

RAPID LOCK Quick Connect/Disconnect Bus Bar Connectors

Product Facts

- Replaces power lugs
- Locking feature “snaps” each contact to mating pin
- Up to 250 Amps per contact
- CROWN BAND connector technology provides low contact resistance

Typical Applications

- Power Distribution Systems
- Recognized under the Component Program of Underwriters Laboratories, File No. E28476



The RAPID LOCK connector is a single-pole, quick connect/disconnect replacement for lug connections, used in bus bar and backplane power distribution applications. RAPID LOCK connectors allow a reliable and safe connection, as well as better serviceability, than bolt-fitted lugs. The cable mounted sockets have a right-angle configuration, and feature an insulator cap that provides the retention mechanism on the pin. The pin contacts can be attached to a bus bar by screw or swage, and to a backplane by press fit and backup screw.

Secure Power Distribution

By replacing power lugs fitted using nuts and bolts, the RAPID LOCK connector offers an extremely secure interconnect mechanism that totally frees the power distribution system from the risk of loose connections, which can cause arcing.

Safety Locking Feature

A locking feature is provided on the pins for protection against accidental unlatching of the cable. Although connection of the cable is easily performed by hand, disconnection requires a simple tool to provide the leverage needed to overcome the locking feature.

Improved Ease of Service

Service in the field becomes very easy with RAPID LOCK connectors because there are no nuts and washers to lose in the equipment. The RAPID LOCK connector is available with red or black color insulators.

CROWN BAND Technology

The RAPID LOCK connector enjoys all the benefits of the ELCON CROWN BAND technology, providing a stable connection with excellent mechanical and electrical performance with ratings up to 300 Amps depending on wire gauge and application.

Note: All RAPID LOCK Products in this section are RoHS compliant.

Note: All part numbers are RoHS compliant.

**RAPID LOCK Connectors
Ordering Information**
RAPID LOCK Quick Connect/Disconnect Bus Bar Connectors (Continued)

Size	Crimp Size	Part Numbers				
		Socket			Pin	
		Black	Red	Blue	Swage	Screw
#8	AWG #8	6648228-1	6648228-2	N/A	6648221-1	—
	AWG #12	6648237-1	6648237-2	N/A	6648221-1	N/A
	AWG #6	1766484-1	1766484-2	N/A	6648221-1	—
#4	AWG #8	6648235-1	6648235-2	N/A	6648222-1	—
	AWG #4	6648236-1	6648236-2	N/A	6648222-1	6648224-1
	AWG #6	6648239-1	6648239-2	N/A	6648222-1	—
#2	AWG #0	6648234-1	6648234-2	N/A	6648223-1	6648226-1
	AWG #2	6648238-1	6648238-2	N/A	6648223-1	6648226-1
12 mm	95 Sq. mm	N/A	1857547-1	1857547-2	1857523-3	N/A

Size	Insulation Boot			
	Black	Red	Grey	Blue
#4/#8	1651003-1	1651003-2	1651003-3	1651003-4
#2	1766600-1	1766600-2	1766600-3	1766600-4

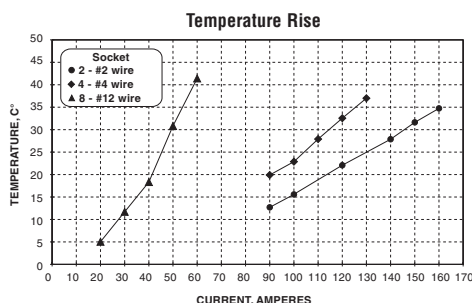
Product Specifications

Materials	
Insulator	Thermoplastic, UL 94V-0 flammability rated
Socket Contact Body	Copper alloy, plated Silver over nickel
CROWN BAND	Beryllium Copper, plated Gold (30 micro inches minimum) over nickel
Pin Contact	Copper alloy, plated Silver over nickel
Electrical	
Current Rating @ 30°C T-rise	Size 8 — 50 Amps on 8 AWG wire Size 4 — 115 Amps on 4 AWG wire Size 2 — 145 Amps on 2 AWG wire Size 12 mm — 250 Amps on 95 mm ² wire
Contact Resistance	Size 8 — 0.5mΩ Size 4 — 0.15 mΩ Size 2 — 0.12 mΩ
Voltage Drop	See graphs
Mechanical	
Removal Tool	Part Number 1857376-1

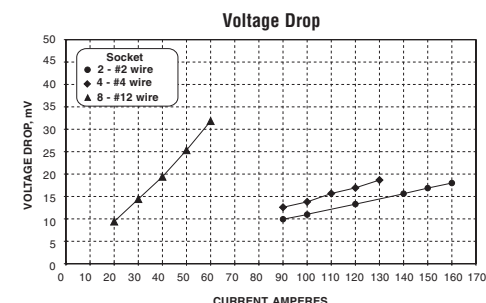
Note: For more information about tooling, call Tooling Sales at 888-777-5917, (717)-810-2080 or e-mail toolingsales@tycoelectronics.com.

