

## AMP Drawer Series Connectors — Miniature Power Drawer (MPD) Connectors

### Product Facts

- High mating cycle life
- Low Mating and Un-mating force (< 0.2lbs per contact)
- Single-piece molded housing
- Molded-in guide pins provide generous blind-mateability
- Sizes: 3 – 10 positions
- Compact size is ideal for distributed DC power applications
- Two Levels of contact sequencing
- One contact for either solder or press-fit termination
- Hardware — Less or traditional shoulder bolt mounting
- Minimum of 3mm contact wipe on shortest power contact
- All MPD connectors in this section are RoHS compliant

### Specifications

Up to 15 amps per contact  
250 mating cycle durability  
+/- 1.25mm radial mis-alignment capability. (Total float is 2.5mm!)

1.6mm sequencing distance — ideal for modular sheet metal construction applications

Minimum of 3mm contact wipe on shortest power contact

Maximum continuous operating temperature — 105°C

UL 94 V-0 High-temperature thermoplastic housings

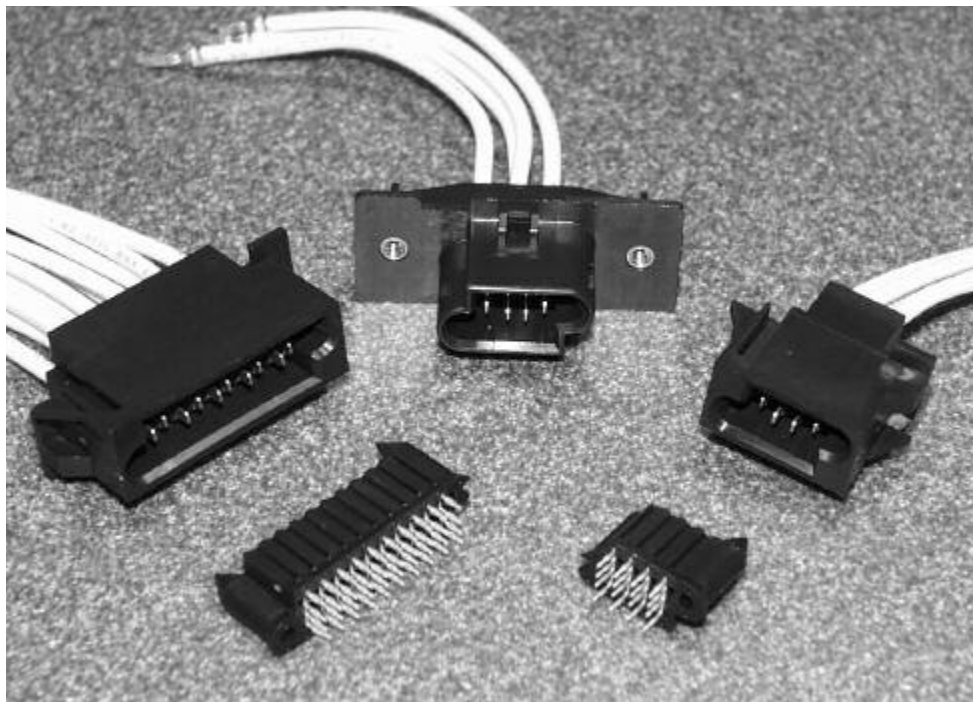
### Technical Documents

#### Product Specification

108-1998

#### Application Specification

114-13067



The new Miniature Power Drawer connector combines a high density power interface in a blind-mateable wire-to-board connector. The MPD contact interface has been previously qualified to requirements similar to BellCore GR-1217 in board-to-board applications. Now available in a crimp-to-wire version, the contacts are rated for up to 15 Amps on 14 AWG wire. In addition, the MPD contacts are designed to meet UL 1977 Hot-Plug requirements for up to 7.8 Amps at 48VDC.

The connection consists of a vertical pcb mountable receptacle and a panel mounted floating plug. The vertical receptacle pcb tails are designed for use in either through-hole solder or press-fit applications. The float-mount plug is easily installed from the inside of the chassis without any additional hardware, lending itself to easy assembly of pre-made cable assemblies. Additionally, the staggered wire exit pattern permits the maximum number of contact interfaces in the least amount of connector volume.

The compact design is ideal for bringing power to small rack-mounted devices such as 1U Computer Servers and Telecommunications Switches. The 3mm center-line satisfies UL 1977 safety requirements for 48 VDC distributed power applications. For higher voltage applications such as AC input, the contacts can be selectively loaded to handle up to 300 V AC or DC.

## AMP Drawer Series Connectors — Miniature Power Drawer (MPD) Connectors (Continued)

### Crimp Contacts

#### Current Ratings

**Standard Power** — 10 Amps

**High Power** — 16 Amps

#### Material and Finish

**Standard Power:**

**Crimp Blade Contacts** — Brass

**Receptacle Contacts** —  
Phos. Bronze.

**Finish** — 0.38µm Gold over 1.27µm Nickel

**High Power:**

**Blades** — High Conductivity Cu Alloy

**Receptacle** — High Conductivity Cu Alloy

**Finish** — 1.27µm Gold over 1.27µm Nickel

**Contact Mating Length (Min.)** —

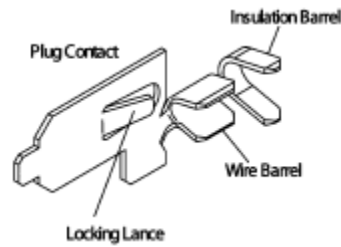
Type A — 4.6mm

Type B — 3.0mm

**Hot-Pluggability (With High Current Contacts only)** —

**250 Cycles** — 7.8 Amps @ 48VDC

**Note:** All contacts are Sn plated in the crimp barrel or Sn in pcb interface



### Crimp Blade Contacts

Wire Size	Type	Cycles	Mating Length	Part Number Strip / Loose Piece
18-20 AWG	Standard Power	100	A	1489128-8 / 1-1489128-4
			B	1489128-7 / 1-1489128-3
	High Power	250	A	1-1489128-0 / 1-1489128-6
			B	1489128-9 / 1-1489128-5
14-16 AWG	Standard Power	100	A	1489757-2 / 1-1489757-0
			B	1489757-1 / 1489757-9
	High Power	250	A	1489757-6 / 1-1489757-2
			B	1489757-5 / 1-1489757-1

Heavy Duty Miniature (HDM) Applicator for AMP-O-LECTRIC Model G Machine - #1385248-3.  
PRO-CRIMPER Hand Tool #354940-1, Die set # 91363-2

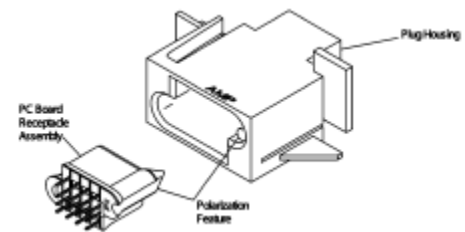
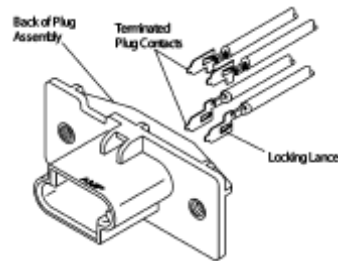
### Plugs and Receptacles

