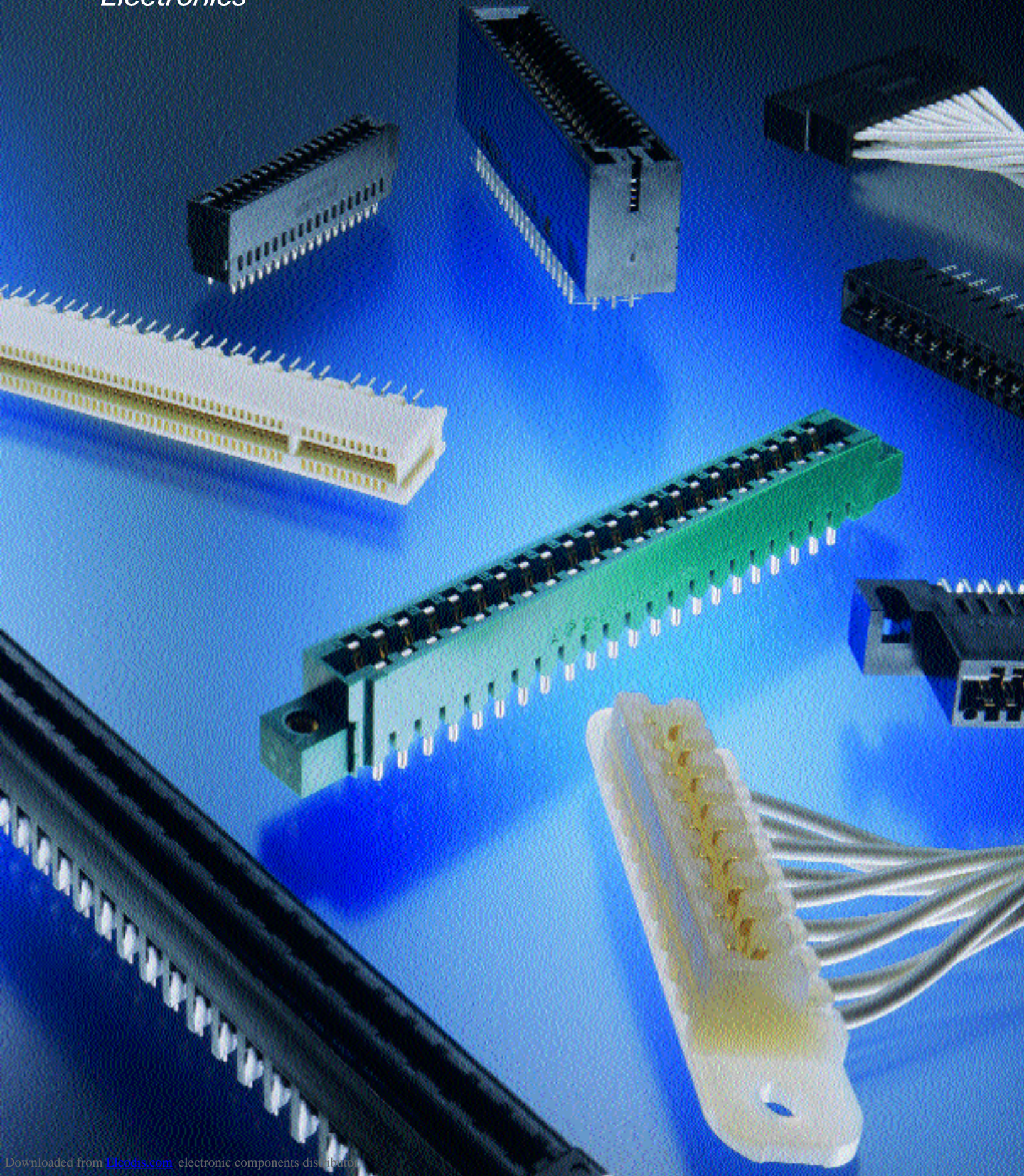


**tyco**

*Electronics*

**Card Edge Connectors**  
Catalog 1654080 Issued 7-03

**AMP**



**Introduction**

This catalog contains product descriptions of AMP Card Edge Connectors. These connectors are presented in three groups: Solder Type Board-to-Board, Press-fit Board-to-Board, and Wire-to-Board connectors.

To assist you in the selection of the appropriate connector for your application, a selection guide is provided at the beginning of each section. See the Table of Contents on the following page for the exact location.

A comprehensive description and features of a partic-

ular printed circuit board connector family are provided at the beginning of that section. Various technical documents are referenced in the connector family sections and are listed and described at the rear of this catalog.

The Tyco Electronics products presented in this catalog are designed and manufactured according to the highest possible standards of quality and craftsmanship. They offer optimum reliability at the lowest possible cost.

**Need more information?**

Call Technical Support at the numbers listed at the bottom of the catalog pages.

Technical Support is staffed with specialists well versed in Tyco Electronics products. They can provide you with:

- Technical Support
- Catalogs
- Technical Documents
- Product Samples
- Tyco Electronics Authorized Distributor Locations

**Dimensioning:**

Dimensions are in inches and millimeters unless specified otherwise. Values in brackets are metric equivalents.

Metric symbols used are:

- m (meter)
- mm (millimeter)
- mm<sup>2</sup> (square millimeter)
- kg (kilogram)
- C (Celsius)
- N (newton)

**Note:** Dimensions in this catalog are for reference purposes only. Customer drawings are available upon request.

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A copy of the certificate is available upon request



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**Selection Guide, Board-to-Board Connectors**

Selection Guide

**Introduction**

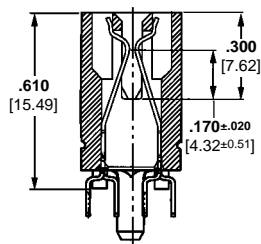
Board-to-board (mother/daughter board) connectors are ideally suited to back-plane wiring or any other application requiring the circuit connection of one printed circuit board to another. Designed to shorten manufacturing time and reduce applied costs, these one-step, pre-assembled connectors are ready for mounting and mass insertion.

Many of the connectors are available with the proven and reliable ACTION PIN contact. This unique contact has superior electrical and physical characteristics that are top of the line in the industry.

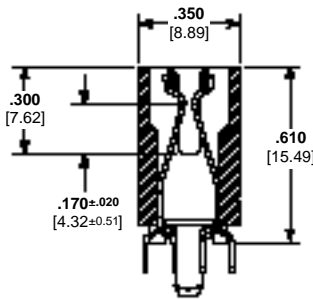
Board-to-board connectors come in a range of contact centerline spacings of .050 [1.27] to .156 [3.96]. A wide range of dual position sizes and post styles are available. One family of connectors features zero insertion force of the daughter board, along with a choice of actuating devices. A variety of housing and contact materials further expands the choice of connectors available to meet many application requirements.

To help in choosing a connector for your application, a Selection Guide is provided on pages 4 through 6.

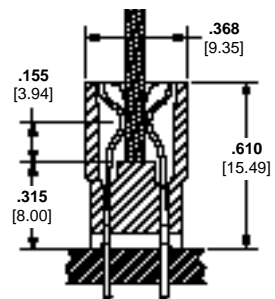
**Standard Edge .050 Series PCI Connectors (Pages 7-10)**



**Standard Edge .050 Series Connectors (Pages 11-14)**



**Standard Edge II Connectors (.100 and .125 Centerline) (Pages 15-27)**



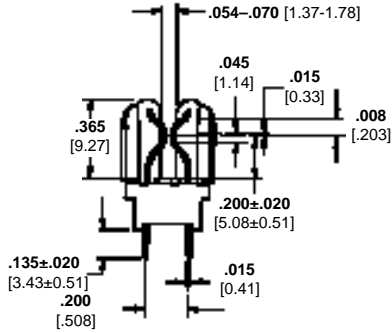
**Centerlines**

.050 [1.27]	X	X	
.100 [2.54]			X
.125 [3.18]			X
.150 [3.81]			
.156 [3.96]			

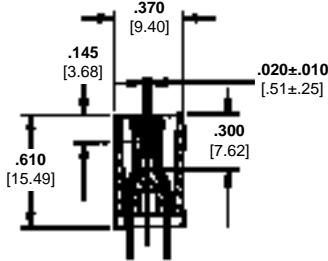
**Tail Styles**

Solder	X	X	X
Right-Angle Solder			X
Wrap-Type			X
Card Extender			X
Solder Eyelet			
Press-Fit			
Surface-Mount			

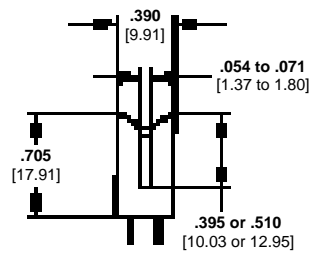
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**Cantilever Beam Connectors Scoop Housing**  
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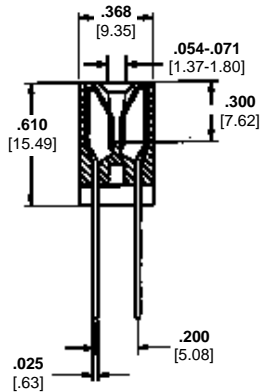
**Centerlines**

			.050 [1.27]
			.0625 [1.588]
	X	X	.100 [2.54]
	X	X	.125 [3.18]
X			.150 [3.81]
	X	X	.156 [3.96]

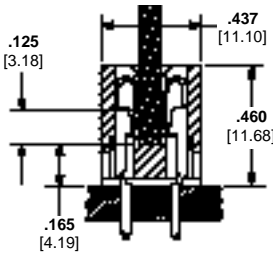
**Tail Styles**

		X	Solder
			Right-Angle Solder
			Wrap-Type
			Card Extender
			Solder Eyelet
	X	X	Press-Fit
			Surface-Mount

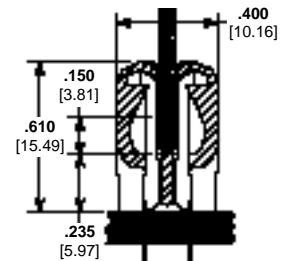
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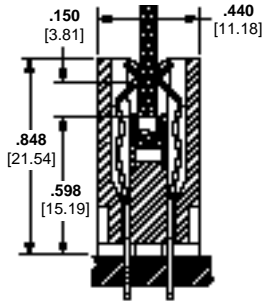
**Centerlines**

			.050 [1.27]
	X	X	.100 [2.54]
X			.125 [3.18]
	X	X	.150 [3.81]
	X	X	.156 [3.96]

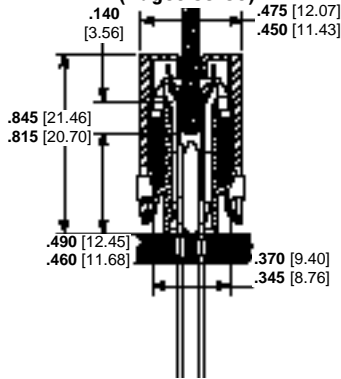
**Tail Styles**

		X	Solder
			Right-Angle Solder
			Wrap-Type
			Card Extender
			Solder Eyelet
	X		Press-Fit
			Surface-Mount

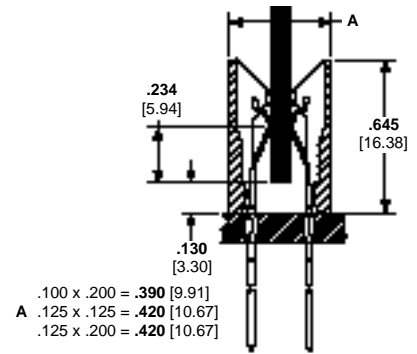
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**Linear ZIF Connectors**  
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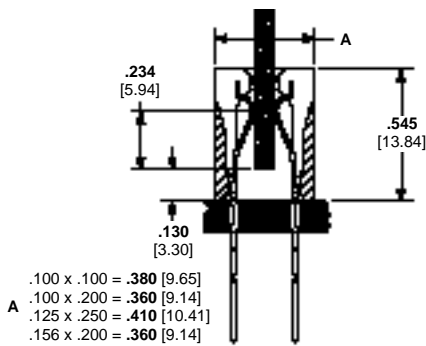
**Centerlines**

.050 [1.27]			
.0625 [1.588]			
.100 [2.54]	X		X
.125 [3.18]	X	X	X
.150 [3.81]			
.156 [3.96]	X		

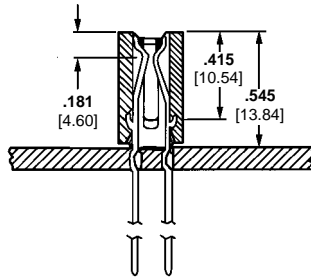
**Tail Styles**

Solder	X	X	
Right-Angle Solder	X		
Wrap-Type	X	X	X
Card Extender			
Solder Eyelet			
Press-Fit		X	X
Surface-Mount			

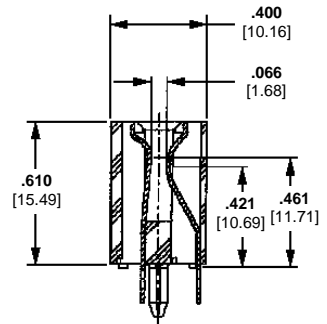
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**High Density Press Fit Connector For .093 Cards**  
(Pages 128-129)



**Centerlines**

.050 [1.27]			
.0625 [1.588]			
.100 [2.54]	X	X	
.125 [3.18]	X		
.150 [3.81]			
.156 [3.96]	X	X	

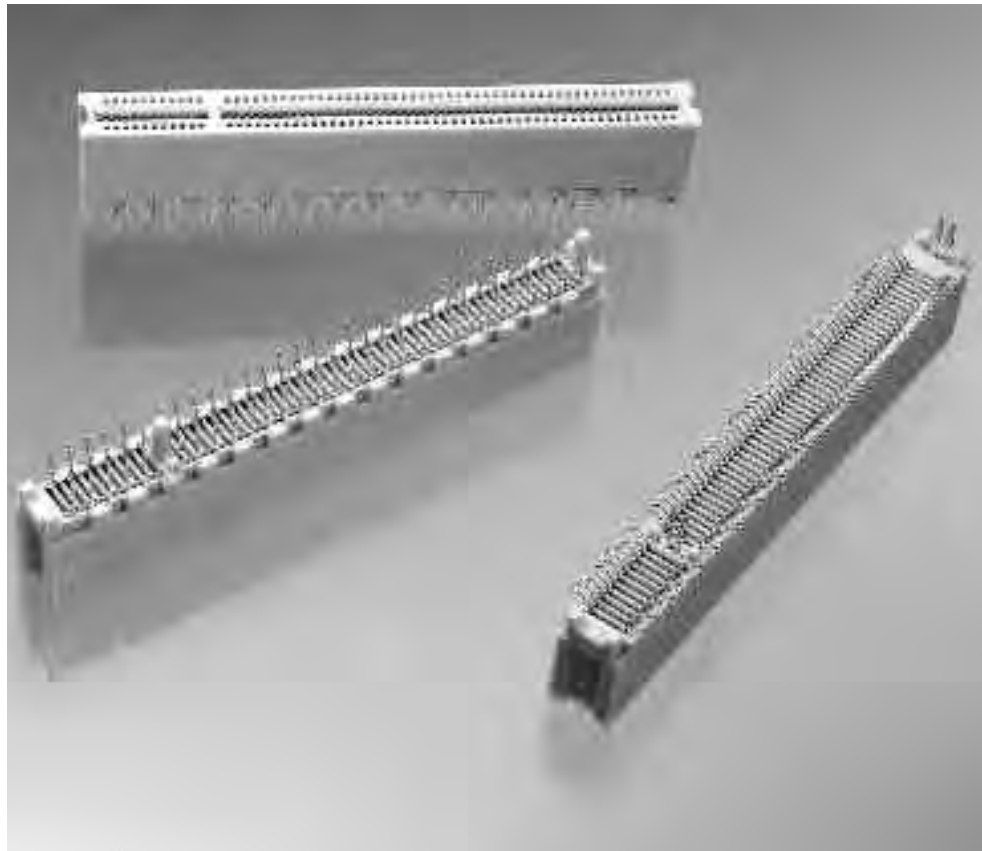
**Tail Styles**

Solder			
Right-Angle Solder			
Wrap-Type	X		
Card Extender			
Solder Eyelet			
Press-Fit	X	X	X
Surface-Mount			

**Standard Edge .050 Series PCI Card Edge Connectors**

**Product Facts**

- High density .050 [1.27] centerline contact spacing
- Easy mating of high circuit count daughter boards
- Polarizing web for positive board-to-connector registration
- Choice of plastic pylons or metal holddowns



Connectors that support PCI expansion cards are derived from those on the MicroChannel Architecture (MCA) bus. The MCA connectors are well defined and have proven value and reliability.

There are four connectors that can be used depending upon the PCI implementation. The differences between these connectors are 32 bit and 64 bit, and the 5 volt and 3.3 volt signaling environments. PCI-X is a version of PCI at 133 MHz which is under development and employs standard PCI connectors. PCI-X is limited to 1 slot versus 4 slots of PCI.

A key differentiates the signaling environment voltages. The same physical connector is used for the 32 bit signaling environments. In one orientation, the key accepts 5 volt boards. When rotated 180°, the connector accepts 3.3 volt signaling boards. The pin numbering of the connector changes for the different signaling environments to maintain the same relative position of signals on the connector.

**Performance Specifications:**

- Durability**—Tested to 100 mating cycles
- Mating Force**—8 oz [2.22 N] max. per contact pair
- Unmating Force**—.5 oz [0.14 N] min. per contact pair
- Contact Resistance**—20 milliohms max. (initial) 30 milliohms max. (final)
- Insulation Resistance**—1000 megohms min.
- Dielectric Withstanding Voltage**—500 VAC (at sea level)
- Capacitance**—2 picofarads max.
- Current Rating**—1 ampere max.
- Voltage Rating**—203 VAC
- Thermal Shock**—-55°C to +85°C for 5 cycles
- Mixed Flowing Gas**—Class II with mated board for 20 days

**Technical Documents:**

- Product Specification**  
108-14034
- Application Specification**  
114-26012
- Qualification Test Report**  
501-203

**Standard Edge .050 Series PCI Card Edge Connectors**

**64 Bit, 5 Volt Signaling**

**92 Dual Positions with 3 Plastic Pylons or 3 Metal Holddowns**

**Material and Finish:**

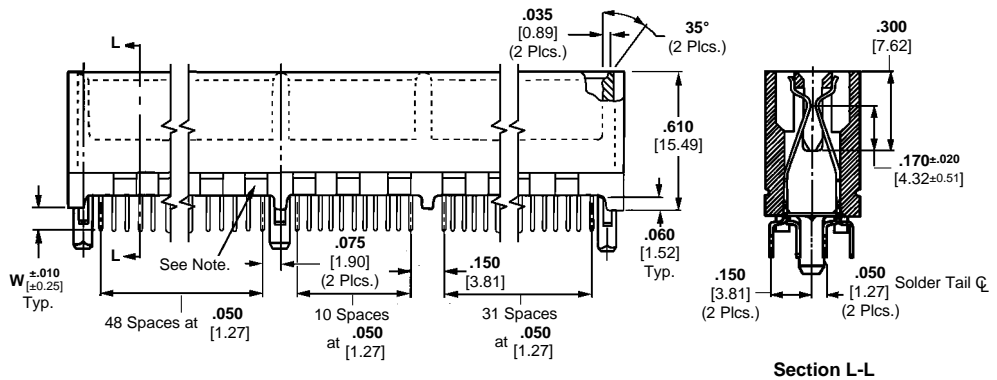
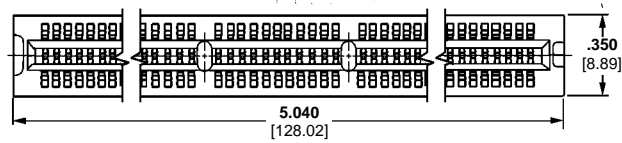
**Housing**—High temperature thermo-plastic 94V-0 rated, white

**Contacts**—Phosphor bronze, plated as follows:

**Plating B**—Duplex plated .000015 [0.00038] min. gold in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel

**Plating C**—Duplex plated .000030 [0.00076] min. gold in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel

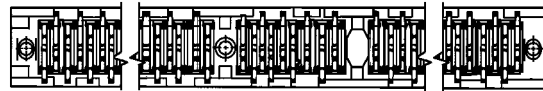
**Plastic Pylons**



Section L-L

**Related Product Data:**

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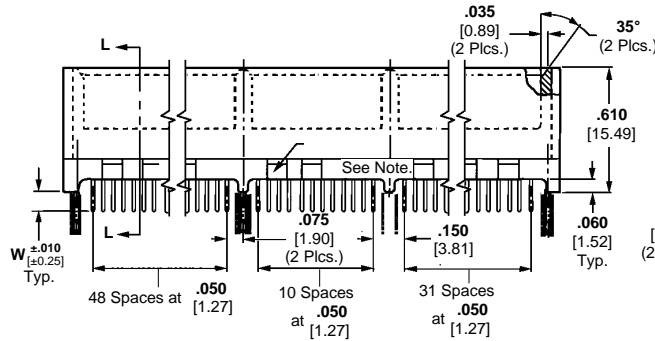


**Technical Documents:**

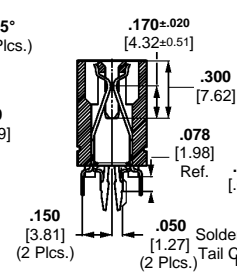
**Product Specification**  
108-14034

**Application Specification**  
114-26012

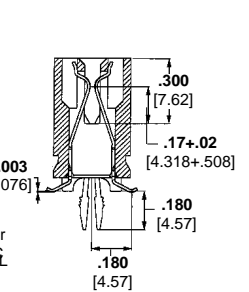
**Metal Holddowns**



**Through Hole**



**Surface Mount**



Section L-L

W (Post Length)	Contact Finish	Part Numbers	
		3 Plastic Pylons	3 Metal Holddowns
.100 2.54	Plating B	145166-2	—
	Plating C	145166-4	145169-4
.125 3.18	Plating C	145166-8	145169-8
Surface Mount	Plating C	—	145113-1

**Notes:** 1. Connectors are supplied with either cored (shown above) or solid side walls.  
2. Other connector sizes can be made available, consult Tyco Electronics.



**Standard Edge .050 Series PCI Card Edge Connectors**

**32 Bit, 3.3 and 5 Volt Signaling**

**60 Dual Positions with 2 Plastic Pylons or 2 Metal Holddowns**

**Material and Finish:**

**Housing Y**—High temperature thermo-plastic 94V-0 rated, white

**Housing Z**—Nylon 6/6, white

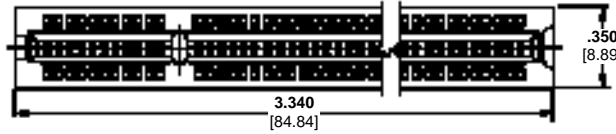
**Contacts**—Phosphor bronze, plated as follows:

**Plating A**—Duplex plated gold flash in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel

**Plating B**—Duplex plated .000015 [0.00038] min. gold in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel

**Plating C**—Duplex plated .000030 [0.00076] min. gold in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel

**Plastic Pylons**



**Related Product Data:**

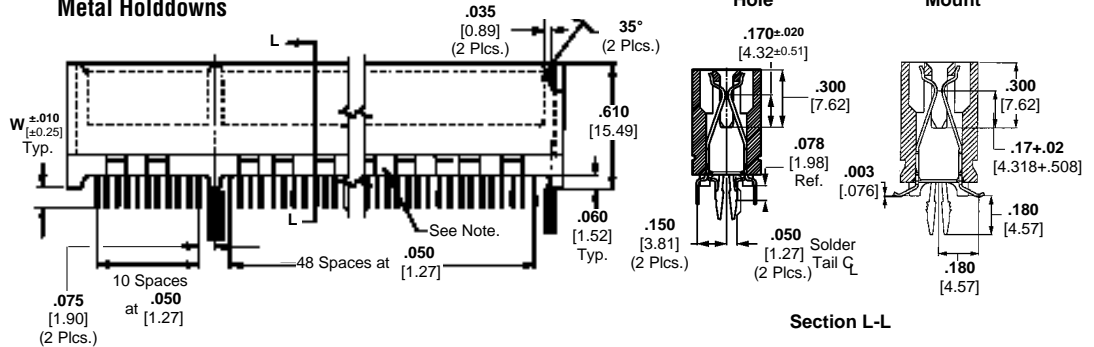
**Performance Specifications**—page 7

**Technical Documents:**

**Product Specification**  
108-14034

**Application Specification**  
114-26012

**Metal Holddowns**



W (Post Length)	Housing Material	Contact Finish	Part Numbers	
			2 Plastic Pylons	2 Metal Holddowns
.100 2.54	Y	Plating A	145154-1	145167-1
		Plating B	145154-2	—
		Plating C	145154-4	145167-4
.118 3.00	Z	Plating A	11299-1	—
		Plating B	11299-6	—
.125 3.18	Y	Plating C	145154-8	—
Surface Mount	Y	Plating C	—	145098-1

**Notes:** 1. Connectors are supplied with either cored (shown above) or solid side walls.  
2. Other connector sizes can be made available, consult Tyco Electronics.

Solder Type Board-to-Board Connectors

**Standard Edge .050 Series PCI Card Edge Connectors**

64 Bit, 3.3 Volt Signaling

92 Dual Positions with 3 Plastic Pylons or 3 Metal Holddowns

**Material and Finish:**

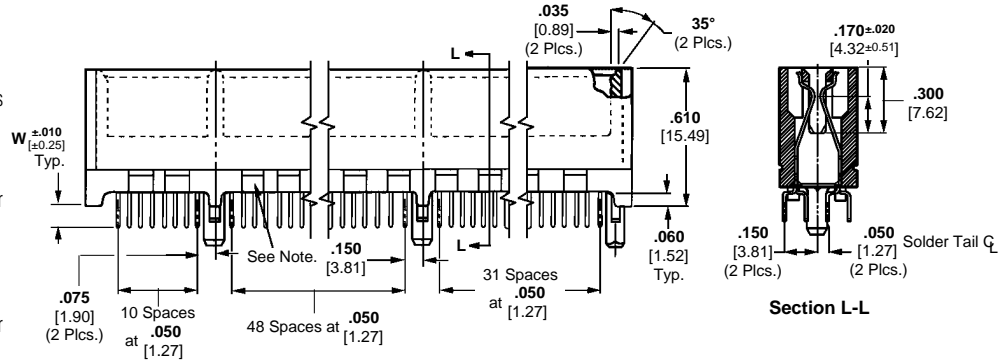
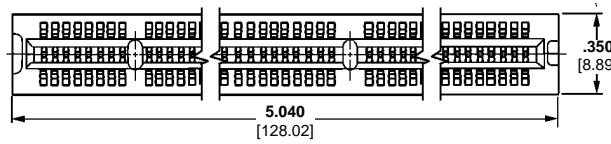
**Housing**—High temperature thermo-plastic 94V-0 rated, white

**Contacts**—Phosphor bronze, plated as follows:

**Plating B**—Duplex plated .000015 [0.00038] min. gold in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel

**Plating C**—Duplex plated .000030 [0.00076] min. gold in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel

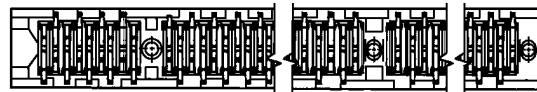
**Plastic Pylons**



Section L-L

**Related Product Data:**

**Performance Specifications**—page 7

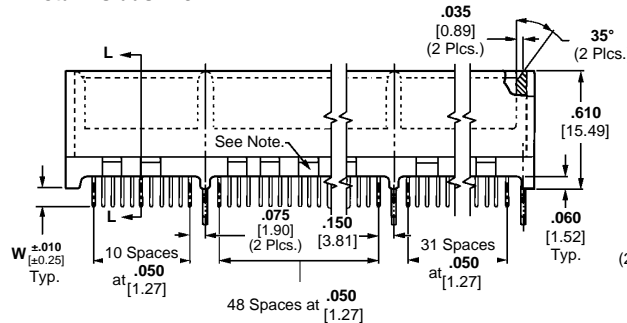


**Technical Documents:**

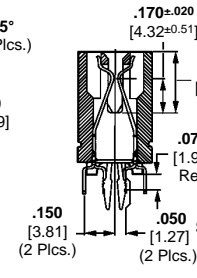
**Product Specification**  
108-14034

**Application Specification**  
114-26012

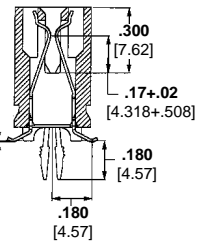
**Metal Holddowns**



**Through Hole**



**Surface Mount**



Section L-L



W (Post Length)	Contact Finish	Part Numbers	
		3 Plastic Pylons	3 Metal Holddowns
.100 2.54	Plating B	—	145168-2
	Plating C	145165-4	145168-4
.125 3.18	Plating C	145165-8	—
Surface Mount	Plating C	—	145246-1

**Notes:** 1. Connectors are supplied with either cored (shown above) or solid side walls.  
2. Other connector sizes can be made available, consult Tyco Electronics.

Solder Type Board-to-Board Connectors

**Standard Edge .050 Series Connectors**

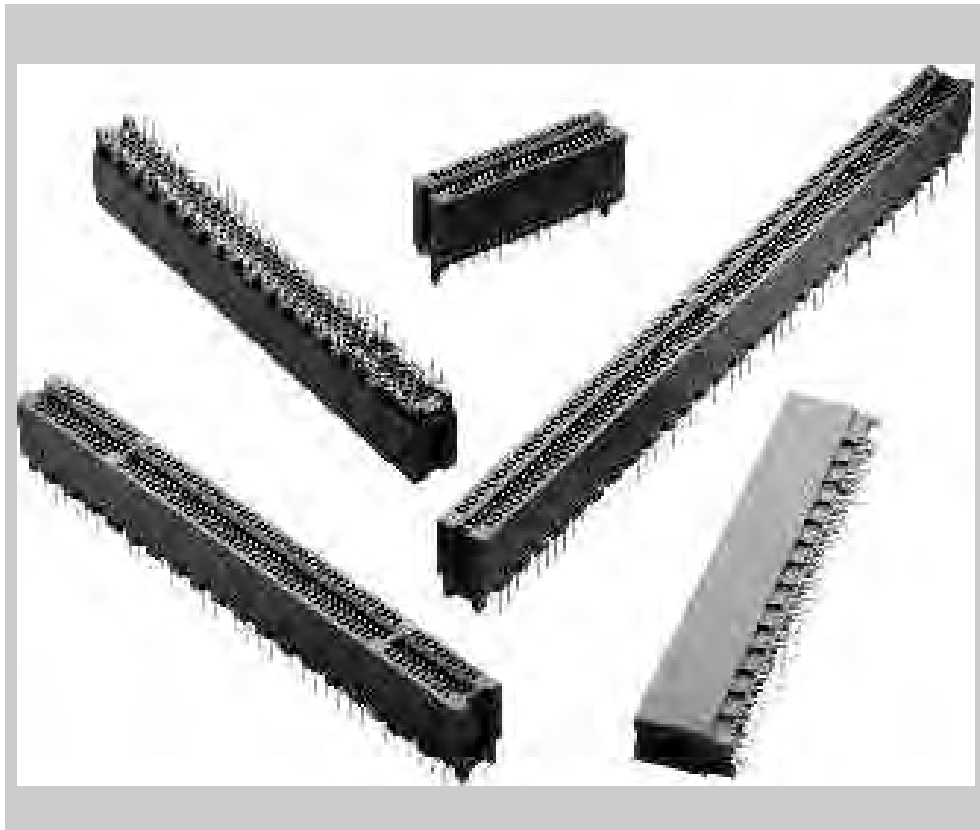
**Product Facts**

- High density .050 [1.27] centerline spacing of contacts
- Easy mating of high-circuit count daughter boards
- Compatible with infrared reflow (IR) soldering techniques
- Polarizing web for positive board-to-connector registration
- Choice of plastic pylons or metal holddowns
- Recognized under the Component Program of Underwriter Laboratories Inc.  File No. E28476
- Certified by Canadian Standards Association,  File No. LR 7189

**Performance Specifications:**

- Contact Current Rating\*** — 1 ampere
- Termination Resistance** —  
20 milliohms max. (initial)  
30 milliohms max. (final)
- Dielectric Withstanding Voltage** —  
500 VAC min.
- Insulation Resistance** — 1000 megohms min.
- Mating Force** — .5 oz. [0.14 N] per contact pair
- Unmating Force** — 1 oz. [0.3 N] per contact pair
- Durability (Tested to)** — 100 mating cycles
- Application Temperature** —  
+215°C for 120 seconds max.
- Temperature Range** —  
-55°C to +85°C

\*Consult Tyco Electronics engineering when paralleling contacts for power applications.

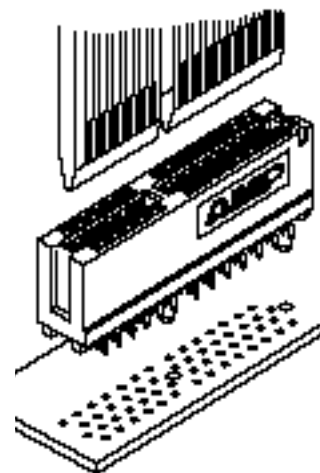


The need to conserve space and pack more function into a given area has demanded that .050 [1.27] centerline spacing become a reality. AMP Standard Edge .050 Series connectors are the ideal vehicle for mother/daughter board applications requiring this real estate.

These rugged connectors have two rows of contacts on .050 [1.27] centerlines. Polarizing webs provide positive board-to-connector registration, while insertion force allows even high circuit-count daughter boards to mate easily. The connectors accept .054 to .070 [1.37 to 1.78] thick daughter boards and feature an overstress protected contact design.

AMP Standard Edge .050 Series connectors are ideal for fast automated robotic assembly with registration features and dimensional tolerancing for more accurate pickup and placement, and are packaged in robotics-compatible trays.

Plastic guide posts or metal holddowns align the connector with the mother board and retain it for soldering. To make circuit routing easy, connector solder posts are arranged in a four-row .100 [2.54] staggered grid. High-temperature tolerant materials promote that these connectors withstand infrared reflow (IR) soldering, while standoffs ease flux cleaning.



**High Density for DataBus Applications**

Solder Type Board-to-Board Connectors

**Standard Edge .050 Series Connectors**

**Configuration;  
1 Key—2 Plastic Pylons**

**Material and Finish:**

**Housing**—High temperature thermo-plastic, brown

**Contacts**—Phosphor bronze, duplex plated .000030 [0.00076] min. gold in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel

**Related Product Data:**

**Performance Specifications**—page 11

**Technical Documents:**

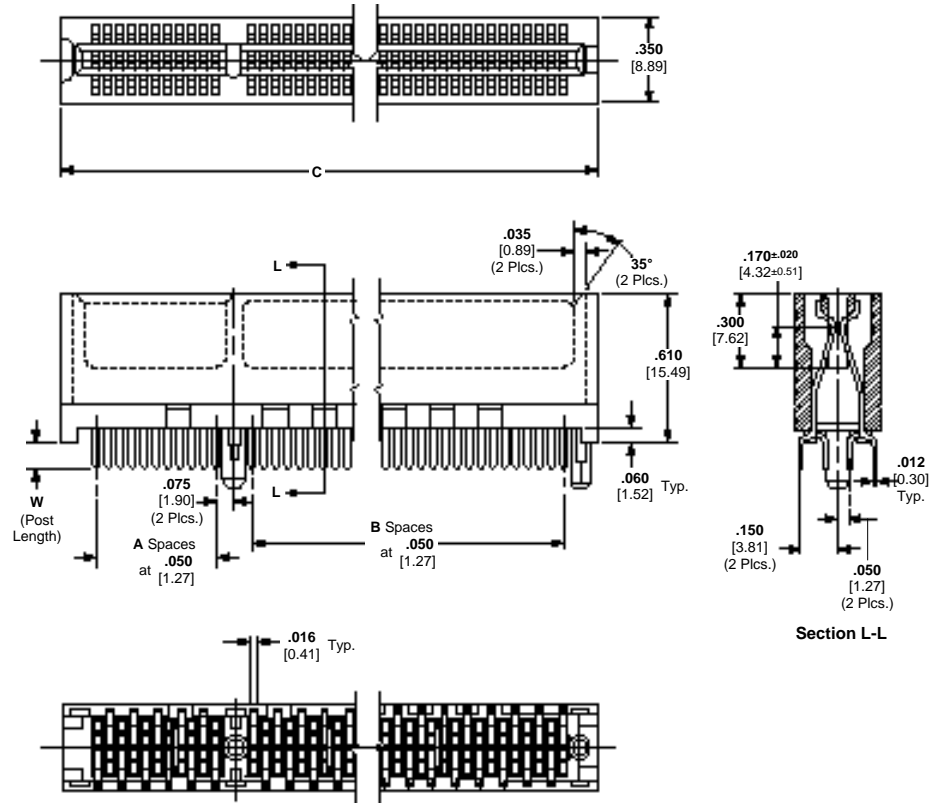
**Product Specification**

108-14034

**Application Specification**

114-26012

Solder Type Board-to-Board Connectors



No. of Dual Positions	Dimensions			W (Post Length)	PC Board Hole Layout	Connector Part Numbers
	A	B	C			
23	10	11	1.490 37.85	.100 2.54	A	650090-7
30	10	18	1.840 46.74	.100 2.54	B	650090-6
40	10	28	2.340 59.44	.100 2.54	B	650090-3
				.140 3.56	B	650181-2
45	10	33	2.590 65.79	.100 2.54	A	650090-2
56	10	44	3.140 79.76	.100 2.54	B	650090-11
				.140 3.56	B	650181-1
80	37	41	4.340 110.24	.100 2.54	C	650090-9
91	41	48	4.890 124.21	.100 2.54	A	650092-12
				.140 3.56	A	650092-2

<sup>1</sup> Connector used for VLocal Bus and MCA Bus applications.

<sup>2</sup> Connector used for MCA Bus applications.

- Notes:** 1. Other connector sizes can be made available, consult Tyco Electronics.  
2. .125 [3.18] post length is available, consult Tyco Electronics.

**Standard Edge .050 Series Connectors**

Solder Type Board-to-Board Connectors

**Configuration;  
1 Key—2 Plastic Pylons**

**Material and Finish:**

**Housing**—High temperature thermo-plastic, brown

**Contacts**—Phosphor bronze, duplex plated .000030 [0.00076] min. gold in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel

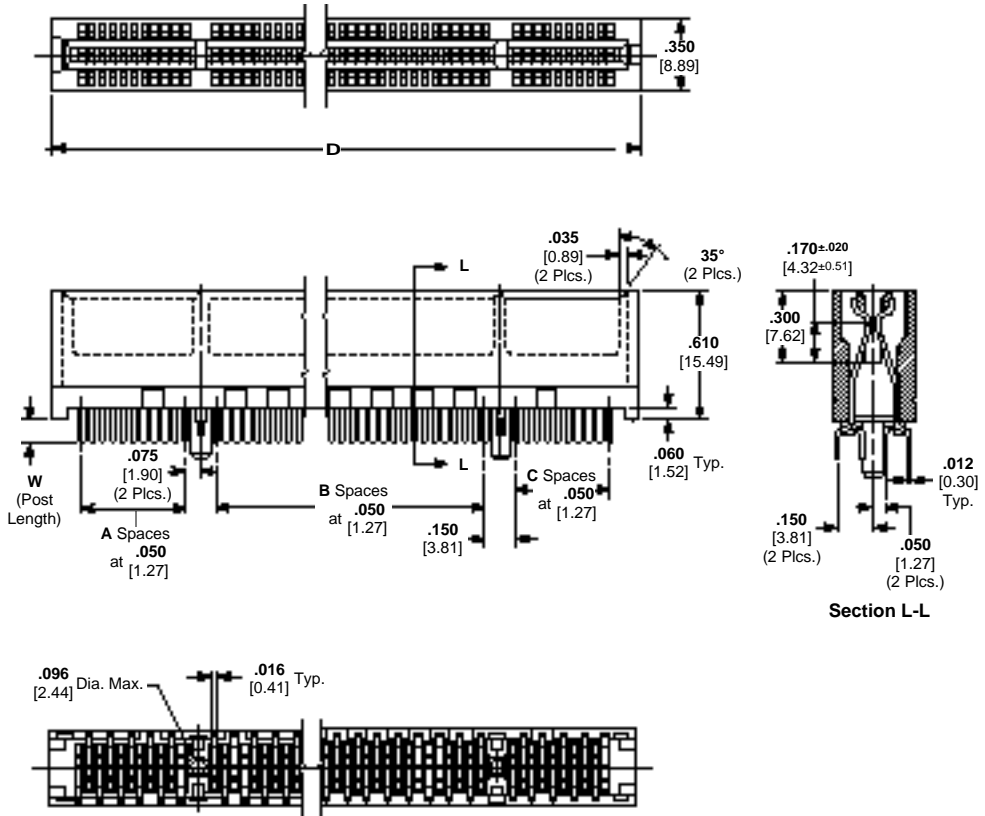
**Related Product Data:**

**Performance Specifications**—page 11

**Technical Documents:**

**Product Specification**  
108-14034

**Application Specification**  
114-26012



No. of Dual Positions	Dimensions				W (Post Length)	PC Board Hole Layout	Connector Part Numbers
	A	B	C	D			
66	10	44	9	3.740 95.00	.100 2.54	A	650091-1*
					.140 3.56	A	650091-2

\*Connectors used for MCA Bus applications.

- Notes:** 1. Other connector sizes can be made available, consult Tyco Electronics.  
2. .125 [3.18] post length is available, consult Tyco Electronics.

**Standard Edge .050 Series Connectors**

**Configuration;**  
**1 Key/1 Web —3 Metal**  
**Holddowns**

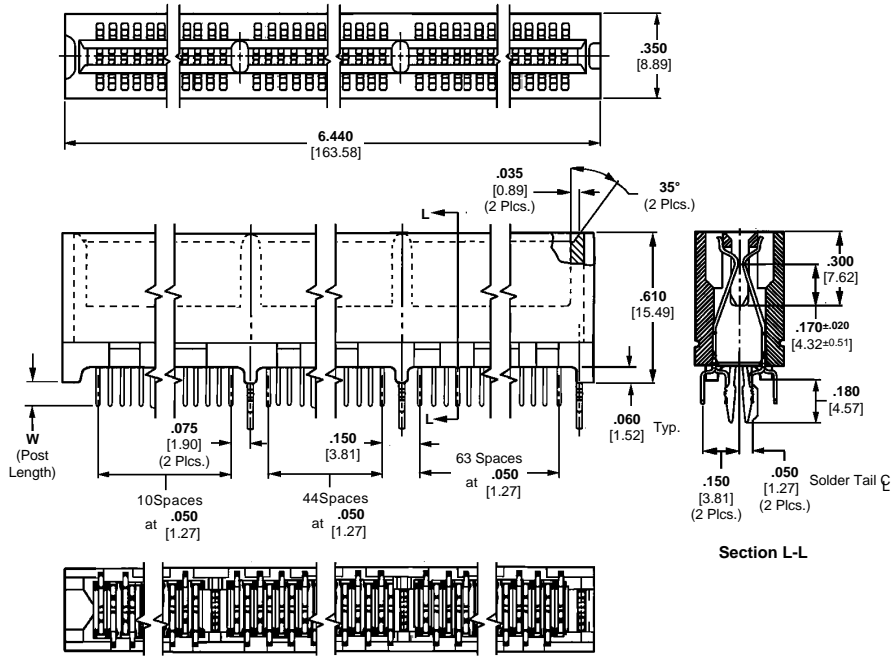
**120 Dual Positions**

**Material and Finish:**

**Housing**—High temperature thermo-plastic, brown

**Holddowns**—Brass, plated .000150 [0.00381] min. tin-lead over .000050 [0.00127] min. nickel

**Contacts**—Phosphor bronze, duplex plated .000030 [0.00076] min. gold in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel



**Related Product Data:**

**Performance Specifications**— page 11

**Technical Documents:**

**Product Specification**  
104-14034

**Application Specification**  
114-26012

No. of Dual Positions	W (Post Length)	Connector Part Numbers
120	.140 3.56	145031-3

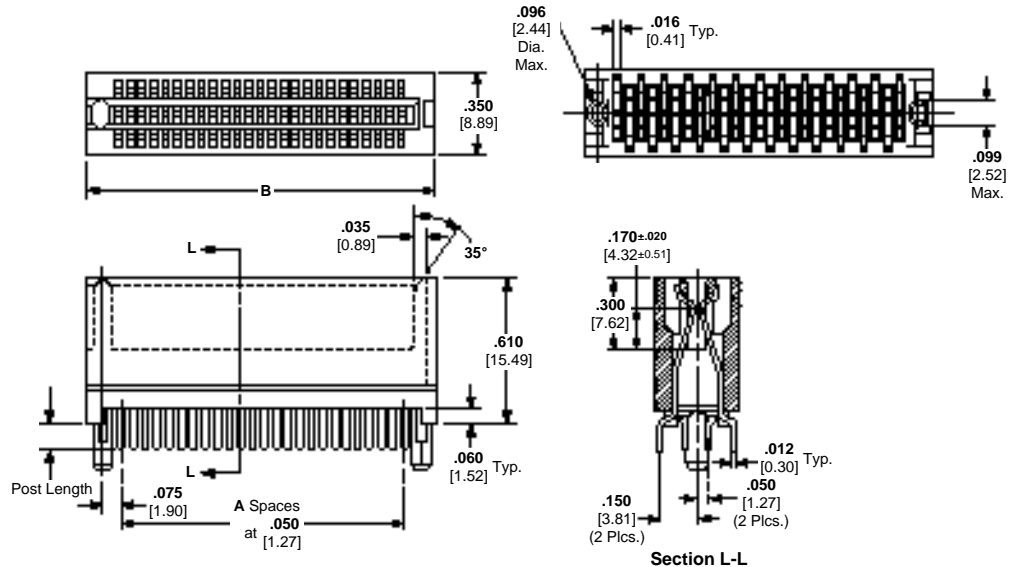
**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Configuration; End Key**

**Material and Finish:**

**Housing**—High temperature thermo-plastic, brown

**Contacts**—Phosphor bronze, duplex plated .000030 [0.00076] min. gold in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel



**Related Product Data:**

**Performance Specifications**— page 11

**Technical Documents:**

**Product Specification**  
108-14034



**Application Specification**  
114-26012

No. of Dual Positions	Dimensions				Post Length	Connector Part Numbers
	A	B	C	D		
25	24	1.480 37.59	1.350 34.29	1.310 33.27	.100 2.54	650719-1

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Standard Edge II Connectors**

**Product Facts**

- **Maximum number of dual positions**  
.100 [2.54] Centerlines-70,  
.125 [3.18] Centerlines-50,  
.150 [3.81] Centerlines-31
- **Selective gold plating of contacts for high performance at low cost**
- **.025 [0.64] square solid posts meet standard wrap-type specifications**
- **For flow solder applications**
- **Glass-filled polyester housing is 94V-0 rated**
- **Accepts double sided PC boards, .054-.070 [1.27-1.78] thick**
- **Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476** 
- **Certified by Canadian Standards Association, File No. LR 7189** 

**Performance Specifications**

- Contact Rating\***: 3 amperes continuous (UL and CSA)
- Contact Resistance**: 10 milliohms max.
- Operating Temperature**: -55°C to +85°C
- Voltage Rating (Sea Level)**:  
.100 [2.54] centerline—1000 VAC (test)  
.125 [3.18] centerline—1500 VAC (test)  
.150 [3.81] centerline—1500 VAC (test)
- Insulation Resistance**: 5000 megohms min., after exposure to humidity
- Vibration Tolerance**: 10 to 500 hertz
- Contact Engagement Force**: 12 oz [3.3 N] average per pair with .062 [1.57] PC board
- Contact Separation Force**: 2 oz [0.6 N] average per pair with .062 [1.57] PC board
- Humidity Tolerance**: 90%-95% for 96 hours

\*Consult Tyco Electronics engineering when paralleling contacts for power applications.



AMP Standard Edge II Connectors provide high reliability and economy in packages compatible with industry standards for double sided printed circuit boards.

Tyco Electronics offers Standard Edge II Connectors with or without mounting ears, for rack mounting and soldering. Contacts are arranged on .100 [2.54] centers, .125 [3.18] centers, .150 [3.81] centers, .200 [5.08] row-to-row; and .250 [6.35] row-to-row.

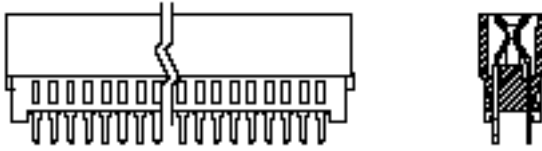
Right-angle connectors are also available with contacts arranged on .100 [2.54] centers, .150 [3.81] row-to-row or .200 [5.08] row-to-row.

Card extenders with contacts on .100 [2.54] and .125 [3.18] centers also are available.

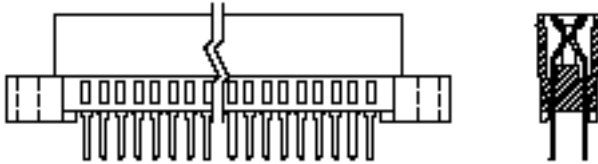
Precision formed phosphor bronze contacts are selectively gold plated. Phosphor bronze has excellent strength characteristics which help the connector absorb load deflection movement of a PC board while maintaining sufficient contact force for good electrical connection. Bifurcated cantilever beam contacts provide redundant contact.

Solder Type Board-to-Board Connectors

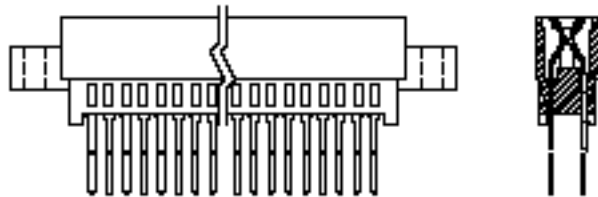
**.100 [2.54] and .125 [3.18] Centerline Solder Posts without Mounting Ears**  
Pages 17 and 18



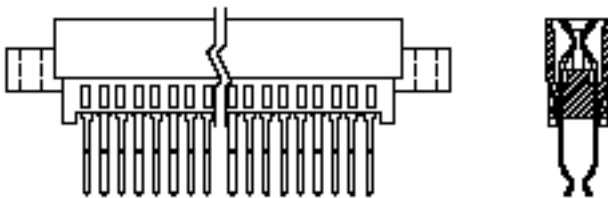
**.100 [2.54] and .125 [3.18] Centerline Solder Posts with Low and Mid-High Mounting Ears**  
Page 20



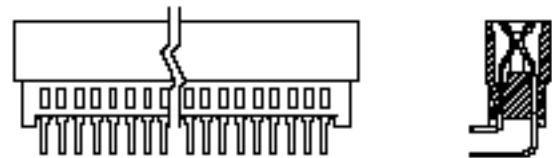
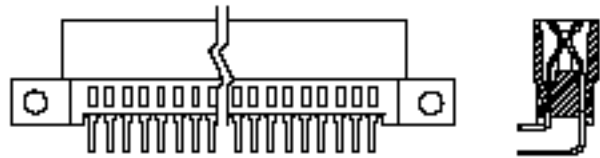
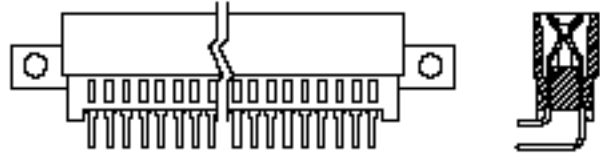
**.100 [2.54] and .125 [3.18] Centerline Wrap-Type Posts with Mid-High Mounting Ears**  
Page 21



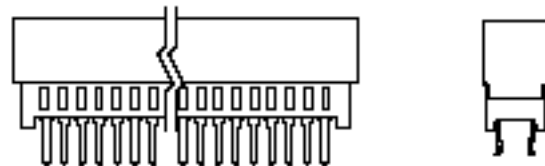
**.100 [2.54] and .125 [3.18] Centerline Card Extenders**  
Page 22



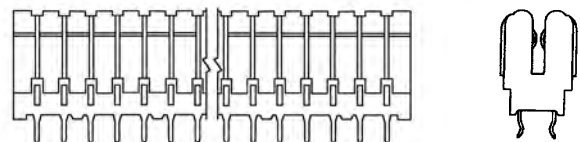
**.100 [2.54] Centerline Right-Angle Posts with Low and No Mounting Ears**  
Page 23



**.100 [2.54] Centerline Solder Posts with Board Retention Feature, without Mounting Ears**  
Page 24



**.150 [3.81] Centerline Solder Posts (with Board Retention Feature), without Mounting Ears**  
Page 19





**Standard Edge II Card Edge Connectors**

**.100 [2.54] Centerline, Vertical Solder Posts, Without Mounting Ears**

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, duplex plated as follows:

**Plating A**—.000030 [0.00076] gold in contact area, tin on posts, with entire contact nickel underplated

**Plating B**—.000015 [0.00038] gold in contact area, tin on posts, with entire contact nickel underplated

**Plating C**—Gold flash in contact area, tin on posts, with entire contact nickel underplated

**Technical Documents:**

**Product Specification**

108-9039

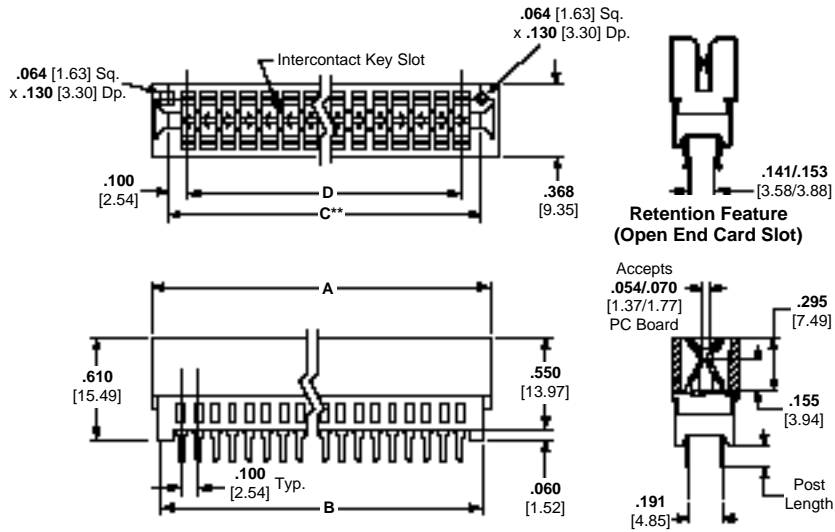
**Intercontact Keying Plug**

**Material:**

Natural color polyester



**Part Number 650025-2**  
(.100 [2.54] Centerline)



No. of Dual Positions	Dimensions				Post Length*	Part Numbers		
	A	B	C**	D		Plating A	Plating B	Plating C
3	.560 14.22	.450 11.43	Open End	.200 5.08	.125	650263-11	—	—
6	.860 21.84	.750 19.05	.700 17.78	.500 12.70	.125 .187	7-530843-5 7-530843-6	—	—
10	1.260 32.00	1.150 29.21	1.100 27.94	.900 22.86	.125 .187	5-530843-0 4-530843-9	—	—
12	1.460 37.08	1.350 34.29	1.300 33.02	1.100 27.94	.125	530843-1	—	—
15	1.760 44.70	1.650 41.91	1.600 40.64	1.400 35.56	.125	530843-2	—	—
17	1.960 49.78	1.850 46.99	1.800 45.72	1.600 40.64	.125	5-530843-3	—	—
18	2.060 52.32	1.950 49.53	1.900 48.26	1.700 43.18	.125	530843-3	2-530843-7	176137-11
20	2.260 57.40	2.150 54.61	2.100 53.34	1.900 48.26	.125	5-530843-4	—	—
22	2.460 62.48	2.350 59.69	2.300 58.42	2.100 53.34	.125	530843-4	—	—
25	2.760 70.10	2.650 67.31	2.600 66.04	2.400 60.96	.125	530843-5	—	—
28	3.060 77.72	2.950 74.93	2.900 73.66	2.700 68.58	.125	530843-6	—	—
30	3.260 82.80	3.150 80.01	3.100 78.74	2.900 73.66	.125 .187	530843-7 1-530843-8	—	—
31	3.360 85.34	3.250 82.55	3.200 81.28	3.000 76.20	.125	6-530843-5	7-530843-0	—
36	3.860 98.04	3.750 95.25	3.700 93.98	3.500 88.90	.125	530843-8	—	—
40	4.260 108.20	4.150 105.41	4.100 104.14	3.900 99.06	.187	2-530843-0	—	—
50	5.260 133.60	5.150 130.81	5.100 129.54	4.900 124.46	.125	1-530843-1	—	—

\*Metric equivalent for post lengths are .125 = 3.18; .187 = 4.75.

\*\*C dimension is card slot length.

† Connectors with Retention Feature.

**Notes:** 1. Other connector sizes can be made available, consult Tyco Electronics.  
2. High temperature IR reflow compatible connectors can be made available, consult Tyco Electronics.

**.125 [3.18] Centerline, Vertical Solder Posts, Without Mounting Ears**

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated with .000030 [0.00076] gold in contact area, tin on posts, with entire contact nickel underplated

**Related Product Data:**

**Performance Specifications**—page 15

**PC Board Hole Layout**—page 26

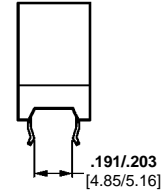
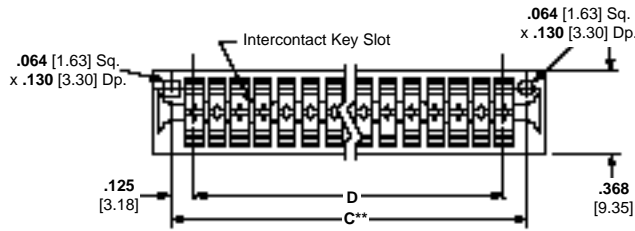
**PC Board Edge Pattern**—page 27

**Special Application**—page 96

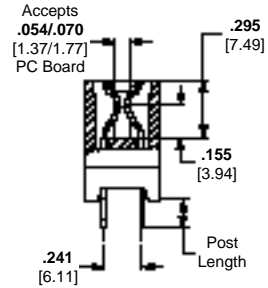
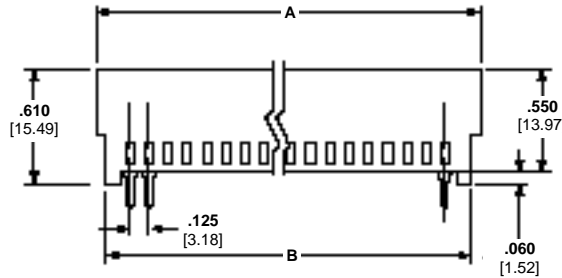
**Technical Documents:**

(pages 186, 187):

Product Specification  
108-9039



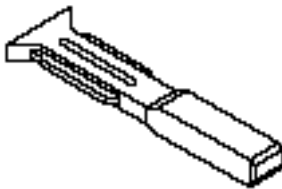
Retention Feature



**Intercontact Keying Plug**

**Material:**

Natural color polyester



Part No. 650025-1  
(.125 [3.18] Centerline)

No. of Dual Positions	Dimensions				Post Length*	Part Numbers
	A	B	C**	D		
6	1.035 26.29	.875 22.22	.875 22.22	.625 15.88	.125	650207-11
14	2.035 51.69	1.875 47.62	1.875 47.62	1.625 41.28	.187	5-530844-8
18	2.535 64.39	2.375 60.33	2.375 60.33	2.125 53.98	.187	1-530844-5
22	3.035 77.09	2.875 73.03	2.875 73.03	2.625 66.68	.187	1-530844-6
28	3.785 96.14	3.625 92.08	3.625 92.08	3.375 85.73	.187	1-530844-7
30	4.035 102.49	3.875 98.42	3.875 98.42	3.625 92.08	.187	1-530844-8
36	4.785 121.54	4.625 117.48	4.625 117.48	4.375 111.13	.187	1-530844-9
40	5.285 134.24	5.125 130.18	5.125 130.18	4.875 123.82	.187	2-530844-0
43	5.660 143.76	5.500 139.70	5.500 139.70	5.250 133.35	.125	1-530844-0
50	6.535 165.99	6.375 161.93	6.375 161.93	6.125 155.58	.125 .187	1-530844-1 2-530844-2

\*Metric equivalent for post lengths are .125 = [3.18]; .187 = [4.75]

\*\*C dimension is card slot length.

<sup>1</sup>Connector with Retention Feature.

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Standard Edge II Connectors** (Continued)

**.150 [3.81] Centerline, Vertical Solder Posts, Retention Feature, Without Mounting Ears**

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated with .000030 [0.00076] gold in contact area, tin on posts, with entire contact nickel underplated

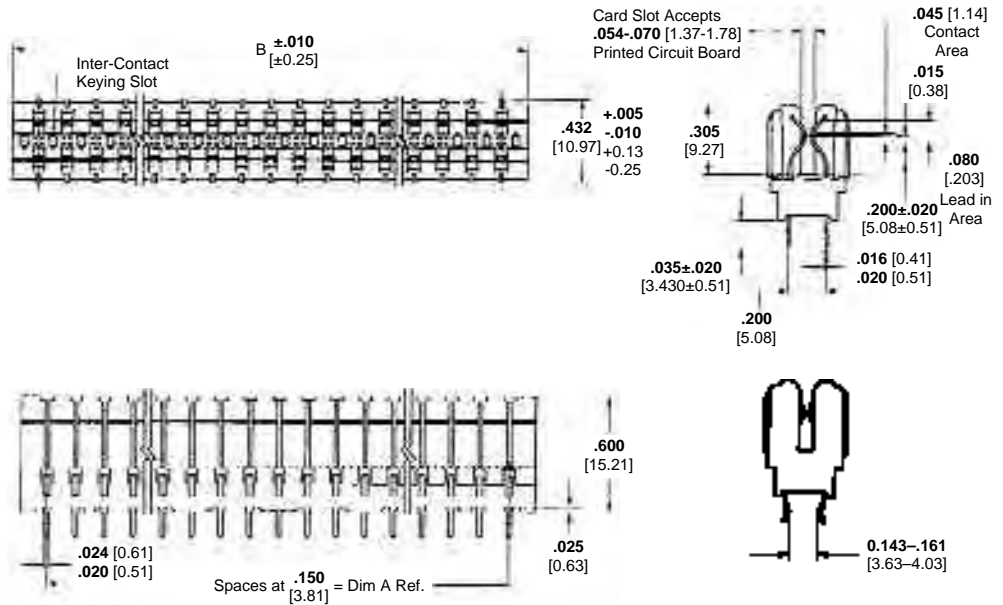
**Related Product Data:**

**Performance Specifications**—page 15

**PC Board Hole Layout**—page 26

**PC Board Edge Pattern**—page 27

**Special Application**—page 96



Solder Type Board-to-Board Connectors

No. of Dual Positions	Dimensions		Retention Location	Post Length*	Part Numbers
	A	B			
12	1.650 41.91	1.920 48.77	7-10, 15-18	.135	1-650728-2
19	2.700 68.58	2.970 75.44	7-10, 29-32	.135	1-650728-9
28	4.050 102.87	4.320 109.73	7-10, 25-32,47-50	.135	2-650728-9
31	4.500 114.30	4.770 121.16	7-10, 27-34,53-56	.135	3-650728-1

\*Metric equivalent for post length is .135 = [3.43]

\*\*C dimension is card slot length.

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**.100 [2.54] and .125 [3.18] Centerline, Vertical Solder Posts, Low and Mid-High Mounting Ears**

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated with .000030 [0.00076] gold in contact area, tin on posts, with entire contact nickel underplated

**Related Product Data:**

**Performance Specifications**—page 15

**PC Board Hole Layout**—page 26

**PC Board Edge Pattern**—page 27

**Special Application**—page 96

**Technical Documents:**

(pages 186, 187):

Product Specification  
108-9039

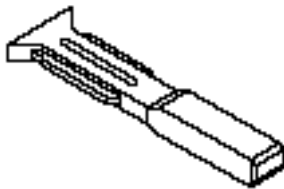
**Intercontact Keying Plugs**

**Material:**

Natural color polyester

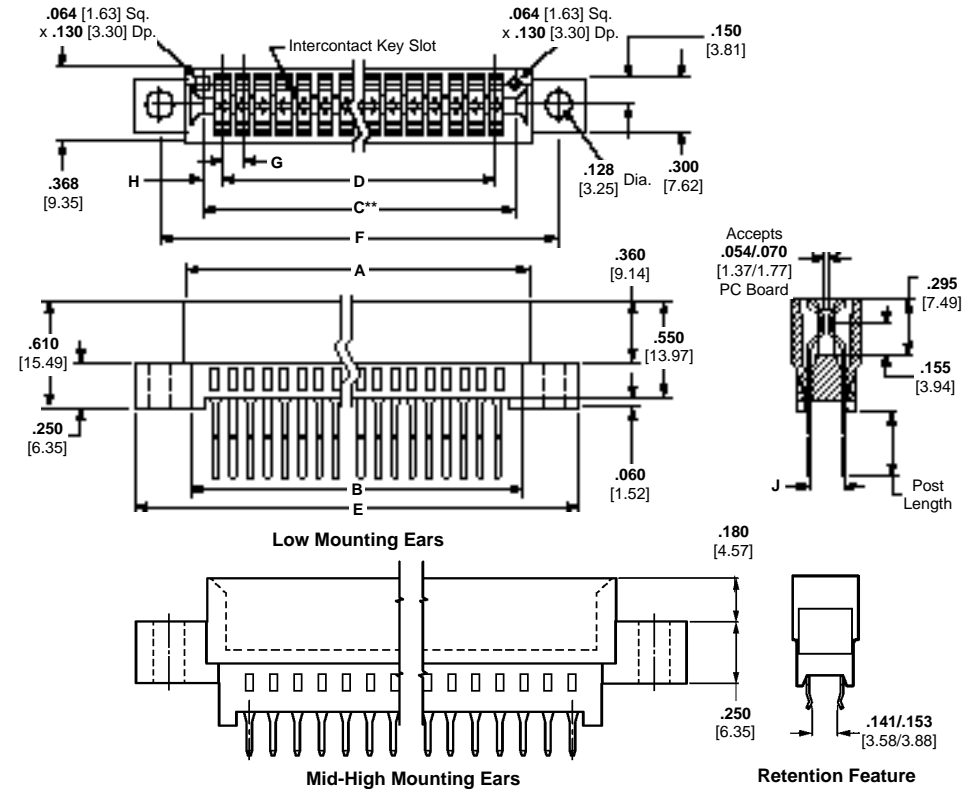


**Part No. 650025-2**  
(.100 [2.54] Centerline)



**Part No. 650025-1**  
(.125 [3.18] Centerline)

**Standard Edge II Connectors (Continued)**



**.100 [2.54] Centerline**

No. of Dual Positions	Dimensions									Post Length*	Part Numbers
	A	B	C**	D	E	F	G	H	J		
15	1.760	1.650	1.600	1.400	2.385	2.075	.100	.100	.191	.125	530841-2
	44.70	41.91	40.64	35.56	67.18	52.71	2.54	2.54	4.85		
18	2.060	1.950	1.900	1.700	2.645	2.375	.100	.100	.191	.125	530841-3
	52.32	49.53	48.26	43.18	67.18	60.32	2.54	2.54	4.85		
25	2.760	2.650	2.600	2.400	3.345	3.075	.100	.100	.191	.125 .187	530841-5 1-530841-6
	70.10	67.31	66.04	60.96	84.96	78.11	2.54	2.54	4.85		
30	3.260	3.160	3.100	2.900	3.845	3.575	.100	.100	.191	.187	1-530841-8
	82.80	80.01	78.74	73.66	97.66	90.81	2.54	2.54	4.85		
36	3.860	3.750	3.700	3.500	4.445	4.175	.100	.100	.191	.125	530841-8
	98.04	95.25	93.98	88.90	112.90	106.21	2.54	2.54	4.85		
50	5.260	5.150	5.100	4.900	5.845	5.575	.100	.100	.191	.125	1-530841-1 2-530841-2
	133.60	130.81	129.54	124.46	148.46	141.60	2.54	2.54	4.85		
									.141-.153 3.58-3.88		650718-11 <sup>2</sup>

\*Metric equivalent for post lengths are .125 = [3.18]; .187 = [4.75]

\*\*C dimension is card slot length.

<sup>1</sup>Connector with Retention Feature.

<sup>2</sup>Connector with Mid-High Mounting Ears.

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**.125 [3.18] Centerline**

No. of Dual Positions	Dimensions									Post Length*	Part Numbers
	A	B	C**	D	E	F	G	H	J		
6	1.035	.875	.875	.625	1.555	1.295	.125	.125	.241	.125	1-531341-3
	26.29	22.22	22.22	15.88	39.50	32.89	3.18	3.18	6.11		
28	3.785	3.505	3.625	3.375	4.305	4.045	.125	.125	.241	.187	1-530842-7
	96.14	89.03	92.08	85.73	109.35	102.74	3.18	3.18	6.11		
50	6.535	6.255	6.375	6.125	7.055	6.795	.125	.125	.241	.125	1-530842-1
	165.99	158.88	161.93	155.58	179.20	172.59	3.18	3.18	6.11		

\*Metric equivalent for post lengths are .125 = [3.18]; .187 = [4.75]

\*\*C dimension is card slot length.

<sup>1</sup>Connector with Retention Feature.

<sup>2</sup>Connector with Mid-High Mounting Ears.

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Standard Edge II Connectors (Continued)**

**.100 [2.54] and .125 [3.18] Centerline, Vertical Wrap-Type Posts, Mid-High Mounting Ears**

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated with .000030 [0.00076] gold in contact area, tin on posts, with entire contact nickel underplated

**Related Product Data:**

**Performance Specifications**—page 15

**PC Board Hole Layout**—page 26

**PC Board Edge Pattern**—page 27

**Special Application**—page 96

**Technical Documents:**

(pages 186, 187):

Product Specification  
108-9039

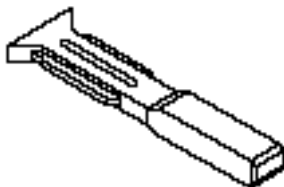
**Intercontact Keying Plugs**

**Material:**

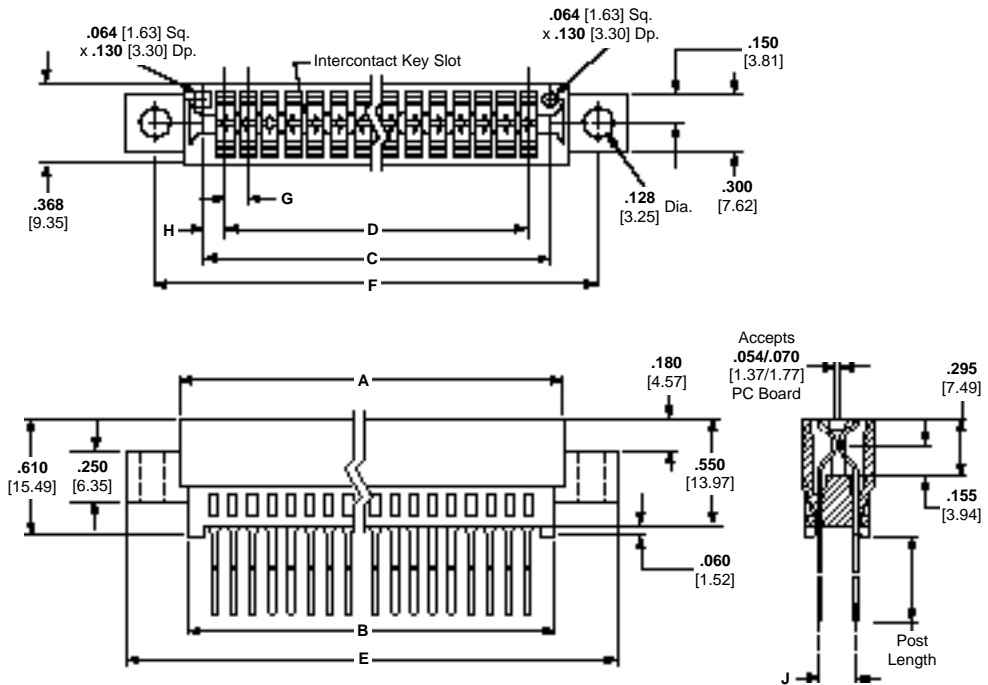
Natural color polyester



**Part No. 650025-2**  
(.100 [2.54] Centerline)



**Part No. 650025-1**  
(.125 [3.18] Centerline)



Solder Type Board-to-Board Connectors

**.100 [2.54] Centerline**

No. of Dual Positions	Dimensions									Post Length*	Part Numbers
	A	B	C**	D	E	F	G	H	J		
30	3.260	3.150	3.100	2.900	3.845	3.575	.100	.100	.200	.570	3-530396-3
	82.80	80.01	78.74	73.66	97.41	90.80	2.54	2.54	5.08		
36	3.860	3.750	3.700	3.500	4.435	4.175	.100	.100	.200	.570	3-530396-4
	98.04	95.25	93.98	88.90	112.65	106.04	2.54	2.54	5.08		
40	4.260	4.150	4.100	3.900	4.845	4.575	.100	.100	.200	.570	3-530396-4
	108.20	105.41	104.14	99.06	123.06	116.21	2.54	2.54	5.08		

\*Metric equivalent for post length is .570 = [14.48].

\*\*C dimension is card slot length.

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**.125 [3.18] Centerline**

No. of Dual Positions	Dimensions									Post Length*	Part Numbers
	A	B	C**	D	E	F	G	H	J		
22	3.035	2.755	2.875	2.625	3.555	3.295	.125	.125	.250	.570	4-530825-5
	77.09	69.98	73.02	66.67	90.30	83.69	3.18	3.18	6.35		

\*Metric equivalent for post length is .570 = [14.48].

\*\*C dimension is card slot length.

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Standard Edge II Connectors (Continued)**

**.100 [2.54] and .125 [3.18] Centerlines, Card Extender Contacts**

**Material and Finish:**  
**Housing**—Black glass-filled polyester, 94V-0 rated  
**Contacts**—Phosphor bronze, plated with .000030 [0.00076] gold in contact area, tin on posts, with entire contact nickel underplated

**Related Product Data:**

**Performance Specifications**—page 15  
**PC Board Hole Layout**—page 26  
**PC Board Edge Pattern**—page 27

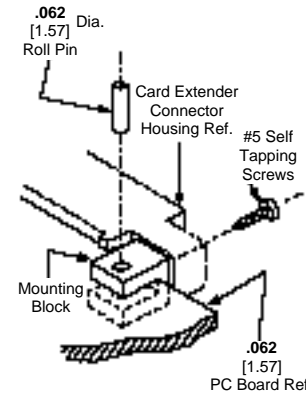
**Technical Documents:**

(pages 186, 187):  
 Product Specification 108-9039

**Mounting Block**

**Material:**

Natural color nylon

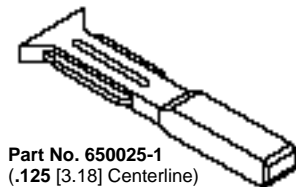


**Kit Part No. 531250-4**  
 Each kit includes 2 mounting blocks, 2 self tapping screws, #5 x .437 [11.10] and 2 roll pins, .075 x .250 [1.57 x 6.35]

**Intercontact Keying Plugs**

**Material:**

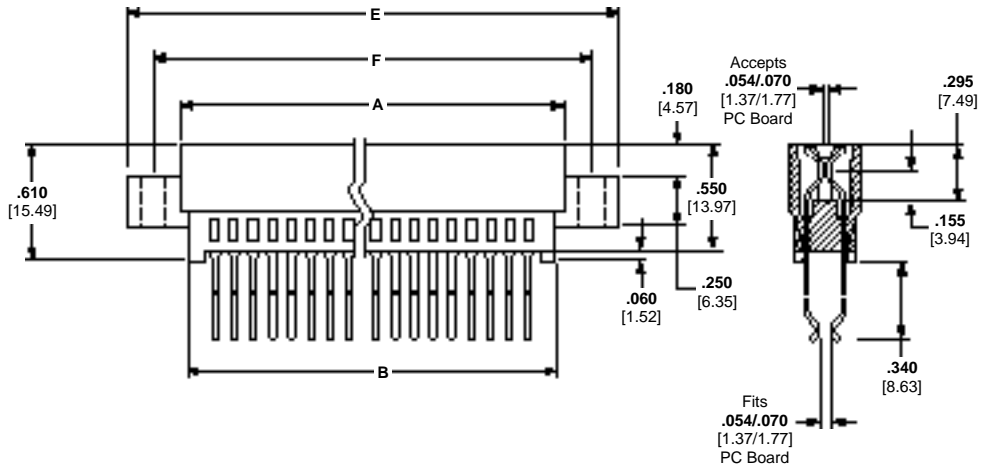
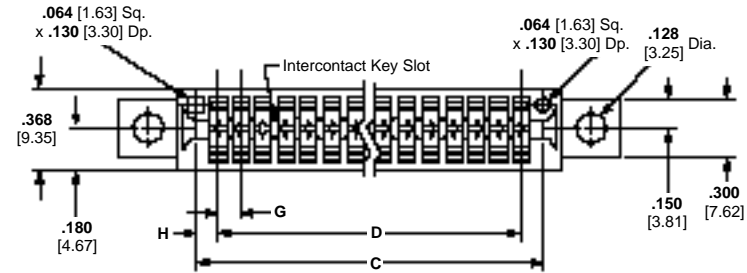
Natural color polyester



**Part No. 650025-1**  
(.125 [3.18] Centerline)



**Part Number 650025-2**  
(.100 [2.54] Centerline)



**.100 [2.54] Centerline**

No. of Dual Positions	Dimensions								Part Numbers
	A	B	C**	D	E	F	G	H	
50	5.260 133.60	5.160 130.81	5.100 129.54	4.900 124.46	5.845 148.46	5.575 141.60	.100 2.54	.100 2.54	530826-3

\*C dimension is card slot length.

†No mounting ears.

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**.125 [3.18] Centerline**

No. of Dual Positions	Dimensions								Part Numbers
	A	B	C**	D	E	F	G	H	
36	4.785 121.54	4.505 114.43	4.625 117.48	4.375 111.13	5.035 134.75	5.045 128.14	.125 3.18	.125 3.18	530384-2

\*C dimension is card slot length.

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Standard Edge II Card Edge Connectors**

Solder Type Board-to-Board Connectors

**.100 [2.54] Right-Angle Solder Posts, with Low and No Mounting Ears**

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, duplex plated as follows:

**Plating A**—.000030 [0.00076] gold in contact area, tin on posts, with entire contact nickel underplated

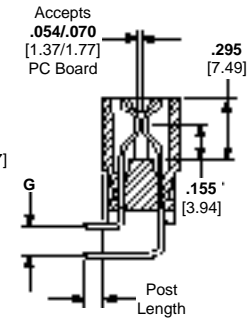
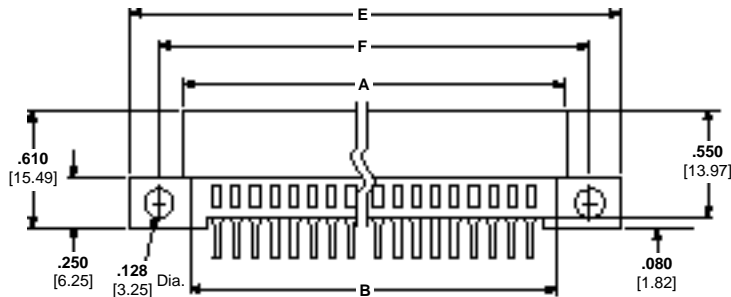
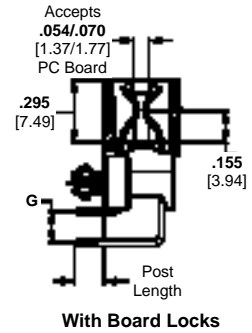
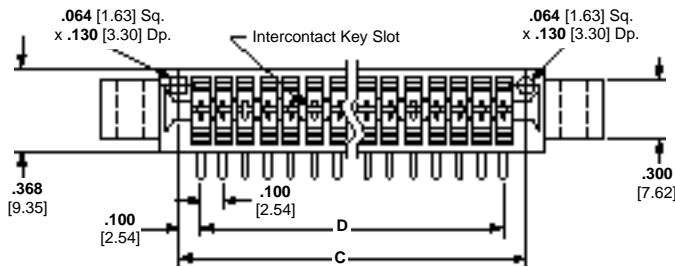
**Plating B**—.000015 [0.00038] gold in contact area, tin on posts, with entire contact nickel underplated

**Related Product Data:**

**Performance Specifications**—page 15

**Technical Documents:**

**Product Specification**  
108-9039



Low Mounting Ears

**Intercontact Keying Plug**

**Material:**

Natural color polyester



**Part Number 650025-2**  
(.100 [2.54] Centerline)

**Low Mounting Ears**

No. of Dual Positions	Dimensions							Post Length <sup>2</sup>	Part Numbers (Plating A)
	A	B	C*	D	E	F	G <sup>1</sup>		
12	1.460	1.350	1.300	1.100	2.045	1.775	.100x	.090	145089-1 <sup>3</sup>
	37.08	34.29	33.02	27.94	51.94	45.08	.150		
18	2.060	1.950	1.900	1.700	2.645	2.375	.100x	.090	645384-1
	52.32	49.53	48.26	43.18	67.18	60.32	.150		
20	2.260	2.150	2.100	1.900	2.845	2.575	.100x	.090	645384-3
	57.40	54.61	53.34	48.26	72.30	65.40	.150		

\*C dimension is card slot length.

<sup>1</sup> Metric equivalent for .100 x .150 and .100 x .200 are [2.54 x 3.81] and [2.54 x 5.08].

<sup>2</sup> Metric equivalent for post length is .090 = [2.27].

<sup>3</sup> Connector with Board Locks.

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**No Mounting Ears**

No. of Dual Positions	Dimensions					Post Length <sup>2</sup>	Part Numbers	
	A	B	C*	D	G <sup>1</sup>		Plating A	Plating B
15	1.760	1.650	1.600	1.400	.100x	.090	650118-1	—
	44.70	41.91	40.64	35.56	.150			
17	1.960	1.850	1.800	1.600	.100x	.090	650187-1	—
	49.78	46.99	45.72	40.64	.200			
25	2.760	2.350	2.600	2.400	.100x	.090	—	532600-2
	70.10	67.61	66.04	60.96	.150			
31	3.360	3.250	3.200	3.000	.100x	.090	—	532600-4
	85.34	82.55	81.28	76.20	.150			
32	3.460	3.350	3.300	3.100	.100x	.090	—	532600-5
	87.88	85.09	83.82	78.74	.150			
19	2.160	2.750	2.700	1.800	.100x	.090	—	532600-6
	54.86	69.85	68.58	45.72	.150			

\*C dimension is card slot length.

<sup>1</sup> Metric equivalent for .100 x .150 and .100 x .200 are [2.54 x 3.81] and [2.54 x 5.08].

<sup>2</sup> Metric equivalent for post length is .090 = [2.27].

**Notes:** 1. Other connector sizes can be made available, consult Tyco Electronics.

2. High temperature IR reflow compatible connectors can be made available, consult Tyco Electronics.

**Standard Edge II Card Edge Connectors**

**.100 [2.54] Centerline Vertical Solder Posts, Retention Feature, Without Mounting Ears**

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, duplex plated as follows:

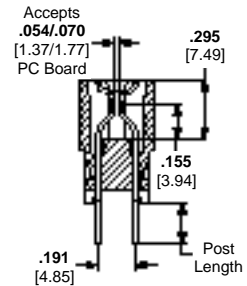
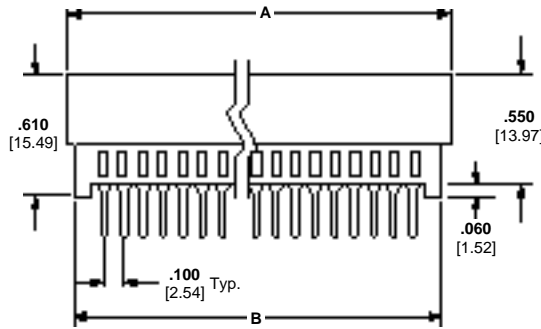
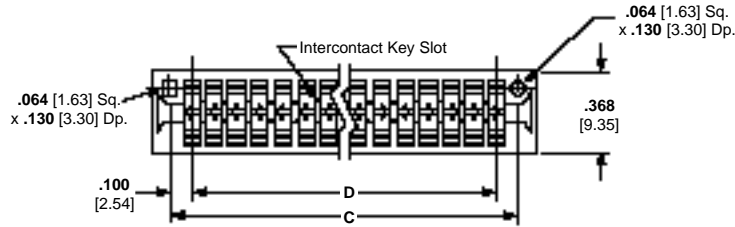
**Plating A**—.000030 [0.00076] gold in contact area, tin on posts, with entire contact nickel underplated

**Plating B**—.000015 [0.00038] gold in contact area, tin on posts, with entire contact nickel underplated

**Plating C**—Gold flash in contact area, tin on posts, with entire contact nickel underplated

**Technical Documents:**

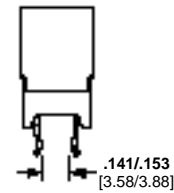
**Product Specification**  
108-9039



**Intercontact Keying Plug**

**Material:**

Natural color polyester



Retention Feature

**Part Number 650025-2**  
(.100 [2.54] Centerline)

No. of Dual Positions	Dimensions				Post Length*	Retention Feature	PartNumbers Plating A
	A	B	C**	D			
18	2.060 52.32	1.950 49.53	1.900 48.26	1.700 43.18	.125	3-6, 31-34	645235-4
31	3.360 85.34	3.250 82.55	3.200 81.28	3.000 76.20	.125	3-6, 29-32 or 31-34, 57-60	645235-1
50	5.260 133.60	5.150 130.81	5.100 129.54	4.900 124.46	.125	3-6, 49-52, 95-98	645235-3
60	6.260 159.00	6.150 156.21	6.100 154.94	5.900 149.86	.125	3-6, 55-58, 63-66, 115-118	645235-8

\*Metric equivalent for post length is .125 = [3.18].

