



AMP-DUAC PL Connectors

Product Facts

- Wire to board connection system
- Improved DUAL-ACTION Contact Design — provides better contact lead-in and reduces contact mating force
- Sequenced contacts available for Mate-first Break-last operation
- 4, 6 and 12-position right angle headers and free hanging receptacles
- 4.2mm x 5.5mm centerline
- Receptacle contacts designed for 26-22 AWG stranded wire
- Recognized under Component Program of Underwriters Laboratories Inc., File No. E28476 
- Certified by Canadian Standards Association, File No. LR7189 

Technical Documents

Product Specifications
108-1646

Application Specifications
114-6067-Crimping Contacts

Qualification Test Report
501-394

Performance Data

Voltage Rating — 600 VAC

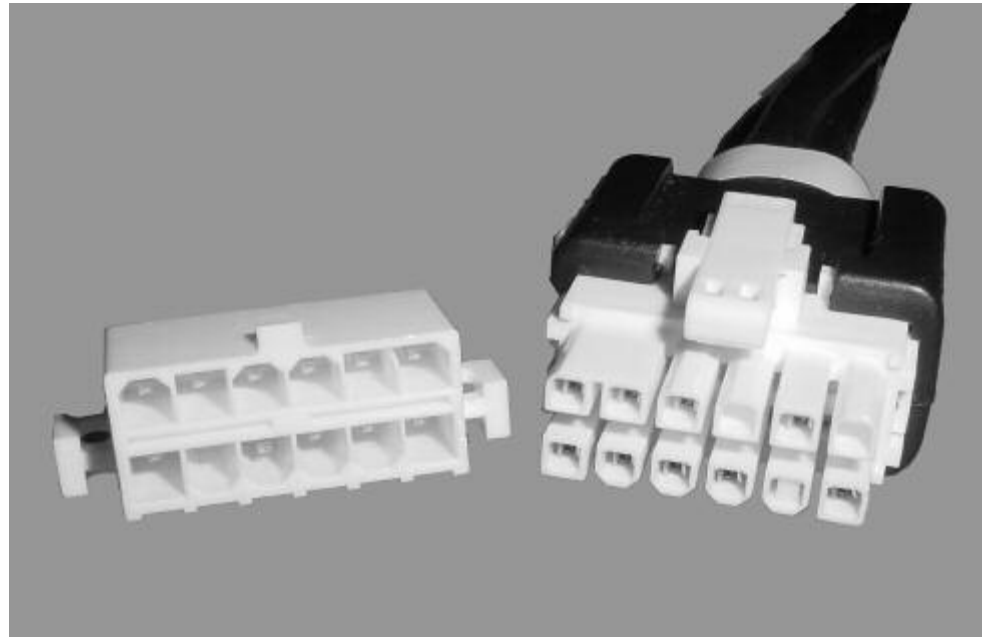
Current Rating — 9 amps maximum in 2-position application

Low Level Resistance — 10 megohms max.

Dielectric Withstanding Voltage — 1500 VAC/min.

Insulation Resistance — 1000 Megohms minimum

Operating Temperature — -55°C to +105°C [-67°F to +221°F]



The latest addition to the 4.2mm Wire-to-Board Power Connectors is the AMP-DUAC PL Connector. This product uses the industry proven AMP-DUAC contacts with the addition of several housing improvements to offer significant overall improvements in connector reliability. The product is available in both component form and as fully assembled custom cable assemblies.

The AMP-DUAC PL housings are designed to guarantee that all electrical contacts are fully seated. The "PL" refers to "Positive

Locking" of the contacts. It is also referred to as terminal position assurance. Contacts are inserted into the receptacle housing and the contact lock is installed to lock all the contacts into position. If any one of the contacts is not fully inserted, the Contact Lock cannot be installed. This feature eliminates a common concern of operator fatigue and the resulting contact back-out, which occurs when a contact is not installed properly. An improved mounting flange has also been added for more secure printed circuit board mounting.

Finally, the housings have been re-designed to provide an improved latch, which offers a metal spring instead of the original plastic spring/latch. An extended latch arm is also available for hard to reach installations or where the connectors are stacked in close proximity.

All the housings are polarized to prevent mis-mating.