#### Materials

UL 94V-0 Thermoplastic

105°C Max. Operating temperature

**Note:** Vertical PCB Mt. Receptacles supplied with press-fit ACTION PIN contacts.



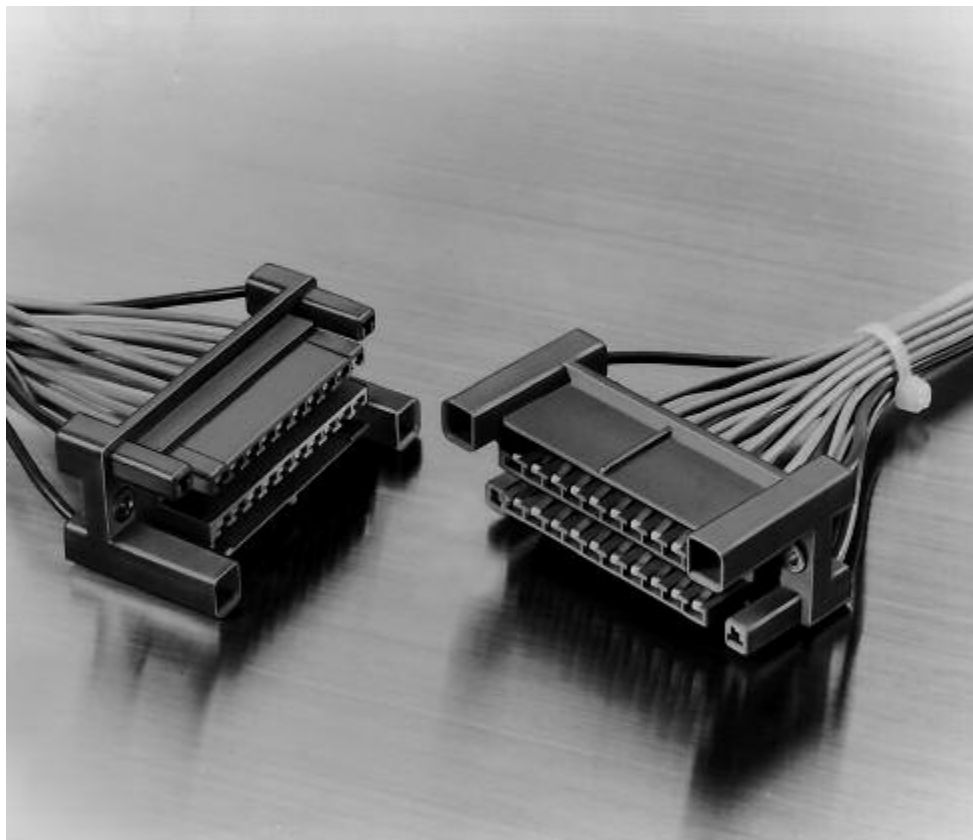
Number of Positions	Part Number			
	Panel Mt. Plug		PCB Mt. Receptacles	
	Snap-In	Shoulder Bolt	Standard Power	High Current
3	1489127-1	—	1489715-1	1-1489715-1
4	1489127-2	1489701-1	1489715-2	1-1489715-2
5	1489127-3	—	1489715-3	1-1489715-3
6	1489127-4	—	1489715-4	1-1489715-4
7	1489127-5	—	1489715-5	1-1489715-5
8	1489127-6	—	1489715-6	1-1489715-6
9	1489127-7	—	1489715-7	1-1489715-7
10	1489127-8	—	1489715-8	1-1489715-8

**Note:** All part numbers are RoHS compliant.

## AMP Drawer Series Connectors — Hybrid Blindmate Drawer Connectors

### Product Facts

- High current circuits and signal circuits can be mixed in the same connector
- High current circuits use MIC connector contacts located at four corners of the housing
- Signal circuits use Standard Drawer Connector contacts
- 24 positions
- Hermaphroditic housing can be mated with top and bottom turned while maintaining polarity



AMP Hybrid Drawer Connectors offer high current and signal circuits mixed in the same connector system.

High current circuits use MIC connector contacts which are located at the four corners of the housing.

Signal circuits use the same hermaphroditic crimp snap-in contacts that are used in the Standard Drawer Connector.

The hermaphroditic housings are available in a popular 24-position size. These housings can be mated with top and bottom turned while maintaining polarity.

### Performance Specifications

**Voltage Rating** — 250 VAC

#### **Current Rating (Max.)** —

Signal Circuit (Drawer);  
4 amperes — 24 AWG [0.2mm<sup>2</sup>] Wire  
5 amperes — 22 AWG [0.3-0.4mm<sup>2</sup>] Wire  
7 amperes — 20 AWG [0.5-0.6mm<sup>2</sup>] Wire  
Power Circuit (MIC);  
10 amperes

#### **Low Level Resistance** —

Signal Circuit (Drawer);  
10 milliohms max. (Initial)  
20 milliohms max. (Final)  
Power Circuit (MIC);  
3 milliohms (Initial)  
6 milliohms (Final)

#### **Dielectric Withstanding Voltage** —

5000 milliohms (Initial)  
2000 milliohms (Final)

#### **Operating Temperature** —

-20°C to +120°C

## AMP Drawer Series Connectors — Hybrid Blindmate Drawer Connectors (Continued)

### Housings (Hermaphroditic), 24 Positions

#### Material

**Housing** — Glass-filled polybutylene terephthalate (PBT), blue

**Bushing** — Brass, zinc-plated

#### Related Product Data

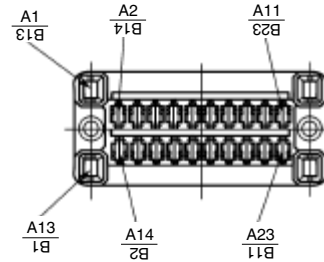
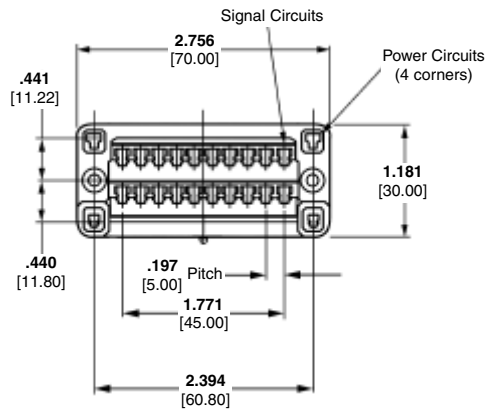
**Performance Specifications** —  
page 84

**MIC Contacts** — page 86

**Crimp Snap-In Contacts** — page 86

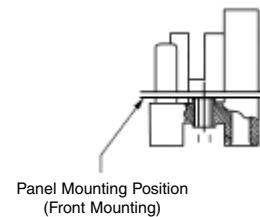
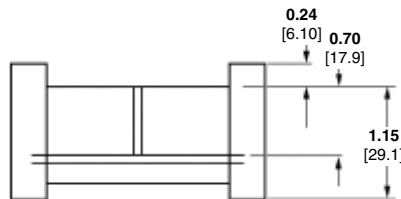
#### Technical Documents

AMP Product Specification  
108-5371



**Note:** Reverse figures show circuit numbers.

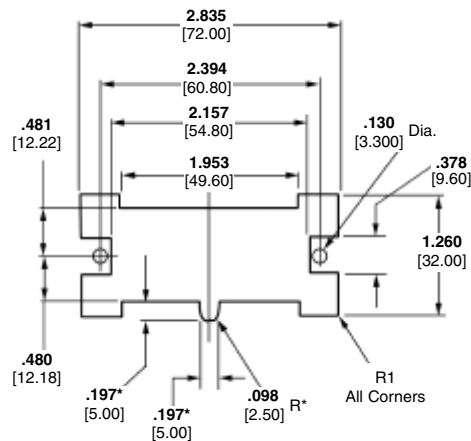
(Example =  $\frac{A1}{13}$  The hole used for No. 1 circuit is used for No. 13 on the reverse side.)



Floating of Bushing	Housing Part Numbers
Up- and downward = 0.05 [.002] Circumferential = 0.14 [.006]	176916-1
Up- and downward = 0.30 [.012] Circumferential = 0.80 [.031]	176916-2

Upward and downward = Axial clearance  
Circumferential = Floating

### Recommended Panel Cutout



\*Dimensions applicable for rear mounting.

**Note:** All part numbers are RoHS compliant.

## AMP Drawer Series Connectors — Hybrid Blindmate Drawer Connectors (Continued)

### MIC Contacts (Used for Power Circuits)

#### Material and Finish

Phosphor bronze, plated .000030 [0.00076] gold in contact area, remainder of contact gold flash, with entire contact underplated nickel

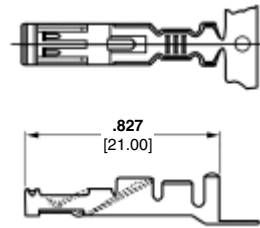
#### Related Product Data

**Performance Specifications—**  
page 84

**Housings—**page 85

#### Technical Documents

AMP Instruction Sheets  
408-089J, 408-369J, 408-370J



Wire Size Range		Insulation Diameter	Part Numbers		Hand Tool
AWG	mm <sup>2</sup>		Receptacle	Contact	
			Strip Form	Loose Piece	
20-14	0.5-2.0	.087-.134 2.20-3.40	170286-4	170289-3	755338-1* 755339-1

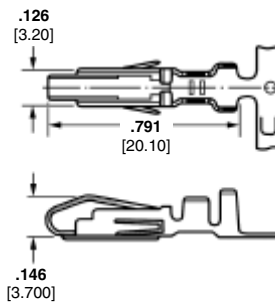
\*Part Number 755338-1 is used on wire for automotive application; Part Number 755339-1 is used on other types of wire.