\*\*C dimension is card slot length.

**Notes:** 1. Other connector sizes can be made available, consult Tyco Electronics.  
2. High temperature IR reflow compatible connectors can be made available, consult Tyco Electronics.

Solder Type Board-to-Board Connectors



**Standard Edge II Card Edge Connectors**

Solder Type Board-to-Board Connectors

**.100 [2.54] Centerline, Special 18/31 Dual Combination Connector, Vertical Solder Posts, Without Mounting Ears**

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated, except where noted

**Contacts**—Phosphor bronze, plated with .000030 [0.00076] gold in contact area (except where noted), tin on posts, with entire contact nickel underplated

**Technical Documents:**

**Product Specification**  
108-9039

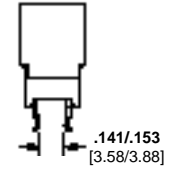
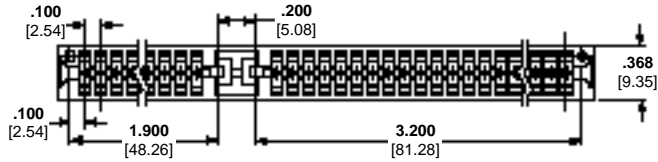
**Intercontact Keying Plug**

**Material:**

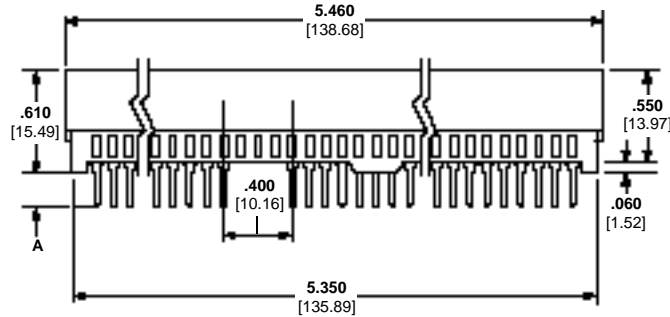
Natural color polyester



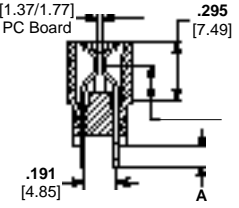
**Part Number 650025-2**  
(.100 [2.54] Centerline)



**Retention Feature**



Accepts  
**.054/.070**  
[1.37/1.77]  
PC Board



**Solder Posts**

No. of Dual Positions	Post Type	Dimension A	Retention Feature	Part Numbers
52	Solder Posts	.125 3.18	3-6, 41, 42, 51, 52, 93-96	645169-2 536128-1 <sup>1</sup>
52	Solder Posts	.125 3.18	None	645169-3
52	Solder Posts	.125 3.18	3-14, 41, 42, 51, 52, 85-96	645169-4
52	Solder Posts	.125 3.18	5, 6, 31, 32, 41, 42, 93, 94	176139-1 <sup>2</sup>
52	Solder Posts	.187 4.75	None	650616-1

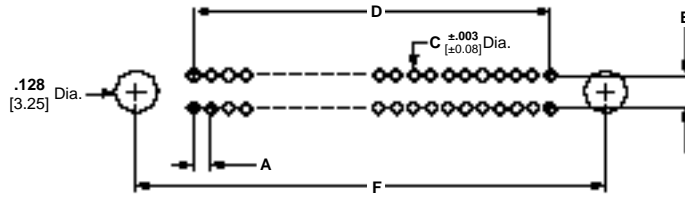
<sup>1</sup> Housing material is high temperature glass-filled polyester, gray.  
<sup>2</sup> Contact area is gold flash.

- Notes:**
1. Card slot length is **5.300** [134.62].
  2. Other connector sizes can be made available, consult Tyco Electronics.
  3. High temperature IR reflow compatible connectors can be made available, consult Tyco Electronics.

Recommended  
PC Board Hole Layouts

**Standard Edge II Connectors** (Continued)

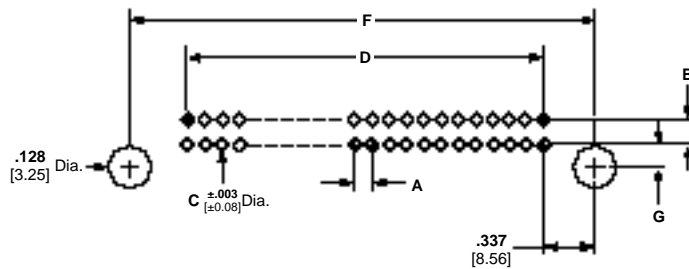
**Vertical Post Connectors**



Connector Type	Dimensions				
	A	B	C	D	F
Solder Post/Retention	.100 2.54	.200 5.08	.040 1.02	See Note 1	See Note 2
Solder Post/Retention	.150 3.81	.200 5.08	.040 1.02	See Note 4	See Note 2
Solder Post, Mounting Ears	.125 3.18	.250 6.35	.040 1.02	See Note 3	See Note 3
Solder Post, W/O Mounting Ears	.100/.125 2.54/3.18	.200/.250 5.08/6.35	.040 1.02	See Note 4	See Note 2
Wrap-Type Post	.100 2.54	.200 5.08	.042 1.07	See Note 5	See Note 5
Wrap-Type Post	.125 3.18	.250 6.35	.042 1.07	See Note 5	See Note 5

- Notes:**
1. Refer to page 24 for **D** Dimensions and Dual Positions.
  2. No mounting ears. Dimensions do not apply.
  3. Refer to page 20 for **D** and **F** Dimensions and Dual Positions.
  4. Refer to pages 18 and 19 for **D** Dimensions and Dual Positions.
  5. Refer to page 21 for **D** and **F** Dimensions and Dual Positions.

**Right-Angle Post Connectors**



Connector Type	Dimensions					
	A	B	C	D	F	G
Right-Angle Posts, Mounting Ears	.100 2.54	.150 3.81	.042 1.07	See Note 1	See Note 1	.137 3.48
Right-Angle Posts, No Mounting Ears	.100 2.54	.150 or .200 3.81 or 5.08	.042 1.07	See Note 2	See Note 3	See Note 3

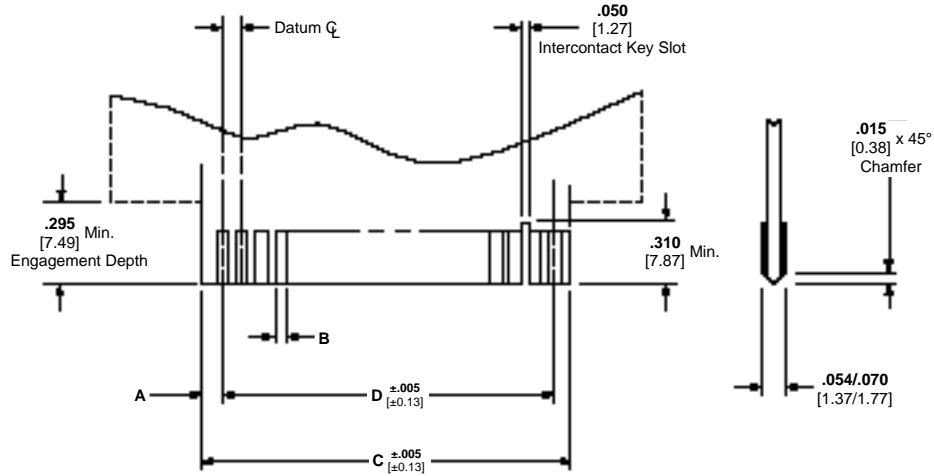
- Notes:**
1. Refer to page 23 for **D** and **F** Dimensions and Dual Positions.
  2. Refer to page 23 for **D** Dimensions and Dual Positions.
  3. No Mounting Ears, Dimensions do not apply.

Solder Type Board-to-Board Connectors

**Standard Edge II Connectors** (Continued)

**Recommended  
PC Board Edge Pattern**

**PC Board Edge Pattern for  
.100 [2.54] and .125 [3.18]  
Centerline**

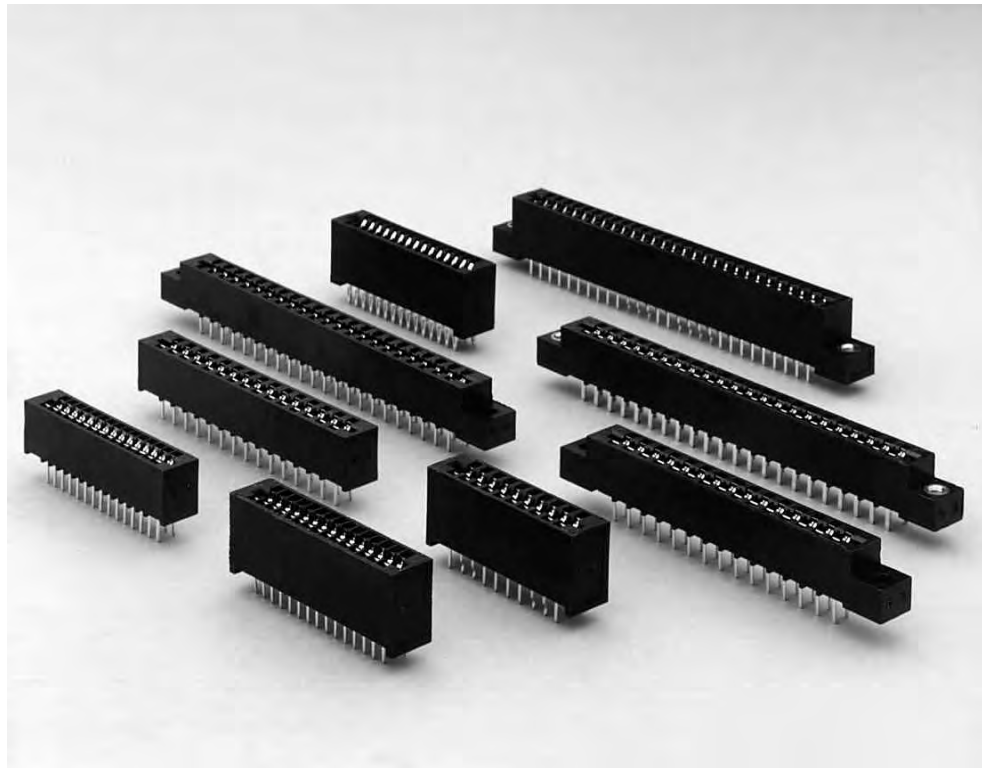


No. of Dual Positions	.100 [2.54] Centerline A = .093 [2.36] B = .050 [1.27]		.125 [3.18] Centerline A = .118 [3.00] B = .075 [1.90]	
	C	D	C	D
3	.386 9.80	.200 5.08	—	—
6	.686 17.42	.500 12.70	.861 21.87	.625 15.88
10	1.086 27.58	.900 22.86	1.361 34.57	1.125 28.58
12	1.286 32.66	1.100 27.94	—	—
13	1.386 35.20	1.200 30.48	—	—
14	—	—	1.861 47.27	1.625 41.28
15	1.586 40.28	1.400 35.56	—	—
17	1.786 45.36	1.600 40.64	—	—
18	1.886 47.90	1.700 43.18	2.361 59.97	2.125 53.98
22	2.286 58.06	2.100 53.34	2.861 72.67	2.625 66.68
25	2.586 65.68	2.400 60.96	—	—
28	2.886 73.30	2.700 68.58	3.611 91.72	3.375 85.73
30	3.086 78.38	2.900 73.66	3.861 98.07	3.625 92.08
31	3.186 80.92	3.000 76.20	3.986 101.24	3.750 95.25
35	3.586 91.08	3.400 86.36	—	—
36	3.686 93.62	3.500 88.90	4.611 117.12	4.375 111.13
40	4.086 103.78	3.900 99.06	5.111 129.82	4.875 123.82
43	4.386 111.40	4.200 106.68	5.486 139.34	5.250 133.35
50	5.086 129.18	4.900 124.46	6.361 161.57	6.125 155.58
60	6.086 154.58	5.900 149.86	—	—
70	7.086 179.98	6.900 175.26	—	—

**Product Facts**

- Double readout Card Edge connectors use dip solder contacts
- Large lead-in chamfers allow easy PC board installation
- Insulator standoffs prevent solder from wicking
- Various lengths for custom applications
- Contact option, single or dual row

**Cantilever Series Card Edge Connectors**



**Description**

The Cantilever Beam Series products from Tyco Electronics are double readout cardedge connectors, using dip solder contacts. Tooled for flexible manufacturing, these Card Edge connectors are readily available in a broad assortment of sizes and mounting styles. Our connectors meet industry standards.

**Design Advantages**

- **Circuit Integrity:** Robust cantilever contacts are designed to promote optimal normal forces at the lowest possible cost. Our uniquely contoured contact mating surface gives you constant engagement, even when subjected to continuous vibration.
- **Ease of Assembly:** Generous lead-in chamfers let your P.C. board slide easily into the connector. Insulator standoffs are provided to facilitate cleaning and prevent solder from wicking.

Availability, flexibility, performance and very low cost make the Cantilever Series from Tyco Electronics the clear choice in Card Edge connectors.

**Cantilever Beam**

The Cantilever Beam Card Edge connector comes with standard high temperature plastic insulators. Contacts are available in a variety of lengths to accommodate various custom applications. Standoffs allow for cleaning and draining and are available as an option on most insulator bodies.

Cantilever Beam Card Edge offers a variety of card slot depths. A full scoop option is available for ease of installation in applications where visibility is limited.

Contact options vary in this series from dual row standard contacts, single row options and press-fit.

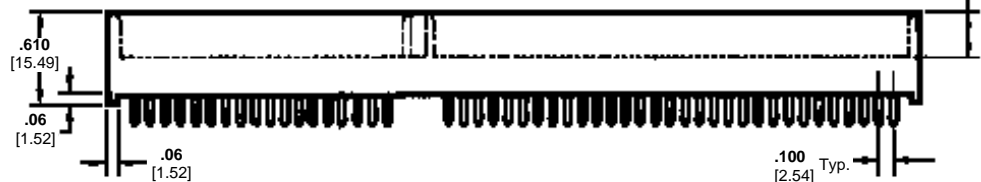
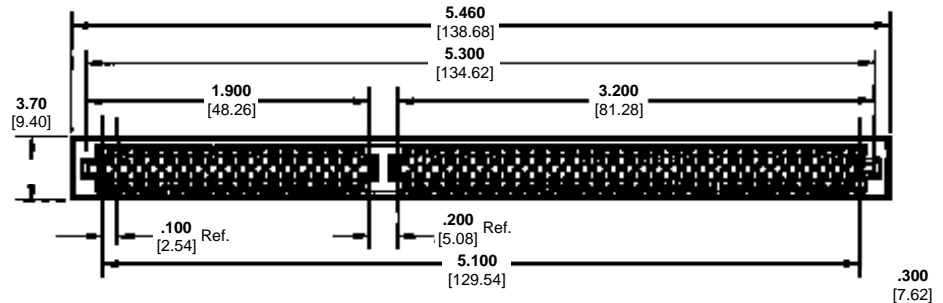
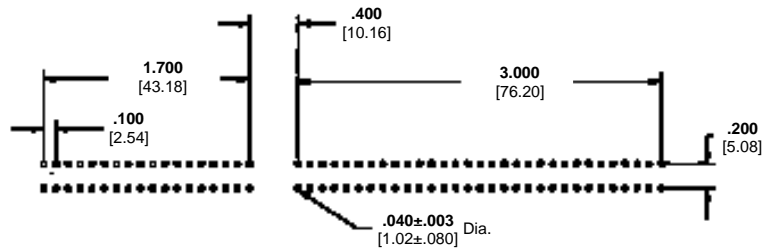
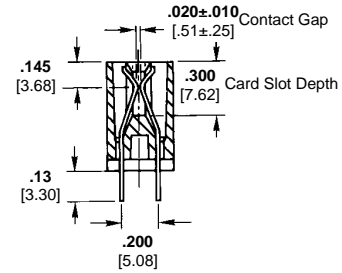
**Cantilever Series Connectors .100 x .200 [2.54 x 5.08] Centerline**

**Product Facts**

- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E60980 
- Certified by Canadian Standards Association, File No. LR49571 

**Physical Properties:**

- Insulation Resistance**—5000 megohms minimum.
- Insertion/Withdrawal Force (Daughter Card)**—8 oz./2 oz. [35.6 N/ 8.9 N] average contact pair using .0620 [1.57] steel blade.
- Insulator Body**—Glass filled thermoplastic, UL rating 94V-0. High temp. plastic option is available; add suffix M399 to part number.
- Color**—Black
- Contacts**—High strength copper alloy.
- Contact Plating**—.000050 [0.00127] nickel underplate with .000030 [0.00076] gold in the mating area, tin/lead on tails, .000100 [0.00254] minimum
- Electrical Properties:**
- Operation Voltage**—600 VDC (sea level)
- Current Rating**—3 Amperes
- Initial Contact Resistance**—10 milliohms
- Environmental Properties:**
- Operating Temperature**—-55°C to +125°C
- Temperature Cycling**—MIL-STD-202 method 107



**Ordering Information**

**Acquired Part Number**

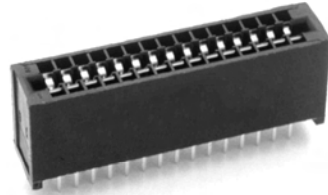
- C8D52DS29C1M191** – Insulator with molded-in polarizing key with card guide chamber. The card slot lengths are 1.900 [48.26] and 3.200 [81.28]. Includes retention tails for .062 [1.57] PCB to hold connectors securely during handling.
- C8D52DS29C1M195** – Same as above. No retention tails.

Solder Type Board-to-Board Connectors

**Cantilever Series Connectors .100 x .200 [2.54 x 5.08] Centerline  
Dip Solder Tails, .300 [7.62] Card Slot Depth**

**Product Facts**

- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E60980 
- Certified by Canadian Standards Association, File No. LR49571 



**Physical Properties:**

**Insulation Resistance**—5000 megohms minimum.  
**Insertion/Withdrawal Force (Daughter Card)**—8 oz./2 oz. [35.6 N/ 8.9 N] average contact pair using .0620 [1.57] steel blade.  
**Insulator Body**—Glass filled thermoplastic, UL rating 94V-0. High temp. plastic option is available; add suffix M399 to part number.

**Color**—Black  
**Contacts**—High strength copper alloy.  
**Contact Plating**—.000050 [0.00127] nickel underplate with .000030 [0.00076] gold in the mating area, tin/lead on tails, .000100 [0.00254] minimum

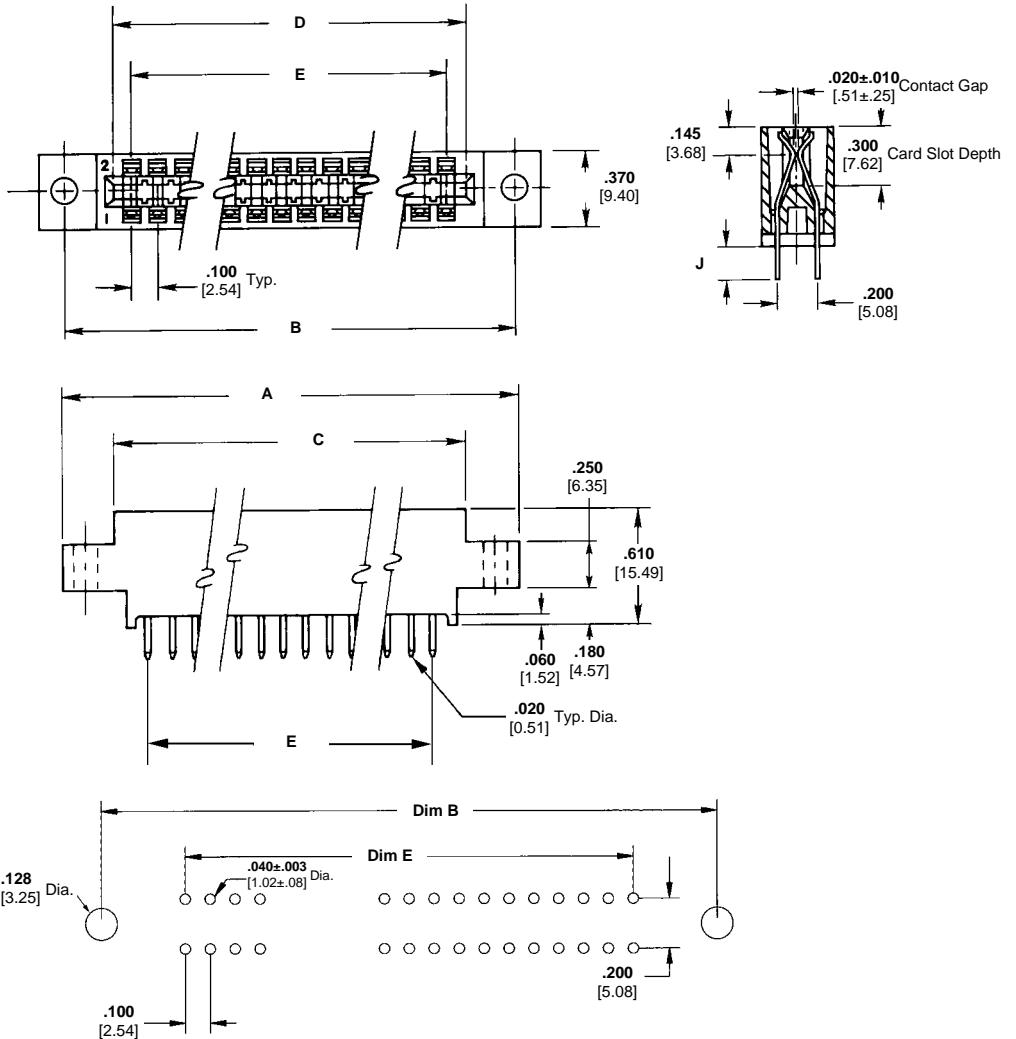
**Electrical Properties:**  
**Operation Voltage**—600 VDC (sea level)  
**Current Rating**—3 Amperes  
**Initial Contact Resistance**—10 milliohms

**Environmental Properties:**  
**Operating Temperature**—-55°C to +125°C  
**Temperature Cycling**—MIL-STD-202 method 107

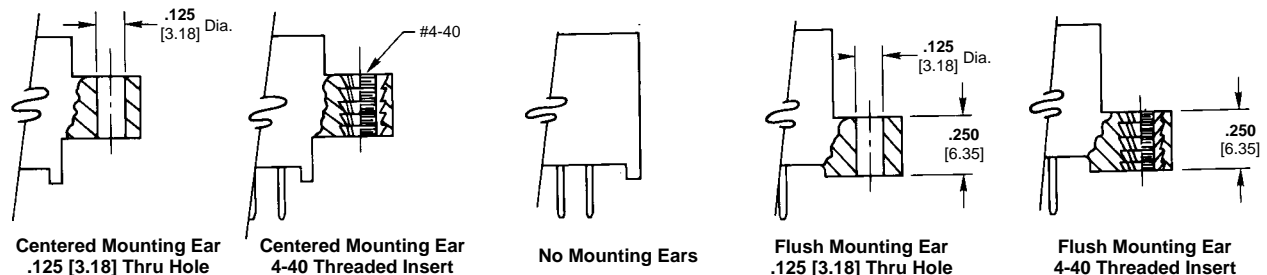
**Vibration**—MIL-STD-202 method 204

**Related Product Data:**

**Daughter Card Edge Pattern**—page 57



**Mounting Styles**



**Ordering Information**

.100" [2.54] Centerline / .200" [5.08] Row-to-Row

No. of Dual Readout Positions	Dimensions					Mounting Ear Options				
	A	B	C	D	E	Centered Mounting Ear .125" [3.18] Thru Hole	Centered Mounting Ear 4-40 Threaded insert	No Mounting Ears	Flush Mounting Ear .125" [3.18] Thru Hole	Flush Mounting Ear 4-40 Threaded insert
<b>Tail Length .130" [3.30] (DIM "J")</b>										
6	1.435 36.45	1.175 29.85	0.860 21.84	0.700 17.78	0.500 12.70	C8D06DS29A1	C8D06DS29B1	C8D06DS29C1	C8D06DS29D1	C8D06DS29E1
10	1.835 46.61	1.575 40.01	1.260 32.00	1.100 27.94	0.900 22.86	C8D10DS29A1	C8D10DS29B1	C8D10DS29C1	C8D10DS29D1	C8D10DS29E1
12	2.035 51.69	1.775 45.09	1.460 37.08	1.300 33.02	1.100 27.94	C8D12DS29A1	C8D12DS29B1	C8D12DS29C1	C8D12DS29D1	C8D12DS29E1
15	2.335 59.31	2.075 52.71	1.760 44.70	1.600 40.64	1.400 35.56	C8D15DS29A1	C8D15DS29B1	C8D15DS29C1	C8D15DS29D1	C8D15DS29E1
18	2.635 66.93	2.375 60.33	2.060 52.32	1.900 48.26	1.700 43.18	C8D18DS29A1	C8D18DS29B1	C8D18DS29C1	C8D18DS29D1	C8D18DS29E1
20	2.835 72.01	2.575 65.41	2.260 57.40	2.100 53.34	1.900 48.26	C8D20DS29A1	C8D20DS29B1	C8D20DS29C1	C8D20DS29D1	C8D20DS29E1
22	3.035 77.09	2.775 70.49	2.460 62.48	2.300 58.42	2.100 53.34	C8D22DS29A1	C8D22DS29B1	C8D22DS29C1	C8D22DS29D1	C8D22DS29E1
25	3.335 84.71	3.075 78.11	2.760 70.10	2.600 66.04	2.400 60.96	C8D25DS29A1	C8D25DS29B1	C8D25DS29C1	C8D25DS29D1	C8D25DS29E1
28	3.635 92.33	3.375 85.73	3.060 77.72	2.900 73.66	2.700 68.58	C8D28DS29A1	C8D28DS29B1	C8D28DS29C1	C8D28DS29D1	C8D28DS29E1
30	3.835 97.41	3.575 90.81	3.260 82.80	3.100 78.74	2.900 73.66	C8D30DS29A1	C8D30DS29B1	C8D30DS29C1	C8D30DS29D1	C8D30DS29E1
31	3.935 99.95	3.675 93.35	3.360 85.34	3.200 81.28	3.000 76.20	C8D31DS29A1	C8D31DS29B1	C8D31DS29C1	C8D31DS29D1	C8D31DS29E1
35	4.335 110.11	4.075 103.51	3.760 95.50	3.600 91.44	3.400 86.36	C8D35DS29A1	C8D35DS29B1	C8D35DS29C1	C8D35DS29D1	C8D35DS29E1
36	4.435 112.65	4.175 106.05	3.860 98.04	3.700 93.98	3.500 88.90	C8D36DS29A1	C8D36DS29B1	C8D36DS29C1	C8D36DS29D1	C8D36DS29E1
40	4.835 122.81	4.575 116.21	4.260 108.20	4.100 104.14	3.900 99.06	C8D40DS29A1	C8D40DS29B1	C8D40DS29C1	C8D40DS29D1	C8D40DS29E1
43	5.135 130.43	4.875 123.83	4.560 115.82	4.400 111.76	4.200 106.68	C8D43DS29A1	C8D43DS29B1	C8D43DS29C1	C8D43DS29D1	C8D43DS29E1
50	5.835 148.21	5.575 141.61	5.260 133.60	5.100 129.54	4.900 124.46	C8D50DS29A1	C8D50DS29B1	C8D50DS29C1	C8D50DS29D1	C8D50DS29E1
60	6.835 173.61	6.575 167.01	6.260 159.00	6.100 154.94	5.900 149.86	C8D60DS29A1	C8D60DS29B1	C8D60DS29C1	C8D60DS29D1	C8D60DS29E1
<b>Tail Length .160" [4.06] (DIM "J")</b>										
6	1.435 36.45	1.175 29.85	0.860 21.84	0.700 17.78	0.500 12.70	C8D06DS29A2	C8D06DS29B2	C8D06DS29C2	C8D06DS29D2	C8D06DS29E2
10	1.835 46.61	1.575 40.01	1.260 32.00	1.100 27.94	0.900 22.86	C8D10DS29A2	C8D10DS29B2	C8D10DS29C2	C8D10DS29D2	C8D10DS29E2
12	2.035 51.69	1.775 45.09	1.460 37.08	1.300 33.02	1.100 27.94	C8D12DS29A2	C8D12DS29B2	C8D12DS29C2	C8D12DS29D2	C8D12DS29E2
15	2.335 59.31	2.075 52.71	1.760 44.70	1.600 40.64	1.400 35.56	C8D15DS29A2	C8D15DS29B2	C8D15DS29C2	C8D15DS29D2	C8D15DS29E2
18	2.635 66.93	2.375 60.33	2.060 52.32	1.900 48.26	1.700 43.18	C8D18DS29A2	C8D18DS29B2	C8D18DS29C2	C8D18DS29D2	C8D18DS29E2
20	2.835 72.01	2.575 65.41	2.260 57.40	2.100 53.34	1.900 48.26	C8D20DS29A2	C8D20DS29B2	C8D20DS29C2	C8D20DS29D2	C8D20DS29E2
22	3.035 77.09	2.775 70.49	2.460 62.48	2.300 58.42	2.100 53.34	C8D22DS29A2	C8D22DS29B2	C8D22DS29C2	C8D22DS29D2	C8D22DS29E2
25	3.335 84.71	3.075 78.11	2.760 70.10	2.600 66.04	2.400 60.96	C8D25DS29A2	C8D25DS29B2	C8D25DS29C2	C8D25DS29D2	C8D25DS29E2
28	3.635 92.33	3.375 85.73	3.060 77.72	2.900 73.66	2.700 68.58	C8D28DS29A2	C8D28DS29B2	C8D28DS29C2	C8D28DS29D2	C8D28DS29E2
30	3.835 97.41	3.575 90.81	3.260 82.80	3.100 78.74	2.900 73.66	C8D30DS29A2	C8D30DS29B2	C8D30DS29C2	C8D30DS29D2	C8D30DS29E2
31	3.935 99.95	3.675 93.35	3.360 85.34	3.200 81.28	3.000 76.20	C8D31DS29A2	C8D31DS29B2	C8D31DS29C2	C8D31DS29D2	C8D31DS29E2
35	4.335 110.11	4.075 103.51	3.760 95.50	3.600 91.44	3.400 86.36	C8D35DS29A2	C8D35DS29B2	C8D35DS29C2	C8D35DS29D2	C8D35DS29E2
36	4.435 112.65	4.175 106.05	3.860 98.04	3.700 93.98	3.500 88.90	C8D36DS29A2	C8D36DS29B2	C8D36DS29C2	C8D36DS29D2	C8D36DS29E2
40	4.835 122.81	4.575 116.21	4.260 108.20	4.100 104.14	3.900 99.06	C8D40DS29A2	C8D40DS29B2	C8D40DS29C2	C8D40DS29D2	C8D40DS29E2
43	5.135 130.43	4.875 123.83	4.560 115.82	4.400 111.76	4.200 106.68	C8D43DS29A2	C8D43DS29B2	C8D43DS29C2	C8D43DS29D2	C8D43DS29E2

.100" [2.54] Centerline / .200" [5.08] Row-to-Row

No. of Dual Readout Positions	Dimensions					Mounting Ear Options				
	A	B	C	D	E	Centered Mounting Ear .125" [3.18] Thru Hole	Centered Mounting Ear 4-40 Threaded insert	No Mounting Ears	Flush Mounting Ear .125" [3.18] Thru Hole	Flush Mounting Ear 4-40 Threaded insert
<b>Tail Length .160" [4.06] (DIM "J") (Continued)</b>										
50	5.835 148.21	5.575 141.61	5.260 133.60	5.100 129.54	4.900 124.46	C8D50DS29A2	C8D50DS29B2	C8D50DS29C2	C8D50DS29D2	C8D50DS29E2
60	6.835 173.61	6.575 167.01	6.260 159.00	6.100 154.94	5.900 149.86	C8D60DS29A2	C8D60DS29B2	C8D60DS29C2	C8D60DS29D2	C8D60DS29E2
<b>Tail Length .220" [5.59] (DIM "J")</b>										
6	1.435 36.45	1.175 29.85	0.860 21.84	0.700 17.78	0.500 12.70	C8D06DS29A3	C8D06DS29B3	C8D06DS29C3	C8D06DS29D3	C8D06DS29E3
10	1.835 46.61	1.575 40.01	1.260 32.00	1.100 27.94	0.900 22.86	C8D10DS29A3	C8D10DS29B3	C8D10DS29C3	C8D10DS29D3	C8D10DS29E3
12	2.035 51.69	1.775 45.09	1.460 37.08	1.300 33.02	1.100 27.94	C8D12DS29A3	C8D12DS29B3	C8D12DS29C3	C8D12DS29D3	C8D12DS29E3
15	2.335 59.31	2.075 52.71	1.760 44.70	1.600 40.64	1.400 35.56	C8D15DS29A3	C8D15DS29B3	C8D15DS29C3	C8D15DS29D3	C8D15DS29E3
18	2.635 66.93	2.375 60.33	2.060 52.32	1.900 48.26	1.700 43.18	C8D18DS29A3	C8D18DS29B3	C8D18DS29C3	C8D18DS29D3	C8D18DS29E3
20	2.835 72.01	2.575 65.41	2.260 57.40	2.100 53.34	1.900 48.26	C8D20DS29A3	C8D20DS29B3	C8D20DS29C3	C8D20DS29D3	C8D20DS29E3
22	3.035 77.09	2.775 70.49	2.460 62.48	2.300 58.42	2.100 53.34	C8D22DS29A3	C8D22DS29B3	C8D22DS29C3	C8D22DS29D3	C8D22DS29E3
25	3.335 84.71	3.075 78.11	2.760 70.10	2.600 66.04	2.400 60.96	C8D25DS29A3	C8D25DS29B3	C8D25DS29C3	C8D25DS29D3	C8D25DS29E3
28	3.635 92.33	3.375 85.73	3.060 77.72	2.900 73.66	2.700 68.58	C8D28DS29A3	C8D28DS29B3	C8D28DS29C3	C8D28DS29D3	C8D28DS29E3
30	3.835 97.41	3.575 90.81	3.260 82.80	3.100 78.74	2.900 73.66	C8D30DS29A3	C8D30DS29B3	C8D30DS29C3	C8D30DS29D3	C8D30DS29E3
31	3.935 99.95	3.675 93.35	3.360 85.34	3.200 81.28	3.000 76.20	C8D31DS29A3	C8D31DS29B3	C8D31DS29C3	C8D31DS29D3	C8D31DS29E3
35	4.335 110.11	4.075 103.51	3.760 95.50	3.600 91.44	3.400 86.36	C8D35DS29A3	C8D35DS29B3	C8D35DS29C3	C8D35DS29D3	C8D35DS29E3
36	4.435 112.65	4.175 106.05	3.860 98.04	3.700 93.98	3.500 88.90	C8D36DS29A3	C8D36DS29B3	C8D36DS29C3	C8D36DS29D3	C8D36DS29E3
40	4.835 122.81	4.575 116.21	4.260 108.20	4.100 104.14	3.900 99.06	C8D40DS29A3	C8D40DS29B3	C8D40DS29C3	C8D40DS29D3	C8D40DS29E3
43	5.135 130.43	4.875 123.83	4.560 115.82	4.400 111.76	4.200 106.68	C8D43DS29A3	C8D43DS29B3	C8D43DS29C3	C8D43DS29D3	C8D43DS29E3
50	5.835 148.21	5.575 141.61	5.260 133.60	5.100 129.54	4.900 124.46	C8D50DS29A3	C8D50DS29B3	C8D50DS29C3	C8D50DS29D3	C8D50DS29E3
60	6.835 173.61	6.575 167.01	6.260 159.00	6.100 154.94	5.900 149.86	C8D60DS29A3	C8D60DS29B3	C8D60DS29C3	C8D60DS29D3	C8D60DS29E3

Solder Type Board-to-Board Connectors



**Cantilever Series Connectors 100 x .200 [2.54 x 5.08], .510 [12.95] and .395 [10.03] Card Slot Depth, Full Scoop**

**Product Facts**

- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E60980 
- Certified by Canadian Standards Association, File No. LR49571 

**Physical Properties:**

**Insulation Resistance**—5000 megohms minimum.

**Insertion/Withdrawal Force (Daughter Card)**—8 oz./2 oz. [35.6 N/ 8.9 N] average contact pair using .0620 [1.57] steel blade.

**Insulator Body**—Glass filled thermoplastic, UL rating 94V-0. High temp. plastic option is available; add suffix M399 to part number.

**Color**—Black

**Contacts**—High strength copper alloy.

**Contact Plating**—.000050 [0.00127] nickel underplate with .000030 [0.00076] gold in the mating area, tin/lead on tails, .000100 [0.00254] minimum

**Electrical Properties:**

**Operation Voltage**—600 VDC (sea level)

**Current Rating**—3 Amperes

**Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

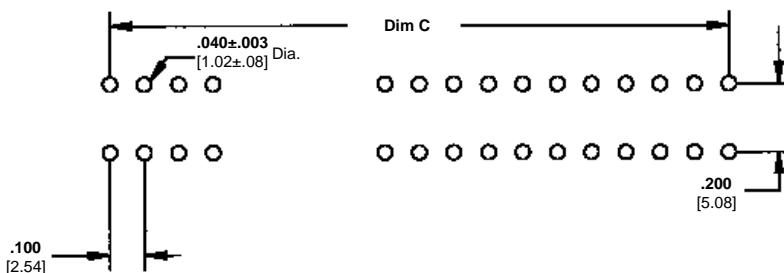
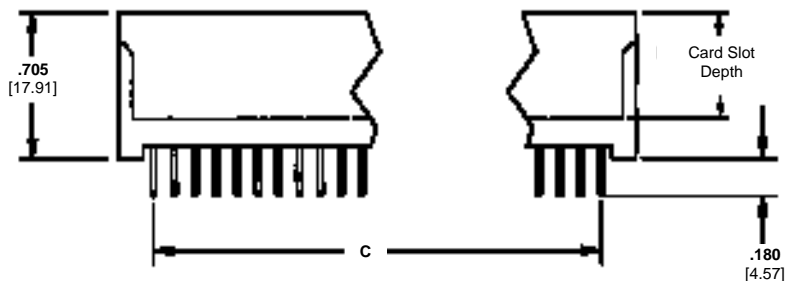
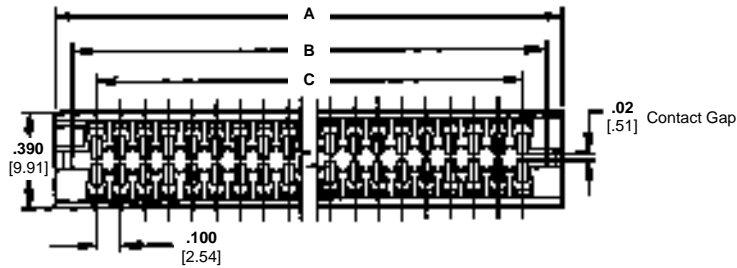
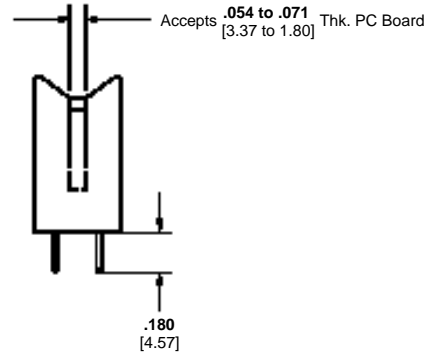
**Operating Temperature**—-55°C to +125°C

**Temperature Cycling**—MIL-STD-202 method 107

**Vibration**—MIL-STD-202 method 204

**Related Product Data**

**Daughter Card Edge Pattern**—page 57



Solder Type Board-to-Board Connectors

**Ordering Information**

.100" [2.54] Centerline / .200" [5.08] Row-to-Row Full Scoop

No. of Dual Readout Pos.	Dimensions			Acquired Part Number
	A	B	C	
<b>.510" [12.95] Card Slot Depth</b>				
18	<b>2.034</b> 51.66	<b>1.904</b> 48.36	<b>1.700</b> 43.18	W8D18DS29063
20	<b>2.234</b> 56.74	<b>2.104</b> 53.44	<b>1.900</b> 48.26	W8D20DS29063
22	<b>2.434</b> 61.82	<b>2.304</b> 58.52	<b>2.100</b> 53.34	W8D22DS29063
25	<b>2.734</b> 69.44	<b>2.604</b> 66.14	<b>2.400</b> 60.96	W8D25DS29063
28	<b>3.034</b> 77.06	<b>2.904</b> 73.76	<b>2.700</b> 68.58	W8D28DS29063
30	<b>3.234</b> 82.14	<b>3.104</b> 78.84	<b>2.900</b> 73.66	W8D30DS29063
35	<b>3.734</b> 94.84	<b>3.604</b> 91.54	<b>3.400</b> 86.36	W8D35DS29063
36	<b>3.834</b> 97.38	<b>3.704</b> 94.08	<b>3.500</b> 88.90	W8D36DS29063
40	<b>4.234</b> 107.54	<b>4.104</b> 104.24	<b>3.900</b> 99.06	W8D40DS29063
43	<b>4.534</b> 115.16	<b>4.404</b> 111.86	<b>4.200</b> 106.68	W8D43DS29063
45	<b>4.734</b> 120.24	<b>4.604</b> 116.94	<b>4.400</b> 111.76	W8D45DS29063
50	<b>5.234</b> 132.94	<b>5.104</b> 129.64	<b>4.900</b> 124.46	W8D50DS29063
60	<b>6.234</b> 158.34	<b>6.104</b> 155.04	<b>5.900</b> 149.86	W8D60DS29063
<b>.395" [10.03] Card Slot Depth</b>				
18	<b>2.034</b> 51.66	<b>1.904</b> 48.36	<b>1.700</b> 43.18	W8D18DS29093
20	<b>2.234</b> 56.74	<b>2.104</b> 53.44	<b>1.900</b> 48.26	W8D20DS29093
22	<b>2.434</b> 61.82	<b>2.304</b> 58.52	<b>2.100</b> 53.34	W8D22DS29093
25	<b>2.734</b> 69.44	<b>2.604</b> 66.14	<b>2.400</b> 60.96	W8D25DS29093
28	<b>3.034</b> 77.06	<b>2.904</b> 73.76	<b>2.700</b> 68.58	W8D28DS29093
30	<b>3.234</b> 82.14	<b>3.104</b> 78.84	<b>2.900</b> 73.66	W8D30DS29093
35	<b>3.734</b> 94.84	<b>3.604</b> 91.54	<b>3.400</b> 86.36	W8D35DS29093
36	<b>3.834</b> 97.38	<b>3.704</b> 94.08	<b>3.500</b> 88.90	W8D36DS29093
40	<b>4.234</b> 107.54	<b>4.104</b> 104.24	<b>3.900</b> 99.06	W8D40DS29093
43	<b>4.534</b> 115.16	<b>4.404</b> 111.86	<b>4.200</b> 106.68	W8D43DS29093
45	<b>4.734</b> 120.24	<b>4.604</b> 116.94	<b>4.400</b> 111.76	W8D45DS29093
50	<b>5.234</b> 132.94	<b>5.104</b> 129.64	<b>4.900</b> 124.46	W8D50DS29093
60	<b>6.234</b> 158.34	<b>6.104</b> 155.04	<b>5.900</b> 149.86	W8D60DS29093

Solder Type Board-to-Board Connectors

**Cantilever Series Connectors .125 x .250 [3.18 x 6.35] Centerline, Dip Solder Tails, .300 [7.62] Card Slot Depth**

**Product Facts**

- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E60980 
- Certified by Canadian Standards Association, File No. LR49571 

**Physical Properties:**

**Insulation Resistance**—5000 megohms minimum.  
**Insertion/Withdrawal Force (Daughter Card)**—8 oz./2 oz. [35.6 N/ 8.9 N] average contact pair using .0620 [1.57] steel blade.  
**Insulator Body**—Glass filled thermoplastic, UL rating 94V-0. High temp. plastic option is available; add suffix M399 to part number.  
**Color**—Black  
**Contacts**—High strength copper alloy.  
**Contact Plating**—.000050 [0.00127] nickel underplate with .000030 [0.00076] gold in the mating area, tin/lead on tails, .000100 [0.00254] minimum

**Electrical Properties:**

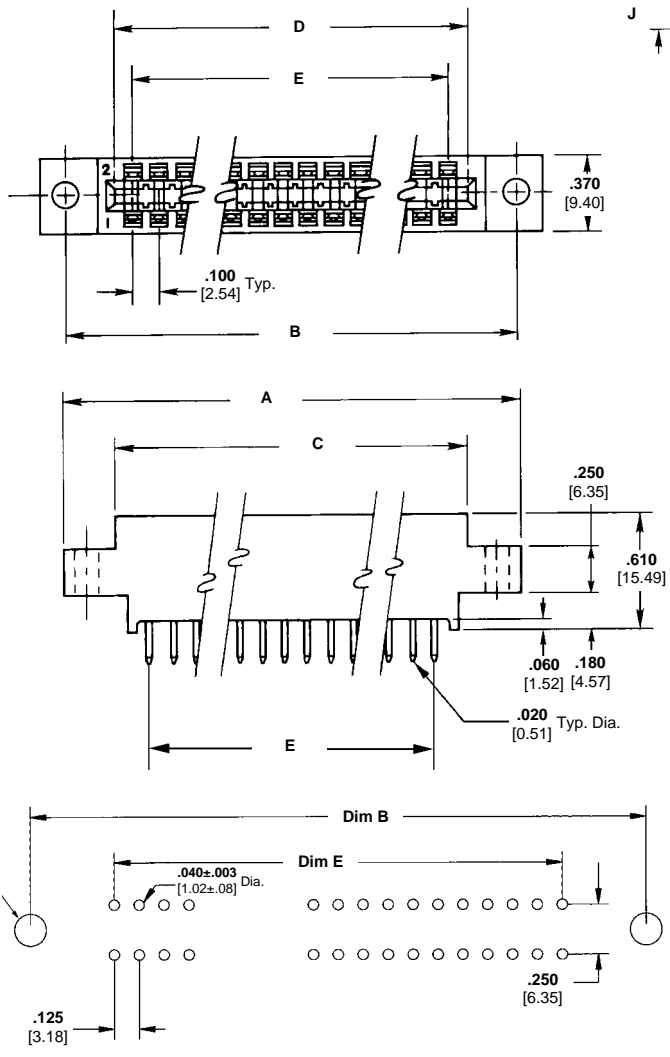
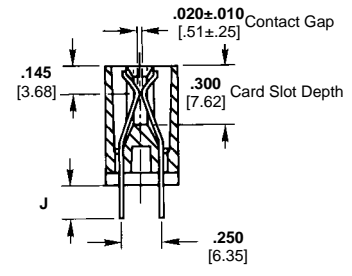
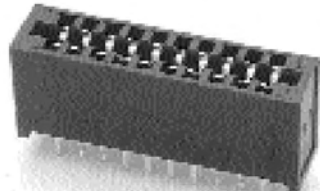
**Operation Voltage**—1000 VDC (sea level)  
**Current Rating**—3 Amperes  
**Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

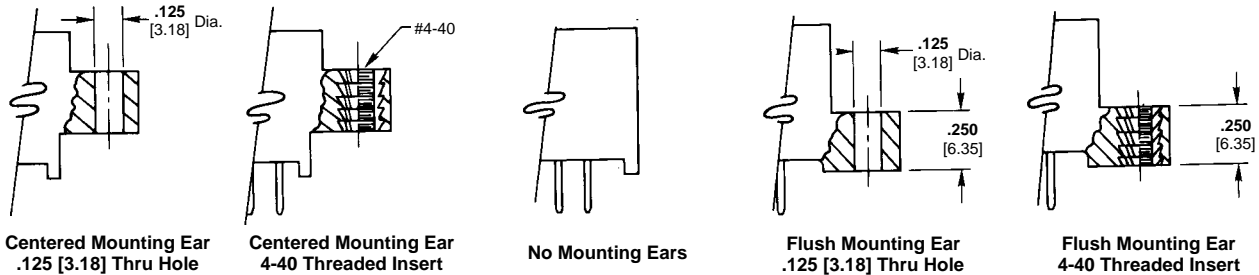
**Operating Temperature**—-55°C to +125°C  
**Temperature Cycling**—MIL-STD-202 method 107  
**Vibration**—MIL-STD-202 method 204

**Related Product Data:**

**Daughter Card Edge Pattern**—page 57



**Mounting Styles**



Solder Type Board-to-Board Connectors

.125" [3.18] Centerline / .250" [6.35] Row-to-Row

No. of Dual Readout Positions	Dimensions					Mounting Ear Options				
	A	B	C	D	E	Centered Mounting Ear .125" [3.18] Thru Hole	Centered Mounting Ear 4-40 Threaded insert	No Mounting Ears	Flush Mounting Ear .125" [3.18] Thru Hole	Flush Mounting Ear 4-40 Threaded insert
<b>Tail Length .130 [3.30] (DIM. "J")</b>										
6	1.555 39.50	1.295 32.89	1.035 26.29	0.875 22.23	0.625 15.88	C7D06DS29A1	C7D06DS29B1	C7D06DS29C1	C7D06DS29D1	C7D06DS29E1
10	2.055 52.20	1.795 45.59	1.535 38.99	1.375 34.93	1.125 28.58	C7D10DS29A1	C7D10DS29B1	C7D10DS29C1	C7D10DS29D1	C7D10DS29E1
15	2.680 68.07	2.420 61.47	2.160 54.86	2.000 50.80	1.750 44.45	C7D15DS29A1	C7D15DS29B1	C7D15DS29C1	C7D15DS29D1	C7D15DS29E1
18	3.055 77.60	2.795 70.99	2.535 64.39	2.375 60.33	2.125 53.98	C7D18DS29A1	C7D18DS29B1	C7D18DS29C1	C7D18DS29D1	C7D18DS29E1
22	3.555 90.30	3.295 83.69	3.035 77.09	2.875 73.03	2.625 66.68	C7D22DS29A1	C7D22DS29B1	C7D22DS29C1	C7D22DS29D1	C7D22DS29E1
25	3.930 99.82	3.670 93.22	3.410 86.61	3.250 82.55	3.000 76.20	C7D25DS29A1	C7D25DS29B1	C7D25DS29C1	C7D25DS29D1	C7D25DS29E1
28	4.305 109.35	4.045 102.74	3.785 96.14	3.625 92.08	3.375 85.73	C7D28DS29A1	C7D28DS29B1	C7D28DS29C1	C7D28DS29D1	C7D28DS29E1
30	4.555 115.70	4.295 109.09	4.035 102.49	3.875 98.43	3.625 92.08	C7D30DS29A1	C7D30DS29B1	C7D30DS29C1	C7D30DS29D1	C7D30DS29E1
31	4.680 118.87	4.420 112.27	4.160 105.66	4.000 101.60	3.750 95.25	C7D31DS29A1	C7D31DS29B1	C7D31DS29C1	C7D31DS29D1	C7D31DS29E1
35	5.180 131.57	4.920 124.97	4.660 118.36	4.500 114.30	4.250 107.95	C7D35DS29A1	C7D35DS29B1	C7D35DS29C1	C7D35DS29D1	C7D35DS29E1
36	5.305 134.75	5.045 128.14	4.785 121.54	4.625 117.48	4.375 111.13	C7D36DS29A1	C7D36DS29B1	C7D36DS29C1	C7D36DS29D1	C7D36DS29E1
40	5.805 147.45	5.545 140.84	5.285 134.24	5.125 130.18	4.875 123.83	C7D40DS29A1	C7D40DS29B1	C7D40DS29C1	C7D40DS29D1	C7D40DS29E1
43	6.180 156.97	5.920 150.37	5.660 143.76	5.500 139.70	5.250 133.35	C7D43DS29A1	C7D43DS29B1	C7D43DS29C1	C7D43DS29D1	C7D43DS29E1
50	7.055 179.20	6.795 172.59	6.535 165.99	6.375 161.93	6.125 155.58	C7D50DS29A1	C7D50DS29B1	C7D50DS29C1	C7D50DS29D1	C7D50DS29E1
<b>Tail Length .160 [4.06] (DIM. "J")</b>										
6	1.555 39.50	1.295 32.89	1.035 26.29	0.875 22.23	0.625 15.88	C7D06DS29A3	C7D06DS29B3	C7D06DS29C3	C7D06DS29D3	C7D06DS29E3
10	2.055 52.20	1.795 45.59	1.535 38.99	1.375 34.93	1.125 28.58	C7D10DS29A3	C7D10DS29B3	C7D10DS29C3	C7D10DS29D3	C7D10DS29E3
15	2.680 68.07	2.420 61.47	2.160 54.86	2.000 50.80	1.750 44.45	C7D15DS29A3	C7D15DS29B3	C7D15DS29C3	C7D15DS29D3	C7D15DS29E3
18	3.055 77.60	2.795 70.99	2.535 64.39	2.375 60.33	2.125 53.98	C7D18DS29A3	C7D18DS29B3	C7D18DS29C3	C7D18DS29D3	C7D18DS29E3
22	3.555 90.30	3.295 83.69	3.035 77.09	2.875 73.03	2.625 66.68	C7D22DS29A3	C7D22DS29B3	C7D22DS29C3	C7D22DS29D3	C7D22DS29E3
25	3.930 99.82	3.670 93.22	3.410 86.61	3.250 82.55	3.000 76.20	C7D25DS29A3	C7D25DS29B3	C7D25DS29C3	C7D25DS29D3	C7D25DS29E3
28	4.305 109.35	4.045 102.74	3.785 96.14	3.625 92.08	3.375 85.73	C7D28DS29A3	C7D28DS29B3	C7D28DS29C3	C7D28DS29D3	C7D28DS29E3
30	4.555 115.70	4.295 109.09	4.035 102.49	3.875 98.43	3.625 92.08	C7D30DS29A3	C7D30DS29B3	C7D30DS29C3	C7D30DS29D3	C7D30DS29E3
31	4.680 118.87	4.420 112.27	4.160 105.66	4.000 101.60	3.750 95.25	C7D31DS29A3	C7D31DS29B3	C7D31DS29C3	C7D31DS29D3	C7D31DS29E3
35	5.180 131.57	4.920 124.97	4.660 118.36	4.500 114.30	4.250 107.95	C7D35DS29A3	C7D35DS29B3	C7D35DS29C3	C7D35DS29D3	C7D35DS29E3
36	5.305 134.75	5.045 128.14	4.785 121.54	4.625 117.48	4.375 111.13	C7D36DS29A3	C7D36DS29B3	C7D36DS29C3	C7D36DS29D3	C7D36DS29E3
40	5.805 147.45	5.545 140.84	5.285 134.24	5.125 130.18	4.875 123.83	C7D40DS29A3	C7D40DS29B3	C7D40DS29C3	C7D40DS29D3	C7D40DS29E3
43	6.180 156.97	5.920 150.37	5.660 143.76	5.500 139.70	5.250 133.35	C7D43DS29A3	C7D43DS29B3	C7D43DS29C3	C7D43DS29D3	C7D43DS29E3
50	7.055 179.20	6.795 172.59	6.535 165.99	6.375 161.93	6.125 155.58	C7D50DS29A3	C7D50DS29B3	C7D50DS29C3	C7D50DS29D3	C7D50DS29E3

Solder Type Board-to-Board Connectors

**Ordering Information**

.125" [3.18] Centerline / .250" [6.35] Row-to-Row

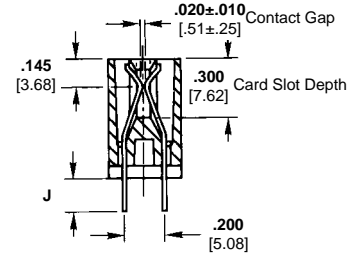
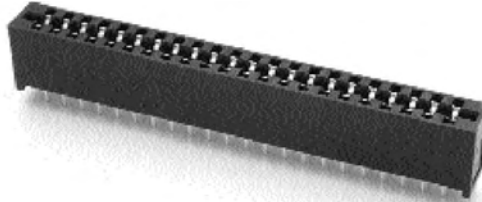
No. of Dual Readout Positions	Dimensions					Mounting Ear Options				
	A	B	C	D	E	Centered Mounting Ear .125" [3.18] Thru Hole	Centered Mounting Ear 4-40 Threaded insert	No Mounting Ears	Flush Mounting Ear .125" [3.18] Thru Hole	Flush Mounting Ear 4-40 Threaded insert
Tail Length .220 [5.59] (DIM. "J")										
6	1.555 39.50	1.295 32.89	1.035 26.29	0.875 22.23	0.625 15.88	C7D06DS29A4	C7D06DS29B4	C7D06DS29C4	C7D06DS29D4	C7D06DS29E4
10	2.055 52.20	1.795 45.59	1.535 38.99	1.375 34.93	1.125 28.58	C7D10DS29A4	C7D10DS29B4	C7D10DS29C4	C7D10DS29D4	C7D10DS29E4
15	2.680 68.07	2.420 61.47	2.160 54.86	2.000 50.80	1.750 44.45	C7D15DS29A4	C7D15DS29B4	C7D15DS29C4	C7D15DS29D4	C7D15DS29E4
18	3.055 77.60	2.795 70.99	2.535 64.39	2.375 60.33	2.125 53.98	C7D18DS29A4	C7D18DS29B4	C7D18DS29C4	C7D18DS29D4	C7D18DS29E4
22	3.555 90.30	3.295 83.69	3.035 77.09	2.875 73.03	2.625 66.68	C7D22DS29A4	C7D22DS29B4	C7D22DS29C4	C7D22DS29D4	C7D22DS29E4
25	3.930 99.82	3.670 93.22	3.410 86.61	3.250 82.55	3.000 76.20	C7D25DS29A4	C7D25DS29B4	C7D25DS29C4	C7D25DS29D4	C7D25DS29E4
28	4.305 109.35	4.045 102.74	3.785 96.14	3.625 92.08	3.375 85.73	C7D28DS29A4	C7D28DS29B4	C7D28DS29C4	C7D28DS29D4	C7D28DS29E4
30	4.555 115.70	4.295 109.09	4.035 102.49	3.875 98.43	3.625 92.08	C7D30DS29A4	C7D30DS29B4	C7D30DS29C4	C7D30DS29D4	C7D30DS29E4
31	4.680 118.87	4.420 112.27	4.160 105.66	4.000 101.60	3.750 95.25	C7D31DS29A4	C7D31DS29B4	C7D31DS29C4	C7D31DS29D4	C7D31DS29E4
35	5.180 131.57	4.920 124.97	4.660 118.36	4.500 114.30	4.250 107.95	C7D35DS29A4	C7D35DS29B4	C7D35DS29C4	C7D35DS29D4	C7D35DS29E4
36	5.305 134.75	5.045 128.14	4.785 121.54	4.625 117.48	4.375 111.13	C7D36DS29A4	C7D36DS29B4	C7D36DS29C4	C7D36DS29D4	C7D36DS29E4
40	5.805 147.45	5.545 140.84	5.285 134.24	5.125 130.18	4.875 123.83	C7D40DS29A4	C7D40DS29B4	C7D40DS29C4	C7D40DS29D4	C7D40DS29E4
43	6.180 156.97	5.920 150.37	5.660 143.76	5.500 139.70	5.250 133.35	C7D43DS29A4	C7D43DS29B4	C7D43DS29C4	C7D43DS29D4	C7D43DS29E4
50	7.055 179.20	6.795 172.59	6.535 165.99	6.375 161.93	6.125 155.58	C7D50DS29A4	C7D50DS29B4	C7D50DS29C4	C7D50DS29D4	C7D50DS29E4

Solder Type Board-to-Board Connectors

**Cantilever Series .156 x .200 [3.96 x 5.08] Centerline, Dip Solder Tails, .300 [7.62] Card Slot Depth**

**Product Facts**

- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E60980 
- Certified by Canadian Standards Association, File No. LR49571 



**Physical Properties:**

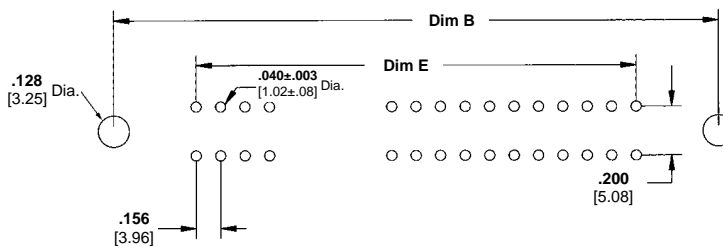
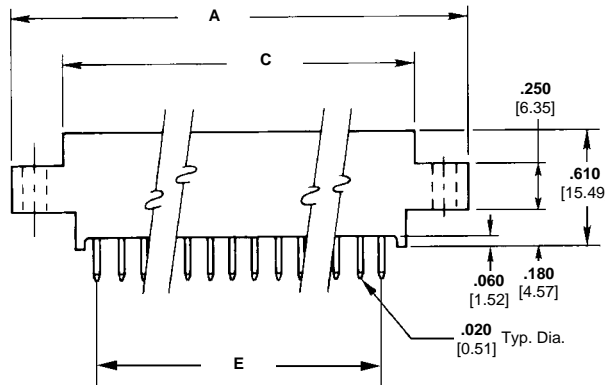
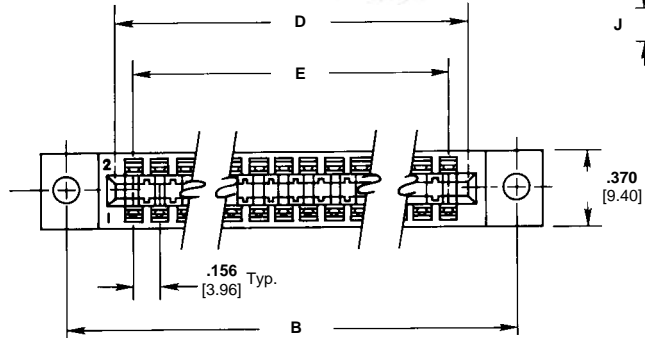
**Insulation Resistance**—5000 megohms minimum.  
**Insertion/Withdrawal Force (Daughter Card)**—8 oz./2 oz. [35.6 N/ 8.9 N] average contact pair using .0620 [1.57] steel blade.  
**Insulator Body**—Glass filled thermoplastic, UL rating 94V-0. High temp. plastic option is available; add suffix M399 to part number.

**Color**—Black  
**Contacts**—High strength copper alloy.  
**Contact Plating**—.000050 [0.00127] nickel underplate with .000030 [0.00076] gold in the mating area, tin/lead on tails, .000100 [0.00254] minimum

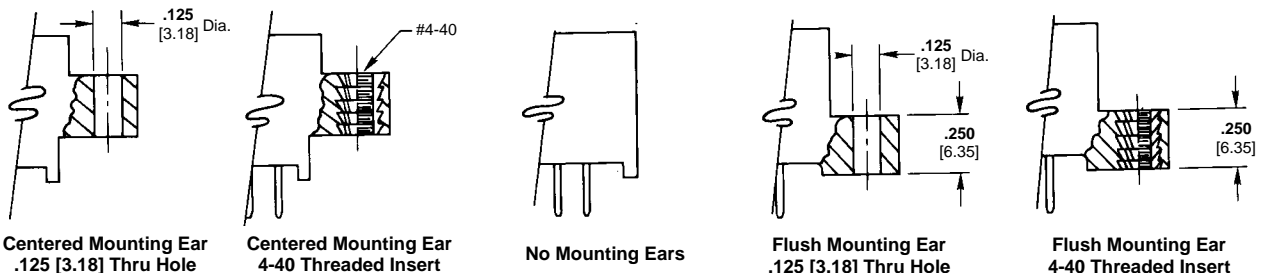
**Electrical Properties:**  
**Operation Voltage**—1500 VDC (sea level)  
**Current Rating**—3 Amperes  
**Initial Contact Resistance**—10 milliohms

**Environmental Properties:**  
**Operating Temperature**—-55°C to +125°C  
**Temperature Cycling**—MIL-STD-202 method 107  
**Vibration**—MIL-STD-202 method 204

**Related Product Data:**  
**Daughter Card Edge Pattern**—page 57



**Mounting Styles**



Centered Mounting Ear  
.125 [3.18] Thru Hole

Centered Mounting Ear  
4-40 Threaded Insert

No Mounting Ears

Flush Mounting Ear  
.125 [3.18] Thru Hole

Flush Mounting Ear  
4-40 Threaded Insert

**Ordering Information**

.156" [3.96] Centerline / .200" [5.08] Row-to-Row

No. of Dual Readout Positions	Dimensions					Mounting Ear Options				
	A	B	C	D	E	Centered Mounting Ear .125" [3.18] Thru Hole	Centered Mounting Ear 4-40 Threaded insert	No Mounting Ears	Flush Mounting Ear .125" [3.18] Thru Hole	Flush Mounting Ear 4-40 Threaded insert
<b>Tail Length .130 [3.30] (DIM. "J")</b>										
6	1.784 45.31	1.534 38.96	1.221 31.01	1.100 27.94	0.780 19.81	C6D06DS29A1	C6D06DS29B1	C6D06DS29C1	C6D06DS29D1	C6D06DS29E1
10	2.408 61.16	2.158 54.81	1.845 46.86	1.724 43.79	1.404 35.66	C6D10DS29A1	C6D10DS29B1	C6D10DS29C1	C6D10DS29D1	C6D10DS29E1
12	2.720 69.09	2.470 62.74	2.157 54.79	2.036 51.71	1.716 43.59	C6D12DS29A1	C6D12DS29B1	C6D12DS29C1	C6D12DS29D1	C6D12DS29E1
15	3.188 80.98	2.938 74.63	2.625 66.68	2.504 63.60	2.184 55.47	C6D15DS29A1	C6D15DS29B1	C6D15DS29C1	C6D15DS29D1	C6D15DS29E1
18	3.656 92.86	3.406 86.51	3.093 78.56	2.972 75.49	2.652 67.36	C6D18DS29A1	C6D18DS29B1	C6D18DS29C1	C6D18DS29D1	C6D18DS29E1
20	3.968 100.79	3.718 94.44	3.405 86.49	3.284 83.41	2.964 75.29	C6D20DS29A1	C6D20DS29B1	C6D20DS29C1	C6D20DS29D1	C6D20DS29E1
22	4.280 108.71	4.030 102.36	3.717 94.41	3.595 91.31	3.276 83.21	C6D22DS29A1	C6D22DS29B1	C6D22DS29C1	C6D22DS29D1	C6D22DS29E1
25	4.748 120.60	4.498 114.25	4.185 106.30	4.064 103.23	3.744 95.10	C6D25DS29A1	C6D25DS29B1	C6D25DS29C1	C6D25DS29D1	C6D25DS29E1
28	5.216 132.49	4.966 126.14	4.653 118.19	4.532 115.11	4.212 106.98	C6D28DS29A1	C6D28DS29B1	C6D28DS29C1	C6D28DS29D1	C6D28DS29E1
30	5.528 140.41	5.278 134.06	4.965 126.11	4.844 123.04	4.524 114.91	C6D30DS29A1	C6D30DS29B1	C6D30DS29C1	C6D30DS29D1	C6D30DS29E1
31	5.684 144.37	5.434 138.02	5.121 130.07	5.000 127.00	4.680 118.87	C6D31DS29A1	C6D31DS29B1	C6D31DS29C1	C6D31DS29D1	C6D31DS29E1
35	6.308 160.22	6.058 153.87	5.745 145.92	5.624 142.85	5.304 134.72	C6D35DS29A1	C6D35DS29B1	C6D35DS29C1	C6D35DS29D1	C6D35DS29E1
36	6.464 164.19	6.214 157.84	5.901 149.89	5.780 146.81	5.460 138.68	C6D36DS29A1	C6D36DS29B1	C6D36DS29C1	C6D36DS29D1	C6D36DS29E1
40	7.088 180.04	6.838 173.69	6.525 165.74	6.404 162.66	6.085 154.56	C6D40DS29A1	C6D40DS29B1	C6D40DS29C1	C6D40DS29D1	C6D40DS29E1
43	7.556 191.92	7.306 185.57	6.993 177.62	6.872 174.55	6.552 166.42	C6D43DS29A1	C6D43DS29B1	C6D43DS29C1	C6D43DS29D1	C6D43DS29E1
50	8.648 219.66	8.398 213.31	8.085 205.36	7.964 202.29	7.644 194.16	C6D50DS29A1	C6D50DS29B1	C6D50DS29C1	C6D50DS29D1	C6D50DS29E1
<b>Tail Length .160 [4.06] (DIM. "J")</b>										
6	1.784 45.31	1.534 38.96	1.221 31.01	1.100 27.94	0.780 19.81	C6D06DS29A3	C6D06DS29B3	C6D06DS29C3	C6D06DS29D3	C6D06DS29E3
10	2.408 61.16	2.158 54.81	1.845 46.86	1.724 43.79	1.404 35.66	C6D10DS29A3	C6D10DS29B3	C6D10DS29C3	C6D10DS29D3	C6D10DS29E3
12	2.720 69.09	2.470 62.74	2.157 54.79	2.036 51.71	1.716 43.59	C6D12DS29A3	C6D12DS29B3	C6D12DS29C3	C6D12DS29D3	C6D12DS29E3
15	3.188 80.98	2.938 74.63	2.625 66.68	2.504 63.60	2.184 55.47	C6D15DS29A3	C6D15DS29B3	C6D15DS29C3	C6D15DS29D3	C6D15DS29E3
18	3.656 92.86	3.406 86.51	3.093 78.56	2.972 75.49	2.652 67.36	C6D18DS29A3	C6D18DS29B3	C6D18DS29C3	C6D18DS29D3	C6D18DS29E3
20	3.968 100.79	3.718 94.44	3.405 86.49	3.284 83.41	2.964 75.29	C6D20DS29A3	C6D20DS29B3	C6D20DS29C3	C6D20DS29D3	C6D20DS29E3
22	4.280 108.71	4.030 102.36	3.717 94.41	3.595 91.31	3.276 83.21	C6D22DS29A3	C6D22DS29B3	C6D22DS29C3	C6D22DS29D3	C6D22DS29E3
25	4.748 120.60	4.498 114.25	4.185 106.30	4.064 103.23	3.744 95.10	C6D25DS29A3	C6D25DS29B3	C6D25DS29C3	C6D25DS29D3	C6D25DS29E3
28	5.216 132.49	4.966 126.14	4.653 118.19	4.532 115.11	4.212 106.98	C6D28DS29A3	C6D28DS29B3	C6D28DS29C3	C6D28DS29D3	C6D28DS29E3
30	5.528 140.41	5.278 134.06	4.965 126.11	4.844 123.04	4.524 114.91	C6D30DS29A3	C6D30DS29B3	C6D30DS29C3	C6D30DS29D3	C6D30DS29E3
31	5.684 144.37	5.434 138.02	5.121 130.07	5.000 127.00	4.680 118.87	C6D31DS29A3	C6D31DS29B3	C6D31DS29C3	C6D31DS29D3	C6D31DS29E3
35	6.308 160.22	6.058 153.87	5.745 145.92	5.624 142.85	5.304 134.72	C6D35DS29A3	C6D35DS29B3	C6D35DS29C3	C6D35DS29D3	C6D35DS29E3
36	6.464 164.19	6.214 157.84	5.901 149.89	5.780 146.81	5.460 138.68	C6D36DS29A3	C6D36DS29B3	C6D36DS29C3	C6D36DS29D3	C6D36DS29E3
40	7.088 180.04	6.838 173.69	6.525 165.74	6.404 162.66	6.085 154.56	C6D40DS29A3	C6D40DS29B3	C6D40DS29C3	C6D40DS29D3	C6D40DS29E3
43	7.556 191.92	7.306 185.57	6.993 177.62	6.872 174.55	6.552 166.42	C6D43DS29A3	C6D43DS29B3	C6D43DS29C3	C6D43DS29D3	C6D43DS29E3
50	8.648 219.66	8.398 213.31	8.085 205.36	7.964 202.29	7.644 194.16	C6D50DS29A3	C6D50DS29B3	C6D50DS29C3	C6D50DS29D3	C6D50DS29E3

Solder Type Board-to-Board Connectors

.156" [3.96] Centerline / .200" [5.08] Row-to-Row

No. of Dual Readout Positions	Dimensions					Mounting Ear Options				
	A	B	C	D	E	Centered Mounting Ear .125" [3.18] ThruHole	Centered Mounting Ear 4-40 Threaded insert	No Mounting Ears	Flush Mounting Ear .125" [3.18] Thru Hole	Flush Mounting Ear 4-40 Threaded insert
Tail Length .220" [5.59] (DIM. "J")										
6	1.784 45.31	1.534 38.96	1.221 31.01	1.100 27.94	0.780 19.81	C6D06DS29A4	C6D06DS29B4	C6D06DS29C4	C6D06DS29D4	C6D06DS29E4
10	2.408 61.16	2.158 54.81	1.845 46.86	1.724 43.79	1.404 35.66	C6D10DS29A4	C6D10DS29B4	C6D10DS29C4	C6D10DS29D4	C6D10DS29E4
12	2.720 69.09	2.470 62.74	2.157 54.79	2.036 51.71	1.716 43.59	C6D12DS29A4	C6D12DS29B4	C6D12DS29C4	C6D12DS29D4	C6D12DS29E4
15	3.188 80.98	2.938 74.63	2.625 66.68	2.504 63.60	2.184 55.47	C6D15DS29A4	C6D15DS29B4	C6D15DS29C4	C6D15DS29D4	C6D15DS29E4
18	3.656 92.86	3.406 86.51	3.093 78.56	2.972 75.49	2.652 67.36	C6D18DS29A4	C6D18DS29B4	C6D18DS29C4	C6D18DS29D4	C6D18DS29E4
20	3.968 100.79	3.718 94.44	3.405 86.49	3.284 83.41	2.964 75.29	C6D20DS29A4	C6D20DS29B4	C6D20DS29C4	C6D20DS29D4	C6D20DS29E4
22	4.280 108.71	4.030 102.36	3.717 94.41	3.595 91.31	3.276 83.21	C6D22DS29A4	C6D22DS29B4	C6D22DS29C4	C6D22DS29D4	C6D22DS29E4
25	4.748 120.60	4.498 114.25	4.185 106.30	4.064 103.23	3.744 95.10	C6D25DS29A4	C6D25DS29B4	C6D25DS29C4	C6D25DS29D4	C6D25DS29E4
28	5.216 132.49	4.966 126.14	4.653 118.19	4.532 115.11	4.212 106.98	C6D28DS29A4	C6D28DS29B4	C6D28DS29C4	C6D28DS29D4	C6D28DS29E4
30	5.528 140.41	5.278 134.06	4.965 126.11	4.844 123.04	4.524 114.91	C6D30DS29A4	C6D30DS29B4	C6D30DS29C4	C6D30DS29D4	C6D30DS29E4
31	5.684 144.37	5.434 138.02	5.121 130.07	5.000 127.00	4.680 118.87	C6D31DS29A4	C6D31DS29B4	C6D31DS29C4	C6D31DS29D4	C6D31DS29E4
35	6.308 160.22	6.058 153.87	5.745 145.92	5.624 142.85	5.304 134.72	C6D35DS29A4	C6D35DS29B4	C6D35DS29C4	C6D35DS29D4	C6D35DS29E4
36	6.464 164.19	6.214 157.84	5.901 149.89	5.780 146.81	5.460 138.68	C6D36DS29A4	C6D36DS29B4	C6D36DS29C4	C6D36DS29D4	C6D36DS29E4
40	7.088 180.04	6.838 173.69	6.525 165.74	6.404 162.66	6.085 154.56	C6D40DS29A4	C6D40DS29B4	C6D40DS29C4	C6D40DS29D4	C6D40DS29E4
43	7.556 191.92	7.306 185.57	6.993 177.62	6.872 174.55	6.552 166.42	C6D43DS29A4	C6D43DS29B4	C6D43DS29C4	C6D43DS29D4	C6D43DS29E4
50	8.648 219.66	8.398 213.31	8.085 205.36	7.964 202.29	7.644 194.16	C6D50DS29A4	C6D50DS29B4	C6D50DS29C4	C6D50DS29D4	C6D50DS29E4

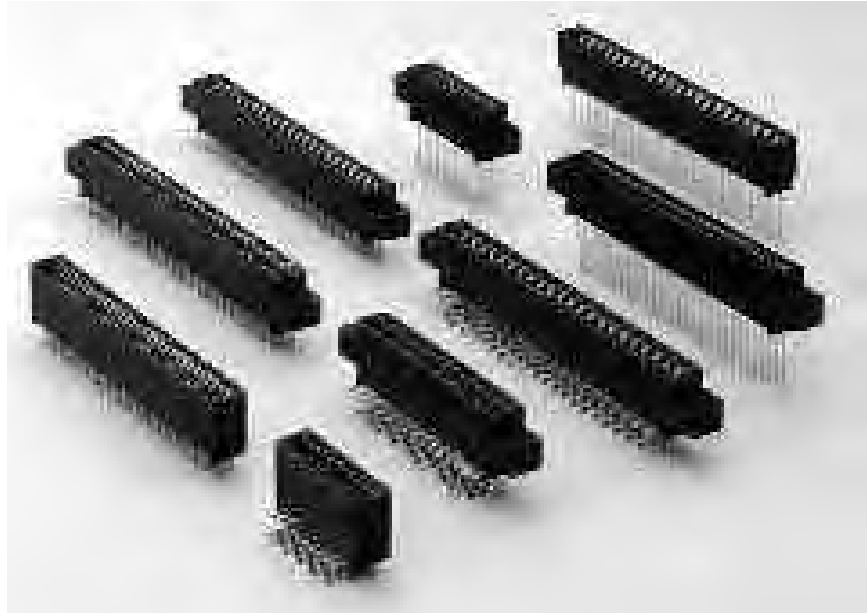
Solder Type Board-to-Board Connectors



**Modified Bellows Card Edge Connectors**

**Product Facts**

- Sizes from 6 to 65 dual positions.
- Contact mating surface optimizes reliability by concentrating the normal force in the actual contact area.
- Mounting ear options accommodate both Panel and PC Board attachment.
- Solder stand-offs facilitate cleaning.
- Bifurcated contact design provides redundant points of contact to maximize reliability.
- Tail lengths available to accommodate .062" [1.57] through .125" [3.18] thick PCB Boards and Wire Wrap termination.
- Straight or Right Angle contact configurations.



Bifurcated contact design provides maximum reliability

**Description/Application**

The modified bellows card edge connectors are dual readout and are designed for reliable termination to double sided PCB boards.

**Modified Bellows**

The modified bellows card edge connector offers a variety of tail lengths for solder and wire wrap applications. Contacts are available in straight tail or right angle configurations to meet your individual purpose. The modified bellows line of connectors offers a variety of card slot depths and has optional high temperature plastic insulators.

**Modified Bellows Connectors .100 x .200 [2.54 x 5.08], Straight Dip Solder And Wire Wrap Tails**

**Product Facts**

- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E60980 
- Certified by Canadian Standards Association, File No. LR49571 

**Physical Properties:**

**Insulation Resistance**—5000 megohms minimum.

**Insertion/Withdrawal Force (Daughter Card)**—8 oz./2 oz. [35.6 N/ 8.9 N] average contact pair using .0620 [1.57] steel blade.

**Insulator Body**—Glass filled thermoplastic, UL rating 94V-0. High temp. plastic option is available; add suffix M399 to part number.

