

# Power Connectors: Entertainment Market



powerCON™ Connectors



LSC 19 Pin Connectors



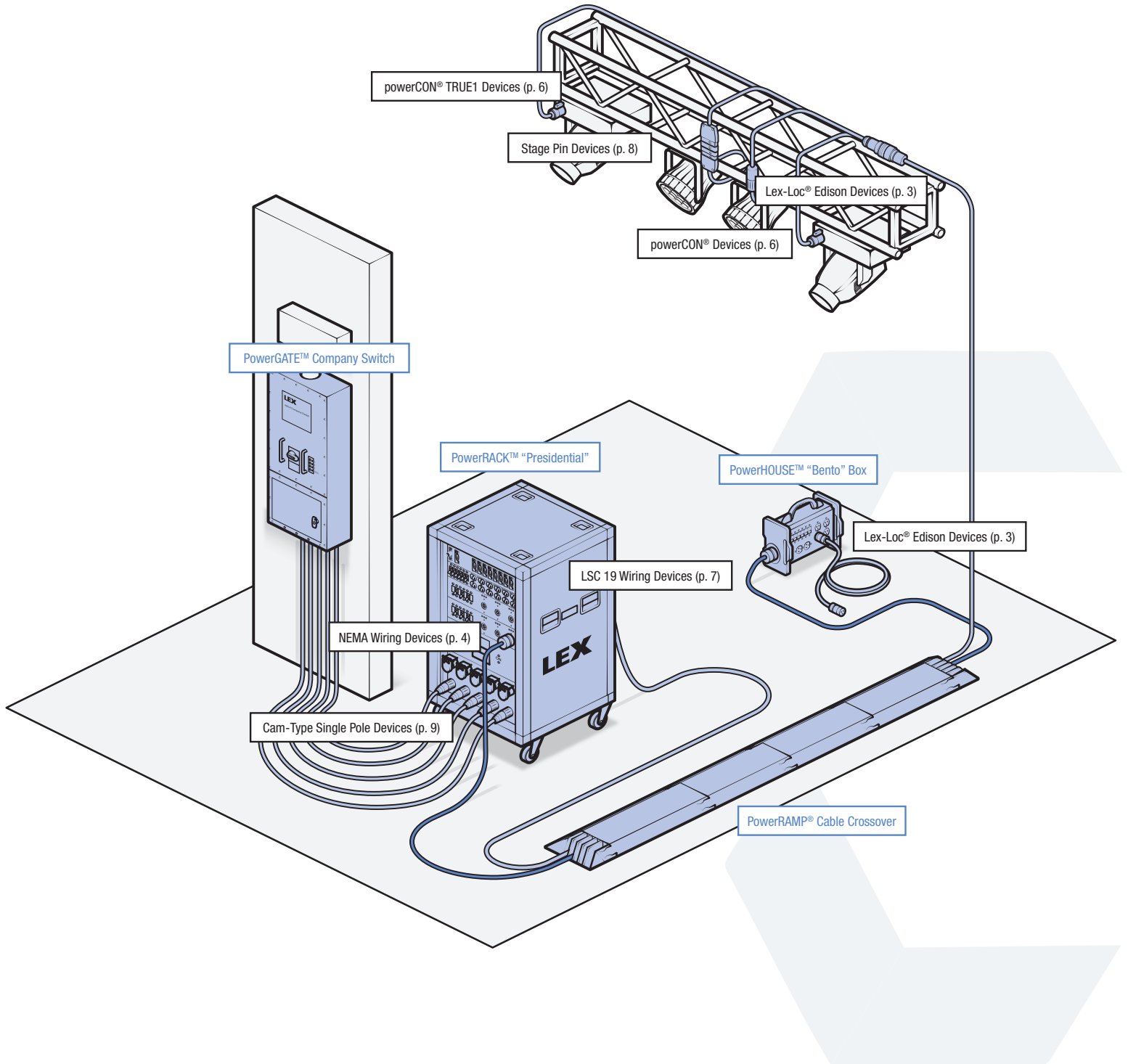
Stage Pin Connectors



Cam-Type Connectors



NEMA Connectors



# Lex-Loc™ Wiring Devices (Edison)

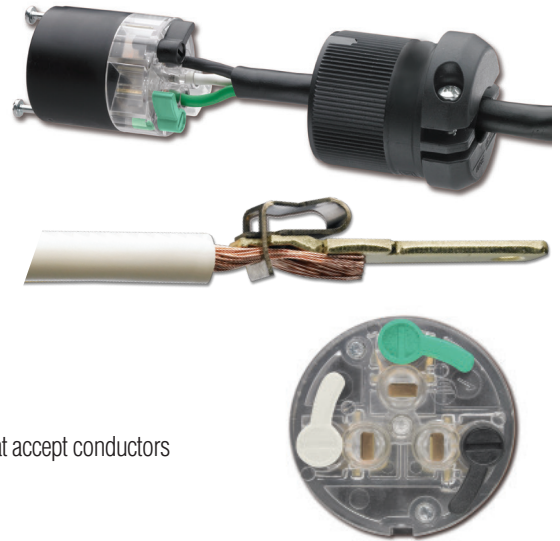
PowerPARTS™  
Connectors



After screw termination is made, the fine copper strands tend to shift, allowing the screw to loosen. This phenomenon is called creep. It leads to heat rise, more loosening, and often device failure.

Our Lex-Loc design is based on the concept of using spring tension instead of screws to make the termination. The spring delivers a pre-determined amount of pressure and automatically adjusts to shifting strands.