Extraction Tool Part Number 723735-1

### Crimp Snap-In Contacts (Hermaphroditic, Used for Signal Circuits)

#### Material and Finish

Phosphor bronze, plated gold in contact area (for length of .236 [6.0] from tip), with entire contact underplated nickel



Wire Size Range		Insulation Dia. Range	Part Numbers		Hand Tool
AWG	mm <sup>2</sup>		Contact	Applicator for AMP-O-ELECTRIC Machine*	
			Strip Form	Loose Piece	
24-20	0.2-0.6	.060-.077 1.50-1.95	170311-1	170313-1	567324-2 724632-1
20-16	0.5-1.4	.071-.130 1.80-3.30	170484-1	170485-1	567241-2 724787-1

\*Applicators are for Model "K" machines. Consult AMP for applicators for other bench machines and lead-making machines.

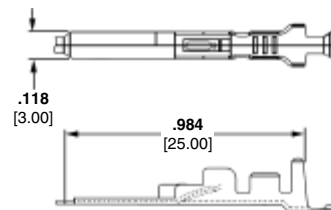
**Notes:** For applicable wire, use wire specified in UL 1015 or 1007.

Extraction Tool Part Number 723986-1

### Tab Contacts

#### Material and Finish

Brass, plated .000030 [0.00076] gold in contact area, with entire contact underplated nickel



Wire Size Range		Insulation Diameter	Part Numbers		Hand Tool
AWG	mm <sup>2</sup>		Tab Contact		
			Strip Form	Loose Piece	
20-14	0.5-2.0	.087-.134 2.20-3.40	170221-4	170222-3	755338-1* 755339-1

\*Part Number 755338-1 is used on wire for automotive application; Part Number 755339-1 is used on other types of wire.

Extraction Tool Part Number 724763-1

**Note:** All part numbers are RoHS compliant.

## AMP Drawer Series Connectors — Special Blindmate Drawer Connectors (uses AMP-LEAF Contacts)

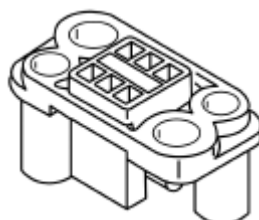
### Product Facts

- Blindmate connectors accept AMP-LEAF crimp snap-in and solder dip contacts
- Contacts are phosphor bronze, gold-over-nickel plated
- 6 and 10 positions
- Housings made of polybutylene terephthalate (PBT)

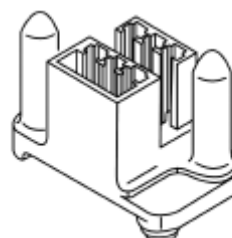


Special Blindmate Drawer Connectors are available in 6- and 10-position configurations and provide wire-to-board and wire-to-wire connection capabilities. These connectors offer the integrity of AMP-LEAF contacts with maximum travel wiping action.

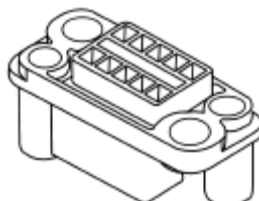
Housings feature molded-in guide pins and diagonally aligned sockets for correct polarization and to facilitate blindmating. The PC header guide pins extend through the PC board to secure the header to the board prior to soldering.



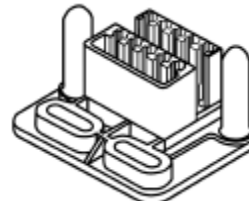
**6-Position Socket Housing**  
(Accepts AMP-LEAF  
Crimp Snap-In Contacts)



**6-Position PC Board Header Housing**  
(Fully loaded with AMP-LEAF  
Solder Dip Contacts)



**10-Position Socket Housing**  
(Accepts AMP-LEAF  
Crimp Snap-In Contacts)



**10-Position Header Housing**  
(Accepts AMP-LEAF  
Crimp Snap-In and  
Solder Dip Contacts)

### Performance Specifications

**Current Rating** —  
4 amperes (max.) — 26-22 AWG  
[0.12-0.4mm<sup>2</sup>] wire

**Voltage Rating** — 50 VDC

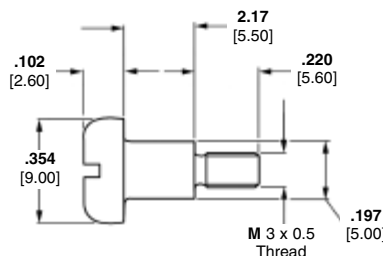
**Temperature Rating** —  
-10°C to +80°C

### Mounting Screw (2 Required per Socket Housing)

**Part Number 343404-1**

### Material and Finish

Steel, plated bright zinc chromate



## AMP Drawer Series Connectors — Special Blindmate Drawer Connectors (Continued)

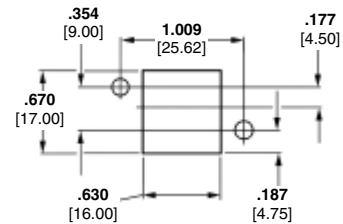
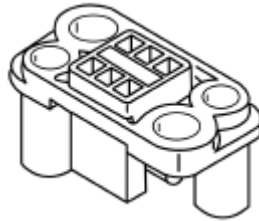
### Socket Housing, 6 Positions

**Part Number 343886-1**

Accepts the following AMP-LEAF  
Crimp Snap-In Contacts:

Part Number 583990-3 (loose piece)  
Part Number 583204-2 (strip form)

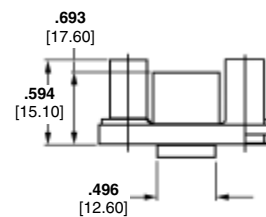
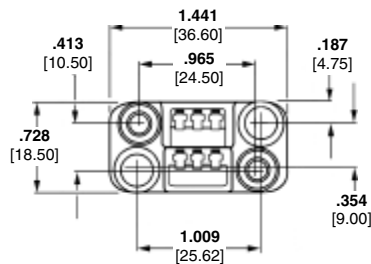
Contacts must be ordered  
separately.



**Recommended Panel Cutout**

### Material

Glass-filled polybutylene terephthalate  
(PBT), black

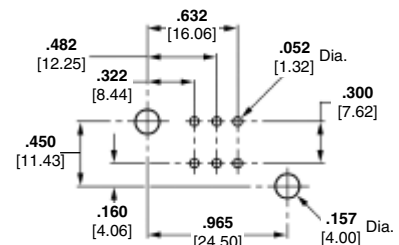
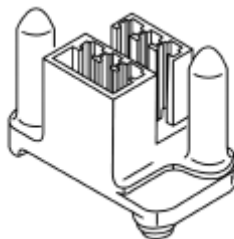


### PC Board Header Housing, 6 Positions with Board Retention

**Part Number 343887-1**

Accepts AMP-LEAF Crimp Snap-In  
Contact Part Number 343371-1  
and Solder Dip Contact  
Part Number 583294-2

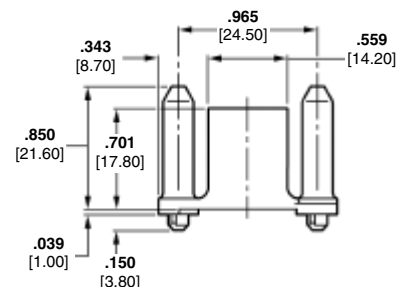
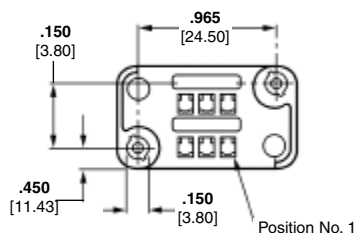
Contacts must be ordered  
separately; refer to contact  
specification pages for details.