AMP-DUAC PL Connectors (Continued)

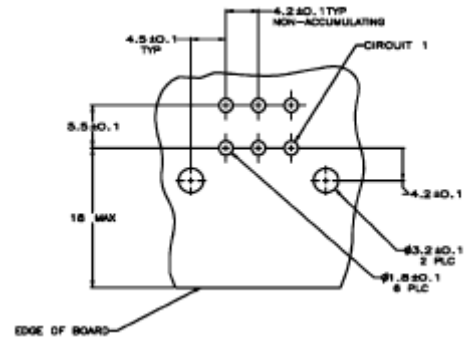
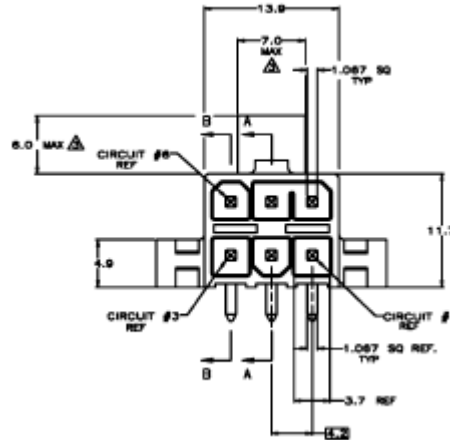
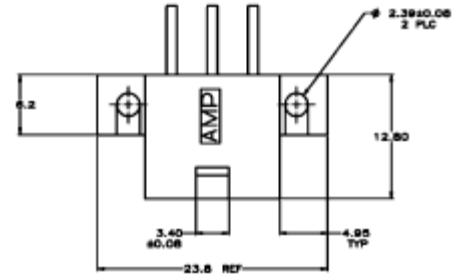
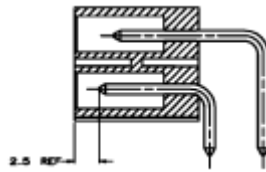
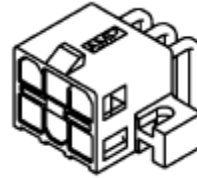
AMP-DUAC PL PCB Headers

Material

Housings — Nylon, UL 94V-0
Color, white

Contacts — Brass, tin-lead

Finish — 0.00038 [0.00030] gold in mating area, tin-lead in solder tail, all over 0.00127 [0.000050] nickel



**Recommended Mounting Hole Pattern
For 1.78 Max. Thick PC Board
Component Side Shown**

No. Positions	Mate-First Break-Last Position #	Part Number
4	All Standard Length 3	5794172-2 5794172-3
6	All Standard Length 3	5794173-2 5794173-3
12	All Standard Length 4	5794176-2 5794176-3

Note: All part numbers are RoHS compliant.

AMP-DUAC PL Connectors (Continued)

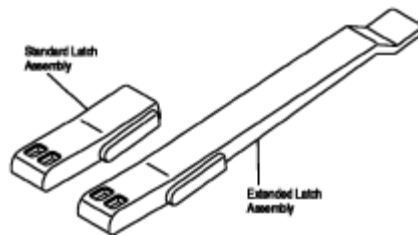
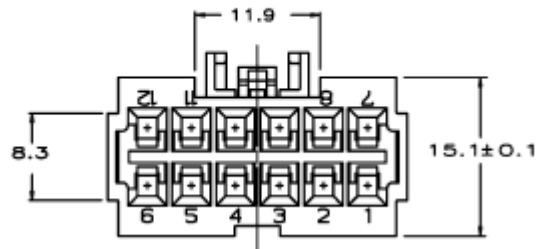
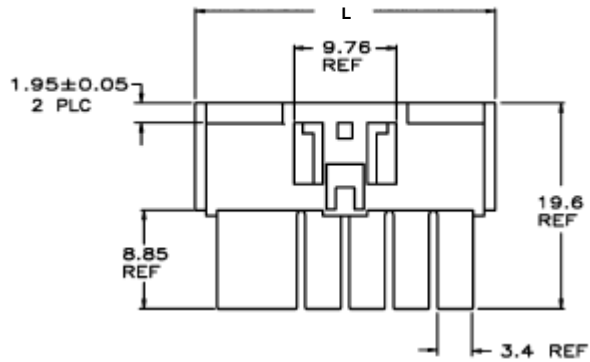
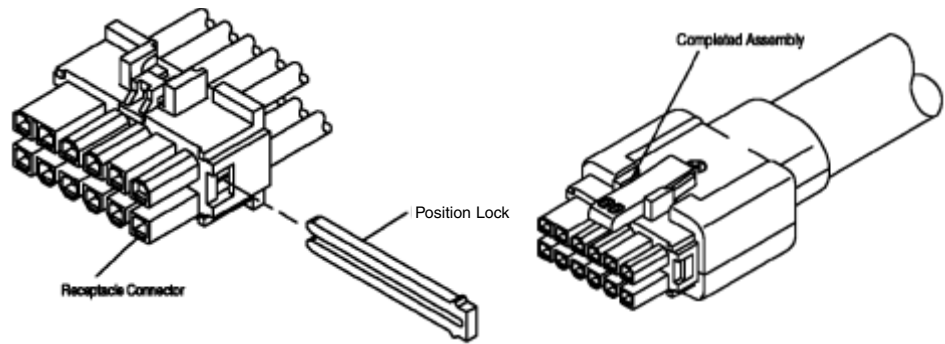
AMP-DUAC PL Receptacles