## Features & Benefits:

- Minimal tools required for terminations
- Cage clamp terminations do not loosen
- Two fast-travel assembly screws reduce labor requirements
- External cord clamp provides excellent strain relief for a wide range of cord sizes
- All-black construction blends into scenery
- Revolutionary design utilizes color-coded Cam levers to open and close the wiring chambers that accept conductors



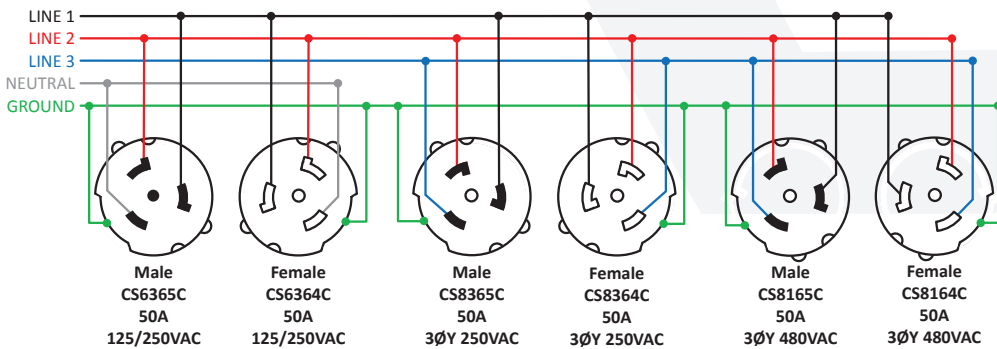
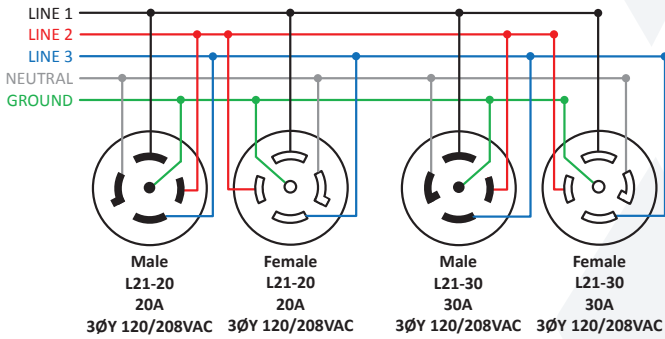
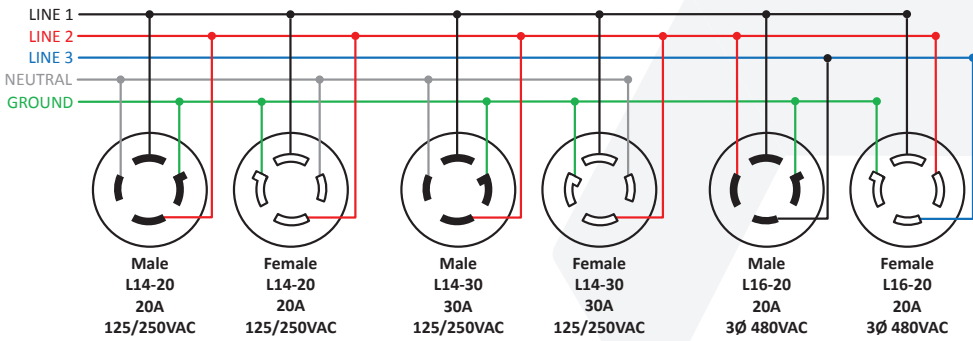
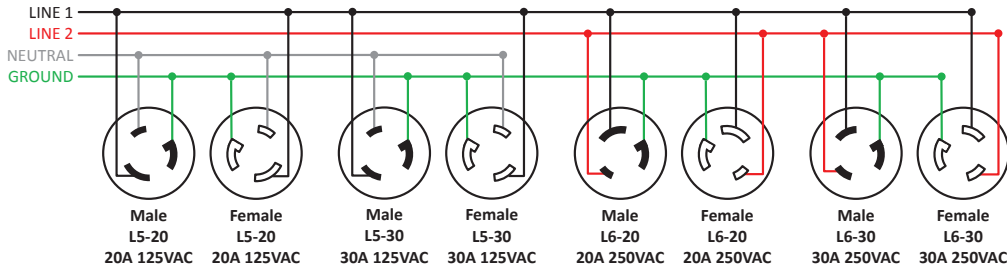
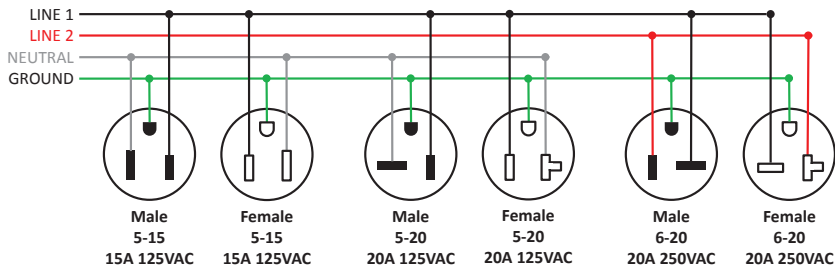
Rating	Cable Size	Plug (Male)	Connector (Female)
			