**Recommended PC Board Layout**

### Material

Glass-filled polybutylene terephthalate  
(PBT), black



**Note:** All part numbers are RoHS compliant.

## AMP Drawer Series Connectors — Special Blindmate Drawer Connectors (Continued)

### Socket Housing, 10 Positions

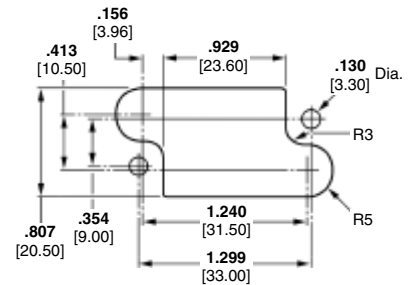
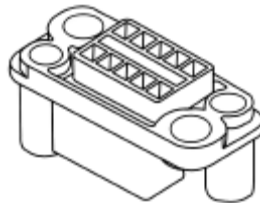
**Part Number 343348-1**

Accepts the following AMP-LEAF  
Crimp Snap-In Contacts:

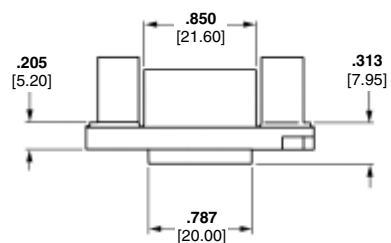
Part Number 343371-1 (strip form)

Part Number 583204-2 (strip form)

Contacts must be ordered  
separately.

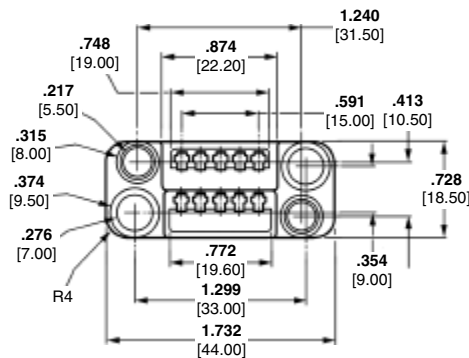


**Recommended Panel Cutout**



### Material

Glass-filled polybutylene terephthalate  
(PBT), black

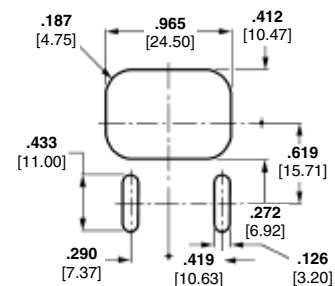
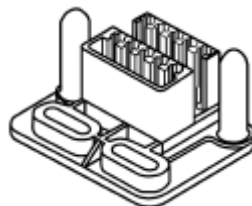


### Header Housing, 10 Positions

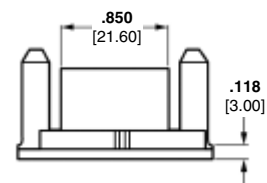
**Part Number 343347-1**

Accepts AMP-LEAF Crimp Snap-In  
Contact Part Number 343371-1  
and Solder Dip Contact  
Part Number 583294-2

Contacts must be ordered  
separately: refer to contact  
specification pages for details.

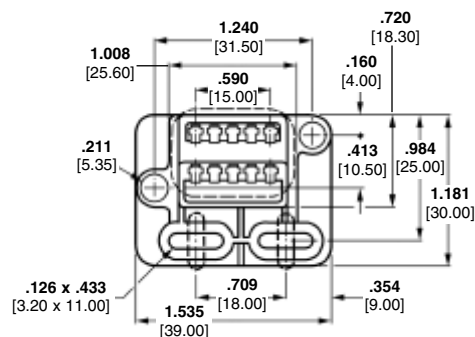


**Recommended Panel Cutout**



### Material

Glass-filled polybutylene terephthalate  
(PBT), black



**Note:** All part numbers are RoHS compliant.

## AMP Drawer Series Connectors — Special Blindmate Drawer Connectors (Continued)

### Crimp, Snap-In Contacts

#### Material and Finish

Phosphor bronze, plated as follows:

**Plating A** — .000100-.000200 [0.00254-0.00508] tin (lubricant must be used)

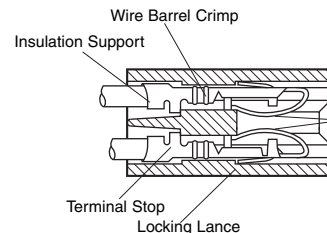
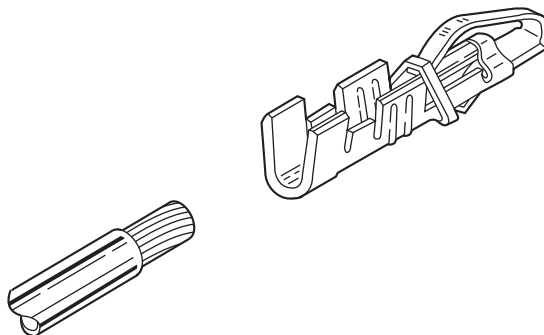
**Plating B** — .000030 [0.00076] min. gold in mating area, gold flash on remainder of contact, with entire contact underplated .000050 [0.00127] min. nickel

**Plating C** — .000015 [0.00038] min. gold in mating area, gold flash on remainder of contact, with entire contact underplated .000050 [0.00127] min. nickel

**Plating D** — .000030 [0.00076] min. gold over .000050 [0.00127] min. nickel in mating area, remainder of contact gold flash over .000015 [0.00038] min. nickel

**Plating E** — .000030 [0.00076] min. gold in mating area, with entire contact underplated .000050 [0.00127] min. nickel

**Plating F** — .000015 [0.00038] min. gold in mating area, with entire contact underplated .000050 [0.00127] min. nickel



Wire Range AWG/mm <sup>2</sup>	Insulation Range		Contact		Contact Finish	Applicator for AMP-O-ELECTRIC Machine*	Hand Tool
	Single Wire	Double Wire	Loose Piece	Strip Form			
<b>26-22</b> 0.12-0.4	<b>.050-.064</b> 1.27-1.63	—	583990-3	583204-2	B	466366-2	90028-3
			—	343371-1	D		
			—	583361-2	A		
<b>22-18</b> 0.3-0.9	<b>.055-.080</b> 1.40-2.03	<b>.120</b> 3.05 Max.	583989-3	583361-3	B	466367-2	90017-3 (1 #22-20) 90028-3 (2 #22) 90101-3 (1 #20)
			583989-4	583361-4	C		
			—	583555-4	E		
			—	583555-6	F		
<b>16</b> 1.25-1.40	<b>.108</b> 2.74 Max.	<b>.080-.160</b> 2.03-4.06	583991-3	60151-6	B	466368-2	90031-8 (2 #18) 90101-3 (2 #20) 90101-3 (1 #16)

\*Applicators are for AMP-O-ELECTRIC Model "K" machines. Consult Tyco Electronics for applicators for other bench machines and lead-making machines.

**Notes:** 1. Shorting contacts are available, consult Tyco Electronics.  
2. Contacts and housings to accommodate .093 [2.36] thick PC boards can be made available, consult Tyco Electronics.

### Technical Documents

Product Specifications

108-9013, 108-9043

Application Specification

114-9003

Instruction Sheets

408-6591, 408-7045, 408-7622,

408-7623, 408-7624, 408-7625,

408-7626

Crimp Inspection Sheet

CI 8050-33

### Hand Crimping Tool



### Contact Extraction Tool

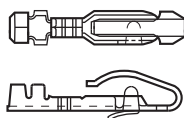


Part Number	
Extraction Tool	Used with Housings
465195-1	480110-2, -5
	480142-2, -3
	582140-5
	582147-5
	582264-2
	582500-2
	582963-2
	583167-3
	583280-1
	583617-1
	583680-1
	583685-1
	583722-1
	583723-1
465195-2	583724-1
	583725-1
	583726-1
465195-2	480133-2

### Dummy Contact

#### Material

Phosphor bronze



Plain Finish—  
**Part Number 66084-1**  
Tin Finish—  
**Part Number 66084-2**  
Gold Finish—  
**Part Number 66084-3**