Test Data

Shown below is current versus temperature rise of the five different available socket sizes.



Shown below is current versus voltage drop performance of the five different available socket sizes.

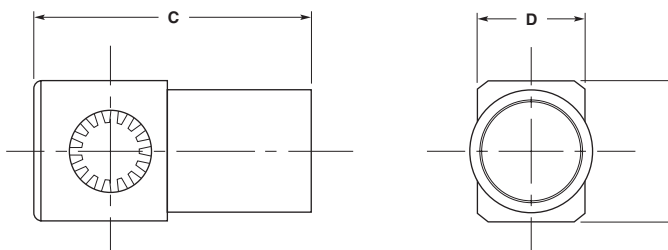


Note: All part numbers are RoHS compliant.

RAPID LOCK Quick Connect Sockets and Pins

Cable Mounted Sockets

RAPID LOCK sockets are crimped to AWG #4, #6 or #8 size cable depending on the application requirements. Envelope dimensions are common except for the crimp barrel diameter.



Part Number	Size	Dimensions			Cable AWG
		C	D	E	
6648228-X	#8				8
6648237-X		1.080	.500	.500	12
1766484-X		27.43	12.70	12.70	6
6648235-X	#4	1.08	.500	.500	8
6648236-X		27.43	12.70	12.70	4
6648239-X					6
6648234-X	#2	1.280	.490	.640	0
6648238-X		32.51	12.45	16.26	2
1857178-X					1/0
1857547-X	12.0 mm	1.920	.930	.930	3/0
		48.70	23.70	23.70	

Note: X refers to available color variants.

Pin Contacts

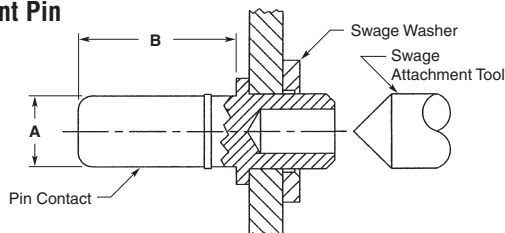
RAPID LOCK pin contacts are offered in either swage or screw & washer mounting options for .125" (3.18 mm) or 3 mm (.118") thick PCB or bus bars. Consult Tyco Electronics Customer Service for other bus bar and backplane thicknesses and designs.

Press Fit Pin Contacts

Attach Type	Pin Size	Mounts to
Screw and Washer	#4	Bus bar/Backplane
		Bus bar
Swage	#4	Bus bar

Note: All part numbers include attachment hardware (screw, washer, etc.)

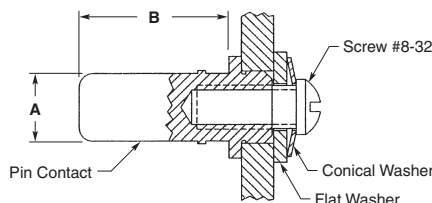
Swage-Mount Pin



Part Number	Size	Dimensions	
		A	B
6648221-1	#8	.142	.550
		3.81	13.97
6648222-1	#4	.250	.550
		6.35	13.97
6648223-1	#2	.375	.550
		9.53	13.97
1857523-3*	12.0 mm	.470	.850
		12.00	21.70

*Requires washer Part Number 1857513-2

Screw-Mount Pin



Part Number	Size	Dimensions	
		A	B
6648224-1	#4	.250	.550
		6.35	13.97
6648226-1	#2	.375	.550
		9.53	13.97

Note: All part numbers are RoHS compliant.

Custom RAPID LOCK Connector Products

In addition to the flexibility offered with standard RAPID LOCK connector products, the basic technology and standard components may also be packaged to suit specific customer needs. Some examples of custom packages are given below.

Snap-Lock Sockets

Discrete pins are generally offered with or without a locking feature. A locking feature for a discrete socket is provided by a special two piece molding (94 V-0). This enables the socket to snap over a locking pin, and provides a 5 lb withdrawal force. The molding will also lock into a panel or holder of .125 (3.18) thickness.



Part Numbers	Wire Size	Color
1643279-1	8 AWG	Black
1643279-2		Red
1643279-3		Blue
1651766-1	4 AWG	Black

Press-Fit Discrete Contacts

Pins and sockets of the type shown are designed for press-fit to board or bus bar, and allow plug-in removal of a variety of board-mount components, discrete contacts, and flat-pack power supplies. Each socket contains a CROWN BAND contact, providing high current capacity and minimum loss, and accommodating misalignment.



Note: All part numbers are RoHS compliant.