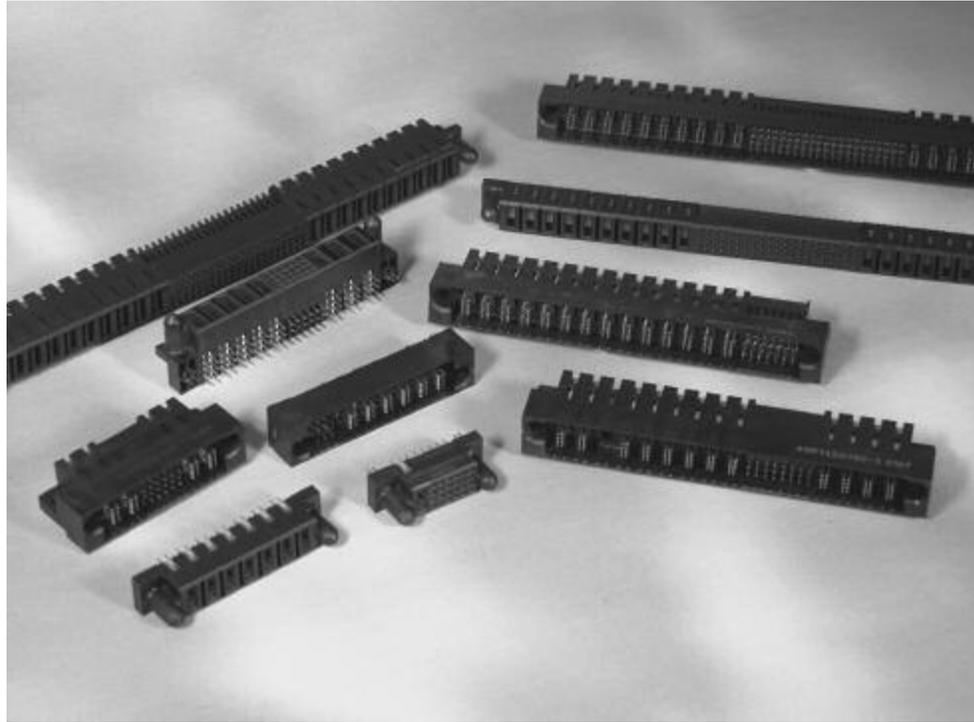


MULTI-BEAM XL Power Distribution Connector System

Board Mount Connectors

Product Facts

- Single-piece molded housings
- Custom configurable modular design
- AC and DC power in the same connector — Meets UL safety requirements
- Current Interrupt ratings per UL 1977 — for “Hot-Plug” applications
- Compact size — ideal for distributed DC power applications
- Molded-in guide pins provide generous blind-mateability
- Up to 3 levels of contact sequencing:
 - 1st — Pwr/Gnd
 - 2nd — Pwr & Signals
 - 3rd — Trigger Signals
- Low Mating and Un-mating force
- Solder or press-fit termination to PCB
- Meets SSI power connector requirements for DPS, MPS and HPS applications
- 30 micro-inch [0.76 micro-meters] gold post-plated contacts for high reliability
- All MULTI-BEAM XL products in this section are RoHS compliant



MULTI-BEAM XL is a blind-mateable board-to-board power distribution connector system. The heart of the MULTI-BEAM XL connector is the unique power contact which offers higher current ratings, lower contact resistance and lower mating forces than alternative designs. The connector is designed and manufactured in a modular approach and therefore allows the customer to select the number of power and signal contacts as well as the mating sequence of contacts they need for their specific application.

The product is also available in versions complying to the Server Systems Infrastructure (SSI) Standard. The MULTI-BEAM XL product offers high reliability and high current density in a package designed specifically for modular hot-swappable power distribution systems.

MULTI-BEAM XL connectors are ideal for blind-mating in modular and rack mounted systems. The high performance design and heavy gold plated contacts meet requirements across many applications including Power Distribution for

compact (1U) computer servers up through High-End Servers, Fault-tolerant Computers, Networking Equipment, Telecommunication Switches, Medical Instrumentation and Industrial Control equipment.

The compact design also meets the I/O needs of modern Modular and Hot-Swappable redundant (N+1) Power Supplies and Uninterruptible Power Supplies.

Technical Documents

Product Specifications — 108-1973

Application Specification — 114-13038

 File # E28476

 File # LR7189

For More Information

Internet
<http://tycoelectronics.com>

Check out product information at:
<http://mbxl.tycoelectronics.com>

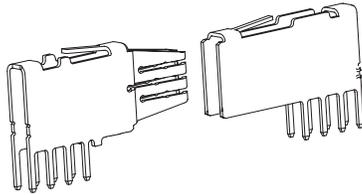
Technical Support Center
1-800-522-6752

MULTI-BEAM XL Power Distribution Connector System (Continued)

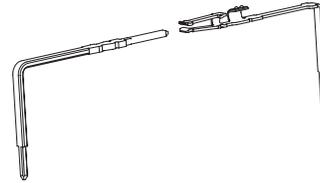
Board-to-Board Products

Board Mount Connectors

Power Contacts



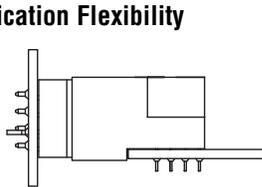
Signal Contacts



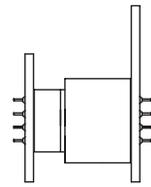
- Improved MULTI-BEAM XL power contact design features eight independent beams which provide:
 - Electrical performance — Parallel current paths yield a lower contact resistance
 - Mechanical performance — Tuned beam design provides low mating forces and high durability life cycles
 - Traditional Dual-Beam design also available
- Twin-beam signal receptacle contact design mates on milled surface, to reduce plating wear / and improve durability
- MULTI-BEAM XL connector assures you of **EXTRA LONG CONTACT WIPE**
 - Power contacts feature up to 0.200" [5.08mm] minimum wipe
 - Shortest "trigger" signal contacts feature a minimum wipe of 0.100" [2.54mm]

- MULTI-BEAM XL connectors provides **EXPANDABLE LENGTH** connectors
 - Overall length is expandable to accommodate up to 36 power contacts
 - Contact spacings are expandable to accommodate higher voltages and/or higher current requirements
- Base metal made from high conductivity copper alloy (over 98% copper) offers superior performance compared to alternative materials (brass, phosphor bronze, beryllium copper, etc.) often used in power connectors
- 0.100" [2.54mm] x 0.100" [2.54mm] PCB contact grid

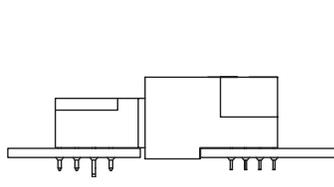
Application Flexibility



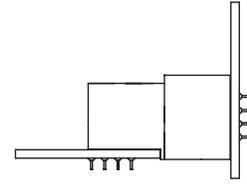
Vertical Receptacle Right Angle Plug



Vertical Receptacle Vertical Plug



Right Angle Receptacle Right Angle Plug



Right Angle Receptacle Vertical Plug

Contact Wipe

Contact Type	Description	Sequence	Minimum Wipe
Power (or GND) Contact	Make First Break Last (MFBL)	1	0.200" [5.08mm]
Power Contact	Standard	2	0.150" [3.81mm]
Signal Contact	Standard	2	0.150" [3.81mm]
Signal (trigger) Contact	Make Last Break First (MLBF)	3	0.100" [2.54mm]

The MLBF power contact and the Standard Signal contact are sequenced to mate at the same time ... sequence #2.