### Technical Documents

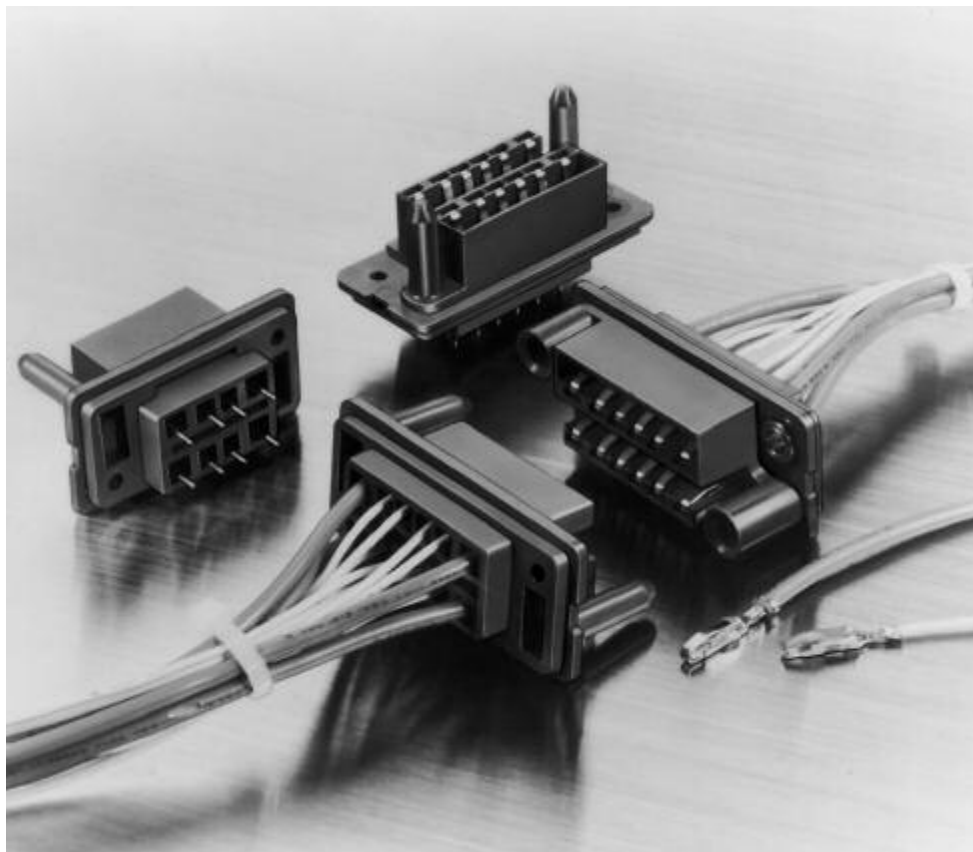
Instruction Sheet 408-7037

**Note:** All part numbers are RoHS compliant.

## AMP Drawer Series Connectors — Standard Blindmate Drawer Connectors

### Product Facts

- Designed for rack and panel applications
- Durable—withstands multiple mating/unmating
- Low insertion and withdrawal force
- Hermaphroditic contacts
- Accepts signal and power contacts
- Provides excellent creep distance
- Mated connectors dust-proof
- Configurations available in 8, 12, 16, 20 and 24 positions
- Contacts accept wire sizes 24-14 AWG [0.2-2.0mm<sup>2</sup>]
- Accept wire insulation diameter — .059-.154 [1.5-3.9]
- Recognized under the Component Program of the Underwriters Laboratories Inc. 



AMP Drawer Connectors are designed as an economical rack and panel connector. They are used in copying machines, control panels, power distribution boards, industrial equipment, power supplies and other electronic equipment.

Blindmate drawer connectors feature excellent durability and feature low insertion and withdrawal force. Leaf-type hermaphroditic contacts ensure reliable, positive contact.

Contacts are on .197 [5.00] centerlines for signal circuits, and .260 [6.60] centerlines for power circuits (2-circuits at each end of the double row of contacts) for a total of 4. Row-to-row spacing is .390 [9.90].

Housings are made of UL 94V-0 rated thermoplastic and feature molded-in guide pins and sockets for positive connector mating.

Other features include wire outlets which provide for sufficient creep distance, plus mated assemblies are completely dust-proof.

Additional economies are achieved through the use of strip-form contacts suitable for high-speed automatic machine terminations. For prototype, maintenance and repair applications, contacts are available in loose piece for easy termination with Tyco Electronics hand crimping tools.

### Performance Specifications

**Voltage Rating** — 250 VAC

#### Current Rating —

4 amperes — 24 AWG [0.2mm<sup>2</sup>] Wire  
5 amperes — 22 AWG [0.3-0.4mm<sup>2</sup>] Wire  
7 amperes — 20 AWG [0.5-0.6mm<sup>2</sup>] Wire  
8 amperes — 18 AWG [0.8-0.9mm<sup>2</sup>] Wire  
12 amperes — 16 AWG [1.25-1.4mm<sup>2</sup>] Wire  
15 amperes — 14 AWG [2.0mm<sup>2</sup>] Wire

#### Contact Resistance —

10 milliohms max. (Initial)  
20 milliohms max. (Final)

#### Insulation Resistance —

5000 milliohms min. (Initial)  
2000 milliohms min. (Final)

**Dielectric Withstanding Voltage** —  
2000 VAC/1 minute

#### Operating Temperature —

–20°C to +120°C (Includes T-Rise)

#### Insertion/Extraction Force —

Insertion—4 kg max. (Initial) —  
16-position  
Extraction—0.7 kg min. (Initial) —  
16-position

#### Durability —

Tested to 1000 Mate/Unmate cycles

## AMP Drawer Series Connectors — Standard Blindmate Drawer Connectors (Continued)

### Plug Connectors, PC Board Mount

#### Material and Finish

**Housing** — Glass-filled polybutylene terephthalate (PBT), blue, 94V-0 rated

**Contacts** — Phosphor bronze, plated gold in contact area over nickel underplating; board mount tails are brass, plated tin over steel underplating

#### Related Product Data:

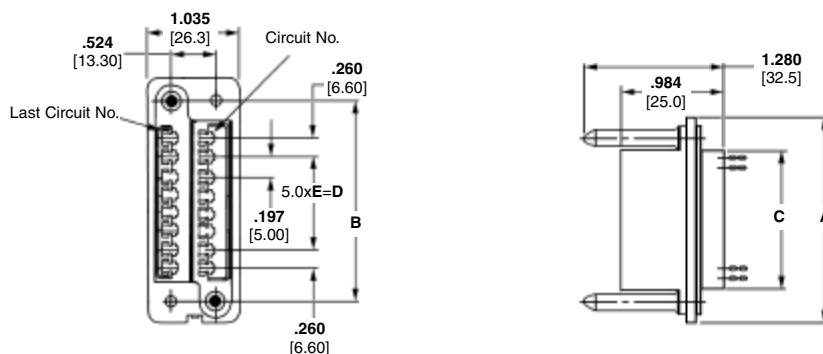
**Performance Specifications** —  
page 91

**Mating Receptacles** — page 93

#### Technical Documents

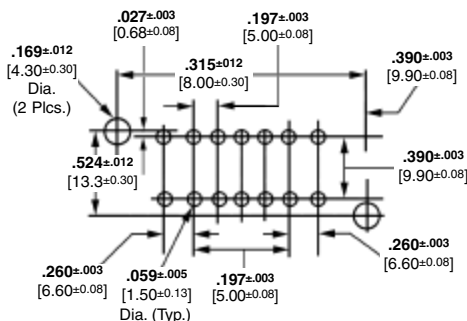
AMP Product Specification  
108-5125

AMP Application Specification  
114-5044



No. of Pos.	Dimensions					Plug Connector Part Numbers
	A	B	C	D	E	
8	2.016 51.2	1.500 38.0	1.055 26.8	.197 5.00	1	172653-2
12	2.409 61.2	1.890 48.0	1.449 36.8	.591 15.0	3	172653-3
16	2.803 71.2	2.283 58.0	1.843 46.8	.984 25.0	5	172653-1

**Note:** To ensure proper contact alignment, connectors must be mated during the soldering process.



Recommended PC Board Layout

**Note:** All part numbers are RoHS compliant.

## AMP Drawer Series Connectors — Standard Blindmate Drawer Connectors (Continued)

### Housings for Crimp Snap-In Contacts

#### Material

Polybutylene terephthalate (PBT), blue,  
94V-0 rated

#### Related Product Data

**Performance Specifications** —  
page 91

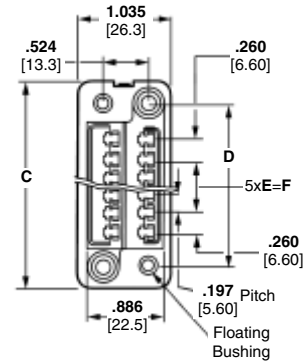
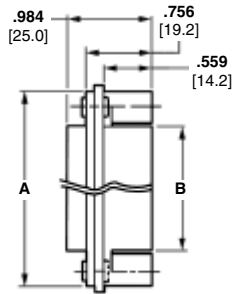
**Crimp Snap-In Contacts** — page 94