Material

Housings — Nylon, UL94V-0
Color, White

Technical Documents — page 101

Contacts — page 109



No. Positions	Dimension L	Part Numbers		
		Housing	Standard Latch	Extended Latch
4	15.9	794152-1*		
6	20.1	794153-1	794150	794149
12	28.6	794156-1		

*Latch items ordered separately
Optional keying plug — Part No. 794144-1

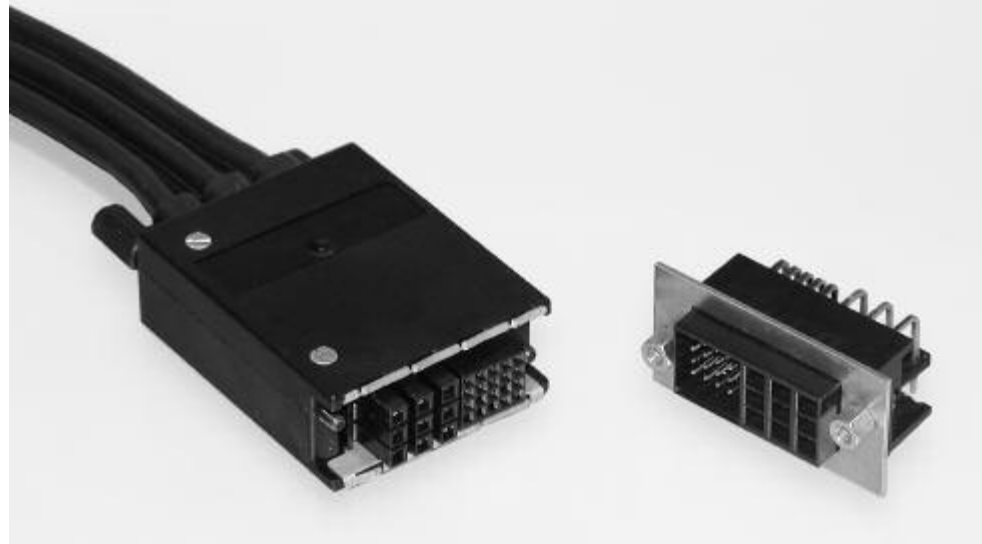
Note: Position Lock Required — use one per housing — Part No. 794145-3

Note: All part numbers are RoHS compliant.

“NEW” AMP-DUAC PL-II Connectors

Product Facts

- Wire-to-board connection system combining power and signal contacts
 - 10A power contacts
 - 4A signal contacts
- High conductivity copper alloy power contacts yield 30% gain in current carrying capacity compared to alternative designs
- Dual Action Contact (DUAC) design — reduces mating forces by up to 50% compared to alternative designs.
- 9 power and 20 signal contacts
- Positive Lock (PL) feature on both Power and Signal contacts ensures contacts remain in position in cable receptacle
- Pin and Receptacle contacts offered in three sizes:
 - 16 AWG
 - 18 AWG
 - 20-22 AWG
- Wide 5.2 X 5.5mm contact spacing allows for 300V applications.
- Recognized under the Component Program of Underwriters laboratories Inc., File No. E28476



The new AMP-DUAC PL-II Connectors bring both shielding and a power / signal mix to the popular DUAC product family. In addition, the wider contact spacing and the use of high conductivity materials results in a higher current carrying capacity than the original 4.2 mm pitch DUAC product.

The deep back shell allows for gathering the larger wire and insulation diameters involves with combination power / signal and shielding all in the same cable. Traditional signal connectors do not accept the range of wire sizes covered by the DUAC PL-II product.