Product Configurations and Part Numbers

The connector configuration is described by reading Left-to-Right on the Plug mating interface and Right-to-Left on the Receptacle mating interface. Custom configurations can be produced due to the modular design of the product. Some popular configurations are shown in the tables below.

Configuration Description: ACP indicates AC Power, P indicates DC Power, HDP indicates High Density Power, S indicates Signal. The corresponding contact spacing and voltage ratings are shown below.

ACP	P	HDP	S
0.300" [7.62mm] spacing	0.250" [6.35mm] spacing	0.200" [5.08mm] spacing	0.100" [2.54mm] grid
300 Volts*	200 Volts*	Connection to same voltage*	60 Volts*

* With circuit board designed to UL 1950, IEC 60950

MULTI-BEAM XL Power Distribution Connector System (Continued)

Board Mount Connectors
Right Angle Receptacles


Configuration *	Part Number	Application	Overall Length " and [mm]	PCB Tail Type (Solder, Press-Fit)	Power Contact Sequencing
1P/24S/1P	6450160-3	SSI "DPS"	1.925" [48.90mm]	Solder	No
2P/24S/2P	1-6450160-0	Distributed DC Power + Signal	2.250" [57.15mm]	Solder	No
3P/24S/3P	6450570-2	Distributed DC Power + Signal	2.750" [69.85mm]	Press-fit	Yes
3ACP/24S/5P	6450170-2	AC and DC Power + Signal	3.400" [86.36mm]	Solder	Yes
3ACP/24S/6P	6450170-8	AC and DC Power + Signal	3.650" [92.71mm]	Solder	Yes
5P/24S/6P	6450160-5	SSI "MPS"	4.350" [110.49mm]	Solder	No
5P/32S/5P	6450560-2	Distributed DC Power + Signal	3.950" [100.33mm]	Press-fit	No
7P/32S/7P	6450560-4	Distributed DC Power + Signal	4.350" [110.49mm]	Press-fit	No
8P/28S	6450172-2	Distributed DC Power + Signal	3.350" [85.09mm]	Solder	Yes
8P/32S/8P	6450160-1	AC and DC Power + Signal	5.450" [138.43mm]	Solder	No
10P/84S/10P	6450160-6	AC and DC Power + Signal	7.750" [196.85mm]	Solder	No
3ACP	6450173-1	AC Power	1.550" [39.37mm]	Solder	Yes
8P	6450163-2	DC Power	2.650" [67.31mm]	Solder	No
14P/32S	6450172-1	Distributed DC Power + Signal	4.950" [125.73mm]	Solder	Yes
16S/4P	6450161-1	Distributed DC Power + Signal	2.050" [52.07mm]	Solder	No
24S/6P	6450161-2	Distributed DC Power + Signal	2.750" [69.85mm]	Solder	No
24S/8P	6450161-6	Distributed DC Power + Signal	3.250" [82.55mm]	Solder	No

* Custom configurations are available — see page 28 for instructions to have Tyco Electronics build your custom part.

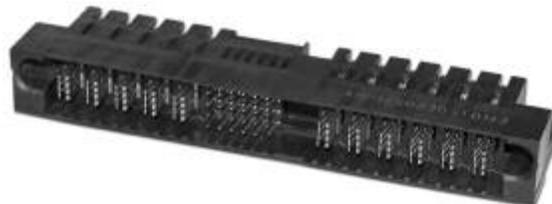
Vertical Receptacles


Configuration *	Part Number	Application	Overall Length " and [mm]	PCB Tail Type (Solder, Press-Fit)	Power Contact Sequencing
1P/24S/1P	6450540-1	SSI "DPS"	1.925" [48.90mm]	Press-fit	No
2P/24S/2P	6450140-1	Distributed DC Power + Signal	2.250" [57.15mm]	Solder	No
3P/24S/3P	1-6450140-0	Distributed DC Power + Signal	2.750" [69.85mm]	Solder	No
4P/24S/4P	6450150-6	Distributed DC Power + Signal	3.350" [85.09mm]	Solder	Yes
4P/24S/3ACP	6450150-3	AC and DC Power + Signal	3.150" [80.01mm]	Solder	Yes
3ACP/24S/5P	6450550-1	AC and DC Power + Signal	3.400" [86.36mm]	Press-fit	Yes
5P/24S/6P	6450540-2	SSI "DPS"	4.350" [110.49mm]	Press-fit	No
6P/24S/6P	4-6450550-5	Distributed DC Power + Signal	4.250" [107.95mm]	Press-fit	No
10P/84S/10P	6450140-4	Distributed DC Power + Signal	7.750" [196.85mm]	Solder	No
10P/24S/12P	3-6450550-2	Distributed DC Power + Signal	5.800" [147.32mm]	Press-fit	Yes
3P	6450543-1	DC Power	1.400" [35.56mm]	Press-fit	No
3ACP	6450543-6	AC Power	1.550" [39.37mm]	Press-fit	No
4P	6450543-5	DC Power	1.650" [41.91mm]	Press-fit	No
5P	6450553-1	DC Power	1.900" [48.26mm]	Press-fit	Yes
6P	6450553-2	DC Power	2.050" [52.07mm]	Press-fit	Yes
7P	6450543-3	DC Power	2.400" [60.96mm]	Press-fit	No
8P/28S	6450142-3	Distributed DC Power + Signal	3.350" [85.09mm]	Solder	No
14P/32S	6450152-1	Distributed DC Power + Signal	4.950" [125.73mm]	Solder	Yes
24S/6P	6450551-1	Distributed DC Power + Signal	2.750" [69.85mm]	Press-fit	Yes
24S/3ACP	6450151-3	Distributed DC Power + Signal	2.200" [55.88mm]	Solder	Yes
24S/8P	6450541-5	Distributed DC Power + Signal	3.250" [82.55mm]	Press-fit	No

* Custom configurations are available — see page 28 for instructions to have Tyco Electronics build your custom part.

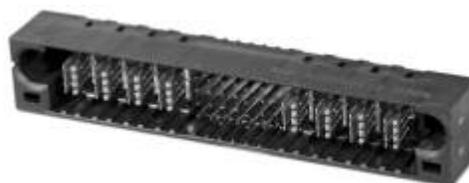
Note: All part numbers are RoHS compliant.