**Color**—Black

**Contacts**—High strength copper alloy.

**Contact Plating**—.000050 [0.00127] nickel underplate with .000030 [0.00076] gold in the mating area, tin/lead on tails, .000100 [0.00254] minimum

**Electrical Properties:**

**Operation Voltage**—600 VDC (sea level)

**Current Rating**—3 Amperes

**Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

**Operating Temperature**—-55°C to +125°C

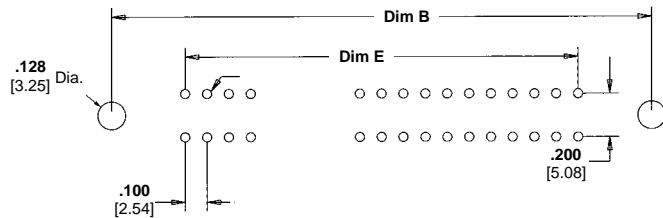
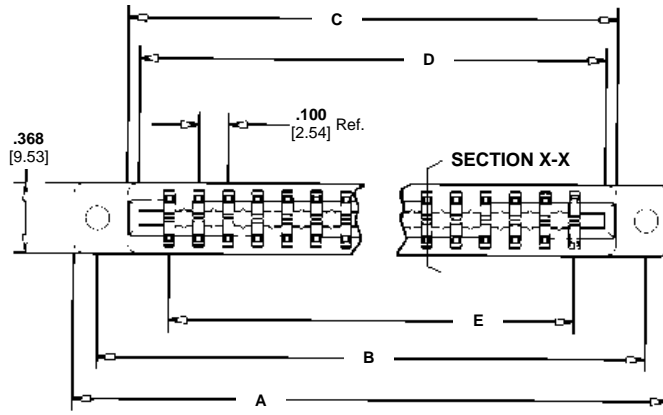
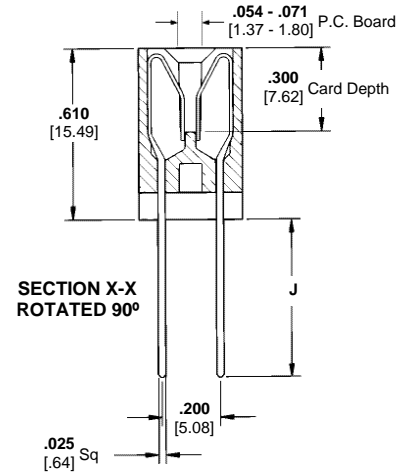
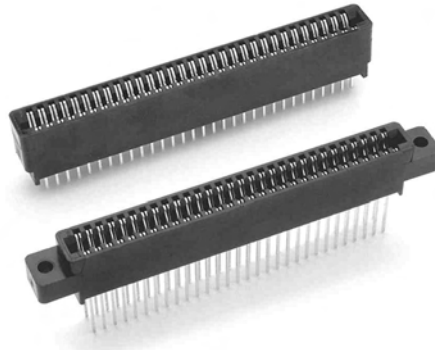
**Temperature Cycling**—MIL-STD-202 method 107

**Vibration**—MIL-STD-202 method 204

**Related Product Data:**

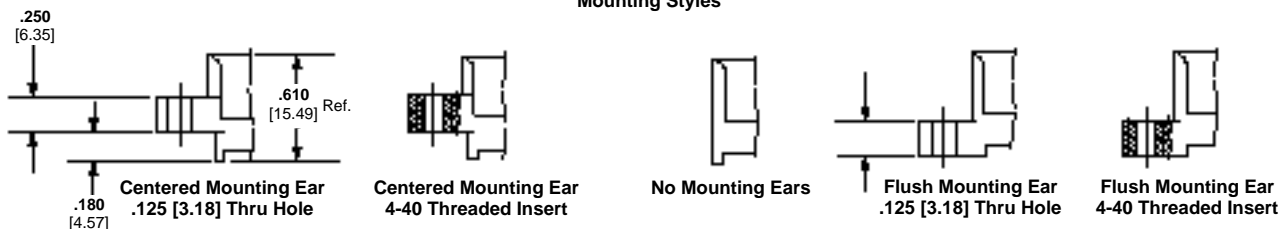
**Polarization Key**—page 57

**Daughter Card Edge Pattern**—page 57



P=.040 [1.02] Dip Solder Applications  
P=.042 [1.07] For Wire Wrap Applications

**Mounting Styles**



**Ordering Information**

.100" [2.54] Centerline / .200" [5.08] Row-to-Row

No. of Dual Readout Positions	Dimensions					Mounting Ear Options				
	A	B	C	D	E	Centered Mounting Ear .125" [3.18] Thru Hole	Centered Mounting Ear 4-40 Threaded insert	No Mounting Ears	Flush Mounting Ear .125" [3.18] Thru Hole	Flush Mounting Ear 4-40 Threaded insert
<b>Tail Length .160" [4.06] (DIM "J")</b>										
10	1.835 46.61	1.575 40.01	1.260 32.00	1.100 27.94	0.900 22.86	A8D10DS29A2	A8D10DS29B2	A8D10DS29C2	A8D10DS29D2	A8D10DS29E2
12	2.035 51.69	1.775 45.09	1.460 37.08	1.300 33.02	1.100 27.94	A8D12DS29A2	A8D12DS29B2	A8D12DS29C2	-	-
15	2.335 59.31	2.075 52.71	1.760 44.70	1.600 40.64	1.400 35.56	A8D15DS29A2	A8D15DS29B2	A8D15DS29C2	A8D15DS29D2	A8D15DS29E2
18	2.635 66.93	2.375 60.33	2.060 52.32	1.900 48.26	1.700 43.18	A8D18DS29A2	A8D18DS29B2	A8D18DS29C2	A8D18DS29D2	A8D18DS29E2
20	2.835 72.01	2.575 65.41	2.260 57.40	2.100 53.34	1.900 48.26	A8D20DS29A2	A8D20DS29B2	A8D20DS29C2	-	-
22	3.035 77.09	2.775 70.49	2.460 62.48	2.300 58.42	2.100 53.34	A8D22DS29A2	A8D22DS29B2	A8D22DS29C2	-	-
25	3.335 84.71	3.075 78.11	2.760 70.10	2.600 66.04	2.400 60.96	A8D25DS29A2	A8D25DS29B2	A8D25DS29C2	A8D25DS29D2	A8D25DS29E2
28	3.635 92.33	3.375 85.73	3.060 77.72	2.900 73.66	2.700 68.58	A8D28DS29A2	A8D28DS29B2	A8D28DS29C2	-	-
30	3.835 97.41	3.575 90.81	3.260 82.80	3.100 78.74	2.900 73.66	A8D30DS29A2	A8D30DS29B2	A8D30DS29C2	A8D30DS29D2	A8D30DS29E2
31	3.935 99.95	3.675 93.35	3.360 85.34	3.200 81.28	3.100 78.74	A8D31DS29A2	A8D31DS29B2	A8D31DS29C2	A8D31DS29D2	A8D31DS29E2
35	4.335 110.11	4.075 103.51	3.760 95.50	3.600 91.44	3.400 86.36	A8D35DS29A2	A8D35DS29B2	A8D35DS29C2	-	-
36	4.435 112.65	4.175 106.05	3.860 98.04	3.700 93.98	3.500 88.90	A8D36DS29A2	A8D36DS29B2	A8D36DS29C2	-	-
40	4.835 122.81	4.575 116.21	4.260 108.20	4.100 104.14	3.900 99.06	A8D40DS29A2	A8D40DS29B2	A8D40DS29C2	-	-
43	5.135 130.43	4.875 123.83	4.560 115.82	4.400 111.76	4.200 106.68	A8D43DS29A2	A8D43DS29B2	A8D43DS29C2	-	-
44	5.235 132.97	4.975 126.37	4.660 118.36	4.500 114.30	4.300 109.22	A8D44DS29A2	A8D44DS29B2	A8D44DS29C2	-	-
50	5.835 148.21	5.575 141.61	5.260 133.60	5.100 129.54	4.800 121.92	A8D50DS29A2	A8D50DS29B2	A8D50DS29C2	A8D50DS29D2	A8D50DS29E2
60	6.835 173.61	6.575 167.01	6.260 159.00	6.100 154.94	5.900 149.86	A8D60DS29A2	A8D60DS29B2	A8D60DS29C2	-	-
65	7.335 186.31	7.075 179.71	6.760 171.70	6.600 167.64	6.400 162.56	A8D65DS29A2	A8D65DS29B2	A8D65DS29C2	A8D65DS29D2	A8D65DS29E2
<b>Tail Length .220" [5.59] (DIM "J")</b>										
10	1.835 46.61	1.575 40.01	1.260 32.00	1.100 27.94	0.900 22.86	A8D10DS29A3	A8D10DS29B3	A8D10DS29C3	A8D10DS29D3	A8D10DS29E3
12	2.035 51.69	1.775 45.09	1.460 37.08	1.300 33.02	1.100 27.94	A8D12DS29A3	A8D12DS29B3	A8D12DS29C3	-	-
15	2.335 59.31	2.075 52.71	1.760 44.70	1.600 40.64	1.400 35.56	A8D15DS29A3	A8D15DS29B3	A8D15DS29C3	A8D15DS29D3	A8D15DS29E3
18	2.635 66.93	2.375 60.33	2.060 52.32	1.900 48.26	1.700 43.18	A8D18DS29A3	A8D18DS29B3	A8D18DS29C3	A8D18DS29D3	A8D18DS29E3
20	2.835 72.01	2.575 65.41	2.260 57.40	2.100 53.34	1.900 48.26	A8D20DS29A3	A8D20DS29B3	A8D20DS29C3	-	-
22	3.035 77.09	2.775 70.49	2.460 62.48	2.300 58.42	2.100 53.34	A8D22DS29A3	A8D22DS29B3	A8D22DS29C3	-	-
25	3.335 84.71	3.075 78.11	2.760 70.10	2.600 66.04	2.400 60.96	A8D25DS29A3	A8D25DS29B3	A8D25DS29C3	A8D35DS29D3	A8D35DS29E3
28	3.635 92.33	3.375 85.73	3.060 77.72	2.900 73.66	2.700 68.58	A8D28DS29A3	A8D28DS29B3	A8D28DS29C3	-	-
30	3.835 97.41	3.575 90.81	3.260 82.80	3.100 78.74	2.900 73.66	A8D30DS29A3	A8D30DS29B3	A8D30DS29C3	A8D30DS29D3	A8D30DS29E3
31	3.935 99.95	3.675 93.35	3.360 85.34	3.200 81.28	3.100 78.74	A8D31DS29A3	A8D31DS29B3	A8D31DS29C3	A8D31DS29D3	A8D31DS29E3
35	4.335 110.11	4.075 103.51	3.760 95.50	3.600 91.44	3.400 86.36	A8D35DS29A3	A8D35DS29B3	A8D35DS29C3	-	-
36	4.435 112.65	4.175 106.05	3.860 98.04	3.700 93.98	3.500 88.90	A8D36DS29A3	A8D36DS29B3	A8D36DS29C3	-	-
40	4.835 122.81	4.575 116.21	4.260 108.20	4.100 104.14	3.900 99.06	A8D40DS29A3	A8D40DS29B3	A8D40DS29C3	-	-
43	5.135 130.43	4.875 123.83	4.560 115.82	4.400 111.76	4.200 106.68	A8D43DS29A3	A8D43DS29B3	A8D43DS29C3	-	-

Solder Type Board-to-Board Connectors

.100" [2.54] Centerline / .200" [5.08] Row-to-Row

No. of Dual Readout Positions	Dimensions					Mounting Ear Options				
	A	B	C	D	E	Centered Mounting Ear .125" [3.18] Thru Hole	Centered Mounting Ear 4-40 Threaded insert	No Mounting Ears	Flush Mounting Ear .125" [3.18] Thru Hole	Flush Mounting Ear 4-40 Threaded insert
<b>Tail Length .220" [5.59] (DIM "J") (Continued)</b>										
44	5.235 132.97	4.975 126.37	4.660 118.36	4.500 114.30	4.300 109.22	A8D44DS29A3	A8D44DS29B3	A8D44DS29C3	-	-
50	5.835 148.21	5.575 141.61	5.260 133.60	5.100 129.54	4.800 121.92	A8D50DS29A3	A8D50DS29B3	A8D50DS29C3	A8D50DS29D3	A8D50DS29E3
60	6.835 173.61	6.575 167.01	6.260 159.00	6.100 154.94	5.900 149.86	A8D60DS29A3	A8D60DS29B3	A8D60DS29C3	-	-
65	7.335 186.31	7.075 179.71	6.760 171.70	6.600 167.64	6.400 162.56	A8D65DS29A3	A8D65DS29B3	A8D65DS29C3	A8D65DS29D3	A8D65DS29E3
<b>Tail Length .560" [14.22] (DIM "J") for Wire Wrap Termination</b>										
10	1.835 46.61	1.575 40.01	1.260 32.00	1.100 27.94	0.900 22.86	A8D10WW29A3	A8D10WW29B3	-	-	-
12	2.035 51.69	1.775 45.09	1.460 37.08	1.300 33.02	1.100 27.94	A8D12WW29A3	A8D12WW29B3	-	-	-
15	2.335 59.31	2.075 52.71	1.760 44.70	1.600 40.64	1.400 35.56	A8D15WW29A3	A8D15WW29B3	-	-	-
18	2.635 66.93	2.375 60.33	2.060 52.32	1.900 48.26	1.700 43.18	A8D18WW29A3	A8D18WW29B3	-	-	-
20	2.835 72.01	2.575 65.41	2.260 57.40	2.100 53.34	1.900 48.26	A8D20WW29A3	A8D20WW29B3	-	-	-
22	3.035 77.09	2.775 70.49	2.460 62.48	2.300 58.42	2.100 53.34	A8D22WW29A3	A8D22WW29B3	-	-	-
25	3.335 84.71	3.075 78.11	2.760 70.10	2.600 66.04	2.400 60.96	A8D25WW29A3	A8D25WW29B3	-	-	-
28	3.635 92.33	3.375 85.73	3.060 77.72	2.900 73.66	2.700 68.58	A8D28WW29A3	A8D28WW29B3	-	-	-
30	3.835 97.41	3.575 90.81	3.260 82.80	3.100 78.74	2.900 73.66	A8D30WW29A3	A8D30WW29B3	-	-	-
31	3.935 99.95	3.675 93.35	3.360 85.34	3.200 81.28	3.100 78.74	A8D31WW29A3	A8D31WW29B3	-	-	-
35	4.335 110.11	4.075 103.51	3.760 95.50	3.600 91.44	3.400 86.36	A8D35WW29A3	A8D35WW29B3	-	-	-
36	4.435 112.65	4.175 106.05	3.860 98.04	3.700 93.98	3.500 88.90	A8D36WW29A3	A8D36WW29B3	-	-	-
40	4.835 122.81	4.575 116.21	4.260 108.20	4.100 104.14	3.900 99.06	A8D40WW29A3	A8D40WW29B3	-	-	-
43	5.135 130.43	4.875 123.83	4.560 115.82	4.400 111.76	4.200 106.68	A8D43WW29A3	A8D43WW29B3	-	-	-
44	5.235 132.97	4.975 126.37	4.660 118.36	4.500 114.30	4.300 109.22	A8D44WW29A3	A8D44WW29B3	-	-	-
50	5.835 148.21	5.575 141.61	5.260 133.60	5.100 129.54	4.800 121.92	A8D50WW29A3	A8D50WW29B3	-	-	-
60	6.835 173.61	6.575 167.01	6.260 159.00	6.100 154.94	5.900 149.86	A8D60WW29A3	A8D60WW29B3	-	-	-
65	7.335 186.31	7.075 179.71	6.760 171.70	6.600 167.64	6.400 162.56	A8D65WW29A3	A8D65WW29B3	-	-	-

Solder Type Board-to-Board Connectors

**Modified Bellows Connectors .100 x .200 [2.54 x 5.08] and  
.100 x .150 [2.54 x 3.81] Right Angle Dip Solder Tails**

**Product Facts**

- **Recognized under the Component Program of Underwriters Laboratories Inc., File No. E60980** 
- **Certified by Canadian Standards Association, File No. LR49571** 

**Physical Properties:**

**Insulation Resistance**—5000 megohms minimum.

**Insertion/Withdrawal Force (Daughter Card)**—8 oz./2 oz. [35.6 N/ 8.9 N] average contact pair using .0620 [1.57] steel blade.

**Insulator Body**—Glass filled thermoplastic, UL rating 94V-0. High temp. plastic option is available; add suffix M399 to part number.

**Color**—Black

**Contacts**—High strength copper alloy.

**Contact Plating**—.000050 [0.00127] nickel underplate with .000030 [0.00076] gold in the mating area, tin/lead on tails, .000100 [0.00254] minimum

**Electrical Properties:**

**Operation Voltage**—600 VDC (sea level)

**Current Rating**—3 Amperes

**Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

**Operating Temperature**—-55°C to +125°C

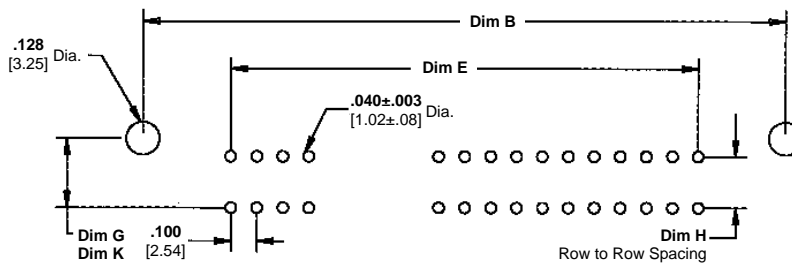
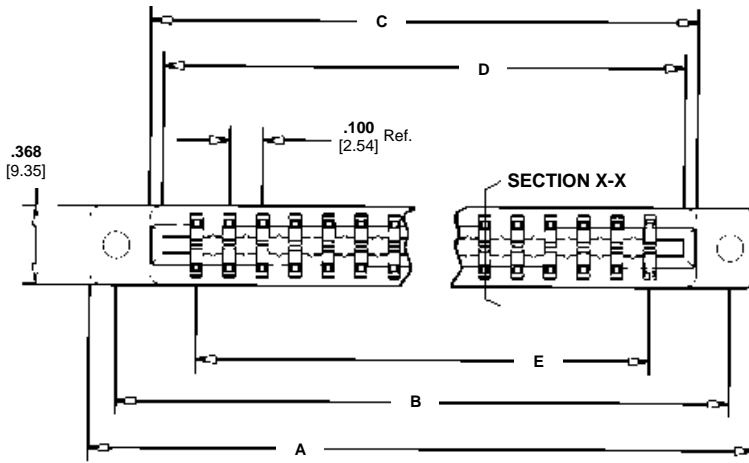
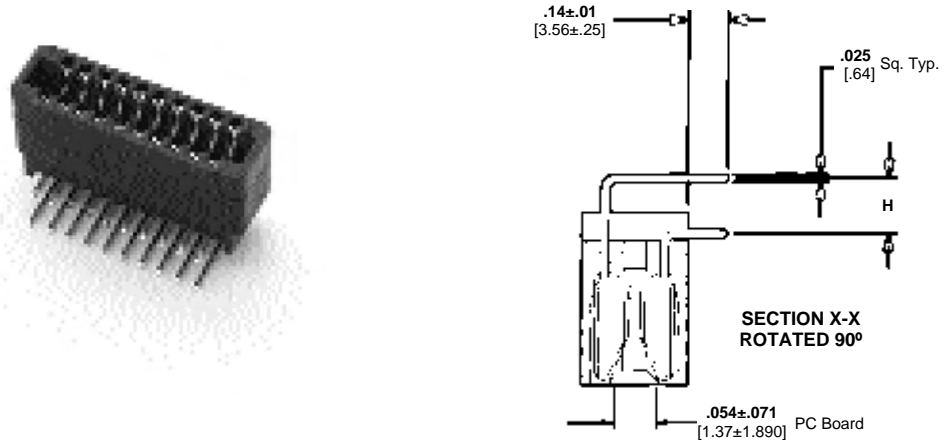
**Temperature Cycling**—MIL-STD-202 method 107

**Vibration**—MIL-STD-202 method 204

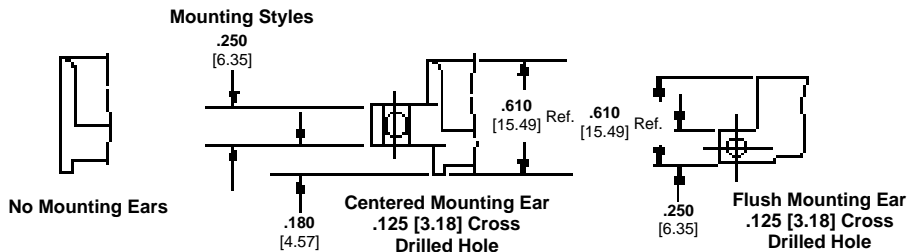
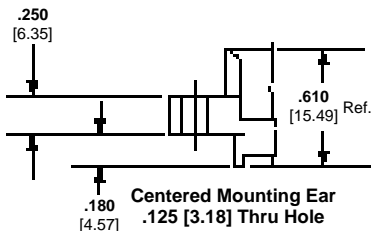
**Related Product Data:**

**Polarization Key**—page 57

**Daughter Card Edge Pattern**—page 57



Dim G - Centered Mounting Ear .125 [3.18] Cross Drilled Hole Only  
Dim K - Flush Mounting Ear .125 [3.18] Cross Drilled Hole Only



.100" [2.54] Centerline / .200" [5.08] Row-to-Row (Dim. "H") Spacing

No. of Dual Readout Positions	Dimensions					Centered Mounting Ear Only G	Flush Mounting Ear Only K	Centered Mounting Ear .125" [3.18] Thru Hole	Mounting Ear Options		
	A	B	C	D	E				No Mounting Ears	Centered Mounting Ear .125" [3.18] Cross-Drilled Hole	Flush Mounting Ear .125" [3.18] Cross-Drilled Hole
10	1.835 46.61	1.575 40.01	1.260 32.00	1.100 27.94	0.900 22.86	0.470 11.94	0.290 7.37	A8D10RA29A	A8D10RA29C	A8D10RA29E	A8D10RA29F
12	2.035 51.69	1.775 45.09	1.460 37.08	1.300 33.02	1.100 27.94	0.470 11.94	0.290 7.37	A8D12RA29A	A8D12RA29C	A8D12RA29E	-
15	2.335 59.31	2.075 52.71	1.760 44.70	1.600 40.64	1.400 35.56	0.470 11.94	0.290 7.37	A8D15RA29A	A8D15RA29C	A8D15RA29E	A8D15RA29F
18	2.635 66.93	2.375 60.33	2.060 52.32	1.900 48.26	1.700 43.18	0.470 11.94	0.290 7.37	A8D18RA29A	A8D18RA29C	A8D18RA29E	A8D18RA29F
20	2.835 72.01	2.575 65.41	2.260 57.40	2.100 53.34	1.900 48.26	0.470 11.94	0.290 7.37	A8D20RA29A	A8D20RA29C	A8D20RA29E	-
22	3.035 77.09	2.775 70.49	2.460 62.48	2.300 58.42	2.100 53.34	0.470 11.94	0.290 7.37	A8D22RA29A	A8D22RA29C	A8D22RA29E	-
25	3.335 84.71	3.075 78.11	2.760 70.10	2.600 66.04	2.400 60.96	0.470 11.94	0.290 7.37	A8D25RA29A	A8D25RA29C	A8D25RA29E	A8D25RA29F
28	3.635 92.33	3.375 85.73	3.060 77.72	2.900 73.66	2.700 68.58	0.470 11.94	0.290 7.37	A8D28RA29A	A8D28RA29C	A8D28RA29E	-
30	3.835 97.41	3.575 90.81	3.260 82.80	3.100 78.74	2.900 73.66	0.470 11.94	0.290 7.37	A8D30RA29A	A8D30RA29C	A8D30RA29E	A8D30RA29F
31	3.935 99.95	3.675 93.35	3.360 85.34	3.200 81.28	3.100 78.74	0.470 11.94	0.290 7.37	A8D31RA29A	A8D31RA29C	A8D31RA29E	A8D31RA29F
35	4.335 110.11	4.075 103.51	3.760 95.50	3.600 91.44	3.400 86.36	0.470 11.94	0.290 7.37	A8D35RA29A	A8D35RA29C	A8D35RA29E	-
36	4.435 112.65	4.175 106.05	3.860 98.04	3.700 93.98	3.500 88.90	0.470 11.94	0.290 7.37	A8D36RA29A	A8D36RA29C	A8D36RA29E	-
40	4.835 122.81	4.575 116.21	4.260 108.20	4.100 104.14	3.900 99.06	0.470 11.94	0.290 7.37	A8D40RA29A	A8D40RA29C	A8D40RA29E	-
43	5.135 130.43	4.875 123.83	4.560 115.82	4.400 111.76	4.200 106.68	0.470 11.94	0.290 7.37	A8D43RA29A	A8D43RA29C	A8D43RA29E	-
44	5.235 132.97	4.975 126.37	4.660 118.36	4.500 114.30	4.300 109.22	0.470 11.94	0.290 7.37	A8D44RA29A	A8D44RA29C	A8D44RA29E	-
50	5.835 148.21	5.575 141.61	5.260 133.60	5.100 129.54	4.800 121.92	0.470 11.94	0.290 7.37	A8D50RA29A	A8D50RA29C	A8D50RA29E	A8D50RA29F
60	6.835 173.61	6.575 167.01	6.260 159.00	6.100 154.94	5.900 149.86	0.470 11.94	0.290 7.37	A8D60RA29A	A8D60RA29C	A8D60RA29E	-
65	7.335 186.31	7.075 179.71	6.760 171.70	6.600 167.64	6.400 162.56	0.470 11.94	0.290 7.37	A8D65RA29A	A8D65RA29C	A8D65RA29E	A8D65RA29F

Solder Type Board-to-Board Connectors

**Ordering Information**

.100" [2.54] Centerline / .150" [3.81] Row-to-Row (Dim. "H") Spacing

No. of Dual Readout Positions	Dimensions					Mounting Ear Options						
	A	B	C	D	E	Centered Mounting Ear Only G	Flush Mounting Ear Only K	Centered Mounting Ear .125" [3.18] Thru Hole	No Mounting Ears	Centered Mounting Ear .125" [3.18] Cross-Drilled Hole	Flush Mounting Ear .125" [3.18] Cross-Drilled Hole	
10	1.835 46.61	1.575 40.01	1.260 32.00	1.100 27.94	0.900 22.86	0.420 10.67	0.240 6.10	A8D10RA29AM233	A8D10RA29CM233	A8D10RA29EM233	A8D10RA29FM233	
12	2.035 51.69	1.775 45.09	1.460 37.08	1.300 33.02	1.100 27.94	0.420 10.67	0.240 6.10	A8D12RA29AM233	A8D12RA29CM233	A8D12RA29EM233	-	
15	2.335 59.31	2.075 52.71	1.760 44.70	1.600 40.64	1.400 35.56	0.420 10.67	0.240 6.10	A8D15RA29AM233	A8D15RA29CM233	A8D15RA29EM233	A8D15RA29FM233	
18	2.635 66.93	2.375 60.33	2.060 52.32	1.900 48.26	1.700 43.18	0.420 10.67	0.240 6.10	A8D18RA29AM233	A8D18RA29CM233	A8D18RA29EM233	A8D18RA29FM233	
20	2.835 72.01	2.575 65.41	2.260 57.40	2.100 53.34	1.900 48.26	0.420 10.67	0.240 6.10	A8D20RA29AM233	A8D20RA29CM233	A8D20RA29EM233	-	
22	3.035 77.09	2.775 70.49	2.460 62.48	2.300 58.42	2.100 53.34	0.420 10.67	0.240 6.10	A8D22RA29AM233	A8D22RA29CM233	A8D22RA29EM233	-	
25	3.335 84.71	3.075 78.11	2.760 70.10	2.600 66.04	2.400 60.96	0.420 10.67	0.240 6.10	A8D25RA29AM233	A8D25RA29CM233	A8D25RA29EM233	A8D25RA29FM233	
28	3.635 92.33	3.375 85.73	3.060 77.72	2.900 73.66	2.700 68.58	0.420 10.67	0.240 6.10	A8D28RA29AM233	A8D28RA29CM233	A8D28RA29EM233	-	
30	3.835 97.41	3.575 90.81	3.260 82.80	3.100 78.74	2.900 73.66	0.420 10.67	0.240 6.10	A8D30RA29AM233	A8D30RA29CM233	A8D30RA29EM233	A8D30RA29FM233	
31	3.935 99.95	3.675 93.35	3.360 85.34	3.200 81.28	3.100 78.74	0.420 10.67	0.240 6.10	A8D31RA29AM233	A8D31RA29CM233	A8D31RA29EM233	A8D31RA29FM233	
35	4.335 110.11	4.075 103.51	3.760 95.50	3.600 91.44	3.400 86.36	0.420 10.67	0.240 6.10	A8D35RA29AM233	A8D35RA29CM233	A8D35RA29EM233	-	
36	4.435 112.65	4.175 106.05	3.860 98.04	3.700 93.98	3.500 88.90	0.420 10.67	0.240 6.10	A8D36RA29AM233	A8D36RA29CM233	A8D36RA29EM233	-	
40	4.835 122.81	4.575 116.21	4.260 108.20	4.100 104.14	3.900 99.06	0.420 10.67	0.240 6.10	A8D40RA29AM233	A8D40RA29CM233	A8D40RA29EM233	-	
43	5.135 130.43	4.875 123.83	4.560 115.82	4.400 111.76	4.200 106.68	0.420 10.67	0.240 6.10	A8D43RA29AM233	A8D43RA29CM233	A8D43RA29EM233	-	
44	5.235 132.97	4.975 126.37	4.660 118.36	4.500 114.30	4.300 109.22	0.420 10.67	0.240 6.10	A8D44RA29AM233	A8D44RA29CM233	A8D44RA29EM233	-	
50	5.835 148.21	5.575 141.61	5.260 133.60	5.100 129.54	4.800 121.92	0.420 10.67	0.240 6.10	A8D50RA29AM233	A8D50RA29CM233	A8D50RA29EM233	A8D50RA29FM233	
60	6.835 173.61	6.575 167.01	6.260 159.00	6.100 154.94	5.900 149.86	0.420 10.67	0.240 6.10	A8D60RA29AM233	A8D60RA29CM233	A8D60RA29EM233	-	
65	7.335 186.31	7.075 179.71	6.760 171.70	6.600 167.64	6.400 162.56	0.420 10.67	0.240 6.10	A8D65RA29AM233	A8D65RA29CM233	A8D65RA29EM233	A8D65RA29FM233	

*Electronics*

**Product Facts**

- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E60980 
- Certified by Canadian Standards Association, File No. LR49571 

**Physical Properties:**

**Insulation Resistance**—5000 megohms minimum.

**Insertion/Withdrawal Force (Daughter Card)**—8 oz./2 oz. [35.6 N/ 8.9 N] average contact pair using .0620 [1.57] steel blade.

**Insulator Body**—Glass filled thermoplastic, UL rating 94V-0. High temp. plastic option is available; add suffix M399 to part number.

**Color**—Black

**Contacts**—High strength copper alloy.

**Contact Plating**—.000050 [0.00127] nickel underplate with .000030 [0.00076] gold in the mating area, tin/lead on tails, .000100 [0.00254] minimum

**Electrical Properties:**

**Operation Voltage**—600 VDC (sea level)

**Current Rating**—3 Amperes

**Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

**Operating Temperature**—-55°C to +125°C

**Temperature Cycling**—MIL-STD-202 method 107

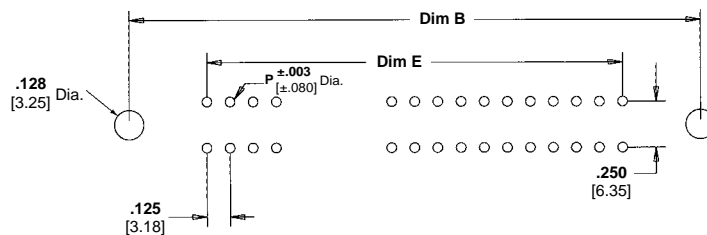
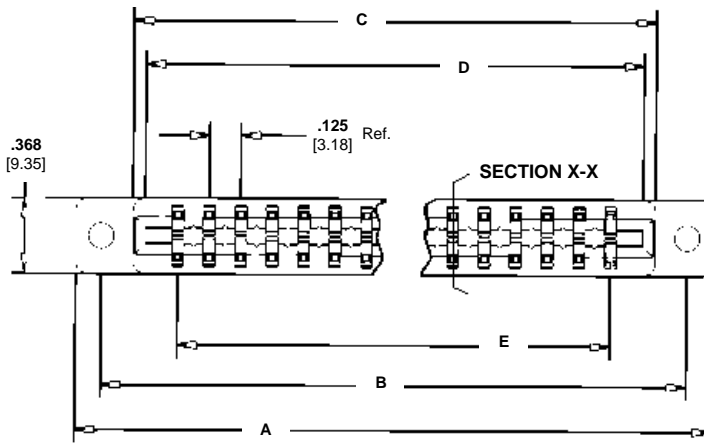
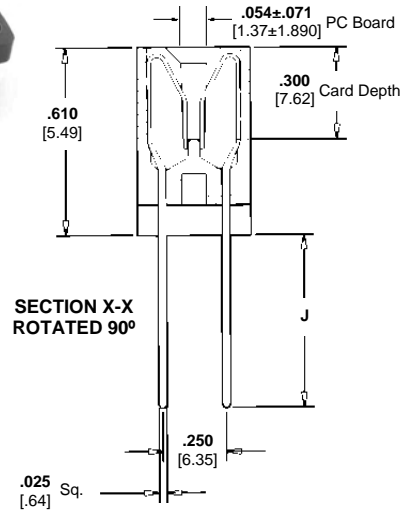
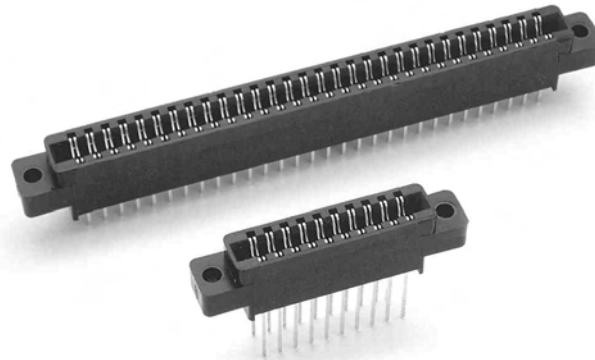
**Vibration**—MIL-STD-202 method 204

**Related Product Data:**

**Polarization Key**—page 57

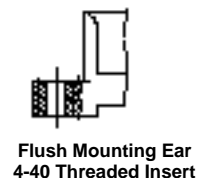
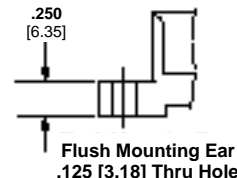
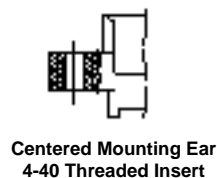
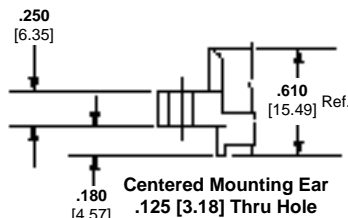
**Daughter Card Edge Pattern**—page 57

**Modified Bellows Connectors .125 x .250 [3.18 x 6.35], Centerline Straight Dip Solder and Wire Wrap Tails**



P=.040 [1.02] Dip Solder Applications  
P=.042 [1.07] For Wire Wrap Applications

**Mounting Styles**





.125" [3.18] Centerline / .250" [6.35] Row-to-Row Dip Solder

No. of Dual Readout Positions	Dimensions					Mounting Ear Options				
	A	B	C	D	E	Centered Mounting Ear .125" [3.18] Thru Hole	Centered Mounting Ear 4-40 Threaded insert	No Mounting Ears	Flush Mounting Ear .125" [3.18] Thru Hole	Flush Mounting Ear 4-40 Threaded insert
<b>Tail Length .160" [4.06] (DIM "J")</b>										
6	1.555 39.50	1.295 32.89	1.035 26.29	0.875 22.23	0.625 15.88	A7D06DS29A2	A7D06DS29B2	A7D06DS29C2	A7D06DS29D2	A7D06DS29E2
10	2.055 52.20	1.795 45.59	1.535 38.99	1.375 34.93	1.125 28.58	A7D10DS29A2	A7D10DS29B2	A7D10DS29C2	A7D10DS29D2	A7D10DS29E2
15	2.680 68.07	2.420 61.47	2.160 54.86	2.000 50.80	1.750 44.45	A7D15DS29A2	A7D15DS29B2	A7D15DS29C2	A7D15DS29D2	A7D15DS29E2
18	3.055 77.60	2.795 70.99	2.535 64.39	2.375 60.33	2.125 53.98	A7D18DS29A2	A7D18DS29B2	A7D18DS29C2	A7D18DS29D2	A7D18DS29E2
22	3.555 90.30	3.295 83.69	3.035 77.09	2.875 73.03	2.625 66.68	A7D22DS29A2	A7D22DS29B2	A7D22DS29C2	-	-
25	3.930 99.82	3.670 93.22	3.410 86.61	3.250 82.55	3.000 76.20	A7D25DS29A2	A7D25DS29B2	A7D25DS29C2	A7D25DS29D2	A7D25DS29E2
28	4.305 109.35	4.045 102.74	3.785 96.14	3.625 92.08	3.375 85.73	A7D28DS29A2	A7D28DS29B2	A7D28DS29C2	-	-
30	4.555 115.70	4.295 109.09	4.035 102.49	3.875 98.43	3.625 92.08	A7D30DS29A2	A7D30DS29B2	A7D30DS29C2	A7D30DS29D2	A7D30DS29E2
35	5.180 131.57	4.920 124.97	4.660 118.36	4.500 114.30	4.250 107.95	A7D35DS29A2	A7D35DS29B2	A7D35DS29C2	-	-
36	5.305 134.75	5.045 128.14	4.785 121.54	4.625 117.48	4.375 111.13	A7D36DS29A2	A7D36DS29B2	A7D36DS29C2	-	-
40	5.805 147.45	5.545 140.84	5.285 134.24	5.125 130.18	4.875 123.83	A7D40DS29A2	A7D40DS29B2	A7D40DS29C2	-	-
43	6.180 156.97	5.920 150.37	5.660 143.76	5.500 139.70	5.250 133.35	A7D43DS29A2	A7D43DS29B2	A7D43DS29C2	-	-
50	7.055 179.20	6.795 172.59	6.535 165.99	6.375 161.93	6.125 155.58	A7D50DS29A2	A7D50DS29B2	A7D50DS29C2	A7D50DS29D2	A7D50DS29E2

.125" [3.18] Centerline / .250" [6.35] Row-to-Row Wire Wrap

No. of Dual Readout Positions	Dimensions					Mounting Ear Options				
	A	B	C	D	E	Centered Mounting Ear .125" [3.18] Thru Hole	Centered Mounting Ear 4-40 Threaded insert	No Mounting Ears	Flush Mounting Ear .125" [3.18] Thru Hole	Flush Mounting Ear 4-40 Threaded insert
<b>Tail Length .560" [14.22] (DIM "J")</b>										
6	1.555 39.50	1.295 32.89	1.035 26.29	0.875 22.23	0.625 15.88	A7D06WW29A3	A7D06WW29B3	-	-	-
10	2.055 52.20	1.795 45.59	1.535 38.99	1.375 34.93	1.125 28.58	A7D10WW29A3	A7D10WW29B3	-	-	-
15	2.680 68.07	2.420 61.47	2.160 54.86	2.000 50.80	1.750 44.45	A7D15WW29A3	A7D15WW29B3	-	-	-
18	3.055 77.60	2.795 70.99	2.535 64.39	2.375 60.33	2.125 53.98	A7D18WW29A3	A7D18WW29B3	-	-	-
22	3.555 90.30	3.295 83.69	3.035 77.09	2.875 73.03	2.625 66.68	A7D22WW29A3	A7D22WW29B3	-	-	-
25	3.930 99.82	3.670 93.22	3.410 86.61	3.250 82.55	3.000 76.20	A7D25WW29A3	A7D25WW29B3	-	-	-
28	4.305 109.35	4.045 102.74	3.785 96.14	3.625 92.08	3.375 85.73	A7D28WW29A3	A7D28WW29B3	-	-	-
30	4.555 115.70	4.295 109.09	4.035 102.49	3.875 98.43	3.625 92.08	A7D30WW29A3	A7D30WW29B3	-	-	-
35	5.180 131.57	4.920 124.97	4.660 118.36	4.500 114.30	4.250 107.95	A7D35WW29A3	A7D35WW29B3	-	-	-
36	5.305 134.75	5.045 128.14	4.785 121.54	4.625 117.48	4.375 111.13	A7D36WW29A3	A7D36WW29B3	-	-	-
40	5.805 147.45	5.545 140.84	5.285 134.24	5.125 130.18	4.875 123.83	A7D40WW29A3	A7D40WW29B3	-	-	-
43	6.180 156.97	5.920 150.37	5.660 143.76	5.500 139.70	5.250 133.35	A7D43WW29A3	A7D43WW29B3	-	-	-
50	7.055 179.20	6.795 172.59	6.535 165.99	6.375 161.93	6.125 155.58	A7D50WW29A3	A7D50WW29B3	-	-	-

*Electronics*

**Modified Bellows Connectors .125 x .250 [3.18 x 6.35], .125 x .150 [3.18 x 3.81], .125 x .200 [3.18 x 5.08] Centerline, Right Angle Tails**

**Product Facts**

- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E60980 
- Certified by Canadian Standards Association, File No. LR49571 

**Physical Properties:**

**Insulation Resistance**—5000 megohms minimum.

**Insertion/Withdrawal Force (Daughter Card)**—8 oz./2 oz. [35.6 N/ 8.9 N] average contact pair using .0620 [1.57] steel blade.

**Insulator Body**—Glass filled thermoplastic, UL rating 94V-0. High temp. plastic option is available; add suffix M399 to part number.

**Color**—Black

**Contacts**—High strength copper alloy.

**Contact Plating**—.000050 [0.00127] nickel underplate with .000030 [0.00076] gold in the mating area, tin/lead on tails, .000100 [0.00254] minimum

**Electrical Properties:**

**Operation Voltage**—1000 VDC (sea level)

**Current Rating**—3 Amperes

**Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

**Operating Temperature**—-55°C to +125°C

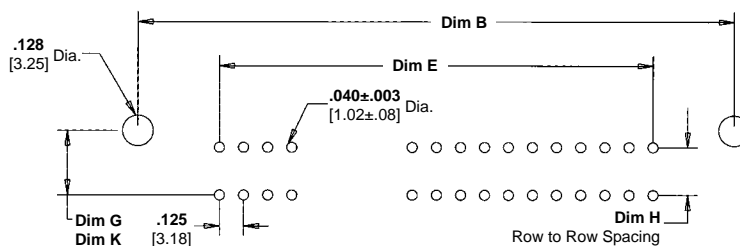
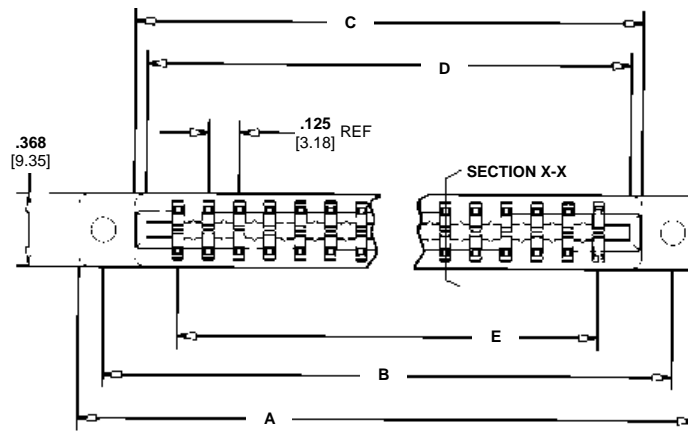
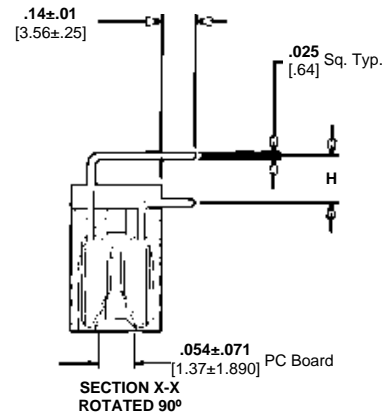
**Temperature Cycling**—MIL-STD-202 method 107

**Vibration**—MIL-STD-202 method 204

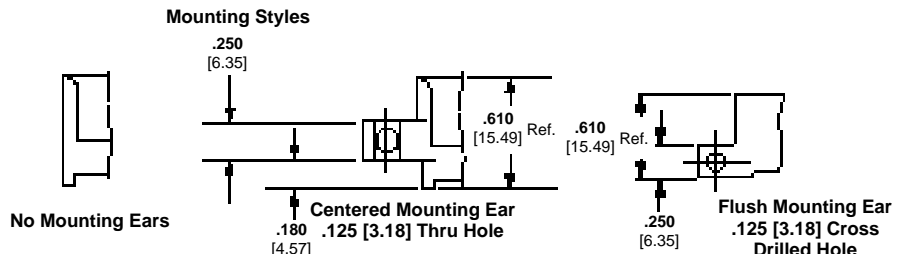
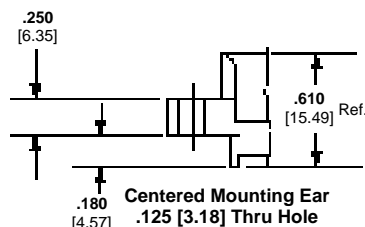
**Related Product Data:**

**Polarization Key**—page 57

**Daughter Card Edge Pattern**—page 57



Dim G - Centered Mounting Ear .125 [3.18] Cross Drilled Hole Only  
Dim K - Flush Mounting Ear .125 [3.18] Cross Drilled Hole Only



**.125" [3.18] Centerline / .200" [5.08] and .150" [3.81] Row-to-Row (Dim. "H") Spacing**

No. of Dual Readout Positions	Dimensions					Mounting Ear Options					
	A	B	C	D	E	Centered Mounting Ear Only G	Flush Mounting Ear Only K	Centered Mounting Ear .125" [3.18] Thru Hole	No Mounting Ears	Centered Mounting Ear .125" [3.18] Cross-Drilled Hole	Flush Mounting Ear .125" [3.18] Cross-Drilled Hole
<b>.150" [3.81] Row-to-Row (Dim. "H") Spacing</b>											
6	1.555 39.50	1.295 32.89	1.035 26.29	0.875 22.23	0.625 15.88	0.420 10.67	0.240 6.10	A7D06RA29AM231	A7D06RA29CM231	A7D06RA29EM231	A7D06RA29FM231
10	2.055 52.20	1.795 45.59	1.535 38.99	1.375 34.93	1.125 28.58	0.420 10.67	0.240 6.10	A7D10RA29AM231	A7D10RA29CM231	A7D10RA29EM231	A7D10RA29FM231
15	2.680 68.07	2.420 61.47	2.160 54.86	2.000 50.80	1.750 44.45	0.420 10.67	0.240 6.10	A7D15RA29AM231	A7D15RA29CM231	A7D15RA29EM231	A7D15RA29FM231
18	3.055 77.60	2.795 70.99	2.535 64.39	2.375 60.33	2.125 53.98	0.420 10.67	0.240 6.10	A7D18RA29AM231	A7D18RA29CM231	A7D18RA29EM231	A7D18RA29FM231
22	3.555 90.30	3.295 83.69	3.035 77.09	2.875 73.03	2.625 66.68	0.420 10.67	0.240 6.10	A7D22RA29AM231	A7D22RA29CM231	A7D22RA29EM231	A7D22RA29FM231
25	3.930 99.82	3.670 93.22	3.410 86.61	3.250 82.55	3.000 76.20	0.420 10.67	0.240 6.10	A7D25RA29AM231	A7D25RA29CM231	A7D25RA29EM231	A7D25RA29FM231
28	4.305 109.35	4.045 102.74	3.785 96.14	3.625 92.08	3.375 85.73	0.420 10.67	0.240 6.10	A7D28RA29AM231	A7D28RA29CM231	A7D28RA29EM231	A7D28RA29FM231
30	4.555 115.70	4.295 109.09	4.035 102.49	3.875 98.43	3.625 92.08	0.420 10.67	0.240 6.10	A7D30RA29AM231	A7D30RA29CM231	A7D30RA29EM231	A7D30RA29FM231
35	5.180 131.57	4.920 124.97	4.660 118.36	4.500 114.30	4.250 107.95	0.420 10.67	0.240 6.10	A7D35RA29AM231	A7D35RA29CM231	A7D35RA29EM231	A7D35RA29FM231
36	5.305 134.75	5.045 128.14	4.785 121.54	4.625 117.48	4.375 111.13	0.420 10.67	0.240 6.10	A7D36RA29AM231	A7D36RA29CM231	A7D36RA29EM231	A7D36RA29FM231
40	5.805 147.45	5.545 140.84	5.285 134.24	5.125 130.18	4.875 123.83	0.420 10.67	0.240 6.10	A7D40RA29AM231	A7D40RA29CM231	A7D40RA29EM231	A7D40RA29FM231
43	6.180 156.97	5.920 150.37	5.660 143.76	5.500 139.70	5.250 133.35	0.420 10.67	0.240 6.10	A7D43RA29AM231	A7D43RA29CM231	A7D43RA29EM231	A7D43RA29FM231
50	7.055 179.20	6.795 172.59	6.535 165.99	6.375 161.93	6.125 155.58	0.420 10.67	0.240 6.10	A7D50RA29AM231	A7D50RA29CM231	A7D50RA29EM231	A7D50RA29FM231
<b>.200" [5.08] Row-to-Row (Dim. "H") Spacing</b>											
6	1.555 39.50	1.295 32.89	1.035 26.29	0.875 22.23	0.625 15.88	0.470 11.94	0.290 7.37	A7D06RA29AM232	A7D06RA29CM232	A7D06RA29EM232	A7D06RA29FM232
10	2.055 52.20	1.795 45.59	1.535 38.99	1.375 34.93	1.125 28.58	0.470 11.94	0.290 7.37	A7D10RA29AM232	A7D10RA29CM232	A7D10RA29EM232	A7D10RA29FM232
15	2.680 68.07	2.420 61.47	2.160 54.86	2.000 50.80	1.750 44.45	0.470 11.94	0.290 7.37	A7D15RA29AM232	A7D15RA29CM232	A7D15RA29EM232	A7D15RA29FM232
18	3.055 77.60	2.795 70.99	2.535 64.39	2.375 60.33	2.125 53.98	0.470 11.94	0.290 7.37	A7D18RA29AM232	A7D18RA29CM232	A7D18RA29EM232	A7D18RA29FM232
22	3.555 90.30	3.295 83.69	3.035 77.09	2.875 73.03	2.625 66.68	0.470 11.94	0.290 7.37	A7D22RA29AM232	A7D22RA29CM232	A7D22RA29EM232	A7D22RA29FM232
25	3.930 99.82	3.670 93.22	3.410 86.61	3.250 82.55	3.000 76.20	0.470 11.94	0.290 7.37	A7D25RA29AM232	A7D25RA29CM232	A7D25RA29EM232	A7D25RA29FM232
28	4.305 109.35	4.045 102.74	3.785 96.14	3.625 92.08	3.375 85.73	0.470 11.94	0.290 7.37	A7D28RA29AM232	A7D28RA29CM232	A7D28RA29EM232	A7D28RA29FM232
30	4.555 115.70	4.295 109.09	4.035 102.49	3.875 98.43	3.625 92.08	0.470 11.94	0.290 7.37	A7D30RA29AM232	A7D30RA29CM232	A7D30RA29EM232	A7D30RA29FM232
35	5.180 131.57	4.920 124.97	4.660 118.36	4.500 114.30	4.250 107.95	0.470 11.94	0.290 7.37	A7D35RA29AM232	A7D35RA29CM232	A7D35RA29EM232	A7D35RA29FM232
36	5.305 134.75	5.045 128.14	4.785 121.54	4.625 117.48	4.375 111.13	0.470 11.94	0.290 7.37	A7D36RA29AM232	A7D36RA29CM232	A7D36RA29EM232	A7D36RA29FM232
40	5.805 147.45	5.545 140.84	5.285 134.24	5.125 130.18	4.875 123.83	0.470 11.94	0.290 7.37	A7D40RA29AM232	A7D40RA29CM232	A7D40RA29EM232	A7D40RA29FM232
43	6.180 156.97	5.920 150.37	5.660 143.76	5.500 139.70	5.250 133.35	0.470 11.94	0.290 7.37	A7D43RA29AM232	A7D43RA29CM232	A7D43RA29EM232	A7D43RA29FM232
50	7.055 179.20	6.795 172.59	6.535 165.99	6.375 161.93	6.125 155.58	0.470 11.94	0.290 7.37	A7D50RA29AM232	A7D50RA29CM232	A7D50RA29EM232	A7D50RA29FM232

.125" [3.18] Centerline / .250" [6.35] Row-to-Row (Dim. "H") Spacing

No. of Dual Readout Positions	Dimensions					Centered Mounting Ear Only G	Flush Mounting Ear Only K	Centered Mounting Ear .125" [3.18] Thru Hole	Mounting Ear Options		
	A	B	C	D	E				No Mounting Ears	Centered Mounting Ear .125" [3.18] Cross-Drilled Hole	Flush Mounting Ear .125" [3.18] Cross-Drilled Hole
<b>.250" [6.35] Row-to-Row (Dim. "H") Spacing</b>											
6	1.555 39.50	1.295 32.89	1.035 26.29	0.875 22.23	0.625 15.88	0.520 13.21	0.340 8.64	A7D06RA29A	A7D06RA29C	A7D06RA29E	A7D06RA29F
10	2.055 52.20	1.795 45.59	1.535 38.99	1.375 34.93	1.125 28.58	0.520 13.21	0.340 8.64	A7D10RA29A	A7D10RA29C	A7D10RA29E	A7D10RA29F
15	2.680 68.07	2.420 61.47	2.160 54.86	2.000 50.80	1.750 44.45	0.520 13.21	0.340 8.64	A7D15RA29A	A7D15RA29C	A7D15RA29E	A7D15RA29F
18	3.055 77.60	2.795 70.99	2.535 64.39	2.375 60.33	2.125 53.98	0.520 13.21	0.340 8.64	A7D18RA29A	A7D18RA29C	A7D18RA29E	A7D18RA29F
22	3.555 90.30	3.295 83.69	3.035 77.09	2.875 73.03	2.625 66.68	0.520 13.21	0.340 8.64	A7D22RA29A	A7D22RA29C	A7D22RA29E	A7D22RA29F
25	3.930 99.82	3.670 93.22	3.410 86.61	3.250 82.55	3.000 76.20	0.520 13.21	0.340 8.64	A7D25RA29A	A7D25RA29C	A7D25RA29E	A7D25RA29F
28	4.305 109.35	4.045 102.74	3.785 96.14	3.625 92.08	3.375 85.73	0.520 13.21	0.340 8.64	A7D28RA29A	A7D28RA29C	A7D28RA29E	A7D28RA29F
30	4.555 115.70	4.295 109.09	4.035 102.49	3.875 98.43	3.625 92.08	0.520 13.21	0.340 8.64	A7D30RA29A	A7D30RA29C	A7D30RA29E	A7D30RA29F
35	5.180 131.57	4.920 124.97	4.660 118.36	4.500 114.30	4.250 107.95	0.520 13.21	0.340 8.64	A7D35RA29A	A7D35RA29C	A7D35RA29E	A7D35RA29F
36	5.305 134.75	5.045 128.14	4.785 121.54	4.625 117.48	4.375 111.13	0.520 13.21	0.340 8.64	A7D36RA29A	A7D36RA29C	A7D36RA29E	A7D36RA29F
40	5.805 147.45	5.545 140.84	5.285 134.24	5.125 130.18	4.875 123.83	0.520 13.21	0.340 8.64	A7D40RA29A	A7D40RA29C	A7D40RA29E	A7D40RA29F
43	6.180 156.97	5.920 150.37	5.660 143.76	5.500 139.70	5.250 133.35	0.520 13.21	0.340 8.64	A7D43RA29A	A7D43RA29C	A7D43RA29E	A7D43RA29F
50	7.055 179.20	6.795 172.59	6.535 165.99	6.375 161.93	6.125 155.58	0.520 13.21	0.340 8.64	A7D50RA29A	A7D50RA29C	A7D50RA29E	A7D50RA29F

Solder Type Board-to-Board Connectors

**Modified Bellows Connectors, .156 x .200 [3.96 x 5.08] Centerline, Straight Dip Solder and Wire Wrap Tails**

**Product Facts**

- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E60980 
- Certified by Canadian Standards Association, File No. LR49571 

**Physical Properties:**

**Insulation Resistance**—5000 megohms minimum.

**Insertion/Withdrawal Force (Daughter Card)**—8 oz./2 oz. [35.6 N/ 8.9 N] average contact pair using .0620 [1.57] steel blade.

**Insulator Body**—Glass filled thermoplastic, UL rating 94V-0. High temp. plastic option is available; add suffix M399 to part number.

**Color**—Black

**Contacts**—High strength copper alloy.

**Contact Plating**—.000050 [0.00127] nickel underplate with .000030 [0.00076] gold in the mating area, tin/lead on tails, .000100 [0.00254] minimum

**Electrical Properties:**

**Operation Voltage**—1500 VDC (sea level)

**Current Rating**—3 Amperes

**Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

**Operating Temperature**—-55°C to +125°C

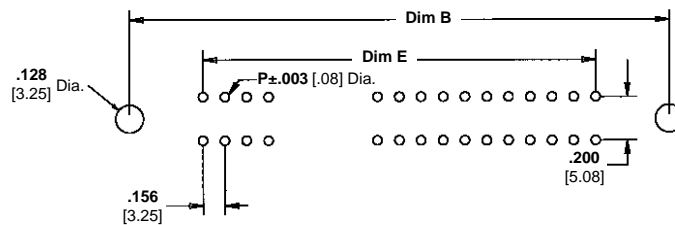
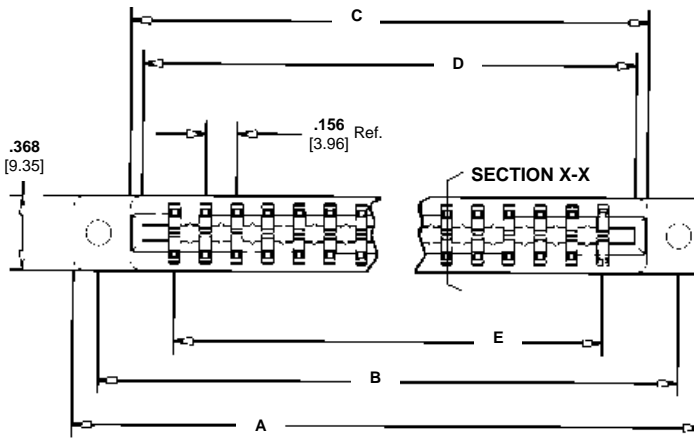
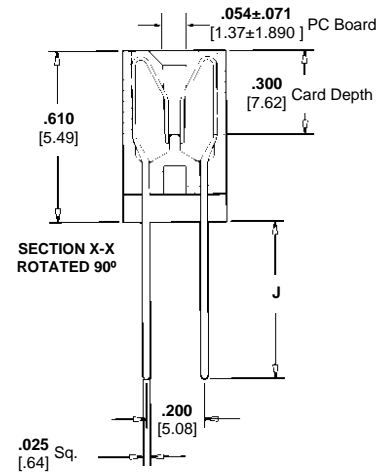
**Temperature Cycling**—MIL-STD-202 method 107

**Vibration**—MIL-STD-202 method 204

**Related Product Data:**

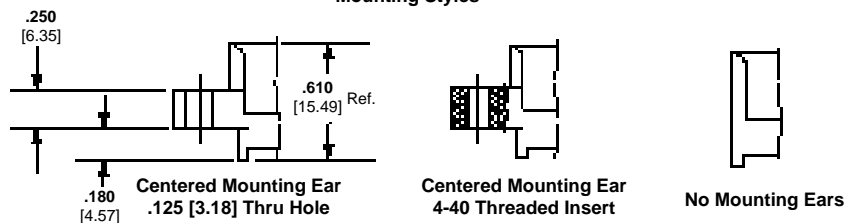
**Polarization Key**—page 57

**Daughter Card Edge Pattern**—page 57



P=.040 [1.02] Dip Solder Applications  
P=.042 [1.07] For Wire Wrap Applications

**Mounting Styles**



.156" [3.96] Centerline / .200" [5.08] Row-to-Row

No. of Dual Readout Positions	Dimensions					Mounting Ear Options		
	A	B	C	D	E	Centered Mounting Ear .125" [3.18] Thru Hole	Centered Mounting Ear 4-40 Threaded Insert	No Mounting Ears
<b>Tail Length .160" [4.06] (DIM "J")</b>								
6	1.784 45.31	1.534 38.96	1.221 31.01	1.100 27.94	0.780 19.81	A6D06DS29A2	A6D06DS29B2	A6D06DS29C2
10	2.408 61.16	2.158 54.81	1.845 46.86	1.724 43.79	1.404 35.66	A6D10DS29A2	A6D10DS29B2	A6D10DS29C2
12	2.720 69.09	2.470 62.74	2.157 54.79	2.036 51.71	1.716 43.59	A6D12DS29A2	A6D12DS29B2	A6D12DS29C2
15	3.188 80.98	2.938 74.63	2.625 66.68	2.504 63.60	2.184 55.47	A6D15DS29A2	A6D15DS29B2	A6D15DS29C2
18	3.656 92.86	3.406 86.51	3.093 78.56	2.972 75.49	2.652 67.36	A6D18DS29A2	A6D18DS29B2	A6D18DS29C2
22	4.280 108.71	4.030 102.36	3.717 94.41	3.596 91.34	3.276 83.21	A6D22DS29A2	A6D22DS29B2	A6D22DS29C2
25	4.748 120.60	4.498 114.25	4.185 106.30	4.064 103.23	3.744 95.10	A6D25DS29A2	A6D25DS29B2	A6D25DS29C2
28	5.216 132.49	4.966 126.14	4.653 118.19	4.532 115.11	4.212 106.98	A6D28DS29A2	A6D28DS29B2	A6D28DS29C2
36	6.464 164.19	6.214 157.84	5.901 149.89	5.780 146.81	5.460 138.68	A6D36DS29A2	A6D36DS29B2	A6D36DS29C2
43	7.556 191.92	7.306 185.57	6.993 177.62	6.872 174.55	6.552 166.42	A6D43DS29A2	A6D43DS29B2	A6D43DS29C2
<b>Tail Length .220" [5.59] (DIM "J")</b>								
6	1.784 45.31	1.534 38.96	1.221 31.01	1.100 27.94	0.780 19.81	A6D06DS29A3	A6D06DS29B3	A6D06DS29C3
10	2.408 61.16	2.158 54.81	1.845 46.86	1.724 43.79	1.404 35.66	A6D10DS29A3	A6D10DS29B3	A6D10DS29C3
12	2.720 69.09	2.470 62.74	2.157 54.79	2.036 51.71	1.716 43.59	A6D12DS29A3	A6D12DS29B3	A6D12DS29C3
15	3.188 80.98	2.938 74.63	2.625 66.68	2.504 63.60	2.184 55.47	A6D15DS29A3	A6D15DS29B3	A6D15DS29C3
18	3.656 92.86	3.406 86.51	3.093 78.56	2.972 75.49	2.652 67.36	A6D18DS29A3	A6D18DS29B3	A6D18DS29C3
22	4.280 108.71	4.030 102.36	3.717 94.41	3.596 91.34	3.276 83.21	A6D22DS29A3	A6D22DS29B3	A6D22DS29C3
25	4.748 120.60	4.498 114.25	4.185 106.30	4.064 103.23	3.744 95.10	A6D25DS29A3	A6D25DS29B3	A6D25DS29C3
28	5.216 132.49	4.966 126.14	4.653 118.19	4.532 115.11	4.212 106.98	A6D28DS29A3	A6D28DS29B3	A6D28DS29C3
36	6.464 164.19	6.214 157.84	5.901 149.89	5.780 146.81	5.460 138.68	A6D36DS29A3	A6D36DS29B3	A6D36DS29C3
43	7.556 191.92	7.306 185.57	6.993 177.62	6.872 174.55	6.552 166.42	A6D43DS29A3	A6D43DS29B3	A6D43DS29C3
<b>Tail Length .560" [14.22] (DIM "J") For Wire Wrap Termination</b>								
6	1.784 45.31	1.534 38.96	1.221 31.01	1.100 27.94	0.780 19.81	A6D06WW29A3	A6D06WW29B3	-
10	2.408 61.16	2.158 54.81	1.845 46.86	1.724 43.79	1.404 35.66	A6D10WW29A3	A6D10WW29B3	-
12	2.720 69.09	2.470 62.74	2.157 54.79	2.036 51.71	1.716 43.59	A6D12WW29A3	A6D12WW29B3	-
15	3.188 80.98	2.938 74.63	2.625 66.68	2.504 63.60	2.184 55.47	A6D15WW29A3	A6D15WW29B3	-
18	3.656 92.86	3.406 86.51	3.093 78.56	2.972 75.49	2.652 67.36	A6D18WW29A3	A6D18WW29B3	-
22	4.280 108.71	4.030 102.36	3.717 94.41	3.596 91.34	3.276 83.21	A6D22WW29A3	A6D22WW29B3	-
25	4.748 120.60	4.498 114.25	4.185 106.30	4.064 103.23	3.744 95.10	A6D25WW29A3	A6D25WW29B3	-
28	5.216 132.49	4.966 126.14	4.653 118.19	4.532 115.11	4.212 106.98	A6D28WW29A3	A6D28WW29B3	-
36	6.464 164.19	6.214 157.84	5.901 149.89	5.780 146.81	5.460 138.68	A6D36WW29A3	A6D36WW29B3	-
43	7.556 191.92	7.306 185.57	6.993 177.62	6.872 174.55	6.552 166.42	A6D43WW29A3	A6D43WW29B3	-

Solder Type Board-to-Board Connectors

**Modified Bellows Connectors .156 x .200 [3.96 x 5.08] Centerline, .156 x .150 [3.96 x 3.81], Right Angle, Dip Solder Tails**

**Product Facts**

- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E60980 
- Certified by Canadian Standards Association, File No. LR49571 

**Physical Properties:**

**Insulation Resistance**—5000 megohms minimum.

**Insertion/Withdrawal Force (Daughter Card)**—8 oz./2 oz. [35.6 N/ 8.9 N] average contact pair using .0620 [1.57] steel blade.

**Insulator Body**—Glass filled thermoplastic, UL rating 94V-0. High temp. plastic option is available; add suffix M399 to part number.

**Color**—Black

**Contacts**—High strength copper alloy.

**Contact Plating**—.000050 [0.00127] nickel underplate with .000030 [0.00076] gold in the mating area, tin/lead on tails, .000100 [0.00254] minimum

**Electrical Properties:**

**Operation Voltage**—1500 VDC (sea level)

**Current Rating**—3 Amperes

**Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

**Operating Temperature**—-55°C to +125°C

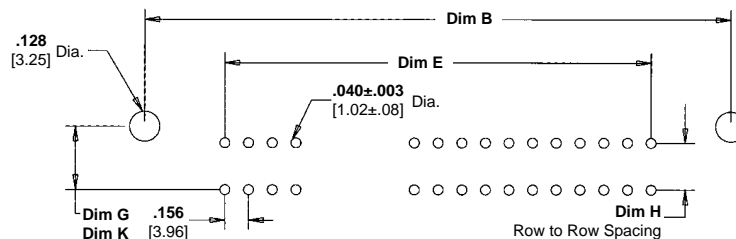
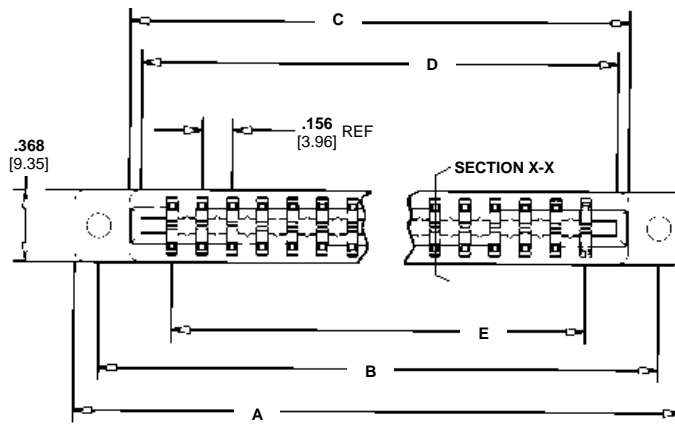
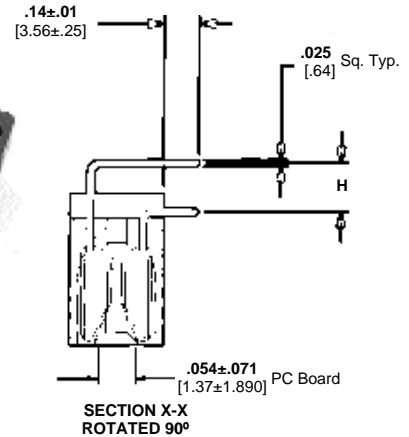
**Temperature Cycling**—MIL-STD-202 method 107

**Vibration**—MIL-STD-202 method 204

**Related Product Data:**

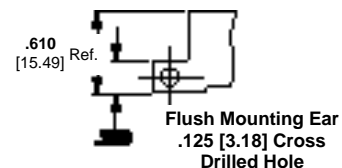
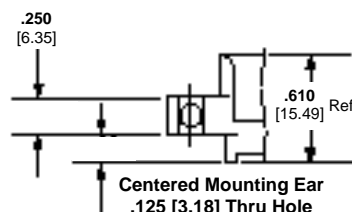
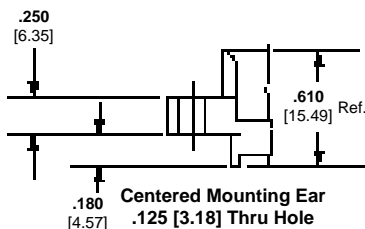
**Polarization Key**—page 57

**Daughter Card Edge Pattern**—page 57



Dim G - Centered Mounting Ear .125 [3.18] Cross Drilled Hole Only  
Dim K - Flush Mounting Ear .125 [3.18] Cross Drilled Hole Only

**Mounting Styles**



.156" [3.96] Centerline / .200" [5.08] and .150" [3.81] Row-to-Row (Dim. "H") Spacing

No. of Dual Readout Positions	Dimensions						Mounting Ear Options				
	A	B	C	D	E	Centered Mounting Ear Only G	Flush Mounting Ear Only K	Centered Mounting Ear .125" [3.18] Thru Hole	No Mounting Ears	Centered Mounting Ear .125" [3.18] Cross-Drilled Hole	Flush Mounting Ear .125" [3.18] Cross-Drilled Hole
<b>.200" [5.08] Row-to-Row (Dim. "H") Spacing</b>											
6	1.784 45.31	1.534 38.96	1.221 31.01	1.100 27.94	0.780 19.81	0.470 11.94	0.290 7.37	A6D06RA29A	A6D06RA29C	A6D06RA29E	A6D06RA29F
10	2.408 61.16	2.158 54.81	1.845 46.86	1.724 43.79	1.404 35.66	0.470 11.94	0.290 7.37	A6D10RA29A	A6D10RA29C	A6D10RA29E	A6D10RA29F
12	2.720 69.09	2.470 62.74	2.157 54.79	2.036 51.71	1.716 43.59	0.470 11.94	0.290 7.37	A6D12RA29A	A6D12RA29C	A6D12RA29E	A6D12RA29F
15	3.188 80.98	2.938 74.63	2.625 66.68	2.504 63.60	2.184 55.47	0.470 11.94	0.290 7.37	A6D15RA29A	A6D15RA29C	A6D15RA29E	A6D15RA29F
18	3.656 92.86	3.406 86.51	3.093 78.56	2.972 75.49	2.652 67.36	0.470 11.94	0.290 7.37	A6D18RA29A	A6D18RA29C	A6D18RA29E	A6D18RA29F
22	4.280 108.71	4.030 102.36	3.717 94.41	3.596 91.34	3.276 83.21	0.470 11.94	0.290 7.37	A6D22RA29A	A6D22RA29C	A6D22RA29E	A6D22RA29F
25	4.748 120.60	4.498 114.25	4.185 106.30	4.064 103.23	3.744 95.10	0.470 11.94	0.290 7.37	A6D25RA29A	A6D25RA29C	A6D25RA29E	A6D25RA29F
28	5.216 132.49	4.966 126.14	4.653 118.19	4.532 115.11	4.212 106.98	0.470 11.94	0.290 7.37	A6D28RA29A	A6D28RA29C	A6D28RA29E	A6D28RA29F
36	6.464 164.19	6.214 157.84	5.901 149.89	5.780 146.81	5.460 138.68	0.470 11.94	0.290 7.37	A6D36RA29A	A6D36RA29C	A6D36RA29E	A6D36RA29F
40	7.088 180.04	6.838 173.69	6.525 165.74	6.404 162.66	6.084 154.53	0.470 11.94	0.290 7.37	A6D40RA29A	A6D40RA29C	A6D40RA29E	A6D40RA29F
43	7.556 191.92	7.306 185.57	6.993 177.62	6.872 174.55	6.552 166.42	0.470 11.94	0.290 7.37	A6D43RA29A	A6D43RA29C	A6D43RA29E	A6D43RA29F
<b>.150" [3.81] Row-to-Row (Dim. "H") Spacing</b>											
6	1.784 45.31	1.534 38.96	1.221 31.01	1.100 27.94	0.780 19.81	0.420 10.67	0.240 6.10	A6D06RA29AM233	A6D06RA29CM233	A6D06RA29EM233	A6D06RA29FM233
10	2.408 61.16	2.158 54.81	1.845 46.86	1.724 43.79	1.404 35.66	0.420 10.67	0.240 6.10	A6D10RA29AM233	A6D10RA29CM233	A6D10RA29EM233	A6D10RA29FM233
12	2.720 69.09	2.470 62.74	2.157 54.79	2.036 51.71	1.716 43.59	0.420 10.67	0.240 6.10	A6D12RA29AM233	A6D12RA29CM233	A6D12RA29EM233	A6D12RA29FM233
15	3.188 80.98	2.938 74.63	2.625 66.68	2.504 63.60	2.184 55.47	0.420 10.67	0.240 6.10	A6D15RA29AM233	A6D15RA29CM233	A6D15RA29EM233	A6D15RA29FM233
18	3.656 92.86	3.406 86.51	3.093 78.56	2.972 75.49	2.652 67.36	0.420 10.67	0.240 6.10	A6D18RA29AM233	A6D18RA29CM233	A6D18RA29EM233	A6D18RA29FM233
22	4.280 108.71	4.030 102.36	3.717 94.41	3.596 91.34	3.276 83.21	0.420 10.67	0.240 6.10	A6D22RA29AM233	A6D22RA29CM233	A6D22RA29EM233	A6D22RA29FM233
25	4.748 120.60	4.498 114.25	4.185 106.30	4.064 103.23	3.744 95.10	0.420 10.67	0.240 6.10	A6D25RA29AM233	A6D25RA29CM233	A6D25RA29EM233	A6D25RA29FM233
28	5.216 132.49	4.966 126.14	4.653 118.19	4.532 115.11	4.212 106.98	0.420 10.67	0.240 6.10	A6D28RA29AM233	A6D28RA29CM233	A6D28RA29EM233	A6D28RA29FM233
36	6.464 164.19	6.214 157.84	5.901 149.89	5.780 146.81	5.460 138.68	0.420 10.67	0.240 6.10	A6D36RA29AM233	A6D36RA29CM233	A6D36RA29EM233	A6D36RA29FM233
40	7.088 180.04	6.838 173.69	6.525 165.74	6.404 162.66	6.084 154.53	0.420 10.67	0.240 6.10	A6D40RA29AM233	A6D40RA29CM233	A6D40RA29EM233	A6D40RA29FM233
43	7.556 191.92	7.306 185.57	6.993 177.62	6.872 174.55	6.552 166.42	0.420 10.67	0.240 6.10	A6D43RA29AM233	A6D43RA29CM233	A6D43RA29EM233	A6D43RA29FM233

Solder Type Board-to-Board Connectors

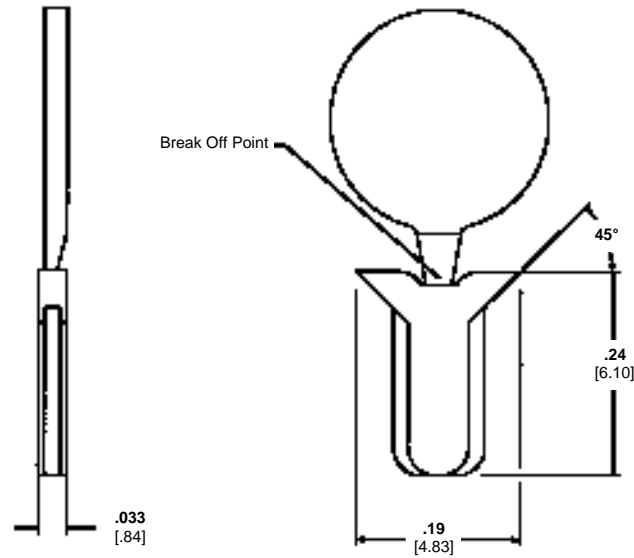


*Electronics*

**Description/Application**

Tyco Electronics can provide polarization keys in the basic configuration shown on this page. Our Modified Bellows and Cantilever Beam Series Card Edge Connectors use these keys. The part number and the connector series for which it was designed are listed in the table below.

**Card Edge Polarization Keys**

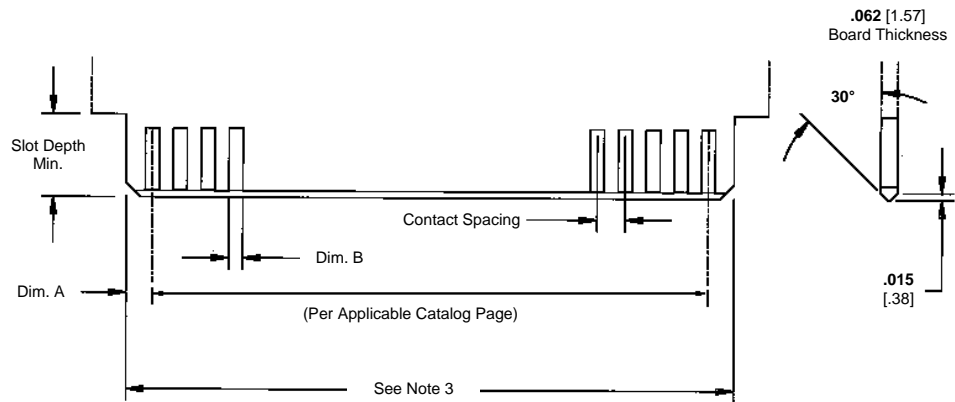


**Ordering Information**

Acquired Part Number	Used on Connector Series	Shown on Pages
98014-01	Modified Bellows	41-56
98014-01	Cantilever Beam	28-40

**Card Edge Connectors Recommended Daughter Card Edge Pattern**

Per MIL-C-21097E



**Daughter Card**

Contact Spacing Non-Accum.	Dim A ±.005 (.13)	Dim B
.100 [2.54]	.093 [2.36]	.052 [1.32]
.125 [3.18]	.093 [2.36]	.052 [1.32]
.156 [3.96]	.105* [2.67]	.094 [2.39]

\* Except MIL-C-21097E 8-4 which is .070 [1.78]

**NOTES:**

- Dimensions are in inches
- Unless otherwise specified, tolerance is ±.005 [0.13 mm] for three place decimals.
- Number of contact fingers shall be the same as the corresponding printed wiring connector.

**Product Facts**

- Low profile housing is .460 [11.68] deep
- 6 through 43 dual positions on .156 [3.96] centerline; 6 through 50 dual positions on .125 [3.18] centerline
- Solder eyelet for wire-to-board or solder post for mother-daughter board application
- Selective gold plating of contact area for high performance at low cost
- Alternate platings are available on request
- Contacts bifurcated for redundancy
- Tin plate for high solderability of solder eyelets and posts
- Accepts .055-.070 [1.40-1.78] thick printed circuit boards
- Housings available with or without mounting ears
- Intercontact keying available
- UL 94V-0 rated, glass-filled polyester housings
- Variety of solder post lengths
- 5 ampere current rating per contact\*
- Recognized under the Component Program of Underwriters Laboratories Inc. File No. E28476



For printed circuit board packaging, AMP Low Profile Edge Connectors provide high performance, low cost connections on .125 [3.18] and .156 [3.96] centerline spacings. .100 [2.54] centerline connectors can be made available, consult Tyco Electronics.

Mounted connector housings extend only .460 [11.68] from the mother board to allow efficient use of available space.

These low profile connectors are available in 6 through 43 dual position sizes on .156 [3.96] centerline spacing and with 6 through 50 dual positions on .125 [3.18] centers. Connectors are supplied

with either solder posts for mother-daughter board applications or solder eyelet contacts for wire-to-board use.

Low Profile Edge Connectors feature clear slot entry and accept .055-.070 [1.40-1.78] thick double-sided printed circuit boards. Solder posts are available with .150 [3.18] and .180 [4.57] long tails on .140 [3.56] or .200 [5.08] row-to-row spacing.

Impact-resistant thermo-plastic housing, UL rated 94V-0, have molded-in cavity identification and are available with or without mounting ears. Additional features of the housings include intercontact keying

provisions, probe slots and identification of number one position.

The precision formed contacts made of phosphor bronze are gold plated on the contact mating surface only. This selective plating provides high reliability while maintaining low cost. Solder eyelets and posts are tin plated for excellent solderability. The contact is bifurcated for redundancy. Shorting contacts are available.

All connector configurations are furnished preloaded. Selectively loaded connectors can be made available for added economy.

\*Consult Tyco Electronics engineering when paralleling contacts for power applications.

**Material and Finish:**

**Housing**—Green, glass-filled polyester

**Contacts**—Phosphor bronze, duplex plated .000030 [0.00076] gold in contact area; .000100 [0.00254] bright tin on posts, with entire contact under-plated .000030 [0.00076] nickel

**Related Product Data:**

**Keying Plug**—page 63

**PC Board Hole Layouts**—See below

**PC Board Edge Pattern**—page 63

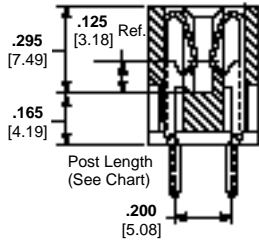
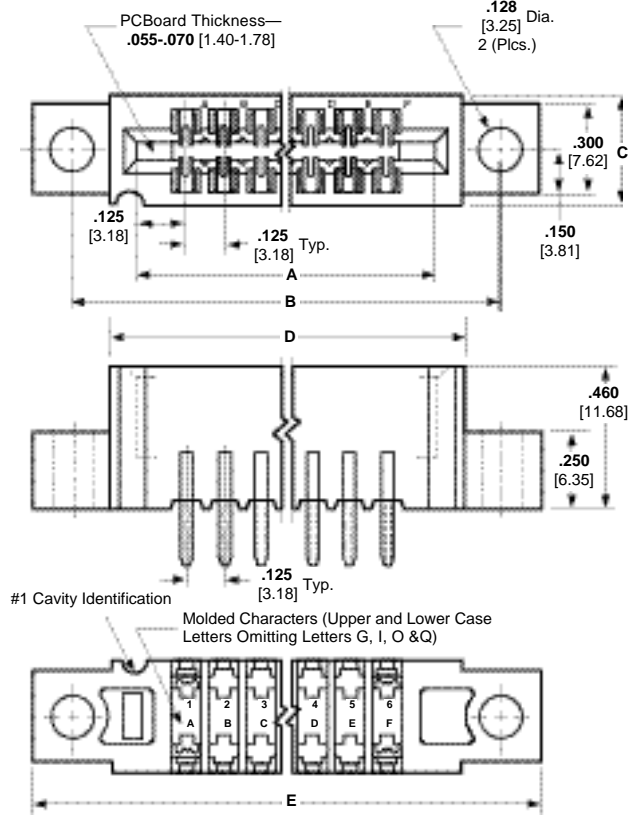
**Technical Documents:**

(pages 186, 187):

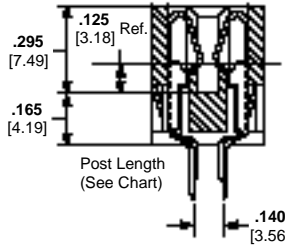
Product Specification

108-9044

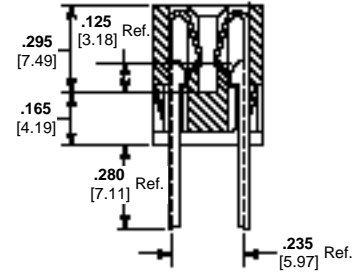
Instruction Sheet 408-7772



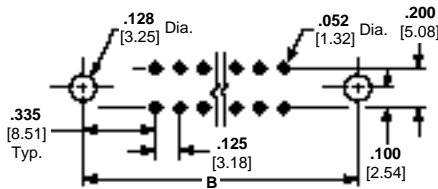
**Flow Solder Post**  
.200 [5.08] Row-to-Row Spacing



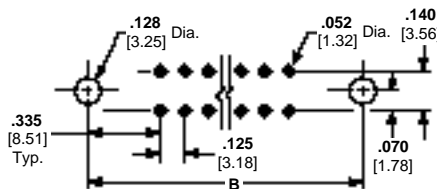
**Flow Solder Post**  
.140 [3.56] Row-to-Row Spacing



**Solder Eyelet Contact**  
.235 [5.97] Row-to-Row Spacing



**Recommended PC Board Hole Layout**



**Recommended PC Board Hole Layout**

**Flow Solder Post  
.200 [5.08] Row-to-Row  
Spacing**

**Low Profile Connectors, .125 [3.18] Centerline** (Continued)

Solder Type Board-to-Board Connectors

No. of Dual Positions	Dimensions					Post Length*	With Mounting Ears	Without Mounting Ears
	A	B	C	D	E			
6	.875	—	.370	1.035	—	.150	—	2-530671-1
	22.23		9.40	26.29				
10	1.375	1.795	.370	1.535	2.055	.150	—	2-530671-2
	34.93	45.59	9.40	38.99	52.20			
15	2.000	2.420	.370	2.160	2.680	.150	—	2-530671-3
	50.80	61.47	9.40	54.86	68.07			
18	2.375	2.795	.370	2.535	3.055	.180	2-530663-4	2-530671-4
	60.33	70.99	9.40	64.39	77.60			
22	2.875	3.295	.370	3.035	3.555	.150	2-530662-5	2-530671-5
	73.03	83.69	9.40	77.09	90.30			
24	3.125	—	.370	3.285	—	.150	—	3-530671-3
	79.38		9.40	83.44				
28	3.625	4.045	.370	3.785	4.305	.150	2-530662-6	2-530671-6
	92.08	102.74	9.40	96.14	109.35			
30	3.875	—	.370	4.035	—	.150	—	2-530671-7
	98.43		9.40	102.49				
36	4.625	5.045	.370	4.785	5.305	.150	—	2-530671-9
	117.48	128.14	9.40	121.54	134.75			
40	5.125	5.545	.437	5.285	5.805	.150	—	3-530671-0
	130.18	140.84	11.10	134.24	147.45			
50	6.375	6.795	.437	6.535	7.055	.150	3-530662-2	—
	161.93	172.59	11.10	165.99	179.20			

**Flow Solder Post  
.140 [3.56] Row-to-Row  
Spacing**

No. of Dual Positions	Dimensions					Post Length*	With Mounting Ears	Without Mounting Ears
	A	B	C	D	E			
15	2.000	—	.370	2.160	—	.150	—	2-530673-3
	50.80		9.40	54.86				
28	3.625	—	.370	3.785	—	.150	—	2-530673-6
	92.08		9.40	96.14				
50	6.375	6.795	.437	6.535	7.055	.180	2-530674-6	—
	161.93	172.59	11.10	165.99	179.20			

**Solder Eyelet Contact  
.235 [5.97] Row-to-Row  
Spacing**

No. of Dual Positions	Dimensions					With Mounting Ears
	A	B	C	D	E	
15	2.000	2.420	.370	2.160	2.680	2-530664-3
	50.80	61.47	9.40	54.86	68.07	
22	2.875	3.295	.370	3.035	3.555	2-530664-5
	73.02	83.69	9.40	77.08	90.29	
28	3.625	4.045	.370	3.785	4.305	2-530664-6
	92.08	102.74	9.40	96.14	109.35	
40	5.125	5.545	.437	5.285	5.805	3-530664-0
	130.17	140.84	11.10	134.23	147.44	
50	6.375	6.795	.437	6.535	7.055	3-530664-2
	161.92	172.59	11.10	165.98	179.19	

\*Metric equivalents for post length are .150 = [3.81]; .180 = [4.57].