15 Amp, 2 Pole, 3 Wire, 120 VAC	Accommodates 18/3 SJ through 10/3 S Cable	X515P	X515C
20 Amp, 2 Pole, 3 Wire, 120 VAC	Accommodates 18/3 SJ through 10/3 S Cable	X520P	X520C







Straight Blade Grounding Devices ('Edisons')	NEMA * Ref. #	Plug (Male) 	Connector (Female) 	Flanged Inlet 	Flanged Outlet 	Single Receptacle 
15A 125VAC	5-15	5266C	5269C	5278C	5279C	5261
20A 125VAC	5-20	5366C	5369C	5378C	5379C	5361
20A 250VAC	6-20	5466C	5469C	5478C	5479C	5461
Locking Devices	NEMA * Ref. #	Plug (Male) 	Connector (Female) 	Flanged Inlet 	Flanged Outlet 	Single Receptacle 
20A 125VAC	L5-20	2311	2313	2315	2316	2310
30A 125VAC	L5-30	2611	2613	2615	2616	2610
20A 250VAC	L6-20	2321	2323	2325	2326	2320
30A 250VAC	L6-30	2621	2623	2625	2626	2620
20A 125/250VAC	L14-20	2411	2413	2415	2416	2410
30A 125/250VAC	L14-30	2711	2713	2715	2716	2710
20A 3Ø 480VAC	L16-20	2431	2433	2435	2436	2430
20A 3ØY 120/208VAC	L21-20	2511	2513	2515	2516	2510
30A 3ØY 120/208VAC	L21-30	2811	2813	2815	2816	2810
'California Style' Locking Devices	Ref. #	Plug (Male) 	Connector (Female) 	Flanged Inlet 	Single Receptacle 	Receptacle Cover 
50A 125/250VAC	CS63	CS6365C	CS6364C	CS6375	CS6369	7774CR
50A 3ØY 250VAC	CS83	CS8365C	CS8364C	CS8375	CS8369	7774CR
50A 3ØY 480VAC	CS81	CS8165C	CS8164C	CS8175	CS8169	7774CR