MULTI-BEAM XL Power Distribution Connector System (Continued)

Board Mount Connectors
Right Angle Plugs


Configuration *	Part Number	Application	Overall Length " and [mm]	PCB Tail Type (Solder, Press-Fit)	Signal Contact Sequencing
1P/24S/1P	6450330-1	SSI "DPS"	1.925" [48.90mm]	Solder	Yes
2P/24S/2P	6450120-2	Distributed DC Power + Signal	2.250" [57.15mm]	Solder	No
3P/24S/3P	6450130-6	Distributed DC Power + Signal	2.750" [69.85mm]	Solder	Yes
4P/24S/3ACP	6450130-4	AC and DC Power + Signal	3.150" [80.01mm]	Solder	Yes
3ACP/24S/5P	6450130-3	AC and DC Power	3.400" [86.36mm]	Solder	Yes
3ACP/24S/6P	1-6450130-4	AC and DC Power + Signal	3.650" [92.71mm]	Solder	Yes
5P/24S/6P	6450230-1	SSI "DPS"	4.350" [110.49mm]	Solder	Yes
5P/32S/5P	2-6450120-4	Distributed DC Power + Signal	3.950" [100.33mm]	Solder	No
6P/24S/6P	2-6450120-7	Distributed DC Power + Signal	4.250" [107.95mm]	Solder	No
8P/32S/8P	6450120-1	Distributed DC Power + Signal	5.450" [138.43mm]	Solder	No
10P/84S/10P	6450120-6	Distributed DC Power + Signal	7.750" [196.85mm]	Solder	No
10P/24S/12P	4-6450130-6	Distributed DC Power + Signal	5.800" [147.32mm]	Solder	Yes
16S/4P	6450231-1	Distributed DC Power + Signal	2.050" [52.07mm]	Solder	Yes
24S/6P	6450131-7	Distributed DC Power + Signal	2.750" [69.85mm]	Solder	Yes
24S/3ACP	6450121-3	Distributed DC Power + Signal	2.200" [55.88mm]	Solder	No
3ACP	6450123-3	AC Power	1.550" [39.37mm]	Solder	N/A
3P	6450123-1	DC Power	1.400" [35.56mm]	Solder	N/A
4P	6450123-2	DC Power	1.650" [41.91mm]	Solder	N/A
5P	6450123-6	DC Power	1.900" [48.26mm]	Solder	N/A
6P	6450523-2	DC Power	2.050" [52.07mm]	Press-fit	N/A
7P	6450123-5	DC Power	2.400" [60.96mm]	Solder	N/A
8P/28S	6450132-3	Distributed DC Power + Signal	3.350" [85.09mm]	Solder	Yes
14P/32S	6450132-4	Distributed DC Power + Signal	4.950" [125.73mm]	Solder	Yes

* Custom configurations are available — see page 28 for instructions to have Tyco Electronics build your custom part.

Vertical Plugs


Configuration *	Part Number	Application	Overall Length " and [mm]	PCB Tail Type (Solder, Press-Fit)	Signal Contact Sequencing
1P/16S/1P	6600333-9	Distributed DC Power + Signal	1.650" [41.91mm]	Press-fit	Yes
1P/24S/1P	6600330-4	SSI "DPS"	1.925" [48.90mm]	Solder	Yes
2P/16S/2P	1-6600333-0	Distributed DC Power + Signal	2.150" [54.61mm]	Press-fit	Yes
2P/24S/2P	1-6600333-2	Distributed DC Power + Signal	2.250" [57.15mm]	Press-fit	Yes
3P/16S/3P	6600333-7	Distributed DC Power + Signal	2.650" [67.31mm]	Press-fit	Yes
3ACP/24S/3ACP	1-6600333-1	AC Power + Signal	3.150" [80.01mm]	Press-fit	No
4P/24S/4P	6600333-6	Distributed DC Power + Signal	3.350" [85.09mm]	Press-fit	Yes
5ACP/24S/5ACP	6600333-1	Distributed DC Power + Signal	4.350" [110.49mm]	Press-fit	Yes
7P/32S/7P	6600330-5	Distributed DC Power + Signal	4.350" [110.49mm]	Solder	No
24S/8P	6600323-2	Distributed DC Power + Signal	3.250" [82.55mm]	Press-fit	No
3ACP	6450503-3	AC Power	1.550" [39.37mm]	Press-fit	N/A
8P	6600303-1	DC Power	2.650" [67.31mm]	Press-fit	N/A

* Custom configurations are available — see page 28 for instructions to have Tyco Electronics build your custom part.

Note: All part numbers are RoHS compliant.

MULTI-BEAM XL Power Distribution Connector System (Continued)

Board Mount Connectors

Specifications

Materials

Housing — High temperature thermo-plastic, UL 94V-0

Power Contacts — High conductivity Copper alloy

Signal Contacts — Copper alloy

Boardlocks — Phosphor bronze

Finish

Power and Signal Contacts — 30 microinches [7.6 micrometers] min. gold over 50 microinches [1.27 micrometers] min. nickel on mating surfaces, 100 microinches [2.54 micrometers] min. tin over 50 microinches [1.27 micrometers] min. nickel at PCB terminations

Note: Tin-lead plating also available on press-fit connectors

Performance Specifications

Up to 55 Amps per power contact, de-rated to 35 Amps in equally energized (8 adjacent positions) connector.

Up to 4 Amps per signal contact, de-rated to 1.5 Amps in equally energized 24-position pin field.

Maximum Continuous Operating Temperature — 105°C.

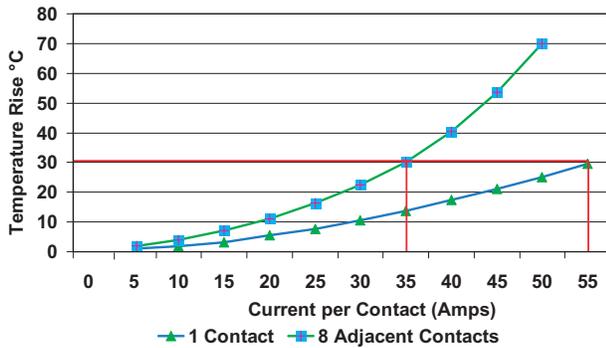
Contact Resistance — 0.7 milli-ohm

Durability — 250 cycle

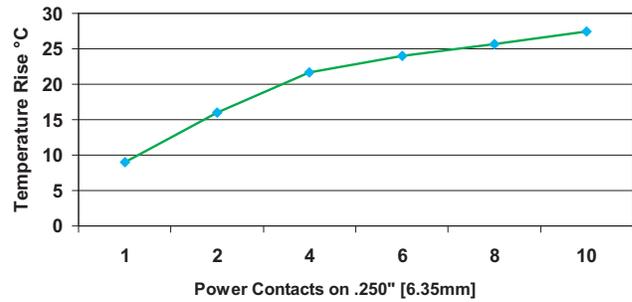
Radial Mis-alignment Capability — ± 0.075" [1.91mm]

Minimum of 0.100" [2.45mm] of contact wipe on shortest signal contact

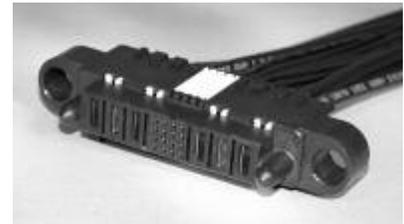
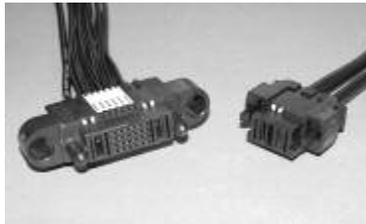
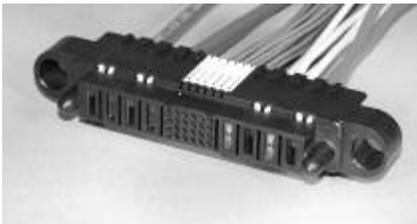
Board-to-Board Products