For applications involving higher voltage cabled power distribution, this product is the ideal solution. The DUAC PL-II connector uses the original industry proven dual-action contact (DUAC) design which provides a lower mating force and less plating wear than alternate contact designs. The signal contacts also feature a twin-cantilever beam that mates on the milled contact surface to provide low plating wear and high long-term reliability.

The cable mounted receptacle uses the popular “Positive Lock” devices proven throughout the automotive industry to ensure all the contacts are fully seated. The “positive locks” are also referred to as “terminal position assurance”. If any one of the contacts is not properly/ completely installed into the housing, then the “Positive Lock” can not be installed. This feature eliminates the common concern of operator fatigue and the resulting contact back-out which occurs when a contact is not properly seated.

The shielding system fully encapsulates the inner conductors and cable braids and provides a reliable conduction to the faceplate of the mating equipment.

Finally, the cable retention is accomplished through two rear-accessed over molded jackscrews for easy installation and removal.

Technical Documents

Product Specification
108-2218

Application Specification
Contact Tyco Electronics

Performance Data

Voltage Rating — 600 VAC

Current Rating —
10 Amps max on a single contact
6 Amps on each contact in 48 pos.
connector

Low Level Resistance —
10 milliohms max

Insulation Resistance —
1000 Megohms minimum

Operating Temperature —
-40°C to +105°C

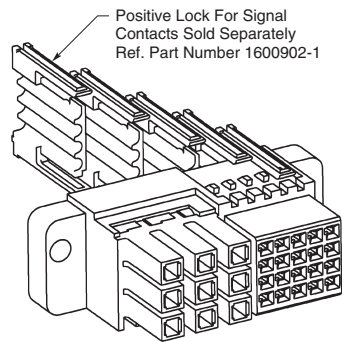
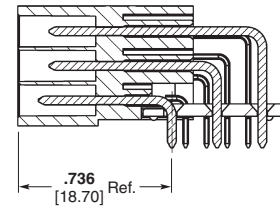
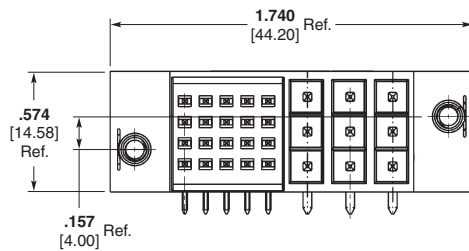
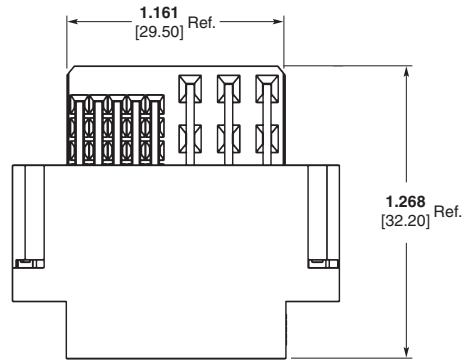
Materials

Housing Material — PBT, UL 94V-0

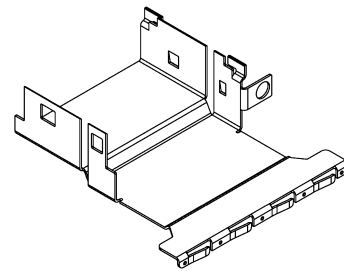
Colors —
Plugs and Receptacles — Black
Positive Locks — White

“NEW” AMP-DUAC PL-II Connectors (Continued)