\* NEMA- National Electrical Manufacturers Association

# Wiring Diagrams



The Neutrik powerCON® line is a range of high end engineered thermoplastic, multi-pole connectors specifically designed for industrial applications. An easy to use and reliable quick-lock system ensures a perfect connection and cannot be released accidentally. This lockable 3 pole single phase equipment (AC) connector carries a high current capacity, rated at 20A / 250VAC. The circular connectors offer the Neutrik unique chuck type strain relief and a reinforced housing for robust dependability.

Rating	 Chassis Connector	 Cable Connector	 Chassis Connector	 Cable Connector
20 Amp, 250 VAC	NAC3MPB-1 (grey)	NAC3FCB (grey)	NAC3MPA-1 (blue)	NAC3FCA (blue)

The powerCON® TRUE1 is a locking IP65 water resistant 16A true mains connector. It replaces appliance couplers wherever a very rugged solution in combination with a locking device is needed in order to guarantee a safe power connection.

Rating	 Appliance Inlet	 Appliance Outlet	 Plug (Male)	 Connector (Female)
20 Amp, 250 VAC	NAC3MPX-TOP	NAC3FPX-TOP	NAC3MX-W-TOP	NAC3FX-W-TOP

# LSC19 6-Circuit 19 Pin Connectors

PowerPARTS™  
Connectors

## Higher Rating!



Lex Products' LSC19 Connectors are UL recognized and rated 23 Amps, 600 VAC



Each circuit can carry up to a maximum of 23 Amps continuous load

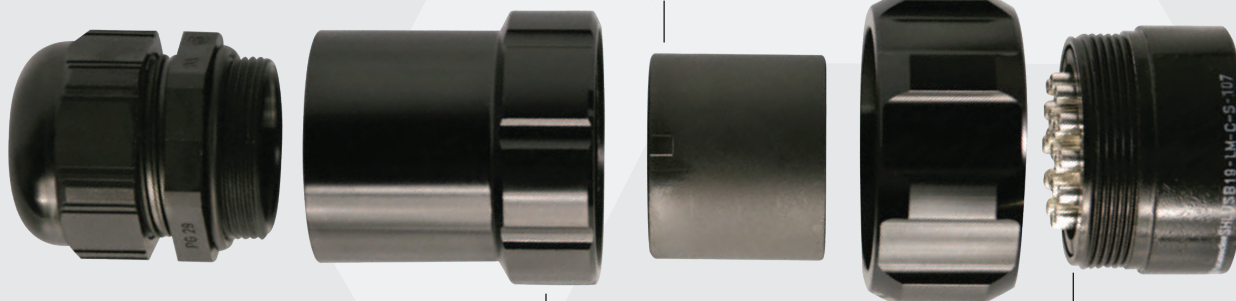


Interiors are clearly and permanently marked on front and back for ease of wiring and circuit identification

Strain Relief/Sealing Gland helps prevent strain on wire terminations and seals cable entry from ingress of contaminants.

Thermoplastic Insulating Sleeve helps prevent stray wire strands from potentially energizing the housing for added safety.

Ribbed Coupling Ring's precision machine threads provide ease of mating and long life.



Machined Aluminum Housing with hard black anodized finish provides enhanced durability. Precision machine threads provide ease of mating.






Flexible High Temperature Interior is heat and impact resistant and aids in aligning male and female contacts.



"Tempered Spring" Female Contacts maintain constant pressure over the life of the device and help ensure low resistance connections. Silver plated brass contacts allow for high conductivity.



Grounding Rings  
A recessed area in the interior accepts the grounding rings, allowing the ground conductors in multi-cable to be bonded. Extended grounding contacts provide First Make Last Break Connection.