Performance @ 30 Amps per Contact



See Cable Connectors on Pages 18-27



“NEW” MULTI-BEAM XL Current Pass-Thru Power Distribution Connector System

Product Facts

- Combines PCB and Cable mounted contacts
- Ideal for separating AC input from DC input
- Eliminates FASTON tab interface at the back of the connector housing
- Requires less space than two housing designs
- Terminates 14 AWG up to 8 AWG wire
- Mates with Tyco Electronics Vertical and Right Angle PCB plugs
- High strength housing materials
- RoHS Compliant

Technical Documents

Product Specification —
108-1973 and 108-2157

Application Specification —
114-13038



The Cable Pass-Through MULTI-BEAM XL receptacles securely terminate up to a 10 AWG wire directly into MULTI-BEAM XL pcb mounted receptacles. The design includes a “terminal position assurance” (TPA) feature that ensures the manually inserted wires are fully seated. The product offers a unique way of using the MULTI-BEAM XL pcb receptacles as a sort of “docking” connector. A single docking connector is far easier to mate to and to design around in a blind-mate application, than multiple power and signal connectors. By separating

some circuits to be cable terminated and some to be pcb terminated it allows both high voltage (AC) and low voltage (DC) power to pass through the same connector.

This separation of the AC and DC power eliminates the concerns of high voltage power running through circuit boards better suited to carry only low voltage circuitry. Additional applications may include designs where the power is better routed directly to a different pcb, through cables, yet pass through a single docking connector for ease in system design.

The Cable Pass-Through connector is offered in both right angle or vertical pcb mount orientations and is supplied with either press-fit or solder pc tails. The connector is mate-able to either pcb mounted or cable mounted MULTI-BEAM XL or MULTI-BEAM XLE plugs. All MULTI-BEAM XL cable connectors are supplied pre-assembled by Tyco Electronics.

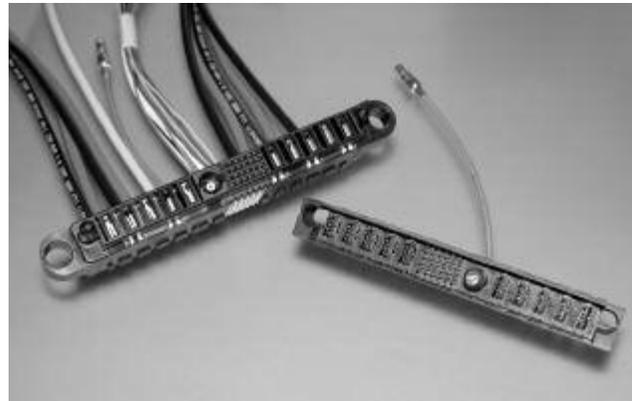
**“NEW” MULTI-BEAM XL Current Pass-Thru
Power Distribution Connector System** (Continued)

Available Configurations	Part Numbers			
	Right Angle Receptacles	Right Angle Plugs	Vertical Receptacles	Vertical Plugs
3CP/1P/24S/2P	6450178-1	6450130-2	—	—
3CP/24S/2P	6450178-2	2-6450130-6	—	—
3CP/24S/3ACP	1888179-1	2-6450330-6	—	—
3CP/4P/24S	6450578-1	1-6450132-3	6450558-1	6600310-5
3ACP/24S/6P	—	1-6450130-4	6450558-2	—
3CP/8P/12S	1888132-1	—	—	—
3CP/20S/10P	6450578-2	6-6450130-2	—	—
3CP/16S	6450668-1	6450622-1	—	—

Note: Receptacles are the only MULTI-BEAM XL parts with Pass-Thru capability.

Configuration Description

CP	ACP	P	HDP	S
AC Power	AC Power	DC Power	High Density Power	Signal
Cable Power .300" spacing	PC Mount .300" spacing	PC Mount .250" spacing	PC Mount .200" spacing	PC Mount .100" grid



**“NEW” MULTI-BEAM XL Coax Pass-Thru
Combine power, coax and signal all in one connector**

Right Angle Plug	Cable Receptacle
292495-1	292491-1

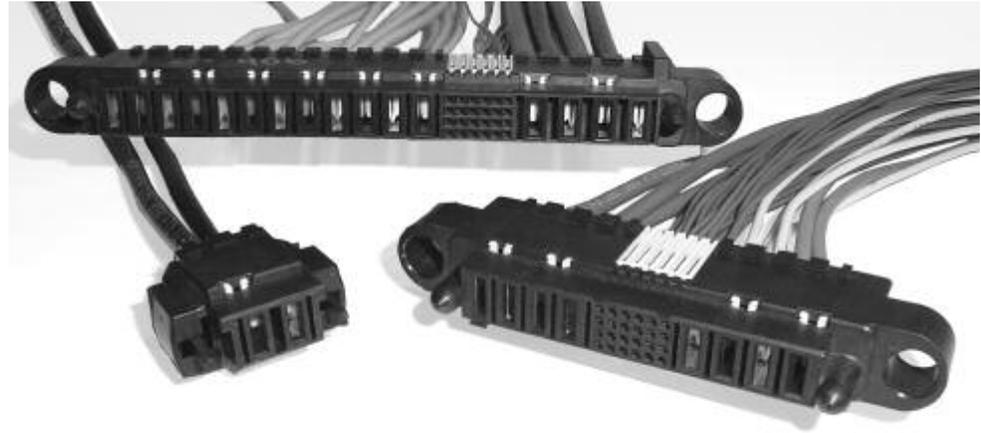
Note: All part numbers are RoHS compliant.

MULTI-BEAM XL Power Distribution Connector System Cable Receptacle Assemblies

Cable Receptacle Assemblies

Product Facts

- Single one-piece housing design
- Terminal Position Assurance (TPA) Secondary Locks on contacts assure no contact back-out
- Pre-assembled made-to-order cable assemblies
- Installation to panel provides float in X, Y and Z directions
- Insulation crimp on all contacts
- 30 microinch (.76 micrometers) gold plated contacts for high reliability
- Touch-safe design passes UL1977 and IEC 60950 finger probe test
- AC and DC power in the same connector — meets UL & IEC safety requirements
- All MULTI-BEAM XL products in this section are RoHS compliant



MULTI-BEAM XL Cable Assemblies allow designers freedom to connect power supplies and power distribution subassemblies in a wide variety of applications. Expanding beyond board-to-board applications the cable assemblies are available for both cable-to-board or panel mount applications and can terminate 8-16 AWG and 22-26 AWG wires all in one connector, without using adapter circuit boards. In addition, the power contacts are designed to be able to accept two-wire terminations which can further reduce harness complexity by reducing or eliminating mid-wire splices.

The use of high temperature glass filled housing materials, redundant contact retention and high conductivity contact materials allows the use of this connector in very high current density applications. The features work together to result in a highly durable and compact power connector, which offers industry leading minimum millivolt drop through the connection. The connector was designed to pass the UL 1977 and IEC 60950 finger probe test which makes the connector touch-safe. The insulation crimp adds further safety by keeping the insulation from being pulled away from the termination point. These features eliminate the

need for a secondary cable clamp which often can be size prohibitive.

The cable connectors are designed to mate to the de-facto standard Tyco Electronics MULTI-BEAM XL Right Angle or Vertical PCB Plugs. The combination of pcb and cable connections, both with mixed power and signal arrangements provides a universal power distribution connector systems.

