer a number of advantages over both round jacketed power cables or traditional busbars.
  - Variety of interfaces for end of cable or mid-cable terminations enable high application versatility and customization.
  - Flat cables can be easily formed and will hold their shape, enabling high packaging flexibility. Cables can be easily routed through confined spaces.
  - Fully touch-safe. Less copper compared to round jacketed cable; therefore less weight and lower cost per ampere of rated current.

## Copper Cable Options

Part Number	Width (mm [in1])	Thickness (mm [in1])	Copper Conductor(s) W (inch[mm]) x T (inch [mm])	Color	Operating Voltage	Max Current (A)
1-765210-7	1.018 (25.86)	0.024 (0.61)	1 x 0.987 (25.07) x 0.01 (0.25)	Blue	300	80
1-765210-8	1.018 (25.86)	0.034 (0.86)	1 x 0.987 (25.07) x 0.02 (0.51)	Blue	300	110
1-765210-9	1.018 (25.86)	0.024 (0.61)	2 x 0.45 (11.43) x 0.01 (0.25)	Blue	300	40/40
2-765210-0	1.018 (25.86)	0.034 (0.86)	2 x 0.45 (11.43) x 0.02 (0.51)	Blue	300	55/55
2-765210-3	0.484 (12.29)	0.024 (0.61)	1 x 0.45 (11.43) x 0.01 (0.25)	Blue	300	40
2-765210-4	0.484 (12.29)	0.034 (0.86)	1 x 0.45 (11.43) x 0.02 (0.51)	Blue	300	55
2-765210-5	1.018 (25.86)	0.044 (1.12)	1 x 0.987 (25.07) x 0.03 (0.76)	Red	300	135
2-765210-6	1.018 (25.86)	0.052 (1.32)	1 x 0.987 (25.07) x 0.03 (0.76)	Red	600	135
2-765210-7	1.018 (25.86)	0.052 (1.32)	1 x 0.987 (25.07) x 0.03 (0.76)	Blue	600	135
2-765210-8	0.484 (12.29)	0.034 (0.86)	1 x 0.45 (11.43) x 0.02 (0.51)	Red	300	55
2-765210-9	1.018 (25.86)	0.034 (0.86)	2 x 0.45 (11.43) x 0.02 (0.51)	Red	300	55/55
3-765210-0	1.018 (25.86)	0.034 (0.86)	1 x 0.987 (25.07) x 0.02 (0.51)	Red	300	110



Circular MILS	Approx AWG	Amps
Per Conductor		

12,566	9	80
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5,729	13	40/40
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25,133	6	110
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11,459	10	55/55
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**Cable-to-Cable Connectors**

Part Number	Description	Tail Type	Tail Length (inch)
765191-1	slim plug	N/A	N/A
765478-1	slim receptacle	N/A	N/A
766569-1	cable to cable receptacle PM*	N/A	N/A
766569-1 PM needs:	765530-1, 765245-1	N/A	N/A
766569-1	cable to cable receptacle STR**	N/A	N/A
766569-1 STR needs:	765529-1, 765245-1	N/A	N/A

\*PM = Panel Mount  
 \*\*STR = Squeeze-to-Release



Cable Receptacle



Mid-Cable Termination  
 .250 FASTON Tab Tap



PCB-Mounted Header

**Blindmate PCB-Mounted Headers**

Part Number	Description	Tail Type	Tail Length (inch)
5765527-1	2 cable vert header	Solder	0.131
5765527-2	2 cable vert header	Solder	0.165
765608-1	2 cable R/A header	Solder	0.273
5765208-1	4 cable vert header	Solder	0.131
5765208-2	4 cable vert header	Solder	0.165
5765208-3	4 cable vert header	Solder	0.235
5765208-4	4 cable vert header	Solder	0.305
766510-1	4 cable R/A header	Solder	0.273
765208-5	4 cable vert header	Press Fit	0.144

**PCB Mounted Headers**

Part Number	Description	Tail Type	Tail Length (inch)
1-765206-7	slim vert header	Solder	0.131
1-765206-8	slim vert header	Solder	0.165
1-765206-9	slim vert header	Solder	0.225
2-765206-0	slim vert header with eyelet	Solder	0.131
765271-1	slim vert header	Press Fit	0.144
765204-5	slim R/A header	Solder	0.124
765204-6	slim R/A header	Solder	0.165

**Mid-Cable Terminations**

Part Number	Description	Tail Type	Tail Length (inch)
765277-1	Tap	N/A	N/A
765311-1	Side Tap, R/A	N/A	N/A
765275-1	Side Tap, Jogged	N/A	N/A
765276-1	.250 FASTON Tab Tap	N/A	N/A

**Blindmate Cable-Mounted Receptacles**

Part Number	Description	Tail Type	Tail Length (inch)
765528-1	2 cable housing	N/A	N/A
765528-1 needs:	765529-1, 765209-1, 768209-2	N/A	N/A
765247-1	4 cable housing	N/A	N/A
765247-1 needs:	765248-1, 765209-1, 768209-2	N/A	N/A

**Terminal Block Interface**

Part Number	Description	Centerline [inch,(mm)]	Hole Size [inch,(mm)]
765228-1	Full-Width Cover		
765216-1	Termination Assembly, .562	0.562 (14.27)	0.171 x 0.250 (4.34 x 6.35)
765225-1	Termination Assembly, .688	0.688 (17.48)	0.270 x 0.296 (6.86 x 7.52)
765229-1	Half-Width Cover		
765216-1	Termination Assembly, .562	0.562 (14.27)	0.171 x 0.250 (4.34 x 6.35)
765225-1	Termination Assembly, .688	0.688 (17.48)	0.270 x 0.296 (6.86 x 7.52)

**Stud Interface**

Part Number	Description	Stud Size [inch,(mm)]	Hole Size [inch,(mm)]
765228-1	Cover		
765226-1	Termination Assembly for 1/4	0.250 (6.35)	0.266 (6.76)
765226-2	Termination Assembly for 5/16	0.312 (7.92)	0.328 (8.33)

# Associated Content

Open Compute Project (OCP) Bus Bar Clip and Cable Assemblies QRG ([Doc # 1-1773867-8](#))

2-Piece Power Connectors QRG ([Doc # 4-17773458-1](#))

TE also has a broad offering of **cable-mounted** bus bar connectivity solutions; contact TE for more details.

## For More Information

### TE Technical Support Center

USA:	1.800.522.6752
Canada:	1.905.475.6222
Mexico:	52.0.55.1106.0800
Latin/S. America:	54.0.11.4733.2200
Germany:	49.0.6251.133.1999
UK:	44.0.800.267666
France:	33.0.1.3420.8686
Netherlands:	31.0.73.6246.999
China:	86.0.400.820.6015

[te.com/busbar](http://te.com/busbar)

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