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Material and Finish:**

**Housing**—Green, glass-filled polyester

**Contacts**—Phosphor bronze, duplex plated .000030 [0.00076] gold in contact area; .000100 [0.00254] bright tin on posts, with entire contact under-plated .000030 [0.00076] nickel

**Insert**—Brass

**Related Product Data:**

**Keying Plug**—page 63

**PC Board Hole Layouts**—See below

**PC Board Edge Pattern**—page 63

**Technical Documents:**

(pages 186, 187):

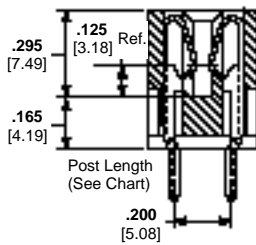
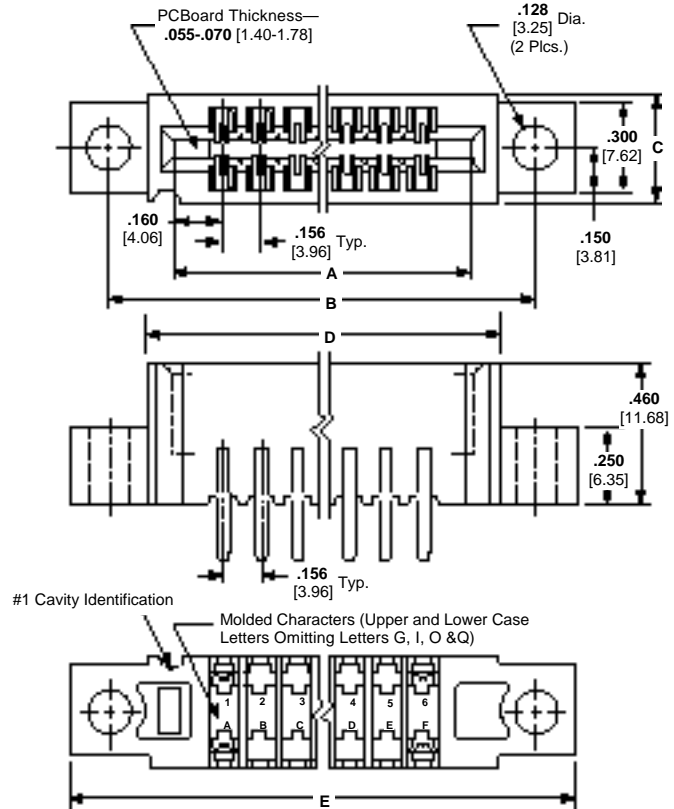
Product Specification  
108-9044

Instruction Sheet 408-7772

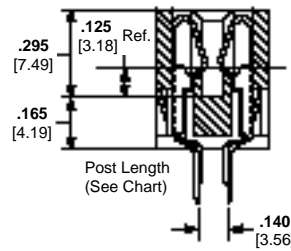
**Mounting Ear with Insert**



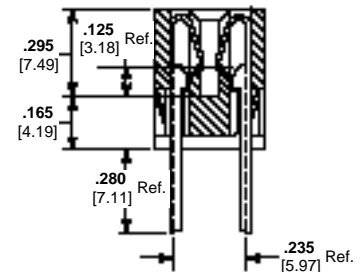
Threaded Inserts  
4-40 NC-2B  
(2 per connector)



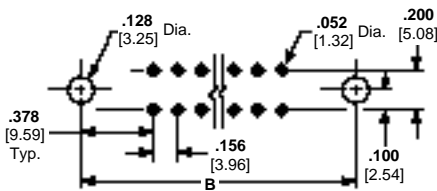
**Flow Solder Post**  
.200 [5.08] Row-to-Row Spacing



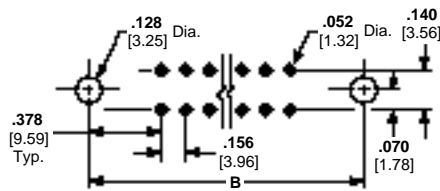
**Flow Solder Post**  
.140 [3.56] Row-to-Row Spacing



**Solder Eyelet Contact**  
.235 [5.97] Row-to-Row Spacing



**Recommended PC Board Hole Layout**



**Recommended PC Board Hole Layout**

**Low Profile Connectors, .156 [3.96] Centerline** (Continued)

**Flow Solder Post  
.200 [5.08] Row-to-Row  
Spacing**

No. of Dual Positions	Dimensions					Post Length*	With Mounting Ears	With Mounting Ears and Inserts	Without Mounting Ears
	A	B	C	D	E				
6	<b>1.100</b>	<b>1.535</b>	<b>.370</b>	<b>1.240</b>	<b>1.785</b>	<b>.150</b>	2-530655-1	2-530677-1	—
	27.94	38.99	9.40	31.50	45.34		2-530689-11	—	2-530666-1
10	<b>1.724</b>	<b>2.159</b>	<b>.370</b>	<b>1.864</b>	<b>2.409</b>	<b>.150</b>	2-530655-2	—	2-530666-2
	43.79	54.84	9.40	47.35	61.19		<b>.180</b>	2-530656-2	—
12	<b>2.036</b>	<b>2.471</b>	<b>.370</b>	<b>2.176</b>	<b>2.721</b>	<b>.150</b>	2-530655-3	—	2-530666-3
	51.71	62.76	9.40	55.27	69.11		2-530655-4	—	2-530666-4
15	<b>2.504</b>	<b>2.939</b>	<b>.370</b>	<b>2.644</b>	<b>3.189</b>	<b>.150</b>	2-530689-4 <sup>1</sup>	—	—
	63.60	74.65	9.40	67.16	81.00		2-530655-5	—	2-530666-5
18	<b>2.972</b>	<b>3.407</b>	<b>.370</b>	<b>3.112</b>	<b>3.657</b>	<b>.150</b>	—	—	2-530667-5
	75.49	86.54	9.40	79.04	92.89		2-530655-6	—	2-530666-6
22	<b>3.596</b>	<b>4.031</b>	<b>.370</b>	<b>3.736</b>	<b>4.281</b>	<b>.150</b>	2-530689-6 <sup>1</sup>	—	531433-4 <sup>1</sup>
	91.34	102.39	9.40	94.89	108.74		<b>.180</b>	2-530656-6	2-530678-6
25	<b>4.064</b>	<b>4.499</b>	<b>.370</b>	<b>4.204</b>	<b>4.749</b>	<b>.150</b>	2-530655-8	—	531433-1 <sup>1</sup>
	103.23	114.27	9.40	106.78	120.62		<b>.180</b>	2-530656-8	—
28	<b>4.532</b>	<b>4.967</b>	<b>.370</b>	<b>4.672</b>	<b>5.217</b>	<b>.150</b>	3-530655-2	—	3-530666-2
	115.11	126.16	9.40	118.67	132.51		<b>.180</b>	3-530656-2	—
30	<b>4.844</b>	<b>5.279</b>	<b>.437</b>	<b>4.984</b>	<b>5.529</b>	<b>.150</b>	2-530655-9	—	2-530666-9
	123.04	134.09	11.10	126.59	140.44		2-530689-9 <sup>1</sup>	—	—
36	<b>5.780</b>	<b>6.215</b>	<b>.437</b>	<b>5.920</b>	<b>6.465</b>	<b>.150</b>	3-530655-0	—	531433-2 <sup>1</sup>
	146.18	157.86	11.10	150.37	164.21		<b>.180</b>	3-530689-0 <sup>1</sup>	—
43	<b>6.872</b>	<b>7.307</b>	<b>.437</b>	<b>7.012</b>	<b>7.557</b>	<b>.150</b>	3-530655-3	3-530677-3	3-530666-3
	174.55	185.60	11.10	178.10	191.95		<b>.180</b>	3-530656-3	—

**Flow Solder Post  
.140 [3.56] Row-to-Row  
Spacing  
and  
Solder Eyelet Contact  
.235 [5.97] Row-to-Row  
Spacing**

No. of Dual Positions	Dimensions					Post Length*	Flow Solder Post		Solder Eyelet Contact	
	A	B	C	D	E		With Mounting Ears	Without Mounting Ears	With Mounting Ears	Without Mounting Ears
6	<b>1.100</b>	<b>1.535</b>	<b>.370</b>	<b>1.240</b>	<b>1.785</b>	<b>.150</b>	—	—	2-530654-1	—
	27.94	38.99	9.40	31.50	45.34		2-530657-2	—	2-530654-2	—
10	<b>1.724</b>	<b>2.159</b>	<b>.370</b>	<b>1.864</b>	<b>2.409</b>	<b>.150</b>	2-530657-4	—	2-530654-4	2-530667-4
	43.79	54.84	9.40	47.35	61.19		<b>.180</b>	—	2-530669-4	—
15	<b>2.504</b>	<b>2.939</b>	<b>.370</b>	<b>2.644</b>	<b>3.189</b>	<b>.150</b>	—	2-530668-5	2-530654-5	—
	63.60	74.65	9.40	67.16	81.00		2-530657-6	2-530668-6	2-530654-6	—
18	<b>2.972</b>	<b>3.407</b>	<b>.370</b>	<b>3.112</b>	<b>3.657</b>	<b>.150</b>	—	—	—	—
	75.49	86.54	9.40	79.04	92.89		2-530657-6	2-530668-6	2-530654-6	—
22	<b>3.596</b>	<b>4.031</b>	<b>.370</b>	<b>3.736</b>	<b>4.281</b>	<b>.150</b>	—	—	2-530654-7	—
	91.34	102.39	9.40	94.89	108.74		—	—	—	—
24	<b>3.908</b>	<b>4.343</b>	<b>.370</b>	<b>4.048</b>	<b>4.593</b>	<b>.150</b>	—	—	—	—
	99.26	110.31	9.40	102.81	116.66		3-530657-2	3-530668-2	3-530654-2	—
28	<b>4.532</b>	<b>4.967</b>	<b>.370</b>	<b>4.672</b>	<b>5.217</b>	<b>.150</b>	—	—	—	—
	115.11	126.16	9.40	118.67	132.51		—	—	—	—
30	<b>4.844</b>	<b>5.279</b>	<b>.437</b>	<b>4.984</b>	<b>5.529</b>	<b>.150</b>	—	—	2-530654-9	—
	123.04	134.09	11.10	126.59	140.44		—	—	—	—
36	<b>5.780</b>	<b>6.215</b>	<b>.437</b>	<b>5.920</b>	<b>6.465</b>	<b>.150</b>	—	—	3-530654-0	—
	146.81	155.58	11.10	150.36	164.21		<b>.180</b>	—	3-530669-0	—
43	<b>6.872</b>	<b>7.307</b>	<b>.437</b>	<b>7.012</b>	<b>7.557</b>	<b>.150</b>	3-530657-3	—	3-530654-3	—
	174.55	185.60	11.10	178.10	191.95		—	—	—	—

\*Metric equivalents for post length are **.150** = [3.81]; **.180** = [4.57].

<sup>1</sup>For **.040** [1.02] diameter hole.

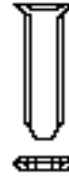
**Note:** Other connector sizes can be made available, consult Tyco Electronics.

Solder Type Board-to-Board Connectors

**Keying Plug**

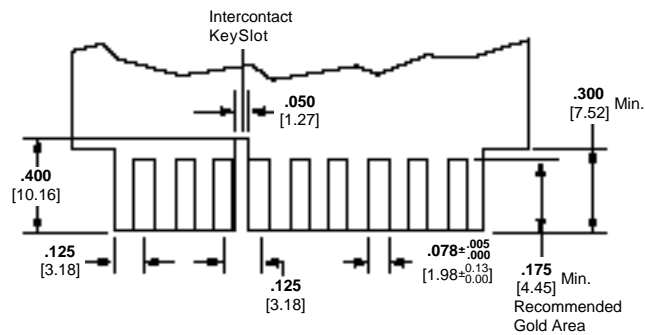
**Material:** Glass-filled nylon  
**Part No.** 650025-2

**Intercontact Key**

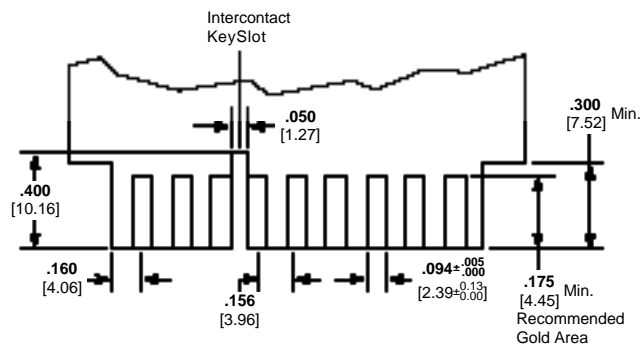


**Recommended PC Board Edge Patterns**

**.125 [3.18] Centerline Boards**




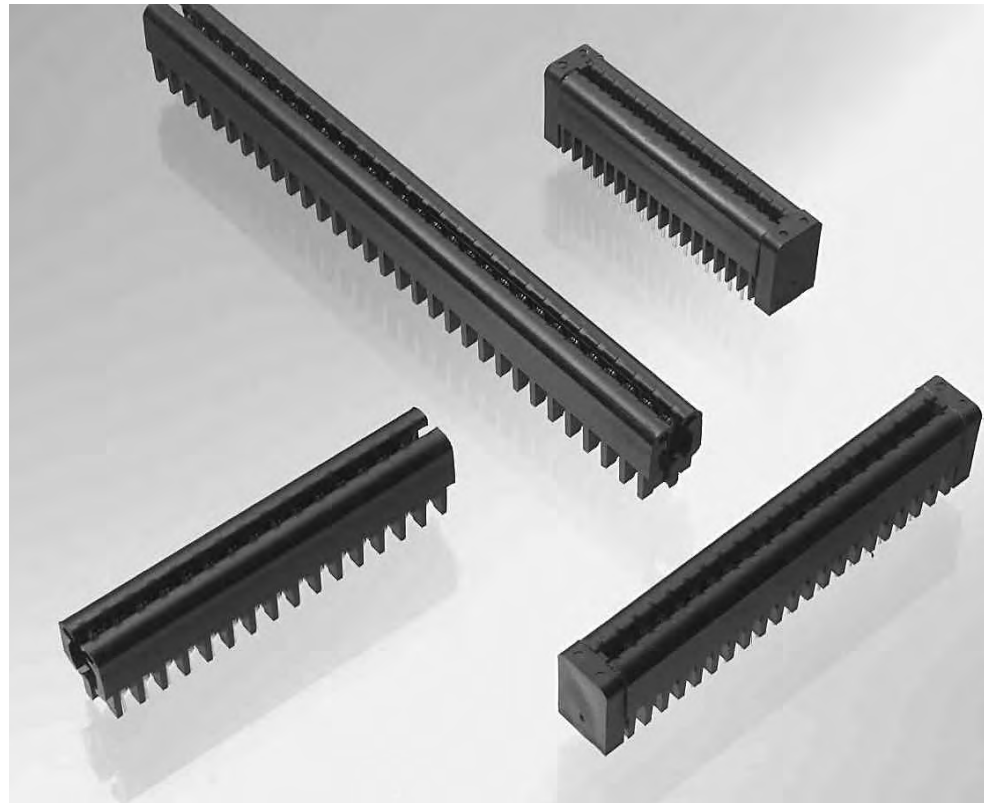
**.156 [3.96] Centerline Boards**



**Twin Leaf Mother Board Connectors**

**Product Facts**

- Wide variety of sizes available from 3 dual positions and up—no initial tooling investment required for new versions
- Connectors can be selectively loaded with contacts in custom patterns
- Connectors tooled on all standard centerlines—  
.100 [2.54], .125 [3.18],  
.150 [3.81], .156 [3.96],  
and .200 [5.08]  
*Note:* .200 [5.08] centerline capabilities provided by loading every-other dual position of .100 [2.54] centerline housings.
- Closed card entry protects contacts and daughter board pads
- Adapts to a wide range of mother board thicknesses to .104 [2.64] maximum
- Phosphor bronze contacts selectively plated for top performance and maximum economy
- Protective channel helps prevent overstress of contacts
- Daughter board keying available in intercontact or on-contact styles
- Recognized under the Component Program of Underwriters Laboratories Inc.,  
File No. E28476 



The AMP Twin Leaf Connector is a highly reliable, low-cost mother/daughter board connector designed for solid-state circuitry. The one-piece, multi-contact connector requires no front-end tooling. This versatile connector for double-sided printed circuit boards uses preloaded contacts and selective plating to give lowest applied cost. Critical contact areas are gold-over-nickel plated to provide positive electrical connection between contacts and daughter board pads. Contact posts are tin plated for efficient dip soldering to mother boards up to .104 [2.64] thick. The Twin Leaf Connector delivers high reliability because the contacts possess superior tolerance of environmental stresses including shock, vibration and variations of temperature and humidity. Other characteristics such as high insulation resistance, low

termination resistance, long life and moderate contact separation force meet industry requirements for reliability. Connectors are tooled in sizes from 3 through 80 dual-contact positions with contacts on .100 [2.54], .125 [3.18], .150 [3.81], .156 [3.96] or .200 [5.08] centers. Other sizes and custom-loaded contact patterns are available on request. The connector housing, made of glass-filled polyester with a UL 94V-0 rating, features a standoff which facilitates the use of a probe for electrical continuity checks without risk of damage to the contacts. A closed card-entry design of the housing protects the contacts and daughter board pads. Housings accept daughter boards ranging from .055 [1.40] to .070 [1.78] in thickness. Intercontact and on-contact keys are available for polarization of the housings.

Card guides or end caps make alignment of daughter board pads with Twin Leaf Connector contacts quick and easy.

**Performance Specifications**

**Contact Rating\*:**

3 amperes continuous

**Temperature Rating:**

-55°C to +105°C

**Insulation Resistance:**

5,000 megohms

**Dielectric Withstanding Voltage:**

Altitude	Test Voltage (AC, RMS)	
	.100 [2.54]	.150 [3.81]
Sea Level	1,000	1,500
50,000 ft 15 240 m	400	600
70,000 ft 21 336 m	280	400

**Termination Resistance:**

10 milliohms, max.

**Durability:** Tested to 100 cycles

(engage/withdraw)

**Contact Plating:** .000015 [0.00038]

selective gold plating on contact area; bright tin on solder tie

\*Consult Tyco Electronics engineering when paralleling contacts for power applications.



**Twin Leaf Mother Board Connectors Without End Caps**

**.100 [2.54], .125 [3.18],  
.150 [3.81] and  
.156 [3.96] Centerlines,  
With Solder Posts**

**Material and Finish:**

**Housing**—Glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated .000015 [0.00038] gold in contact area; tin on posts, with entire contact under-plated .000030 [0.00076] nickel, except where noted

**Related Product Data:**

**Performance Specifications**—page 64

**Card Guides**—pages 70, 71

**Keying Plugs**—page 72

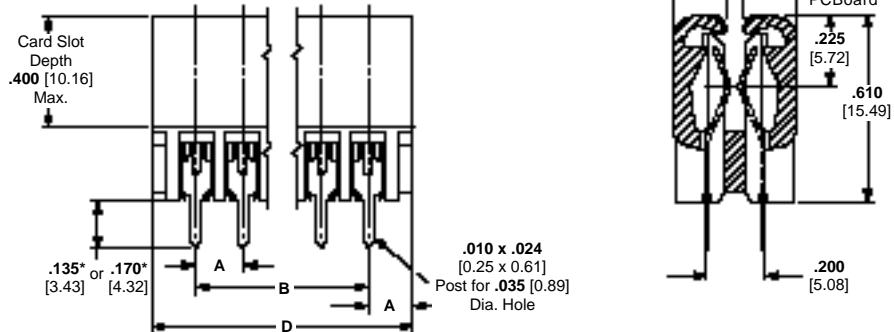
**PC Board Hole Layouts**—page 71

**Technical Documents:**

(pages 186, 187):

Product Specification  
108-9027

Instruction Sheets 408-7479,  
408-7498, 408-7506



\*Post length: .135 [3.43] for .150 [3.81] and .156 [3.96] centerlines, except where noted;  
.170 [4.32] for .100 [2.54] and .125 [3.18] centerlines, except where noted.

**Twin Leaf Mother Board Connectors Without End Caps**

Solder Type Board-to-Board Connectors

No. of Dual Positions	A = .100 [2.54] Centerline Spacing			A = .125 [3.18] Centerline Spacing			A = .150 [3.81] Centerline Spacing			A = .156 [3.96] Centerline Spacing		
	B	D	Part Numbers	B	D	Part Numbers	B	D	Part Numbers	B	D	Part Numbers
2	—	—	—	—	—	—	.300 7.62	.600 15.24	1-583694-1	—	—	—
3	.200 5.08	.400 10.16	583485-6	—	—	—	.300 7.62	.600 15.24	645155-11 <sup>3</sup>	.312 7.92	.624 15.85	4-583486-8
4	—	—	—	—	—	—	.450 11.43	.750 19.05	583407-5	—	—	—
5	.400 10.16	.600 15.24	583485-7	—	—	—	.600 15.24	.900 22.86	583407-6	—	—	—
8	—	—	—	—	—	—	1.050 26.67	1.350 34.29	583407-9	—	—	—
9	—	—	—	1.000 25.40	1.250 31.75	583533-7	—	—	—	—	—	—
10	.900 22.86	1.100 27.94	1-583485-2	—	—	—	—	—	—	1.400 35.56	1.720 43.69	4-583486-1
11	—	—	—	—	—	—	1.500 38.10	1.800 45.72	1-583407-2	—	—	—
14	1.300 33.02	1.500 38.10	1-583485-6	—	—	—	—	—	—	—	—	—
15	—	—	—	—	—	—	2.100 53.34	2.400 60.96	1-583407-5	—	—	—
18	—	—	—	2.125 53.97	2.375 60.32	1-583533-6	—	—	—	2.652 67.36	2.964 75.28	3-583486-3
20	—	—	—	—	—	—	2.850 72.39	3.150 80.01	2-583407-0 530292-9 <sup>3</sup>	—	—	—
22	—	—	—	2.625 66.67	2.875 73.02	2-583533-0	—	—	—	—	—	—
28	—	—	—	—	—	—	4.050 102.87	4.350 110.49	583407-1	4.212 106.99	4.524 114.91	2-583486-3
30	—	—	—	3.625 92.08	3.875 98.43	531534-2 <sup>2</sup>	—	—	—	4.524 114.91	4.836 122.83	2-583486-1
31	—	—	—	—	—	—	4.500 53.34	4.800 60.96	530292-3 <sup>3</sup>	—	—	—
33	—	—	—	—	—	—	—	—	—	4.992 126.80	5.304 134.72	1-583486-8
36	—	—	—	—	—	—	—	—	—	5.460 138.68	5.772 146.61	1-583486-5
40	—	—	—	4.875 123.83	5.125 130.18	3-583533-8	5.850 148.59	6.150 156.21	3-583407-8	6.084 154.53	6.396 162.46	1-583486-1
43	—	—	—	—	—	—	—	—	—	6.552 166.42	6.864 174.35	583486-8
50	4.900 124.46	5.100 129.54	583485-3	6.130 155.70	6.380 162.05	5-583533-01	7.350 186.69	7.650 194.31	4-583407-8	7.640 194.06	7.960 202.18	583486-1
56	—	—	—	—	—	—	—	—	—	8.580 217.93	8.892 225.86	5-583486-0
65	6.400 162.56	6.600 167.64	5-583485-6	—	—	—	—	—	—	—	—	—
80	7.900 200.66	8.100 205.74	5-583485-5	—	—	—	—	—	—	—	—	—

<sup>1</sup>Contacts are plated .000030 [0.00076] gold in contact area, tin on posts, with entire contact underplated .000030 [0.00076] nickel.

<sup>2</sup>Post length .135 [3.43]

<sup>3</sup>Post length .170 [4.32]

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Twin Leaf Mother Board Connectors With End Caps**

**.100 [2.54], .125 [3.18],  
.150 [3.81] and  
.156 [3.96] Centerlines,  
With Solder Posts**

**Material and Finish:**

**Housing**—Glass-filled polyester,  
94V-0 rated

**Contacts**—Phosphor bronze, plated  
.000015 [0.00038] gold in contact area;  
tin on posts, with entire contact under-  
plated .000030 [0.00076] nickel

**Related Product Data:**

**Performance Specifications**—  
page 64

**Keying Plugs**—page 72

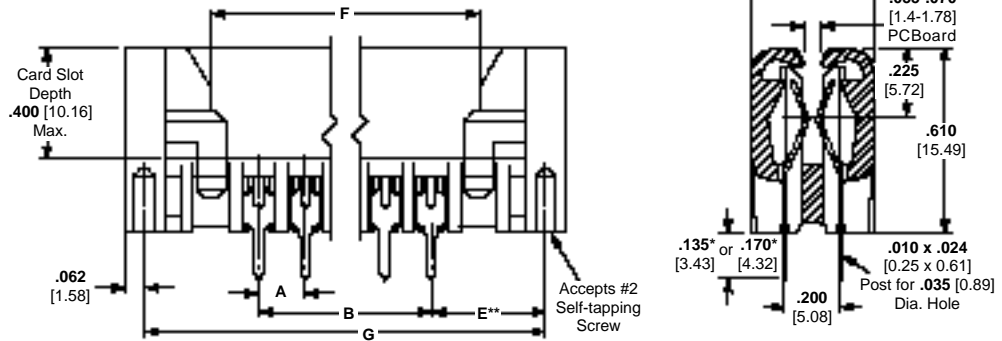
**PC Board Hole Layouts**—page 71

**Technical Documents:**

(pages 186, 187):

Product Specification  
108-9027

Instruction Sheets 408-7479,  
408-7498, 408-7506



\*Post length: .135 [3.43] for .150 [3.81] and .156 [3.96] centerlines;  
.170 [4.32] for .100 [2.54] and .125 [3.18] centerlines.

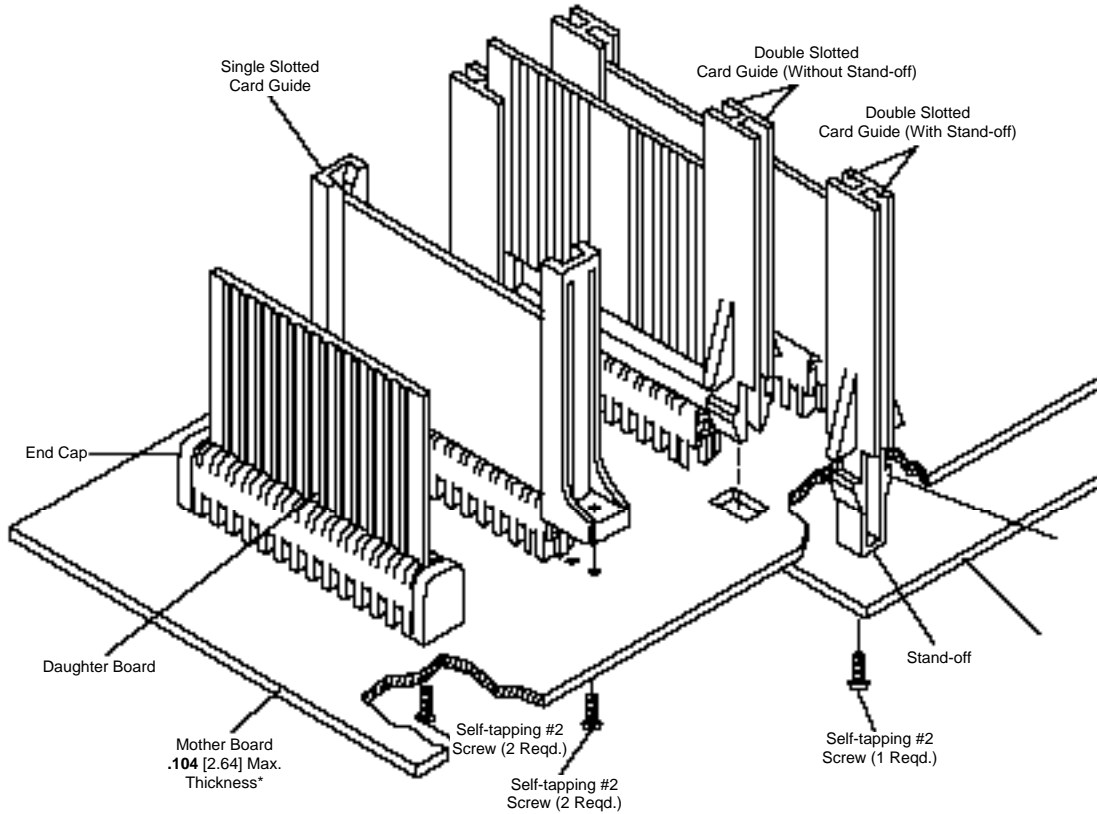
\*\*See page 27 for dimensions.

No. of Dual Pos.	A = .100 [2.54] Centerline Spacing				A = .125 [3.18] Centerline Spacing				A = .150 [3.81] Centerline Spacing				A = .156 [3.96] Centerline Spacing			
	B	F	G	Part Numbers	B	F	G	Part Numbers	B	F	G	Part Numbers	B	F	G	Part Numbers
3	.200 5.03	.400 10.16	.734 18.64	583715-1	—	—	—	—	—	—	—	—	—	—	—	—
5	.400 10.16	.600 15.24	.934 23.72	583715-3	—	—	—	—	—	—	—	—	—	—	—	—
6	.500 12.70	.700 17.78	1.034 26.26	583715-4	.625 15.88	.875 22.23	1.259 31.96	583679-5	—	—	—	—	.780 19.81	1.092 27.74	1.538 39.07	583660-6
7	.600 15.24	.800 20.32	1.134 28.80	583715-5	—	—	—	—	—	—	—	—	—	—	—	—
9	.800 20.32	1.000 25.40	1.334 33.88	583715-7	—	—	—	—	—	—	—	—	—	—	—	—
10	.900 22.86	1.100 27.94	1.434 36.42	583715-8	—	—	—	—	—	—	—	—	1.404 35.66	1.716 43.59	2.162 54.91	1-583660-0
12	1.100 27.94	1.300 33.02	1.634 41.50	1-583715-0	—	—	—	—	—	—	—	—	1.716 43.58	2.028 51.51	2.474 62.84	1-583660-2
13	1.200 30.48	1.400 35.56	1.734 44.04	1-583715-1	—	—	—	—	—	—	—	—	—	—	—	—
14	—	—	—	—	—	—	—	—	1.950 49.53	2.250 57.15	2.684 68.17	1-583692-3	2.028 51.51	2.340 59.44	2.786 70.76	1-583660-4
15	1.400 35.56	1.600 40.64	1.934 49.12	1-583715-3	—	—	—	—	2.100 53.34	2.400 60.96	2.834 71.98	1-583692-4	2.184 55.47	2.496 63.40	2.942 74.73	583660-2
17	1.600 40.64	1.800 45.72	2.134 54.20	1-583715-5	2.000 50.80	2.250 57.15	2.634 66.90	1-583679-6	—	—	—	—	—	—	—	—
18	1.700 43.18	1.900 48.26	2.234 56.74	1-583715-6	2.125 53.98	2.375 60.33	2.759 70.08	1-583679-7	—	—	—	—	2.652 67.36	2.964 75.28	3.410 86.61	1-583660-7
20	1.900 48.26	2.100 53.34	2.434 61.82	1-583715-8	2.375 60.33	2.625 66.68	3.009 76.43	1-583679-9	—	—	—	—	—	—	—	—
22	—	—	—	—	—	—	—	—	—	—	—	—	3.276 83.21	3.588 91.14	4.034 102.46	2-583660-1
25	2.400 60.96	2.600 66.04	2.934 74.52	2-583715-3	3.000 76.20	3.250 82.55	3.634 92.30	2-583679-4	3.600 91.44	3.900 99.06	4.334 110.08	2-583692-4	3.744 95.10	4.065 103.02	4.502 114.35	2-583660-4
26	2.500 63.50	2.700 68.58	3.034 77.05	2-583715-4	—	—	—	—	—	—	—	—	—	—	—	—
28	2.700 68.58	2.900 73.66	3.234 82.14	2-583715-6	3.375 85.73	3.625 92.08	4.009 101.83	2-583679-6	—	—	—	—	4.212 106.98	4.524 114.91	4.979 126.24	2-583660-7
30	2.900 73.66	3.100 78.74	3.434 87.22	2-583715-8	—	—	—	—	4.350 110.49	4.650 118.11	5.084 129.13	583692-1	4.524 114.91	4.836 122.83	5.282 134.16	2-583660-9
31	3.000 76.20	3.200 81.28	3.534 89.76	2-583715-9	—	—	—	—	—	—	—	—	—	—	—	—
32	3.100 78.74	3.300 83.82	3.634 92.30	3-583715-0	—	—	—	—	—	—	—	—	4.836 122.83	5.148 130.76	5.594 142.09	3-583660-1
33	—	—	—	—	—	—	—	—	4.800 121.92	5.100 129.54	5.534 140.56	3-583692-1	—	—	—	—
34	3.300 83.82	3.500 88.90	3.834 97.38	3-583715-2	—	—	—	—	—	—	—	—	—	—	—	—
35	3.400 83.36	3.600 91.44	3.934 99.92	3-583715-3	—	—	—	—	5.100 129.54	5.400 137.16	5.834 148.18	3-583692-3	5.304 134.72	5.616 142.64	6.062 153.97	3-583660-4
36	3.500 88.90	3.700 93.98	4.034 102.46	3-583715-4	—	—	—	—	5.250 133.35	5.550 140.97	5.984 151.99	3-583692-4	5.460 138.68	5.772 146.61	6.218 157.94	583660-1
40	3.900 99.06	4.100 104.14	4.434 112.62	3-583715-8	4.875 123.83	5.125 130.18	5.509 139.93	3-583679-8	5.850 148.59	6.150 156.21	6.584 167.23	3-583692-8	—	—	—	—
41	4.000 101.60	4.200 106.68	4.534 115.16	3-583715-9	—	—	—	—	—	—	—	—	—	—	—	—
43	—	—	—	—	—	—	—	—	—	—	—	—	6.552 166.42	6.864 174.35	7.310 185.67	4-583660-1
50	4.900 124.46	5.100 129.54	5.434 138.02	4-583715-8	6.125 155.58	6.375 161.93	6.759 171.68	4-583679-8	7.350 186.69	7.650 194.31	8.084 205.33	4-583692-8	7.644 194.16	7.956 202.08	8.402 213.41	4-583660-8
80	7.900 200.66	8.100 205.74	8.434 214.22	5-583715-7	—	—	—	—	—	—	—	—	—	—	—	—

Note: Other connector sizes can be made available, consult Tyco Electronics.

**Twin Leaf Mother Board Connectors With End Caps (Continued)**

**Typical Connector and Card Guide Assembly**



\*Must be .063 [1.59] thick for use with Double Slotted Card Guides.

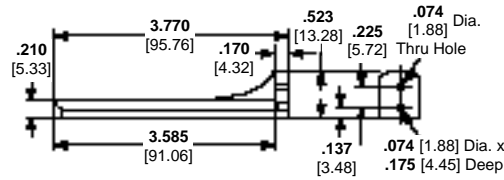
**Card Guides**

**Material:** Glass-filled nylon, black  
**Part No. 583671-1**

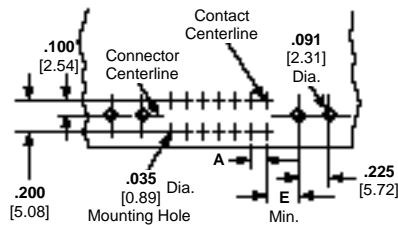
**Related Product Data:**  
**Connectors used with**—page 65

**Technical Documents:**  
(pages 186, 187):  
Instruction Sheets 408-7498,  
408-7506

**Single Slotted**



**Single Slotted Card Guide and Connector Mounting**



Dimensions	
A	E
.100	.263
2.54	6.68
.125	.288
3.18	7.31
.150	.313
3.81	7.95
.156	.319
3.96	8.10

*Electronics*

**Twin Leaf Mother Board Connectors** (Continued)

**Card Guides**

(Continued)

**Material:** Nylon, natural

**Part No. 583425-1**

**Related Product Data:**

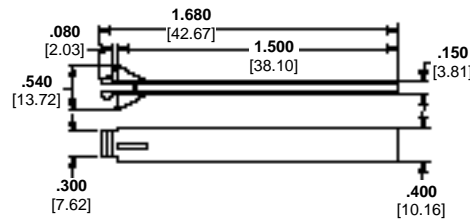
**Connectors used with**—page 65

**Technical Documents:**

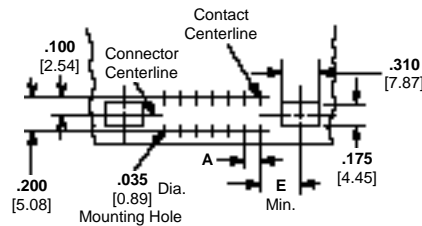
(pages 186, 187):

Instruction Sheets 408-7498,  
408-7506

**Double Slotted Without Stand-off**



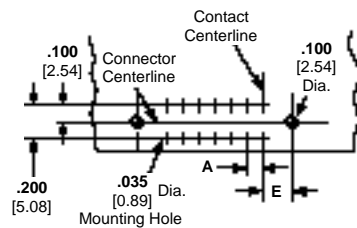
**Double Slotted Card Guide and Connector Mounting**



Dimensions	
A	E
.100 2.54	.328 8.33
.125 3.18	.353 8.96
.150 3.81	.376 9.60
.156 3.96	.384 9.75

**Note:** Mother Board must be **.063 [1.59]** thick for use with Double Slotted Card Guides.

**Recommended PC Board Layout for Connectors With End Caps**



Dimensions	
A	E
.100 2.54	.267 6.78
.125 3.18	.317 8.05
.150 3.81	.367 9.32
.156 3.96	.379 9.62

**Keying Plugs**

**Material:** Nylon, natural

**Technical Documents:**  
(pages 186, 187):  
Instruction Sheet 408-7479



Type A



Type B

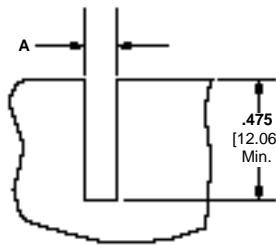


On-Contact

Intercontact

In-Row Contact Spacing	Type of Contact	Connector Style*		Intercontact Keying Plug			On-Contact Keying Plug	
		with End Caps	without End Caps	Type A Part Numbers	Type B Part Numbers	Insertion/Extraction Tool	Part Numbers	Insertion/Extraction Tool
.100 2.54	Solder Post	583715	583485	530286-3	—	91081-2	583714-1	91088-1
	Card Extender	530268	530291					
.125 3.18	Solder Post	583679	583533	530286-2	530030-1	91081-1	583714-1	91088-1
	Card Extender	530265	530290					
.150 3.81	Solder Post	583692	583407	530286-2	530030-1	91081-1	—	—
	Wrap-Type Post	583754	583752					
	Card Extender	530278	530270					
.156 3.96	Solder Post	583660	583486	530286-2	530030-1	91081-1	—	—
	Wrap-Type Post	583755	583753					
	Card Extender	530267	530282					

\*Refer to pages 66-68, as applicable, for specific connector sizes.



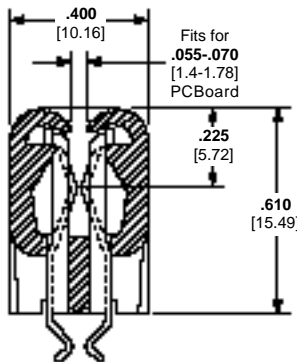
Connector Centerlines	Dimension A	
	Intercontact	On-Contact
.100	.040	.129
2.54	1.02	3.28
.125	.050	.129
3.18	1.27	3.28
.150	.050	.160
3.81	1.27	4.06
.156	.050	.160
3.96	1.27	4.06

Recommended PC Board Cutout for Keying Plugs

**Other Twin Leaf Mother Board Connectors**

For more information on the connectors shown here, consult Tyco Electronics.

**Card Extender Connectors**



**Connectors With End Caps**

Centerlines	Part Number Series*
.150 3.81	530278
.156 3.96	530267

\*Consult Tyco Electronics for specific connector sizes.

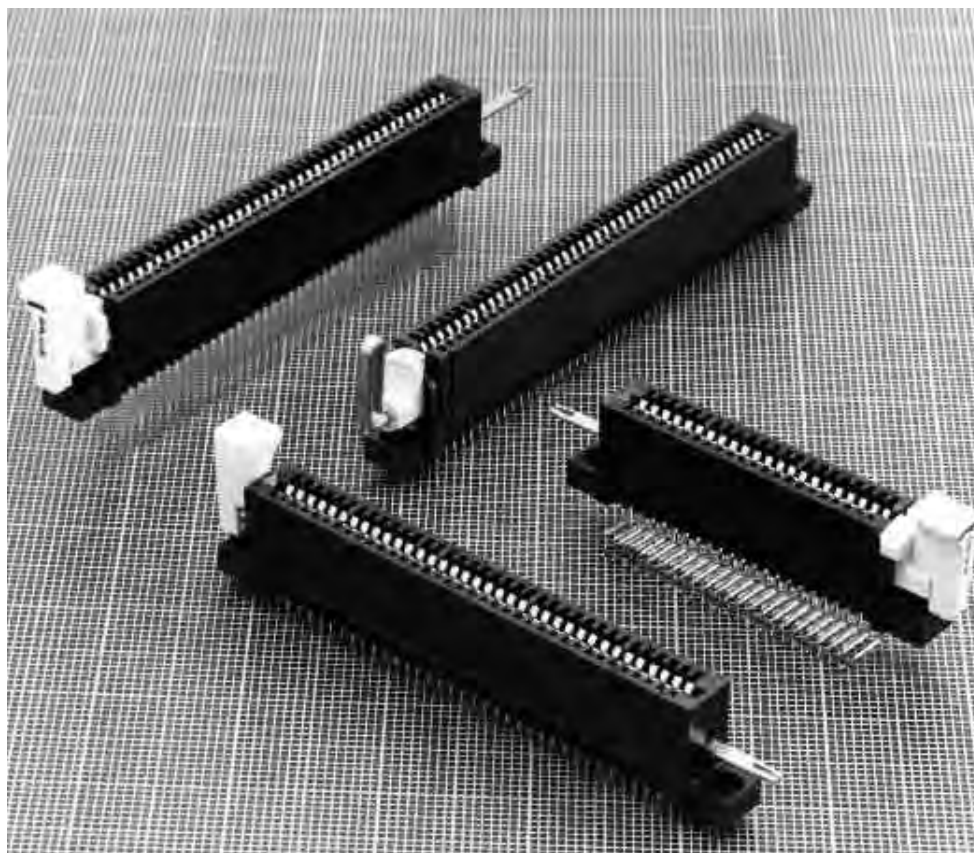


**Rotary Cam ZIF Connectors**

Solder Type Board-to-Board Connectors

**Product Facts**

- Zero insertion force; little or no effort required to insert and withdraw PC boards
- Reduced pad wear for extended board life
- Allows all four sides of board to be used for input/output functions
- Accepts double-sided boards
- Three contact styles to choose from: vertical solder post, right-angle solder post and wrap-type post (2 and 3 high)
- Available in .100 [2.54], .125 [3.18] and .156 [3.96] centerlines
- Three configurations available: open one end, open both ends and closed both ends
- Products indicated are recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476



**Performance Specifications**

**Current vs. Temperature Rise\*:**  
3 amperes at 30°C

**Operating Temperature:**  
-55°C to +105°C

**Contact Resistance:**  
20 milliohms max.

**Durability:** Tested to 5000 cycles

AMP Rotary Cam Zero Insertion Force (ZIF) Card Edge Connectors are available in sizes to fit most industry-standard printed circuit boards. A clockwise rotation of the cam handle opens contacts to allow zero-force insertion or removal of PC boards—even boards with a large number of contacts. Turning the cam handle to close the connector locks the board securely in place. Rotary Cam ZIF Connectors accept double-sided PC boards .054-.070 [1.37-

1.78] thick, with contact centerline intervals of .100 [2.54], .125 [3.18] and .156 [3.96]. Row-to-row spacing of connector posts is .200 [5.08] for .100 [2.54] and .156 [3.96] connectors and .250 [6.35] for .125 [3.18] connectors.

Contacts are nickel underplated phosphor bronze with gold plate in the contact area and tin-lead plated posts. Contact configurations include vertical and right-angle solder posts and wrap-type posts. Preassembled connectors

feature housings made from 94V-0 rated glass-filled polyester and mounting ears for easy mounting to the mother board. Housings are available with one end open, both ends open and both ends closed for side and top daughter board insertion. Integral board locks secure boards in the connectors. Accessories include dust covers, cam rods (with and without boots) and cam keys for nut-driver actuation and for tandem operation of connectors.

\*Consult Tyco Electronics engineering when paralleling contacts for power applications.

*Electronics*

**Rotary Cam ZIF Connectors, .100 x .200 [2.54 x 5.08] Centerline**

**Vertical Connector,  
Solder Post Terminals**

**Material and Finish:**

**Housing**—Glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated .000030 [0.00076] gold per MIL-G-45204 in contact area; .000100 [0.00254] tin-lead per MIL-P-81728 on post with entire contact underplated .000050 [0.00127] nickel per QQ-N-290

**Related Product Data:**

**Board Lock Feature**—On connectors open one end and open both ends

**Daughter PC Board**—.054-.070 [1.37-1.78] thick

**Performance Specifications**—page 73

**Dust Cover**—page 79

**PC Board Hole Layout and Edge Patterns**—pages 81, 82

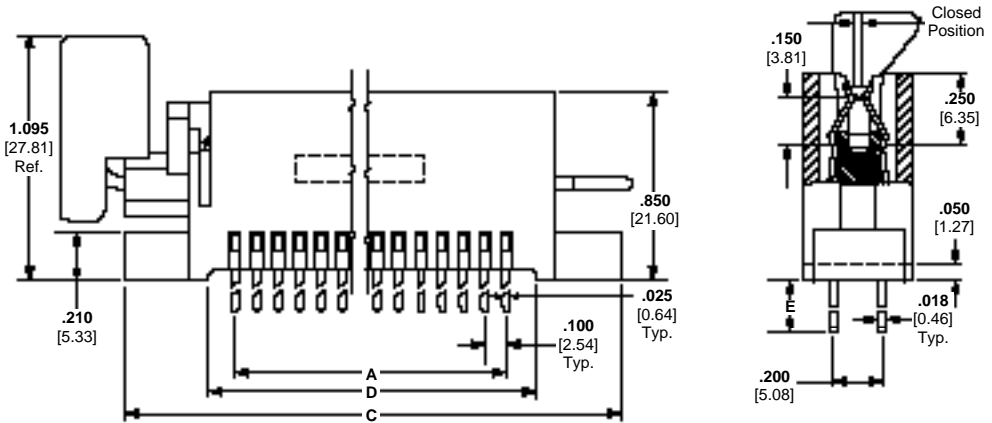
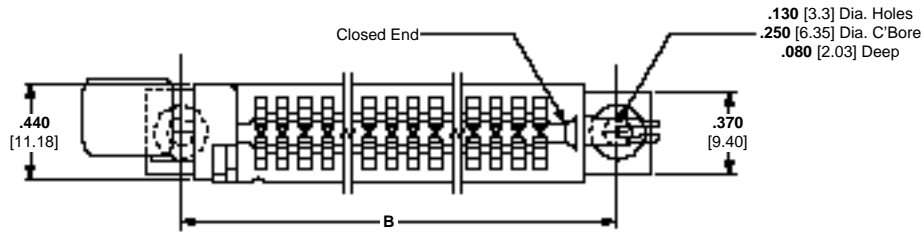
**Special Application**—pages 82, 96

**Technical Documents:**

(pages 186, 187):

Product Specification  
108-9048

Instruction Sheet 408-7911



No. of Dual Positions	Dimensions					Part Numbers		
	A	B	C	D	E*	Open One End <sup>1</sup>	Open Both Ends <sup>1</sup>	Closed Both Ends
22	2.100	2.800	3.100	2.300	.125	531020-1	—	531019-1
	53.34	71.12	78.74	58.42	.160	1-531020-1	—	—
25	2.400	3.100	3.400	2.600	.125	531020-2	—	531019-2
	60.96	78.74	86.36	66.04	.160	1-531020-2	—	—
28	2.700	3.400	3.700	2.900	.160	1-531020-3	—	—
	68.58	86.36	93.98	73.66				
31	3.000	3.700	4.000	3.200	.160	2-531020-1	—	—
	76.20	93.98	101.60	81.28				
36	3.500	4.200	4.500	3.700	.125	3-531020-2	—	531019-4
	88.90	106.68	114.30	93.98	.160	1-531020-4	—	—
40	3.900	4.600	4.900	4.100	.125	531020-5	—	—
	99.06	116.84	124.46	104.14	.160	1-531020-5	—	—
43	4.200	4.900	5.200	4.400	.125	3-531020-3	—	—
					.160	1-531020-7	—	—
					.160	2-531020-8 <sup>2</sup>	—	—
50	4.900	5.600	5.900	5.100	.125	531020-8	531021-8	—
					.160	1-531020-8	—	1-531019-8
					.160	2-531020-9 <sup>2</sup>	—	—
60	5.900	6.600	6.900	6.100	.160	1-531020-9	1-531021-9	1-531019-9
					.125	1-531020-0	—	—
65	6.400	7.100	7.400	6.600	.160	2-531020-0	—	—
					.160	3-531020-0 <sup>2</sup>	—	—
					.160	—	—	—

\*Metric equivalents in millimeters for post lengths E are .125 = [3.18]; .160 = [4.06].

<sup>1</sup>Recognized under the Component Program of Underwriters Laboratories Inc.

<sup>2</sup>Connectors without cam rod and boardlock.

**Notes:** 1. Connector with card slot open one end is shown for illustration purposes.

2. Other connector sizes can be made available, consult Tyco Electronics.

**Rotary Cam ZIF Connectors, .100 x .200 [2.54 x 5.08] Centerline (Continued)**

**Right-Angle Connector,  
Solder Post Terminals**

**Material and Finish:**

**Housing**—Glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated .000030 [0.00076] gold per MIL-G-45204 in contact area; .000100 [0.00254] tin-lead per MIL-P-81728 on post with entire contact underplated .000050 [0.00127] nickel per QQ-N-290

**Related Product Data:**

**Board Lock Feature**—On connectors open one end and open both ends

**Daughter PC Board**—.054-.070 [1.37-1.78] thick

**Performance Specifications**—page 73

**Dust Cover**—page 79

**PC Board Hole Layout and Edge Patterns**—pages 81, 82

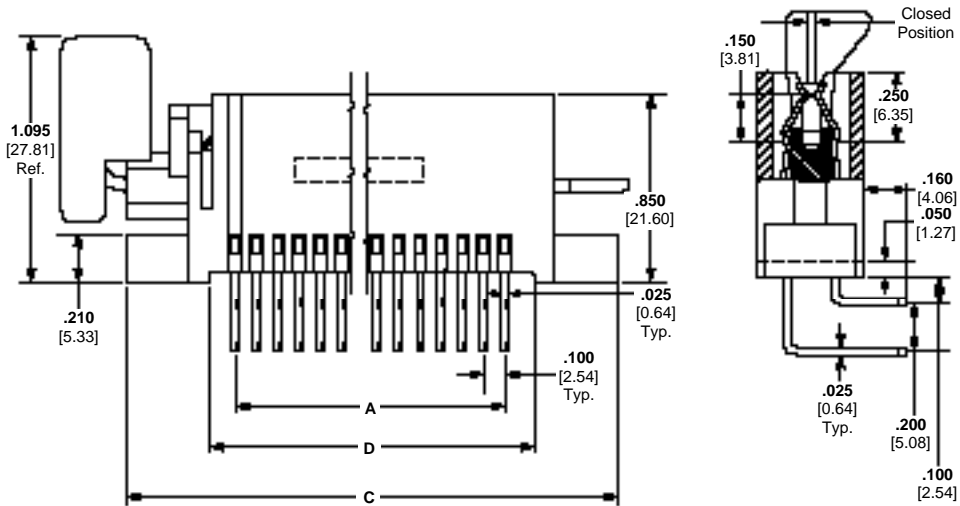
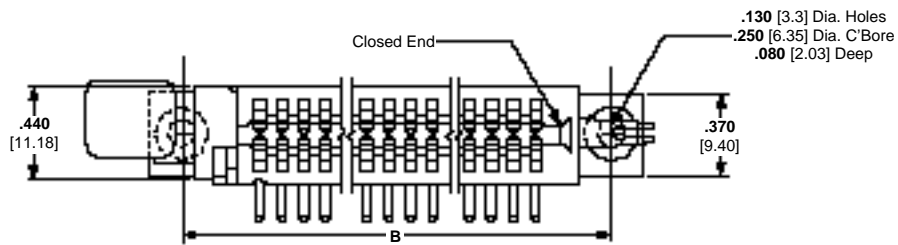
**Special Application**—page 82, 96

**Technical Documents:**

(pages 186, 187):

Product Specification 108-9048

Instruction Sheet 408-7911



No. of Dual Positions	Dimensions				Bend Right	Part Numbers (Open End <sup>1</sup> )
	A	B	C	D		
25	2.400 60.96	3.100 78.74	3.400 86.36	2.800 71.12	R	531395-2 <sup>3</sup>
36	3.500 88.90	4.200 106.68	4.500 114.30	3.700 93.98	R	531396-4
50	4.900 124.56	5.600 142.24	5.900 149.86	5.100 129.54	L	1-531396-8
65	6.400 162.56	7.100 180.34	7.400 187.96	6.600 167.64	R	1-531396-0

<sup>1</sup>Recognized under the Component Program of Underwriters Laboratories Inc.

- Notes:**
1. Connector with card slot open one end is shown.
  2. Other connector sizes can be made available, consult Tyco Electronics.
  3. Open both ends.

**Vertical Connector,  
Wrap-Type Post Terminals**

**Material and Finish:**

**Housing**—Glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated .000030 [0.00076] gold per MIL-G-45204 in contact area; .000100 [0.00254] tin-lead per MIL-P-81728 on post with entire contact underplated .000050 [0.00127] nickel per QQ-N-290

**Related Product Data:**

**Board Lock Feature**—On connectors open one end and open both ends

**Daughter PC Board**—.054-.070 [1.37-1.78] thick

**Performance Specifications**—page 73

**Dust Cover**—page 79

**PC Board Hole Layout and Edge Patterns**—pages 81, 82

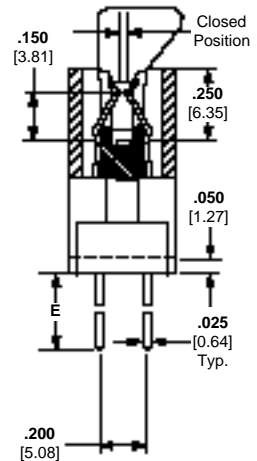
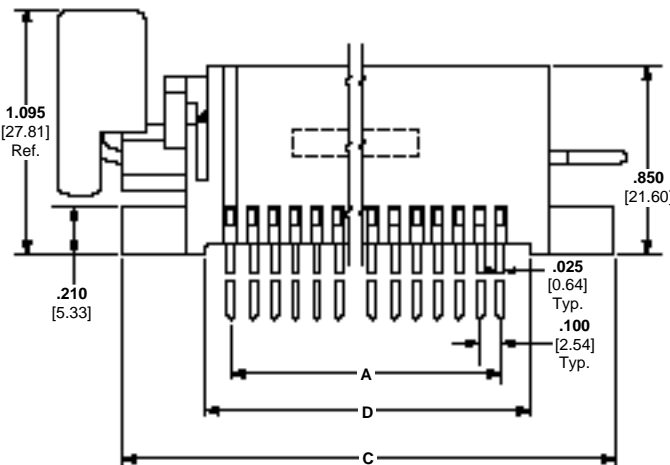
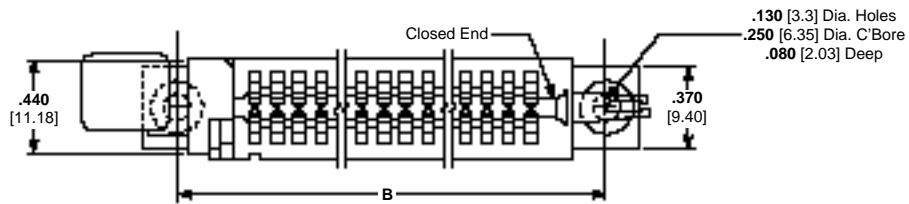
**Special Application**—pages 82, 96

**Technical Documents:**

(pages 186, 187):

Product Specification 108-9048

Instruction Sheet 408-7911



No. of Dual Positions	Dimensions					Part Numbers	
	A	B	C	D	E*	Open One End <sup>1</sup>	Open Both Ends <sup>1</sup>
25	2.400 60.96	3.100 78.74	3.400 86.36	2.600 66.04	.380	1-531414-2	—
36	3.500 88.90	4.200 106.68	4.500 114.30	3.700 93.98	.580 .380	531414-4 1-531414-4	531415-4 —
40	3.900 99.06	4.600 116.84	4.900 124.46	4.100 104.14	.580	531414-5	—
42	4.100 104.14	4.800 121.92	5.100 129.54	4.300 109.22	.380	1-531414-6	—
50	4.900 124.46	5.600 142.24	5.900 149.86	5.100 129.54	.580	2-531414-4	531415-8
60	5.900 149.86	6.600 167.64	6.900 175.26	6.100 154.94	.580	531414-9	—
65	6.400 162.56	7.100 180.34	7.400 187.96	6.600 167.64	.580	1-531414-0	—

\*Metric equivalents in millimeters for post lengths E are .580 = [14.73] (3-high wrap-type); .380 = [9.65] (2-high wrap-type).

<sup>1</sup>Recognized under the Component Program of Underwriters Laboratories Inc.

**Notes:** 1. Connector with card slot open one end is shown for illustration purposes.  
2. Other connector sizes can be made available, consult Tyco Electronics.

Solder Type Board-to-Board Connectors

**Rotary Cam ZIF Connectors, .125 x .250 [3.18 x 6.35] Centerline**

**Vertical Connector,  
Solder Post Terminals**

**Material and Finish:**

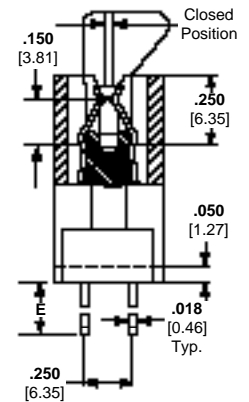
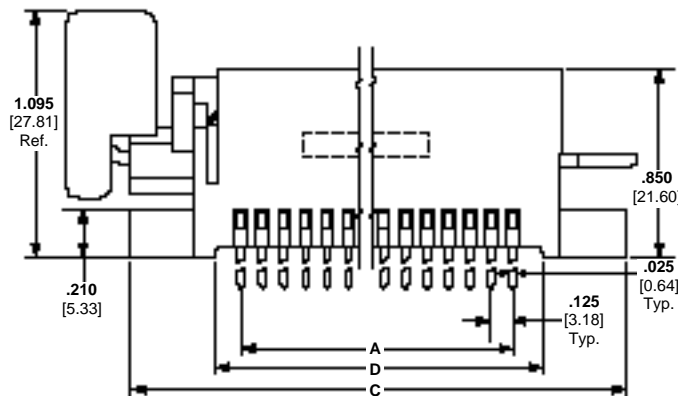
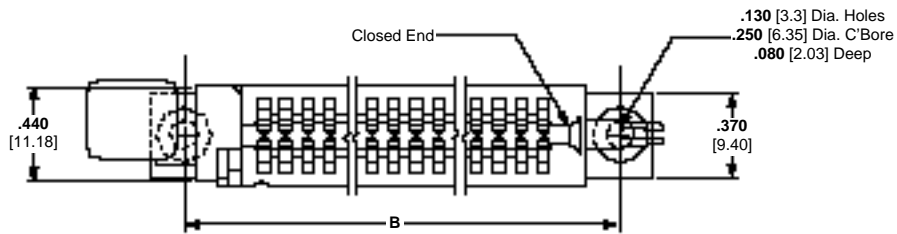
**Housing**—Glass-filled polyester, 94V-0 rated  
**Contacts**—Phosphor bronze, plated .000030 [0.00076] gold per MIL-G-45204 in contact area; .000100 [0.00254] tin-lead per MIL-P-81728 on post with entire contact underplated .000050 [0.00127] nickel per QQ-N-290

**Related Product Data:**

**Board Lock Feature**—On connectors open one end and open both ends  
**Daughter PC Board**—.054-.070 [1.37-1.78] thick  
**Performance Specifications**—page 73  
**Dust Cover**—page 79  
**PC Board Hole Layout and Edge Patterns**—pages 81, 82  
**Special Application**—pages 82, 96

**Technical Documents:**

(pages 186,187):  
 Product Specification 108-9048  
 Instruction Sheet 408-7911



No. of Dual Positions	Dimensions					Part Numbers	
	A	B	C	D	E*	Open One End <sup>1</sup>	Open Both Ends <sup>1</sup>
28	3.375 85.73	4.125 104.76	4.425 112.40	3.625 92.08	.125	—	531024-3
30	3.625 92.08	4.375 111.13	4.675 118.75	3.875 98.43	.125	531023-4	—
40	4.875 123.83	5.625 142.88	5.925 150.50	5.125 130.18	.160	1-531023-4	1-531024-4

\*Metric equivalents in millimeters for post lengths E are .125 = [3.18]; .160 = [4.06].

<sup>1</sup>Recognized under the Component Program of Underwriters Laboratories Inc.

**Notes:** 1. Connector with card slot open one end is shown for illustration purposes.  
 2. Other connector sizes can be made available, consult Tyco Electronics.

**Rotary Cam ZIF Connectors, .156 x .200 [3.96 x 5.08] Centerline**

**Vertical Connector,  
Solder Post Terminals**

**Material and Finish:**

**Housing**—Glass-filled polyester, 94V-0 rated  
**Contacts**—Phosphor bronze, plated .000030 [0.00076] gold per MIL-G-45204 in contact area; .000100 [0.00254] tin-lead per MIL-P-81728 on post with entire contact underplated .000050 [0.00127] nickel per QQ-N-290

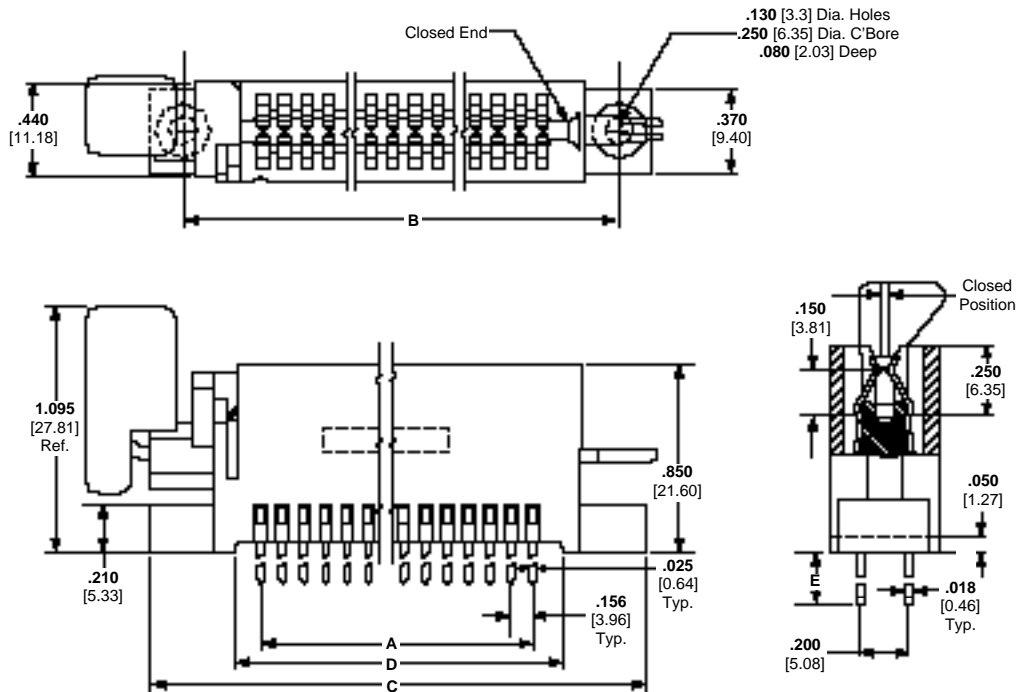


**Related Product Data:**

- Board Lock Feature**—On connectors open one end and open both ends
- Daughter PC Board**—.054-.070 [1.37-1.78] thick
- Performance Specifications**—page 73
- Dust Cover**—page 79
- PC Board Hole Layout and Edge Patterns**—pages 81, 82
- Special Application**—pages 82, 96

**Technical Documents:**

- (pages 186, 187):
- Product Specification 108-9048
- Instruction Sheet 408-7911



No. of Dual Positions	Dimensions					Part Numbers		
	A	B	C	D	E*	Open One End <sup>1</sup>	Open Both Ends <sup>1</sup>	Closed Both Ends
22	3.276	4.088	4.388	3.588	.125	531025-3	—	—
	83.21	103.83	111.46	91.14	.160	531025-9	—	531007-9
36	5.460	6.272	6.572	5.772	.160	—	1-531026-1	—
	138.68	159.31	166.93	146.61	.160	—	1-531026-1	—
43	6.552	7.364	7.664	6.864	.125	531025-6	—	—
	166.42	187.05	194.67	174.35	.125	531025-6	—	—

\*Metric equivalents in millimeters for post lengths E are .125 = [3.18]; .160 = [4.06].

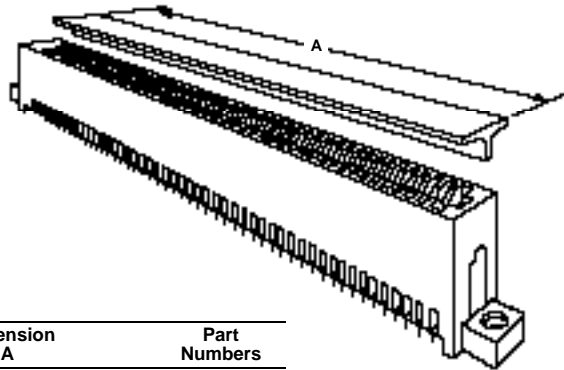
<sup>1</sup>Recognized under the Component Program of Underwriters Laboratories Inc.

- Notes:** 1. Connector with card slot open one end is shown for illustration purposes.  
 2. Other connector sizes can be made available, consult Tyco Electronics.

**Accessories**

**Dust Covers**

**Material:** Rigid vinyl, black



Dimension A	Part Numbers
11.050 280.67	531863-2
48.000 1219.20	531863-1

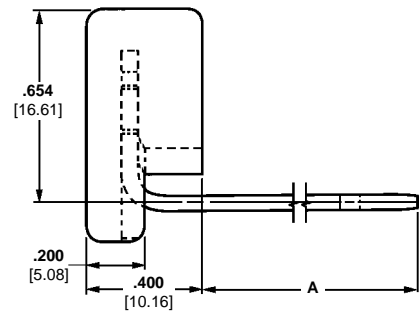
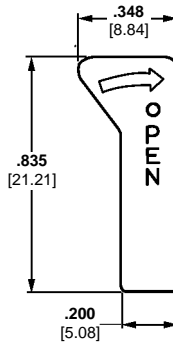
**Note:** Other lengths can be made available upon request, consult Tyco Electronics.

**Cam Rods with Boot**

**Material:**

**Cam Rod**—Stainless steel

**Boot**—Glass-filled polyester, yellow



Dimension A	Part Numbers
3.185 80.90	650083-1
3.705 94.11	650083-2
4.470 113.54	650083-3
5.285 134.24	650083-4
5.900 149.86	650083-6
5.975 151.77	532563-7

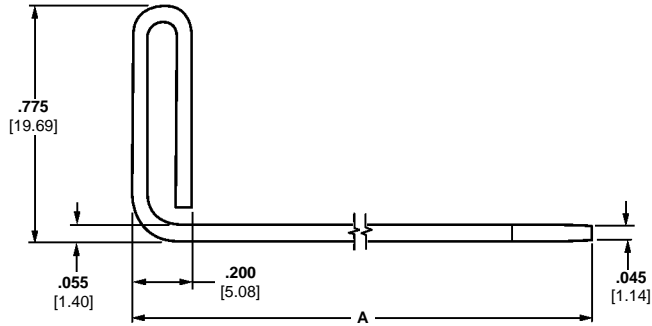
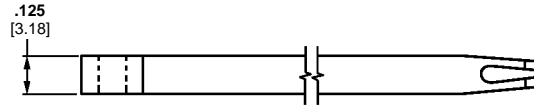
Dimension A	Part Numbers
6.385 162.18	650083-7
6.985 177.42	650083-8
7.485 190.12	650083-9
7.725 196.22	1-532563-0
8.320 211.34	1-650083-7

**Note:** Other lengths can be made available upon request, consult Tyco Electronics.

**Cam Rods without Boot**

**Material:** Stainless steel

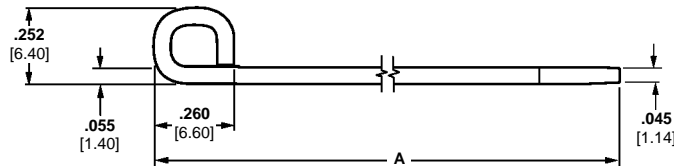
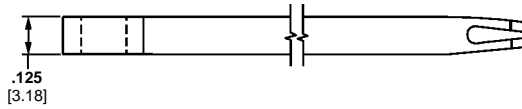
Solder Type Board-to-Board Connectors



Dimension A	Part Numbers
2.200 55.88	2-531004-8
2.700 68.58	2-531004-9
3.300 83.82	3-531004-0
4.750 120.65	531004-4
5.000 127.00	1-531004-4
5.500 139.70	531004-6

Dimension A	Part Numbers
6.000 152.40	531004-7
6.250 158.75	1-531004-6
6.750 171.45	1-531004-7
8.250 209.55	3-531004-2
12.500 317.50	2-531004-0

**Note:** Other lengths can be made available upon request, consult Tyco Electronics.



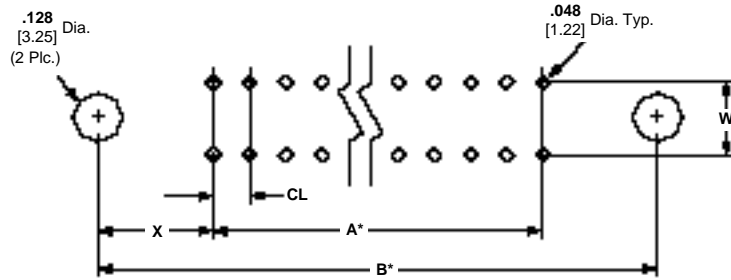
Dimension A	Part Numbers
3.380 85.85	645293-3
4.50 114.30	645293-8
5.200 132.08	645293-6
6.90 175.30	645293-7
13.120 333.25	645293-5

**Note:** Other lengths can be made available upon request, consult Tyco Electronics.



**Recommended PC Board Hole Layouts**

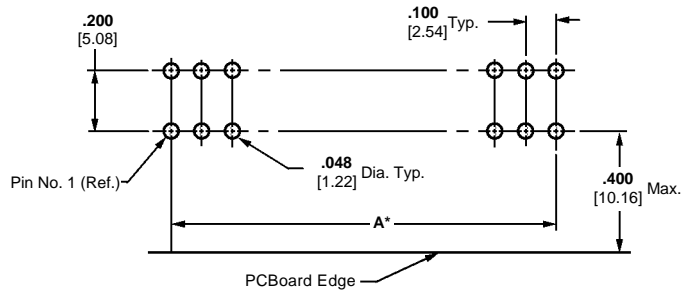
**Mother Board Hole Layout, Vertical Through-Board Connectors**



\*Refer to individual connector specifications.

CL	W	X
.100 2.54	.200 5.08	.350 8.89
.125 2.18	.250 6.35	.375 9.53
.156 3.96	.200 5.08	.406 10.31

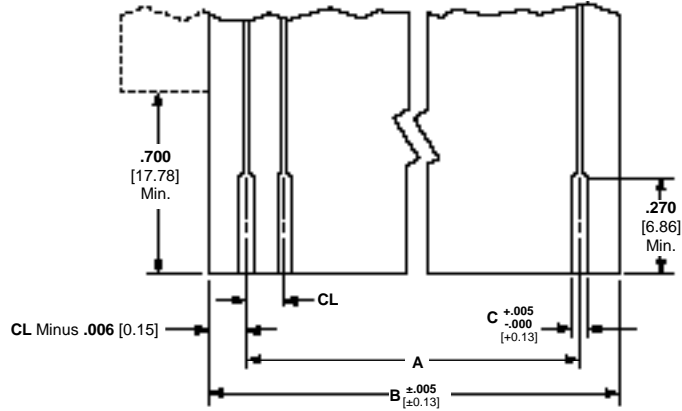
**Mother Board Hole Layout, Right-Angle Through-Board Connectors**



\*Refer to individual connector specifications.

**Recommended PC Board Edge Pattern**

**Daughter Board Edge Pattern**



No. of Dual Positions	CL = .100 [2.54] C = .050 [1.27]		CL = .125 [3.18] C = .078 [1.98]		CL = .156 [3.96] C = .094 [2.39]	
	A	B	A	B	A	B
22	2.100 53.34	2.288 58.12	—	—	3.267 83.21	3.576 90.83
25	2.400 60.96	2.588 65.74	—	—	—	—
28	2.700 68.58	2.888 73.36	3.375 85.73	3.613 91.77	—	—
30	—	—	3.625 92.08	3.863 98.12	—	—
31	3.000 76.20	3.188 80.98	—	—	—	—
36	3.500 88.90	3.688 93.68	—	—	5.460 138.68	5.760 146.30
40	3.900 99.06	4.088 103.84	4.875 123.83	5.113 129.87	—	—
43	4.200 106.68	4.388 111.46	—	—	6.552 166.42	6.852 174.04
50	4.900 124.46	5.088 129.24	—	—	—	—
60	5.900 149.86	6.088 154.64	—	—	—	—
65	6.400 162.56	6.588 167.34	—	—	—	—

**Special Application**

**Tandem Application**



**Note:** Contact Tyco Electronics for information concerning special tandem connectors.

**Linear ZIF Connectors**

**Product Facts**

- Minimizes force needed to install and remove printed circuit boards
- Available in lever and bell crank styles
- Lever styles allow side and top card entry
- Wiping action contacts enhance electrical properties
- Contacts on .100 x .100 [2.54 x 2.54] or .125 x .125 [3.18 x 3.18] centers
- .025 [0.64] square posts
- Accepts PC boards from .054 to .070 [1.37 to 1.78] in thickness
- Normally closed design leaves springs in relaxed position
- 50 to 175 dual positions available on .100 [2.54] centerline connectors and 40 to 140 dual positions available on .125 [3.18] centerline connectors



**Performance Specifications**

**Current vs. Temperature Rise\*:**  
3 amperes at 30°C

**Operating Temperature:**  
-65°C to +85°C

**Contact Resistance:**  
16 milliohms max.

**Durability:** Tested to 250 cycles  
(board-to-contact actuation)

AMP Linear Zero Insertion Force (ZIF) PC Board Edge Connectors are available in both lever and bell crank actuated styles and can be provided as panel assemblies, separate housings and contacts or as pre-assembled with solder post terminals.

Panel assemblies include a housing with ACTION PIN press-fit solderless contacts mounted on an epoxy board for rack application. Separate housing assemblies and ACTION PIN contacts allow customer assembly. These can be mounted as close as .625 [15.88]. More design latitude for high density application is provided by the side entry lever-type connector, permitting use of all sides of the PC board for edge-type I/O connections (see page 133). Where solder applications are

required, Tyco Electronics has a line of preassembled connectors with tin-plated solder terminals. All these configurations are available in a broad range of sizes.

With ZIF style connectors, intermittencies can occur if a contact comes to rest on a piece of foreign matter (dust and dirt particles) found on PC boards. To decrease the probability of this happening, all connectors have been designed to include a wiping contact which produces a wiping action. This action, produced by the geometry and bending movements of the beam, pushes aside debris and allows for good electrical connection by cleaning the actual point of contact.

In addition, all connectors have removable wings which make it possible to repair or replace damaged cam rails, handles, contacts

and housing modules without removing the entire housing assembly from the board.

\*Consult Tyco Electronics engineering when paralleling contacts for power applications.

**Linear ZIF Connectors, .100 x .100 [2.54 x 2.54] Centerline**

**Housing with Solder Posts**

**Lever Style, Side Entry**

**Material and Finish:**

**Housing**—Glass-filled polyester, black

**Contacts**—Copper alloy 725, plated .000015 [0.00038] min. gold per MIL-G-45204 in contact area; .000100 [0.00254] min. tin-lead on post with entire contact underplated .000050 [0.00127] min. nickel per QQ-N-290

**Related Product Data:**

**Daughter PC Board**—.054-.070 [1.37-1.78] thick

**Performance Specifications**—page 83

**PC Board Hole Layout and Edge Pattern**—page 88

**Special Application**—page 96



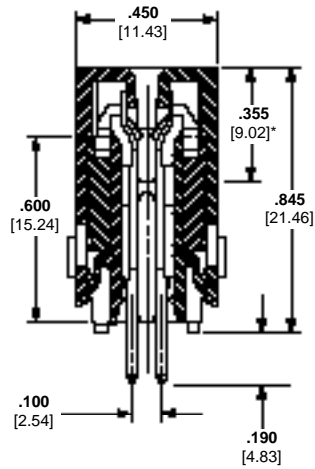
**Technical Documents:**

(pages 186, 187):

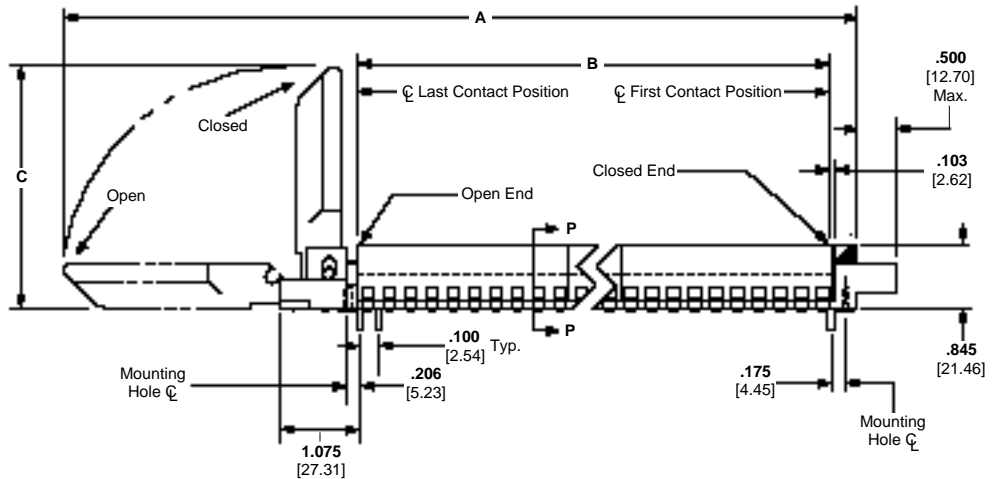
Product Specification  
108-14015

Application Specification  
114-26003

Instruction Sheets 408-2995,  
408-2999, 408-6915



Section P-P



\*Card slot depth.

No. of Dual Positions	Dimensions			Part Number
	A	B	C	
35	6.113 155.27	3.400 86.36	2.000 50.80	645135-2
80	11.613 294.97	7.900 200.66	3.000 76.20	1-645135-1
100	13.613 345.77	9.900 251.46	3.000 76.20	1-645135-5

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Linear ZIF Connectors, .100 x .100 [2.54 x 2.54] Centerline** (Continued)

**Panel Assembly**

**Material and Finish:**

**Housing**—Glass-filled polyester, black

**Contacts**—Copper alloy 725, plated .000015 [0.00038] gold per MIL-G-45204 in contact area; .000001 [0.00003] min. gold flash per MIL-G-45204 on post with entire contact under-plated .000050 [0.00127] nickel per QQ-N-290

**Related Product Data:**

**Daughter PC Board**—.054-.070 [1.37-1.78] thick

**Performance Specifications**—page 83

**PC Board Hole Layout and Edge Pattern**—page 88

**ACTION PIN Contacts**—pages 88, 94

**Tooling**—page 95

**Special Application**—page 96

**Technical Documents:**

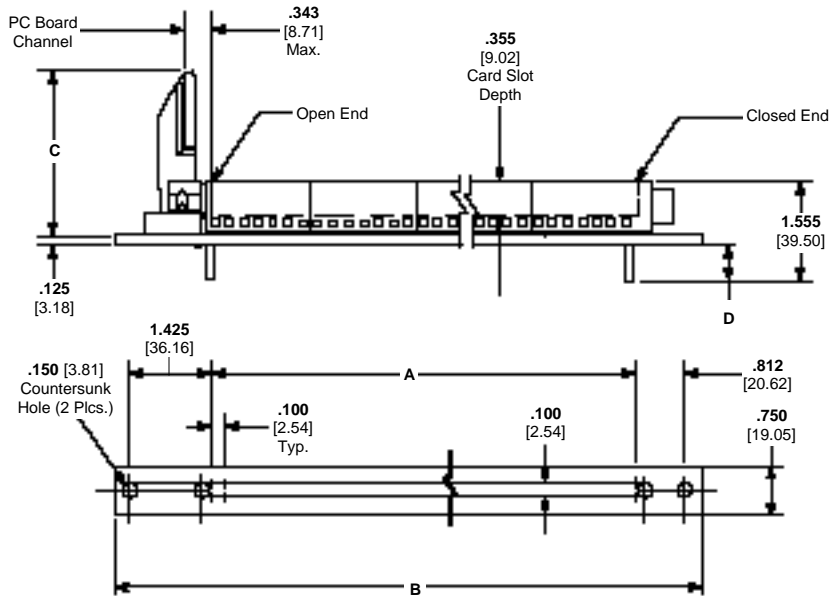
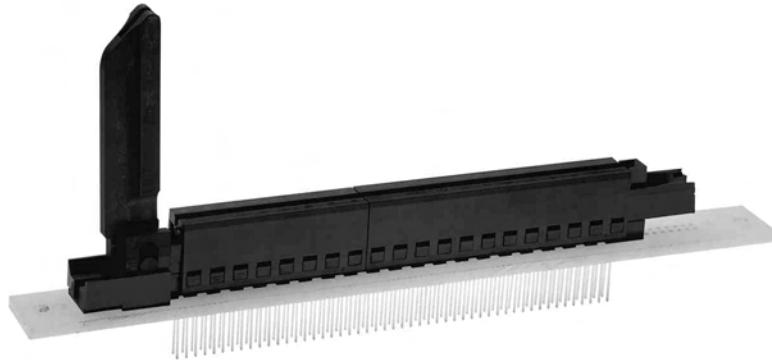
(pages 186, 187):

Product Specification  
108-14015

Application Specification  
114-26003

Instruction Sheets 408-2995,  
408-2999, 408-6915

**Lever Style, Side Entry**



No. of Dual Positions	Dimensions				Part Numbers
	A	B	C	D	
75	7.400 251.46	10.125 320.68	3.000 76.20	.615 15.62	1-645145-0
100	9.900 251.46	12.625 320.68	3.000 76.20	.615 15.62	1-645145-5
130	12.900 251.46	15.625 320.68	3.000 76.20	.615 15.62	2-645145-1
140	13.900 353.06	16.625 422.28	3.000 76.20	.615 15.62	2-645145-3
150	14.900 251.46	17.625 320.68	3.000 76.20	.615 15.62	2-645145-5
160	15.900 403.86	18.625 473.07	3.000 76.20	.615 15.62	2-645145-7
160	15.900 403.86	18.625 473.07	3.000 76.20	.455 11.56	147400-1

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Panel Assembly**

**Lever Style, Top Entry**

**Material and Finish:**

**Housing**—Glass-filled polyester, black

**Contacts**—Copper alloy 725, plated .000015 [0.00038] gold per MIL-G-45204 in contact area; .000001 [0.00003] min. gold flash per MIL-G-45204 on post with entire contact under-plated .000050 [0.00127] nickel per QQ-N-290

**Related Product Data:**

**Daughter PC Board**—.054-.070 [1.37-1.78] thick

**Performance Specifications**—page 83

**PC Board Hole Layout and Edge Pattern**—page 88

**ACTION PIN Contacts**—pages 88, 94

**Tooling**—page 95

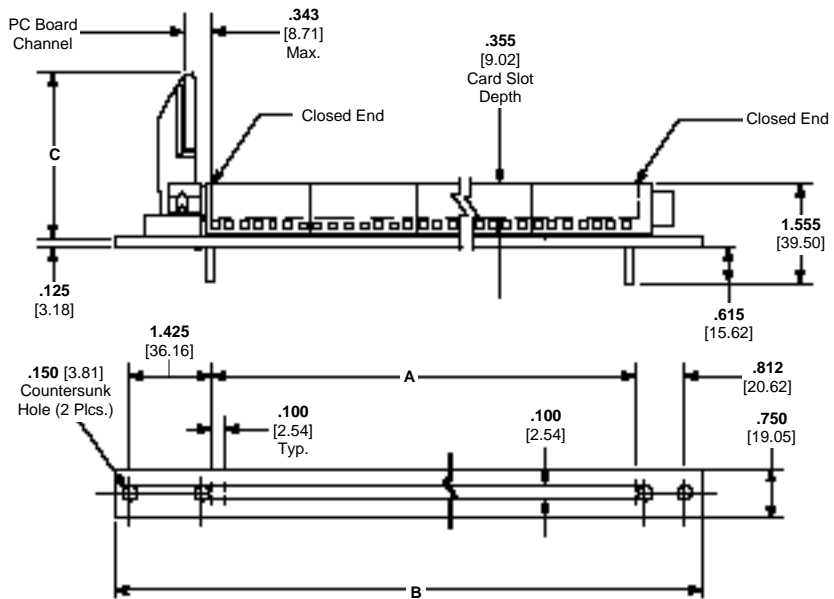
**Technical Documents:**

(pages 186, 187):

Product Specifications  
108-14015, 108-26003

Application Specification  
114-26003

Instruction Sheets 408-2995,  
408-2999, 408-6915



No. of Dual Positions	Dimensions			Part Numbers
	A	B	C	
110	10.900 276.86	13.625 346.08	3.000 76.20	1-645147-7
120	11.900 302.26	14.625 371.48	3.000 76.20	1-645147-9

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Linear ZIF Connectors, .100 x .100 [2.54 x 2.54] Centerline** (Continued)

**Housing**

**Material:** Glass-filled polyester, black

**Related Product Data:**

**Daughter PC Board**—.054-.070 [1.37-1.78] thick

**Mounting Screws**—Customer supplies, must be applied before opening connector

**Performance Specifications**—page 83

**PC Board Hole Layout and Edge Pattern**—page 88

**ACTION PIN Contacts**—pages 88, 94

**Tooling**—page 95

**Special Application**—page 96

**Technical Documents:**

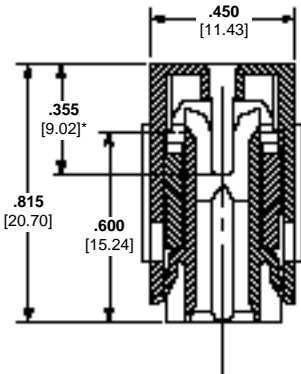
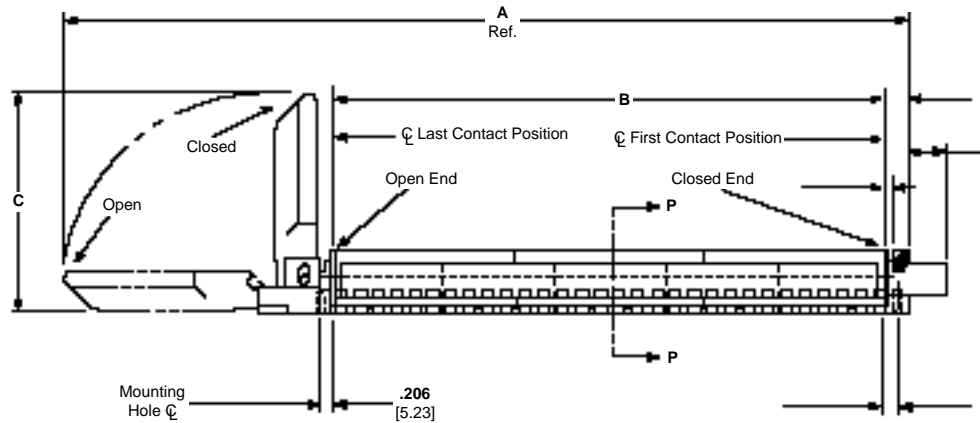
(pages 186, 187):

Product Specifications  
108-14015, 108-26003

Application Specification  
108-26003

Instruction Sheets 408-2995,  
408-2999, 408-6915

**Lever Style, Side Entry**



Section P-P

\*Card slot depth.