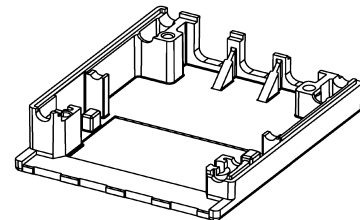
PCB Plug
Part Number 6469602-1



Free-Hanging Receptacle
Shown with Positive Locks



Shield



Cable Clamp

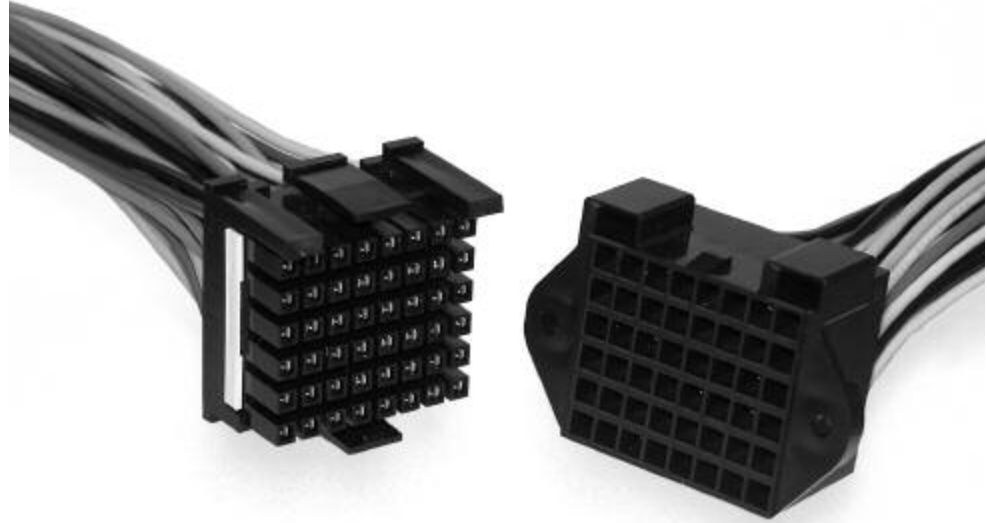
Note: Other cable components required. Cable receptacle components shown not sold separately. Receptacle only sold as part of a finished cable assembly.

Note: All part numbers are RoHS compliant.

“NEW” AMP-DUAC UPC Connectors

Product Facts

- Wire-to-wire connection system
- High conductivity copper alloy contacts yield 30% gain in current carrying capacity compared to alternative designs
- Dual Action Contact (DUAC) design — reduces mating forces by up to 50% compared to alternative designs
- Sequenced contacts for Make-First-Break-Last operation
- 48 and 66 position housings
- 4.4mm X 5.3mm contact grid
- Pin and Receptacle contacts offered in three sizes:
 - 16 AWG
 - 18 AWG
 - 20-22 AWG
- Recognized under the Component Program of Underwriters laboratories Inc., File No. E28476



The latest addition to the AMP-DUAC product family is the AMP-DUAC UPC connector. The UPC connector offers much higher pin counts and a variety of product improvements to make the connector more reliable and easier to use. The UPC connector uses the original industry proven dual-action contact (DUAC) design along with very high conductivity copper alloys to improve the current carrying capacity.

The first noticeable difference of the UPC connector is the large pin count. With either 48 or 66 positions, the housing can serve as a common mating I/O point where multiple low current power connector cables are combined into one interface. Other connectors would yield an excessive mating force when mating this number of wires, however, the low mating force of the DUAC / UPC connector allows up to 66 wires to be mated with less than a 20 lb mating force.

The next key improvement is the use of molded-in guide pins. The guide pins make the mating process very easy and provide a visual polarization of the connector. The housings are so easily mated they practically “fall together”.

The use of two locking latches ensures a more secure connection and the screw-mounts for the panel mounted plug provide better retention than plastic latches.

Finally, the free-hanging receptacle uses the popular “Positive Lock” device to ensure all the contacts are fully seated. The “positive locks” are also referred to as “terminal position assurance”. If any one of the contacts is not properly/ completely installed into the housing, then the “Positive Lock” can not be installed. This feature eliminates the common concern of operator fatigue and the resulting contact back-out which occurs when a contact is not properly seated.