The cable assemblies are all RoHS compliant, designed to specific customer requirements and manufactured in Tyco Electronics' cable assembly manufacturing facilities.

Technical Documents

Product Specification —
108-2157

Application Specification —
114-13112

For More Information

Internet <http://tycoelectronics.com>

Check out product information at: <http://mbxl.tycoelectronics.com>

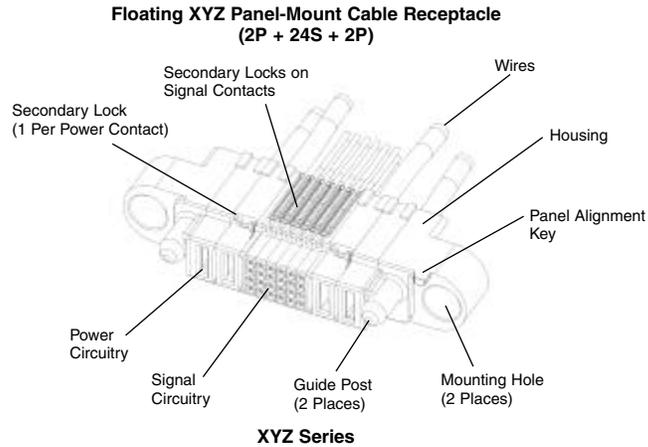
Technical Support Center 1-800-522-6752

MULTI-BEAM XL Power Distribution Connector System
Cable Receptacle Assemblies (Continued)

Configurations/Applications

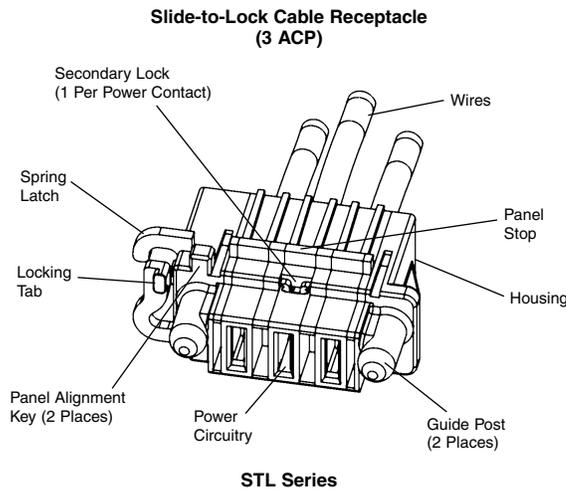
Floating XYZ Panel-Mount Receptacle

- 0.060" [1.52] Nominal Float in X, Y and Z direction
- For modular installation of large power distribution systems
- Single connector replaces multiple power and signal connectors



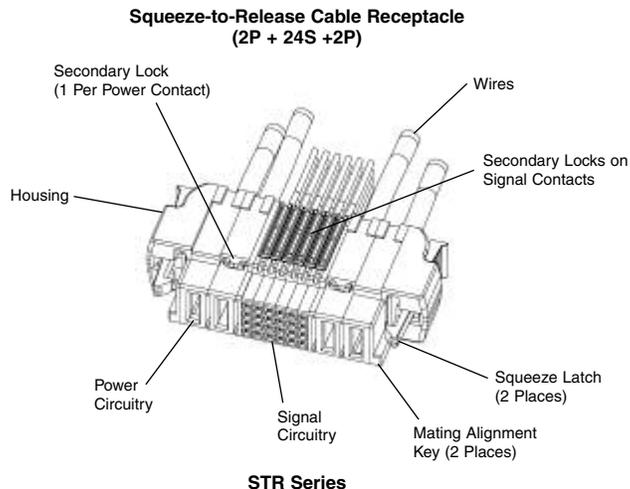
Slide-to-Lock Receptacle

- 0.030" [0.76] nominal float in X and Y direction
- Ideal for modular installation of smaller systems requiring less space and less float — such as fan trays
- Replaces connectors which use multiple low power contacts to carry the total current
- Power only or Power Plus signal mixed



Cable-to-Board Receptacle

- Easy to mate/disconnect with squeeze-to-release latches
- Mates to right angle or vertical MULTI-BEAM XL STR plugs
- Replaces two traditional connectors (1 signal and 1 power) with just 1 connector

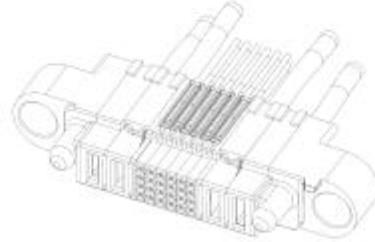


MULTI-BEAM XL Power Distribution Connector System
Cable Receptacle Assemblies (Continued)

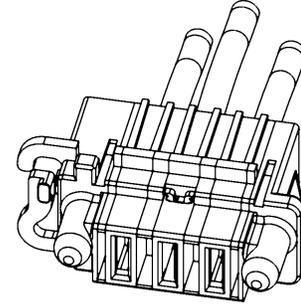
Panel Mount Receptacles

Product Facts

- High strength glass-filled housing materials
- Expandable/modular housing design
- PMT Series floats +/- 0.060" [1.52] in X, Y and Z directions
- STL series floats 0.030" [0.76] in X and Y directions
- Mounting Hardware Kits:
Part Number 1600914-1 — Standard
Part Number 1600914-3 — High Force



X, Y, Z Floating Receptacle



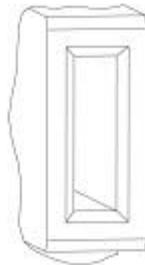
Slide-to-Lock Receptacle

Power and Signal Module Specifications

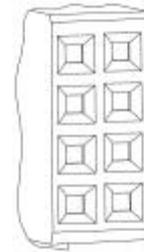
Power Module Widths:	Module Designation	Maximum Wire Size AWG [mm ²]	Max. Insulation Dia. inches [mm]
0.300 [7.62] (ACP)	300 (ACP)	8 [10.5]	0.272 [6.91]
0.250 [6.35] (P)	250 (P)	10 [6.6]	0.215 [5.46]
0.200 [5.08] (HDP)	200 (HDP)	12 [2.6]	0.156 [3.96]

Signal Module Width	Module Designation	Wire Range AWG [mm ²]	Insulation Range inches [mm]
0.200 [5.08] (8 Contacts)	Signals	22-26 [0.14-0.32]	0.036-0.054 [0.91-1.37]

Part numbers shown identify the main receptacle connector housing. Additional components (contacts, contact locks, etc.) are used to complete the cable assembly. See page 22 for contacts, secondary locks and application equipment information.