**Panel Cutout**—page 94

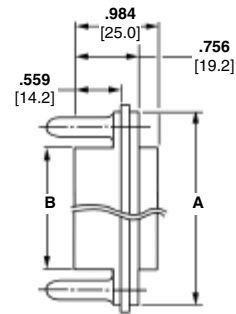
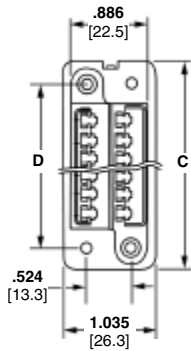
#### Technical Documents

AMP Product Specification  
108-5125

AMP Application Specification  
114-5044



**Receptacle**



**Plug**

No. of Pos.	Dimensions						Receptacle		Plug	
	A	B	C	D	E	F	Floating Bushing Size	Part Numbers	Panel Mount Hole Diameter	Part Numbers
8	1.858 47.20	1.055 26.80	2.016 51.20	1.500 38.00	1	.197 5.00	.118 3.00	172070-1	.130 3.30	172063-1
							.157 4.00	172070-3	.169 4.30	172063-3
12	2.252 57.20	1.449 36.80	2.410 61.20	1.890 48.00	3	.591 15.00	.118 3.00	172069-1	.130 3.30	172061-1
							.157 4.00	172069-3	.169 4.30	172061-3
16	2.657 67.20	1.843 46.80	2.803 71.20	2.283 58.00	5	.984 25.00	.118 3.00	172068-1	.130 3.30	172059-1
							.157 4.00	172068-3	.169 4.30	172059-3
20	3.039 77.20	2.236 56.80	3.197 81.20	2.677 68.00	7	1.378 35.00	.157 4.00	173033-3	.169 4.30	173032-3
24	3.433 87.20	2.630 66.80	3.591 91.20	3.071 78.00	9	1.772 45.00	.118 3.00	172625-1	.130 3.30	172624-1
							.157 4.00	172625-3	.169 4.30	172624-3

**Note:** All part numbers are RoHS compliant.

## AMP Drawer Series Connectors — Standard Blindmate Drawer Connectors (Continued)

### Crimp Snap-In Contacts (Hermaphroditic)

#### Material and Finish

Phosphor bronze, plated gold in contact area (for length of .236 [6.0] from tip), with entire contact underplated nickel

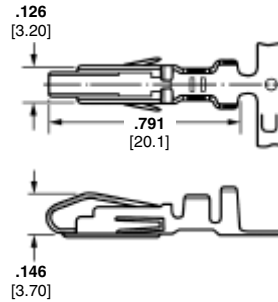
#### Related Product Data

**Performance Specifications** —  
page 91

**Housings** — page 93

#### Technical Documents

AMP Instruction Sheets  
408-097J, 408-098J, 408-151J



Wire Size Range		Insulation Dia. Range	Part Numbers		Applicator for AMP-O-ELECTRIC Machine*	Hand Tool Numbers
AWG	mm²		Contact			
			Strip Form	Loose Piece		
24-20	0.2-0.6	.059-.077 1.50-1.95	170311-1	170313-1	567324-2	724632-1
20-16	0.5-1.4	.071-.130 1.80-3.30	170484-1	170485-1	567241-2	724787-1
18-14	0.8-2.0	.091-.154 2.30-3.90	170312-1	170314-1	567325-2	724639-1

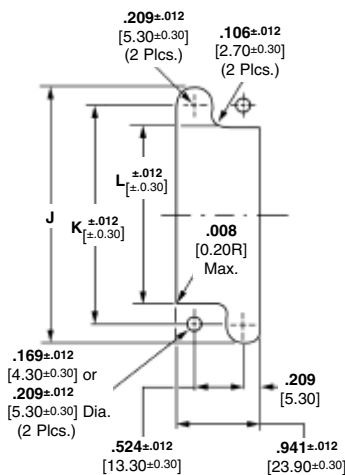
\*Applicators are for Model "K" machines. Consult Tyco Electronics for applicators for other bench machines and lead-making machines.

**Notes:** 1. For applicable wire, use wire specified in UL 1015 or 1007.

2. Contacts for 18-14 AWG [0.8-2.0mm<sup>2</sup>] wire are used at the four corners of the connector as power contacts (8 required per assembly).

Extraction Tool **Part Number 723986-1**

### Recommended Panel Cutout



**Rear Panel Mount**

No. of Pos.	Rear Panel Mount Dimensions		
	J	K	L
8	1.913 48.60	1.500 38.00	1.110 28.20
12	2.307 58.60	1.890 48.00	1.504 38.20
16	2.701 68.60	2.283 58.00	1.898 48.20
20	3.094 78.60	2.677 68.00	2.291 58.20
24	3.488 88.60	3.071 78.00	2.685 68.20

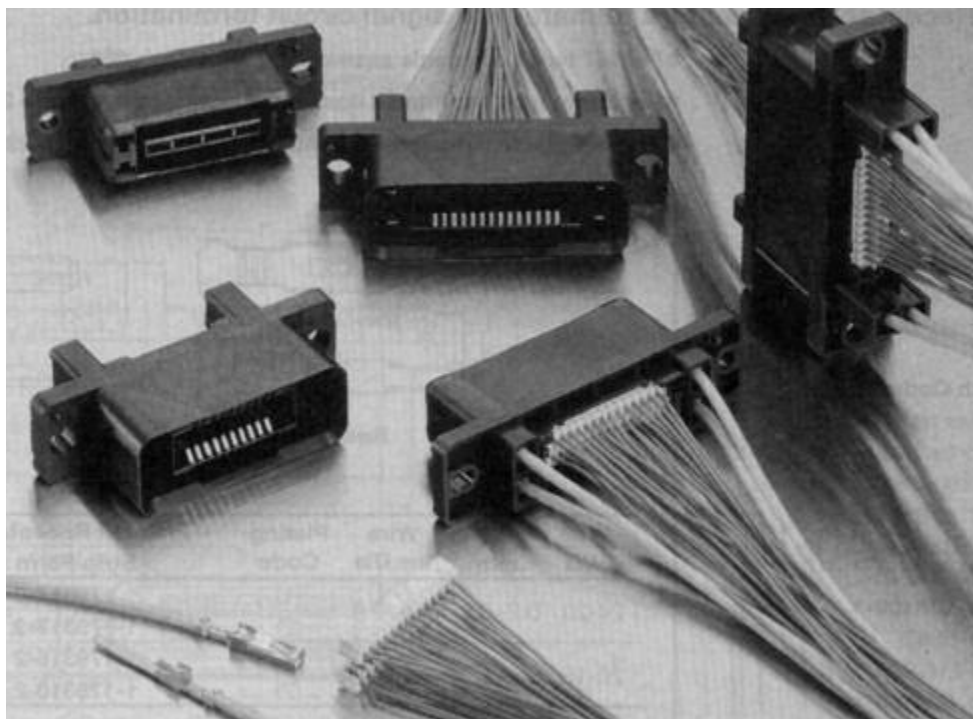
**Note:** Mounting holes of .209 [5.30] dia. are used when mounting receptacle housings with .157 [4.0] long floating bushings and the mating plug housings. Panel thickness is .063 [1.60]. Panel cutout shown above is for use with plug housings. For receptacle housings, use the mirror-image cutout.

**Note:** All part numbers are RoHS compliant.

## AMP Drawer Series Connectors — Hybrid Mini-Drawer Connectors

### Product Facts

- Combine signal circuits and power circuits into one connector
- Power circuits can be used for high current of up to 15A
- Signal circuits accept CT connector in the back, reducing harnessing costs
- Power circuits use crimp-type tab and receptacle contacts
- Meet requirements for creepage distance and spatial distance for primary power supply as set forth in IEC-950, safety specifications for business machines and OA equipment. Creepage distance on active power side: 5mm  
Spatial distance on active power side: 4.5mm



### Technical Documents

Product Specification  
108-60022

Application Specification  
114-5182

Hybrid Mini-Drawer Connectors are designed for use in rack and panel application to serve as an I/O connector for copying machines, laser-beam printers and other OA equipment. They provide an economical means of combining into one connector signal circuits and power circuits which were packaged separately in the past.