No. of Dual Positions	Dimensions			Part Numbers
	A	B	C	
50	7.613 193.37	4.900 124.46	2.000 50.80	645115-5
75	11.113 282.27	7.400 187.96	3.000 76.20	1-645115-0
80	11.613 294.97	7.900 200.66	3.000 76.20	1-645115-1
100	13.613 345.77	9.900 251.46	3.000 76.20	1-645115-5
110	14.613 371.17	10.900 276.86	3.000 76.20	1-645115-7 3-645115-2
115	15.113 383.87	11.400 289.56	3.000 76.20	1-645115-8
125	16.113 409.27	12.400 314.96	3.000 76.20	2-645115-0
130	16.613 421.97	12.900 327.66	3.000 76.20	2-645115-1
140	17.613 447.37	13.900 353.06	3.000 76.20	2-645115-3
160	19.613 498.17	15.900 403.86	3.000 76.20	3-645115-3
175	21.113 536.27	17.400 441.96	3.000 76.20	3-645115-0

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**ACTION PIN Contacts with Wiping Feature,  
.100 [2.54] Centerline**

**Material and Finish:**

Copper alloy 725, plated .000015 [0.00038] gold per MIL-G-45204 in contact area; .000001 [0.00003] min. gold flash per MIL-G-45204 on post with entire contact underplated .000050 [0.00127] nickel per QQ-N-290

**Related Product Data:**

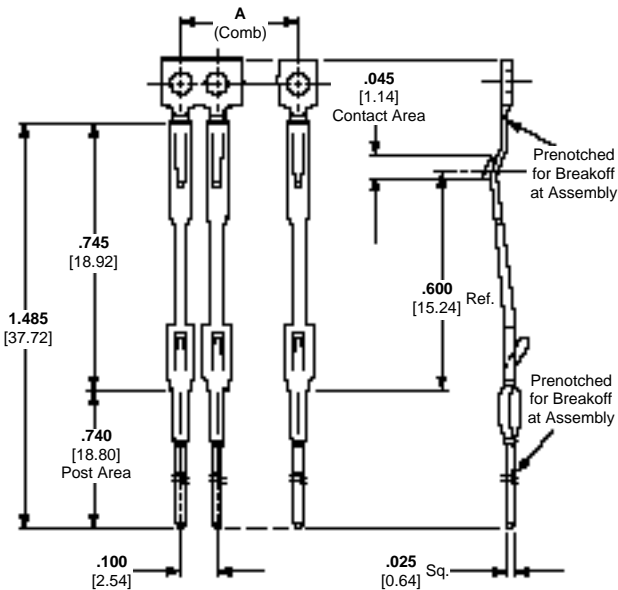
**Performance Specifications—**  
page 83

**ACTION PIN Contact Description and Application Specification—**  
page 94

**Tooling—**page 95

**Technical Documents:**

(pages 186, 187):  
Instruction Sheet 408-2665



**Contact Combs**

Number of Contacts Per Comb*	Dimension A		Part Number
55	5.400	137.16	4-119311-1

\*At least two (2) contact combs required per housing.  
**Note:** Other sizes can be made available, consult Tyco Electronics.

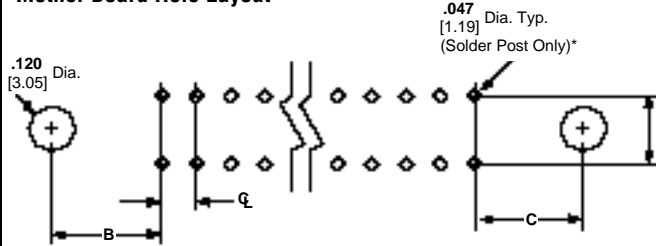
**Reeled Contacts**

Number of Contacts Per Reel	Part Number
35,000	119196-6

**Note:** Other plating combinations and thicknesses can be made available, consult Tyco Electronics.

**Recommended PC Board Hole Layout and Edge Pattern,  
.100 [2.54] Centerline**

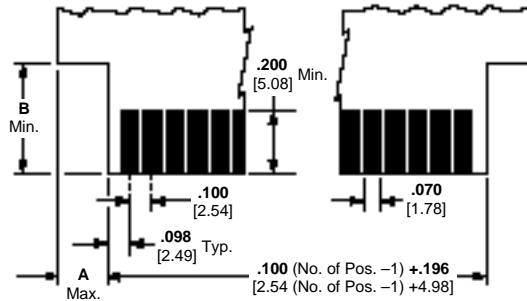
**Mother Board Hole Layout**



\*For ACTION PIN post hole diameter, see page 94.

Connector Style	Dimensions			
	CL	A	B	C
Lever	.100 2.54	.100 2.54	.206 5.23	.175 4.45

**Daughter Board Edge Pattern**



Connector Style	Entry Style	Dimensions	
		A	B
Lever	Side	.240 6.10	—
	Top	.240 6.10	.320 8.13



**Linear ZIF Connectors, .125 x .125 [3.18 x 3.18] Centerline**

**Panel Assembly**

**Lever Style, Side Entry**

**Material and Finish:**

**Housing**—Glass-filled polyester, black

**Contacts**—Copper alloy 725, plated .000015 [0.00038] gold per MIL-G-45204 in contact area; .000001 [0.00003] min. gold flash per MIL-G-45204 on post with entire contact under-plated .000050 [0.00127] nickel per QQ-N-290

**Related Product Data:**

**Daughter PC Board**—.054-.070 [1.37-1.78] thick

**Performance Specifications**—page 83

**PC Board Hole Layout and Edge Pattern**—page 93

**ACTION PIN Contacts**—pages 93, 94

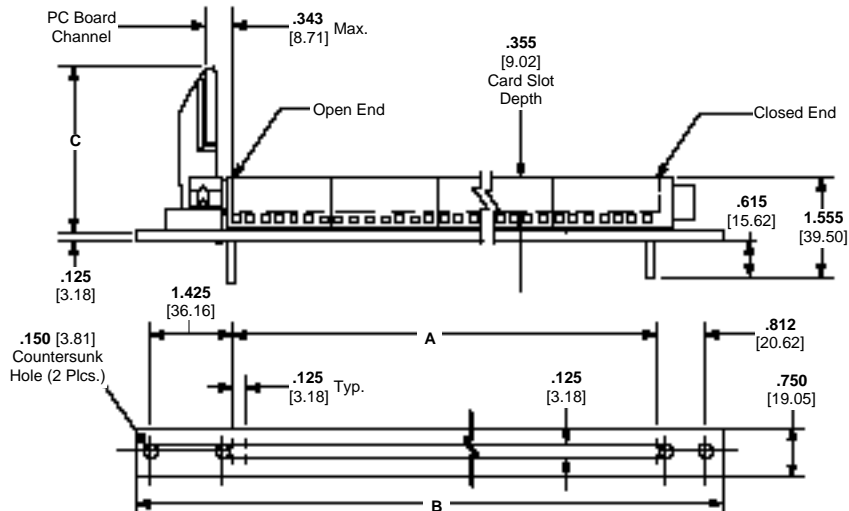
**Tooling**—page 95

**Special Application**—page 96

**Technical Documents:**

(pages 186, 187):

Instruction Sheets 408-2995, 408-6915, 408-6916



No. of Dual Positions	Dimensions			Part Numbers
	A	B	C	
40	4.875 123.83	7.625 193.68	2.000 50.80	645146-5
56	6.875 174.63	9.625 244.48	3.000 76.20	645146-9
60	7.375 187.32	10.125 257.17	3.000 76.20	1-645146-0
72	8.875 225.43	11.625 295.28	3.000 76.20	1-645146-3
84	10.375 250.83	13.125 320.68	3.000 76.20	1-645146-6
124	15.375 390.53	18.125 460.38	3.000 76.20	2-645146-6

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Panel Assembly**

**Bell Crank Style, Top Entry**

**Material and Finish:**

**Housing**—Glass-filled polyester, black

**Contacts**—Copper alloy 725, plated .000015 [0.00038] gold per MIL-G-45204 in contact area; .000001 [0.00003] min. gold flash per MIL-G-45204 on post with entire contact under-plated .000050 [0.00127] nickel per QQ-N-290

**Related Product Data:**

**Daughter PC Board**—.054-.070 [1.37-1.78] thick

**Performance Specifications**—page 83

**PC Board Hole Layout and Edge Pattern**—page 93

**ACTION PIN Contacts**—pages 93, 94

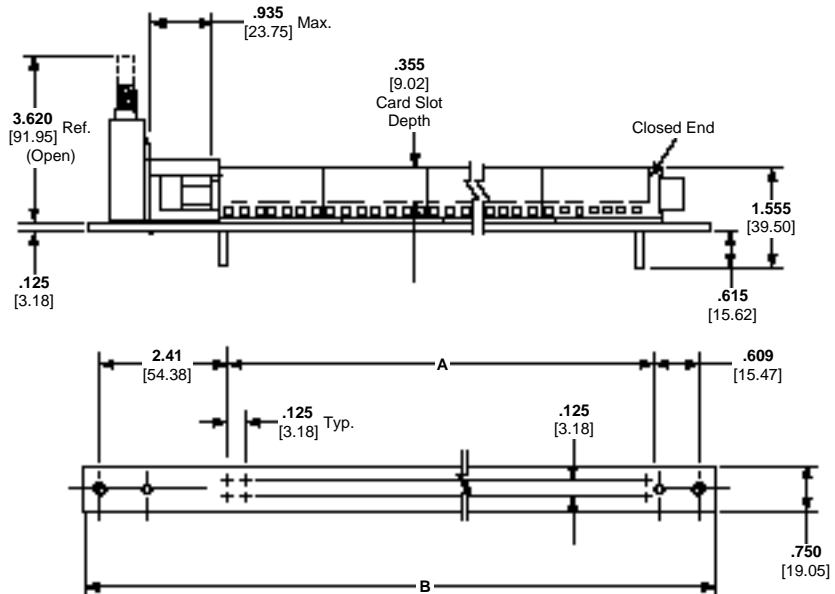
**Tooling**—page 95



**Technical Documents:**

(pages 186, 187):

Instruction Sheets 408-2995, 408-6915, 408-6916



No. of Dual Positions	Dimensions		Part Numbers
	A	B	
60	7.375 187.33	10.625 269.88	1-645149-0
80	9.875 250.82	13.125 333.38	1-645149-5
112	13.875 352.43	17.125 434.98	2-645149-3
140	17.375 441.33	20.625 523.88	3-645149-0

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

Solder Type Board-to-Board Connectors

**Linear ZIF Connectors, .125 x .125 [3.18 x 3.18] Centerline** (Continued)

**Housing**

**Material:** Glass-filled polyester, black

**Related Product Data:**

**Daughter PC Board**—.054-.070 [1.37-1.78] thick

**Mounting Screws**—Customer supplied, must be applied before opening connector

**Performance Specifications**—page 83

**PC Board Hole Layout and Edge Pattern**—page 93

**ACTION PIN Contacts**—pages 93, 94

**Tooling**—page 95

**Special Application**—page 96

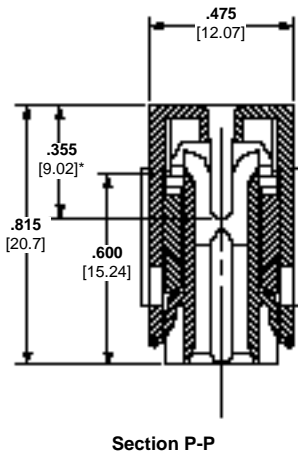
**Lever Style, Side Entry**



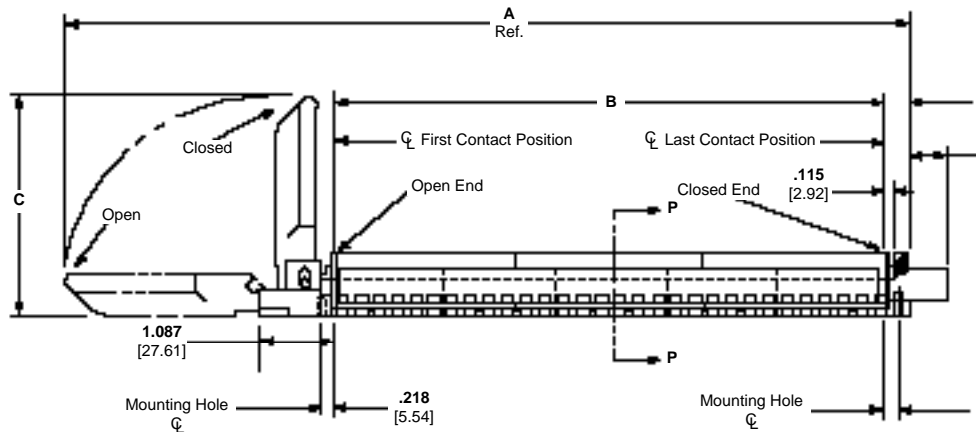
**Technical Documents:**

(pages 186, 187):

Instruction Sheets 408-2995, 408-6915, 408-6916



\*Card slot depth.



No. of Dual Positions	Dimensions			Part Number
	A	B	C	
84	14.112 358.44	10.375 263.52	3.000 76.20	1-645116-6
100	16.112 409.24	12.375 314.33	3.000 76.20	2-645116-0
112	17.612 447.34	15.775 400.68	3.000 76.20	2-645116-3
124	19.112 485.44	17.275 438.78	3.000 76.20	2-645116-6

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Housing**

**Bell Crank Style, Top Entry**

**Material:** Glass-filled polyester, black

**Related Product Data:**

**Daughter PC Board**—.054-.070 [1.37-1.78] thick

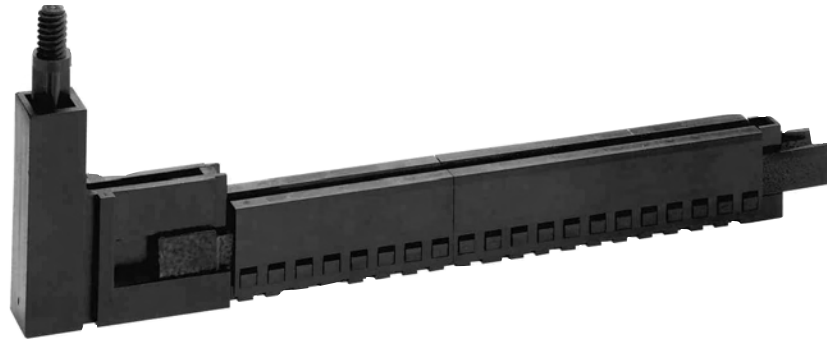
**Mounting Screws**—Customer supplied, must be applied before opening connector

**Performance Specifications**—page 83

**PC Board Hole Layout and Edge Pattern**—page 93

**ACTION PIN Contacts**—pages 93, 94

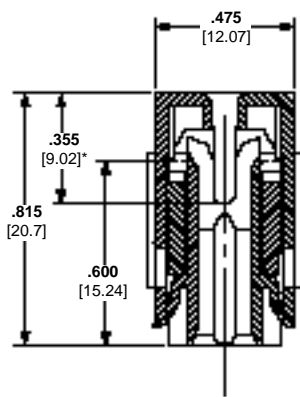
**Tooling**—page 95



**Technical Documents:**

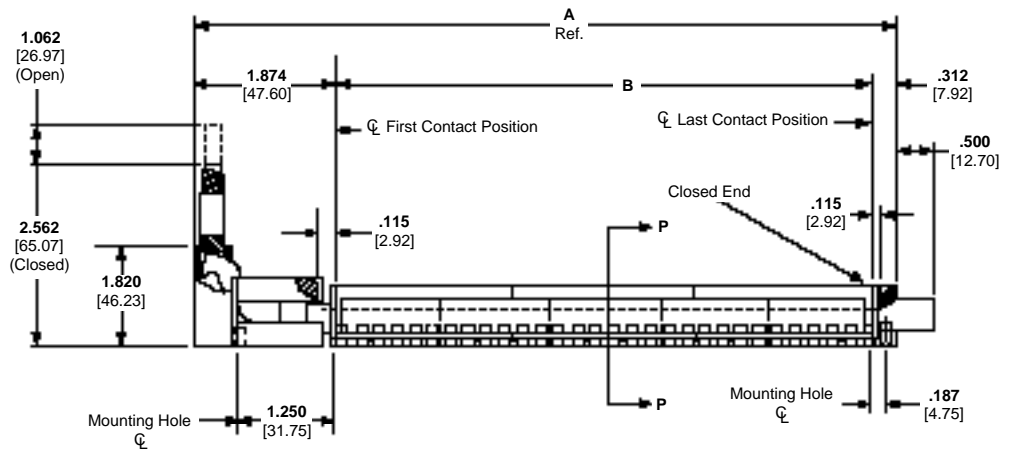
(pages 186, 187):

Instruction Sheets 408-2995, 408-6915, 408-6916



Section P-P

\*Card slot depth.



No. of Dual Positions	Dimensions		Part Numbers
	A	B	
52	<b>8.562</b> 217.47	<b>6.375</b> 161.93	645142-8
60	<b>9.562</b> 242.87	<b>7.375</b> 187.32	1-645142-0
80	<b>13.125</b> 333.37	<b>9.875</b> 250.82	1-645142-5
112	<b>16.062</b> 407.97	<b>13.875</b> 352.43	2-645142-3

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**ACTION PIN Contacts with Wiping Feature,  
.125 [3.18] Centerline**

**Material and Finish:**

Copper alloy 725, plated .000015 [0.00038] gold per MIL-G-45204 in contact area; .000001 [0.00003] min. gold flash per MIL-G-45204 on post with entire contact underplated .000050 [0.00127] nickel per QQ-N-290

**Related Product Data:**

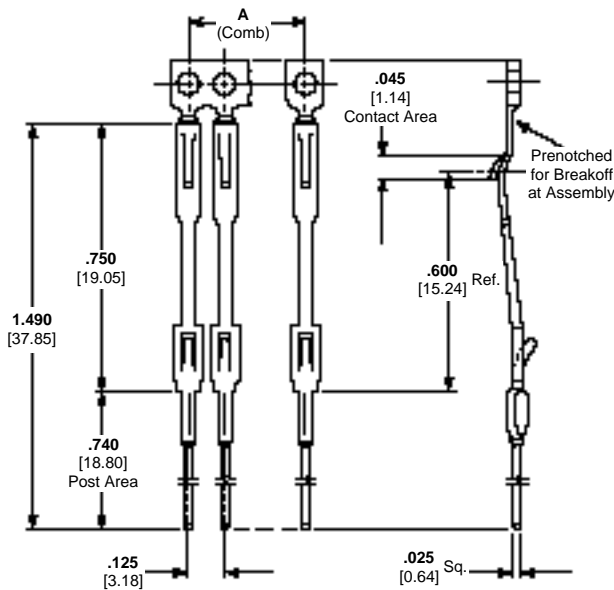
**Performance Specifications—**  
page 83

**ACTION PIN Contact Description and Application Specification—**  
page 94

**Tooling—**page 95

**Technical Documents:**

(pages 186, 187):  
Instruction Sheet 408-2665



**Contact Combs**

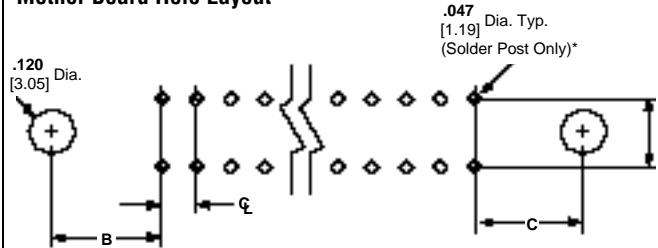
Number of Contacts Per Comb*	Dimension A	Part Number
56	6.875 174.63	1-119950-2

\*At least two (2) contact combs required per housing.

**Note:** Other sizes can be made available, consult Tyco Electronics.

**Recommended PC Board Hole Layout and Edge Pattern,  
.125 [3.18] Centerline**

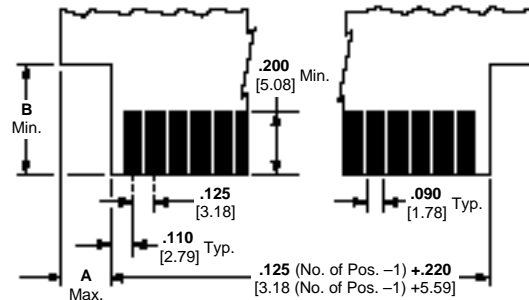
**Mother Board Hole Layout**



\*For ACTION PIN post hole diameter, see page 94.

Connector Style	Dimensions			
	ϕ	A	B	C
Lever	.125 3.18	.125 3.18	.218 5.54	.187 4.75
Bell-Crank	.125 3.18	.125 3.18	1.250 31.75	.187 4.75

**Daughter Board Edge Pattern**

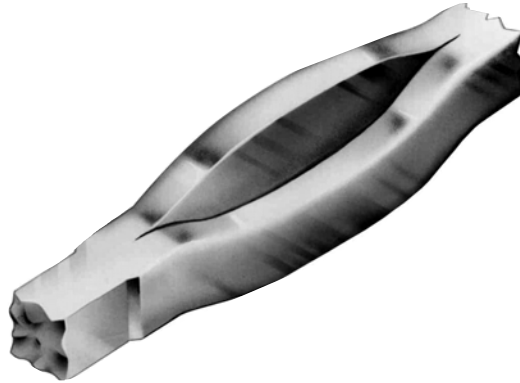


Connector Style	Entry Style	Dimensions	
		A	B
Lever	Side	.240 6.10	—
	Top	.240 6.10	.320 8.13
Bell-Crank	Top	.775 19.68	.600 15.24

Solder Type Board-to-Board Connectors

**AMP ACTION PIN  
Press-Fit Contacts**

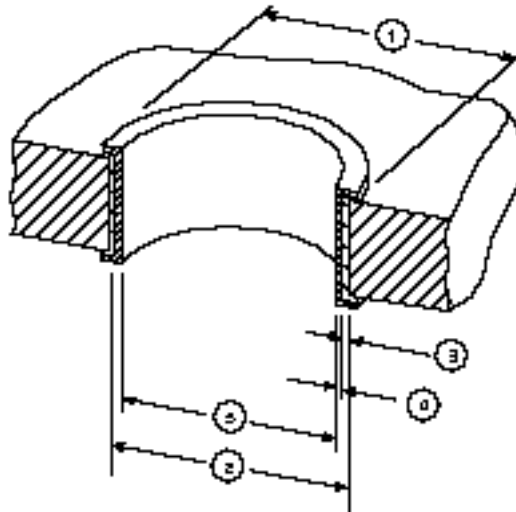
Solder Type Board-to-Board Connectors



ACTION PIN contacts provide a reliable press-fit connection. Localized pressure in the interface area entails oxide break-through and helps prevent corrosion in the harshest environments to provide a reliable connection virtually every time. Also, radial and axial distortion are controlled to meet today's standards for multilayer board applications.

**PC Board Thickness**

ACTION PIN contacts are designed for use in a variety of PC board thicknesses. However, certain ACTION PIN contacts are to be used in specific ranges of board thicknesses. To promote optimum performance, the recommended board thicknesses provided with the connector being used must be followed.



- ① Annular Ring (See Note)
- ② Drilled Hole
- ③ Copper Thickness
- ④ Tin-Lead Thickness
- ⑤ Plated Through-Hole

**ACTION PIN Contact/PC Board Applications**

Connector Type	ACTION PIN Contact Material Thickness	Drilled Hole Diameter <sup>②</sup>	Plating Thicknesses		Plated Through-Hole Diameter <sup>⑤</sup>	Radial Hole Distortion	
			Copper <sup>③*</sup>	Tin-Lead <sup>④</sup>		Average	Maximum
Linear ZIF	.025 0.64	.0453±.001 1.151±0.03	.001-.003 0.03-0.08	.0003 0.008 Min.	.037-.043 0.94-1.09	Not Specified	Not Specified

\*Maximum hardness of copper layer is 150 Knoop.

**Note:** Recommended annular ring diameter is hole diameter plus .020 [0.51].

**Linear ZIF Connectors** (Continued)

**Tooling**

Assembly tooling is not required except when using connectors with ACTION PIN contacts. ACTION PIN contact assembly requires an arbor-style bench tool with a capacity of 40 lb [178 N] per contact, a support fixture, contact applicator, carrier removal tool and housing assembly tool.

Typical procedure is to place a PC board on the support fixture, insert contact combs into the printed circuit board with the contact applicator and seat with the arbor tool. Next, remove the carrier strip from the contact combs with the carrier break-off tool. Place the housing over the contacts with the housing assembly tool, and repeat the entire process until the board is complete.

**.100 x .100 [2.54 x 2.54] Centerline Connectors**

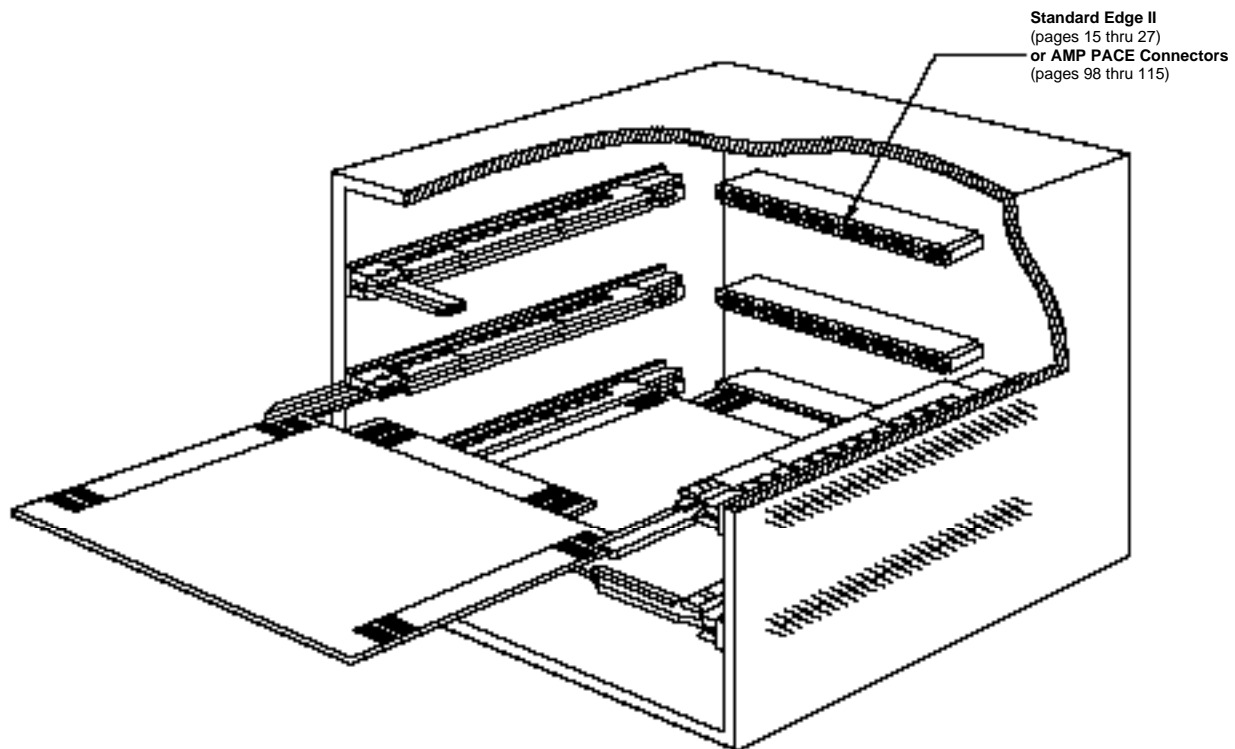
No. of Dual Positions	T-Bar Applicator	Carrier Removal Tool	Housing Assembly Tool	Housing Removal Tool	Wing Removal/Replacement Tool	Housing Insertion Tool	Contact Replacement Tools	
							With Housing	Without Housing
50	266267-4	265924-4	313136-1					
80	266267-3	265924-4	313136-2					
100	266267-4	265924-4						
110	266267-5	265924-4	313136-3					
115	266267-5	265924-4		313256-1	266233-1	266264-1	266235-1	3-265871-2
120	266267-5	265924-4						
125	266267-4	265924-4	313136-4					
140	266267-4	265924-4						
175	266267-5	265924-4	313136-5					

**.125 x .125 [3.18 x 3.18] Centerline Connectors**

No. of Dual Positions	T-Bar Applicator	Carrier Removal Tool	Housing Assembly Tool	Housing Removal Tool	Wing Removal/Replacement Tool	Housing Insertion Tool	Contact Replacement Tools	
							With Housing	Without Housing
40	313139-1	265924-4	313136-1					
52	313139-2	265924-6						
56	313139-2	265924-6	313136-2					
60	313139-2	265924-7						
72	313139-3	265924-4		313256-1	266233-1	266264-1	266235-1	3-265871-2
84	313139-2	265924-5	313136-3					
112	313139-2	265924-7	313136-4					
124	313139-2	265924-5						
140	313139-2	265924-5	313136-5					

**Linear ZIF Connectors** (Continued)**Special Application**

Use Linear and Rotary ZIF Connectors as Card Guides to access more sides of the Daughter Board.



Standard Edge II  
(pages 15 thru 27)  
or AMP PACE Connectors  
(pages 98 thru 115)



**ACTION PIN Press-Fit Contacts**

**The Reliable Plated Through-Hole Interconnect**

Solderless interconnections have been popular in electrical and electronic application with world-wide success for decades. They provide reliable electrical and mechanical stability and offer applied-cost savings across the board. For PC board applications, ACTION PIN contacts from Tyco Electronics provide these features:

- Large gas-tight contact zone
- Reliability due to stored energy in compliant pin contacts
- No damage to plated through-holes during installation
- Especially suited for multilayer PC boards
- Less costly board manufacturing due to larger hole tolerances compared to use of solid pins
- Application can be made by end-user
- Repairability—contact can be replaced in the same pin location (two repairs)
- Installation with no heat cycling of board
- Permits mass insertion by minimizing forces needed to insert pins as compared to solid pin press-fit application
- Significant applied-cost savings in many applications

Since ACTION PIN contacts do not have to be soldered, issues associated with solder are eliminated, such as:

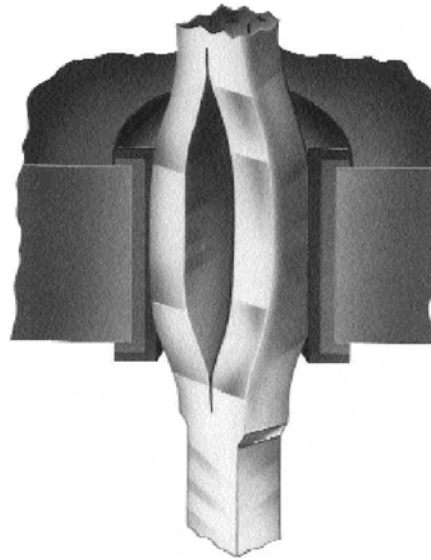
- Faulty solder joints
- Solder fumes; contaminant's are deposited on the contacts

- Solder spots; short circuits between printed circuits
- Flux residuals
- Thermal strain on printed circuit boards and components
- Degassing of plated through-holes

Solderless press-fit interconnections using the ACTION PIN contact are primarily integrated in, but not limited to, backplanes.

Solderless press-fit interconnections are used in racks, especially where connectors must be fixed on the solder side of the PC board and/or component side. In these applications, the holes for ACTION PIN contact connectors are covered during the soldering process and press-fitting is performed after soldering.

Other applications for ACTION PIN contact interconnections include PC boards that incorporate components using surface mount technology (SMT). Here, too, press-fit interconnections can be applied after soldering, thus eliminating complications associated with connectors suitable for surface mounting.

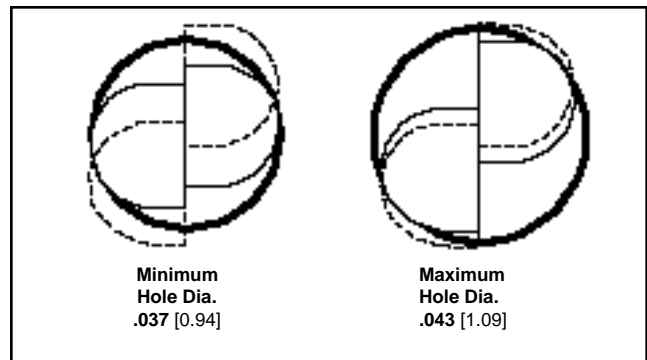


**Principle of the Tyco Electronics Compliant ACTION PIN Contact**

When an ACTION PIN contact is inserted into a plated through-hole, two spring members are compressed, exerting force against the hole for gas-tight connection. The diameter of the hole is smaller than the diagonal size of the pin (see cross-section illustration below).

The beam characteristics of the pin are designed so that a plastic, as well as an elastic, deformation takes place during insertion. The two spring members compress to different degrees

to accommodate hole tolerances. The compliant pin also reduces strain on the board. With a rigid pin, the elastic strain energy is stored entirely in the board, leading to damage of the plated through-holes. With the ACTION PIN contact, the residual force of the elastic deformation maintains stored energy to produce a tight contact zone between the pin and the plated through-hole. This provides long term electrical and mechanical reliability of the interconnection.



**Cross-Section Area from Tyco Electronics ACTION PIN Press-Fit Contact in Printed Circuit Board Holes from Tyco Electronics.**

**Note:** ACTION PIN contact mounting hole specifications are presented in each product section, where applicable.

**AMP PACE Connectors**

**Performance Specifications**

**Electrical Characteristics**

**Contact Resistance:** ACTION PIN Contact Interface—5 milliohm  
Spring Contact to Test Board—11.5 milliohms

**Total Circuit Resistance:**  
12 milliohms

**Continuous Current Rating\*:**  
3 amperes

**Insulation Resistance:**  
5,000 milliohms

**Dielectric Withstanding Voltage:**  
.100 [2.54] Centerline Spacing—  
1,000 VAC at sea level;  
350 VAC at 50,000 ft. [15,240 m];  
275 VAC at 70,000 ft. [21,336 m]  
.125 [3.18] Centerline Spacing—  
1,500 VAC at sea level;  
500 VAC at 50,000 ft. [15,240 m];  
235 VAC at 70,000 ft. [21,336 m]

**Physical Characteristics**

**Card Insertion Force (Max.):**  
16 oz [4.45 N] per contact pair  
ACTION PIN Contact Post

**Card Extraction Force (Min.):**  
1 oz [.278 N] per contact pair  
ACTION PIN Contact Post

**Retention (in PC board):**  
.100 x .100 [2.54 x 2.54]—  
7.5 lb. [33.4 N] min.

**Operating Temperature:**  
-55°C to +85°C

**Durability:** Tested to 100 cycles (100 insertions and withdrawals at a rate not exceeding 10 cycles per minute)

**Salt Spray:** MIL-STD-1344,  
Method 1001

**Physical Shock:** MIL-STD-1344,  
Method 2004

**Thermal Shock:** MIL-STD-1344,  
Method 1003, Cond. A

**Humidity:** MIL-STD-1344,  
Method 1002, Type II

**Vibration:** MIL-STD-1344,  
Method 2005

**Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476**



**Certified by Canadian Standards Association, File No. LR7189**



\*Consult Tyco Electronics engineering when paralleling contacts for power applications.



AMP PACE (Pre-Assembled Card Edge) Connectors are the latest innovation in the evolution of backplane architecture. Designed to shorten manufacturing time and reduce applied costs, these one-step, pre-assembled connectors are ready for mounting and mass insertion. In addition, design features such as removable housings and contacts, that

are replaceable through the top of the connector housing, for maximum flexibility in your backplane packaging.

At the heart of the AMP PACE Connector is AMP's proven and reliable ACTION PIN Contact. This unique contact has superior electrical and physical characteristics that are top of the line in the industry.

AMP PACE Connectors are available with post centerline spacings of:

- .100 x .100 [2.54 x 2.54]
- .100 x .200 [2.54 x 5.08]
- .125 x .125 [3.18 x 3.18]
- .125 x .250 [3.18 x 6.35]
- .156 x .200 [3.96 x 5.08]

**Important:**

Application tooling is absolutely necessary to insert connectors into PC boards. See page 115 for application tooling.

**AMP PACE Connectors** (Continued)

**Product Facts**

**Repairability—**

(See below for details)  
Individual contacts can be removed without removing the housing; housings can be removed without removing posts. **Important:** APC must be inserted into the connector when removing the contact.

**Precision Plated**

Selective plating put: it is needed for superior contact at a reasonable cost.

**Beam Contact Design**

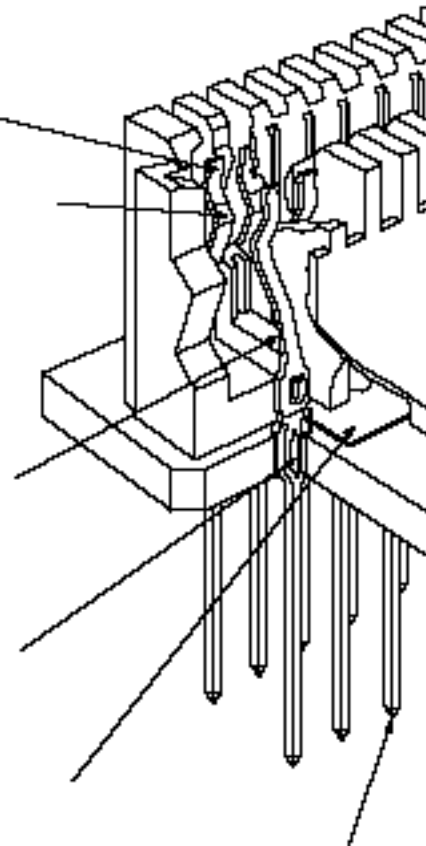
The contact's unique beam accommodates and compensates for daughter board warpage and stress providing long-term performance (100 gram normal force).

**Gas-Tight Connector**

Spring sections of ACTI contacts compress in opposite directions, maintaining a tight fit with the PC board.

**Contact Tip Align**

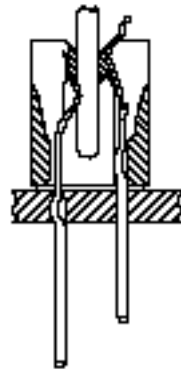
Polyester strip provides stable pin alignment and damage-free entry into the PC board.



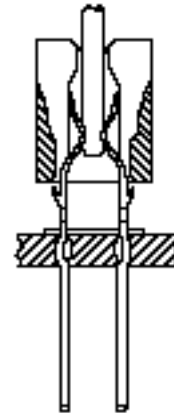
**Precision Plated Post—**

Gold plating can be applied to the entire post, or just the post tip for improved pluggability.

**Repairability Details**

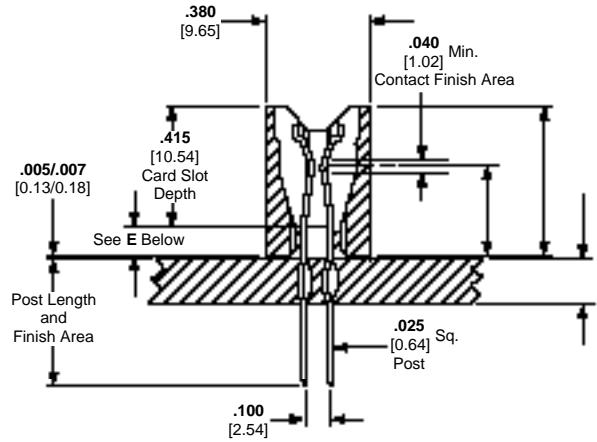
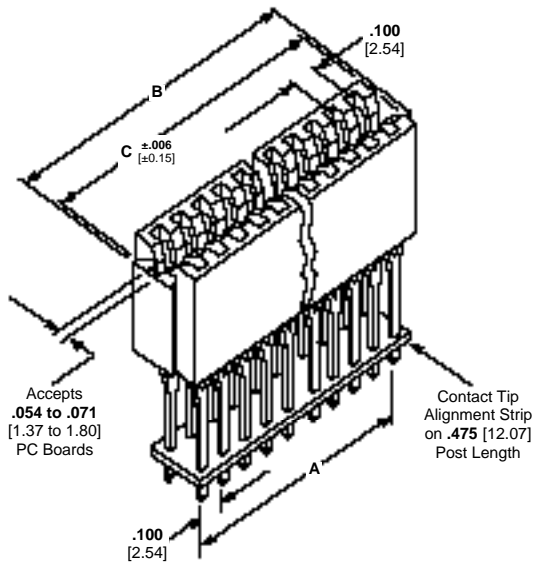


Remove and replace contacts without removing housing. (See page 115 for Contact Replacement Tools.)



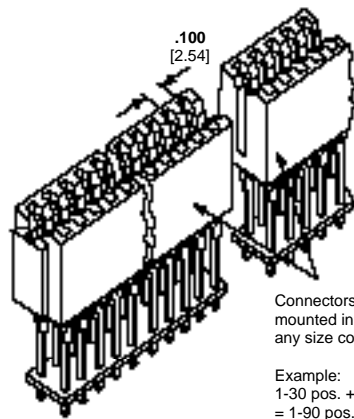
Remove and replace housing without removing contacts.

**Standard Housing**



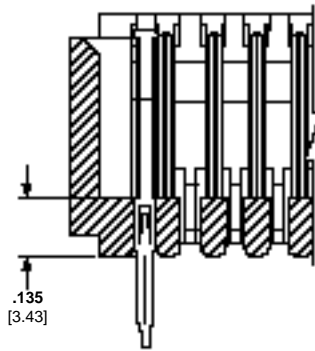
Board-to-Board Connectors  
Press-Fit

**Typical Closed End/  
Open End Housing**



Connectors can be mounted in pairs using any size combinations.

Example:  
1-30 pos. + 1-60 pos.  
= 1-90 pos.



Detail E

**Keying Plugs**



**Intercontact (Plastic)**  
Part No. 118982-1



**On-Contact (Plastic)**  
Part No. 119802-2

**AMP PACE Connectors, .100 x .100 [2.54 x 2.54] Centerline** (Continued)

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated gold .000030 [0.00076] min. thk. over .000050 [0.00127] min. thk. nickel in contact area, .000100 [0.00254] min. tin-lead on posts, with entire contact underplated .000050 [0.00127] min. nickel

**Contact Tip Alignment Strip**—Clear polyester, type D

**Note:** Full palladium-nickel plated posts and other platings and plating thicknesses can be made available.

**Related Product Data:**

**Performance Specifications**—page 98

**Accessories**—page 112

**PC Board Edge Pattern**—page 113

**ACTION PIN Contact Mounting Hole Specifications**—page 114

**Application Tooling**—page 115

**Contact Replacement Tools**—page 115

**Special Application**—page 96

**Technical Documents:**

(pages 186, 187):

Product Specifications  
108-14019, 108-26003

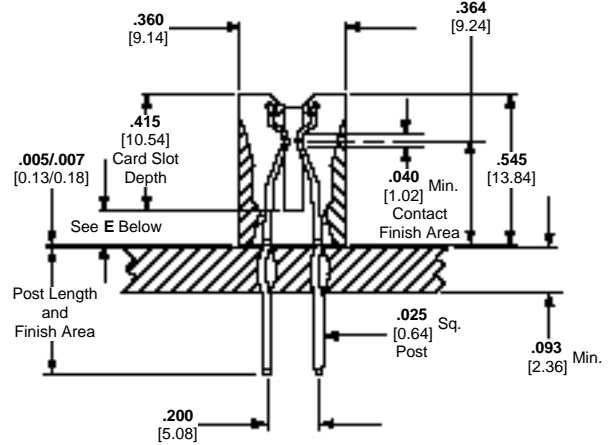
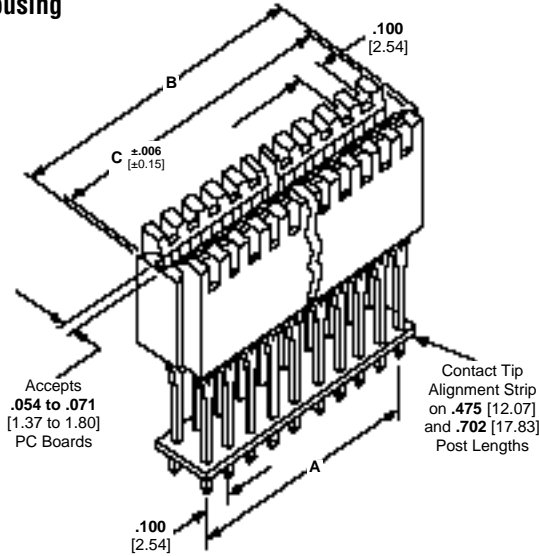
Application Specification  
114-26002

Instruction Sheets 408-2978,  
408-2979, 408-6881, 408-9091,  
408-9188

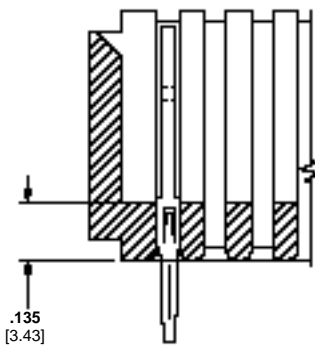
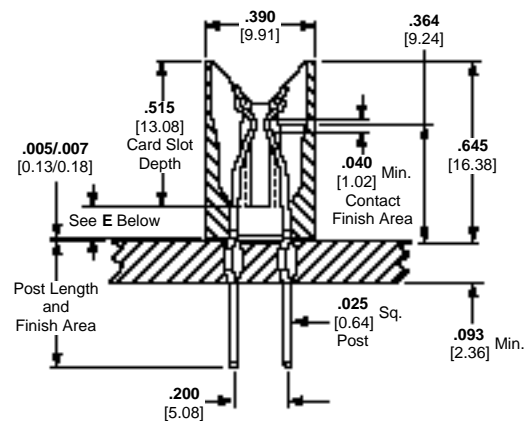
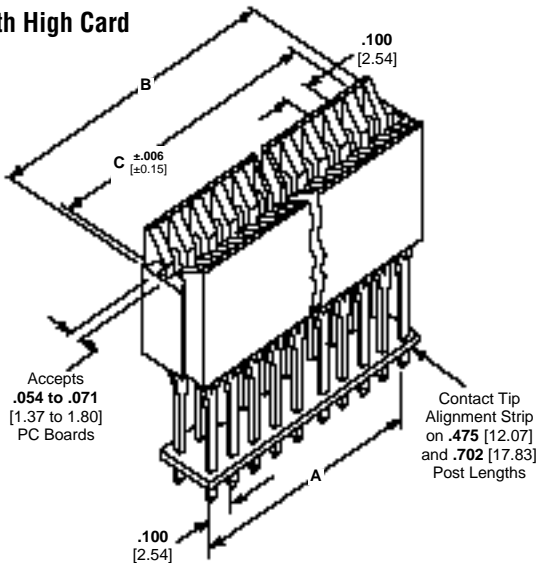
No. of Dual Positions	Dimensions			Post Length	Closed/Closed		Closed/Open
	A	B	C		Standard	Scoop	Standard
15	<b>1.400</b>	<b>1.734</b>	<b>1.604</b>	<b>.180</b>	119734-1	119736-1	—
	35.56	44.04	40.74	4.57	119237-1	—	—
20	<b>1.900</b>	<b>2.234</b>	<b>2.104</b>	<b>.180</b>	119734-6	—	—
	48.26	56.74	53.44	4.57	—	—	—
25	<b>2.400</b>	<b>2.734</b>	<b>2.604</b>	<b>.180</b>	1-119734-1	—	—
	60.96	69.44	66.14	4.57	—	—	—
28	<b>2.700</b>	<b>3.034</b>	<b>2.904</b>	<b>.180</b>	1-119734-4	—	—
	68.58	77.06	73.76	4.57	—	—	—
31	<b>3.000</b>	<b>3.334</b>	<b>3.204</b>	<b>.475</b>	1-119237-7	—	—
	76.20	84.68	81.38	12.07	—	—	—
35	<b>3.400</b>	<b>3.734</b>	<b>3.604</b>	<b>.180</b>	2-119734-1	—	119831-6
	83.36	94.84	91.54	4.57	—	—	119413-6
40	<b>3.900</b>	<b>4.234</b>	<b>4.104</b>	<b>.180</b>	2-119734-6	2-119736-6	—
	99.06	107.54	104.24	4.57	—	—	—
48	<b>4.700</b>	<b>5.034</b>	<b>4.904</b>	<b>.475</b>	3-119237-4	—	—
	119.38	127.86	124.56	12.07	—	—	—
50	<b>4.900</b>	<b>5.234</b>	<b>5.104</b>	<b>.180</b>	3-119734-6	—	—
	124.46	132.94	129.64	4.57	—	—	—
60	<b>5.900</b>	<b>6.234</b>	<b>6.104</b>	<b>.180</b>	4-119734-6	4-119736-6	—
	149.86	158.34	155.04	4.57	—	—	—

**Note:** Other connector sizes and connectors with card scoops can be made available, consult Tyco Electronics.

**Standard Housing**



**Housing with High Card Scoops**



Detail E

**Keying Plugs**



Intercontact (Plastic)  
Part No. 118982-1



On-Contact (Plastic)  
Part No. 118982-2

**AMP PACE Connectors, .100 x .200 [2.54 x 5.08] Centerline** (Continued)

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated gold .000030 [0.00076] min. thk. over .000050 [0.00127] min. thk. nickel in contact area, .000100 [0.00254] min. tin-lead on posts, with entire contact underplated .000050 [0.00127] min. nickel

**Contact Tip Alignment Strip**—Clear polyester, type D

**Note:** Full palladium-nickel plated posts and other platings and plating thicknesses can be made available.

**Related Product Data:**

**Performance Specifications**—page 98

**Accessories**—page 112

**PC Board Edge Pattern**—page 113

**ACTION PIN Contact Mounting Hole Specifications**—page 114

**Application Tooling**—page 115

**Contact Replacement Tools**—page 115

**Special Application**—page 96

**Technical Documents:**

(pages 186, 187):

Product Specifications  
108-14019, 108-26003

Application Specification  
114-26002

Instruction Sheets 408-2933,  
408-2978, 408-2979, 408-9058,  
408-9067, 408-9091, 408-9186

No. of Dual Positions	Dimensions			Post Length	Closed End/Closed End	
	A	B	C		Standard	High Scoop
10	<b>.900</b>	<b>1.234</b>	<b>1.104</b>	<b>.180</b>	—	650297-1
	22.86	31.34	28.04	4.57		
15	<b>1.400</b>	<b>1.734</b>	<b>1.604</b>	<b>.180</b>	119738-1	119791-1
	35.56	44.04	40.74	4.57		
18	<b>1.700</b>	<b>2.034</b>	<b>1.904</b>	<b>.180</b>	119738-4	—
	43.18	51.66	48.36	4.57		
20	<b>1.900</b>	<b>2.234</b>	<b>2.104</b>	<b>.180</b>	119738-6	—
	48.26	56.74	53.44	4.57		
22	<b>2.100</b>	<b>2.434</b>	<b>2.304</b>	<b>.180</b>	119738-8	—
	53.34	61.82	58.52	4.57		
24	<b>2.300</b>	<b>2.634</b>	<b>2.504</b>	<b>.180</b>	1-119738-0	—
	58.42	66.90	63.60	4.57		
25	<b>2.400</b>	<b>2.734</b>	<b>2.604</b>	<b>.180</b>	1-119738-1	—
	60.96	69.44	66.14	4.57		
28	<b>2.700</b>	<b>3.034</b>	<b>2.904</b>	<b>.180</b>	1-119738-4	—
	68.58	77.06	73.76	4.57		
30	<b>2.900</b>	<b>3.234</b>	<b>3.104</b>	<b>.180</b>	1-119738-6	1-119791-6
	73.66	82.14	78.84	4.57		
31	<b>3.000</b>	<b>3.334</b>	<b>3.204</b>	<b>.180</b>	1-119738-7	—
	76.20	84.68	81.38	4.57		
32	<b>3.100</b>	<b>3.434</b>	<b>3.304</b>	<b>.180</b>	1-650122-8	—
	78.74	87.22	83.92	4.57		
34	<b>3.300</b>	<b>3.634</b>	<b>3.504</b>	<b>.180</b>	—	2-119791-0
	83.82	92.30	88.90	4.57		
35	<b>3.400</b>	<b>3.734</b>	<b>3.604</b>	<b>.180</b>	2-119216-0	—
	86.36	94.84	91.54	4.57		
36	<b>3.500</b>	<b>3.834</b>	<b>3.704</b>	<b>.180</b>	2-119216-1	—
	88.90	97.38	94.08	4.57		
37	<b>3.600</b>	<b>3.934</b>	<b>3.804</b>	<b>.180</b>	2-119216-2	—
	91.44	99.92	96.62	4.57		
40	<b>3.900</b>	<b>4.234</b>	<b>4.104</b>	<b>.180</b>	2-650122-3	—
	99.06	107.54	104.24	4.57		
43	<b>4.200</b>	<b>4.534</b>	<b>4.404</b>	<b>.180</b>	2-119216-6	—
	106.68	115.16	111.86	4.57		
44	<b>4.300</b>	<b>4.634</b>	<b>4.504</b>	<b>.180</b>	2-119216-9	—
	109.22	117.70	114.40	4.57		
50	<b>4.900</b>	<b>5.234</b>	<b>5.104</b>	<b>.180</b>	3-119216-0	—
	124.46	132.94	129.64	4.57		
55	<b>5.400</b>	<b>5.734</b>	<b>5.604</b>	<b>.180</b>	3-119738-6	3-119791-6
	137.16	145.54	142.34	4.57		
60	<b>5.900</b>	<b>6.234</b>	<b>6.104</b>	<b>.180</b>	3-119216-6	—
	149.86	158.34	155.04	4.57		
60	<b>5.900</b>	<b>6.234</b>	<b>6.104</b>	<b>.180</b>	4-119738-1	4-650124-1
	149.86	158.34	155.04	4.57		
60	<b>5.900</b>	<b>6.234</b>	<b>6.104</b>	<b>.180</b>	119677-1	—
	149.86	158.34	155.04	4.57		

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

Press-Fit  
Board-to-Board Connectors

**AMP PACE Connectors, .125 x .125 [3.18 x 3.18] Centerline**

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated gold .000030 [0.00076] min. thk. over .000050 [0.00127] min. thk. palladium-nickel in contact area, .000100 [0.00254] min. tin-lead on posts, with entire contact underplated. .000050 [0.00127] min. nickel

**Contact Tip Alignment Strip**—Clear polyester, type D

**Note:** Full palladium-nickel plated posts and other platings and plating thicknesses can be made available.

**Related Product Data:**

**Performance Specifications**—page 98

**Accessories**—page 112

**PC Board Edge Pattern**—page 113

**ACTION PIN Contact Mounting Hole Specifications**—page 114

**Application Tooling**—page 115

**Contact Replacement Tools**—page 115

**Special Application**—page 96

**Technical Documents:**

(pages 186, 187):

Product Specifications

108-14019, 108-26003

Application Specification

114-26002

Instruction Sheets 408-6727,

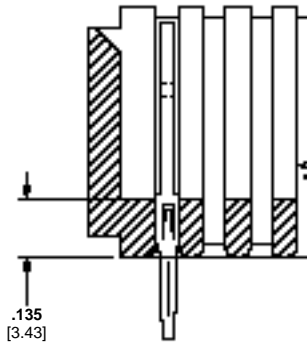
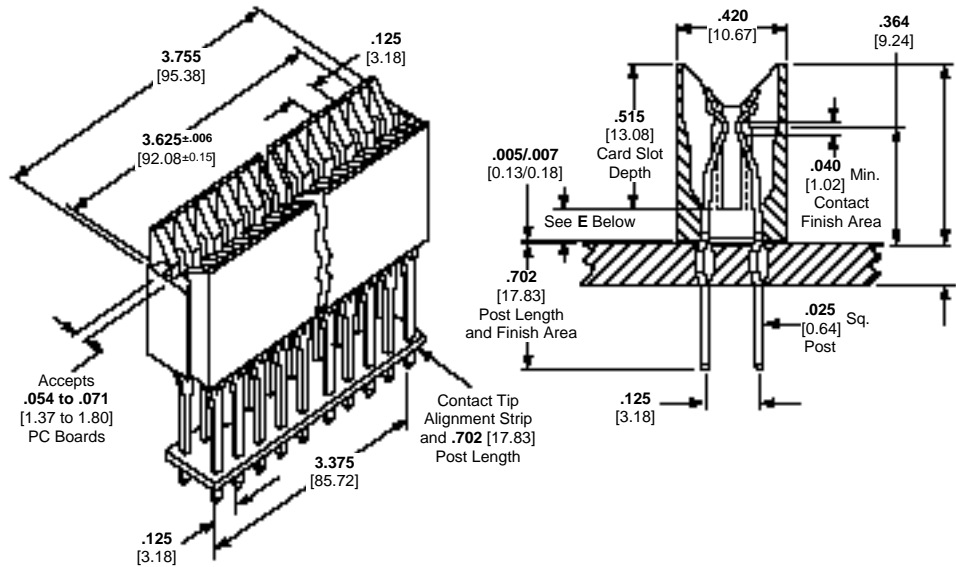
408-9186

**Housing with High Card**

**Scoops**

**28 Dual Positions**

**Part Number 1-119853-4**



Detail E

**Keying Plugs**



**Intercontact (Plastic)**  
Part No. 118982-1

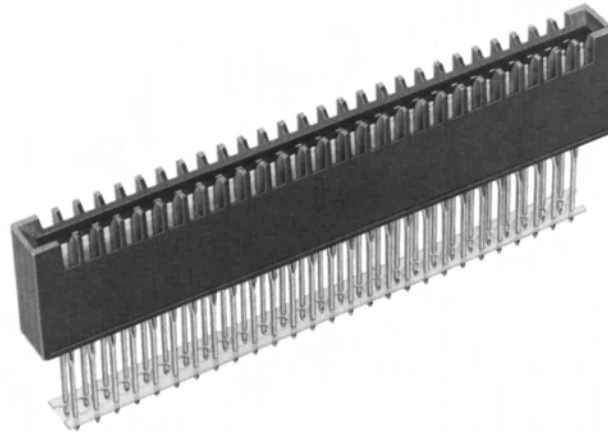


**On-Contact (Plastic)**  
Part No. 119802-2



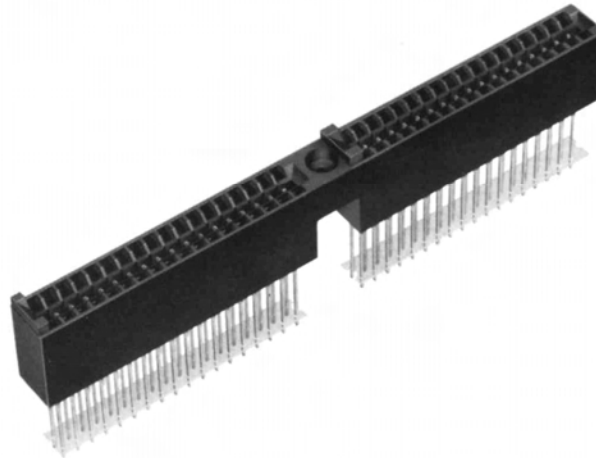
**AMP PACE Connector Specials, .125 x .125 [3.18 x 3.18] Centerline****27 Dual Positions**

**Tin-Lead Posts**  
**.634 [16.10] Long**  
 Part No. 645394-1

**18 or 36 Dual Positions**

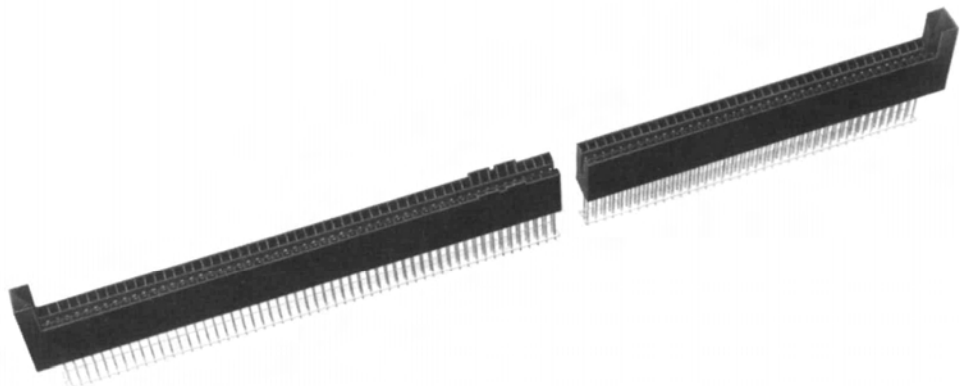
**Tin-Lead Posts**  
**.740 [18.80] Long**  
 Part No. 119552-2

**Tin-Lead Posts**  
**.180 [4.57] Long**  
 Part No. 119880-1

**97 Dual Positions**

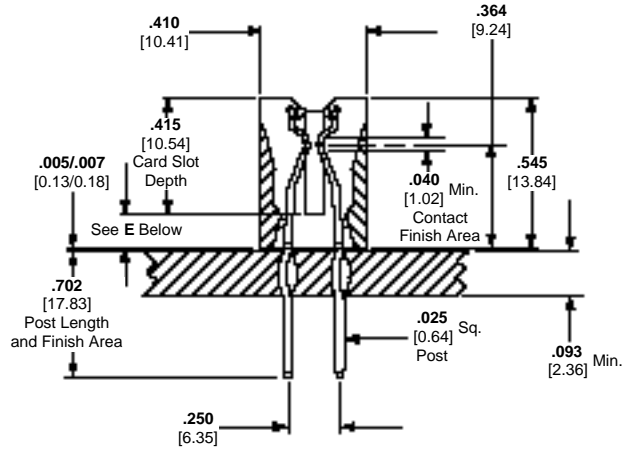
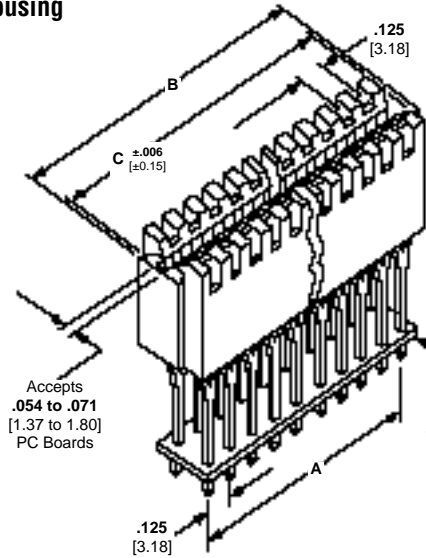
(Two-piece Closed End/Open End with Partial Card Scoops and Card Guides)

Contact Tyco Electronics for specific Part Number information.

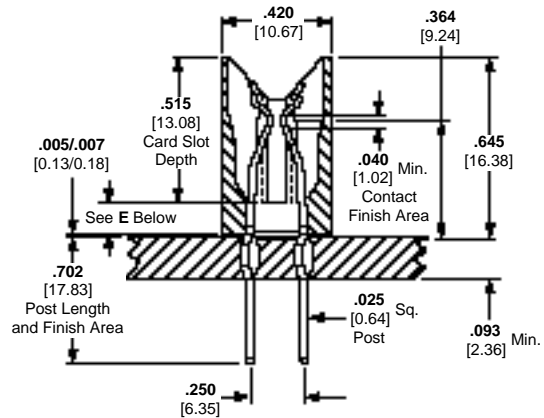
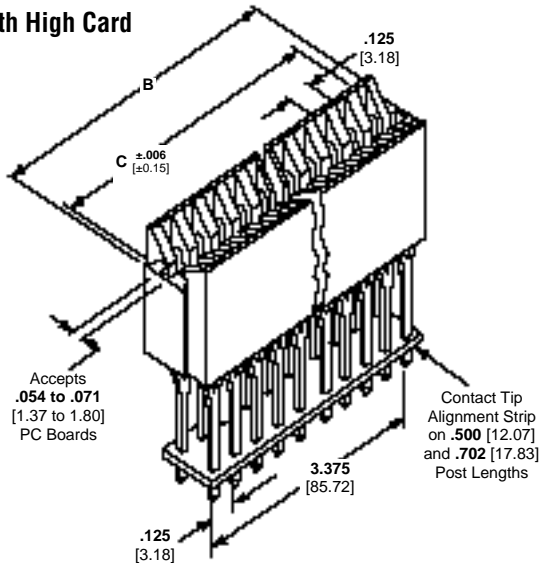


**AMP PACE Connectors, .125 x .250 [3.18 x 6.35] Centerline**

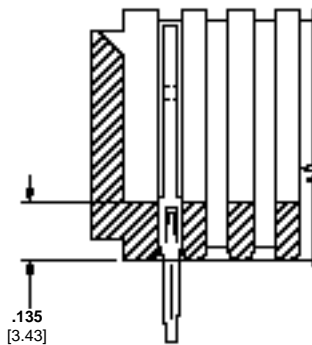
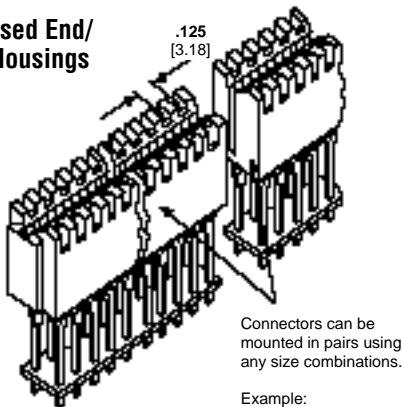
**Standard Housing**



**Housing with High Card Scoops**



**Typical Closed End/ Open End Housings**



Detail E

**Keying Plugs**



Intercontact (Plastic)  
Part No. 118982-1



On-Contact (Plastic)  
Part No. 119802-2

**AMP PACE Connectors, .125 x .250 [3.18 x 6.35] Centerline** (Continued)

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated gold .000030 [0.00076] min. thk. over .000050 [0.00127] min. thk. nickel in contact area, .000100 [0.00254] min. tin-lead on posts, with entire contact underplated .000050 [0.00127] min. nickel

**Contact Tip Alignment Strip**—Clear polyester, type D

**Note:** Full palladium-nickel plated posts and other platings and plating thicknesses can be made available.

**Related Product Data:**

**Performance Specifications**—page 98

**Accessories**—page 112

**PC Board Edge Pattern**—page 113

**ACTION PIN Contact Mounting Hole Specifications**—page 114

**Application Tooling**—page 115

**Contact Replacement Tools**—page 115

**Special Application**—page 96

**Technical Documents:**

(pages 186, 187):

Product Specifications  
108-14019, 108-26003

Application Specification  
114-26002

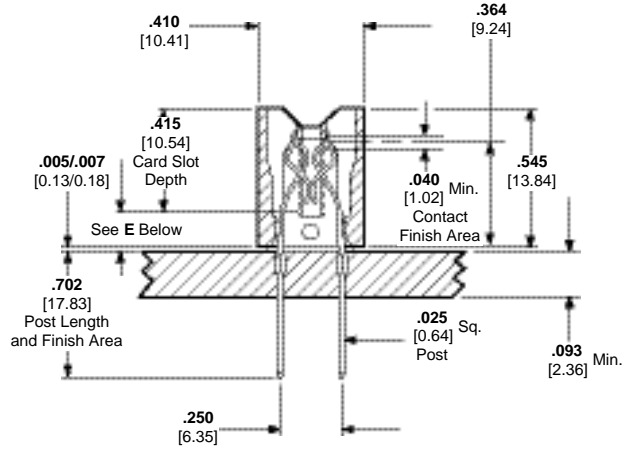
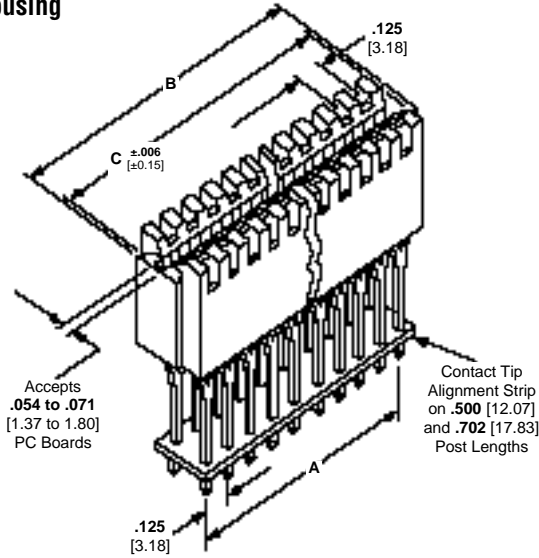
Instruction Sheets 408-2933,  
408-2978, 408-2979, 408-9063,  
408-9091, 408-9119, 408-9186

No. of Dual Positions	Dimensions			Post Length	Closed End/Closed End		Closed End/Open End High Scoop
	A	B	C		Standard	High Scoop	
18	2.125	2.373	2.505	.180	119822-4	—	3-119840-2
	53.98	60.27	63.63	4.57			
22	2.625	3.005	2.875	.180	119200-8	—	—
				4.57			
				.500			
25	3.000	3.380	3.250	.180	1-119822-1	—	—
				4.57			
27	3.250	3.630	3.500	.702	1-119202-3	—	—
				17.83			
28	3.375	3.755	3.625	.180	1-119822-4	—	—
				4.57			
30	3.625	4.005	3.875	.500	1-119200-4	—	—
				12.70			
				.180			
36	4.375	4.755	4.625	.180	2-119822-2	678034-1	—
				4.57			
38	4.625	4.873	5.005	.500	2-119822-4	—	119840-9
				12.70			
40	4.875	5.255	5.125	.180	2-119822-6	—	—
				4.57			
50	6.125	6.505	6.375	.702	3-119822-6	—	—
				17.83			
51	6.250	6.630	6.500	.180	3-119200-7	—	—
				4.57			
60	7.375	7.755	7.625	.500	4-119822-6	—	—
				12.70			
	7.375	7.755	7.625	.180		—	—
				4.57			

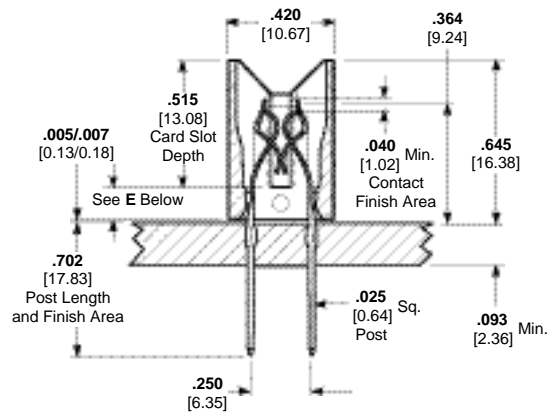
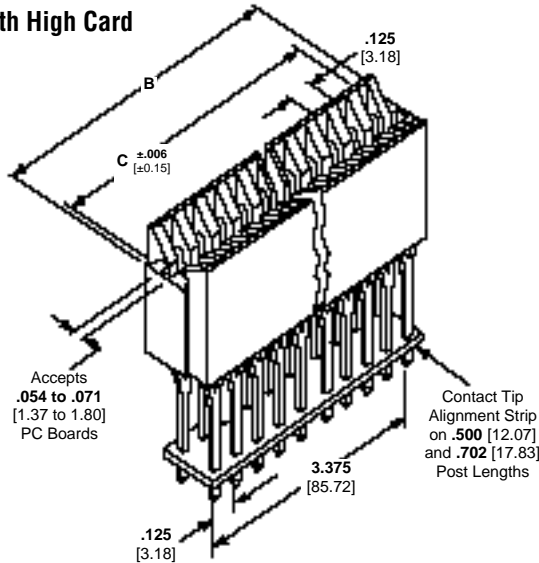
**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**AMP PACE Connectors, .125 x .250 [3.18 x 6.35] Centerline w/ Make Before Break Contacts**

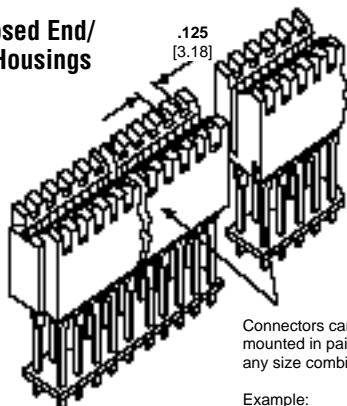
**Standard Housing**



**Housing with High Card Scoops**

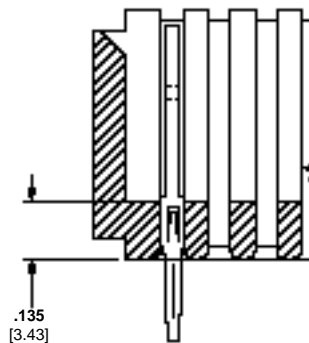


**Typical Closed End/  
Open End Housings**



Connectors can be mounted in pairs using any size combinations.

Example:  
1-30 pos. + 1-60 pos.  
= 1-90 pos.



Detail E

**Keying Plugs**



Intercontact (Plastic)  
Part No. 118982-1



On-Contact (Plastic)  
Part No. 118982-2

**AMP PACE Connectors, .125 x .250 [3.18 x 6.35] Centerline w/ Make Before Break Contacts** (Continued)

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated gold .000030 [0.00076] min. thk. over .000050 [0.00127] min. thk. nickel in contact area, .000100 [0.00254] min. tin-lead on posts, with entire contact underplated .000050 [0.00127] min. nickel

**Contact Tip Alignment Strip**—Clear polyester, type D

**Note:** Full palladium-nickel plated posts and other platings and plating thicknesses can be made available.

No. of Dual Positions	Dimensions			Post Length	Closed End/Closed End	Closed End/Open End
	A	B	C		Standard	High Scoop
18	2.125 53.98	2.505 63.63	2.373 60.27	.180 4.57	1571235-1	—
24	2.875 76.20	3.123 79.25	3.058 77.67	.180 4.57	—	650059-2

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Related Product Data:**

**Performance Specifications**—page 98

**Accessories**—page 112

**PC Board Edge Pattern**—page 113

**ACTION PIN Contact Mounting Hole Specifications**—page 114

**Application Tooling**—page 115

**Contact Replacement Tools**—page 115

**Special Application**—page 96

**Technical Documents:**

(pages 186, 187):

Product Specifications  
108-14019, 108-26003

Application Specification  
114-26002

Instruction Sheets 408-2933,  
408-2978, 408-2979, 408-9063,  
408-9091, 408-9119, 408-9186

**AMP PACE Connectors, .156 x .200 [3.96 x 5.08] Centerline**

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated gold .000030 [0.00076] min. thk. over .000050 [0.00127] min. thk. nickel in contact area, .000100 [0.00254] min. tin-lead on posts, with entire contact underplated .000050 [0.00127] min. nickel

**Contact Tip Alignment Strip**—Clear polyester, type D

**Note:** Full palladium-nickel plated posts and other platings and plating thicknesses can be made available.

**Related Product Data:**

**Performance Specifications**—page 98

**Accessories**—page 112

**PC Board Edge Pattern**—page 113

**ACTION PIN Contact Mounting Hole Specifications**—page 114

**Application Tooling**—page 115

**Contact Replacement Tools**—page 115

**Special Application**—page 96

**Technical Documents:**

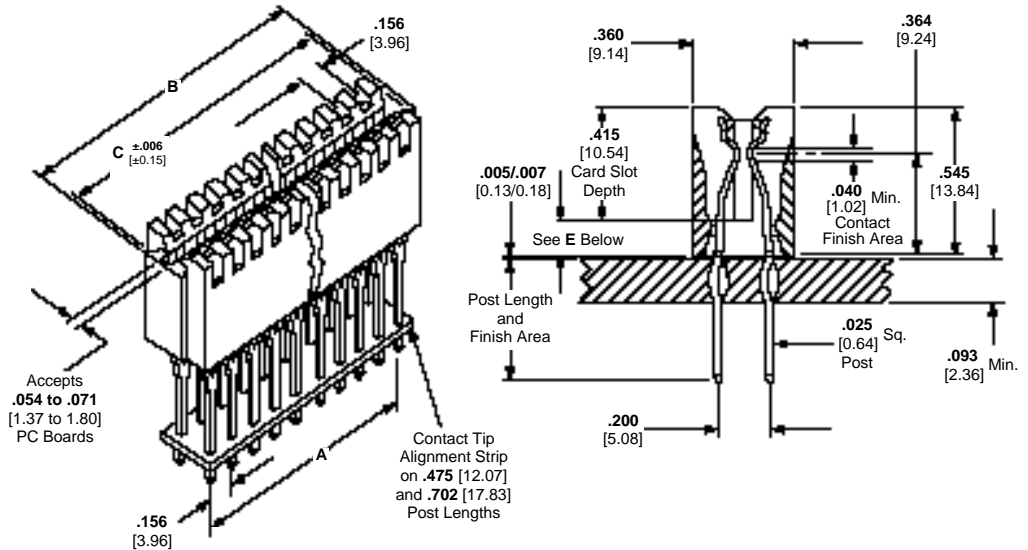
(pages 186, 187):

Product Specifications  
108-14019, 108-26003

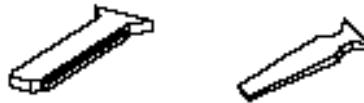
Application Specification  
114-26002

Instruction Sheets 408-6726,  
408-9186

**Standard Housing**

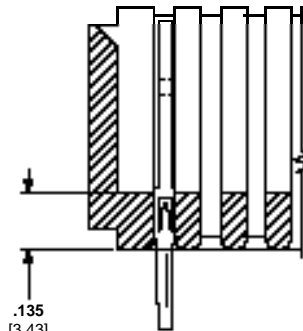


**Keying Plugs**



**Intercontact (Plastic)**  
Part No. 118982-1

**On-Contact (Plastic)**  
Part No. 119802-2



**Detail E**

No. of Dual Positions	Dimensions			Post Length	Closed End/Closed End Standard
	A	B	C		
15	2.184 55.47	2.626 66.70	2.495 63.39	.180 4.57	119790-1
				.475 12.07	119254-1
				.702 17.83	119256-1
18	2.652 67.36	3.094 78.59	2.964 75.29	.475 12.07	119254-4
				.180 4.57	119790-8
				.702 17.83	119256-8
22	3.276 83.21	3.718 94.44	3.588 91.13	.180 4.57	1-119790-4
				.475 12.07	1-119254-4
				.702 17.83	1-119256-4
28	4.212 106.98	4.654 118.21	4.524 114.91	.180 4.57	2-119790-9
				.475 12.07	2-119254-9
				.702 17.83	2-119256-9
43	6.552 166.42	6.994 177.65	6.864 174.35	.180 4.57	
				.475 12.07	
				.702 17.83	

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**AMP PACE Connectors, .156 x .200 [3.96 x 5.08] Centerline w/Make Before Break Contacts**

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated gold flash over .000030 [0.00076] min. thk. over .000050 [0.00127] min. thk. nickel in contact area, .000100 [0.00254] min. tin-lead on posts, with entire contact underplated. .000050 [0.00127] min. nickel

**Contact Tip Alignment Strip**—Clear polyester, type D

**Note:** Full palladium-nickel plated posts and other platings and plating thicknesses can be made available.

**Related Product Data:**

**Performance Specifications**—page 98

**Accessories**—page 112

**PC Board Edge Pattern**—page 113

**ACTION PIN Contact Mounting Hole Specifications**—page 114

**Application Tooling**—page 115

**Contact Replacement Tools**—page 115

**Special Application**—page 96

**Technical Documents:**

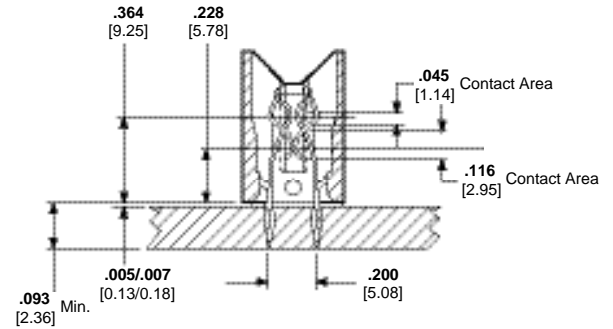
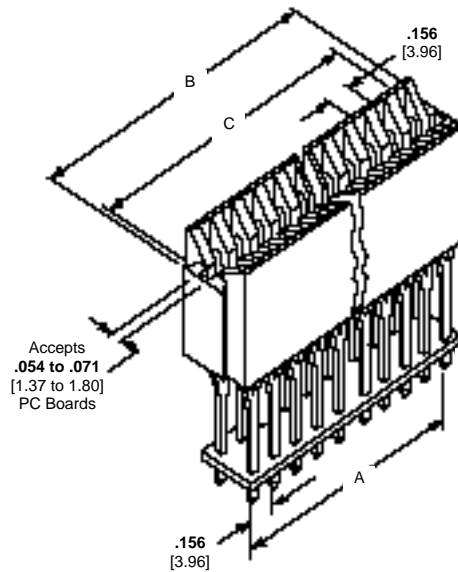
(pages 186, 187):

Product Specifications  
108-14019, 108-26003

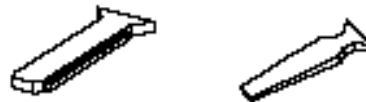
Application Specification  
114-26002

Instruction Sheets 408-6726,  
408-9186

**Card Scoop Housing**

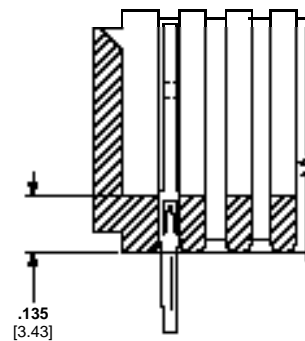


**Keying Plugs**



**Intercontact (Plastic)**  
Part No. 118982-1

**On-Contact (Plastic)**  
Part No. 119802-2



Detail E

No. of Dual Positions	Dimensions			Post Length	Closed End/Closed End Scoop
	A	B	C		
18	2.652 67.36	3.094 78.59	2.964 75.29	.180 4.57	678035-1

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

Press-Fit Board-to-Board Connectors

**Accessories for AMP PACE Connectors**

**Connector Card Guide**

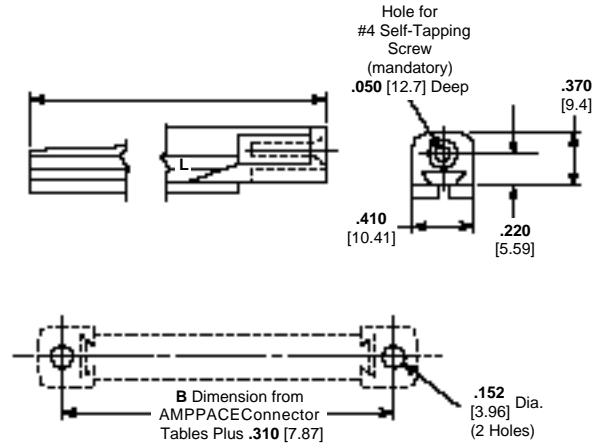
**Material:** Black glass-filled polyester

**Related Product Data:**

Mates with all standard housings (will not mate with some special housings)

**Technical Documents:**

(pages 186, 187):  
Instruction Sheet 408-9091



L1	Part Numbers
2.500 63.50	117169-3
6.000 152.40	1-117169-3

<sup>1</sup>Other lengths up to 6.0 [152.4] can be made available. Consult Tyco Electronics for details.