Power Module



Signal Module

Configurations/Part Numbers

Available Configurations	Part Numbers			
	XYZ Series	STL Series	Mating PCB Plugs	
			Vertical	Right Angle
3ACP	1600606-2	292499-1	6450503-3	6450123-3
4P	—	292499-4	6600303-2	6450123-2
4ACP	—	292499-3	6600303-3	—
5P	1600606-1	1761419-2	—	6450123-6
1P/16S/1P	1-1600636-3	1761819-4	6600333-9	—
1P/24S/1P	1600636-9	—	6600330-4	6450330-1
2P/16S/2P	1-1600636-0	—	1-6600333-0	—
2P/24S/2P	1600636-2	1761819-2	6600333-5	1-6450330-4
3P/16S/3P	1600636-8	—	6600333-7	—
3ACP/24S/3ACP	1-1600636-4	—	1-6600333-1	—
4P/24S/4P	1-1600636-5	—	6600333-6	—
5ACP/24S/5ACP	1600636-1	—	6600333-1	5-6450130-0
7P/48S/7P	1-1600636-6	—	—	3-6450120-4

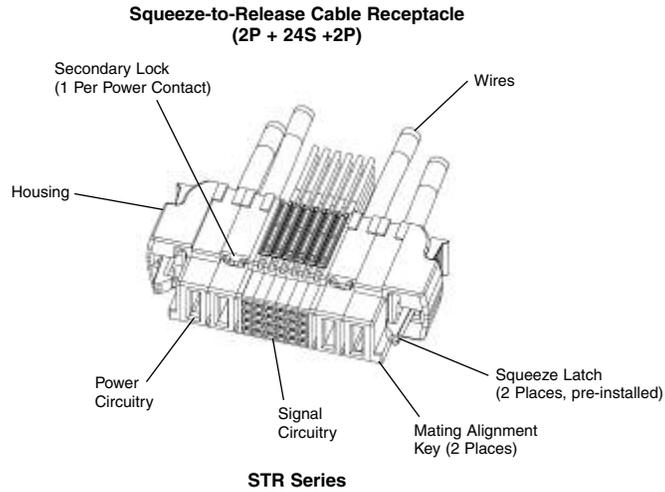
Note: All part numbers are RoHS compliant.

MULTI-BEAM XL Power Distribution Connector System Cable Receptacle Assemblies (Continued)

Cable-to-Board Squeeze-to-Release Receptacles

Product Facts

- High strength glass-filled housing
- Pre-installed squeeze-to-release latches.
- Expandable/Modular housing design
- Mates to Tyco Electronics Vertical or Right Angle PCB Plugs



Technical Documents:

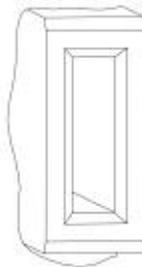
Product Specification —
108-2157

Application Specification —
114-13112

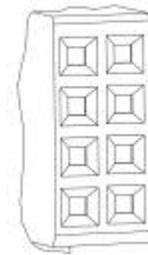
See page 22 for contacts, secondary locks and application equipment information.

Power and Signal Module Specifications

Power Module Widths:	Module Designation	Maximum Wire Size AWG [mm ²]	Max. Insulation Dia. inches [mm]
0.300 [7.62] (ACP)	300 (ACP)	8 [10.5]	.272 [6.91]
0.250 [6.35] (P)	250 (P)	10 [6.6]	.215 [5.46]
0.200 [5.08] (HDP)	200 (HDP)	12 [2.6]	.156 [3.96]
Signal Module Width	Module Designation	Wire Range AWG [mm ²]	Insulation Range inches [mm]
0.200 [5.08] (8 Contacts)	Signals	22-26 [0.14-0.32]	.036-.054 [0.91-1.37]



Power Module



Signal Module

Configurations/Part Numbers

Available Configurations	STR Series	Part Numbers	
		Vertical	Right Angle
2ACP	1600798-2	6600393-1	6450129-1
3P	1600798-3	6600393-2	6450129-2
3ACP	1600798-5	—	—
4P	1600798-4	6600390-1	6450129-3
6P	1600798-1	6600393-3	—
1P/24S/1P	1600788-8	6600380-2	6450128-1
2P/8S/2P	1-1600788-3	—	6450128-6
2P/16S/2P	1-1600788-0	6600383-5	—
2P/24S/2P	1600788-1	6600383-3	6450128-2
3ACP/24S/3ACP	1-1600788-2	6600383-6	—
4P/24S/4P	1-1600788-4	6600383-7	6450128-5

Note: All part numbers are RoHS compliant.

MULTI-BEAM XL Power Distribution Connector System
Cable Receptacle Assemblies (Continued)

Board-to-Board Products

Cable Receptacle Components

Material and Finish

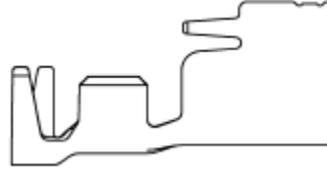
Body — 50 micro inches Nickel over Tin

Mating Area — 30 micro inches Gold over Nickel

Technical Documents

Product Specification
108-2157-1

Application Specification
114-13164

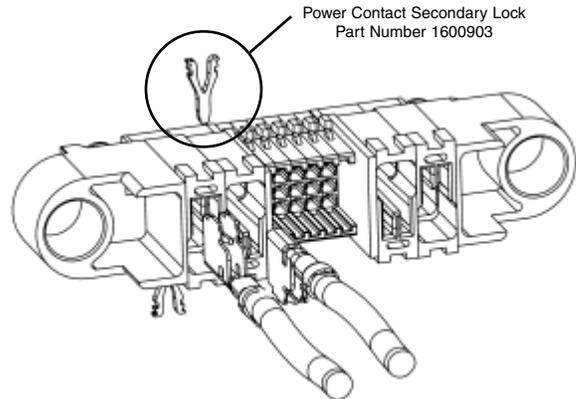
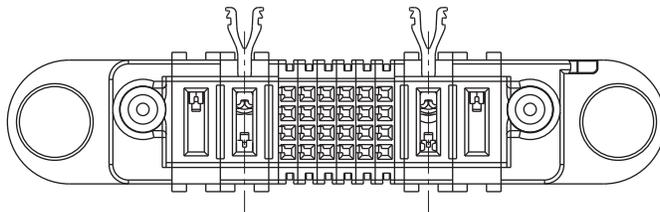


Power Contact

Power Contacts

Wire Size Range AWG	Insulation Diameter	Plating	Housing Width	Part Number	Applicator Tool
12	.156 Max. [3.96]	Tin	.200 or .250 [5.08 or 6.35]	1-1600961-7 (make-first-break-last)	1385635-3
	.156-.176 [3.96-4.47]	Tin	.250 [6.35]		1385636-3
14	.120-.156 [3.05-3.96]	Tin	.200 or .250 [5.08 or 6.35]	1-1600961-8 (Standard)	1385635-3
	.090 Max. [2.29]	Tin	.250 [6.35]		1385636-3

Wire Size Range AWG	Insulation Diameter	Plating	Housing Width	Part Number	Applicator Tool
8	.215-.272 [5.46-6.91]	Tin	.300 [7.62]	1-1600960-7 (make-first-break-last)	1385637-3
10	.176-.215 [4.47-5.46]	Tin	.200 or .300 [6.35 or 7.62]		1385638-3
2 @ 12	.130 Max. [3.30]	Tin	.300 [7.62]	1-1600960-8 (Standard)	1385637-3
2 @ 14	.137 Max. [3.48]	Tin	.300 [7.62]		1385637-3



Secondary Power Locks:
Part Number 1600903-X

Note: One secondary lock needed for each power contact.

Note: All part numbers are RoHS compliant.