A major design feature of these Hybrid Mini-Drawer Connectors is that Mini-Drawer Connectors mate with one another on the connector mating side and in the back, signal circuits accept a pre-terminated CT receptacle connector.

Also, for power circuits, crimp-type power contacts are used by inserting them into the four corners of Mini-Drawer Connector.

The housing has an integrated guide-pin and socket to facilitate mating of the connector halves. Provision is also made to prevent dust from entering.

This product line includes:

- 12-position connector (4 positions for power and 8 positions for signal circuits)
- 24-position connector (4 positions for power and 20 positions for signal circuits)
- 32-position connector (4 positions for power and 28 positions for signal circuits)

Drawer Connectors are available in the following types depending on application: For details contact our Sales Department

- Mini-Drawer Connectors
- Standard Drawer Connectors
- High Current Drawer Connectors.

### Performance Data

**Voltage Rating** —  
250V AC (power)  
30V AC (signal)

**Current Rating** —  
15A max. (power)  
2A max. (signal)

**Contact Resistance** —  
10mm  $\Omega$  max. (power)  
40mm  $\Omega$  max. (signal)

**Insulation Resistance** —  
100M  $\Omega$  max.

**Dielectric Withstanding Voltage** —  
1.8KV AC/min. (power)  
1.0KV AC/min. (signal)

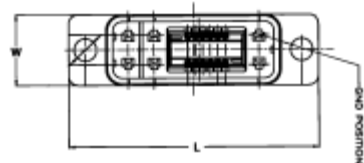
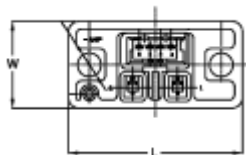
**Durability** — 3,000 cycles min.

**Note:** All part numbers are RoHS compliant.

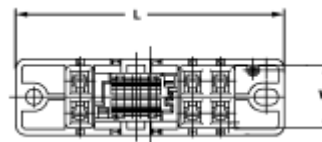
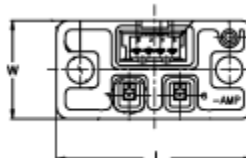
## AMP Drawer Series Connectors — Hybrid Mini-Drawer Connectors (Continued)

### Standard Width

Plugs



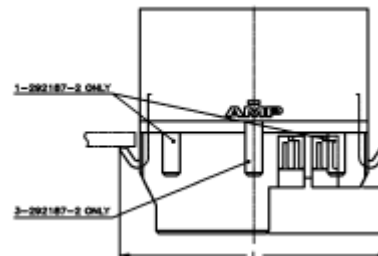
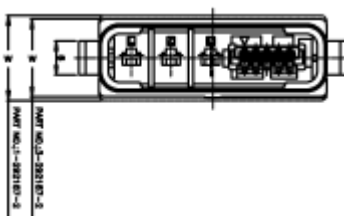
Receptacles



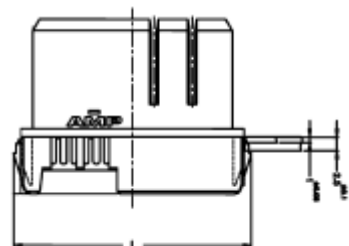
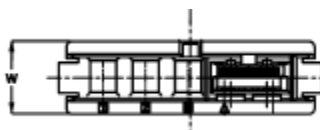
Type	Part Number	Number of Power Contacts	Number of Signal Contacts	L	W
Plug	292180-1	2	4	33	16.4
Receptacle	292184-1	2	4	33	16.4
Plug	1-292183-2	6	12	67	19
Receptacle	1-292186-2	6	12	67	19

### Slim Width

Plugs



Receptacles



Type	Part Number	Number of Power Contacts	Number of Signal Contacts	L	W
Plug	1-292187-2	3	5	47.5	15
Receptacle	2-292190-2	3	5	43.5	12
Plug	3-292187-2	4	5	54.5	13.5
Receptacle	4-292190-2	4	5	50.5	12
Plug	2-292189-3	3	7	51.5	15
Receptacle	1-292192-3	3	7	47.5	12

**Note:** All part numbers are RoHS compliant.

## AMP Drawer Series Connectors — Hybrid Mini-Drawer Connectors (Continued)

## Power Contacts

## Material

Copper alloy  
For finish, see table below.

### Finish Codes

- 1) Over nickel underplated, contact area:  
gold plated, crimp area: tin plated

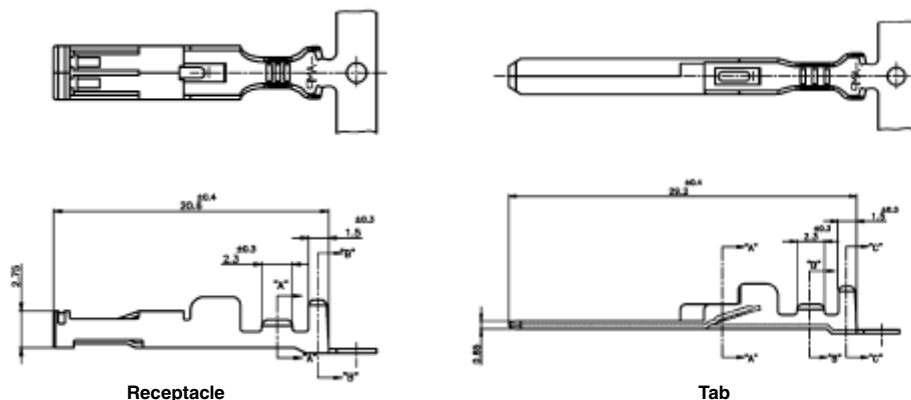
2) Tin plated all over.

Hand Tool AWG #20-24

Part No. 934199-1 (411-5662)

AWG #16-20

Part No. 934198-1 (411-5661)



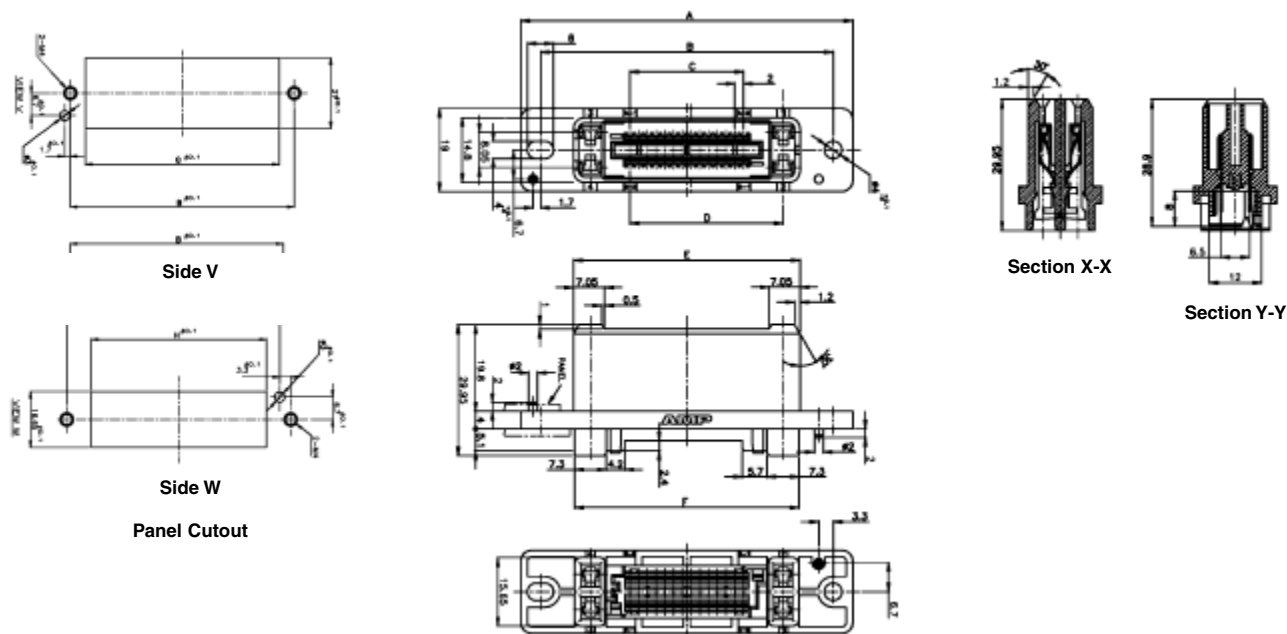
## Receptacle Assembly

## Material and Finish

**Housing** — Thermoplastic, black

**Contact** — Copper alloy, gold plated on mating side over nickel underplate, tin plated on CT mating side over nickel underplate.