Technical Documents

Product Specification

108-2248

Application Specification

114-13195

Performance Data

Voltage Rating — 600 VAC

Current Rating —

11 Amps max on a single contact
4 Amps on each contact in 48 pos. connector

Low Level Resistance — 10 milli-ohms max

Insulation Resistance — 1.2 E16 ohms minimum

Operating Temperature — -40°C to +105°C

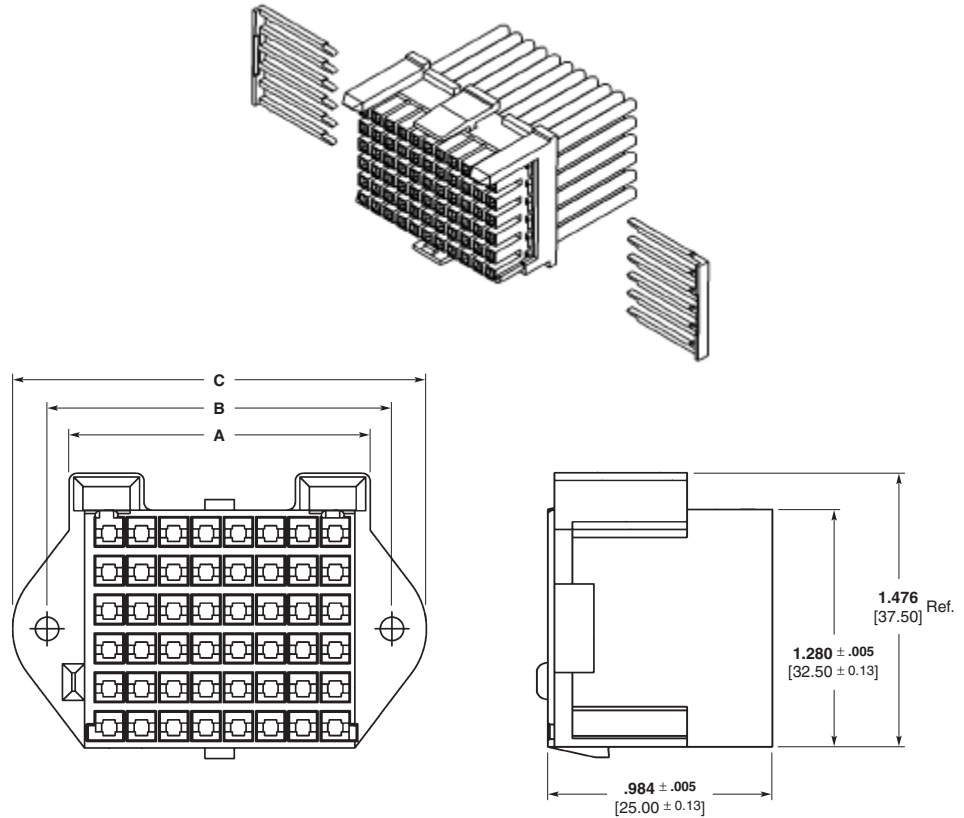
Materials

Housing Material — PBT, UL 94V-0

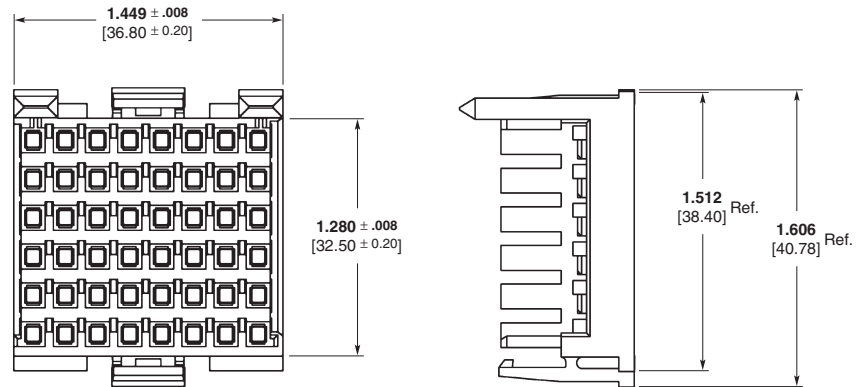
Colors —

Plugs and Receptacles — Black
Positive Locks — White

“NEW” AMP-DUAC UPC Connectors (Continued)



Panel Mount Plug
(Accepts contacts on page 108)



Free-Hanging Receptacle
(Accepts contacts on page 109)

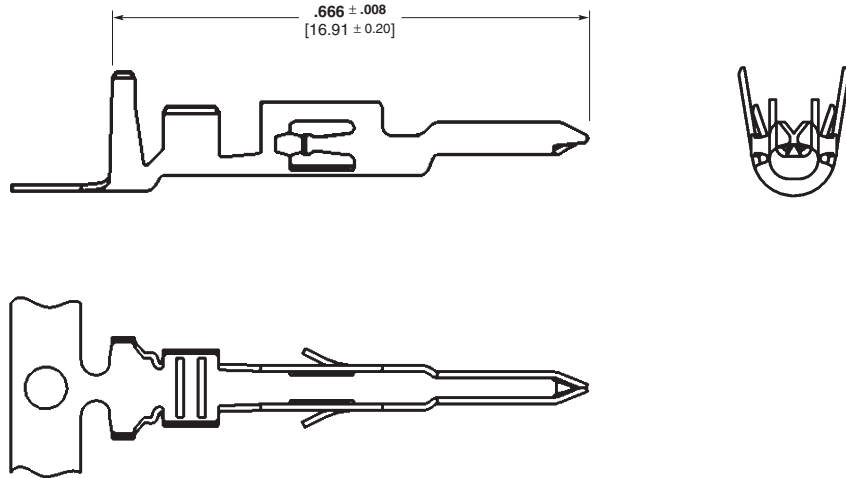
Size (No. Circuits)	Panel Mount Plug	Dimensions			Free-Hanging Receptacle*	Positive Lock*
		A	B	C		
48	1934142-1	1.61 41.0	1.85 47.0	2.22 56.4	1934144-1	1469910-1
66	1934143-1	2.13 54.2	2.37 60.2	2.74 69.6	1934145-1	1934017-1

*Two (2) required for each receptacle housing. Not used in plug housings.