Press-Fit Board-to-Board Connectors

**Ground Module**

**Rating:**

**20 amperes per contact**—Copper or aluminum bus

**Material and Finish:**

**Housing**—Black glass-reinforced thermoplastic

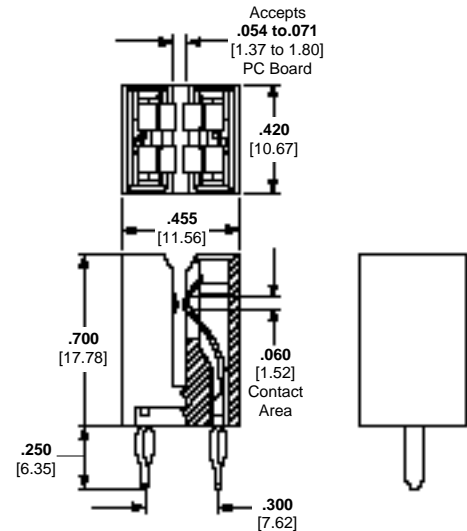
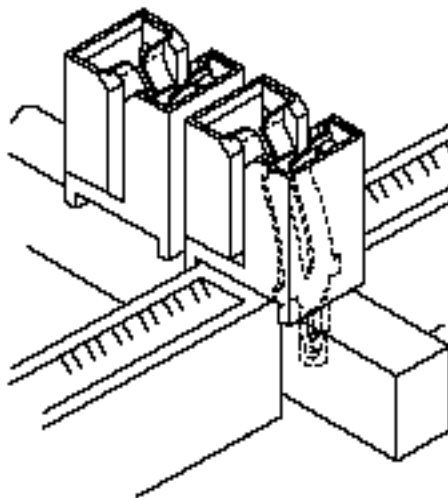
**Contact**—CA 195, 3/4 hard, plated .000050 [0.00127] gold in contact area (front face only); .000100 [0.00254] tin-lead on post, with entire contact under-plated .000050 [0.00127] nickel

**Related Product Data:**

Mates with all standard housings (will not mate with some special housings)

**Technical Documents:**

(pages 186, 187):  
Instruction Sheet 408-2978

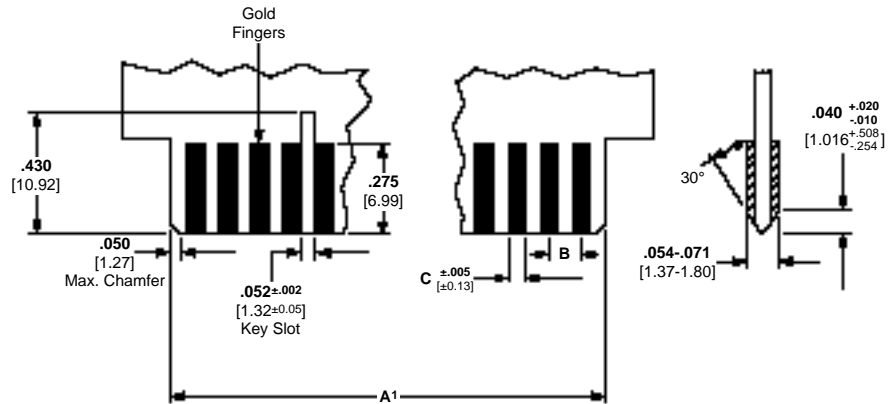


Part No. 119341-1  
Seating Tool 59881-1



**PC Board Layout for AMP PACE Connectors**

**Recommended  
PC Board Edge Pattern**



<sup>1</sup>A Max. = Minimum connector card slot  $-.001$  [-0.03].  
A Min. = Minimum connector card slot  $-.011$  [-0.28].

**Note:** Finger pattern to be centered on daughter card.  
Each finger can deviate  $.003$  [0.08] from true position.

AMP PACE Connector Centerline Spacing	Dimensions	
	B	C
<b>.100 x .100</b> 2.54 x 2.54	<b>.100</b> 2.54	<b>.070</b> 1.78
<b>.100 x .200</b> 2.54 x 5.08	<b>.100</b> 2.54	<b>.070</b> 1.78
<b>.125 x .125</b> 3.18 x 3.18	<b>.125</b> 3.18	<b>.080</b> 2.03
<b>.125 x .250</b> 3.18 x 6.35	<b>.125</b> 3.18	<b>.080</b> 2.03
<b>.156 x .200</b> 3.96 x 5.08	<b>.156</b> 3.96	<b>.080</b> 2.03

Press-Fit  
Board-to-Board Connectors

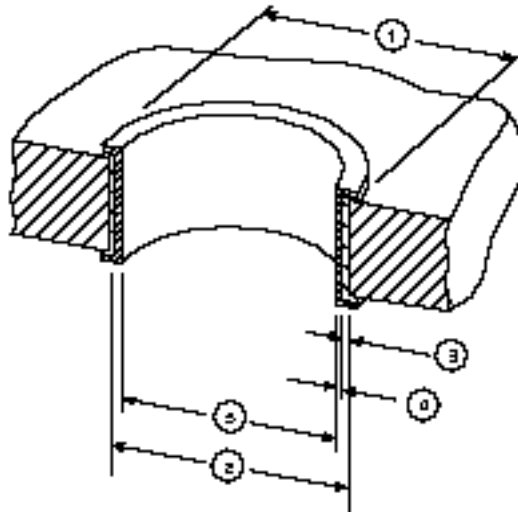
**AMP ACTION PIN  
Press-Fit Contacts**



ACTION PIN contacts provide a reliable press-fit connection. Localized pressure in the interface area entails oxide break-through and helps prevent corrosion in the harshest environments to provide a reliable connection virtually every time. Also, radial and axial distortion are controlled to meet today's standards for multilayer board applications.

**PC Board Thickness**

ACTION PIN contacts are designed for use in a variety of PC board thicknesses. However, certain ACTION PIN contacts are to be used in specific ranges of board thicknesses. To promote optimum performance, the recommended board thicknesses provided with the connector being used must be followed.



- ① Annular Ring (See Note)
- ② Drilled Hole
- ③ Copper Thickness
- ④ Tin-Lead Thickness
- ⑤ Plated Through-Hole

**Mounting Hole Specifications**

Connector		ACTION PIN Contact Material Thickness	Drilled Hole Diameter <sup>②</sup>	Plating Thicknesses		Plated Through-Hole Diameter <sup>⑤</sup>	Radial Hole Distortion	
Centerline	No. of Dual Positions			Copper <sup>③*</sup>	Tin-Lead <sup>④</sup>		Average	Maximum
.125 x .125 3.18 x 3.18	28, 97	.025 0.64	.0453±.001 1.151±0.03	.001-.003 0.03-0.08	.0003 0.008 Min.	.037-.043 0.94-1.09	Not Specified	Not Specified
.156 x .200 3.96 x 5.08	15-43							
.125 x .125 3.18 x 3.18	27	.025 0.64	.0465±.001 1.181±0.03	.001-.003 0.03-0.08	.0003 0.008 Min.	.037-.043 0.94-1.09	Not Specified	Not Specified
.100 x .100 2.54 x 2.54	15-60							
.100 x .200 2.54 x 5.08	15-60	.025 0.64	.0453±.001 1.151±0.03	.001-.003 0.03-0.08	.0003 0.008 Min.	.037-.043 0.94-1.09	.0015 0.038	.002 0.05
.125 x .125 3.18 x 3.18	18, 36							
.125 x .250 3.18 x 6.35	18-60							

\*Maximum hardness of copper layer is 150 Knoop.

**Note:** Recommended annular ring diameter is hole diameter plus .020 [0.51].

Press-Fit Board-to-Board Connectors

**Application Tooling for AMP PACE Connectors**

**Modular Seating Tools**

Available from Tyco Electronics is a complete series of AMP PACE Modular Seating Tools for installing AMP PACE Connectors on printed circuit boards and panels. These tools are modular in design in that housing tool holders may be added or subtracted to accommodate several different connector sizes. In addition, all tool parts are individually replaceable should the tool become damaged.

Modular seating tools are supplied in two basic designs: One which covers all connector centerlines except .100 x .100 [2.54 x 2.54] and one for the .100 x .100 [2.54 x 2.54] centerline connectors.

All seating tools have a common shut height of 1.5 inches [38]. This allows AMP PACE and other ACTION PIN products to be seated at the same time on AMP seating machines. See page 149 for a description of the AMP seating machines.



**.100 x .100 [2.54 x 2.54]  
Centerline Spacing**

**.100 x .200 [2.54 x 5.08],  
.125 x .125 [3.18 x 3.18],  
.125 x .250 [3.18 x 6.35],  
.156 x .200 [3.96 x 5.08]  
Centerline Spacing**

**For Connectors without Scoops**

No. of Dual Positions	Centerline			
	.100 x .100 [2.54 x 2.54]	.100 x .200 [2.54 x 5.08]	.125 x .250 [3.18 x 6.35]	.156 x .200 [3.96 x 5.08]
15	58200-1	58140-1	—	58143-1
18	—	58140-4	58142-4	—
20	58200-6	58140-6	—	—
22	—	58140-8	58142-8	58143-8
25	1-58200-1	1-58140-1	1-58142-1	—
28	1-58200-4	1-58140-4	1-58142-4	1-58143-4
30	1-58200-6	1-58140-6	1-58142-6	—
31	1-58200-7	—	—	—
32	—	1-58140-8	—	—
34	—	2-58140-0	—	—
35	2-58200-1	2-58140-1	—	—
36	—	2-58140-2	2-58142-2	—
37	—	2-58140-3	—	—
40	2-58200-6	2-58140-6	2-58142-6	—
43	—	2-58140-9	—	2-58143-9
44	—	3-58140-0	—	—
48	3-58200-4	—	—	—
50	3-58200-6	3-58140-6	3-58142-6	—
51	3-58200-7	—	3-58142-7	—
54	4-58200-0	—	—	—
55	4-58200-1	4-58140-1	—	—
56	—	—	4-58142-2	—
60	4-58200-6	4-58140-6	4-58142-6	—

**For Connectors with Scoops**

No. of Dual Positions	Centerline		
	.100 x .200 [2.54 x 5.08]	.125 x .125 [3.18 x 3.18]	.125 x .250 [3.18 x 6.35]
15	58150-1	—	—
18	—	—	58184-4
22	58150-8	—	—
28	—	1-58218-4	—
30	1-58150-6	—	—
38	—	—	2-58184-4
50	3-58150-6	—	3-58184-6
55	4-58150-1	—	—

**Contact Replacement Tools**

Replacement tools listed in the chart at the right are used to install replacement contacts in AMP PACE connector housings. Replacement Tool **1-265871-7** is used to remove all .025 [0.64] square posts from PC boards.

Centerline	Housing Style	
	Standard	Full Card Scoop
.100 x .100 [2.54 x 2.54]	266220-3	—
.100 x .200 [2.54 x 5.08]	266220-1	58210-1
.125 x .125 [3.18 x 3.18]	—	58210-4
.125 x .250 [3.18 x 6.35]	266220-2	58210-2
.156 x .200 [3.96 x 5.08]	266220-2	—

**Note:** Tooling availability is dependent upon part number activity. Consult Tyco Electronics for further information.

## TELEDENSITY Connectors

### Product Facts

- High density - .0625 [1.586] contact centerlines
- Compliant ACTION PIN contacts press-fit into plated-through holes for solderless application
- Individually replaceable contacts
- Accommodates up to three levels of daughter card pads for sequencing
- .125 [3.18] square grid post arrangement

### Performance Specifications

**Current Rating\*:**  
3 amperes max.

**Mating Force (Contact Pair):**  
1 lb. [4.4 N] max.

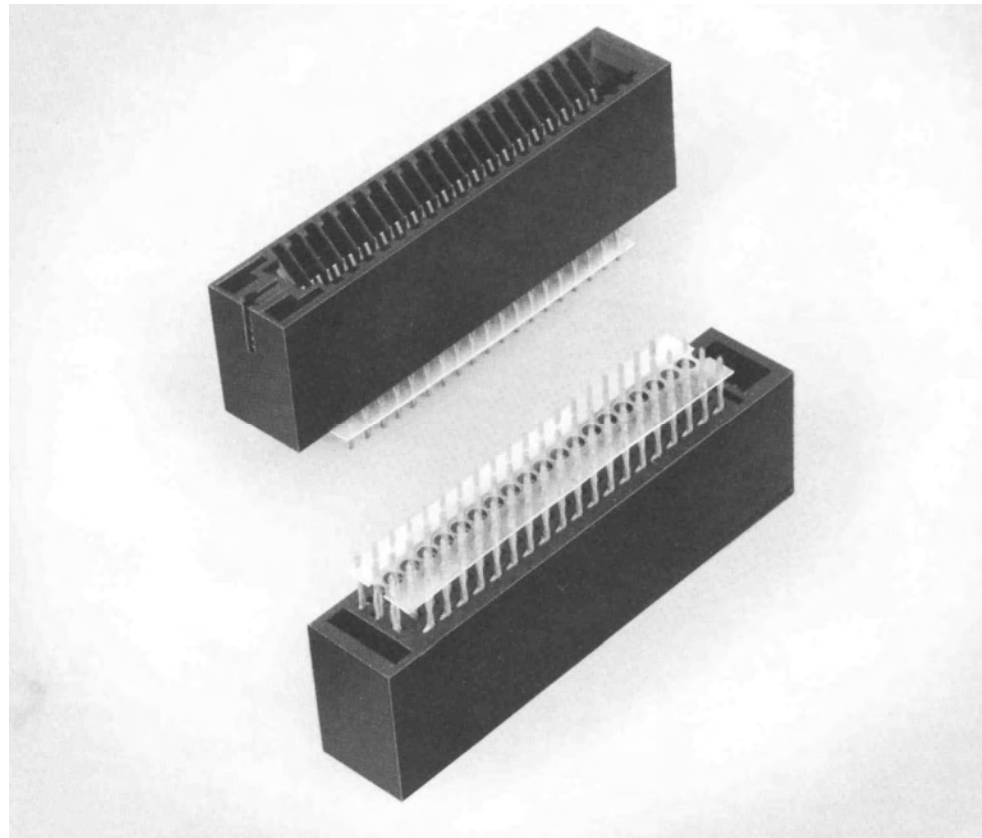
**Durability (Mating Cycles):**  
100 min.

**Termination Resistance:**  
12 milliohms max.

**Dielectric Rating:**  
1200 VAC (rms)

**Insulation Resistance:**  
5000 megohms max.

**Operating Temperature:**  
-55°C to +85°C



The high performance AMP TELEDENSITY connector is a high density, card edge, telecommunications connector. It features compliant ACTION PIN contacts for solderless application to multi-layer printed circuit boards with plated-through or bare copper holes.

These connectors accept .054 to .072 [1.37 to 1.83] thick daughter cards. To satisfy the broadest range of application needs, the

contacts are plated with 30 microinches of gold in the mating area and tin-lead on the posts. A plastic locating strip keeps posts positioned correctly for board insertion.

For high-density needs, TELEDENSITY connectors offer a .0625 [1.586] daughter card contact centerline spacing in 39-, 71-, or 99-dual positions. The connector's .330 [8.38] slot depth accommodates up to three levels of daughter card

pads for sequencing, while a biasing wedge maintains proper pad alignment during card extraction. Posts are arranged in a .125 [3.18] square grid to ease circuit routing.

\*Consult Tyco Electronics when paralleling contacts for power applications.

**TELEDENSITY Connectors, .0625 [1.586] Centerline**

**Material and Finish:**

**Housing**—Black polyester

**Contacts**—Copper alloy 725, plated .000030 [0.00076] gold in contact area, .000030 [0.00076] solder plate on post, with entire contact underplated .000100 [0.00254] nickel

**Coil Spring**—Stainless steel

**Contact Tip Alignment Strip**—Clear polyester

**Related Product Data:**

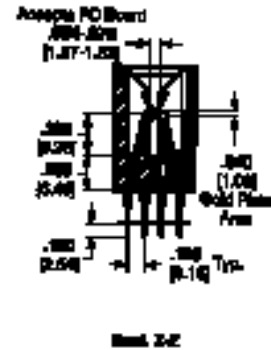
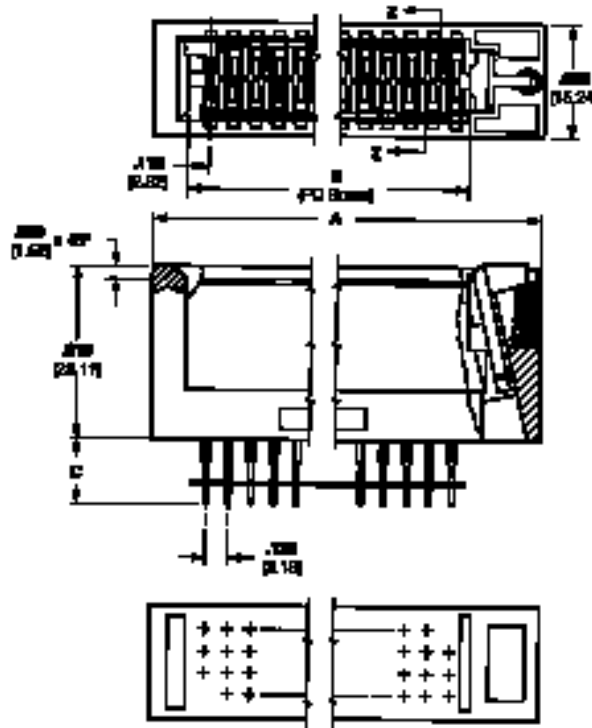
**Performance Specifications**—page 116

**ACTION PIN Contact Mounting Hole Specifications**—page 118

**Technical Document**—pages 186, 187

**Product Specification**—108-26003

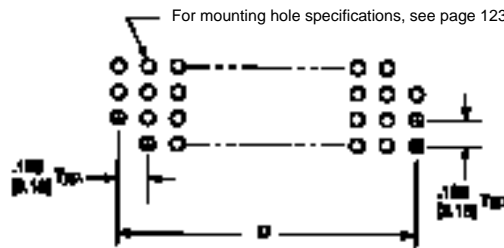
**Instruction Sheet**—408 6866



Number of Dual Positions	Dimensions				Connector Part Numbers	Seating Tool Numbers**
	A	B	C	D		
39	3.168	2.588-2.600	.634	2.375	650148-1	58084-1
	80.47	65.74-66.04	16.10 .350 8.89	60.33	650281-1*	
71	5.168	4.588-4.600	.634	4.375	650149-1	58084-3
99	6.918	6.338-6.350	.634	6.125	650150-1	58084-2
	175.72	160.99-161.29	16.10	155.58		

\* Contacts in this connector are underplated .000150 [0.00381] nickel.  
\*\* See page 149 for a description of AMP seating machines.

**Recommended PC Board Layout (Shown from post side)**

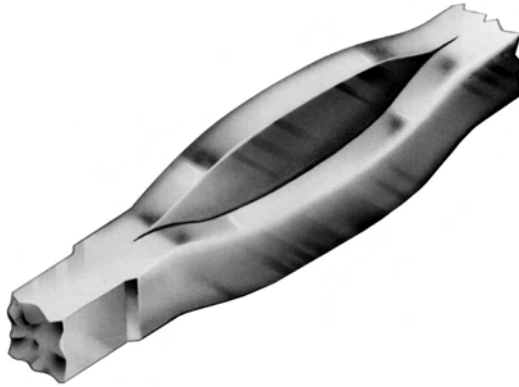


Note: ACTION PIN posts require .093 [2.36] min. thick PC board.

Press-Fit Board-to-Board Connectors

**TELEDENSITY Connectors** (Continued)

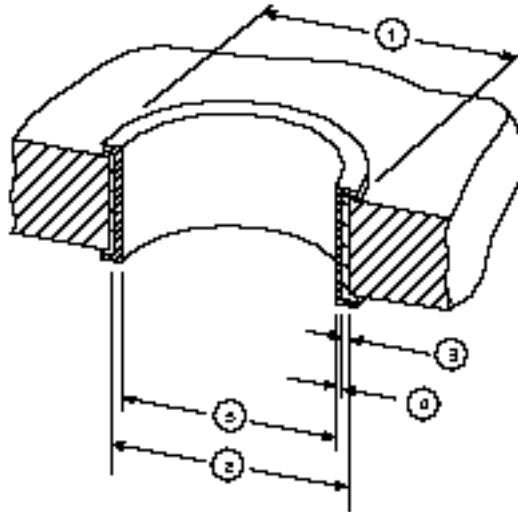
**AMP ACTION PIN  
Press-Fit Contacts**



ACTION PIN contacts provide a reliable press-fit connection. Localized pressure in the interface area entails oxide breakthrough and helps prevent corrosion in the harshest environments to provide a reliable connection virtually every time. Also, radial and axial distortion are controlled to meet today's standards for multilayer board applications.

**PC Board Thickness**

ACTION PIN contacts are designed for use in a variety of PC board thicknesses. However, certain ACTION PIN contacts are to be used in specific ranges of board thicknesses. To promote optimum performance, the recommended board thicknesses provided with the connector being used must be followed.



- ① Annular Ring (See Note)
- ② Drilled Hole
- ③ Copper Thickness
- ④ Tin-Lead Thickness
- ⑤ Plated Through-Hole

**Mounting Hole Specifications**

ACTION PIN Contact Material Thickness	Drilled Hole Diameter <sup>②</sup>	Plating Thicknesses		Plated-Through Hole Diameter <sup>⑤</sup>	Radial Hole Distortion	
		Copper <sup>③*</sup>	Tin-Lead <sup>④</sup>		Average	Maximum
.025 0.64	.0453±.001 1.151±0.03	.001-.003 0.03-0.08	.0003 Min. 0.008	.037-.043 0.94-1.09	.0015 0.038	.002 0.05

\*Maximum hardness of copper layer is 150 Knoop  
**Note:** Recommended annular ring diameter is hole diameter plus .020 [0.51]

Press-Fit Board-to-Board Connectors

**ECONOMATE Connectors**

**Performance Specifications**

**Electrical Characteristics**

**Contact Resistance:**

8 milliohms (max.)

**Insulation Resistance:**

2,000 megohms (min.)

**Continuous Current Rating\*:**

3 amperes

**Physical Characteristics**

**Card Insertion Force:**

16 oz [4.45 N] (max.) per contact pair

**Card Extraction Force:**

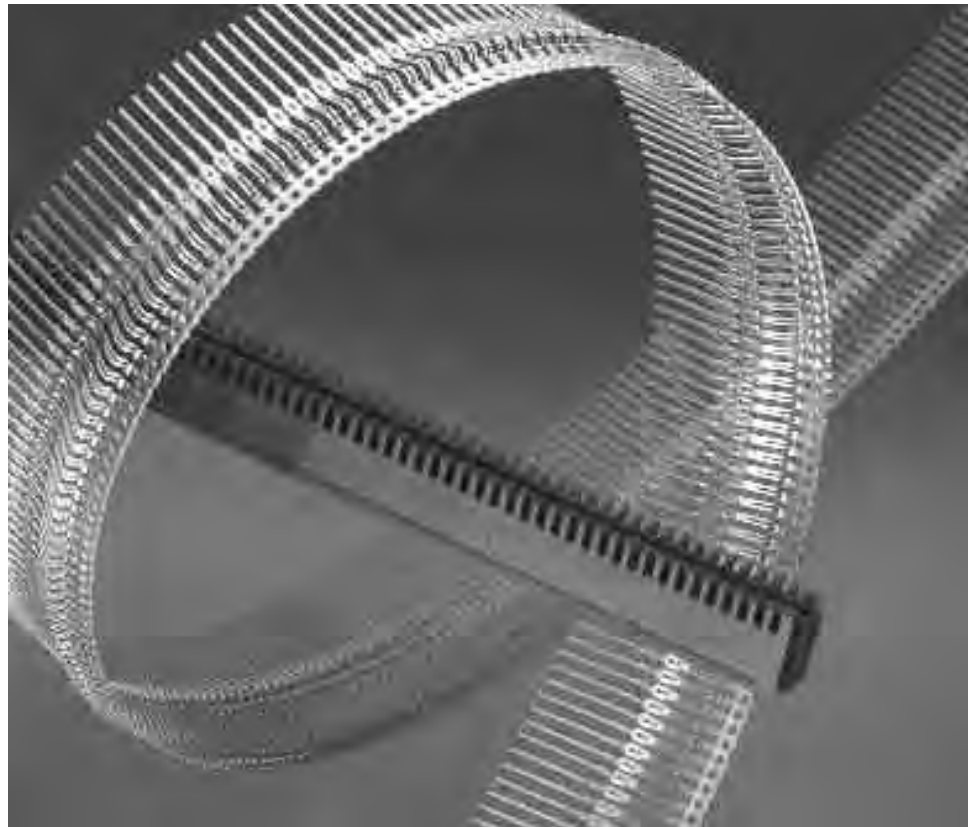
1 oz [0.28 N] (min.) per contact pair

**Retention (in PC Board):**

7 lb [31.1 N] (min.)

**Operating Temperature:**

-65°C to +125°C



AMP ECONOMATE Connectors provide a reliable and economical method for interconnecting backplane panels, using either two-sided or multi-layer PC boards.

Connector housings are furnished unloaded and are available for post centerline spacings of: .100 x .200 [2.54 x 5.08] and .156 x .200 [3.96 x 5.08]. The housings are simply positioned onto the contacts, after the contacts have been inserted into the PC board and the carrier strip removed.

Contacts from Tyco Electronics feature the proven and reliable ACTION PIN contact design. These press-fit contacts employ two spring members that compress to exert force against the plated through-holes for a gas-tight connection. Gold plating of contacts promotes the electrical integrity of the connection.

Feed-through posts are also available for accepting wrap-type terminations. These posts also feature the ACTION PIN contact design and are supplied in strip form and stored on reels for insertion into PC boards.

**Important:**

Application tooling is absolutely necessary for installing contacts and housings onto PC boards. See page 126 for application tooling.

\*Consult Tyco Electronics engineering when paralleling contacts for power applications.

## ECONOMATE Connectors (Continued)

**.100 x .200 [2.54 x 5.08]  
Centerline Spacing**

### Material and Finish:

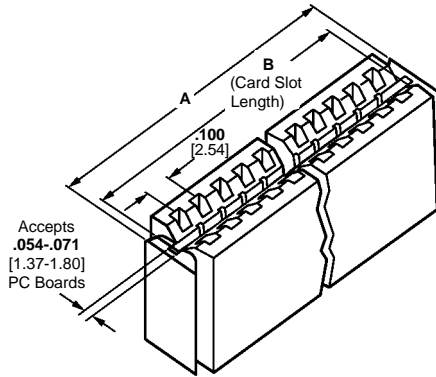
**Housing**—Black glass-filled nylon

**Contacts**—Copper alloy 725, plated as follows:

**Plating A**—Selectively plated .000030 [0.00076] min. gold in contact area, .000001 [0.00003] min. gold on remainder of contact, with entire contact underplated .000050 [0.00127] min. nickel

**Plating B**—Duplex plated .000030 [0.00076] min. gold in contact area, .000100 [0.00254] min. tin-lead on posts, with entire contact underplated .000050 [0.00127] min. nickel

**Plating C**—Selectively plated .000100 [0.00254] min. gold in contact area, .000001 [0.00003] min. gold on remainder of contact, except .000050 [0.00127] min. gold for .200 [5.08] from tip of post, with entire contact underplated .000050 [0.00127] min. nickel



No. of Dual Positions	Dimensions		Housing Part Numbers
	A	B	
25	2.734 82.14	2.604 78.84	1-117798-4
30	3.234 82.14	3.104 78.84	117798-3
35	3.734 94.84	3.604 91.54	117798-6
36	3.834 97.38	3.704 94.08	117798-7
40	4.234 107.54	4.104 104.24	117798-8
50	5.234 132.94	5.104 129.64	1-117798-1
60	6.234 158.34	6.104 155.04	1-117798-2

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

### Related Product Data:

**Performance Specifications**—page 119

**Card Guides**—page 122

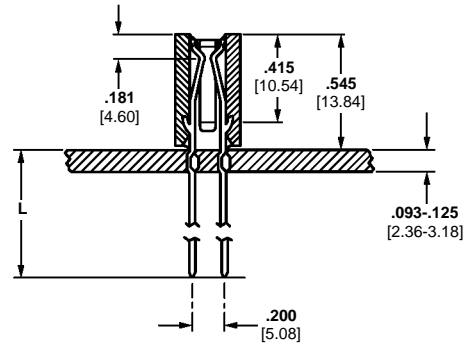
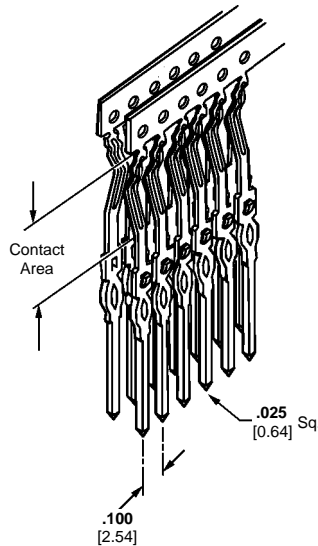
**ACTION PIN Contact Mounting Hole Specifications**—page 125

**Application Tooling**—page 126

### Technical Documents:

(pages 186, 187):

Product Specification  
108-26002



### Keying Plugs

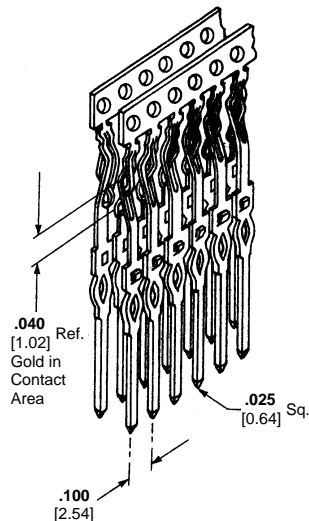


**Intercontact (Plastic)**  
Part No. 118982-1



**On-Contact (Plastic)**  
Part No. 119802-2

### Make-Before-Break Contacts



Dimension L	Contact Part Numbers*		
	Plating A	Plating B	Plating C
.475 12.07	2-117795-4	4-117795-0	—
.702 17.83	117795-3	2-117795-6	4-117795-8

\*Contacts are strip form, 35,000 per reel.

Dimension L	Make Before Break Contact Part Numbers*	
	Plating A	Plating B
.475 12.07	—	118951-8
.702 17.83	118951-4	—

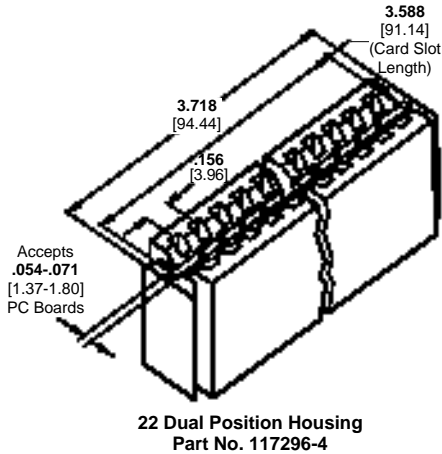


**ECONOMATE Connectors** (Continued)

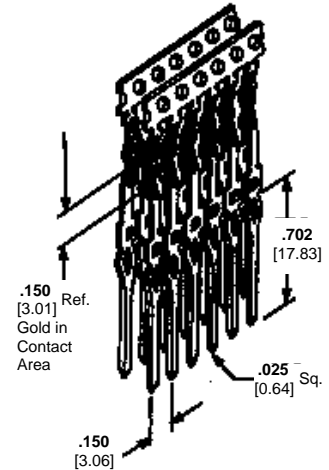
**.156 x .200 [3.96 x 5.08]**  
**Centerline Spacing**

**Material and Finish:**

**Housing**—Black glass-filled nylon  
**Contacts**—Copper alloy 725, plated as follows:  
**Plating A**—Selectively plated .000030 [0.00076] min. gold in contact area, .000001 [0.00003] min. gold on remainder of contact, with entire contact underplated .000050 [0.00127] min. nickel  
**Plating B**—Duplex plated .000030 [0.00076] min. gold in contact area, .000100 [0.00254] min. tin-lead on posts, with entire contact underplated .000050 [0.00127] min. nickel



**22 Dual Position Housing**  
Part No. 117296-4



**Make-Before-Break Contacts**

**Related Product Data:**

- Performance Specifications**—page 119
- Card Guides**—page 122
- ACTION PIN Contact Mounting Hole Specifications**—page 125
- Application Tooling**—page 126

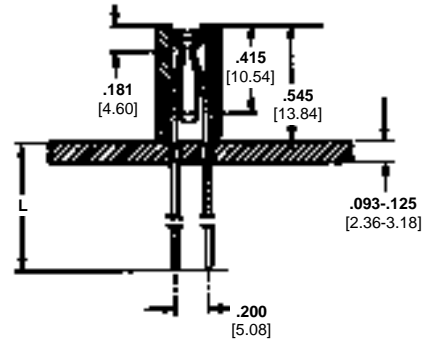
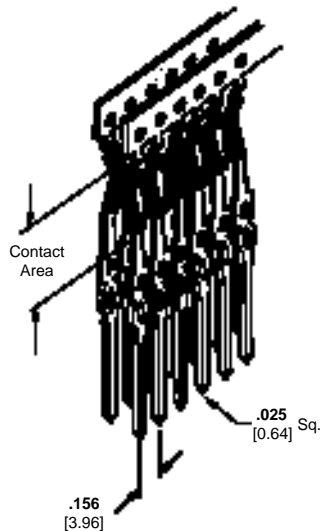
**Technical Documents:**

- (pages 186, 187):
- Product Specification 108-26002

**Keying Plug**



**Intercontact (Plastic)**  
Part No. 118982-1



**Note:** Other connector sizes can be made available, consult Tyco Electronics.

Make Before Break Contacts		
Dimension L	Plating	Part Numbers*
.475 12.07	B	1-118778-2
.702 17.83	A	118778-6

Dimension L	Contact Part Numbers*
.475 12.07	117285-7
.702 17.83	117285-8

\*Contacts are strip form, 15,000 per reel.

**Card Guides for ECONOMATE Connectors**

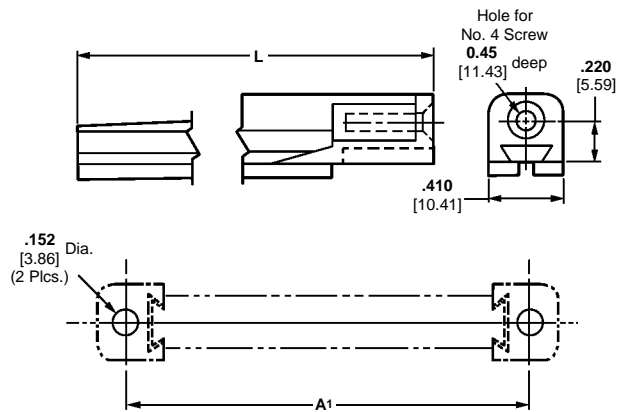
**Material:** Black glass-filled nylon

**Related Product Data:**

Mates with all .100 x .200 [2.54 x 5.08] and .156 x .200 [3.96 x 5.08] centerline housings

**Technical Documents:**

(pages 186, 187):  
Instruction Sheet 408-9091



**Recommended Mounting Dimensions**

Dimension L*	Card Guide Part Numbers
2.500 63.50	117169-3
6.000 152.40	1-117169-3

\*Other lengths can be made available in .500 [12.70] increments from 1.500 [38.10] to 6.500 [165.10]. Consult Tyco Electronics for details.

Housing		Dimension A <sup>1</sup>
Centerline Spacing	No. of Dual Positions	
.100 x .200 2.54 x 5.08	30	<b>3.544</b> 90.02
	35	<b>4.044</b> 102.72
	36	<b>4.144</b> 105.26
	40	<b>4.544</b> 115.42
	50	<b>5.544</b> 140.82
	60	<b>6.544</b> 166.22
.156 x .200 3.96 x 5.08	22	<b>4.028</b> 102.31

**Note:** A<sup>1</sup> dimension = A dimension of ECONOMATE housing plus .310 [7.87].

**ECONOMATE Center Carrier Feed-Thru Posts\***

**.100 [2.54] Centerline, Wrap Type**

**Material:**

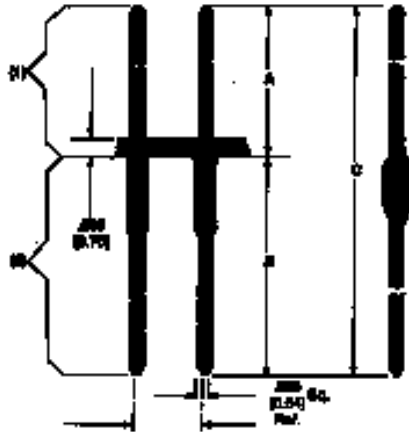
Copper Alloy 725

**Finish** – Gold plate per MIL-G-45204 over nickel plate per QQ-N-290 (see table for thicknesses)

Recommended Hole Size:

**Non-Plated-thru Hole** - .0453±.001 [1.15±0.03], 1.15 mm drill

**Plated-thru Hole** - .039±.003 [0.99±0.08], 1.15 mm drill



Dimensions			Part Numbers
A	B	C	
			1) .000001 [0.00003] min. gold flash over .000050 [0.0013] min. nickel plate
			2) .000050 [0.0013] min. gold plate over .000050 [0.0013] min. nickel plate
.318 8.08	.687 17.45	1.005 25.53	—
.578 14.68	.460 11.68	1.038 26.37	118243-8
.578 14.68	.550 13.97	1.128 28.65	1-118243-1
.380 9.65	.823 20.90	1.203 30.56	—

**.100 [2.54] Centerline, TERMI-POINT Clip Part Number 119136-2**

**Material:**

Copper Alloy 725

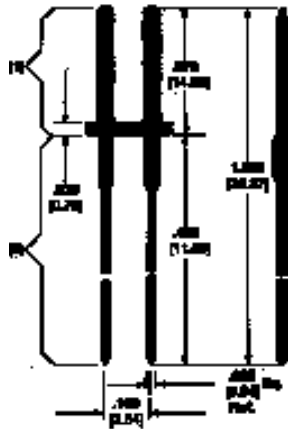
**Finish** –

- 1) Gold plate per MIL-G-45204, .000030 [0.00076] min. thk. over nickel plate per QQ-N-290, .000050 [0.0013] min. thk.
- 2) Gold flash per MIL-G-45204, .000001 [0.00003] min. thk. over nickel plate per QQ-N-290, .000050 [0.0013] min. thk.

**Recommended Hole Size:**

**Non Plated-thru Hole** - .0453±.001 [1.15±0.03], 1.15 mm drill

**Plated-thru Hole** - .039±.003 [0.99±0.08], 1.15 mm drill



**.125 [3.18] Centerline, Wrap Type**

**Material:**

Copper Alloy 725

**Finish** – Gold plate per MIL-G-45204 or solder plate over nickel plate per QQ-N-290 (see table for thicknesses)

**Recommended Hole Size:**

**Non Plated-thru Hole** - .0453±.001 [1.15±0.03], 1.15 mm drill

**Plated-Thru Hole** - .039±.003 [0.99±0.08], 1.15 mm drill



Dimensions		Part Numbers	
A	B		
		.000100 [0.0025] min. tin plate over .000050 [0.0013] min. nickel plate	.000030 [0.00076] min. gold plate over .000050 [0.0013] min. nickel plate
.703 17.68	.548 13.92	117311-7	1-117311-0

\*Use AMP Cut and Transfer Machine for center carrier post insertion. Consult Tyco Electronics.

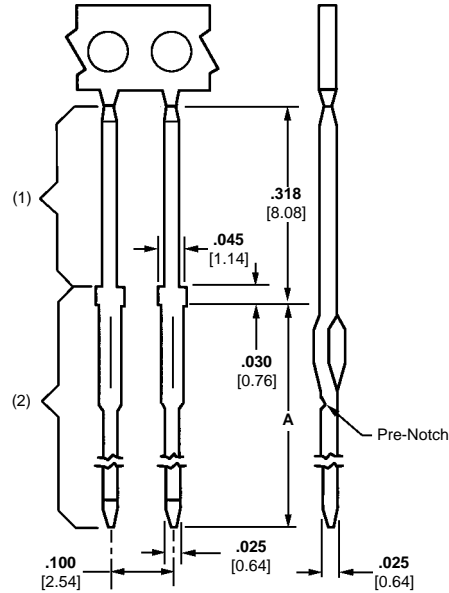
**ECONOMATE Connectors** (Continued)

**Feed-Through Posts**

**Material and Finish:**

Copper alloy 725, plated as follows:  
**Plating A**—Selectively plated .000030 [0.00076] min. gold in Area (1), .000001 [0.00003] min. gold in Area (2), with entire post underplated .000050 [0.00127] min. nickel  
**Plating B**—.000030 [0.00076] min. gold over .000100 [0.00254] min. nickel on entire post  
**Plating C**—.000050 [0.00127] min. gold over .000100 [0.00254] min. nickel on entire post  
**Plating D**—.000100 [0.00254] min. tin-lead over .000050 [0.00127] min. nickel on entire post

**.100 [2.54] Centerline Spacing**



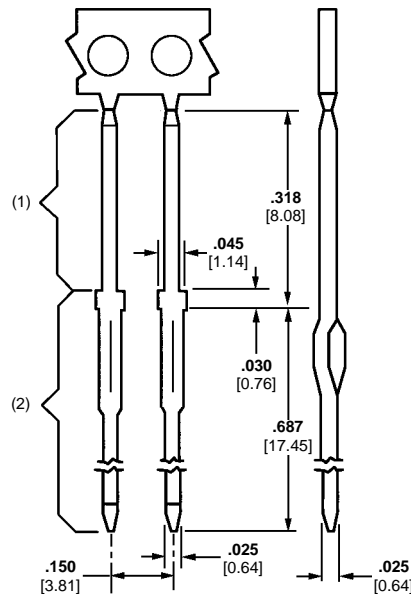
Dimension A	Feed-Through Post Part Numbers*			
	Plating A	Plating B	Plating C	Plating D
.687 17.45	117249-7 3-117249-1 <sup>1</sup>	1-117249-2	117249-2	6-117249-5
.500 12.70	3-117249-2	—	—	5-117249-6

\*Posts in strip form, 50,000 per reel.  
<sup>1</sup>Pre-notched to break with 120° bend.

**.150 [3.81] Centerline Spacing**

**Material and Finish:**

Copper alloy 725, selectively plated  
 .000030 [0.00076] min. gold in Area (1),  
 .000001 [0.00003] min. gold in Area (2),  
 with entire post underplated .000050 [0.00127] min. nickel

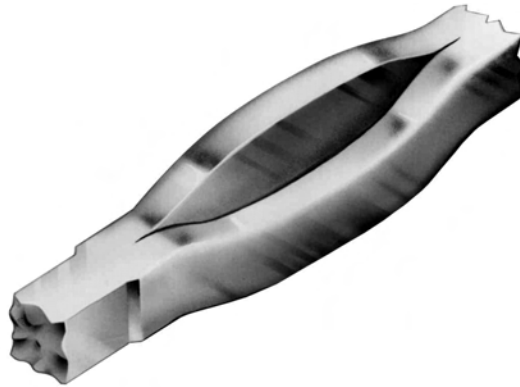


50,000 per reel  
 Part No. 117269-5

Press-Fit Board-to-Board Connectors

**ECONOMATE Connectors** (Continued)

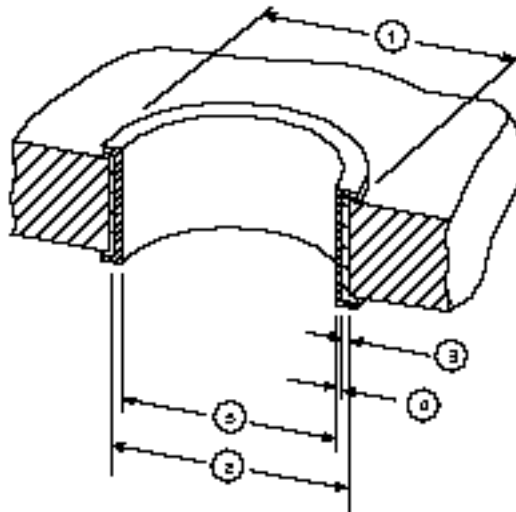
**AMP ACTION PIN  
Press-Fit Contacts**



ACTION PIN contacts provide a reliable press-fit connection. Localized pressure in the interface area entails oxide break-through and helps prevent corrosion in the harshest environments to provide a reliable connection virtually every time. Also, radial and axial distortion are controlled to meet today's standards for multilayer board applications.

**PC Board Thickness**

ACTION PIN contacts are designed for use in a variety of PC board thicknesses. However, certain ACTION PIN contacts are to be used in specific ranges of board thicknesses. To promote optimum performance, the recommended board thicknesses provided with the connector being used must be followed.



- ① Annular Ring (See Note)
- ② Drilled Hole
- ③ Copper Thickness
- ④ Tin-Lead Thickness
- ⑤ Plated Through-Hole

**Mounting Hole Specifications**

Connector		ACTION PIN Contact Material Thickness	Drilled Hole Diameter <sup>②</sup>	Plating Thicknesses		Plated Through-Hole Diameter <sup>⑤</sup>	Radial Hole Distortion	
Centerline	No. of Dual Positions			Copper <sup>③</sup> *	Tin-Lead <sup>④</sup>		Average	Maximum
.100 x .200 2.54 x 5.08	30, 35, 36, 40, 50, 60	.025 0.64	.0453±.001 1.151±0.03	.001-.003 0.03-0.08	.0003 0.008 Min.	.037-.043 0.94-1.09	Not Specified	Not Specified
.156 x .200 3.96 x 5.08	22							

\*Maximum hardness of copper layer is 150 Knoop.

**Note:** Recommended annular ring diameter is hole diameter plus .020 [0.51].

**Application Tooling for ECONOMATE Connectors**

Available from Tyco Electronics is a complete series of ACTION PIN Assembly Tooling Kits for ECONOMATE connector housings and feed-through posts. Assembly Kit tools provide the means for installing housings and contacts onto printed circuit boards, as well as removing

housings and contacts from the printed circuit boards. All tools are available in kits, or may be purchased individually.

In many instances, part number series are listed in the charts. Specific dash numbers and detailed information on the contacts and

housings are presented on the respective product specification pages. For specific dash numbers and complete information on the tooling, contact Tyco Electronics.

**For ECONOMATE Connectors**

ACTION PIN Contacts			ECONOMATE Housings		ACTION PIN Assembly Tool Numbers
Centerline	Pin Length	Part Numbers	No. of Dual Positions	Part Numbers	
.125 x .125 3.18 x 3.18	.702 17.83	117793-□	15-60	117796-□	Applicator 265902-□ Carrier Removal Tool 265924-□ Housing Assembly Tool 58292-□ Housing Removal Tool 265868-1 Pin Replacement Tool 265871-2
.100 x .200 2.54 x 5.08	.702 17.83	117795-□	15-60	117798-□	Applicator 265904-□ Carrier Removal Tool 265924-□ Housing Assembly Tool 265879-□ Housing Removal Tool 265868-1 Pin Replacement Tool 265871-2
.156 x .200 3.96 x 5.08	.702 17.83	117285-□	15-50	117296-□	Applicator 265905-□ Carrier Removal Tool 265924-□ Housing Assembly Tool 265881-□ Housing Removal Tool 265868-1 Pin Replacement Tool 265871-2
.156 x .200 3.96 x 5.08	.475 12.07	117285-□	15-50	117296-□	Applicator 265906-□ Carrier Removal Tool 265924-□ Housing Assembly Tool 265881-□ Housing Removal Tool 265868-1 Pin Replacement Tool 265871-3
.100 x .200 2.54 x 5.08	.475 12.07	117795-□	15-60	117798-□	Applicator 266129-□ Carrier Removal Tool 265924-□ Housing Assembly Tool 265879-□ Housing Removal Tool 265868-1 Pin Replacement Tool 265871-3
.100 2.54	.340 8.64	117880-□	20-60	117879-□	Applicator 265937-□ Carrier Removal Tool 265924-□ Housing Assembly Tool 265962-□ Housing Removal Tool 265868-2 Pin Replacement Tool 1-265871-1



**For Feed-Through Posts**

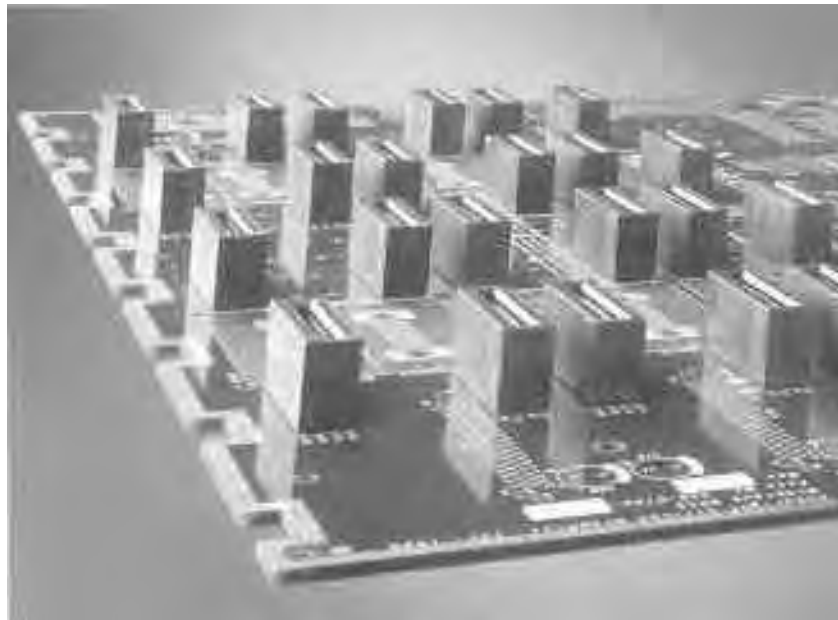
ACTION PIN Contacts				ACTION PIN Assembly Tool Numbers
Centerline	Pin Length	No. of Positions	Part Numbers	
.100 2.54	.500-.687 12.70-17.45	8-60	117249-□	Applicator 265910-□ Carrier Removal Tool 265924-□ Pin Replacement Tool 265871-7
.125 3.18	.687 17.45	8-60	117272-□	Applicator 265911-□ Carrier Removal Tool 265924-□ Pin Replacement Tool 265871-7
.150 3.81	.687 17.45	8-50	117269-□	Applicator 265912-□ Carrier Removal Tool 265924-□ Pin Replacement Tool 265871-7
.150 3.81	.365-.475 9.27-12.07	8-50	117269-□	Applicator 265931-□ Carrier Removal Tool 265924-□ Pin Replacement Tool 265871-7

Press-Fit Board-to-Board Connectors

**High Density Press-Fit Card Edge**

**Product Facts**

- High density .050" [1.27] center spacing.
- Staggered contacts for low insertion force.
- Designed for multi-layer .093" [2.36] daughter cards.
- High temperature SMT solder reflow temperatures of 260° for 30 seconds.
- Unique pin geometry allows for even distribution of forces reducing axial pin rotation and preserving perpendicularity to the PCB board.
- Edge and side coining provides a uniform pin radius ensuring maximum contact without "skiving" the plated hole.
- Full complement of application tooling available.
- Recognized under the Component Program of Underwriters Laboratories Inc.,  File No. E60980
- Certified by Canadian Standards Association,  File No. LR 49571



High Density (.050" [1.27] center spacing) Press-Fit connectors from Tyco Electronics are designed for high density backplane or mid-plane applications. Compliant pin connectors from Tyco Electronics meet or exceed requirements of current industry standards, including Bellcore specifications, which address critical performance issues such as hole retention, hole deformation and environmental performance.

**Electrical Characteristics:**

**Operating Voltage**—600VDC (sea level)

**Current Rating**—1.5 Amperes

**Initial Contact Resistance** — 30 milliohms

**Environmental Characteristics:**

**Operating Temperature** — -55°C to +125°C

**Temperature Cycling** — MIL-STD-202 method 107

**Vibration**— MIL-STD-202, method 204

**.050 [1.27] Centerline For .093 [2.36] Thick Daughter Cards**

**Material and Finish:**

**Insulation Resistance**—1000 megohms minimum

**Contact Retention into PCB**—2 lbs. min.

**Insertion Force**—10 oz. max.

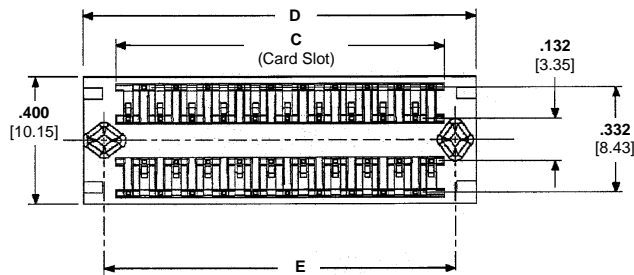
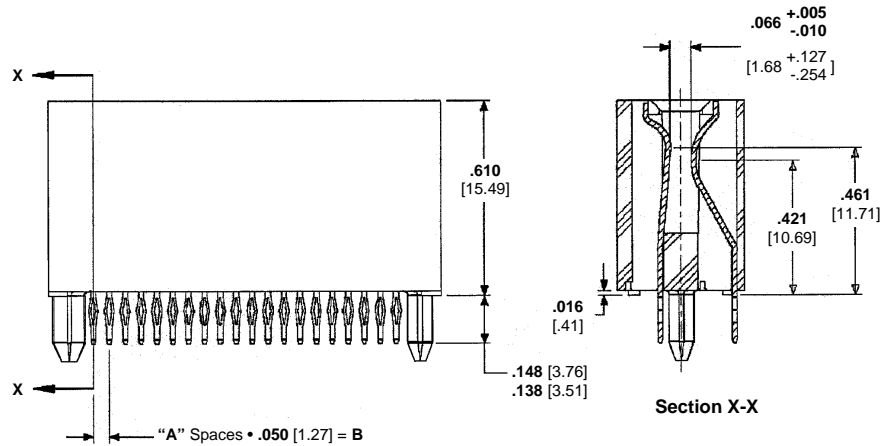
**Mating Force**—2 oz. per contact

**Housing**—High Temp. Glass filled thermoplastic, UL rating 94V-0

**Color**—Black

**Spring Contact**—BeCu

**Contact Plating**—Palladium Nickel



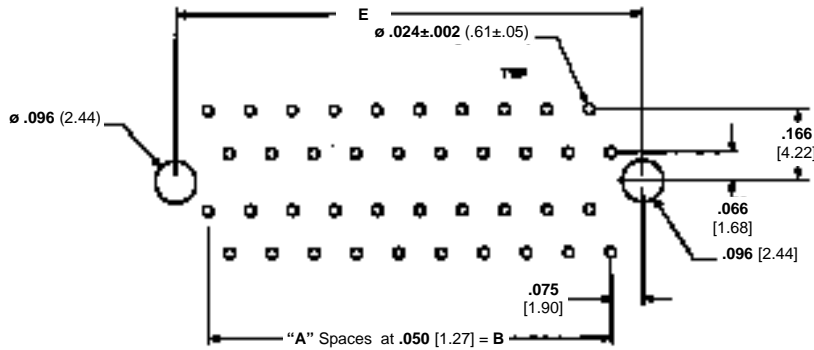
**Note:** Dimension E is Connector Mounting PC Hole Pattern.

Press-Fit  
Board-to-Board Connectors

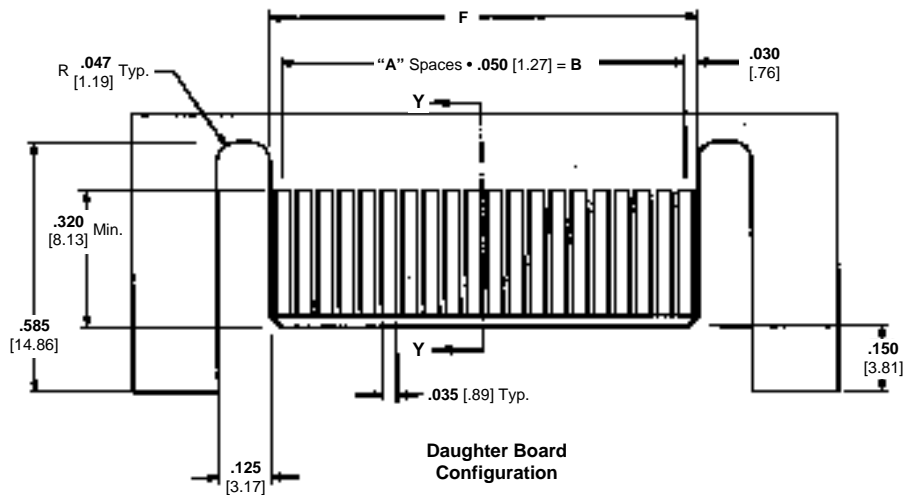


**Ordering Information**

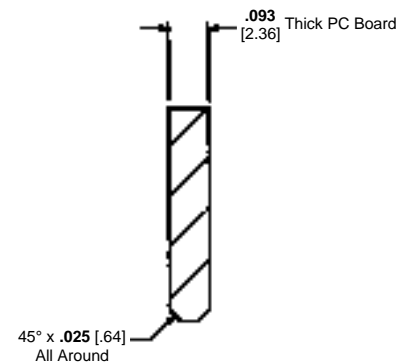
No. of Dual Readout Position	Dimensions						TYCO Part Number	Acquired Part Number
	A	B	C	D	E	F		
20	19	0.950 [24.13]	1.040 [26.42]	1.230 [31.24]	1.100 [27.94]	1.010 [25.65]	147668-2	C9D020PF60048
30	29	1.450 [36.83]	1.540 [39.12]	1.730 [43.94]	1.600 [40.64]	1.510 [38.35]	147668-3	C9D030PF60048
40	39	1.950 [49.53]	2.040 [51.82]	2.230 [56.64]	2.100 [53.34]	2.010 [51.05]	147668-4	C9D040PF60048
50	49	2.450 [62.23]	2.540 [64.52]	2.730 [69.34]	2.600 [66.04]	2.510 [63.75]	147668-5	C9D050PF60048
60	59	2.950 [74.93]	3.040 [77.22]	3.230 [82.04]	3.100 [78.74]	3.010 [76.45]	147668-6	C9D060PF60048



Connector Mounting  
PC Hole Pattern



Daughter Board  
Configuration



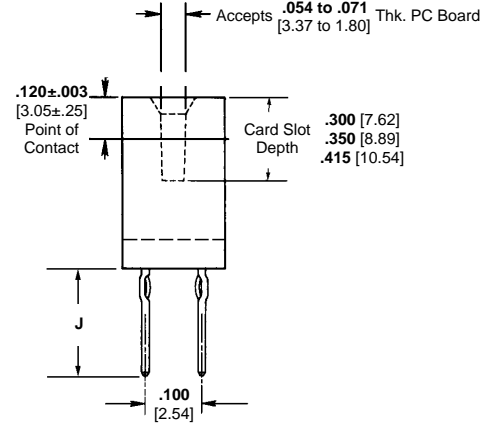
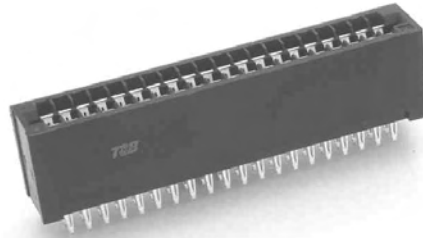
Section Y-Y

Press-Fit  
Board-to-Board Connectors

**.100 x .100 [2.54 x 2.54] Centerline Press Fit, with Standoffs**

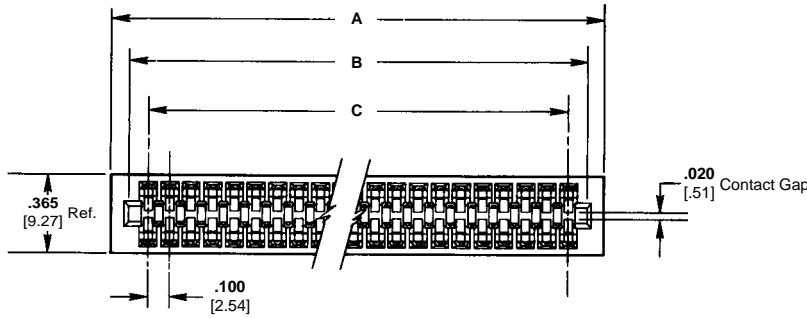
**Product Facts**

- **Recognized under the Component Program of Underwriters Laboratories Inc., File No. E60980** 
- **Certified by Canadian Standards Association, File No. LR49571** 



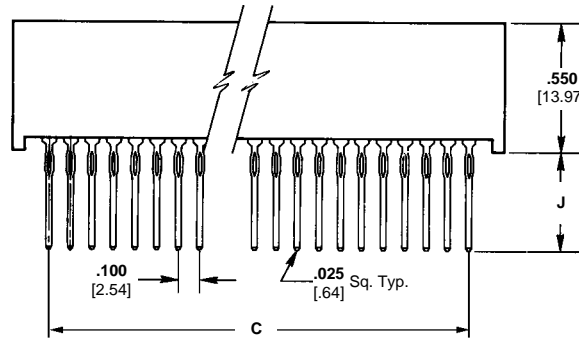
**Physical Properties:**

- Insulation Resistance**—5000 megohms minimum
- Contact Retention Into PCB**—5lbs. min. [356 N]
- Insertion Force**—10 oz. [44.5 N] max. measured with a .0700 ± .0001 [1.80±.00254] THK polished blade per MIL-C-21097C
- Withdrawal Force**—1 oz. min. [4.54 N] measured with a .0540 ± .0001 [3.37±.000254] THK polished test blade per MIL-C-21097C after sizing 3 times with a .0700 ± .0001 [1.80±.00254] THK blade
- Insulator Body**—High Temp. Glass filled thermoplastic, UL rating 94V-0
- Color**—Black
- Spring Contact**—Phosphor Bronze alloy
- Contact Plating**—.000050 [0.00127] nickel underplate with .000030 [0.00076] gold in the mating area, tin/lead on tails, .000100 [0.00254] minimum



**Electrical Properties:**

- Operating Voltage**—600 VDC (sea level)
- Current Rating**—3 Amperes
- Initial Contact Resistance**—10 milliohms



**Environmental Properties:**

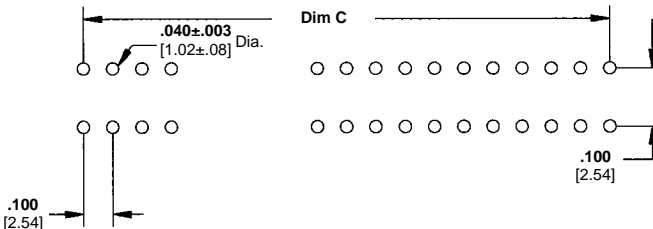
- Operating Temperature**—-55°C to +125°C
- Temperature Cycling**—MIL-STD-202 method 107
- Vibration**—MIL-STD-202, method 204

**Application Tooling:**

**Insertion Tool**—page 150

**Related Product Data:**

**Daughter Card Edge Pattern**—page 57



Press-Fit Board-to-Board Connectors

**Ordering Information**

.100 [2.54] Centerline/.100 [2.54] Row-To-Row		with Standoffs			Acquired Part Numbers		
No. of Dual Readout Positions	Dimensions			.300 [7.62] Card Slot Depth	.350 [8.89] Card Slot Depth	.415 [10.54] Card Slot Depth	
	A	B	C				
<b>Tail Length .180 [4.57] (Dim. "J")</b>							
18	<b>2.034</b> 51.66	<b>1.904</b> 48.36	<b>1.700</b> 43.18	C1D18PF29013	C1D18PF29133	C1D18PF29043	
20	<b>2.234</b> 56.74	<b>2.104</b> 53.44	<b>1.900</b> 48.26	C1D20PF29013	C1D20PF29133	C1D20PF29043	
22	<b>2.434</b> 61.82	<b>2.304</b> 58.52	<b>2.100</b> 53.34	C1D22PF29013	C1D22PF29133	C1D22PF29043	
25	<b>2.734</b> 69.44	<b>2.604</b> 66.14	<b>2.400</b> 60.96	C1D25PF29013	C1D25PF29133	C1D25PF29043	
28	<b>3.034</b> 77.06	<b>2.904</b> 73.76	<b>2.700</b> 68.58	C1D28PF29013	C1D28PF29133	C1D28PF29043	
30	<b>3.234</b> 82.14	<b>3.104</b> 78.84	<b>2.900</b> 73.66	C1D30PF29013	C1D30PF29133	C1D30PF29043	
35	<b>3.734</b> 94.84	<b>3.604</b> 91.54	<b>3.400</b> 86.36	C1D35PF29013	C1D35PF29133	C1D35PF29043	
36	<b>3.834</b> 97.38	<b>3.704</b> 94.08	<b>3.500</b> 88.90	C1D36PF29013	C1D36PF29133	C1D36PF29043	
40	<b>4.234</b> 107.54	<b>4.104</b> 104.24	<b>3.900</b> 99.06	C1D40PF29013	C1D40PF29133	C1D40PF29043	
43	<b>4.534</b> 115.16	<b>4.404</b> 111.86	<b>4.200</b> 106.68	C1D43PF29013	C1D43PF29133	C1D43PF29043	
45	<b>4.734</b> 120.24	<b>4.604</b> 116.94	<b>4.400</b> 111.76	C1D45PF29013	C1D45PF29133	C1D45PF29043	
50	<b>5.234</b> 132.94	<b>5.104</b> 129.64	<b>4.900</b> 124.46	C1D50PF29013	C1D50PF29133	C1D50PF29043	
60	<b>6.234</b> 158.34	<b>6.104</b> 155.04	<b>5.900</b> 149.86	C1D60PF29013	C1D60PF29133	C1D60PF29043	
<b>Tail Length .475 [12.07] (Dim. "J")</b>							
18	<b>2.034</b> 51.66	<b>1.904</b> 48.36	<b>1.700</b> 43.18	C1D18PF29015	C1D18PF29135	C1D18PF29045	
20	<b>2.234</b> 56.74	<b>2.104</b> 53.44	<b>1.900</b> 48.26	C1D20PF29015	C1D20PF29135	C1D20PF29045	
22	<b>2.434</b> 61.82	<b>2.304</b> 58.52	<b>2.100</b> 53.34	C1D22PF29015	C1D22PF29135	C1D22PF29045	
25	<b>2.734</b> 69.44	<b>2.604</b> 66.14	<b>2.400</b> 60.96	C1D25PF29015	C1D25PF29135	C1D25PF29045	
28	<b>3.034</b> 77.06	<b>2.904</b> 73.76	<b>2.700</b> 68.58	C1D28PF29015	C1D28PF29135	C1D28PF29045	
30	<b>3.234</b> 82.14	<b>3.104</b> 78.84	<b>2.900</b> 73.66	C1D30PF29015	C1D30PF29135	C1D30PF29045	
35	<b>3.734</b> 94.84	<b>3.604</b> 91.54	<b>3.400</b> 86.36	C1D35PF29015	C1D35PF29135	C1D35PF29045	
36	<b>3.834</b> 97.38	<b>3.704</b> 94.08	<b>3.500</b> 88.90	C1D36PF29015	C1D36PF29135	C1D36PF29045	
40	<b>4.234</b> 107.54	<b>4.104</b> 104.24	<b>3.900</b> 99.06	C1D40PF29015	C1D40PF29135	C1D40PF29045	
43	<b>4.534</b> 115.16	<b>4.404</b> 111.86	<b>4.200</b> 106.68	C1D43PF29015	C1D43PF29135	C1D43PF29045	
45	<b>4.734</b> 120.24	<b>4.604</b> 116.94	<b>4.400</b> 111.76	C1D45PF29015	C1D45PF29135	C1D45PF29045	
50	<b>5.234</b> 132.94	<b>5.104</b> 129.64	<b>4.900</b> 124.46	C1D50PF29015	C1D50PF29135	C1D50PF29045	
60	<b>6.234</b> 158.34	<b>6.104</b> 155.04	<b>5.900</b> 149.86	C1D60PF29015	C1D60PF29135	C1D60PF29045	

Press-Fit  
Board-to-Board Connectors

**Ordering Information**

.100" [2.54] Centerline / .100" [2.54] Row-to-Row with Standoffs

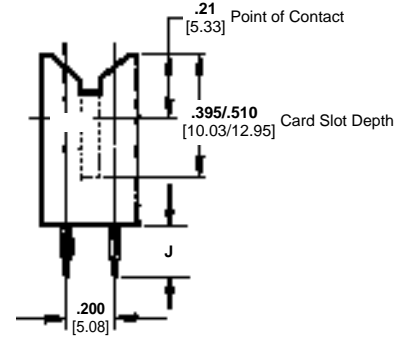
No. of Dual Readout Positions	Dimensions			Acquired Part Numbers		
	A	B	C	.300 [7.62] Card Slot Depth	.350 [8.84] Card Slot Depth	.415 [10.54] Card Slot Depth
Tail Length .625 [15.88] (Dim. "J")						
18	<b>2.034</b> 51.66	<b>1.904</b> 48.36	<b>1.700</b> 43.18	C1D18PF29017	C1D18PF29137	C1D18PF29047
20	<b>2.234</b> 56.74	<b>2.104</b> 53.44	<b>1.900</b> 48.26	C1D20PF29017	C1D20PF29137	C1D20PF29047
22	<b>2.434</b> 61.82	<b>2.304</b> 58.52	<b>2.100</b> 53.34	C1D22PF29017	C1D22PF29137	C1D22PF29047
25	<b>2.734</b> 69.44	<b>2.604</b> 66.14	<b>2.400</b> 60.96	C1D25PF29017	C1D25PF29137	C1D25PF29047
28	<b>3.034</b> 77.06	<b>2.904</b> 73.76	<b>2.700</b> 68.58	C1D28PF29017	C1D28PF29137	C1D28PF29047
30	<b>3.234</b> 82.14	<b>3.104</b> 78.84	<b>2.900</b> 73.66	C1D30PF29017	C1D30PF29137	C1D30PF29047
35	<b>3.734</b> 94.84	<b>3.604</b> 91.54	<b>3.400</b> 86.36	C1D35PF29017	C1D35PF29137	C1D35PF29047
36	<b>3.834</b> 97.38	<b>3.704</b> 94.08	<b>3.500</b> 88.90	C1D36PF29017	C1D36PF29137	C1D36PF29047
40	<b>4.234</b> 107.54	<b>4.104</b> 104.24	<b>3.900</b> 99.06	C1D40PF29017	C1D40PF29137	C1D40PF29047
43	<b>4.534</b> 115.16	<b>4.404</b> 111.86	<b>4.200</b> 106.68	C1D43PF29017	C1D43PF29137	C1D43PF29047
45	<b>4.734</b> 120.24	<b>4.604</b> 116.94	<b>4.400</b> 111.76	C1D45PF29017	C1D45PF29137	C1D45PF29047
50	<b>5.234</b> 132.94	<b>5.104</b> 129.64	<b>4.900</b> 124.46	C1D50PF29017	C1D50PF29137	C1D50PF29047
60	<b>6.234</b> 158.34	<b>6.104</b> 155.04	<b>5.900</b> 149.86	C1D60PF29017	C1D60PF29137	C1D60PF29047

Press-Fit  
Board-to-Board Connectors

**.100 x .200 [2.54 x 5.08] Centerline Press-Fit, Full Scoop**

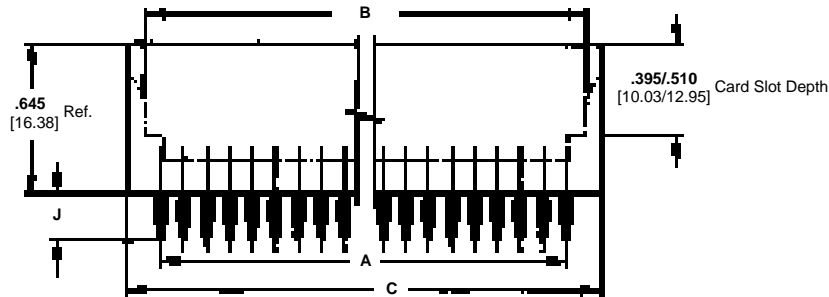
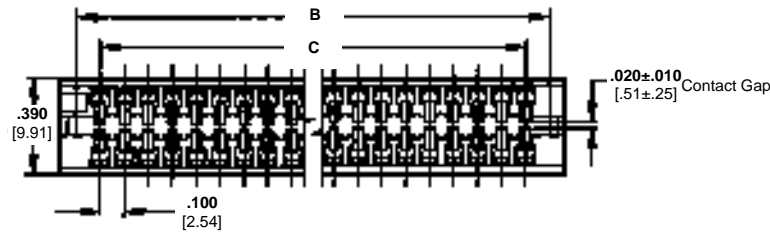
**Product Facts**

- **Recognized under the Component Program of Underwriters Laboratories Inc., File No. E60980**
- **Certified by Canadian Standards Association, File No. LR49571**



**Physical Properties:**

- Insulation Resistance**—5000 megohms minimum.
- Contact Retention Into PCB**—5lbs. min. [356 N]
- Insertion Force**—10 oz. [44.5 N] max. measured with a .0700 ± .0001 [1.80±.00254] THK polished blade per MIL-C-21097C
- Withdrawal Force**—1 oz. min. [4.5 N] measured with a .0540 ± .0001 [3.37±.00254] THK polished test blade per MIL-C-21097C after sizing 3 times with a .0700 ± .0001 [1.80±.00254] THK blade
- Insulator Body**—High Temp. Glass filled thermoplastic, UL rating 94V-0
- Color**—Black
- Spring Contact**—Phosphor Bronze alloy
- Contact Plating**—.000050 [0.00127] nickel underplate with .000030 [0.00076] gold in the mating area, tin/lead on tails, .000100 [0.00254] minimum



**Electrical Properties**

- Operating Voltage**—600 VDC (sea level)
- Current Rating**—3 Amperes
- Contact Resistance**—10 milliohms

**Environmental Properties:**

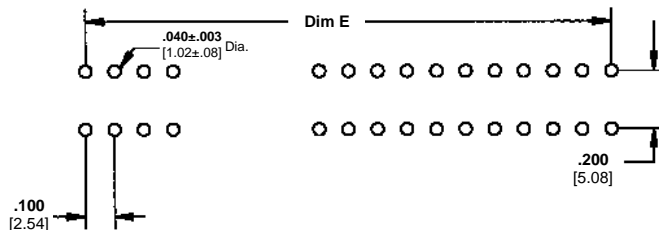
- Operating Temperature**—-55°C to +125°C
- Temperature Cycling**—MIL-STD-202 method 107
- Vibration**—MIL-STD-202, method 204

**Application Tooling:**

**Insertion Tool**—page 150

**Related Product Data:**

**Daughter Card Edge Pattern**—page 57



Note: Open ends and open/closed ends are available. Consult Tyco Electronics.

Press-Fit Board-to-Board Connectors

.100 [2.54] Centerline / .200 [5.08] Row-to-Row Full Scoop

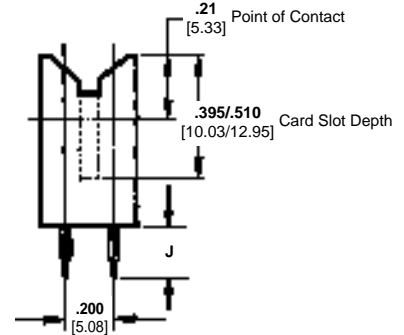
No. of Dual Readout Positions	Dimensions			Acquired Part Numbers	
	A	B	C	.510 [12.95] Card Slot Depth	.395 [10.03] Card Slot Depth
<b>Tail Length .670 [17.02] (DIM "J")</b>					
18	<b>2.034</b> 51.66	<b>1.904</b> 48.36	<b>1.700</b> 43.18	W8D18PF29012	W8D18PF29042
20	<b>2.234</b> 56.74	<b>2.104</b> 53.44	<b>1.900</b> 48.26	W8D20PF29012	W8D20PF29042
22	<b>2.434</b> 61.82	<b>2.304</b> 58.52	<b>2.100</b> 53.34	W8D22PF29012	W8D22PF29042
25	<b>2.734</b> 69.44	<b>2.604</b> 66.14	<b>2.400</b> 60.96	W8D25PF29012	W8D25PF29042
28	<b>3.034</b> 77.06	<b>2.904</b> 73.76	<b>2.700</b> 68.58	W8D28PF29012	W8D28PF29042
30	<b>3.234</b> 82.14	<b>3.104</b> 78.84	<b>2.900</b> 73.66	W8D30PF29012	W8D30PF29042
35	<b>3.734</b> 94.84	<b>3.604</b> 91.54	<b>3.400</b> 86.36	W8D35PF29012	W8D35PF29042
36	<b>3.834</b> 97.38	<b>3.704</b> 94.08	<b>3.500</b> 88.90	W8D36PF29012	W8D36PF29042
40	<b>4.234</b> 107.54	<b>4.104</b> 104.24	<b>3.900</b> 99.06	W8D40PF29012	W8D40PF29042
43	<b>4.534</b> 115.16	<b>4.404</b> 111.86	<b>4.200</b> 106.68	W8D43PF29012	W8D43PF29042
45	<b>4.734</b> 120.24	<b>4.604</b> 116.94	<b>4.400</b> 111.76	W8D45PF29012	W8D45PF29042
50	<b>5.234</b> 132.94	<b>5.104</b> 129.64	<b>4.900</b> 124.46	W8D50PF29012	W8D50PF29042
60	<b>6.234</b> 158.34	<b>6.104</b> 155.04	<b>5.900</b> 149.86	W8D60PF29012	W8D60PF29042
<b>Tail Length .180 [4.57] (DIM "J")</b>					
18	<b>2.034</b> 51.66	<b>1.904</b> 48.36	<b>1.700</b> 43.18	W8D18PF29013	W8D18PF29043
20	<b>2.234</b> 56.74	<b>2.104</b> 53.44	<b>1.900</b> 48.26	W8D20PF29013	W8D20PF29043
22	<b>2.434</b> 61.82	<b>2.304</b> 58.52	<b>2.100</b> 53.34	W8D22PF29013	W8D22PF29043
25	<b>2.734</b> 69.44	<b>2.604</b> 66.14	<b>2.400</b> 60.96	W8D25PF29013	W8D25PF29043
28	<b>3.034</b> 77.06	<b>2.904</b> 73.76	<b>2.700</b> 68.58	W8D28PF29013	W8D28PF29043
30	<b>3.234</b> 82.14	<b>3.104</b> 78.84	<b>2.900</b> 73.66	W8D30PF29013	W8D30PF29043
35	<b>3.734</b> 94.84	<b>3.604</b> 91.54	<b>3.400</b> 86.36	W8D35PF29013	W8D35PF29043
36	<b>3.834</b> 97.38	<b>3.704</b> 94.08	<b>3.500</b> 88.90	W8D36PF29013	W8D36PF29043
40	<b>4.234</b> 107.54	<b>4.104</b> 104.24	<b>3.900</b> 99.06	W8D40PF29013	W8D40PF29043
43	<b>4.534</b> 115.16	<b>4.404</b> 111.86	<b>4.200</b> 106.68	W8D43PF29013	W8D43PF29043
45	<b>4.734</b> 120.24	<b>4.604</b> 116.94	<b>4.400</b> 111.76	W8D45PF29013	W8D45PF29043
50	<b>5.234</b> 132.94	<b>5.104</b> 129.64	<b>4.900</b> 124.46	W8D50PF29013	W8D50PF29043
60	<b>6.234</b> 158.34	<b>6.104</b> 155.04	<b>5.900</b> 149.86	W8D60PF29013	W8D60PF29043

Press-Fit Board-to-Board Connectors

**.100 x .200 [2.54 x 5.08] Centerline, Press-Fit, Full Scoop with Standoffs**

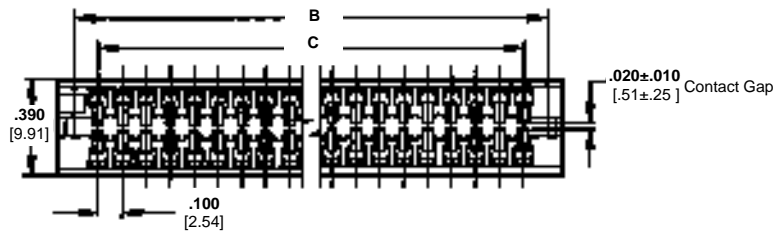
**Product Facts**

- **Recognized under the Component Program of Underwriters Laboratories Inc., File No. E60980** 
- **Certified by Canadian Standards Association, File No. LR49571** 



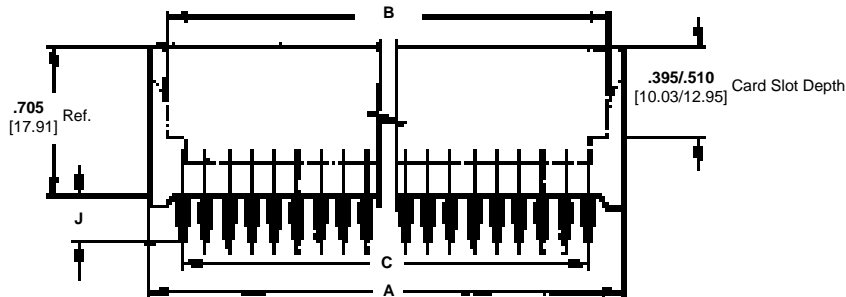
**Physical Properties:**

- Insulation Resistance**—5000 megohms minimum.
- Contact Retention Into PCB**—5lbs. min. [356 N]
- Insertion Force**—10 oz. [44.5 N] max. measured with a .0700 ± .0001 [1.80±.00254] THK polished blade per MIL-C-21097C
- Withdrawal Force**—1 oz. min. [4.5 N] measured with a .0540 ± .0001 [3.37±.00254] THK polished test blade per MIL-C-21097C after sizing 3 times with a .0700 ± .0001 [1.80±.00254] THK blade
- Insulator Body**—High Temp. Glass filled thermoplastic, UL rating 94V-0
- Color**—Black
- Spring Contact**—Phosphor Bronze alloy
- Contact Plating**—.000050 [0.00127] nickel underplate with .000030 [0.00076] gold in the mating area, tin/lead on tails, .000100 [0.00254] minimum



**Electrical Properties:**

- Operating Voltage**—600 VDC (sea level)
- Current Rating**—3 Amperes
- Initial Contact Resistance**—10 milliohms



**Environmental Properties:**

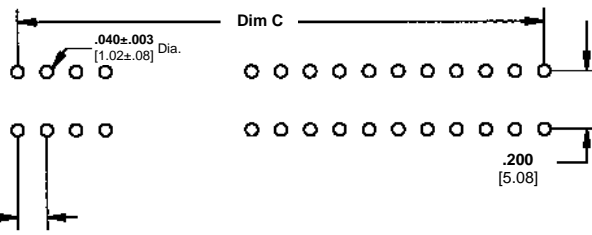
- Operating Temperature**—-55°C to +125°C
- Temperature Cycling**—MIL-STD-202 method 107
- Vibration**—MIL-STD-202, method 204

**Application Tooling:**

**Insertion Tool**—page 150

**Related Product Data:**

**Daughter Card Edge Pattern**—page 57



Note: Open ends and open/closed ends are available. Consult Tyco Electronics.