MULTI-BEAM XL Power Distribution Connector System
Cable Receptacle Assemblies (Continued)

Cable Receptacle Components (Continued)

Material and Finish

Contact — Phosphor bronze plated gold over nickel in mating area

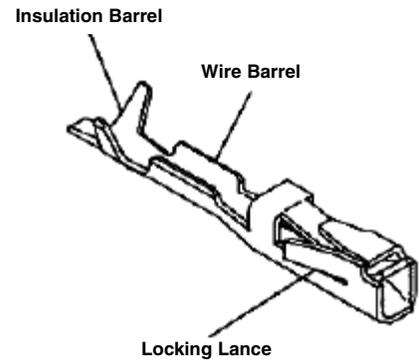
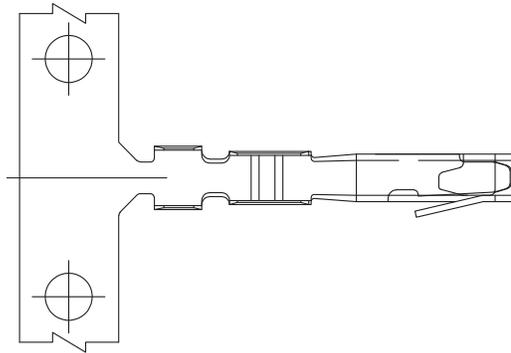
Technical Documents

Product Specification

108-25031

Application Specification

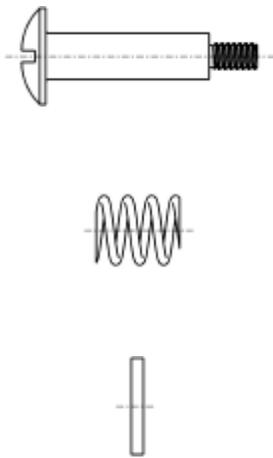
114-25021



Signal Contacts

Wire Size Range AWG	Insulation Diameter	Version	Part Number	Extraction Tool
22-26	.036-.054 [0.91-1.37]	Low Pressure	531216-5 (reel)	91156-2
	.036-.054 [0.91-1.37]	High Pressure	531224-6 (reel)	91156-2

Secondary Locks



Float Mount Hardware Kit

Part Number 1600914-1

(Standard Force)

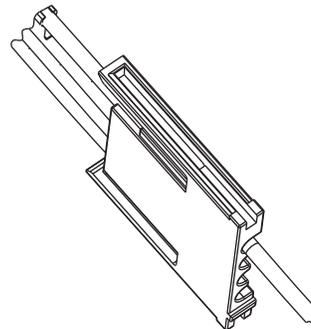
Part Number 1600914-3

(High Force)

1 Kit / Cable Assembly;

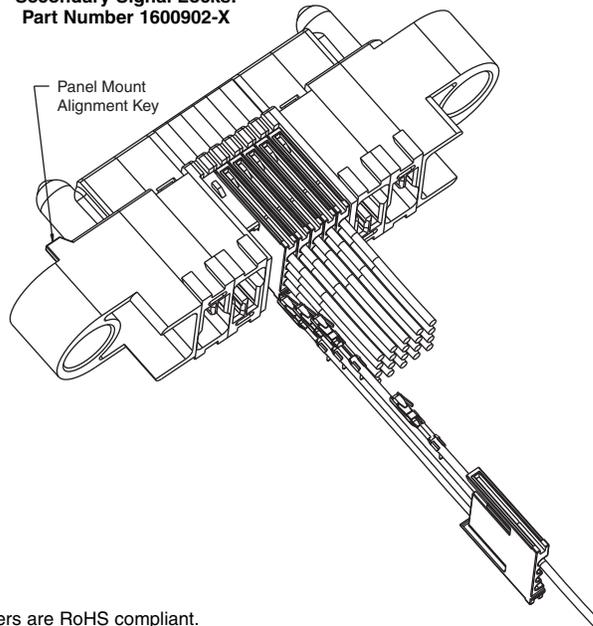
**Kit includes 2 screws, 2 washers
and 2 springs**

Note: Kit not needed for STR or
STL housings



Note: One secondary lock needed
for each column of signal
contacts

Secondary Signal Locks:
Part Number 1600902-X



Note: All part numbers are RoHS compliant.

MULTI-BEAM XL Power Distribution Connector System
Cable Receptacle Assemblies (Continued)

Specifications

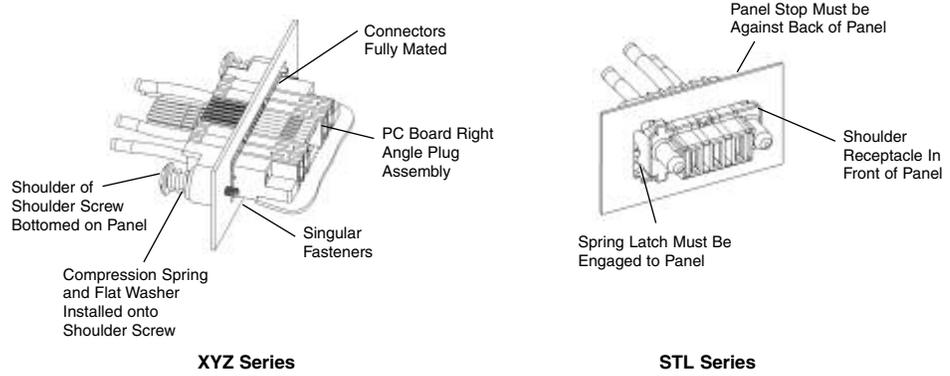
Product Specifications

Power Contacts —
 50 Amps on single 8 AWG wire

Signal Contacts —
 5 Amps on single 22 AWG wire
 0.050" [1.27] minimum float in X,
 Y and Z direction

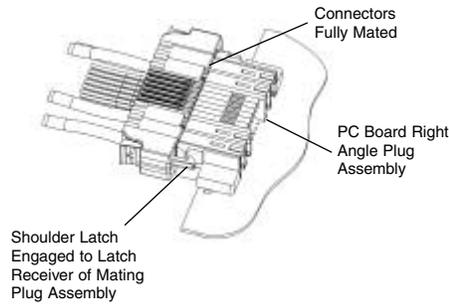
Sequenced Mating —
 3 Levels Pwr/Grnd, Pwr & Signal,
 Signal 250 Cycle Durability

Installed Connector Illustration



XYZ Series

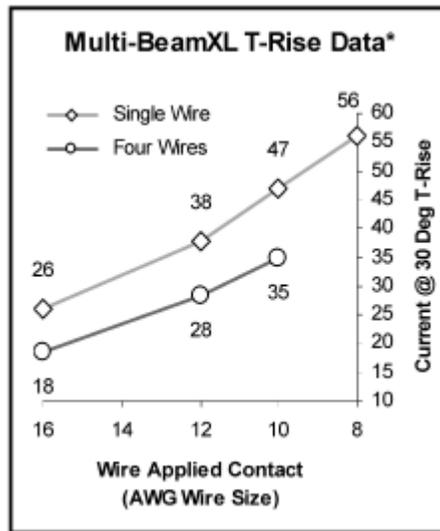
STL Series



STR Series

Additional temperature-rise data available, contact Tyco Electronics Product Engineering.

Current/temperature rise data shown — from End-Of-Life qualification test.