Note: All part numbers are RoHS compliant.

Contacts for AMP-DUAC PL, PL-II and UPC Connectors

Materials — High Conductivity
Copper Alloy
Finish — Pre-Tin or Gold Plated



Cable Mounted Products

Contacts, Male

Technical Documents

Product Specification
108-2218 AMP-DUAC PL
108-2248 AMP-DUAC UPC

Application Specification
114-6067 AMP-DUAC PL
114-13195 AMP-DUAC UPC

DUAC PL or UPC Contacts

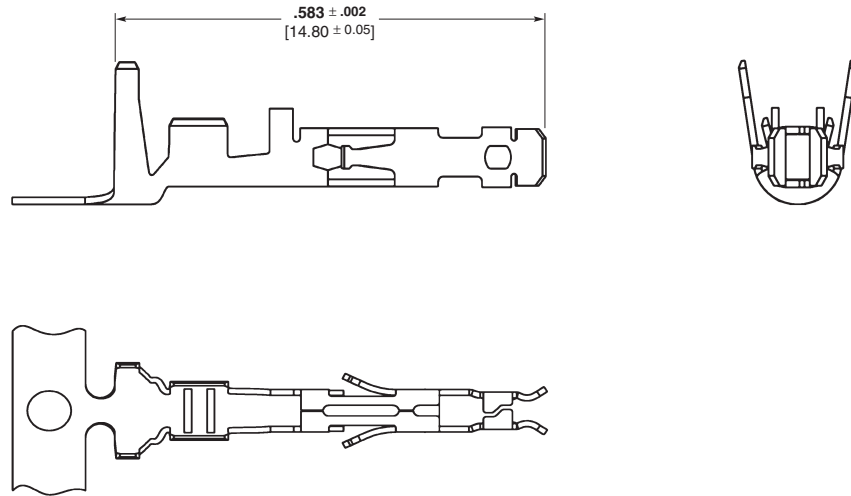
Wire Size Range AWG [mm ²]	Ins. Dia. Range	Plating	Part Number (Continuous Strip)
22-20 [0.3-0.5]	.590-.094 [1.50-2.40]	Tin	794576-1*
18 or 18+22 [0.8-1.1]	.087-.154 [2.20-3.90]	Gold	1934185-4
16 or 2 @ 18 [1.3-1.6]	.098-.173 [2.50-4.40]	Gold	1934184-4

Application Equipment: Extraction Tool 1976132
*Made from Phosphor-Bronze material (low conductivity)

Note: All part numbers are RoHS compliant.

Contacts for AMP-DUAC PL, PL-II and UPC Connectors (Continued)

Materials — High Conductivity
Copper Alloy
Finish — Gold Plated



Contacts, Female

Technical Documents

Product Specification

108-2218 AMP-DUAC PL
108-2248 AMP-DUAC UPC

Application Specification

114-6067 AMP-DUAC PL
114-13195 AMP-DUAC UPC

DUAC PL or UPC Contacts

Wire Size Range AWG [mm ²]	Ins. Dia. Range	Plating	Part Number (Continuous Strip)
22-20 [0.3-0.5]	.590-.094 [1.50-2.40]	Gold	1934193-4
18 or 18+22 [0.8-1.1]	.087-.154 [2.20-3.90]	Gold	1934183-4
16 or 2 @ 18 [1.3-1.6]	.098-.173 [2.50-4.40]	Gold	1934182-4

Application Equipment: Extraction Tool 1976382

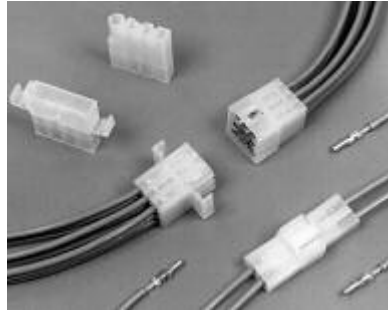
Note: All part numbers are RoHS compliant.