Style					
	Spider Version Inline	Plug (Male)	Connector (Female)	Flanged Panel Mount Male	Flanged Panel Mount Female
	Rating				
Crimp	23 Amp, 600 VAC	LSC19-LMC-29	LSC19-LFC-29	LSC19-PMC	LSC19-PFC
Solder	23 Amp, 600 VAC	LSC19-LMS-29	LSC19-LFS-29	LSC19-PMS	LSC19-PFS
PG 36 Version large entry - crimp	23 Amp, 600 VAC	LSC19-LMC-36	LSC19-LFC-36	N/A	N/A
PG 36 Version large entry - solder	23 Amp, 600 VAC	LSC19-LMS-36	LSC19-LFS-36	N/A	N/A
Spider Version (Break-in/break-out) crimp contact	23 Amp, 600 VAC	LSC19-LMC-SPR	LSC19-LFC-SPR	N/A	N/A

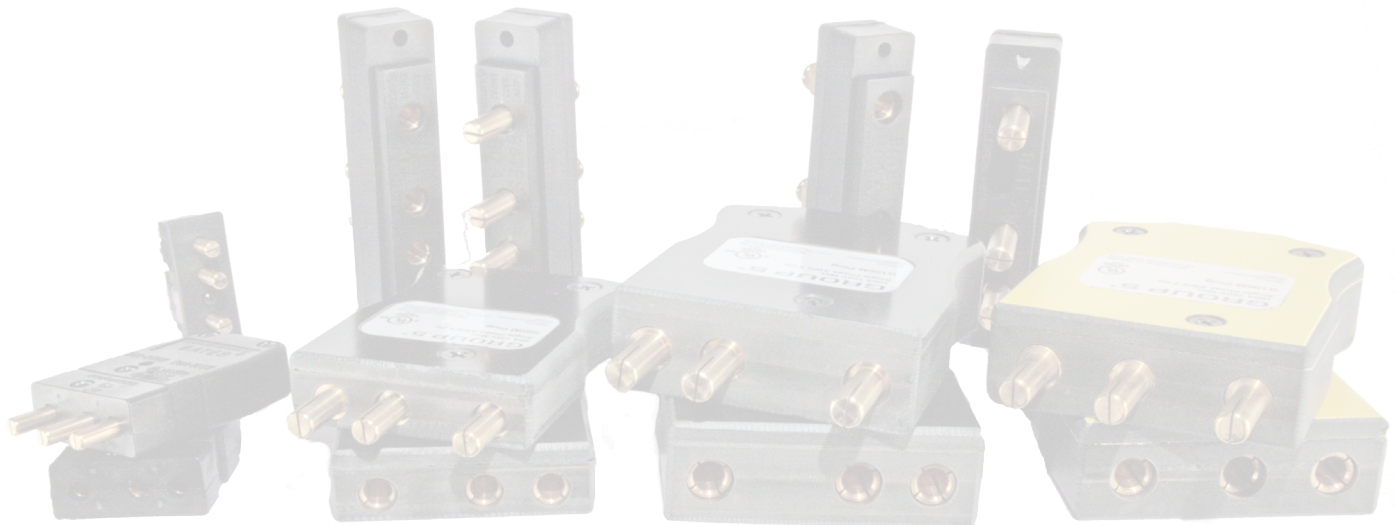
Group 5 products continue to be precision machined from the highest quality high-temperature phenolic material available today. The 20 Amp Power Connectors are ideal for use with LED lighting and other loads such as multi-bank video monitors and are interchangeable with other brands.

## Features & Benefits:

- ↻ Stage pin connectors offer years of reliable service in the most demanding environments
- ↻ Our pins are crafted from solid brass rod machined to +/- 0.0005" tolerance while allowing the pins to float which allows positive alignment and pin contact, which is critical to device life
- ↻ Precision slotted and crimped female contacts are sized to provide constant spring contact pressure even when the pins are damaged
- ↻ 2 piece strain relief accommodates a wide range of wire sizes

Rating	Inline / Male	Inline / Female	Panel / Male	Panel / Female
	 <p>100 Amp Female and Male Inline (pictured)</p>		 <p>60 Amp Panel Mount / Female and Male Ring (Pictured)</p>	
100 Amp, 250 VAC	G106M-H (Yellow Cover)	G106F-H (Yellow Cover)	106MR-H	106FR-H
100 Amp, 125 VAC	G100M	G100F*	100MR	100FR
60 Amp, 125 VAC	G60M	G60F*	60MR	60FR
20 Amp, 125 VAC	2P20G-M	2P20G-F	2P20G-MR	2P20G-FR