Press-Fit Board-to-Board Connectors

.100 [2.54] Centerline / .200 [5.08] Row-to-Row Full Scoop with Standoffs

No. of Dual Readout Positions	Dimensions			Acquired Part Numbers	
	A	B	C	.510 [12.95] Card Slot Depth	.395 [10.03] Card Slot Depth
<b>Tail Length .670 [17.02] (DIM "J")</b>					
18	<b>2.034</b> 51.66	<b>1.904</b> 48.36	<b>1.700</b> 43.18	W8D18PF29062	W8D18PF29092
20	<b>2.234</b> 56.74	<b>2.104</b> 53.44	<b>1.900</b> 48.26	W8D20PF29062	W8D20PF29092
22	<b>2.434</b> 61.82	<b>2.304</b> 58.52	<b>2.100</b> 53.34	W8D22PF29062	W8D22PF29092
25	<b>2.734</b> 69.44	<b>2.604</b> 66.14	<b>2.400</b> 60.96	W8D25PF29062	W8D25PF29092
28	<b>3.034</b> 77.06	<b>2.904</b> 73.76	<b>2.700</b> 68.58	W8D28PF29062	W8D28PF29092
30	<b>3.234</b> 82.14	<b>3.104</b> 78.84	<b>2.900</b> 73.66	W8D30PF29062	W8D30PF29092
35	<b>3.734</b> 94.84	<b>3.604</b> 91.54	<b>3.400</b> 86.36	W8D35PF29062	W8D35PF29092
36	<b>3.834</b> 97.38	<b>3.704</b> 94.08	<b>3.500</b> 88.90	W8D36PF29062	W8D36PF29092
40	<b>4.234</b> 107.54	<b>4.104</b> 104.24	<b>3.900</b> 99.06	W8D40PF29062	W8D40PF29092
43	<b>4.534</b> 115.16	<b>4.404</b> 111.86	<b>4.200</b> 106.68	W8D43PF29062	W8D43PF29092
45	<b>4.734</b> 120.24	<b>4.604</b> 116.94	<b>4.400</b> 111.76	W8D45PF29062	W8D45PF29092
50	<b>5.234</b> 132.94	<b>5.104</b> 129.64	<b>4.900</b> 124.46	W8D50PF29062	W8D50PF29092
60	<b>6.234</b> 158.34	<b>6.104</b> 155.04	<b>5.900</b> 149.86	W8D60PF29062	W8D60PF29092
<b>Tail Length .180 [4.57] (DIM "J")</b>					
18	<b>2.034</b> 51.66	<b>1.904</b> 48.36	<b>1.700</b> 43.18	W8D18PF29063	W8D18PF29093
20	<b>2.234</b> 56.74	<b>2.104</b> 53.44	<b>1.900</b> 48.26	W8D20PF29063	W8D20PF29093
22	<b>2.434</b> 61.82	<b>2.304</b> 58.52	<b>2.100</b> 53.34	W8D22PF29063	W8D22PF29093
25	<b>2.734</b> 69.44	<b>2.604</b> 66.14	<b>2.400</b> 60.96	W8D25PF29063	W8D25PF29093
28	<b>3.034</b> 77.06	<b>2.904</b> 73.76	<b>2.700</b> 68.58	W8D28PF29063	W8D28PF29093
30	<b>3.234</b> 82.14	<b>3.104</b> 78.84	<b>2.900</b> 73.66	W8D30PF29063	W8D30PF29093
35	<b>3.734</b> 94.84	<b>3.604</b> 91.54	<b>3.400</b> 86.36	W8D35PF29063	W8D35PF29093
36	<b>3.834</b> 97.38	<b>3.704</b> 94.08	<b>3.500</b> 88.90	W8D36PF29063	W8D36PF29093
40	<b>4.234</b> 107.54	<b>4.104</b> 104.24	<b>3.900</b> 99.06	W8D40PF29063	W8D40PF29093
43	<b>4.534</b> 115.16	<b>4.404</b> 111.86	<b>4.200</b> 106.68	W8D43PF29063	W8D43PF29093
45	<b>4.734</b> 120.24	<b>4.604</b> 116.94	<b>4.400</b> 111.76	W8D45PF29063	W8D45PF29093
50	<b>5.234</b> 132.94	<b>5.104</b> 129.64	<b>4.900</b> 124.46	W8D50PF29063	W8D50PF29093
60	<b>6.234</b> 158.34	<b>6.104</b> 155.04	<b>5.900</b> 149.86	W8D60PF29063	W8D60PF29093

Press-Fit  
Board-to-Board Connectors



**.100 x .200 [2.54 x 5.08] Centerline, Press-Fit without Standoffs**

**Product Facts**

- **Recognized under the Component Program of Underwriters Laboratories Inc., File No. E60980** 
- **Certified by Canadian Standards Association, File No. LR49571** 

**Physical Properties:**

- Insulation Resistance**—5000 megohms minimum.
- Contact Retention Into PCB**—5 lbs. [356 N]
- Insertion/Withdrawal Force**—8 oz./2 oz. [35.6 N/ 8.9 N] average contact pair using .0620 [1.57] steel blade.
- Insulator Body**—Glass filled thermoplastic, UL rating 94V-0
- Color**—Black
- Contacts**—High strength copper alloy.
- Contact Plating**—.000050 [0.00127] nickel underplate with .000030 [0.00076] gold in the mating area, tin/lead on tails, .000100 [0.00254] minimum

**Electrical Properties:**

- Operating Voltage**—600 VDC (sea level)
- Current Rating**—3 Amperes
- Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

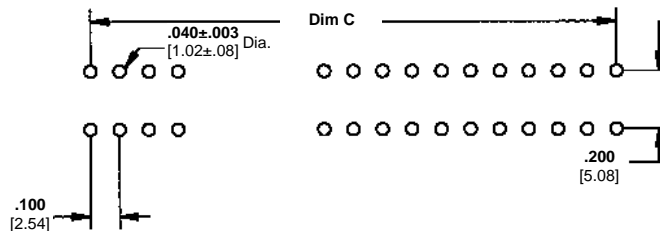
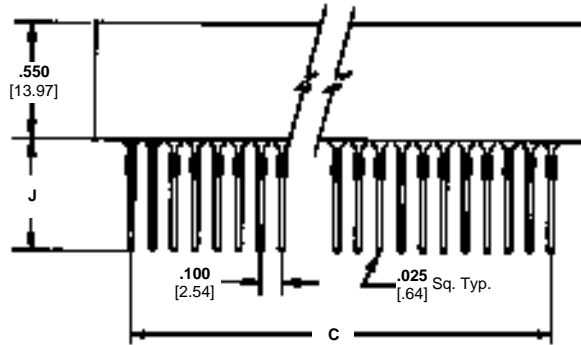
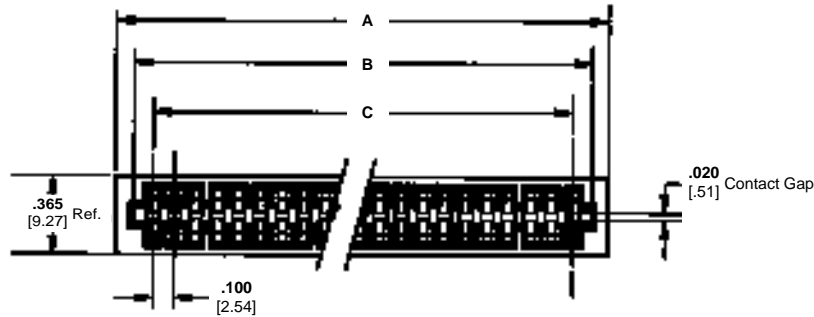
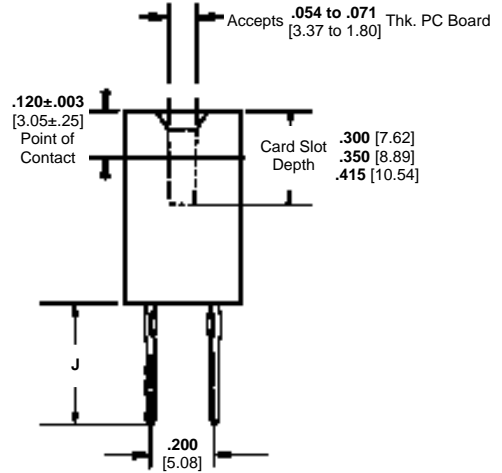
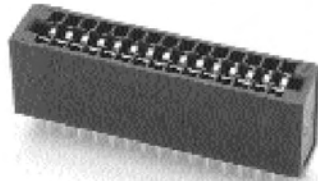
- Operating Temperature**—-55°C to +125°C
- Temperature Cycling**—MIL-STD-202 method 107
- Vibration**—MIL-STD-202, method 204

**Application Tooling:**

**Insertion Tool**—page 150

**Related Product Data:**

**Daughter Card Edge Pattern**—page 57



Note: Open ends and open/closed ends are available. Consult Tyco Electronics.

Press-Fit Board-to-Board Connectors

.100" [2.54] Centerline / .200" [5.08] Row-to-Row without Standoffs

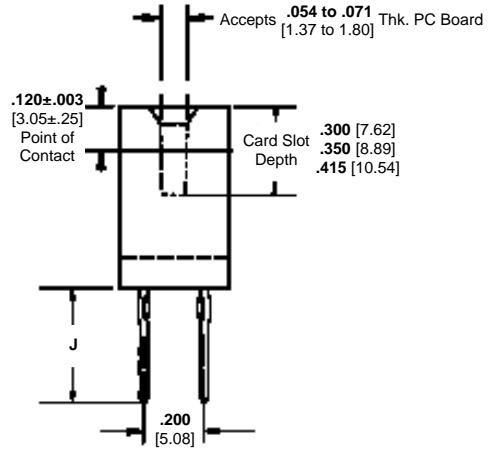
No. of Dual Readout Positions	Dimensions			Acquired Part Numbers		
	A	B	C	.300 [7.62] Card Slot Depth	.350 [8.89] Card Slot Depth	.415 [10.54] Card Slot Depth
<b>Tail Length .670 [17.02] ("J")</b>						
6	0.860 21.84	0.700 17.78	0.500 12.70	C8D06PF29032	C8D06PF29142	C8D06PF29022
10	1.260 32.00	1.100 27.94	0.900 22.86	C8D10PF29032	C8D10PF29142	C8D10PF29022
12	1.460 37.08	1.300 33.02	1.100 27.94	C8D12PF29032	C8D12PF29142	C8D12PF29022
15	1.760 44.70	1.600 40.64	1.400 35.56	C8D15PF29032	C8D15PF29142	C8D15PF29022
20	2.260 57.40	2.100 53.34	1.900 48.26	C8D20PF29032	C8D20PF29142	C8D20PF29022
22	2.460 62.48	2.300 58.42	2.100 53.34	C8D22PF29032	C8D22PF29142	C8D22PF29022
25	2.760 70.10	2.600 66.04	2.400 60.96	C8D25PF29032	C8D25PF29142	C8D25PF29022
28	3.060 77.72	2.900 73.66	2.700 68.58	C8D28PF29032	C8D28PF29142	C8D28PF29022
30	3.260 82.80	3.100 78.74	2.900 73.66	C8D30PF29032	C8D30PF29142	C8D30PF29022
31	3.360 85.34	3.200 81.28	3.000 76.20	C8D31PF29032	C8D31PF29142	C8D31PF29022
35	3.760 95.50	3.600 91.44	3.400 86.36	C8D35PF29032	C8D35PF29142	C8D35PF29022
36	3.860 98.04	3.700 93.98	3.500 88.90	C8D36PF29032	C8D36PF29142	C8D36PF29022
40	4.260 108.20	4.100 104.14	3.900 99.06	C8D40PF29032	C8D40PF29142	C8D40PF29022
43	4.560 115.82	4.400 111.76	4.200 106.68	C8D43PF29032	C8D43PF29142	C8D43PF29022
50	5.260 133.60	5.100 129.54	4.900 124.46	C8D50PF29032	C8D50PF29142	C8D50PF29022
60	6.260 159.00	6.100 154.94	5.900 149.86	C8D60PF29032	C8D60PF29142	C8D60PF29022
<b>Tail Length .180 [4.57] ("J")</b>						
6	0.860 21.84	0.700 17.78	0.500 12.70	C8D06PF29033	C8D06PF29143	C8D06PF29023
10	1.260 32.00	1.100 27.94	0.900 22.86	C8D10PF29033	C8D10PF29143	C8D10PF29023
12	1.460 37.08	1.300 33.02	1.100 27.94	C8D12PF29033	C8D12PF29143	C8D12PF29023
15	1.760 44.70	1.600 40.64	1.400 35.56	C8D15PF29033	C8D15PF29143	C8D15PF29023
20	2.260 57.40	2.100 53.34	1.900 48.26	C8D20PF29033	C8D20PF29143	C8D20PF29023
22	2.460 62.48	2.300 58.42	2.100 53.34	C8D22PF29033	C8D22PF29143	C8D22PF29023
25	2.760 70.10	2.600 66.04	2.400 60.96	C8D25PF29033	C8D25PF29143	C8D25PF29023
28	3.060 77.72	2.900 73.66	2.700 68.58	C8D28PF29033	C8D28PF29143	C8D28PF29023
30	3.260 82.80	3.100 78.74	2.900 73.66	C8D30PF29033	C8D30PF29143	C8D30PF29023
31	3.360 85.34	3.200 81.28	3.000 76.20	C8D31PF29033	C8D31PF29143	C8D31PF29023
35	3.760 95.50	3.600 91.44	3.400 86.36	C8D35PF29033	C8D35PF29143	C8D35PF29023
36	3.860 98.04	3.700 93.98	3.500 88.90	C8D36PF29033	C8D36PF29143	C8D36PF29023
40	4.260 108.20	4.100 104.14	3.900 99.06	C8D40PF29033	C8D40PF29143	C8D40PF29023
43	4.560 115.82	4.400 111.76	4.200 106.68	C8D43PF29033	C8D43PF29143	C8D43PF29023
50	5.260 133.60	5.100 129.54	4.900 124.46	C8D50PF29033	C8D50PF29143	C8D50PF29023
60	6.260 159.00	6.100 154.94	5.900 149.86	C8D60PF29033	C8D60PF29143	C8D60PF29023

Press-Fit Board-to-Board Connectors

**.100 x .200 [2.54 x 5.08] Centerline, Press-Fit with Standoffs**

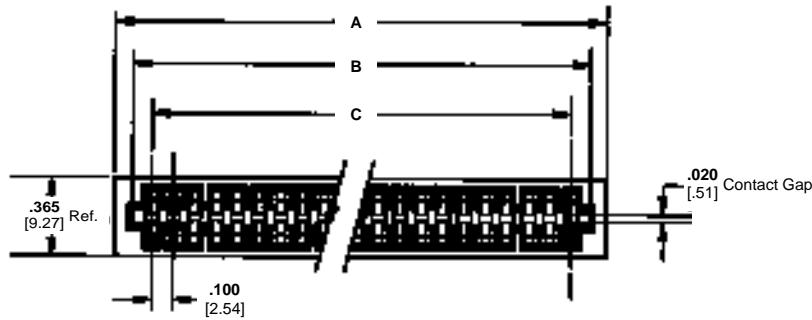
**Product Facts**

- **Recognized under the Component Program of Underwriters Laboratories Inc., File No. E60980** 
- **Certified by Canadian Standards Association, File No. LR49571** 



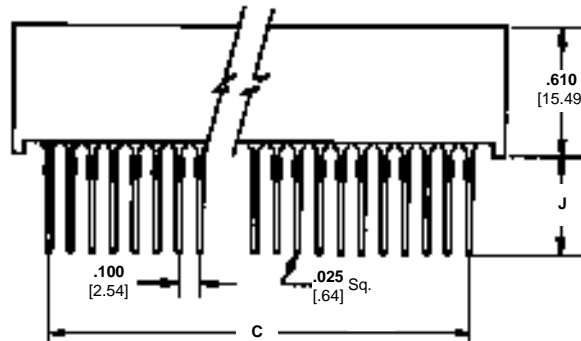
**Physical Properties:**

- Insulation Resistance**—5000 megohms minimum.
- Contact Retention Into PCB**—5 lbs. [356 N]
- Insertion/Withdrawal Force**—8 oz./2 oz. [35.6 N/ 8.9 N] average contact pair using .0620 [1.57] steel blade.
- Insulator Body**—Glass filled thermoplastic, UL rating 94V-0
- Color**—Black
- Contacts**—High strength copper alloy.
- Contact Plating**—.000050 [0.00127] nickel underplate with .000030 [0.00076] gold in the mating area, tin/lead on tails, .000100 [0.00254] minimum



**Electrical Properties:**

- Operating Voltage**—600 VDC (sea level)
- Current Rating**—3 Amperes
- Initial Contact Resistance**—10 milliohms

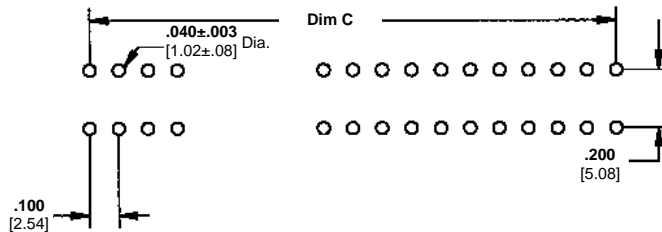


**Environmental Properties:**

- Operating Temperature**—-55°C to +125°C
- Temperature Cycling**—MIL-STD-202 method 107
- Vibration**—MIL-STD-202, method 204

**Application Tooling:**

- Insertion Tool**—page 150
- Related Product Data:**
- Daughter Card Edge Pattern**—page 57



Note: Open ends and open/closed ends are available. Consult Tyco Electronics.

Press-Fit Board-to-Board Connectors

**Ordering Information**

.100 [2.54] Center-to-Center/.200 [5.08] Row-To-Row with Standoffs

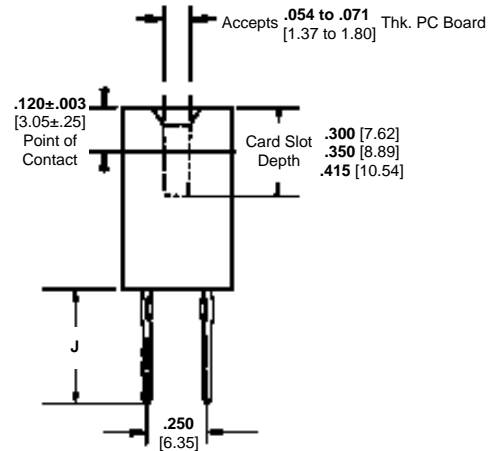
No. of Dual Readout Positions	Dimensions			Acquired Part Numbers		
	A	B	C	.300 [7.62] Card Slot Depth	.350 [8.89] Card Slot Depth	.415 [10.54] Card Slot Depth
<b>Tail Length .670 [17.02] (dim "J")</b>						
6	0.860 21.84	0.700 17.78	0.500 12.70	C8D06PF29012	C8D06PF29132	C8D06PF29042
10	1.260 32.00	1.100 27.94	0.900 22.86	C8D10PF29012	C8D10PF29132	C8D10PF29042
12	1.460 37.08	1.300 33.02	1.100 27.94	C8D12PF29012	C8D12PF29132	C8D12PF29042
15	1.760 44.70	1.600 40.64	1.400 35.56	C8D15PF29012	C8D15PF29132	C8D15PF29042
20	2.260 57.40	2.100 53.34	1.900 48.26	C8D20PF29012	C8D20PF29132	C8D20PF29042
22	2.460 62.48	2.300 58.42	2.100 53.34	C8D22PF29012	C8D22PF29132	C8D22PF29042
25	2.760 70.10	2.600 66.04	2.400 60.96	C8D25PF29012	C8D25PF29132	C8D25PF29042
28	3.060 77.72	2.900 73.66	2.700 68.58	C8D28PF29012	C8D28PF29132	C8D28PF29042
30	3.260 82.80	3.100 78.74	2.900 73.66	C8D30PF29012	C8D30PF29132	C8D30PF29042
31	3.360 85.34	3.200 81.28	3.000 76.20	C8D31PF29012	C8D31PF29132	C8D31PF29042
35	3.760 95.50	3.600 91.44	3.400 86.36	C8D35PF29012	C8D35PF29132	C8D35PF29042
36	3.860 98.04	3.700 93.98	3.500 88.90	C8D36PF29012	C8D36PF29132	C8D36PF29042
40	4.260 108.20	4.100 104.14	3.900 99.06	C8D40PF29012	C8D40PF29132	C8D40PF29042
43	4.560 115.82	4.400 111.76	4.200 106.68	C8D43PF29012	C8D43PF29132	C8D43PF29042
50	5.260 133.60	5.100 129.54	4.900 124.46	C8D50PF29012	C8D50PF29132	C8D50PF29042
60	6.260 159.00	6.100 154.94	5.900 149.86	C8D60PF29012	C8D60PF29132	C8D60PF29042
<b>Tail Length .180 [4.57] (dim "J")</b>						
6	0.860 21.84	0.700 17.78	0.500 12.70	C8D06PF29013	C8D06PF29133	C8D06PF29043
10	1.260 32.00	1.100 27.94	0.900 22.86	C8D10PF29013	C8D10PF29133	C8D10PF29043
12	1.460 37.08	1.300 33.02	1.100 27.94	C8D12PF29013	C8D12PF29133	C8D12PF29043
15	1.760 44.70	1.600 40.64	1.400 35.56	C8D15PF29013	C8D15PF29133	C8D15PF29043
20	2.260 57.40	2.100 53.34	1.900 48.26	C8D20PF29013	C8D20PF29133	C8D20PF29043
22	2.460 62.48	2.300 58.42	2.100 53.34	C8D22PF29013	C8D22PF29133	C8D22PF29043
25	2.760 70.10	2.600 66.04	2.400 60.96	C8D25PF29013	C8D25PF29133	C8D25PF29043
28	3.060 77.72	2.900 73.66	2.700 68.58	C8D28PF29013	C8D28PF29133	C8D28PF29043
30	3.260 82.80	3.100 78.74	2.900 73.66	C8D30PF29013	C8D30PF29133	C8D30PF29043
31	3.360 85.34	3.200 81.28	3.000 76.20	C8D31PF29013	C8D31PF29133	C8D31PF29043
35	3.760 95.50	3.600 91.44	3.400 86.36	C8D35PF29013	C8D35PF29133	C8D35PF29043
36	3.860 98.04	3.700 93.98	3.500 88.90	C8D36PF29013	C8D36PF29133	C8D36PF29043
40	4.260 108.20	4.100 104.14	3.900 99.06	C8D40PF29013	C8D40PF29133	C8D40PF29043
43	4.560 115.82	4.400 111.76	4.200 106.68	C8D43PF29013	C8D43PF29133	C8D43PF29043
50	5.260 133.60	5.100 129.54	4.900 124.46	C8D50PF29013	C8D50PF29133	C8D50PF29043
60	6.260 159.00	6.100 154.94	5.900 149.86	C8D60PF29013	C8D60PF29133	C8D60PF29043

Press-Fit Board-to-Board Connectors

**.125 x .250 [3.18 x 6.35] Centerline without Standoffs**

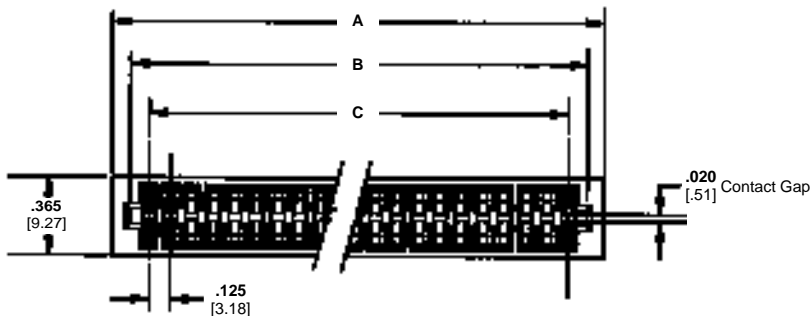
**Product Facts**

- **Recognized under the Component Program of Underwriters Laboratories Inc., File No. E60980** 
- **Certified by Canadian Standards Association, File No. LR49571** 



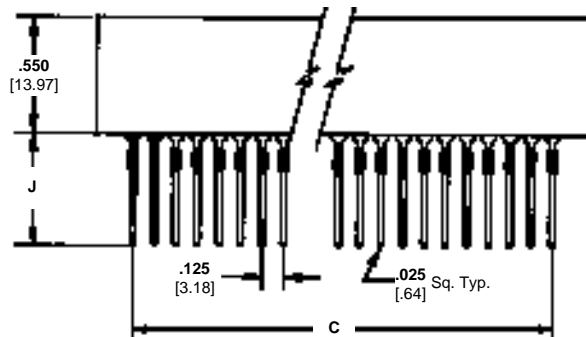
**Physical Properties:**

- Insulation Resistance**—5000 megohms minimum.
- Contact Retention Into PCB**—5 lbs. [356 N]
- Insertion/Withdrawal Force**—8 oz./2 oz. [35.6 N/ 8.9 N] average contact pair using .0620 [1.57] steel blade.
- Insulator Body**—Glass filled thermoplastic, UL rating 94V-0
- Color**—Black
- Contacts**—High strength copper alloy.
- Contact Plating**—.000050 [0.00127] nickel underplate with .000030 [0.00076] gold in the mating area, tin/lead on tails, .000100 [0.00254] minimum



**Electrical Properties:**

- Operating Voltage**—1000 VDC (sea level)
- Current Rating**—3 Amperes
- Initial Contact Resistance**—10 milliohms
- Environmental Properties:**
- Operating Temperature**—-55°C to +125°C
- Temperature Cycling**—MIL-STD-202 method 107
- Vibration**—MIL-STD-202, method 204

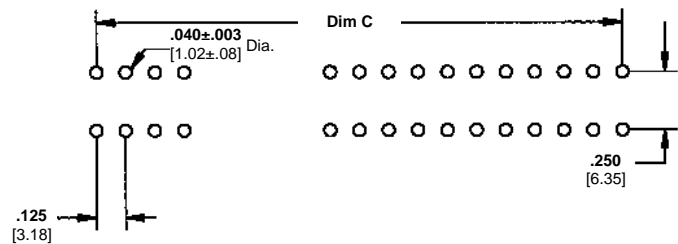


**Application Tooling:**

**Insertion Tool**—page 150

**Related Product Data:**

**Daughter Card Edge Pattern**—page 57



Note: Open ends and open/closed ends are available. Consult Tyco Electronics.

Press-Fit Board-to-Board Connectors

.125 [3.18] Centerline /.250 [6.35] Row-to-Row without Standoffs

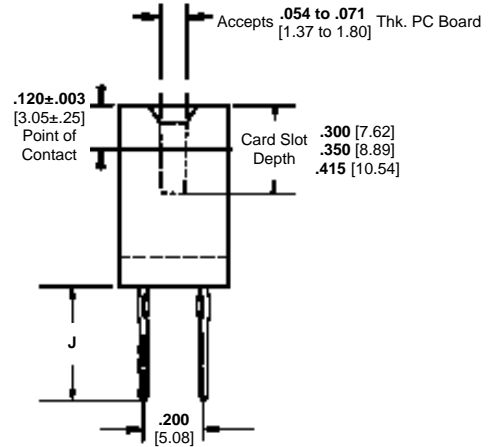
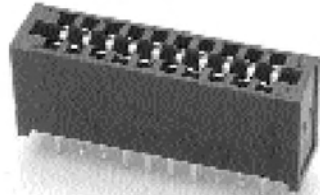
No. of Dual Readout Positions	Dimensions			Acquired Part Numbers		
	A	B	C	.300 [7.62] Card Slot Depth	.350 [8.89] Card Slot Depth	.415 [10.54] Card Slot Depth
<b>Tail Length .670 [17.02] (DIM "J")</b>						
6	1.035 26.29	0.875 22.23	0.625 15.88	C7D06PF29032	C7D06PF29142	C7D06PF29022
10	1.535 38.99	1.375 34.93	1.125 28.58	C7D10PF29032	C7D10PF29142	C7D10PF29022
12	1.785 45.34	1.625 41.28	1.375 34.93	C7D12PF29032	C7D12PF29142	C7D12PF29022
15	2.160 54.86	2.000 50.80	1.750 44.45	C7D15PF29032	C7D15PF29142	C7D15PF29022
18	2.535 64.39	2.375 60.33	2.125 53.98	C7D18PF29032	C7D18PF29142	C7D18PF29022
20	2.785 70.74	2.625 66.68	2.375 60.33	C7D20PF29032	C7D20PF29142	C7D20PF29022
22	3.035 77.09	2.875 73.03	2.625 66.68	C7D22PF29032	C7D22PF29142	C7D22PF29022
25	3.410 86.61	3.250 82.55	3.000 76.20	C7D25PF29032	C7D25PF29142	C7D25PF29022
28	3.785 96.14	3.625 92.08	3.375 85.73	C7D28PF29032	C7D28PF29142	C7D28PF29022
30	4.035 102.49	3.875 98.43	3.625 92.08	C7D30PF29032	C7D30PF29142	C7D30PF29022
31	4.160 105.66	4.000 101.60	3.750 95.25	C7D31PF29032	C7D31PF29142	C7D31PF29022
35	4.660 118.36	4.500 114.30	4.250 107.95	C7D35PF29032	C7D35PF29142	C7D35PF29022
36	4.785 121.54	4.625 117.48	4.375 111.13	C7D36PF29032	C7D36PF29142	C7D36PF29022
40	5.285 134.24	5.125 130.18	4.875 123.83	C7D40PF29032	C7D40PF29142	C7D40PF29022
43	5.660 143.76	5.500 139.70	5.250 133.35	C7D43PF29032	C7D43PF29142	C7D43PF29022
50	6.535 165.99	6.375 161.93	6.125 155.58	C7D50PF29032	C7D50PF29142	C7D50PF29022
<b>Tail Length .180 [4.57] (DIM "J")</b>						
6	1.035 26.29	0.875 22.23	0.625 15.88	C7D06PF29033	C7D06PF29143	C7D06PF29023
10	1.535 38.99	1.375 34.93	1.125 28.58	C7D10PF29033	C7D10PF29143	C7D10PF29023
12	1.785 45.34	1.625 41.28	1.375 34.93	C7D12PF29033	C7D12PF29143	C7D12PF29023
15	2.160 54.86	2.000 50.80	1.750 44.45	C7D15PF29033	C7D15PF29143	C7D15PF29023
18	2.535 64.39	2.375 60.33	2.125 53.98	C7D18PF29033	C7D18PF29143	C7D18PF29023
20	2.785 70.74	2.625 66.68	2.375 60.33	C7D20PF29033	C7D20PF29143	C7D20PF29023
22	3.035 77.09	2.875 73.03	2.625 66.68	C7D22PF29033	C7D22PF29143	C7D22PF29023
25	3.410 86.61	3.250 82.55	3.000 76.20	C7D25PF29033	C7D25PF29143	C7D25PF29023
28	3.785 96.14	3.625 92.08	3.375 85.73	C7D28PF29033	C7D28PF29143	C7D28PF29023
30	4.035 102.49	3.875 98.43	3.625 92.08	C7D30PF29033	C7D30PF29143	C7D30PF29023
31	4.160 105.66	4.000 101.60	3.750 95.25	C7D31PF29033	C7D31PF29143	C7D31PF29023
35	4.660 118.36	4.500 114.30	4.250 107.95	C7D35PF29033	C7D35PF29143	C7D35PF29023
36	4.785 121.54	4.625 117.48	4.375 111.13	C7D36PF29033	C7D36PF29143	C7D36PF29023
40	5.285 134.24	5.125 130.18	4.875 123.83	C7D40PF29033	C7D40PF29143	C7D40PF29023
43	5.660 143.76	5.500 139.70	5.250 133.35	C7D43PF29033	C7D43PF29143	C7D43PF29023
50	6.535 165.99	6.375 161.93	6.125 155.58	C7D50PF29033	C7D50PF29143	C7D50PF29023

Press-Fit  
Board-to-Board Connectors

**.125 x .250 [3.18 x 6.35] Centerline with Standoffs**

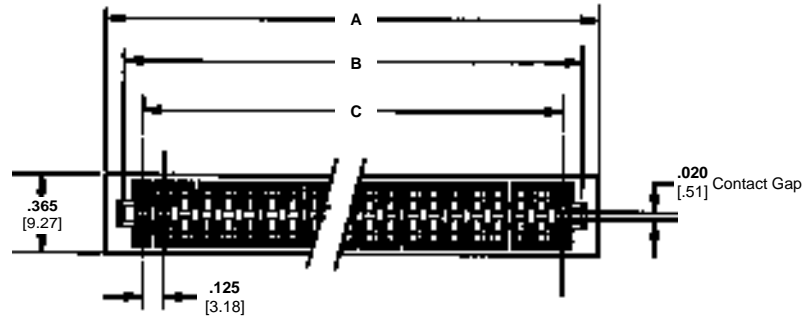
**Product Facts**

- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E60980 
- Certified by Canadian Standards Association, File No. LR49571 



**Physical Properties:**

- Insulation Resistance**—5000 megohms minimum.
- Contact Retention Into PCB**—5 lbs. [356 N]
- Insertion/Withdrawal Force**—8 oz./2 oz. [35.6 N/ 8.9 N] average contact pair using .0620 [1.57] steel blade.
- Insulator Body**—Glass filled thermoplastic, UL rating 94V-0
- Color**—Black
- Contacts**—High strength copper alloy.
- Contact Plating**—.000050 [0.00127] nickel underplate with .000030 [0.00076] gold in the mating area, tin/lead on tails, .000100 [0.00254] minimum

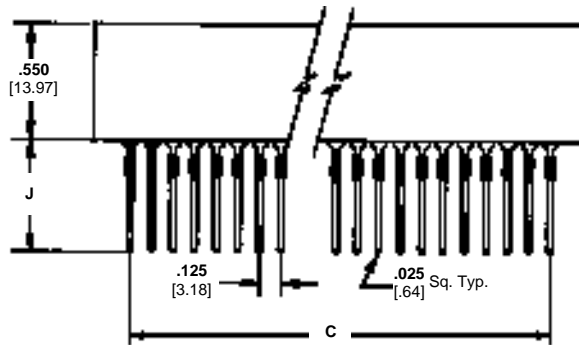


**Electrical Properties:**

- Operating Voltage**—1000 VDC (sea level)
- Current Rating**—3 Amperes
- Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

- Operating Temperature**—-55°C to +125°C
- Temperature Cycling**—MIL-STD-202 method 107
- Vibration**—MIL-STD-202, method 204

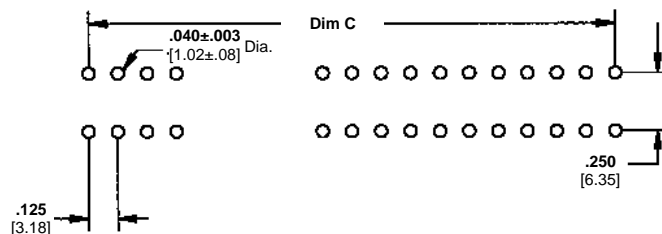


**Application Tooling:**

**Insertion Tool**—page 150

**Related Product Data:**

**Daughter Card Edge Pattern**—page 57



Note: Open ends and open/closed ends are available. Consult Tyco Electronics.

Press-Fit Board-to-Board Connectors

.125 [3.18] Centerline / .250 [6.35] Row-to-Row with Standoffs

No. of Dual Readout Positions	Dimensions			Acquired Part Numbers		
	A	B	C	.300 [7.62] Card Slot Depth	.350 [8.89] Card Slot Depth	.415 [10.54] Card Slot Depth
<b>Tail Length .670 [17.02] (DIM "J")</b>						
6	1.035 26.29	0.875 22.23	0.625 15.88	C7D06PF29012	C7D06PF29132	C7D06PF29042
10	1.535 38.99	1.375 34.93	1.125 28.58	C7D10PF29012	C7D10PF29132	C7D10PF29042
12	1.785 45.34	1.625 41.28	1.375 34.93	C7D12PF29012	C7D12PF29132	C7D12PF29042
15	2.160 54.86	2.000 50.80	1.750 44.45	C7D15PF29012	C7D15PF29132	C7D15PF29042
18	2.535 64.39	2.375 60.33	2.125 53.98	C7D18PF29012	C7D18PF29132	C7D18PF29042
20	2.785 70.74	2.625 66.68	2.375 60.33	C7D20PF29012	C7D20PF29132	C7D20PF29042
22	3.035 77.09	2.875 73.03	2.625 66.68	C7D22PF29012	C7D22PF29132	C7D22PF29042
25	3.410 86.61	3.250 82.55	3.000 76.20	C7D25PF29012	C7D25PF29132	C7D25PF29042
28	3.785 96.14	3.625 92.08	3.375 85.73	C7D28PF29012	C7D28PF29132	C7D28PF29042
30	4.035 102.49	3.875 98.43	3.625 92.08	C7D30PF29012	C7D30PF29132	C7D30PF29042
31	4.160 105.66	4.000 101.60	3.750 95.25	C7D31PF29012	C7D31PF29132	C7D31PF29042
35	4.660 118.36	4.500 114.30	4.250 107.95	C7D35PF29012	C7D35PF29132	C7D35PF29042
36	4.785 121.54	4.625 117.48	4.375 111.13	C7D36PF29012	C7D36PF29132	C7D36PF29042
40	5.285 134.24	5.125 130.18	4.875 123.83	C7D40PF29012	C7D40PF29132	C7D40PF29042
43	5.660 143.76	5.500 139.70	5.250 133.35	C7D43PF29012	C7D43PF29132	C7D43PF29042
50	6.535 165.99	6.375 161.93	6.125 155.58	C7D50PF29012	C7D50PF29132	C7D50PF29042
<b>Tail Length .180 [4.57] (DIM "J")</b>						
6	1.035 26.29	0.875 22.23	0.625 15.88	C7D06PF29013	C7D06PF29133	C7D06PF29043
10	1.535 38.99	1.375 34.93	1.125 28.58	C7D10PF29013	C7D10PF29133	C7D10PF29043
12	1.785 45.34	1.625 41.28	1.375 34.93	C7D12PF29013	C7D12PF29133	C7D12PF29043
15	2.160 54.86	2.000 50.80	1.750 44.45	C7D15PF29013	C7D15PF29133	C7D15PF29043
18	2.535 64.39	2.375 60.33	2.125 53.98	C7D18PF29013	C7D18PF29133	C7D18PF29043
20	2.785 70.74	2.625 66.68	2.375 60.33	C7D20PF29013	C7D20PF29133	C7D20PF29043
22	3.035 77.09	2.875 73.03	2.625 66.68	C7D22PF29013	C7D22PF29133	C7D22PF29043
25	3.410 86.61	3.250 82.55	3.000 76.20	C7D25PF29013	C7D25PF29133	C7D25PF29043
28	3.785 96.14	3.625 92.08	3.375 85.73	C7D28PF29013	C7D28PF29133	C7D28PF29043
30	4.035 102.49	3.875 98.43	3.625 92.08	C7D30PF29013	C7D30PF29133	C7D30PF29043
31	4.160 105.66	4.000 101.60	3.750 95.25	C7D31PF29013	C7D31PF29133	C7D31PF29043
35	4.660 118.36	4.500 114.30	4.250 107.95	C7D35PF29013	C7D35PF29133	C7D35PF29043
36	4.785 121.54	4.625 117.48	4.375 111.13	C7D36PF29013	C7D36PF29133	C7D36PF29043
40	5.285 134.24	5.125 130.18	4.875 123.83	C7D40PF29013	C7D40PF29133	C7D40PF29043
43	5.660 143.76	5.500 139.70	5.250 133.35	C7D43PF29013	C7D43PF29133	C7D43PF29043
50	6.535 165.99	6.375 161.93	6.125 155.58	C7D50PF29013	C7D50PF29133	C7D50PF29043

NOTE: Optional stacking designs are available (consult Tyco Electronics).

Press-Fit  
Board-to-Board Connectors



**.156 x .200 [3.18 x 5.08] Centerline without Standoffs**

**Product Facts**

- **Recognized under the Component Program of Underwriters Laboratories Inc., File No. E60980** 
- **Certified by Canadian Standards Association, File No. LR49571** 

**Physical Properties:**

- Insulation Resistance**—5000 megohms minimum.
- Contact Retention Into PCB**—5 lbs. [356 N]
- Insertion/Withdrawal Force**—8 oz./2 oz. [35.6 N/ 8.9 N] average contact pair using .0620 [1.57] steel blade.
- Insulator Body**—Glass filled thermoplastic, UL rating 94V-0
- Color**—Black
- Contacts**—High strength copper alloy.
- Contact Plating**—.000050 [0.00127] nickel underplate with .000030 [0.00076] gold in the mating area, tin/lead on tails, .000100 [0.00254] minimum

**Electrical Properties:**

- Operating Voltage**—1500 VDC (sea level)
- Current Rating**—3 Amperes
- Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

- Operating Temperature**—-55°C to +125°C
- Temperature Cycling**—MIL-STD-202 method 107
- Vibration**—MIL-STD-202, method 204

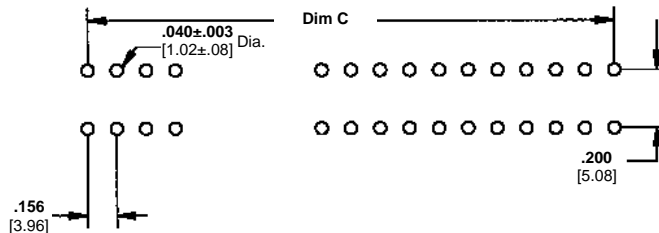
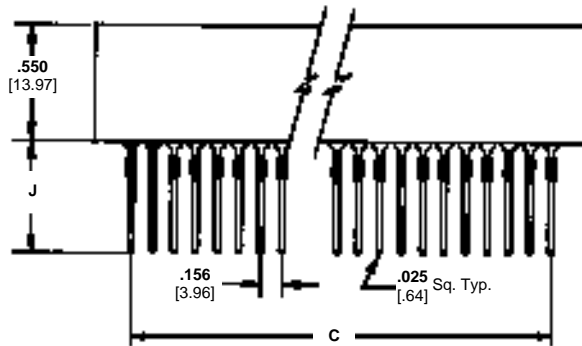
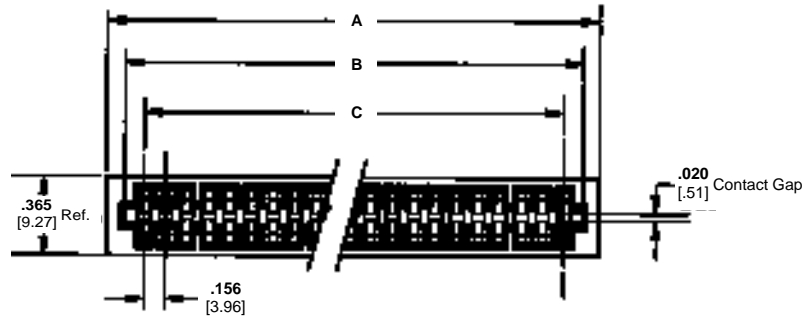
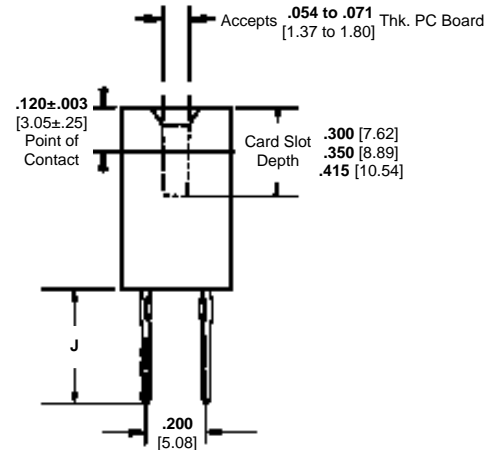
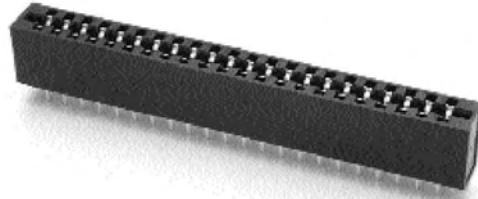
**Application Tooling:**

**Insertion Tool**—page 150

**Related Product Data:**

**Daughter Card Edge Pattern**—page 57

Note: Open ends and open/closed ends are available. Consult Tyco Electronics.



Press-Fit Board-to-Board Connectors

**Ordering Information**

.156 [3.18] Centerline/.200 [5.08] Row-to-Row without Standoffs

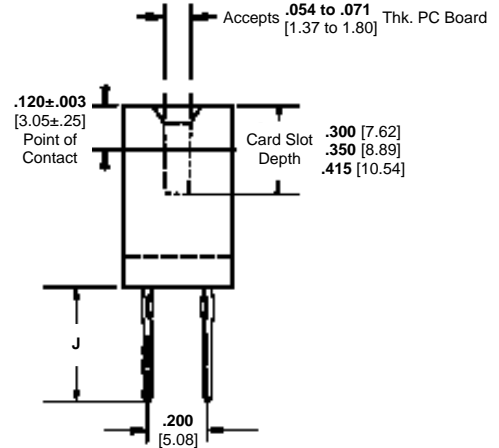
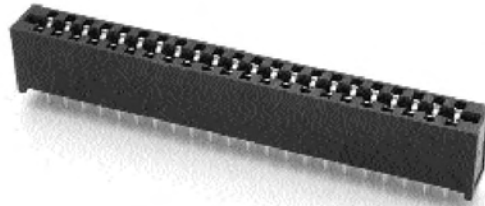
No. of Dual Readout Positions	Dimensions			Acquired Part Numbers		
	A	B	C	.300 [7.62] Card Slot Depth	.350 [8.84] Card Slot Depth	.415 [10.54] Card Slot Depth
<b>.670 [17.02] Tail Length (DIM "J")</b>						
6	1.221 31.01	1.100 27.94	0.780 19.81	C6D06PF29032	C6D06PF29142	C6D06PF29022
10	1.845 46.86	1.724 43.79	1.404 35.66	C6D10PF29032	C6D10PF29142	C6D10PF29022
12	2.157 54.79	2.036 51.71	1.716 43.59	C6D12PF29032	C6D12PF29142	C6D12PF29022
15	2.625 66.68	2.504 63.60	2.184 55.47	C6D15PF29032	C6D15PF29142	C6D15PF29022
18	3.093 78.56	2.972 75.49	2.652 67.36	C6D18PF29032	C6D18PF29142	C6D18PF29022
20	3.405 86.49	3.284 83.41	2.964 75.29	C6D20PF29032	C6D20PF29142	C6D20PF29022
22	3.717 94.41	3.596 91.34	3.276 83.21	C6D22PF29032	C6D22PF29142	C6D22PF29022
25	4.185 106.30	4.064 103.23	3.744 95.10	C6D25PF29032	C6D25PF29142	C6D25PF29022
28	4.653 118.19	4.532 115.11	4.212 106.98	C6D28PF29032	C6D28PF29142	C6D28PF29022
30	4.965 126.11	4.844 123.04	4.524 114.91	C6D30PF29032	C6D30PF29142	C6D30PF29022
31	5.121 130.07	5.000 127.00	4.680 118.87	C6D31PF29032	C6D31PF29142	C6D31PF29022
35	5.745 145.92	5.624 142.85	5.304 134.72	C6D35PF29032	C6D35PF29142	C6D35PF29022
36	5.901 149.89	5.780 146.81	5.460 138.68	C6D36PF29032	C6D36PF29142	C6D36PF29022
40	6.525 165.74	6.404 162.66	6.085 154.56	C6D40PF29032	C6D40PF29142	C6D40PF29022
43	6.993 177.62	6.872 174.55	6.552 166.42	C6D43PF29032	C6D43PF29142	C6D43PF29022
<b>.180 [4.57] Tail Length (DIM "J")</b>						
6	1.221 31.01	1.100 27.94	0.780 19.81	C6D06PF29033	C6D06PF29143	C6D06PF29023
10	1.845 46.86	1.724 43.79	1.404 35.66	C6D10PF29033	C6D10PF29143	C6D10PF29023
12	2.157 54.79	2.036 51.71	1.716 43.59	C6D12PF29033	C6D12PF29143	C6D12PF29023
15	2.625 66.68	2.504 63.60	2.184 55.47	C6D15PF29033	C6D15PF29143	C6D15PF29023
18	3.093 78.56	2.972 75.49	2.652 67.36	C6D18PF29033	C6D18PF29143	C6D18PF29023
20	3.405 86.49	3.284 83.41	2.964 75.29	C6D20PF29033	C6D20PF29143	C6D20PF29023
22	3.717 94.41	3.596 91.34	3.276 83.21	C6D22PF29033	C6D22PF29143	C6D22PF29023
25	4.185 106.30	4.064 103.23	3.744 95.10	C6D25PF29033	C6D25PF29143	C6D25PF29023
28	4.653 118.19	4.532 115.11	4.212 106.98	C6D28PF29033	C6D28PF29143	C6D28PF29023
30	4.965 126.11	4.844 123.04	4.524 114.91	C6D30PF29033	C6D30PF29143	C6D30PF29023
31	5.121 130.07	5.000 127.00	4.680 118.87	C6D31PF29033	C6D31PF29143	C6D31PF29023
35	5.745 145.92	5.624 142.85	5.304 134.72	C6D35PF29033	C6D35PF29143	C6D35PF29023
36	5.901 149.89	5.780 146.81	5.460 138.68	C6D36PF29033	C6D36PF29143	C6D36PF29023
40	6.525 165.74	6.404 162.66	6.085 154.56	C6D40PF29033	C6D40PF29143	C6D40PF29023
43	6.993 177.62	6.872 174.55	6.552 166.42	C6D43PF29033	C6D43PF29143	C6D43PF29023

Press-Fit Board-to-Board Connectors

**.156 x .200 [3.18 x 5.08] Centerline with Standoffs**

**Product Facts**

- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E60980 
- Certified by Canadian Standards Association, File No. LR49571 



**Physical Properties:**

- Insulation Resistance**—5000 megohms minimum.
- Contact Retention Into PCB**—5 lbs. [356 N]
- Insertion/Withdrawal Force**—8 oz./2 oz. [35.6 N/ 8.9 N] average contact pair using .0620 [1.57] steel blade.
- Insulator Body**—Glass filled thermoplastic, UL rating 94V-0
- Color**—Black
- Contacts**—High strength copper alloy.
- Contact Plating**—.000050 [0.00127] nickel underplate with .000030 [0.00076] gold in the mating area, tin/lead on tails, .000100 [0.00254] minimum

**Electrical Properties:**

- Operating Voltage**—1500 VDC (sea level)
- Current Rating**—3 Amperes
- Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

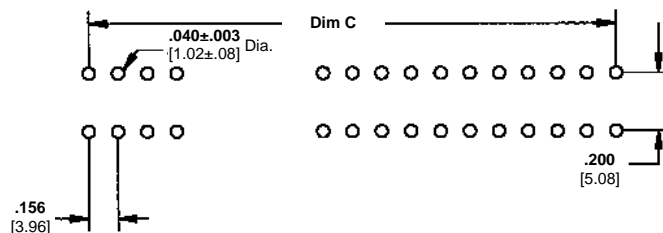
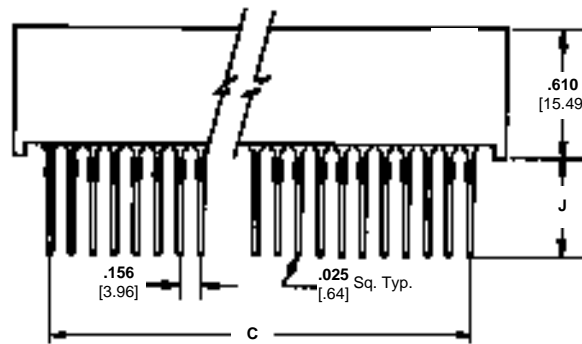
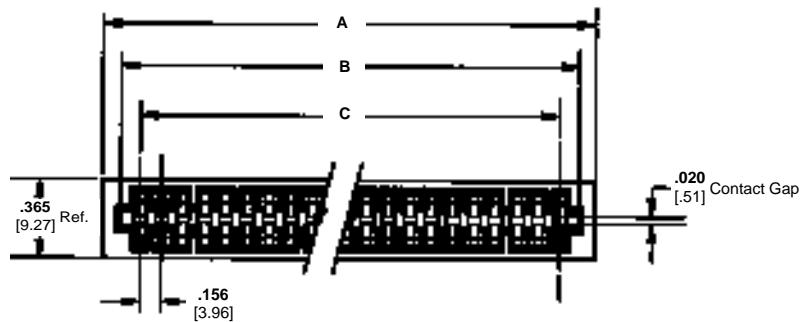
- Operating Temperature**—-55°C to +125°C
- Temperature Cycling**—MIL-STD-202 method 107
- Vibration**—MIL-STD-202, method 204

**Application Tooling:**

**Insertion Tool**—page 150

**Related Product Data:**

**Daughter Card Edge Pattern**—page 57



Note: Open ends and open/closed ends are available. Consult Tyco Electronics.

Press-Fit Board-to-Board Connectors

**Ordering Information**

.156 [3.18] Centerline/.200 [5.08] Row-to-Row with Standoffs

No. of Dual Readout Positions	Dimensions			Acquired Part Numbers		
	A	B	C	.300 [7.62] Card Slot Depth	.350 [8.89] Card Slot Depth	.415 [10.54] Card Slot Depth
<b>.670 [17.02] Tail Length (DIM "J")</b>						
6	1.221 31.01	1.100 27.94	0.780 19.81	C6D06PF29012	C6D06PF29132	C6D06PF29042
10	1.845 46.86	1.724 43.79	1.404 35.66	C6D10PF29012	C6D10PF29132	C6D10PF29042
12	2.157 54.79	2.036 51.71	1.716 43.59	C6D12PF29012	C6D12PF29132	C6D12PF29042
15	2.625 66.68	2.504 63.60	2.184 55.47	C6D15PF29012	C6D15PF29132	C6D15PF29042
18	3.093 78.56	2.972 75.49	2.652 67.36	C6D18PF29012	C6D18PF29132	C6D18PF29042
20	3.405 86.49	3.284 83.41	2.964 75.29	C6D20PF29012	C6D20PF29132	C6D20PF29042
22	3.717 94.41	3.596 91.34	3.276 83.21	C6D22PF29012	C6D22PF29132	C6D22PF29042
25	4.185 106.30	4.064 103.23	3.744 95.10	C6D25PF29012	C6D25PF29132	C6D25PF29042
28	4.653 118.19	4.532 115.11	4.212 106.98	C6D28PF29012	C6D28PF29132	C6D28PF29042
30	4.965 126.11	4.844 123.04	4.524 114.91	C6D30PF29012	C6D30PF29132	C6D30PF29042
31	5.121 130.07	5.000 127.00	4.680 118.87	C6D31PF29012	C6D31PF29132	C6D31PF29042
35	5.745 145.92	5.624 142.85	5.304 134.72	C6D35PF29012	C6D35PF29132	C6D35PF29042
36	5.901 149.89	5.780 146.81	5.460 138.68	C6D36PF29012	C6D36PF29132	C6D36PF29042
40	6.525 165.74	6.404 162.66	6.085 154.56	C6D40PF29012	C6D40PF29132	C6D40PF29042
43	6.993 177.62	6.872 174.55	6.552 166.42	C6D43PF29012	C6D43PF29132	C6D43PF29042
<b>.180 [4.57] Tail Length (DIM "J")</b>						
6	1.221 31.01	1.100 27.94	0.780 19.81	C6D06PF29013	C6D06PF29133	C6D06PF29043
10	1.845 46.86	1.724 43.79	1.404 35.66	C6D10PF29013	C6D10PF29133	C6D10PF29043
12	2.157 54.79	2.036 51.71	1.716 43.59	C6D12PF29013	C6D12PF29133	C6D12PF29043
15	2.625 66.68	2.504 63.60	2.184 55.47	C6D15PF29013	C6D15PF29133	C6D15PF29043
18	3.093 78.56	2.972 75.49	2.652 67.36	C6D18PF29013	C6D18PF29133	C6D18PF29043
20	3.405 86.49	3.284 83.41	2.964 75.29	C6D20PF29013	C6D20PF29133	C6D20PF29043
22	3.717 94.41	3.596 91.34	3.276 83.21	C6D22PF29013	C6D22PF29133	C6D22PF29043
25	4.185 106.30	4.064 103.23	3.744 95.10	C6D25PF29013	C6D25PF29133	C6D25PF29043
28	4.653 118.19	4.532 115.11	4.212 106.98	C6D28PF29013	C6D28PF29133	C6D28PF29043
30	4.965 126.11	4.844 123.04	4.524 114.91	C6D30PF29013	C6D30PF29133	C6D30PF29043
31	5.121 130.07	5.000 127.00	4.680 118.87	C6D31PF29013	C6D31PF29133	C6D31PF29043
35	5.745 145.92	5.624 142.85	5.304 134.72	C6D35PF29013	C6D35PF29133	C6D35PF29043
36	5.901 149.89	5.780 146.81	5.460 138.68	C6D36PF29013	C6D36PF29133	C6D36PF29043
40	6.525 165.74	6.404 162.66	6.085 154.56	C6D40PF29013	C6D40PF29133	C6D40PF29043
43	6.993 177.62	6.872 174.55	6.552 166.42	C6D43PF29013	C6D43PF29133	C6D43PF29043

Press-Fit Board-to-Board Connectors

Tyco Electronics offers a complete line of servo-electric driven presses for the application of press-fit connectors. Each system features a PC controlled servo electric drive for precise application and monitoring of force, speed, and press height. The entire process is data driven to provide flexible programming and automatic set-up. SPC analysis is provided for each connector pressed to assure the quality of every application.

**Press-Fit Application Tooling**

**BMEP 1K/2K Servo Electric Press**

- 1000 or 2000 lb force [4.5 or 9 kN]
- 12" [305 mm] throat depth
- Compact footprint – 16" x 24" [406 x 610 mm]
- Force resolution of approximately 1 lb [4.4 N] for delicate press applications.



**BMEP 3T/5T Benchtop Electric Servo Press**

- 3 or 5 tons force [27 or 44 kN]
- 18" x 24" [460 x 610 mm] PCB capacity
- Compact footprint – 24" x 48" [610 x 1220 mm]
- Midrange force and board size capacity in a benchtop unit.



**MEP 6T/12 T Manual Electric Servo Press**

- 6 or 12 tons force [53 or 107 kN]
- 24" x 36" [610 x 914 mm] PCB capacity
- Self-contained, portable unit
- Compact, manual unit capable of handling large boards and high force applications.

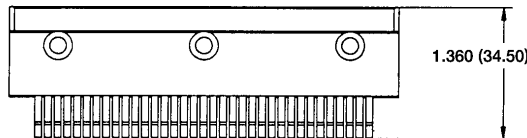
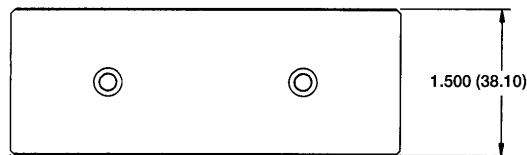
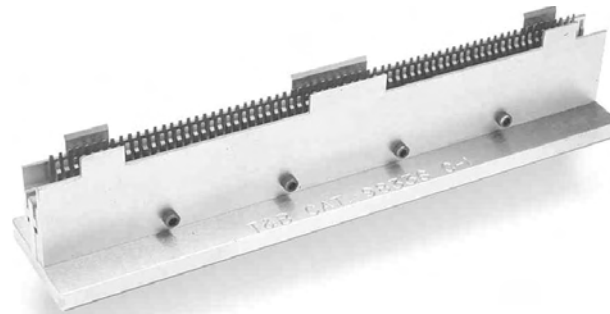


**Automatic Pick, Place and Press (AP3)**

- 8 tons force [71 kN]
- 18" x 30" [457 x 762 mm] PCB capacity
- SMEMA compatible unit for automatic pick, place and press of connectors and odd-from components.
- Vision system for pin inspection prior to placement.



**Press-Fit Card Edge Insertion Tools**



**Ordering Information**

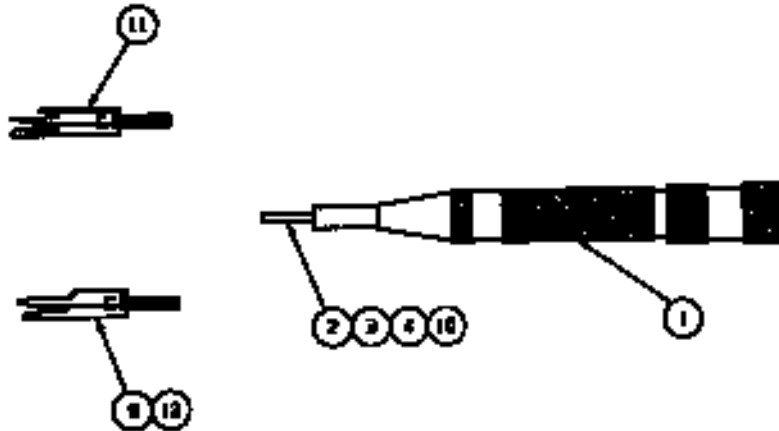
Center-to Center	Connector Prefix	Max. No. Of Positions	Tool Part Number		Replacement Blade Part Number	
			Acquired P/N	TYCO	Acquired P/N	Tyco
.100 x .100 2.54 x 2.54	C1	70	98336	3-1437266-5	98293	1437274-1
.100 x .100 2.54 x 2.54	C1	100	98341	—	98293	1437274-1
.156 x .200 3.96 x 5.08	C6	43	98231	1-1437266-1	98206	1437266-8
.125 x .250 3.18 x 6.35	C7	50	98230	1-1437266-0	98206	1437266-8
.100 x .200 2.54 x 5.08	C8	70	98224	1437266-9	98206	1437266-8
.100 x .200 2.54 x 5.08 (Full Scoop)	W8	70	98236	1490560-1	98238	1490563-1
.100 x .200 2.54 x 5.08 (Full Scoop)	W8	35	98236	1490560-2	98238	1490563-1

Press-Fit  
Board-to-Board Connectors

**Press-Fit Card Edge Removal Tool Kits**

**Description**

Removal tool kits include: impact tools, removal tips for tail lengths ranging from .180 in. [4.57] to .680 in. [17.27] Kits for .100" x .200" [2.54 x 5.08] Series Card Edge connectors include the insertion tip.



**Ordering Information**

Center x Row	Prefix	Acquired Kit Number	Tyco Kit Number
.156 x .200 3.96 x 5.08	C6	9818002	1437266-3
.125 x .250 3.18 x 6.35	C7	9818002	1437266-3
.100 x .200 2.54 x 5.08	C8	9818002	1437266-3
.100 x .100 2.54 x 2.54	C1	9818004	1437266-4
.100 x .200 2.54 x 5.08 Wide Full Scoop	W8	9818005	1437266-5

**Ordering Information**

Item No.	Description	Applies to Kit No.					Replacement Part Number	Tyco Part Number
		9818001	9818001	9818003	9818004	9818005		
1	Impact Tool						9820401	1437266-7
2	Removal Tip - .180 [4.57] Tail						9820301	1437266-6
3	Removal Tip - .378/.475 Tail 9.60/12.07						9820302	1437260-4
4	Removal Tip - .670/.680 Tail 17.02/17.27						9820303	—
6	Insertion Tip - C6, 7 & 8 PF						9836701	3-1437266-9
10	Removal Tip - .550/.625 Tail 13.97/15.88						9820305	1437260-5
11	Insertion Tip - C1 Series PF						9836301	1437260-6
12	Insertion Tip - W8 Series PF						9836702	1437260-7

**Wire-to-Board Connectors**

Except for DUO-TYNE flag connectors, which are exclusively for wire-to-board application, the connectors presented in this section are primarily wire-to-board connectors, but do have some board-to-board capabilities. These connectors are available in a wide range of styles to suit almost any wire-to-board application. This versatile connector family features snap-in contacts of various configurations including crimp, post, eyelet and solder types.

Wire-to-board crimp, snap-in contacts are easily inserted into the connector housing and are furnished in reel-fed strip form for automatic machine application and loose piece for hand tool termination. The Wire-to-Board Printed Circuit Board Connector family includes:

**Crimp Snap Twin Leaf Connectors**

(Pages 154-163)

These connectors are designed for high density wire-to-board applications and feature bifurcated, crimp and solder eyelet contacts on .100 [2.54] and .125 [3.18] centers. Design flexibility allows the customer to save by purchasing only enough contacts for his circuit design requirements. Contact styles include crimp, solder eyelet and vertical and right-angle posts, in a variety of sizes.

**AMP-LEAF Connectors**

(Pages 164-172)

These connectors are for single- or double-sided printed circuit boards. Snap-in contacts lock in place on .156 [3.96] centers, maintaining constant pressure on circuit paths. Contact options are available for precision crimped terminations and solder dip applications.

**High Current Connectors**

(Pages 173-176)

Designed for a current capability of up to 30 amperes, these connectors are an economical answer to the costly problem of interconnecting high current printed circuitry. Styles are available for wire-to-board and board-to-board applications. Contacts are on .312 [7.92] centers.

**DUO-TYNE Flag Connectors**

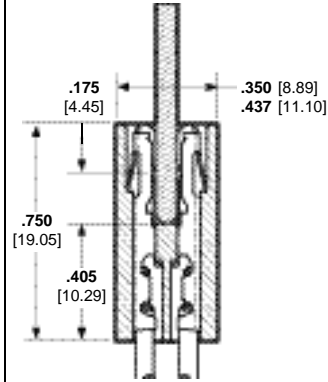
(Pages 177-180)

These economical connectors are designed to meet the quality and reliability requirements of industries such as appliance controls, vending machine subassemblies, television, stereo, business machines and other areas with similar control needs. The right-angle design of the connector permits close-quarter cabling. Contacts are doubly locked in when a PC board is inserted.

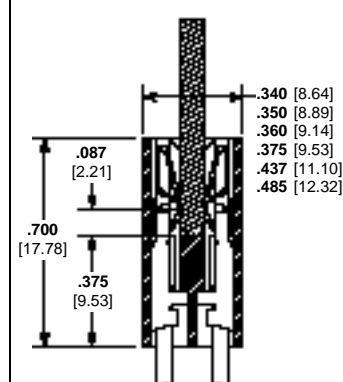


**Wire-to-Board Connector Selection Guide**

**Crimp Snap  
Twin Leaf Connectors  
(Pages 154-163)**



**AMP-LEAF  
Connectors  
(Pages 164-172)**



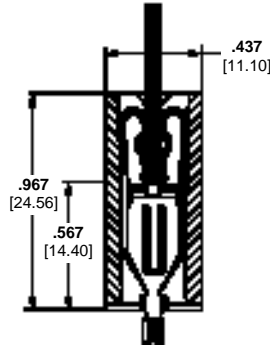
**Centerlines**

.100 [2.54]	X	
.125 [3.18]	X	
.156 [3.96]	X	X
.197 [5.00]		
.260 [6.60]		
.312 [7.92]		

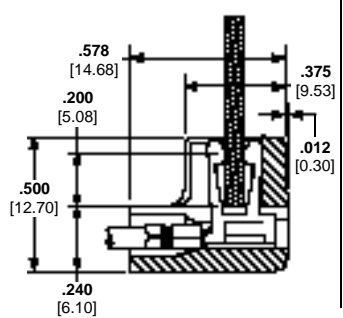
**Styles**

Crimp	X	X
Right-Angle Post	X	X
Wrap-Type Post	X	X
Solder Eyelet	X	X
Solder Tail	X	X
Double Sided	X	X
Single Sided	X	X

**High Current  
Connectors  
(Pages 173-176)**



**DUO-TYNE Flag  
Connectors  
(Pages 177-180)**



**Centerlines**

.100 [2.54]		
.125 [3.18]		
.156 [3.96]		X
.197 [5.00]		
.260 [6.60]		
.312 [7.92]	X	

**Styles**

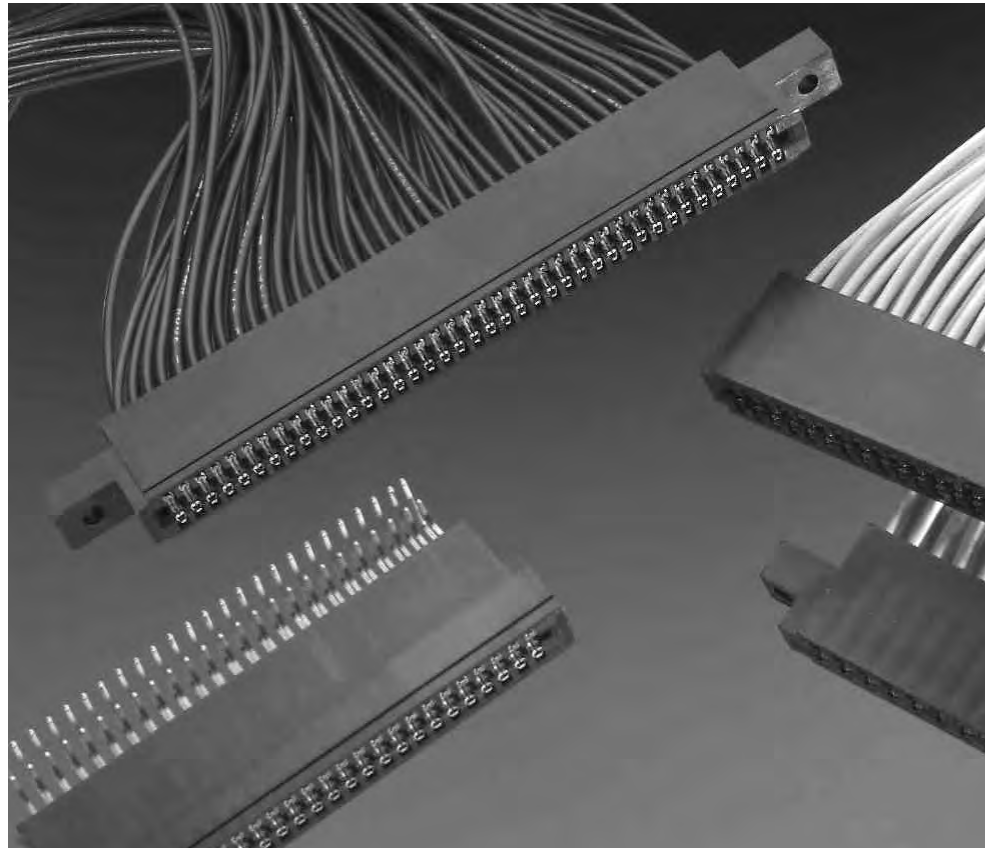
Crimp	X	X
Right-Angle Post		
Wrap-Type Post		
Solder Eyelet		
Solder Tail	X	
Double Sided	X	X*
Single Sided		

\*Double-sided board; single readout.

**Crimp Snap Twin Leaf Connectors**

**Product Facts**

- Crimp snap-in, solder eye-let, .025 [0.64] square posted and right angle contacts on .100 [2.54], .125 [3.18] or .156 [3.96] centers
- Customer buys only enough contacts to meet circuit and retention requirements
- Contacts bifurcated for redundancy
- Single leaf version available for higher contact normal forces
- Low insertion forces
- Accommodates AWG 16-28 [1.4-0.08 mm<sup>2</sup>] wire range and insulation diameters .035-.105 [0.89-2.67]
- Large variety of connector sizes
- Cavity identification on face of card slot and wire entry
- High speed automatic machine terminations provide uniform reliability at lowest applied cost
- Recognized under the Component Program of Underwriters Laboratories Inc. File No. E28476
- Certified by Canadian Standards Association File No. LR 7189



The Crimp Snap Twin Leaf Connector is designed especially for high density wire-to-board applications. Termination styles include crimp, solder, posted and right angle, in a variety of sizes.

Design flexibility allows the customer to save by purchasing only enough contacts for the circuit requirements. Easy replaceability of each contact cuts repair cost in the event of contact or wire damage.

**Performance Specifications**

**Contact Rating\*:** 5 amperes, continuous 3 amperes, max. (for .025 [0.64] posted contacts)

**Contact Resistance:** 10 milliohms, max.

**Insulation Resistance:** 5000 megohms (initial)  
1000 megohms

**Voltage Rating:**  
.100 [2.54] Centerline-1000 Vrms  
.125 [3.18] Centerline-1500 Vrms  
.156 [3.96] Centerline-1800 Vrms

**Insertion Force (per pair):** Twin Leaf-10 oz. [2.78 N], max.; 7.6 oz. [2.11 N], avg. Non-Bifurcated Contacts-20 oz. [5.57 N], max.

**Extraction Force (per pair):** Twin Leaf-0.7 oz. [0.195 N], min.; 1.2 oz. [0.334 N], avg.

**Operating Temperature:** -55°C to +105°C

\*Consult Tyco Electronics engineering when paralleling contacts for power applications.

**Crimp Snap Twin Leaf Connectors** (Continued)

**Crimp, Snap-In Contacts**

**Material and Finish:**

Phosphor bronze, plated .000030 [0.00076] nickel on entire contact, with the addition of one of the following platings:

**Plating A**—.000030 [0.00076] gold in mating area

**Plating B**—.000015 [0.00038] gold in mating area

**Plating C**—.000050 [0.00127] gold in mating area, with gold flash on remainder of contact

**Plating D**—.000015 [0.00038] gold in mating area, with gold flash on remainder of contact

**Note:** Tin plating is available upon request.

**Related Product Data:**

**Performance Specifications**—page 154

**Application Tooling**—pages 184,185

**Connector Housings**—pages 157, 159, 161

**Technical Documents:**

(pages 186, 187):

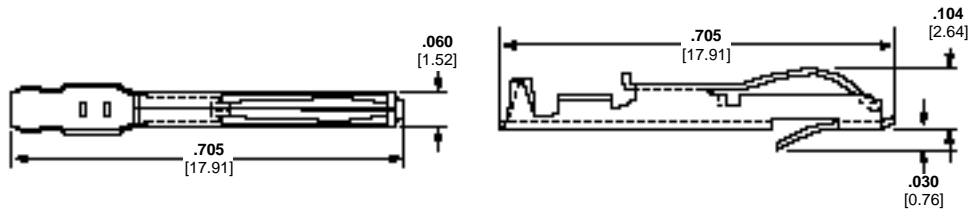
Product Specification 108-9031

Application Specification 114-9004

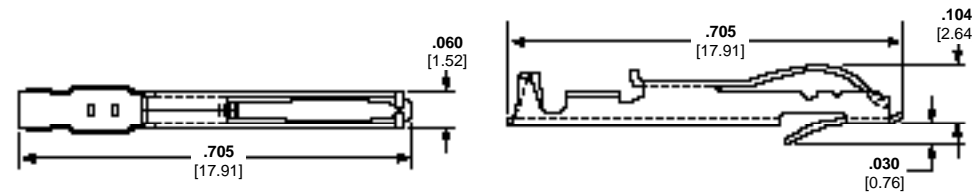
Instruction Sheets

408-7527, 408-7529, 408-7531, 408-7551, 408-7556, 408-7583

**Note:** Only loose piece contacts manufactured and supplied by Tyco Electronics are to be used with the hand tools listed on this page. No attempt should be made to produce loose piece parts from a strip since special cutoff tooling is required to assure a properly functioning part.



Connector Centerline	Wire Size Range AWG/mm <sup>2</sup>	Insulation Dia. Range	Contact Finish (Plating)	Contact Part Numbers		Applicator for AMP-O-LECTRIC Machine*	Applicator for Stripper/Crimper Machine	Color Code	Hand Tool
				Loose Piece	Strip Form				
.100 2.54	28-24 0.08-0.2	.035-.055 0.89-1.40	A	583616-4	583616-2	466577-4	466912-1	Orange	90268-1
			B	583616-5	583616-3				
			C	583616-9	583616-8				
			D	1-583616-1	1-583616-0				
.125 3.18	24-20 0.2-0.6	.048-.060 1.22-1.52	A	583853-5	583853-3	466622-2	466919-1	Green	91535-1
			B	583853-4	583853-2				
			C	583853-9	583853-8				
			D	1-583853-1	1-583853-0				
.156 3.96	28-24 0.08-0.2	.035-.055 0.89-1.40	A	583616-4	583616-2	466577-4	466912-1	Orange	90268-1
			B	583616-5	583616-3				
			C	583616-9	583616-8				
			D	1-583616-1	1-583616-0				
.156 3.96	24-20 0.2-0.6	.048-.060 1.22-1.52	A	583853-5	583853-3	466622-2	466919-1	Green	91535-1
			B	583853-4	583853-2				
			C	583853-9	583853-8				
			D	1-583853-1	1-583853-0				
.156 3.96	22-18 0.3-0.9	.049-.095 1.24-2.41	A	583649-6	583649-3	466713-2	466928-1	Violet	90264-1
			B	583649-5	583649-2				
			C	583649-7	583649-4				
			—	—	—				
.156 3.96	20-16 0.6-1.4	.073-.090 1.85-2.29	A	583875-6	583875-5	687775-2	—	White	90285-1
			B	583875-3	583875-2				
			C	583875-3	583875-2				
			—	—	—				



**Crimp, Snap-In Contacts, Non-Bifurcated**

**Material and Finish:**

Phosphor bronze, plated .000030 [0.00076] nickel on entire contact, with the addition of one of the following platings:

**Plating A**—.000030 [0.00076] gold in mating area

**Plating B**—.000015 [0.00038] gold in mating area

**Note:** Tin plating is available upon request.

**Related Product Data:**

(See above)

Connector Centerline	Wire Size Range AWG/mm <sup>2</sup>	Insulation Dia. Range	Contact Finish (Plating)	Contact Part Numbers		Applicator for AMP-O-LECTRIC Machine*	Applicator for Stripper/Crimper Machine	Color Code	Hand Tool
				Loose Piece	Strip Form				
.100 2.54	28-24 0.08-0.2	.035-.055 0.89-1.40	A	531476-5	531476-4	466577-4	466912-1	Orange	90268-1
			B	531477-5	531477-4				
			A	531477-4	531477-2				
			—	—	—				
.125 3.18	24-20 0.2-0.6	.048-.060 1.22-1.52	A	531477-5	531477-4	466622-2	466919-1	Green	91535-1
			B	531477-3	531477-2				
			—	—	—				
			—	—	—				
.156 3.96	28-24 0.08-0.2	.035-.055 0.89-1.40	A	531476-5	531476-4	466577-4	466912-1	Orange	90268-1
			B	531477-5	531477-4				
			A	531477-5	531477-4				
			B	531477-3	531477-2				
.156 3.96	22-18 0.3-0.9	.045-.095 1.14-2.41	A	—	531478-4	466713-2	466928-1	Violet	—

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

**Snap-In Solder Eyelet Contacts**

**Material and Finish:**

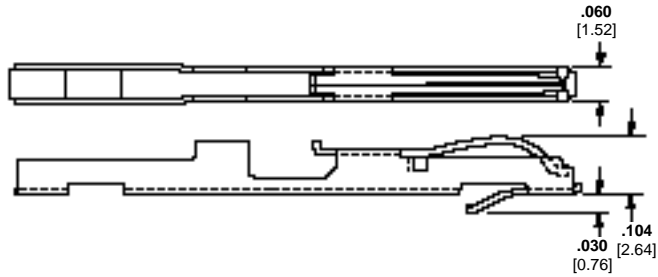
Phosphor bronze, plated .000030 [0.00076] nickel on entire contact, with the addition of one of the following platings:

**Plating A**—.000030 [0.00076] gold in mating area

**Plating B**—.000015 [0.00038] gold in mating area

Solder eyelet portion is tin plated.