For more information see the product website @ <http://mbxl.tycoelectronics.com>

“NEW” MULTI-BEAM XL Power Distribution Connector System Cable Plug Assemblies

Cable Plug Assemblies

Product Facts

- High strength housing materials
- Hot-Pluggable
- Installation provides float in X, Y and Z directions
- Sequenced mating
- RoHS complaint
- Modular mold design provides configuration flexibility
- Integral cable clamp supports contacts and provides strain relief in minimum amount of space
- 30 microinch (0.76 micrometers) gold plated contacts for high reliability
- Sold only as part of a pre-assembled cable assembly



The newest addition to the MULTI-BEAM XL cable assemblies are the cable mounted plugs. Produced with modular molds, the connectors can be made in a wide variety of sizes. The pcb mounted MULTI-BEAM XL plugs are typically rigidly mounted to hot-swappable power supplies and the systems they connect with. The “float blind-mate drawer connector” design of the MULTI-BEAM XL cable connectors eliminates the concern of an inadequately aligned chassis. The connector can accept mating parts misaligned by as much as 3mm (± 1.5 mm), and still mate without

applying stress to solder or complaint pin terminations. The MULTI-BEAM cable plugs can terminate 8-14 AWG and 22-26 AWG wires all in one connector, without using adapter circuit boards. The use of high temperature glass filled housing materials, redundant contact retention and high conductivity contact materials allows the use of this connector in very high density applications.

The cable assemblies are all RoHS compliant designed to specific customer requirements and manufactured in Tyco Electronics’ internal cable assembly manufacturing facilities.

Technical Documents

Product Specifications — 108-2157-1

Application Specifications — 114-13164

For More Information

Internet

<http://tycoelectronics.com>

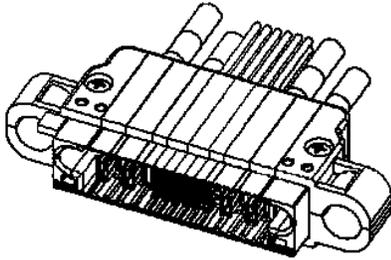
Check out product information at:

<http://mbxl.tycoelectronics.com>

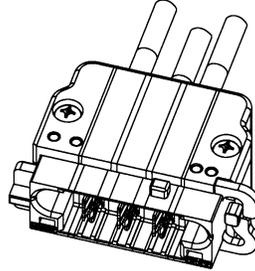
Technical Support Center
1-800-522-6752

“NEW” MULTI-BEAM XL Power Distribution Connector System
Cable Plug Assemblies (Continued)

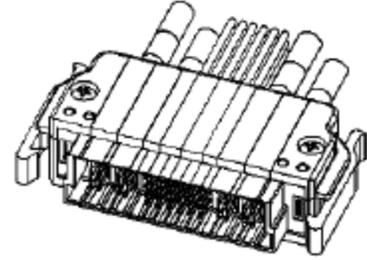
**Configurations/
Part Numbers**



PMT



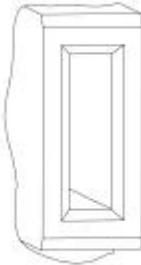
STL



STR

Power Module Widths:

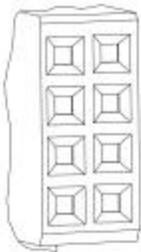
0.300" (ACP)
0.250" (P)
0.200" (HDP)



Module Designation	Maximum Wire Size		Max. Insulation Dia.
	AWG	mm ²	
300 (ACP)	8	10.5	.272 6.91
250 (P)	10	6.6	.215 5.46
200 (HDP)	12	2.6	.156 3.96

Signal Module Width:

0.200" (8 Contacts)



Module Designation	Maximum Wire Size		Max. Insulation Dia.
	AWG	mm ²	
Signals	22-26	0.14-0.32	.036-.054 0.91-1.37

Configuration	PMT Series Plug	STL Series Plug	Mating Receptacles*		STR Series Plug	Mating Receptacles Vertical
			Vertical	Right Angle		
3 ACP	—	1761421-1	6450543-6	6450173-1	—	—
4 P	—	1761421-3	6450543-5	—	1600814-2	—
1P/16S/1P	1600236-5	1600820-2	—	2-6450170-0	1600238-4	6450740-4
1P/24S/1P	1600236-4	1600820-1	6450540-1	6450160-3	1600238-3	6450740-5
2P/24S/2P	1600236-6	1600820-3	—	2-6450170-1	1600238-5	6450740-6
3ACP/24S/3ACP	1600236-7	1600820-4	4-6450550-1	2-6450170-2	1600238-6	6450740-7

PMT Series — Panel Mount with total 3mm float in X,Y and Z directions
 STL Series — Panel Mount with total 1.5mm float in X and Y directions
 STR Series — Squeeze-to-Release for removeable Cable-to-Board / I/O Applications
 *Specifications on mating pcb mountable receptacles:
 Product Specification — 108-2157-1
 Application Specification — 114-13164

Note: All part numbers are RoHS compliant.

**“NEW” MULTI-BEAM XL Power Distribution Connector System
Cable Plug Assemblies (Continued)**

Connector Styles

Intermateable with Tyco Electronics MULTI-BEAM XL pcb mounted receptacles

Specifications

Wire Gauge — 8 AWG – 14 AWG

Sequenced Mating — 3 Levels: Pwr/Gnd, Pwr & Signal, Signal

Current Carrying Capacity — Power Contacts — 45 Amps* on single 8 AWG wire
Signal Contacts — 4 Amps on single 22 AWG wire

Durability — 250 Cycle

Temperature Range — 40°C – 105°C

Float — 1.5mm float in X, Y, and Z Direction**

RoHS Compliant

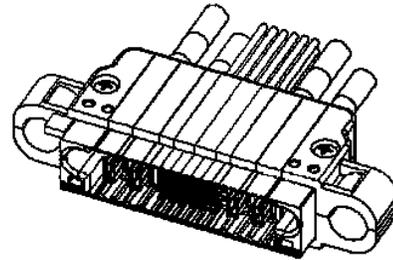
UL, CSA, VDE Approvals Pending

*Based on End-of-Design Life Qualification Tests

**Mated to Tyco Electronics MULTI-BEAM XL receptacles only

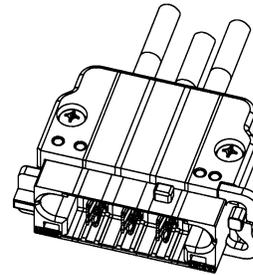
PMT (Panel Mount) for True X, Y, Z Floating

- Single-piece contact design — eliminates multiple contact interfaces
- Insulation crimp on all contacts
- Installation to panel provides float in X, Y and Z directions



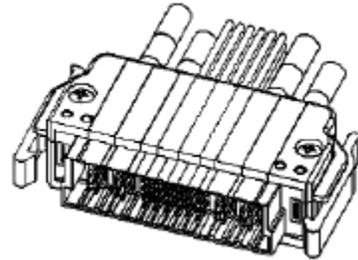
STL (Slide-to-Lock) — Most Economical — Still Offering X and Y Floating

- Single-piece contact design — eliminates multiple contact interfaces
- Insulation crimp on all contacts
- Installation to panel provides float in X and Y directions



STR (Squeeze-to-Release) — To Connect Sub-assemblies

- Single-piece contact design — eliminates multiple contact interfaces
- Insulation crimp on all contacts
- Easy to mate/disconnect with squeeze-to-release latches



- Offered as pre-assembled, fully tested cable assemblies, as shown below
- Combines multiple power and signal connectors into a single Power I/O Connector