\*Fused version available (add suffix FUS to catalog number)






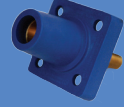




# Cam-Type Connectors







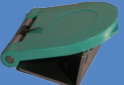
Lex Products is pleased to offer a wide range of Single Pole Cam Connectors from Leviton. These connectors can provide electrical power distribution for multiple indoor and outdoor applications. Leviton manufactures the highest quality single pin connectors available. These connectors are compatible with competitive cam-type products and can be retrofitted to existing locations and power distribution systems. We offer a variety of quick connect/disconnect connectors for various amperage ratings in a multitude of cable sizes.

The heavy-duty connectors are the standard for the following markets:

-  Entertainment and Movie Industry
-  Concerts and Theme Parks
-  Carnival Equipment
-  Conventions
-  Motor and Generator Splices
-  Mining and Construction Sites
-  Commercial and Navy Shipbuilding & Repair

Rating	Cable Size (AWG) (Recommended cable size)	 Plug Male Inline	 Connector Female Inline	 Panel Male Threaded Stud	 Panel Female Threaded Stud	 Panel Male Double Set Screw	 Panel Female Double Set Screw
400 Amp 600 VAC	2/0-4/0	16D24	16D33	16R23	16R24	16R21	16R22
400 Amp 600 VAC	#2-2/0	16D22	16D31	16R23	16R24	16R21	16R22
400 Amp 600 VAC	#6-#2	16D44	16D45	16R23	16R24	—	—

Add suffix to part number to specify color: A = Black, B = White, C = Red, D = Blue, E = Green, Y = Yellow, BR = Brown, O = Orange

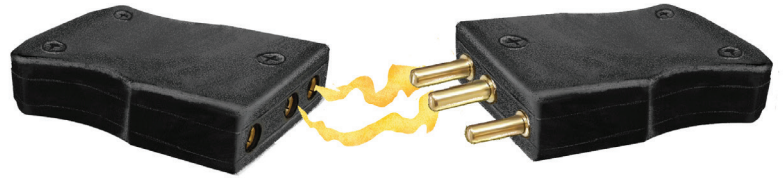
 Male to (3) Female	 Paralleling T	 Tapping T	 Double Female	 Double Male	 Protective Cover	 Snap Back Cover
16MFFF	MMF	MFF	RFF	MMM	Male: PCM Female: PCF	CL40WTC-L-125

Add suffix to part number to specify color: A = Black, B = White, C = Red, D = Blue, E = Green, Y = Yellow, BR = Brown, O = Orange

## Make or Break Under Load

A key characteristic of electrical connectors is their ability to make or break a connection under load.

When a connection is broken while the circuit is energized, electricity will continue to flow and physically leap across the gap between the contacts and cause an electrical arc.







- In milder cases, the arc will damage the contacts, reducing conductivity and, with each occurrence, eventually lead to heat rise.
- In more extreme circumstances, the electrical arc can literally vaporize the contact metal resulting in an unsafe and unusable connection.

Connectors are therefore designed to withstand connection and disconnection while the circuit is energized or deenergized. Contacts that are designed to withstand current rupture are simply larger than their counterparts. Therefore, Nationally Recognized Test Laboratories (NRTLs) such as UL and SDA “list” connectors “for make or break under load” or “not for make or break under load”. Connectors listed for make or break under load are inherently larger than those that are not.

## Certifications

First published in 1897, the National Electrical Code (NEC or ‘The Code’) is published every three years by The National Fire Protection Association (NFPA). The NEC or such organizations, has been adopted across the United States by local and state governments as well as federal agencies. The NEC makes frequent reference to a Nationally Recognized Testing Laboratories (NRTL), of which there are several such organizations. Products are submitted to these organizations for evaluation and, should they pass, the products are ‘listed’ and/or ‘labeled’.