Other Soft Shell Pin & Socket Connectors

Product Facts

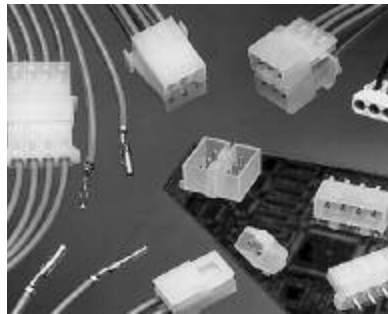
AMP .093 and .062 Commercial Pin and Socket Connectors

- Economical grade, wire-to-wire connectors
- Dual contact locking lances provide optimum contact stability
- Panel mount or free-hanging versions
- Voltage rating: 250 VAC or VDC
- Standard density (.093" diameter pin contact), .198" centerline, 1-15 positions; 13 A rating
- High density (.062" diameter pin contact), .145" centerline, 1-9 positions; 7 A rating



AMP Commercial MATE-N-LOK Connectors

- Standard density, wire-to-wire and wire-to-board connectors
- .200" centerline
- 1-16 positions
- Panel mount or free hanging
- Ratings: 19 A, 250 VAC
- Hot side is egg-crated for safety
- Locking devices are integral part of design



AMP Universal MATE-N-LOK and Universal MATE-N-LOK II Connectors

- .250" centerline; 1-15 and 2-15 positions, respectively
- Standard density, wire-to-wire and wire-to-board capability
- Panel mount or free hanging
- Ratings: 19 A, 600 VAC or VDC
- Contacts protected in the housings
- Seals available for splash protection (Universal MATE-N-LOK Connectors only)



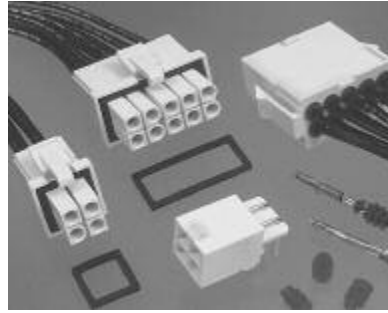
For more Information Order Catalog 82181, "Soft Shell Pin and Socket Connectors"

Other Soft Shell Pin & Socket Connectors (Continued)

Product Facts

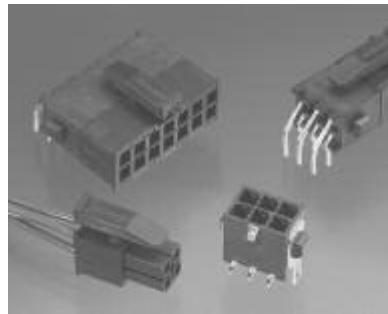
AMP Mini-Universal MATE-N-LOK and Mini-Universal MATE-N-LOK 2 Connectors

- High density, .163" centerline; 1-24 and 2-24 positions, respectively
- Wire-to-wire and wire-to-board capability
- Ratings: 600 VAC or VDC; 9.5 A and 10.5 A, respectively
- Contacts protected in the housings
- Seals available for splash protection (Mini-Universal MATE-N-LOK Connectors only)



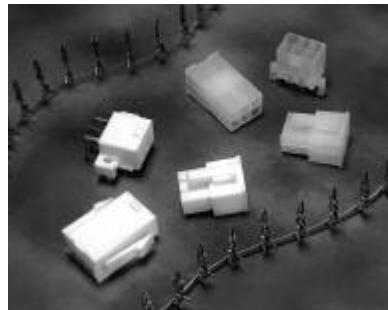
AMP Micro MATE-N-LOK 3mm Connectors

- High density, wire-to-wire and wire-to-board connectors
- 3 mm centerline, 2-24 positions
- Ratings: 5 A, 250 VAC
- Dual beam receptacle contact design for improved reliability
- Panel mount or free hanging
- PCB headers are available in vertical and right angle versions; thru-hole or surface mount



AMP 4.2 mm PE Series Connector System

- High density, wire-to-wire, wire-to-board and wire-to-panel connectors
- 4.2 mm centerline
- Single-row housings (3, 4 and 5 positions); Double-row (2-24 positions, even only)
- Ratings: 9 A max. (2 pos.), 600 VAC
- 18-22 AWG pins and sockets, RoHS compliant
- Nylon housings, UL 94V-2 and 94V-0
- Positive latch design
- Intermateable and interchangeable with Molex Mini-Fit, Jr. and intermateable with AMP-DUAC connectors



For more information Order Catalog 82181, "Soft Shell Pin and Socket Connectors"