Wire Range		Wire Ins. Dia.	Plating Code	Receptacle Part Number	Tab Part Number
AWG	mm <sup>2</sup>			Strip Form	Strip Form
24-20	0.2-0.5	1.4-2.6	1	179317-2	179322-2
			2	1-179317-2	1-179322-2
20-16	0.5-1.25	1.6-2.8	1	179316-2	179321-2
			2	1-179316-2	1-179321-2



No. of Pos. (Power/ Signal)	Dimensions								Mini-Drawer Receptacle Assembly Part No.	Required Number of Power Contact	Required Number of CT Connector
	A	B	C	D	E	F	G	H			
12 (4-8)	56.0	47.0	6.0	24.1	31.8	31.4	38.0	32.4	292185-8	4	4 Pos. x 2
24 (4-20)	68.0	59.0	18.0	36.1	43.8	43.4	50.0	44.4	2-292185-0	4	10 Pos. x 2
32 (4-28)	76.0	67.0	26.0	44.1	51.8	51.4	58.0	52.4	2-292185-8	4	14 Pos. x 2

**Note:** All part numbers are RoHS compliant.

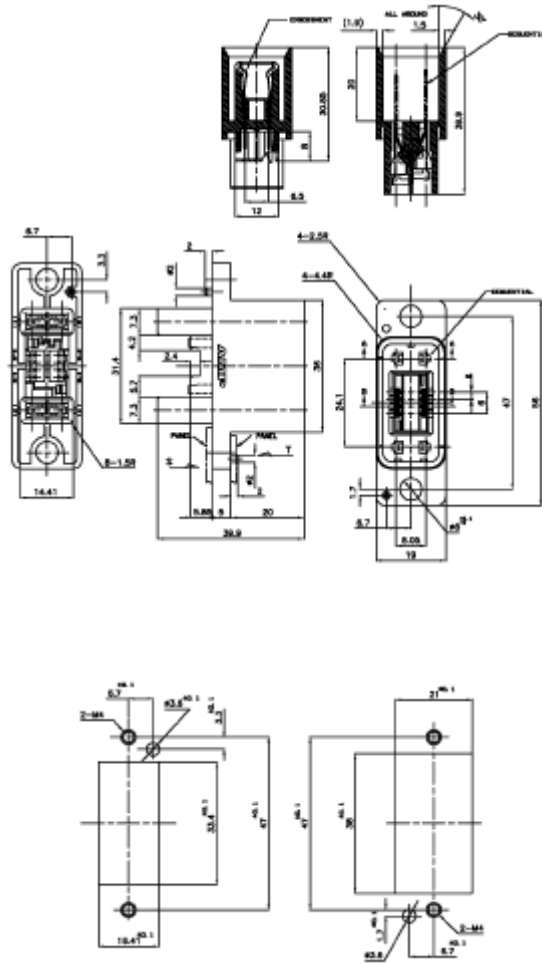
## AMP Drawer Series Connectors — Hybrid Mini-Drawer Connectors (Continued)

### Plug Assembly

#### Material and Finish

**Housing** — Thermoplastic, black  
UL94V-0

**Contact** — Copper alloy, gold plated  
on mating side over nickel underplate,  
tin plated platen on CT mating side over  
nickel underplate.



View S

View T

Panel Cutout

No. of Pos. (Power/ Signal)	Dimensions								Mini-Drawer Receptacle Assembly Part No.	Required Number of Power Contact	Required Number of CT Connector
	A	B	C	D	E	F	G	H			
12 (4-8)	56.0	47.0	6.0	24.1	36.0	31.4	33.4	38.0	292182-8	4	4 Pos. x 2
24 (4-20)	68.0	59.0	18.0	36.1	48.0	43.4	45.4	50.0	2-292181-0**	4	10 Pos. x 2
32 (4-28)	76.0	67.0	26.0	44.1	56.0	51.4	53.4	58.0	2-292181-8	4	14 Pos. x 2

\*12-Position connector is provided with sequential feature in one power circuit position. Other connector sizes have sequential feature in power circuits and signal circuits.

\*\*Optional part numbers offer sequential mating — see customer drawings for details.

**Note:** All part numbers are RoHS compliant.

**Insulation Dia** — 0.95-1.05mm<sup>2</sup> (For AWG #24 wire, see notes under the table)



\* The color of housing is natural. Other colors available include blue, yellow and black. For details contact our Sales Department

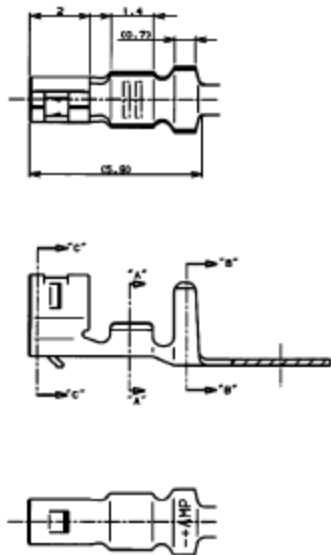
\*\* For wire to be used, contact our Sales Department as there are wires that have been tested by us and can be recommended for your use.

\*\*\* The color of housing is gray.

South America: 55-11-2103-6000  
Hong Kong: 852-2735-1628  
Japan: 81-44-844-8013  
UK: +44 (0) 800-267-666

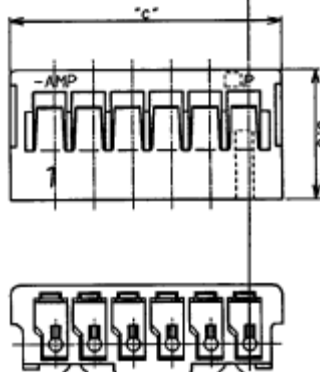
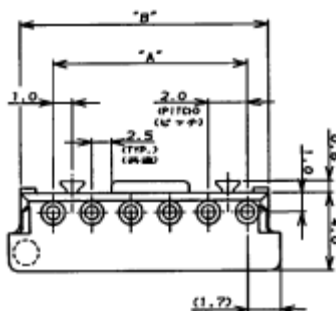
## CT Receptacle Contacts to Mate with Signal Circuit Termination with Crimp Type Contacts

## Receptacle Contact

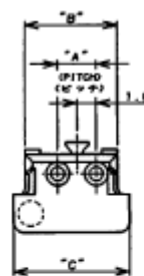


### Receptacle Housing Material

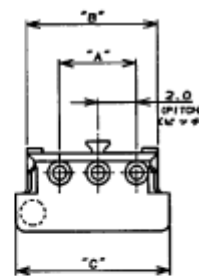
UL94-0 rated, 66 nylon, natural color  
(white)



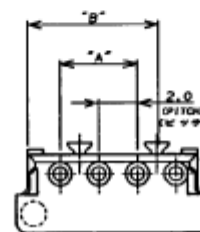
### 4-15 Positions



## 2 Position



### 3 Position



#### 4 Position

No. of Positions	Dimensions			Part Number
	A	B	C	Receptacle Assembly*
2	2.0	4.8	6.0	179228-2
3	4.0	6.8	8.0	179228-3
4	6.0	8.8	10.0	179228-4
5	8.0	10.8	12.0	179228-5
6	10.0	12.8	14.0	179228-6
7	12.0	14.8	16.0	179228-7
8	14.0	16.8	18.0	179228-8
9	16.0	18.8	20.0	179228-9
10	18.0	20.8	22.0	1-179228-0
11	20.0	22.8	24.0	1-179228-1
12	22.0	24.8	26.0	1-179228-2
13	24.0	26.8	28.0	1-179228-3
14	26.0	28.8	30.0	1-179228-4
15	28.0	30.8	32.0	1-179228-5

\* The color of housing is natural. Other colors available include blue, yellow and black. For details contact our Sales Department

**Note:** All part numbers are RoHS compliant.