Certification Mark	Description
	Underwriters Laboratories (UL) is an independent product safety certification organization. A “UL Listed” Mark means that the product has been tested by UL to nationally recognized Safety Standards and that representative samples have met UL’s safety requirements. The products bearing this mark have been found to be free from reasonably foreseeable risks of fire, electric shock and related hazards. A product that conforms to the Canadian standards (Canadian Standards Association or CSA) will also bear a ‘cUL’ mark.
	The “Recognized Component Mark” is a type of quality mark issued by Underwriters Laboratories (UL). The product has been tested and is placed on components which are intended to be part of a UL listed product, but which cannot bear the full UL logo themselves. Some additional installation precautions may be required. For example, you may need to install the component in a housing to provide protection from dust, liquids and impact. A product that conforms to the Canadian standards (Canadian Standards Association or CSA) will also bear a ‘cUR’ mark.
	The Canadian Standards Association (CSA) is a nonprofit private testing association serving business, industry, government and consumers in Canada and the global marketplace. Among many other activities, CSA develops standards that enhance public safety. A Nationally Recognized Testing Laboratory (NRTL), CSA is very familiar with U.S. requirements. According to OSHA regulations, the CSA-US Mark qualifies as an alternative to the UL Mark.
	The Intertek Electrical Testing Laboratories (ETL) Mark is proof of product compliance to North American safety standards. Authorities Having Jurisdiction (AHJs) and code officials across the US and Canada accept the ETL Listed Mark as proof of product compliance to published industry standards. Retail buyers accept it on products they’re sourcing. Products that are ETL Listed have been tested at an ETL laboratory and found to meet all applicable Standards for Safety published by relevant NRTLs.

# Technical Information

A termination is where the conductors (wires) are attached to the contacts of the connector. The termination must firmly join the wire to the contact and cannot loosen over time. Loose terminations will cause heat rise when current flows, which can damage the connector and result in a dangerous situation.

## TERMINATION TYPES:

### Crimp:

In a crimp connection, the wire is inserted into a tube formed at the end of the male or female contact. A tool compresses the tube onto the wire and, provided the proper tool is used, results in a very tight connection that will not loosen over time. A disadvantage of crimp connections is that they cannot be reused, unlike solder or pressure.

### Solder:

A solder connection is made by melting metal (silver based) to join the wire to the contact. The molten metal fills the gaps between the wire and the contact, making a strong connection. The solder connection can break if stressed which can result in heat rise. The contacts are reusable, however it requires melting the original connection.

### Pressure:

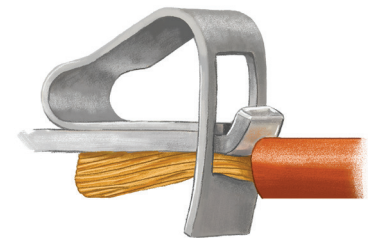
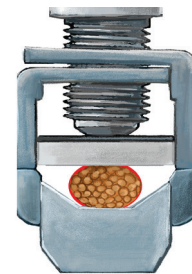
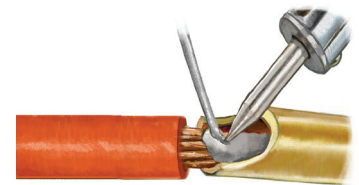
With a pressure connection, a wire is inserted into the end of the contact and a threaded screw bears down directly onto the wire. This provides a high pressure, non-loosening termination. The potential exists for the screw to break the strands of the conductor, unless the screw has a spinning washer to prevent this. It is advisable to add a separate wire shoe or sleeve known as a ferrule to the conductor before tightening to protect the individual strands of the wire.

### Screw:

A screw terminal (used on NEMA wiring devices) involves inserting a wire through an opening between two plates. The two plates are drawn together using a screw clamping the wire and making the termination. Screw terminals are convenient for field installation and repair. However, two plate arrangement can allow fine stranded wire to shift allowing the screw to loosen in a phenomenon is known as 'creep'. The loose screw can lead to heat rise and device failure.

### Cage Clamp:

A cage clamp termination consists of a stamped metal spring with an opening. A lever moves the spring to allow the wire into the opening. With the wire in place the lever is released, the clamp tightens and a high pressure, non-loosening termination results. Cage clamp terminations are effective, convenient, and non-loosening.





**EverGrip® Cable Assembly**



**powerCON® Feed-Thru Adapter**

Featuring the world's finest connectors, including our EverGrip® overmold technology, attached to highly durable and flexible cables using the highest expertise and quality.



**Cam Cable Assembly**



**PowerData™ Cable Assembly**



## We believe in the Power of Connection...

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