**Note:** Tin plating of entire contact is available upon request.



**Related Product Data:**

**Performance Specifications**—page 154

**Connector Housings**—pages 157, 159, 161

Connector Centerline	Contact Finish (Plating)	Part Numbers
.100 2.54	A B	583854-3 583854-5
.125 3.18	A	530245-3

**Technical Documents**

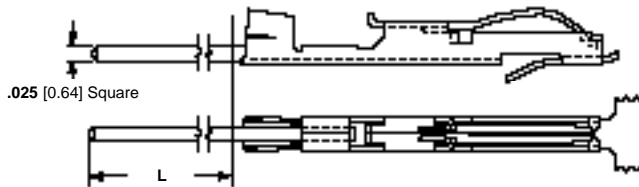
(pages 186, 187):

Product Specification  
108-9031

Application Specification  
114-9004

Instruction Sheets 408-7527,  
408-7529

**Snap-In Wrap Post Contacts**



**Material and Finish:**

**Contact**—Phosphor bronze, plated .000015 [0.00038] gold in mating area, with entire contact underplated .000030 [0.00076] nickel

**Post**—Phosphor bronze, tin-plated

**Note:** Tin plated contacts are available upon request.

Connector Centerline Spacing	Dimension L	Part Numbers
.100 2.54	.451 11.46	583879-1
	.535 13.59	583879-4
.125 3.18	.525 13.34	583884-1
	.525 13.34	583884-1

**Related Product Data:**

**Performance Specifications**—page 154

**Connector Housings**—pages 157, 159, 161

**Technical Documents:**

(pages 186, 187):

Product Specification  
108-9031

Application Specification  
114-9004

Instruction Sheets 408-7527,  
408-7529

Hand



Contact Extraction Tool



**Crimp Snap Twin Leaf Connectors, .100 [2.54] Centerline**

**Housings**

**Material:** Black glass-filled polyester, 94V-0 rated

**Related Product Data:**

**Performance Specifications**—page 154

**Contacts**—pages 155, 156

**Accessories**—page 162\*

**PCB Edge Pattern**—page 163

**Technical Documents:**

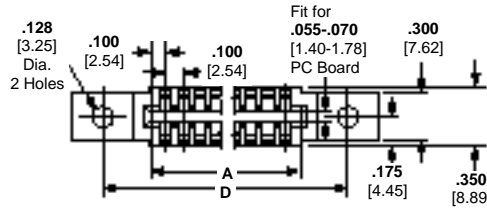
(pages 186, 187):

Product Specification 108-9031

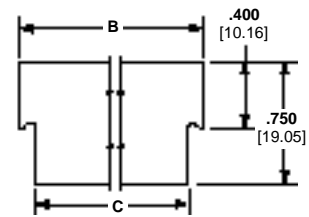
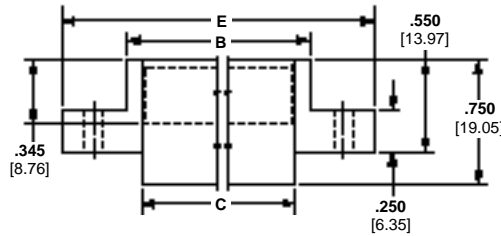
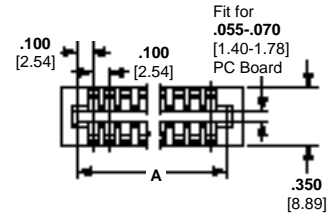
Application Specification 114-9004

Instruction Sheet 408-7527

**With Mounting Ears**



**Without Mounting Ears**



No. of Dual Positions	Dimensions					Part Numbers	
	A	B	C	D	E	Without Mounting Ears	With Mounting Ears
6	.700	.900	.720	—	—	2-583717-1	—
	17.78	22.86	18.29	1.175	1.430	—	583861-5
7	.800	1.000	.820	—	—	2-583717-3	—
	20.32	25.4	20.83	—	—	—	—
8	.900	1.100	.920	—	—	3-583717-9	—
	22.86	27.94	23.36	—	—	—	—
10	1.100	1.300	1.120	1.700	2.100	583717-1	583718-1
	27.94	33.02	28.49	43.18	53.34	—	583861-7
13	1.200	1.400	1.600	—	—	3-583717-3	—
	30.48	35.56	40.64	—	—	—	—
14	1.500	1.700	1.520	—	—	2-583717-7	—
	38.1	43.16	38.61	—	—	—	—
15	1.600	1.800	1.620	2.200	2.600	583717-3	583718-3
	40.64	45.72	41.15	55.88	66.04	—	583861-9
17	1.800	2.000	1.820	2.400	2.800	583717-5	1-583861-1
	45.72	50.8	46.30	60.96	71.12	—	—
18	1.900	2.100	1.920	—	—	583717-7	—
	48.26	53.34	48.76	—	—	—	—
20	2.100	2.300	2.120	—	—	3-583717-1	—
	53.34	58.42	53.84	—	—	—	—
22	2.300	2.500	2.320	2.900	3.300	583717-9	583718-9
	58.42	63.50	58.93	73.66	83.82	—	—
25	2.600	2.800	2.620	3.200	3.600	1-583717-1	1-583718-1
	66.04	71.12	66.55	81.28	91.44	—	—
30	3.100	3.300	3.120	3.700	4.100	1-583717-3	1-583718-3
	78.74	83.82	79.25	93.98	104.14	—	583861-1
32	3.300	3.500	3.320	3.900	4.300	—	2-583718-7
	83.82	88.90	84.33	99.06	109.22	—	—
36	3.700	3.900	3.720	4.175	4.430	—	2-583861-5
	93.98	93.06	94.49	106.04	112.52	—	—
40	4.100	4.300	4.120	4.700	5.100	—	1-583718-5
	104.14	109.22	104.65	119.38	129.54	—	583861-3
50	5.100	5.300	5.120	5.700	6.100	1-583717-9	1-583718-7
	129.54	134.62	130.05	144.78	154.94	—	2-583861-1

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Crimp Snap Twin Leaf Connectors, .100 [2.54] Centerline** (Continued)

**Housings Preloaded with Right-Angle Posts**

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated .000015 [0.00038] gold in mating area, with entire contact underplated .000030 [0.00076] nickel

**Posts**—Phosphor bronze, tin plated

**Related Product Data:**

**Performance Specifications**—page 154

**Accessories**—page 162\*

**PCB Edge Pattern and Hole Layout**—page 163

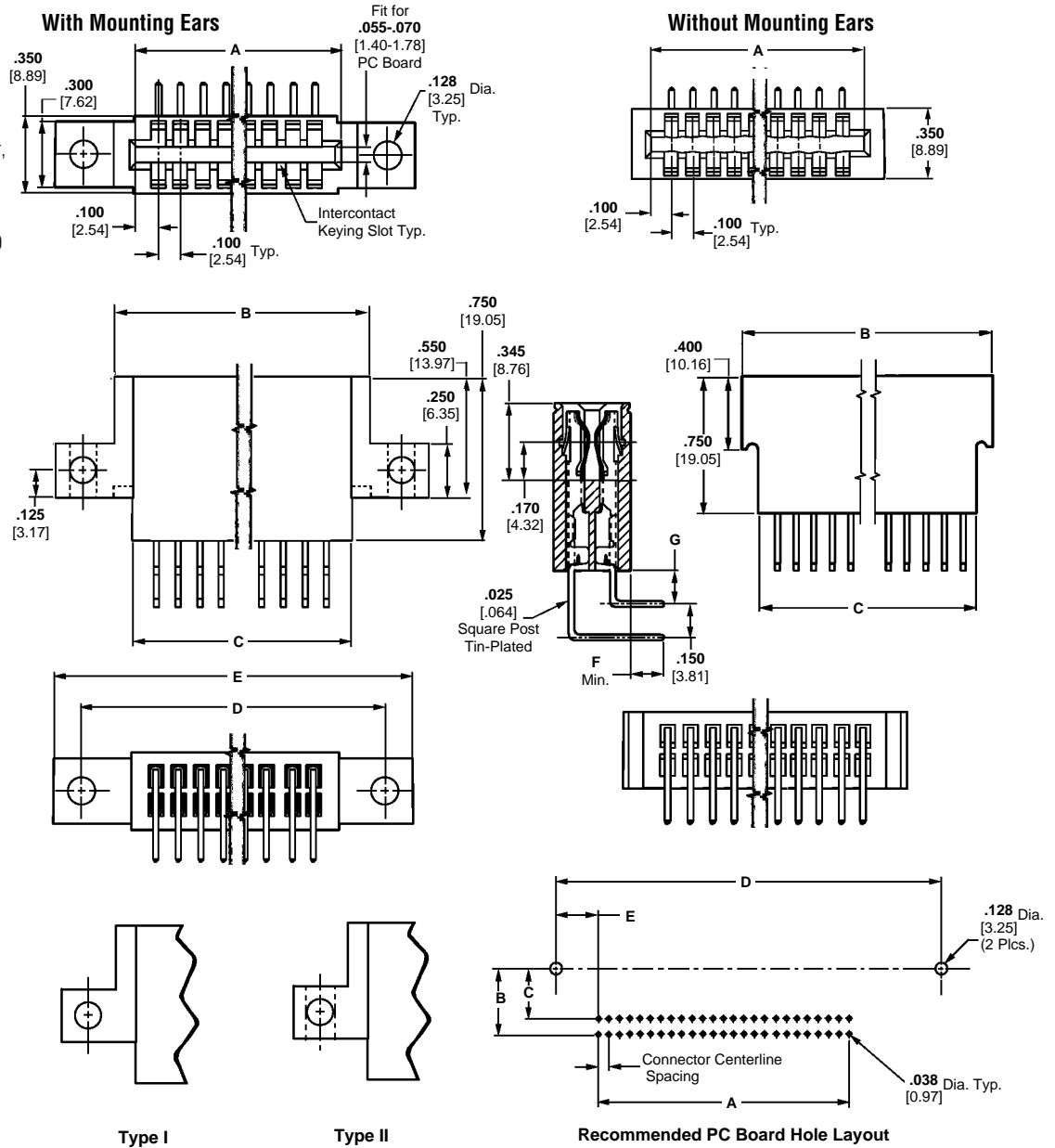
**Technical Documents:**

(pages 186, 187):

Product Specification 108-9031

Application Specification 114-9004

Instruction Sheet 408-7527



No. of Dual Pos.	Dimensions							Posted Assembly Part Numbers		
	A	B	C	D	E	F	G	Right-Angle Post With Mounting Ears	Right-Angle Post Without Mounting Ears	
	Type I	Type II								
10	1.100 27.94	1.300 33.02	1.120 28.49	1.575 40.01	1.830 46.48	—	—	—	583900-5	—
17	1.800 45.72	2.000 50.80	1.820 46.23	—	—	.090 2.29	.150 3.81	—	—	530218-5
22	2.300 58.42	2.500 63.50	2.320 58.93	2.900 73.66	3.300 83.82	.090 2.29	.150 3.81	—	1-583900-3	530218-9
25	2.600 66.04	2.800 71.12	2.620 66.55	3.200 81.28	3.600 91.44	.090 2.29	.150 3.81	583900-1	—	530218-1
28	2.900 73.66	3.100 78.74	2.920 74.16	3.375 85.72	3.630 92.20	.090 2.29	.150 3.81	—	583900-6	—
30	3.100 78.74	3.200 81.28	3.120 79.25	3.700 93.98	4.100 104.14	.090 2.29	.150 3.81	—	583900-4	530218-6
50	5.100 129.54	5.300 134.62	5.120 130.05	5.575 141.61	5.830 148.08	—	—	583900-3	—	—

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Crimp Snap Twin Leaf Connectors, .125 [3.18] Centerline**

**Housings**

**Material:** Black glass-filled polyester  
94V-0 rated

**Related Product Data:**

**Performance Specifications**—  
page 154

**Contacts**—pages 155, 156

**Accessories**—page 162

**PCB Edge Pattern**—page 163

**Technical Documents:**

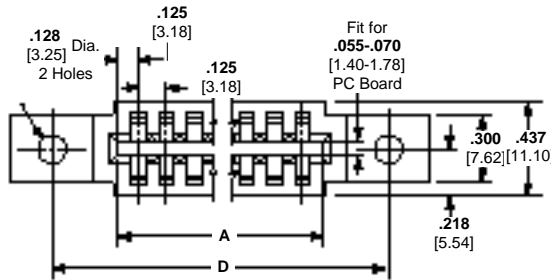
(pages 186, 187):

Product Specification  
108-9031

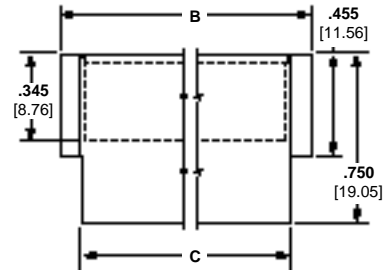
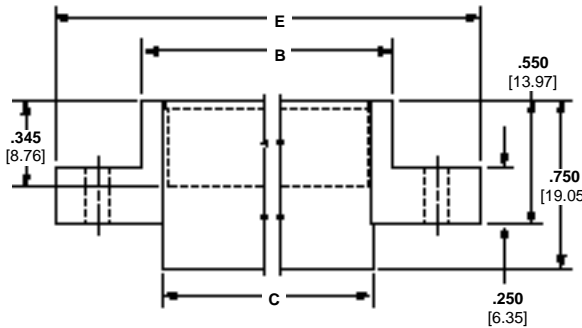
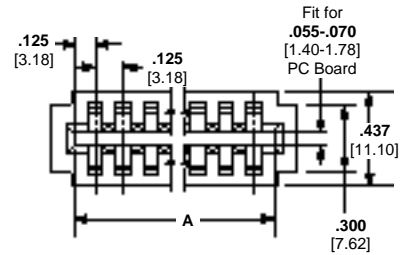
Application Specification  
114-9004

Instruction Sheet 408-7527

**With Mounting Ears**



**Without Mounting Ears**



No. of Dual Positions	Dimensions					Part Numbers	
	A	B	C	D	E	Without Mounting Ears	With Mounting Ears
6	.875 22.23	1.035 26.29	.845 21.46	1.295 32.89	1.555 39.50	583873-1	583864-1
10	1.375 34.93	1.535 38.99	1.345 34.16	1.795 45.59	2.055 52.20	—	583864-3
15	2.000 50.80	2.160 54.86	1.970 50.04	2.420 61.47	2.680 68.07	583873-5	—
22	2.875 73.03	3.035 77.09	2.845 72.26	3.295 83.69	3.555 90.30	583873-9	583864-9
25	3.250 82.55	3.410 86.61	3.220 81.79	3.670 93.22	3.930 99.82	—	—
28	3.625 92.08	3.785 96.14	3.595 91.31	4.045 102.74	4.305 109.35	—	1-583864-3
30	3.875 98.43	4.035 102.49	3.845 97.66	4.295 109.09	4.555 115.70	—	2-583864-1
40	5.125 130.17	5.285 134.23	5.095 129.41	5.545 140.84	5.805 147.44	—	1-583864-7
44	5.625 142.88	5.785 146.94	5.595 142.11	6.045 153.54	6.305 160.15	1-583873-9	—

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Crimp Snap Twin Leaf Connectors, .125 [3.18] Centerline** (Continued)

**Housings Preloaded with Right-Angle Posts**

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated .000030 [0.00076] gold in mating area, with entire contact underplated .000030 [0.00076] nickel

**Posts**—Phosphor bronze, tin-plated

**Related Product Data:**

**Performance Specifications**—page 154

**Accessories**—page 162

**PCB Edge Pattern and Hole Layout**—page 163

**Technical Documents:**

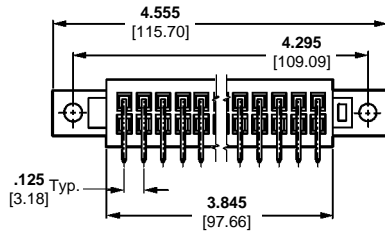
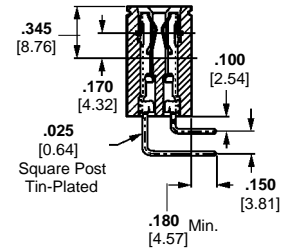
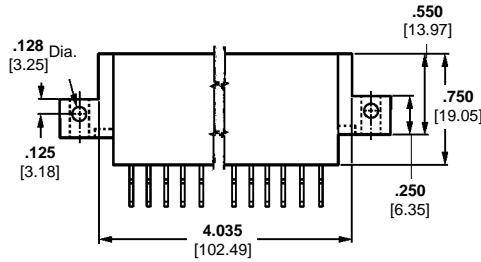
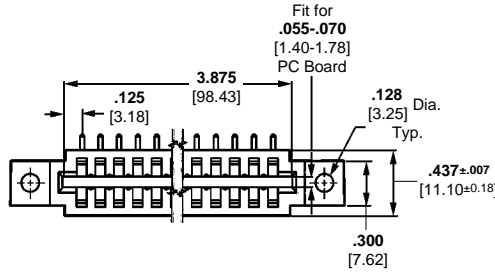
(pages 186, 187):

Product Specification 108-9031

Application Specification 114-9004

Instruction Sheet 408-7527

**With Mounting Ears**



**30 Dual Positions,  
Part No. 530238-8**



**Crimp Snap Twin Leaf Connectors, .156 [3.96] Centerline**

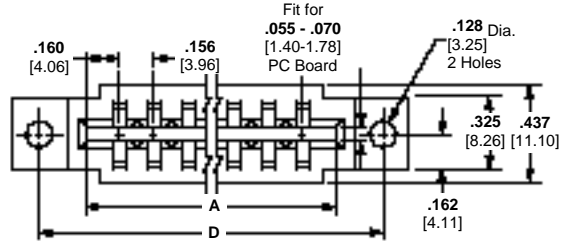
**Housings**

**With Mounting Ears**

**Material:** Black glass-filled polyester, 94V-0 rated

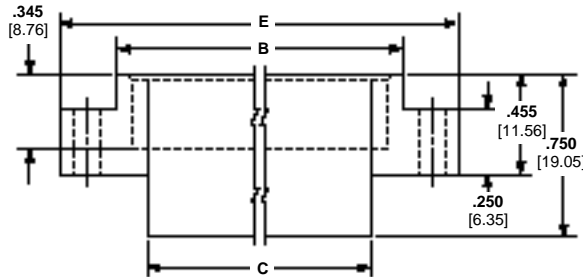
**Related Product Data:**

- Performance Specifications**—page 154
- Contacts**—pages 155, 156
- Accessories**—page 162
- PCB Edge Pattern**—page 163



**Technical Documents:**

- (pages 186, 187):
- Product Specification 108-9031
- Application Specification 114-9004
- Instruction Sheet 408-7527



No. of Dual Positions	Dimensions					Part Numbers Mounting Ears
	A	B	C	D	E	
6	1.100 27.94	1.264 32.11	.976 24.79	1.535 38.99	1.785 45.34	1-583859-3
8	1.412 35.86	1.576 40.03	1.288 32.72	1.847 46.91	2.097 53.26	2-583859-1
10	1.724 43.79	1.888 47.96	1.600 40.64	2.159 54.84	2.409 61.19	583859-9
12	2.036 51.71	2.200 55.88	1.912 48.56	2.471 62.76	2.721 69.11	1-583859-5
15	2.504 63.60	2.668 67.77	2.380 60.45	2.939 74.65	3.189 81.00	583859-7
18	2.972 75.49	3.136 79.55	2.848 72.34	3.407 86.54	3.657 92.89	583859-5
22	3.596 91.34	3.760 95.50	3.472 88.19	4.031 102.39	4.281 108.74	583859-3
28	4.532 115.11	4.696 119.28	4.408 111.96	4.967 126.16	5.217 132.51	583859-1
36	5.780 146.81	5.944 150.96	5.656 143.66	6.215 157.86	6.465 164.21	2-583859-3

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Accessories for Crimp Snap Twin Leaf Connectors**

**Dummy Contacts**

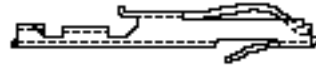
**Material:** Phosphor bronze

**Related Product Data:**

The dummy contact is used in sparsely loaded housings to balance contact pressure. For specific recommendations, consult Tyco Electronics.

**Technical Documents**

(pages 186, 187):  
Instruction Sheet 408-7527



Tin Plated — **Part No. 583857-5**  
.000030 [0.00076] Nickel Plated — **Part No. 583857-6**  
Gold Flash-Over-Nickel Plate — **Part No. 583857-7**

**Retaining Spring**

**Material:** Stainless steel

**Related Product Data:**

Retaining springs are used for single sided PC board applications. Use one spring per 6 empty cavities.

**Technical Documents**

(pages 186, 187):  
Instruction Sheet 408-7527

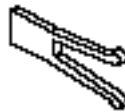


Unplated — **Part No. 583691-2**  
Gold Flash-Over-Nickel Plate — **Part No. 583691-3**

**Keying Plugs**

**Technical Documents**

(pages 186, 187):  
Instruction Sheet 408-7527

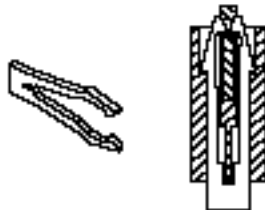


**On-Contact Plug**  
Natural Nylon — **Part No. 583764-1**

**Intercontact Plug**  
Natural Nylon — **Part No. 583274-1**  
Glass-Filled Polyester — **Part No. 583274-3**

**Locking Key**

**Material:** Nylon



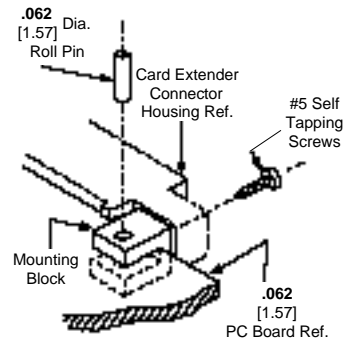
**On-Contact Clip**  
**Part No. 530213-1**

**Mounting Block**

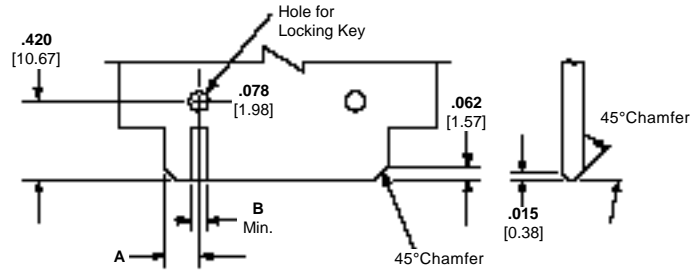
**Material:** Natural color nylon

**Kit Part No. 531250-4**

Each kit includes 2 mounting blocks  
2 self tapping screws,  
#5 x .437 [11.10]  
2 roll pins  
.075 x .250 [1.57 x 6.35]

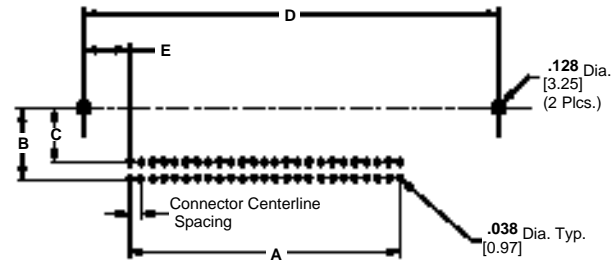


**Recommended PC Board  
Edge Pattern**



Connector Centerline Spacing	Dimensions	
	A	B
.100	.093	.052
2.54	2.36	1.32
.125	.118	.078
3.18	3.00	1.98
.156	.153	.094
3.96	3.89	2.39

**Recommended PC Board  
Hole Layout**



**Connector Centerline Spacing: .100 [2.54]**

No. of Dual Positions	Dimensions				
	A	B	C	D	E
10	.900 22.86	.625 15.88	.475 12.07	1.575 40.01	.400 10.16
17	1.600 40.64	—	—	—	—
20	1.900 48.26	.625 15.88	.375 9.53	2.575 65.41	.337 8.56
22	2.100 53.34	.625 15.88	4.75 12.07	2.900 73.66	.337 8.56
25	2.400 60.96	.625 15.88	.475 12.07	3.200 81.28	.400 10.16
30	2.900 73.66	—	—	3.700 93.98	.400 10.16
50	4.900 124.46	.525 13.34	.375 9.53	5.575 141.61	.337 8.56

**Connector Centerline Spacing: .125 [3.18]**

No. of Dual Positions	Dimensions				
	A	B	C	D	E
30	3.625 92.08	—	—	4.295 109.09	.350 8.89

## AMP-LEAF Connectors

### Product Facts

- Contacts on .156 [3.96] centers
- Glass-filled polyester, phenolic or diallyl phthalate housings
- Closed card entry design helps prevent overstressing of contacts
- Gold-over-nickel plated contacts
- Locking lance permits easy contact replacement
- Keying
- Contacts maintain exact pressures on the circuit paths, despite repeated insertions and extractions
- Recognized under the Component Program of Underwriters Laboratories Inc. File No. E28476 
- Certified by Canadian Standards Association\*\*, File No. LR 7189 

\*\*CSA certification pending for certain products, as noted.

### Performance Specifications

#### Contact Current Rating\*:

5.0 amperes, max.

#### Contact Engaging Force:

16 oz. [4.4 N], max.

#### Contact Separation Force:

2 oz. [0.6 N], min.

#### Vibration:

MIL-STD-202, Method 201

#### Operating Temperature:

Contacts -40°C to +85°C

#### Storage Temperature:

-40°C to +85°C

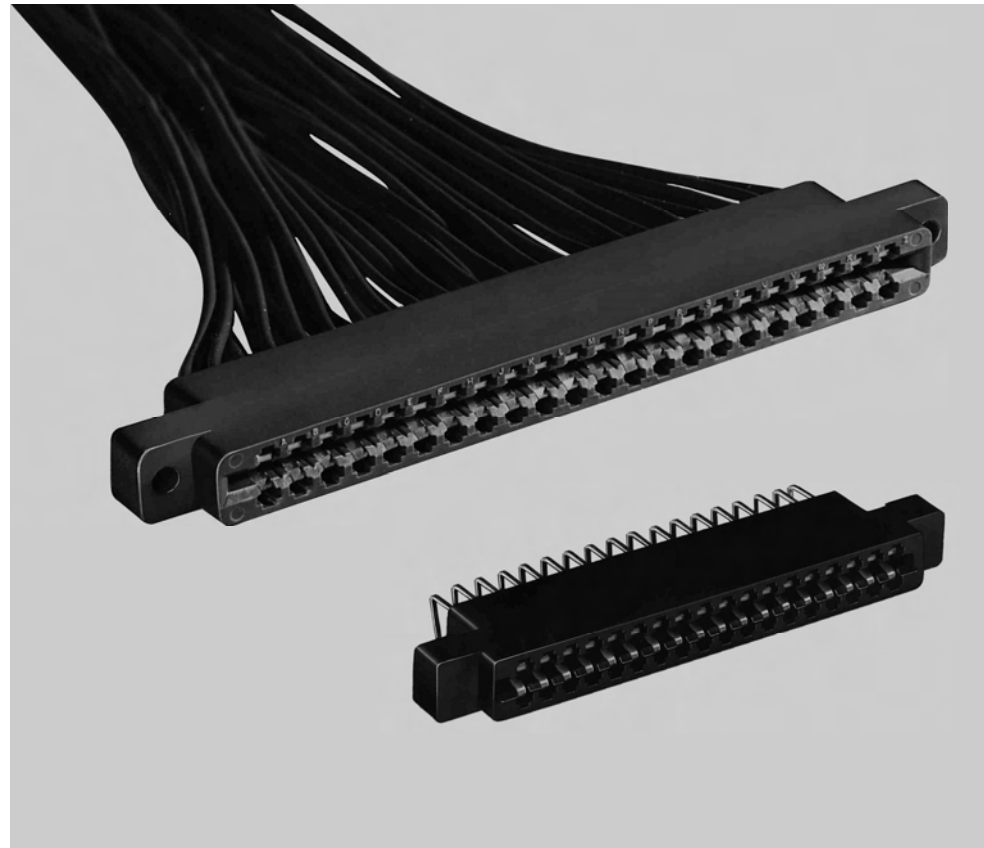
### Housings:

Glass-Filled Polyester, -55°C to +105°C

Glass-Filled Phenolic, -65°C to +125°C

Diallyl Phthalate, -65°C to +125°C

\*Consult Tyco Electronics engineering when paralleling contacts for power applications.



AMP-LEAF Connectors are available with crimp, snap-in contacts or preloaded with right-angle posted contacts.

The crimp type printed circuit connector is supplied with the housing unloaded—the user buys only enough contacts to satisfy circuit requirements. This feature, when coupled with the Tyco Electronics matched tooling, contributes substantially to lower installed costs.

Right-angle posted connectors are supplied in various sizes, with preloaded contacts on one or both sides. The solder-type posts are formed 90° from the housing to permit right-angle interfacing between mother and daughter boards.

**AMP-LEAF 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)

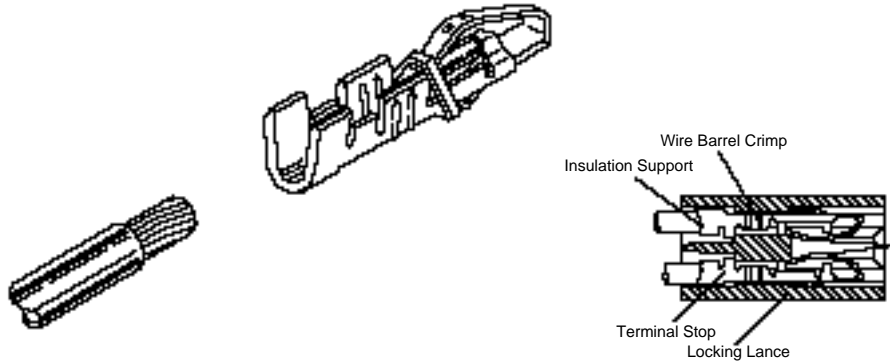
**Plating B**—.000030 [0.00076] min. gold in mating area, gold flash on remainder of contact, with entire contact underplated .000050 [0.00127] min. nickel

**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 Part Numbers		Contact Finish	Applicator for AMP-O-LECTRIC Machine*	Hand Tool
	Single Wire	Double Wire	Loose Piece	Strip Form			
26-22 0.12-0.4	.050-.064 1.27-1.63	—	583990-3	583204-2	B	466366-2	90028-3
			—	343371-1	D		
			—	583361-2	A		
22-18 0.3-0.9	.055-.080 1.40-2.03	.120 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		
			—	—	—		
16 1.25-1.40	.108 2.74 Max.	.080-.160 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-LECTRIC 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.

**Related Product Data:**

**Performance Specifications**—  
page 164

**Connector Housings**—  
pages 167-169

**Application Tooling**—  
pages 184, 185

**Technical Documents:**

- (pages 186, 187):  
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**



Extraction Tool Number	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
	583724-1
583725-1	
583726-1	
465195-2	480133-2

**Dummy Contact**

**Material:**

Phosphor bronze



- Plain Finish—  
**Part No. 66084-1**  
Tin Finish—  
**Part No. 66084-2**  
Gold Finish—  
**Part No. 66084-3**

**Technical Documents:**

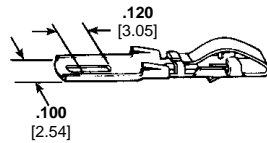
- (pages 186, 187):  
Instruction Sheet 408-7037

**AMP-LEAF Connectors** (Continued)

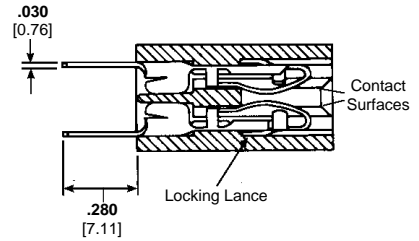
**Solder Eyelet Contact**

**Material and Finish:**

Phosphor bronze, plated .000015 [0.00038] min. gold in contact area, gold flash on remainder of contact, with entire contact underplated .000050 [0.00127] min. nickel



**Standard Eyelet Type Contact**  
Part No. 66067-5  
(For .055-.070 [1.4-1.78]  
Thick PC Boards)

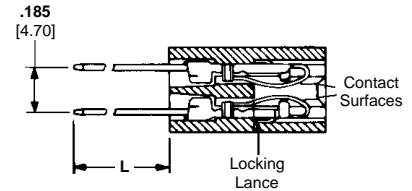


**Note:** Solder tab will accommodate a maximum of two 16 AWG [1.25-1.4 mm<sup>2</sup>] solid wires, or two 18 AWG [0.8-0.9 mm<sup>2</sup>] stranded wires.

**Post Type Contacts**

**Material and Finish:**

Phosphor bronze, plated .000015 [0.00038] min. gold in contact area, tin on post, with entire contact underplated .000050 [0.00127] min. nickel



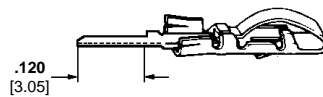
Post Length L	Loose Piece Contact Part No. (.045 x .045 [1.14 x 1.14] Post)
.960 24.38	1-582355-3
.560 14.22	1-582355-5

**Note:** Post type contacts are for .055-.070 [1.4-1.78] thick PC boards.

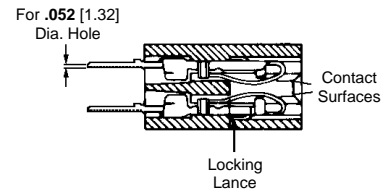
**Solder Dip Contacts**

**Material and Finish:**

Phosphor bronze, plated .000015 [0.00038] min. gold in contact area or, plated .000030 [0.00076] min. gold in contact area, tin on post, with entire contact underplated .000050 [0.00127] min. nickel



**Solder Dip Contact**  
Part No. 583294-2 (.000015)  
Part No. 583294-1 (.000030)  
(For .062 [1.57]  
Thick PC Board)



**AMP-LEAF Connectors, .156 [3.96] Centerline**

**Glass-Filled Polyester Housings**

**Material:** Glass-filled polyester

**Related Product Data:**

**Card Guide Assembly**—page 171

**PC Board Thickness**—.055-.070 [1.40-1.78]

**Performance Specifications**—page 164

**Contacts**—pages 165, 166

**Accessories**—page 171

**PC Board Layout**—page 172

**Technical Documents:**

(pages 186, 187):

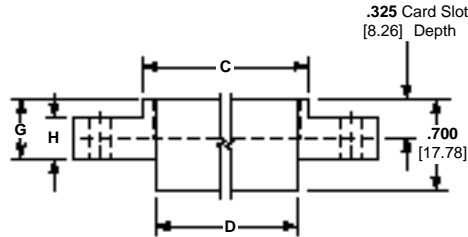
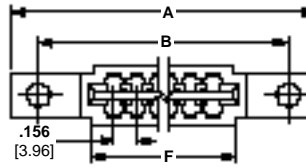
Product Specifications

108-9013, 108-9043

Application Specification

114-9003

Instruction Sheet 408-7037



No. of Dual Positions	Dimensions										Housing Part Numbers
	A	B	C	D	E	F	G	H	J	K	
6	1.785 45.34	1.535 38.99	1.264 32.11	.976 24.79	.125 3.18	1.100 27.94	.456 11.58	.250 6.35	.300 7.62	.350 8.89	583722-1
10	2.409 61.19	2.159 54.84	1.888 47.96	1.600 40.64	.125 3.18	1.724 43.79	.456 11.58	.250 6.35	.300 7.62	.350 8.89	583723-1
12	2.721 69.11	2.471 62.76	2.200 55.88	1.912 48.56	.125 3.18	2.036 51.71	.456 11.58	.250 6.35	.300 7.62	.350 8.89	583724-1*
15	3.189 81.00	2.939 74.65	2.668 67.77	2.380 60.45	.128 3.25	2.504 63.60	.456 11.58	.250 6.35	.300 7.62	.350 8.89	583680-1
18	3.657 92.89	3.407 86.54	3.136 79.65	2.848 72.34	.125 3.18	2.972 75.49	.456 11.58	.250 6.35	.300 7.62	.350 8.89	583725-1
18	3.657 92.89	3.407 86.54	3.136 79.65	2.848 72.34	.156 3.96	2.972 75.49	.456 11.58	.250 6.35	.300 7.62	.350 8.89	583725-3
22	4.281 108.74	4.031 102.39	3.760 95.50	3.472 88.19	.125 3.18	3.596 91.34	.456 11.58	.250 6.35	.300 7.62	.350 8.89	583617-1
22	4.281 108.74	4.031 102.39	3.760 95.50	3.472 88.19	.156 3.96	3.596 91.34	.456 11.58	.250 6.35	.300 7.62	.350 8.89	583617-3
25	4.749 120.62	4.499 114.27	4.228 107.39	3.940 100.01	.125 3.18	4.064 103.23	.456 11.58	.250 6.35	.300 7.62	.350 8.89	583726-1
30	5.529 140.44	5.279 134.09	5.008 127.20	4.720 119.89	.125 3.18	4.844 123.04	.456 11.58	.250 6.35	.300 7.62	.350 8.89	583685-1
36	7.015 178.18	6.578 167.08	5.942 150.92	5.722 145.33	.156 3.96	5.782 146.86	.455 11.55	.290 7.36	.325 8.25	.437 11.10	583552-1

\*CSA certification pending.

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Glass-Filled Phenolic Housings**

**Material:** Glass-filled phenolic per MIL-M-14F

**Related Product Data:**

**Card Guide Assembly**—page 171

**Performance Specifications**—page 164

**Contacts**—pages 165, 166

**Accessories**—page 171

**PC Board Layout**—page 172

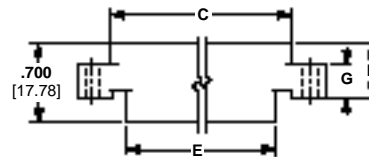
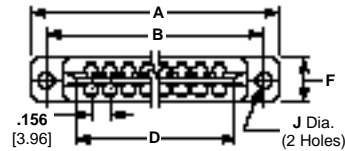
**Technical Documents:**

(pages 186, 187):

Product Specifications  
108-9013, 108-9043

Application Specification  
114-9003

Instruction Sheet 408-7037



No. of Dual Positions	Dimensions										Board Thickness	Housing Part Numbers
	A	B	C	D	E	F	G	H	J			
8	1.982	1.767	1.550	1.410	1.288	.340	.250	.458	.125	.055-.070	582140-5	
	50.34	44.88	39.37	35.81	32.72	8.64	6.35	11.63	3.18	1.40-1.78		
10	2.407	2.157	1.866	1.722	1.598	.360	.250	.456	.128	.055-.070	582963-2*	
	61.14	54.79	47.90	43.74	40.59	9.14	6.35	11.58	3.25	1.40-1.78		
10	—	—	1.886	1.722	1.598	.360	—	—	—	.055-.070	583280-1 <sup>1</sup>	
			47.90	43.74	40.59	9.14				1.40-1.78		
15	3.182	2.854	2.621	2.506	2.376	.350	.250	.466	.187	.055-.070	480110-5	
	80.82	72.49	66.57	63.65	60.35	8.89	6.35	11.84	4.75	1.40-1.78		
15	3.182	2.854	2.621	2.506	2.376	.350	.250	.466	.125	.055-.070	1-582147-5*	
	80.82	72.49	66.57	63.65	60.35	8.89	6.35	11.84	3.18	1.40-1.78		
15	3.182	2.933	2.621	2.506	2.376	.350	.250	.466	.128	.055-.070	582500-5	
	80.82	74.49	66.57	63.65	60.35	8.89	6.35	11.84	3.25	1.40-1.78		
18	3.650	3.400	3.088	2.948	2.843	.375	.155	.406	.156	.055-.070	480133-5	
	92.71	86.36	78.43	74.87	72.21	9.52	3.93	10.31	3.96	1.40-1.78		
22	4.274	4.025	3.754	3.591	3.466	.350	.250	.456	.125	.055-.070	480142-3	
	108.56	102.24	95.35	91.21	88.04	8.89	6.35	11.58	3.18	1.40-1.78		
25	4.741	4.493	4.221	4.058	3.933	.350	.250	.456	.125	.055-.070	583167-3*	
	120.42	114.12	107.21	103.07	99.90	8.89	6.35	11.58	3.18	1.40-1.78		
32	6.365	5.928	5.292	5.132	5.072	.485	.290	.455	.187	.084-.104	582264-2,3	
	161.67	150.57	134.42	130.35	128.83	12.32	7.37	11.56	4.75	2.13-2.64		

\*CSA certification pending.

<sup>1</sup>Housing without mounting ears.

<sup>2</sup>Housing does not accommodate intercontact keying plug.

<sup>3</sup>For .086 to .104 [2.18 to 2.64] thick PC boards (special contacts required).

**Note:** Other connector sizes can be made available, consult Tyco Electronics.



**Diallyl Phthalate Housings**

**Material:** Diallyl phthalate per MIL-M-14F

**Related Product Data:**

**Card Guide Assembly**—page 171

**Performance Specifications**—page 164

**Contacts**—pages 165, 166

**Accessories**—page 171

**PC Board Layout**—page 172

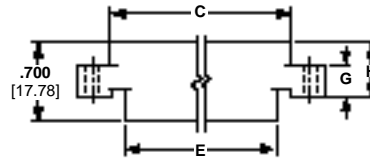
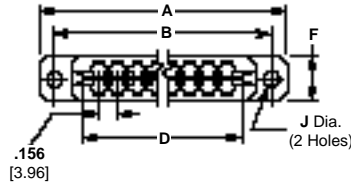
**Technical Documents:**

(pages 186, 187):

Product Specifications  
108-9013, 108-9043

Application Specification  
114-9003

Instruction Sheet 408-7037



Single Slot Housing

No. of Dual Positions	Dimensions										Board Thickness	Housing Part Numbers
	A	B	C	D	E	F	G	H	J			
15	3.187	2.859	2.625	2.510	2.380	.350	.250	.466	.187	.125	.055-.070 1.40-1.78	480110-2
	80.95	72.62	66.68	63.75	60.45	8.89	6.35	11.84	4.15	3.18		
15	3.187	2.938	2.625	2.510	2.380	.350	.250	.466	.128	.125	.055-.070 1.40-1.78	582500-2
	80.95	74.63	66.68	63.75	60.45	8.89	6.35	11.84	3.25	3.18		
18	3.656	3.406	3.093	2.953	2.848	.375	.155	.406	.156	.125	.055-.070 1.40-1.78	480133-2
	92.86	86.51	78.56	75.01	72.34	9.53	3.94	10.31	3.96	3.18		
22	4.281	4.031	3.760	3.596	3.472	.350	.250	.456	.125	.125	.055-.070 1.40-1.78	480142-2
	108.74	102.39	95.90	91.34	88.19	8.89	6.35	11.58	3.18	3.18		

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**AMP-LEAF Connectors, .156 [3.96] Centerline (Continued)**

**Housings Preloaded with Right-Angle Post Contacts**

**Material and Finish:**

**Housing**—See chart below

**Contacts**—Phosphor bronze, plated .000015 [0.00038] min. gold in mating area, with entire contact underplated .000050 [0.00127] min. nickel

**Post**—Phosphor bronze, tin plated

**Retaining Spring**—Stainless steel

**Related Product Data:**

**Card Guide Assembly**—page 171

**Performance Specifications**—page 164

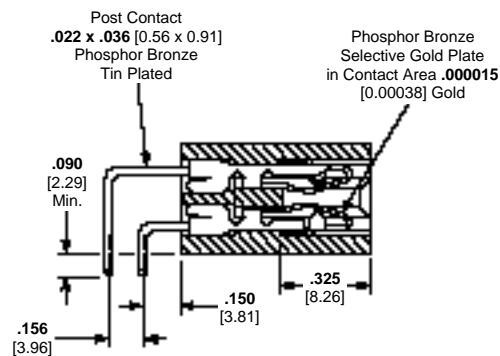
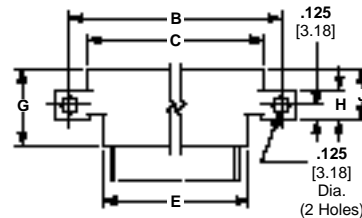
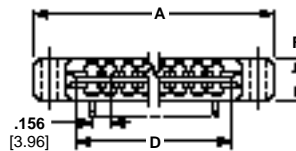
**Accessories**—page 171

**PC Board Layout**—page 172

**Technical Documents:**

(pages 186, 187):

Product Specification  
108-9013



No. of Dual Positions	Dimensions									Part Numbers	Housing Material
	A	B	C	D	E	F	G	H	J		
10	2.407	2.157	1.886	1.722	1.598	.360	.700	.250	.456	583599-1*	
	61.14	54.79	47.9	43.74	40.59	9.14	17.78	6.35	11.58		
15	3.182	2.933	2.621	2.506	2.376	.350	.700	.250	.466	583545-1*	Glass-Filled Phenolic
	80.82	74.5	66.57	63.65	60.35	8.89	17.78	6.35	11.84		
18	3.650	3.400	3.088	2.948	2.843	.375	.700	.250	.406	583544-1*	
	92.71	86.36	78.44	74.88	72.21	9.53	17.78	6.35	10.31		
22	4.274	4.025	3.754	3.591	3.466	.350	.700	.250	.456	583458-2*	Glass-Filled Phenolic
	108.56	102.24	95.35	91.21	88.04	8.89	17.78	6.35	11.58		
28	4.281	4.031	3.760	3.596	3.472	.350	.700	.250	.456	583975-1*	Glass-Filled Polyester
	108.74	102.39	95.50	91.34	88.19	8.89	17.78	6.35	11.58		
28	5.270	4.961	4.680	4.527	4.402	.350	.700	.250	.456	530061-1*	Glass-Filled Phenolic
	133.86	126.01	118.87	114.99	111.81	8.89	17.78	6.35	11.58		

\*CSA certification pending.

- Notes:** 1. Other connector sizes can be made available, consult Tyco Electronics.  
2. Finished hole size is .048-.054 [1.22-1.37] diameter.

**AMP-LEAF Connector Accessories**

**Keying Plugs**

**Material:** Nylon

**Technical Documents:**

(pages 186, 187):  
Instruction Sheets 408-7036,  
408-7037, 408-7068, 408-7339

**Commoning Springs**

**Material and Finish:**

Beryllium copper, gold plated

**Technical Documents:**

(pages 186, 187):  
Instruction Sheet 408-7419

**Retaining Springs**

**Material:** Stainless steel

**Technical Documents:**

(pages 186, 187):  
Instruction Sheets 408-7035,  
408-7037

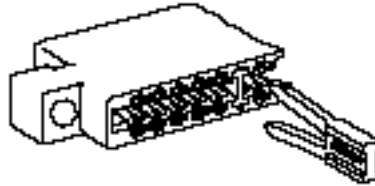
**Card Guides**

**Material:** Glass-filled nylon, black

**Technical Documents:**

(pages 186, 187):  
Instruction Sheets 408-7557,  
408-7565

**On-Contact Keying Plug**

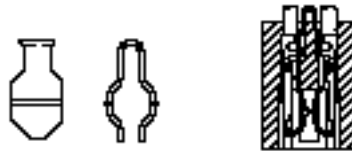


.055-.070 [1.4-1.78] Board Thickness—Part No. 480143-1

**Intercontact Keying Plugs**



.040 [1.02] Wide—Part No. 582501-1  
.025 [0.64] Wide—Part No. 583274-1

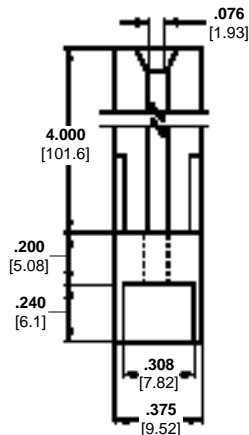


.055-.070 [1.4-1.78] thk. PC board—Part No. 66092-1

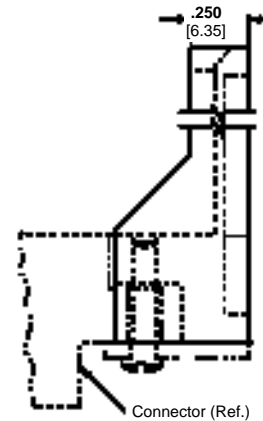
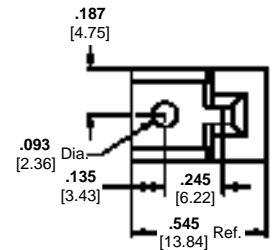
.055-.070 [1.4-1.78] and  
.084-.104 [2.13-2.64] thk. PC board with locking latches—  
Part No. 583454-1



Nickel Finish—Part No. 42973-1  
Plain Finish—Part No. 42973-2  
Gold Finish—Part No. 42973-3



Card Guide Part Number 583760-1



**Note:** Card guides may be used with all connector housings having mounting ears.

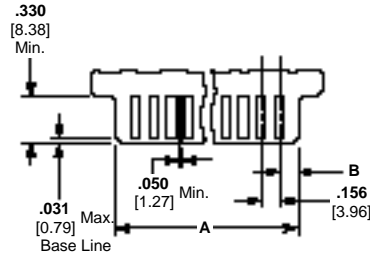
**AMP-LEAF Connector PC Board Layouts**

**Recommended  
PC Board Layouts**

**Technical Documents:**

(pages 186, 187):

Instruction Sheet 408-7037



**Note:** Slot for intercontact keying may be located between any two pads (except the first two and last two pads).

No. of Positions	Housing Material	Dimensions	
		A	B
8	P	1.396	.152
		35.46	3.86
10	P	1.709	.151
		43.40	3.84
15	DP	2.491	.153
	P	63.27	3.89
18	DP	2.487	.152
		63.17	3.86
22	DP	2.940	.144
		74.68	3.66
25	P	3.583	.153
		91.00	3.89
32	P	3.578	.151
		90.88	3.84
32	P	4.043	.150
		102.69	3.81
32	P	5.117	.140
		129.97	3.56

DP = Diallyl Phthalate

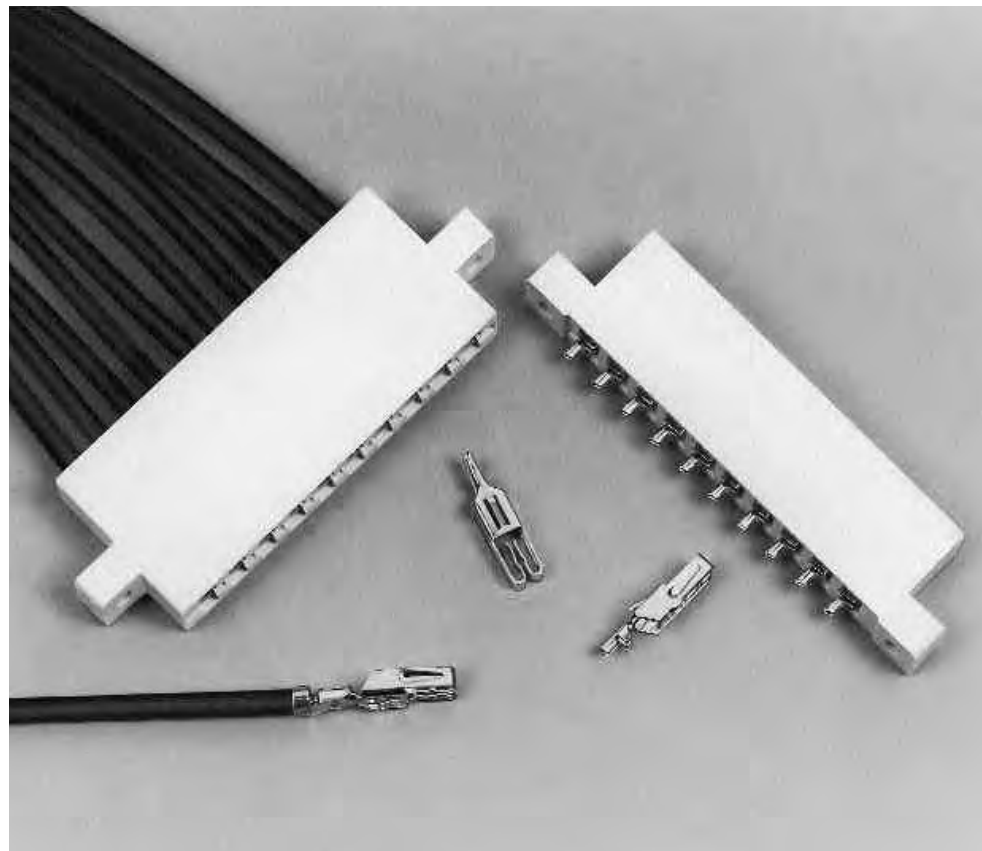
P = Phenolic

**Note:** Board thickness .055-.070 [1.4-1.78] all positions except 32 position-.084-.104 [2.13-2.64].

**High Current Connectors**

**Product Facts**

- High current capability up to 30 amperes\*
- UL rated 94V-0 glass-filled thermoplastic housings
- Choice of wire-to-board and board-to-board (solder tail) connector configurations in 3, 4, 8, 9, 10 and 12 contact sizes
- Heavy duty contacts made of high conductivity copper alloy with tin-over-nickel plating
- Contacts on .312 [7.92] centers
- Large redundant areas of contact provide excellent electrical continuity
- Connectors available for mating with .062 [1.57], .093 [2.36] and .125 [3.18] thick double-sided PC boards
- Contacts furnished in strip form for automatic machine termination and loose form for hand tool application
- Recognized under the Component Program of Underwriters Laboratories Inc. File No. E28476
- Certified by Canadian Standards Association File No. LR 7189



AMP High Current Edge Connectors are an economical answer to the costly issue of interconnecting high current printed circuitry. Designed for a current capability of up to 30 amperes\*, these connectors feature UL rated 94V-0, rugged glass-filled thermoplastic housings and high conductivity copper alloy contacts with bright tin-over-nickel plating. Contacts are on .312 [7.92] centers.

Connectors are available in 3, 4, 8, 9, 10 and 12 contact positions and in a choice of two styles for board-to-board and wire-to-board applications.

The board-to-board connectors are supplied preloaded with solder tail contacts and are designed to mate with .062 [1.57] thick double-sided daughter boards.

Wire-to-board housings are available with and without mounting ears and with capabilities of mating with .062 [1.57], .093 [2.36] and .125 [3.18] thick double-sided daughter boards. These housings are designed to accept crimp, snap-in contacts which can accommodate a wire size range of 16-10 AWG [1.25-6 mm<sup>2</sup>]. Contacts are furnished in strip form for automatic machine termination and in loose form for hand tool application.

While the basic contact is designed to carry 30 amperes\* of current, the actual number of contacts in a connector carrying 30 amperes is limited by the "T" rise of the connector and the PC board.

**Performance Specifications**

- Contact Current Rating\*:**  
30 amperes, max.
- Dielectric Withstanding Voltage (Sea Level):**  
1800 VAC
- Operating Voltage:**  
250 VAC, max.
- Insulation Resistance:**  
1000 megohms, min.
- Contact Resistance @ 30 amperes:**  
2 milliohms, max.
- Operating Temperature:**  
-40°C to +95°C
- Contact Engagement Force:**  
40 oz. [11.12 N], max.

**\*When used with a .180 [4.57] wide double-sided PC board with 5 oz. [0.14 Kg] min. copper each side. Consult Tyco Electronics engineering when paralleling contacts for power applications.**

**High Current Connectors (Continued)**

**Crimp, Snap-In Contacts**

**Material and Finish:**

**A**—Copper alloy CDA-195 plated  
.000150 [0.00381] bright tin over  
.000030 [0.00076] nickel  
**B**—Copper alloy CDA-195 plated  
.000150 [0.00381] silver all over

**Related Product Data:**

**Performance Specifications**—  
page 173

**Connector Housings**—page 175

**Application Tooling**—pages 184, 185

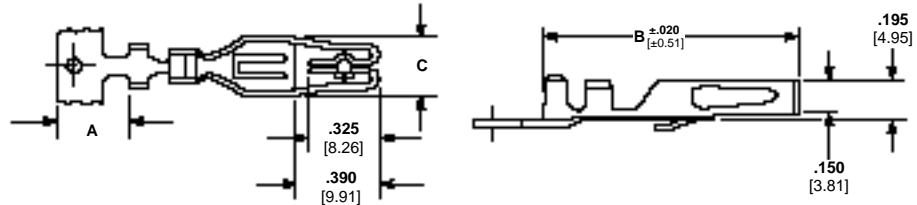
**Technical Documents:**

(pages 186, 187):

Product Specification  
108-9045

Application Specification  
114-9005

Instruction Sheets 408-7782,  
408-7783, 408-7802



Plating	Wire Size Range		Ins. Dia. Range	Dimensions			Mateable Daughter Board Thickness	Contact Part Numbers		Applicator for AMP-O-ELECTRIC Machine	Hand Tool 69710-1 Die Insert
	AWG	mm <sup>2</sup>		A	B	C		Loose Piece	Strip Form		
A	16-14	1.25-2	.090-.145 2.29-3.68	.260 6.60	1.160 29.46	.285 7.24	.062 1.57	530518-1	530517-2	466439-2	90333-1
A	12-10	3-6	.160-.210 4.06-5.33	.190 4.83	1.230 31.24	.285 7.24	.062 1.57	530520-1	530519-2	466438-2	90332-1
B	12-10	3-6	.160-.210 4.06-5.33	.190 4.83	1.230 31.24	.285 7.24	.062 1.57	—	530519-3	466438-2	90332-1
A	12-10	3-6	.160-.210 4.06-5.33	.190 4.83	1.230 31.24	.347 8.81	.093 2.36	—	531373-2	466438-2	90332-1

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



**Hand Crimping Tool  
69710-1**



**Extraction Tool  
91116-1**

**High Current Connectors, .312 [7.92] Centerline**

**Housings**

**With Mounting Ears**

**Material:** White glass-filled polyester, 94V-0 rated

**Related Product Data:**

**Performance Specifications**—page 173

**Contacts**—page 174

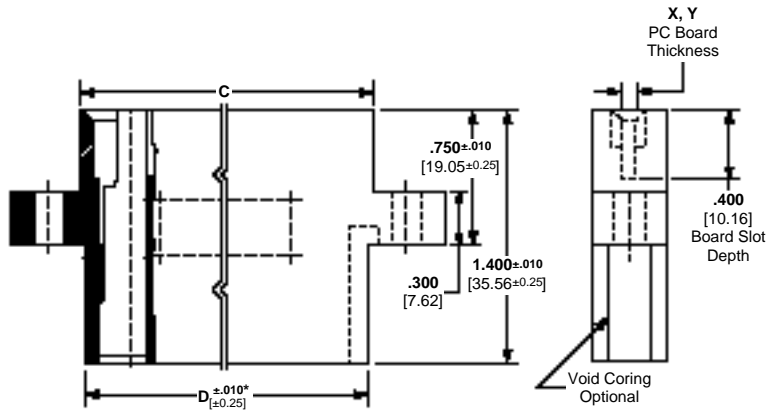
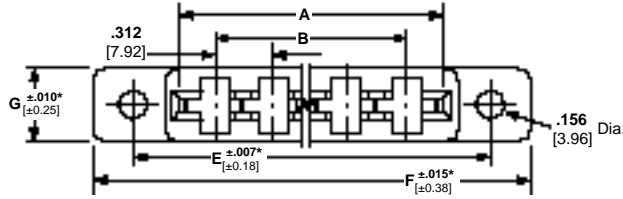
**Technical Documents:**

(pages 186, 187):

Product Specification

108-9045

Instruction Sheet 408-9123



No. of Pos.	Dimensions							Housing Part Numbers	
	A	B	C	D	E	F	G	X = .062 [1.57]	Y = .093 [2.36]
								With Mtg. Ears	With Mtg. Ears
3	1.024 26.01	.624 15.85	1.164 29.57	1.114 28.3	1.538 39.07	1.972 50.09	.500 12.70	—	531370-2
4	1.336 33.93	.936 23.77	1.476 37.49	1.426 36.22	1.850 46.99	2.284 58.01	.437 11.10	530521-3	—
8	2.584 65.63	2.184 55.47	2.724 69.19	2.674 67.92	3.098 78.69	3.532 89.71	.437 11.10	530521-6	—
9	2.896 73.56	2.496 63.40	3.036 77.11	2.986 75.84	3.410 86.61	3.844 97.64	.437 11.10	530521-7	—
12	3.832 97.33	3.432 87.17	3.972 10.89	3.922 99.62	4.346 110.39	4.780 121.41	.437 11.10	530521-9	—

- Notes:**
1. X Housings designed to accept .055-.070 [1.4-1.78] thick daughter boards; use intercontact Keying Plug No. 530533-1.
  2. Y Housings designed to accept .084-.102 [2.13-2.59] thick daughter boards; use intercontact Keying Plug No. 531369-1. + Contact 531373-2.
  3. Use Extraction Tool No. 91116-1 to remove contacts. (Refer to Instruction Sheet 408-7782).
  4. Other connector sizes can be made available, consult Tyco Electronics.

**High Current Connectors .312 [7.92] Centerline** (Continued)

**Housings Preloaded with Solder Tail Contacts**

**Material and Finish:**

**Housing**—White glass-filled polyester, 94V-0 rated

**Contacts**—

**A**—Copper alloy CDA-195 plated .000150 [0.00381] bright tin over .000030 [0.00076] nickel

**B**—Copper alloy CDA-195 plated .000150 [0.00381] silver plate over .000030 [0.00076] thk. nickel

**C**—Copper alloy CDA-195 plated .000030 [0.00076] gold in contact area, .000150 [0.00381] tin-lead solder post, over .000030 [0.00076] nickel

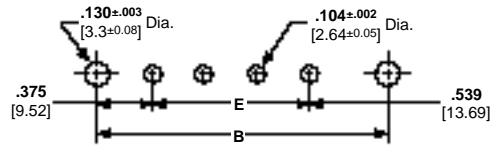
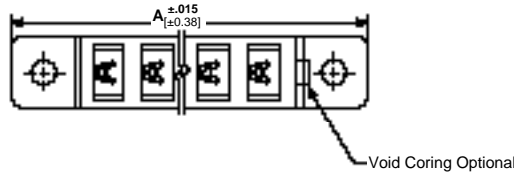
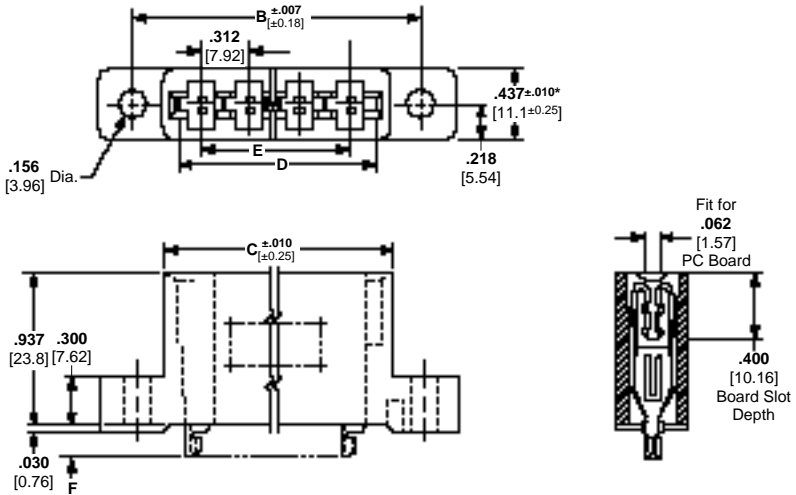
**Related Product Data:**

**Performance Specifications**— page 173

**Technical Documents:**

(pages 186, 187):

Product Specification  
108-9045



PC Board Thickness: .062 [1.57]

**Recommended PC Board Hole Layout**

\*May go to .020 [0.51] over nominal at top center of housing.



No. of Positions	Dimensions						Plating	Connector Part Numbers
	A	B	C	D	E	F		
3	1.972	1.538	1.164	1.024	.624	.180	A	531353-2
	50.09	39.07	29.57	26.01	15.85	4.57		
4	2.284	1.850	1.476	1.336	.936	.180	A	531353-3
	58.01	46.99	37.49	33.93	23.77	4.57		
5	2.593	2.162	1.788	1.648	1.248	.180	A	531353-4
	65.86	54.91	45.42	41.86	31.70	4.57		
6	2.908	2.474	2.100	1.960	1.560	.180	A	531353-5
	73.86	62.84	53.35	49.78	39.62	4.57		
8	3.532	3.098	2.724	2.584	2.184	.180	A	531353-6
						4.57		
	89.71	78.69	69.19	66.63	55.47	.283	B	146912-2
						7.19		
9	3.844	3.410	3.036	2.896	2.496	.180	A	531353-7
						4.57		
10	4.156	3.722	3.348	3.208	2.808	.180	A	531353-8
						4.57		
	105.56	94.54	85.04	81.48	71.32	.283	B	146912-3
						7.19		
12	4.780	4.346	3.972	3.832	3.432	.180	A	531353-9
						4.57		
	121.41	110.39	100.89	97.33	87.17	.283	B	146912-1
						7.19		

**Notes:** 1. A .062 [1.57] thick dummy PC board should be inserted into the connector during soldering to a mother board.  
2. Other connector sizes can be made available, consult Tyco Electronics.



**DUO-TYNE Flag Connectors**

**Product Facts**

- Right angle design permits cabling in close quarters
- Recessed contacts help prevent arcing
- Sizes and configurations available with or without mounting ears
- Lowest installed costs achieved through high-speed compression crimping with AMP matched tooling
- Meets quality and reliability requirements for appliance controls, vending machine subassemblies and business machines
- Recognized under the Component Program of Underwriters Laboratories Inc. File No. E28476 
- Certified by Canadian Standards Association File No. LR 7189 



This flag-type connector is designed to meet the quality and reliability of such equipment as appliance controls, vending machine subassemblies, television, stereo, business machines and other applications with similar control needs.

Among its assembly-saving features is a right-angle design which permits cabling in close quarters, where it does not require frame mounting to attach

the keyed housing to the card cutout and double locking of the contacts when a PC board is inserted. In addition, contacts are recessed to prevent arcing. All sizes and configurations are available with or without mounting ears. Added to low initial cost, lowest installed costs are achieved through high-speed compression crimping with Tyco Electronics matched tooling.

**Performance Specifications**

**Contact Rating\*:**  
5 amperes

**High Potential:**  
2200 VAC, rms

**Operating Temperature:**  
-40°C to +105°C

**Vibration:**  
10 to 55 cps per MIL-STD-1344, Method 202

\*Consult Tyco Electronics engineering when paralleling contacts for power applications.

**DUO-TYNE Flag Connectors** (Continued)

**Tapered Beam Crimp, Snap-In Contacts**

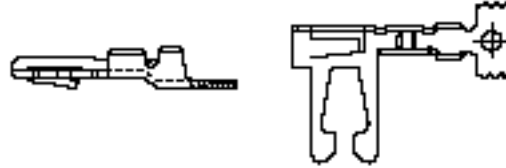
**Material and Finish:**

Beryllium copper or phosphor bronze (see chart) plated as follows:

**Plating A**—.000030 [0.00076] gold in mating area, with entire contact under-plated .000050 [0.00127] nickel

**Plating B**—.000015 [0.00127] gold in mating area, with entire contact under-plated .000050 [0.00127] nickel

**Plating C**—.000150 [0.00381] tin



**Related Product Data:**

**Performance Specifications**—page 177

**Connector Housings**—page 179

**Application Tooling**—pages 184, 185

**Technical Documents:**

(pages 186, 187):

Product Specification 108-9038

Application Specification 114-9002

Instruction Sheets 408-7047, 408-7780, 408-7848, 408-7849

Wire Size Range		Insulation Dia. Range	Material	Contact Finish (Plating)	Contact Part Numbers		Applicator for AMP-O-LECTRIC Machine*	Hand Tool
AWG	mm <sup>2</sup>				Loose Piece	Strip Form		
26-22	0.12-0.4	.035-.055 0.89-1.40	Beryllium Copper	A	530005-3	530004-6	466586-2	90094-4
				B	—	530004-7		
				B	—	530002-7		
22-18	0.3-0.9	.060-.090 1.52-2.29	Phosphor Bronze	C	—	530002-5	466424-2	90027-4
				A	—	530002-3		
				C	—	530006-5		
18-16	0.8-1.4	.090-.130 2.29-3.30	Beryllium Copper	A	—	530006-6	466413-2	—
				B	530007-3	—		
				C	—	530006-2		

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

Hand Crimping Tool



Contact Extraction Tool  
810992-1



**DUO-TYNE Flag Connectors** (Continued)

**Housings, With and Without Mounting Ears**

**Material:** Natural nylon

**Related Product Data:**

**Performance Specifications**—page 177

**Contacts**—page 178

**PC Board Layout**—page 181

**Technical Documents:**

(pages 186, 187):

Product Specification 108-9038

Application Specification 114-9002

Instruction Sheet 408-7047

**On-Contact Keying Plug**

**Material:** Nylon

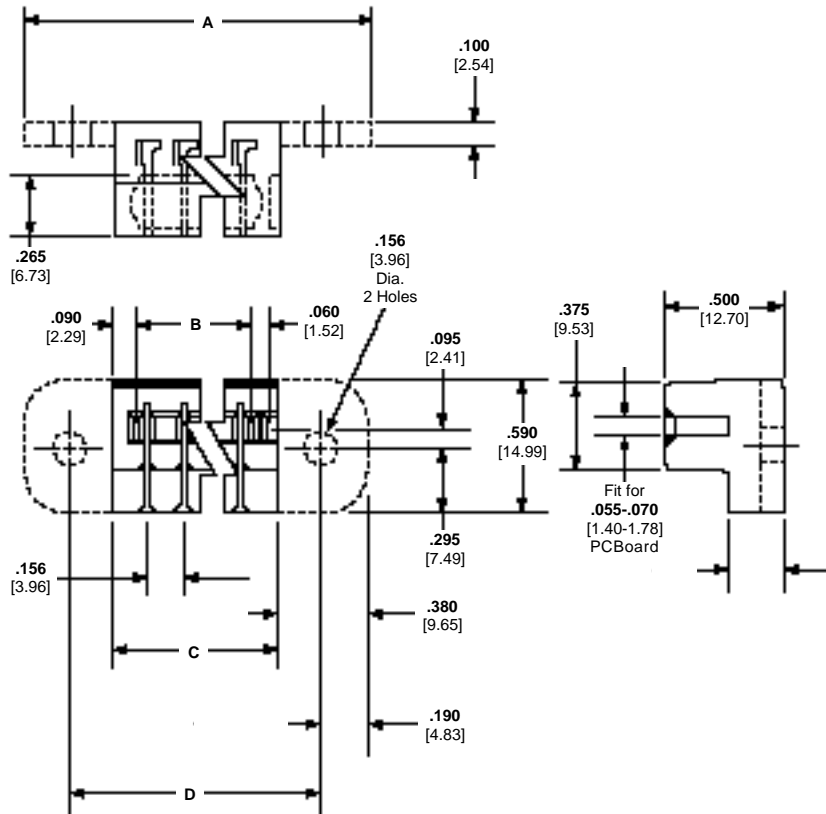


**Part Number 583661-1**

**Technical Documents:**

(pages 186, 187):

Instruction Sheet 408-7486



No. of Pos.	Dimensions				Part Numbers			
					With Mounting Ears		Without Mounting Ears	
	A	B	C	D	For Ins. Dia. Range	For Ins. Dia. Range	For Ins. Dia. Range	For Ins. Dia. Range
3	1.384 35.15	.414 10.52	.624 15.85	1.004 25.50	582380-9	—	—	—
5	—	.736 22.40	.936 27.74	—	—	—	582370-9	530853-2
6	1.852 47.04	.882 22.40	1.092 27.74	1.472 37.39	582382-9	530509-1	582371-9	530853-3
9	2.320 58.93	1.350 34.29	1.560 39.62	1.940 49.28	582383-9	530509-2	582375-9	—
12	2.788 70.82	1.818 46.18	2.028 51.51	2.408 61.16	582384-9	530509-6	582376-9	530853-5
14	3.100 78.74	2.130 54.10	2.340 59.44	2.720 69.09	582385-9	530509-7	582372-9	530853-6
15	3.256 82.70	2.286 58.06	2.496 63.40	2.876 73.05	582386-9	530509-3	582377-9	—
18	3.724 94.59	2.754 69.95	2.964 75.29	3.344 84.94	582387-9	530509-8	582378-9	530853-8
22	4.348 110.44	3.378 85.80	3.588 91.14	3.968 100.79	582388-9	530509-9	582379-9	—

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**DUO-TYNE Flag Connectors** (Continued)

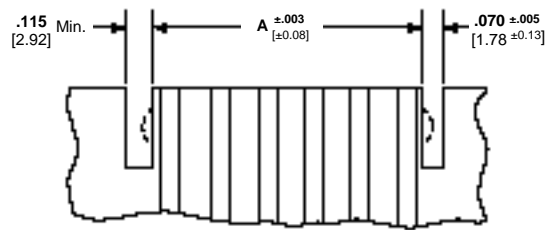
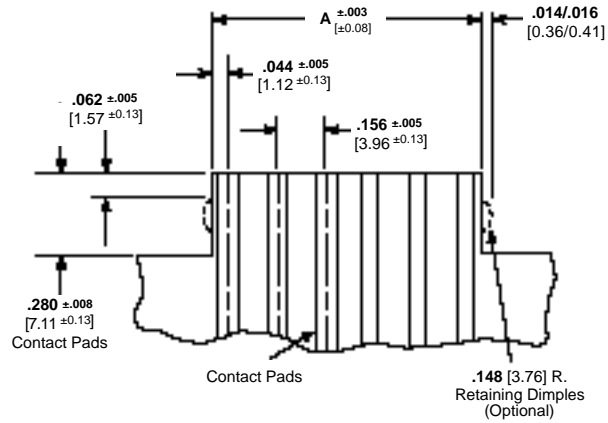
**Recommended PC Board Layouts**

**Related PC Board Data:**

**Recommended Board Thickness**—  
.055-.070 [1.40-1.78]

**Recommended Chamfer of Mating Edge of Boards**—.015 [0.38] x 45°

**Recommended Pad Plating**—Tin  
.000150-.000400 [0.00381-0.01016]  
thick

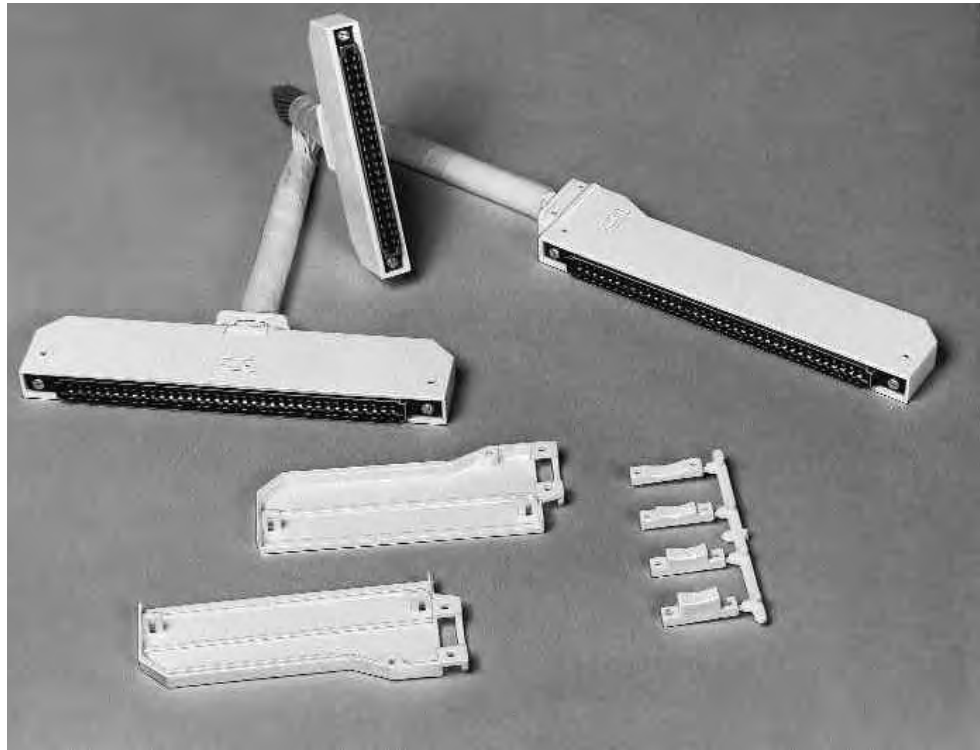


No. of Positions	Dimension A
3	.400 10.16
5	.712 18.09
6	.868 22.05
9	1.337 33.96
12	1.805 45.85
14	2.117 53.77
15	2.272 57.71
18	2.741 69.62
22	3.365 85.47

**Printed Circuit Board Connector Hood Assemblies**

**Product Facts**

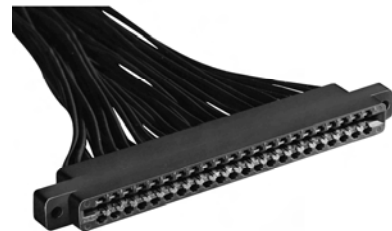
- Can be used with the highly versatile AMP-LEAF and Crimp Snap Twin Leaf printed circuit edge connectors
- Clamping capabilities for wire bundles to .550 [13.97] maximum diameter
- Available with 90° or 180° cable outlet
- All plastic construction—thermoplastic material UL rated 94V-0 for electrical and mechanical applications up to + 105°C
- Thermoplastic material has excellent resistance to common commercial cleaners when used at moderate temperatures
- Separate hood assembly halves permit easy cable dressing
- Furnished in convenient kit form—each kit includes four cable clamp sizes



For use with the following connectors:



**Crimp Snap Twin Leaf Connectors**  
(Pages 154-163)



**AMP-LEAF Connectors**  
(Pages 164-172)

Wire-to-Board Connectors

**90° Cable Outlet**

**Material:** Natural color thermoplastic

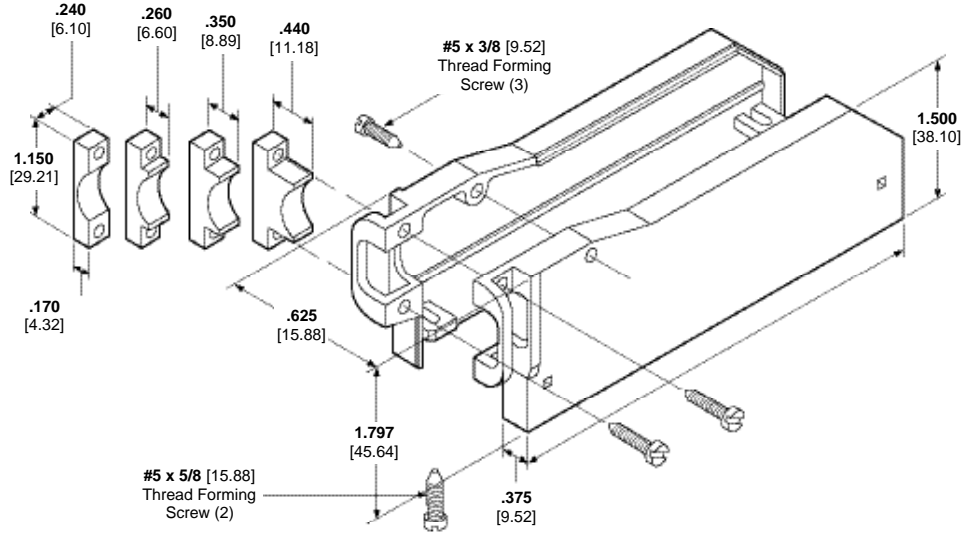
**Related Product Data:**

**Crimp Snap Twin Leaf Connectors**—pages 154-163

**AMP-LEAF Connectors**—pages 164-172

**Technical Documents:**  
(pages 186, 187):

Instruction Sheet 408-7719



No. of Contact Pos.	Connector Size			Hood L Dim. (Max.)	Connector Width .380 [9.65] Max.		Connector Width .437 [11.10]	
	Contact Centers	Mtg. Hole Centers	Length (Max.)		AMP Connector Family	Hood Assembly Kit Number*	AMP Connector Family	Hood Assembly Kit Number*
18	1.56 3.96	3.406 86.51	3.685 93.60	3.826 97.18	AMP-LEAF	530088-3	—	—
22	.156 3.96	4.031 102.39	4.296 109.12	4.451 113.06	—	—	Crimp Snap Twin Leaf	1-530088-4

\*All screws and four sizes of cable clamps are supplied with each kit.

**Note:** Other hood sizes can be made available, consult Tyco Electronics.

**Printed Circuit Board Connector Hood Assemblies (Continued)**

**180° Cable Outlet**

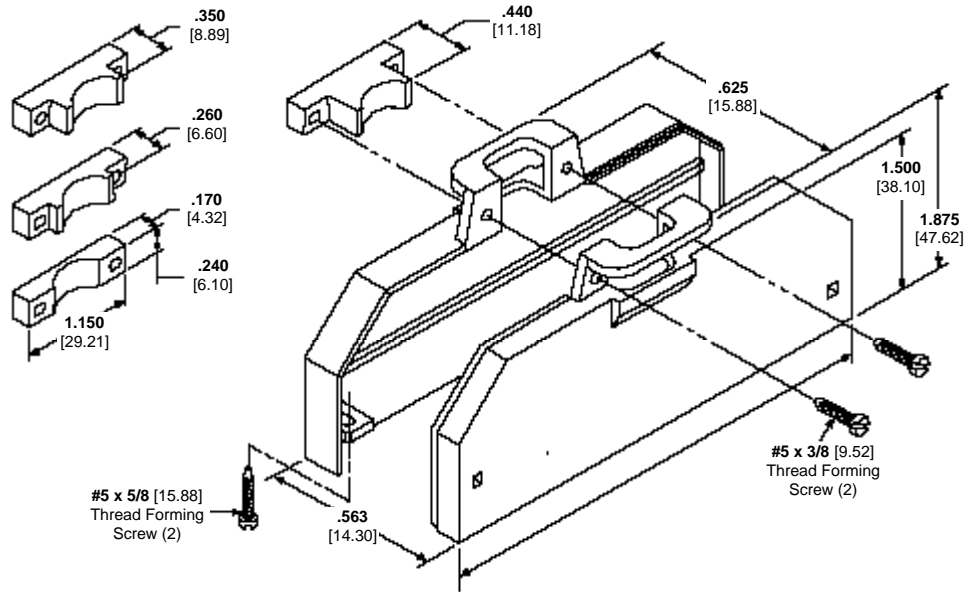
**Material:** Natural color thermoplastic

**Related Product Data:**

**AMP-LEAF Connectors**—  
pages 164-172

**Technical Documents:**

(pages 186, 187):  
Instruction Sheet 408-7719



No. of Pos.	Connector Size			Hood L Dim. (Max.)	Connector Width .380 [9.65] Max.	
	Contact Centers	Mtg. Hole Centers	Length (Max.)		AMP Connector Family	Hood Assembly Kit Number*
22	.156 3.96	4.031 102.39	4.321 109.76	4.451 113.06	AMP-LEAF	530087-4

\*All screws and four sizes of cable clamps are supplied with each kit.

**Note:** Other hood sizes can be made available, consult Tyco Electronics.

**Application Tooling for Wire Crimp Contacts**

Tooling shown on this page is designed to terminate wire crimp contacts used in various wire-to-board connectors.

**AMP-O-LECTRIC Model "G" Terminating Machine  
(Shown with Optional Crimp Quality Monitor)**



The AMP-O-LECTRIC Model "G" is a semi-automatic bench-top machine for terminating wire using reeled terminals and contacts. It features a quiet and reliable direct motor drive, micro-processor controls for ease of setup and operation, and guarding and lighting designed for operator convenience and safety. Three versions are available: with

automatic precision adjust and machine-mounted sensors, or with manual precision adjust with or without sensors. All versions will accept existing Tyco Electronics ministyle applicators with minor modifications.

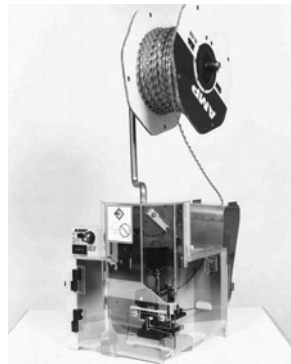
For further details, request Tyco Electronics Catalog 65828.

**AMP-O-MATIC Model II Stripper/Crimper Machine  
(Shown with Optional Crimp Quality Monitor)**



This machine also strips wire, and is therefore used to terminate jacketed cable. It features manual precision adjust, keyed strip blades for faster, more accurate setups, and an efficient scrap removal system. Applicators are interchangeable. All adjustments can be made from the front of the machine without special tools.

**Entry Level Terminator (ELT), 1338600-(x)**

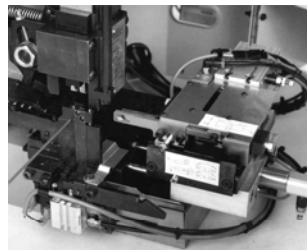


Semiautomatic Bench Terminator for side- and end-feed reeled terminals and contacts. The ELT uses a DC motor with gear box drive. The result is a small-footprint design that is fast and quiet. Cycle time is less than 0.400 sec. with an operation sound level of 76dBa. With a crimp force capacity of 3,000 pounds, the ELT is available for all

but the highest crimp force applications. Optional equipment is also available to meet your specific application requirements.

For more information, request catalog 1308382.

**Optional Stripping Module for the ELT and AMP-O-LECTRIC Model G**



The combination of the Stripping Module with the AMP-O-LECTRIC Model G Terminator or the Entry Level Terminator provides an economical, proficient method of stripping wire and crimping terminals on the same machine. Wires are stripped moments before crimping, meaning there is virtually no chance

of damaging wire conductors during handling or storage. Once the wire is fed into the start sensor the Stripping Module does the rest, improving placement accuracy.

For more information, request catalog 1309085.



**Application Tooling for Wire Crimp Contacts** (Continued)

**AMPOMATOR CLS IV+  
Lead-Making Machines, 356500-1, -2**



Fully-automatic machines that measure, cut, strip and terminate single leads. Microprocessor-controlled, and programmed and operated using an easy-to-follow, menu-driven touchscreen. Features include direct-drive terminating units with precision crimp height adjustment, fully programmable setups,

wire runout and splice detection, and motorized pre-feed with wire straightener. Crimp quality monitoring is also available. For more information, request catalog 124324.

**Crimp Quality Monitor (CQM), 1320420-1, -2**



This unique system provides 100% on-the-fly crimp inspection. It measures the crimp height of each termination, and evaluates the quality of each crimp. If a crimp is questionable, the monitor alerts the operator with both visual and audible alarms. It also provides ports for printing and networking. When used with

AMP-O-LECTRIC Model "G" Termination Machines, the monitor is mounted to the machine. When used with AMPOMATOR CLS IV Lead-Making Machines, it is integrated into the machine's operating system. For more information, request catalog 82275.

**CERTI-CRIMP Straight Action Hand Tools (SAHT)**



Premium grade hand tools. Feature ratchet control to provide complete crimp cycle. Die sets close in a straight line. Include a contact locator and wire stop, plus an insulation crimp adjustment lever, when applicable. Approximate weight 1.3 lb [0.59 kg].

For more information, request catalog 65780.

**626 Pneumatic Tool System**



Lightweight, air-operated modular tooling system. Accepts a wide variety of interchangeable heads for crimping various types of contacts, terminals and splices onto wires ranging 6-26 AWG [13-0.12 mm<sup>2</sup>], plus coaxial and fiber optic cable. Available with either hand- or foot-actuation switch. Optional ratchet

control available to provide complete crimp cycle. For more information, request catalog 124208.

The following is a list of technical documents covering the application, performance and maintenance of the AMP Card Edge Connectors presented in this catalog.

**Product Specifications** describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

**Application Specifications** describe requirements for using the product in its intended application and/or crimping information. They are intended for the Packaging and Design Engineer and the Setup person.

**Instruction Sheets** provide instructions for assembling or applying the product. They are intended for the Manufacturing Assembler or Operator.

**Solder Type Board-to-Board Connectors**

**Standard Edge .050 Series PCI Connectors**

**Product Specification:**

**108-14034** Standard Edge .050 Series PCI Connector

**Application Specification:**

**114-26012** Standard Edge .050 Series PCI Connector

**Standard Edge .050 Series Connectors**

**Product Specification:**

**108-14034** Standard Edge .050 Series Connector

**Application Specification:**

**114-26012** Standard Edge .050 Series Connector

**Standard Edge II Connectors**

**Product Specification:**

**108-9039** Standard Edge II Connector

**Low Profile Connectors**

**Product Specification:**

**108-9044** Low Profile Edge Connector

**Instruction Sheet:**

**408-7772** Contact Replacement, Low Profile Edge Connector

**Twin Leaf Mother Board Connectors**

**Product Specification:**

**108-9027** Twin Leaf Mother Board Connector

**Instruction Sheets:**

**408-7479** Keying Plugs, Twin Leaf Mother Board Connector

**408-7498** Connector Layout, Twin Leaf Mother Board Connector

**408-7506** Card Guides, Twin Leaf Mother Board Connector

**Rotary Cam ZIF Connectors**

**Product Specification:**

**108-9048** Rotary Cam PC Board Edge Connector

**Instruction Sheet:**

**408-7911** Rotary Cam ZIF Connectors

**Linear ZIF Connectors**

**Product Specifications:**

**108-14015** Linear ZIF PC Board Edge Connector, .100 [2.54] Centerline

**108-26003** ACTION PIN Contacts

**Application Specification:**

**114-26003** Linear ZIF PC Board Edge Connector, .100 [2.54] Centerline

**Instruction Sheets:**

**408-2665** Linear ZIF, Carrier Removal Tool Series 265924

**408-2995** Linear ZIF, Housing Wing Removal and Replacement Tool 266233-1

**408-2999** Linear ZIF, T-Bar Insertion Tool Series 266267

**408-6915** Linear ZIF, Housing Assembly Insertion Tool Series 313136

**408-6916** Linear ZIF, T-Bar Insertion Tool Series 313139

**Press-Fit Board-to-Board Connectors**

**AMP PACE Connectors**

**Product Specifications:**

**108-14019** AMP PACE Connector, .125 x .250 [3.18 x 6.35] Centerline

**108-26003** ACTION PIN Contacts

**Application Specification:**

**114-26002** AMP PACE Connector

**Instruction Sheets:**

**408-2933** Contact Replacement Tool .100 x .200 [2.54 x 5.08] and .125 x .250 [3.18 x 6.35], AMP PACE Connector

**408-2978** Seating Tool Ground Module, AMP PACE Connector

**408-2979** Seating Tool Power Module, AMP PACE Connector

**408-6726** Seating Tool, .156 x .200 [3.96 x 5.08] Part No. 59955, AMP PACE Connector

**408-6727** Seating Tool, .125 x .125 [3.18 x 3.18] Part No. 59953, AMP PACE Connector

**408-6881** Contact Replacement Tool .100 x .100 [2.54 x 2.54] with and without Scoops AMP PACE Connector

**408-9058** Seating Tool .100 x .200 [2.54 x 5.08] with Card Scoops, Part No. 58150, AMP PACE Connector

**408-9063** Seating Tool .125 x .250 [3.18 x 6.35] Part No. 58142, AMP PACE Connector

**408-9067** Seating Tool .100 x .200 [2.54 x 5.08] Part No. 58140, AMP PACE Connector

**408-9091** Accessories and Tooling, .100 x .200 [2.54 x 5.08] AMP PACE Connector

**408-9119** Seating Tool, .125 x .250 [3.18 x 6.35] with Card Scoops, Part No. 58184, AMP PACE Connector

**408-9186** Contact Replacement Tool; .100 x .200 [2.54 x 5.08], .125 x .125 [3.18 x 3.18], .125 x .250 [3.18 x 6.35] with Scoops, .156 x .200 [3.96 x 5.08], AMP PACE Connector

**408-9188** Seating Tool .100 x .100 [2.54 x 2.54] Part No. 58200, AMP PACE Connector

**ECONOMATE Connectors**

**Product Specification:**

**108-26002** ECONOMATE Connector

**Instruction Sheet:**

**408-9091** Accessories and Tooling, .100 x .200 [2.54 x 5.08] AMP PACE Connector

**Wire-to-Board Connectors**

**Crimp Snap Twin Leaf Connectors**

**Product Specification:**

**108-9031** Crimp Snap Twin Leaf Connector (Bifurcated Contacts)

**Application Specification:**

**114-9004** Contact, Twin Leaf Connector

**Instruction Sheets:**

- 408-7527** Accessories and Contacts, Crimp Snap Twin Leaf Connector
- 408-7529** Extraction Tool 91073-1
- 408-7531** Hand Tool 90268-1, Single Crimp, 28-24 AWG [0.08-0.2 mm<sup>2</sup>] Wire
- 408-7551** Hand Tool 90264-1, Double Crimp, 22-20 AWG [0.3-0.6 mm<sup>2</sup>] and 18 AWG [0.8-0.9 mm<sup>2</sup>] Wire
- 408-7583** Hand Tool 90285-1, Double Crimp, 20-18 AWG [0.5-0.9 mm<sup>2</sup>] and 16 AWG [1.25-1.4 mm<sup>2</sup>] Wire
- 408-8547** CERTI-CRIMP II Straight Action Hand Tools

**AMP-LEAF Connectors**

**Product Specifications:**

**108-9013** AMP-LEAF Connector  
**108-9043** AMP-LEAF Connector, Tin Plated Contacts

**Application Specification:**

**114-9003** Contact, AMP-LEAF Connector

**Instruction Sheets:**

- 408-6951** Lubricant for tin plating, fretting, corrosion
- 408-7035** Retaining Spring 42973
- 408-7036** On-Contact Keying Plugs 480143 and 582756
- 408-7037** Accessories and Contacts, AMP-LEAF Connector
- 408-7045** Extraction Tool 465195
- 408-7068** Intercontact Keying Plug 582501
- 408-7339** Intercontact Keying Plug 583274
- 408-7419** Commoning Springs
- 408-7622** Hand Tool 90017-3, 22-20 AWG [0.3-0.6 mm<sup>2</sup>], Two 22 AWG [0.3-0.4 mm<sup>2</sup>] or One 18 AWG [0.8-0.9 mm<sup>2</sup>] Wire
- 408-7623** Hand Tool 90028-3, 26-22 AWG [0.12-0.4 mm<sup>2</sup>], Two 22 AWG [0.3-0.4 mm<sup>2</sup>] Wires
- 408-7624** Hand Tool 90031-8, Two 18 AWG [0.8-0.9 mm<sup>2</sup>] Wires
- 408-7626** Hand Tool 90101-3, 20 AWG [0.5-0.6 mm<sup>2</sup>] or Two 20 AWG [0.5-0.6 mm<sup>2</sup>] Wires

**High Current Connectors**

**Product Specification:**

**108-9045** High Current Edge Connector

**Application Specification:**

**114-9005** Contact, High Current Edge Connector

**Instruction Sheets:**

- 408-7782** Extraction Tool 91116-1, High Current Connector
- 408-7783** Die Inserts 90332-1 and 90332-2
- 408-7802** Die Inserts 90333-1 and 90333-2
- 408-9123** High Current Connectors

**DUO-TYNE Flag Connectors**

**Product Specification:**

**108-9038** DUO-TYNE Flag Connector, Tapered Beam Contact

**Application Specification:**

**114-9002** Contact, DUO-TYNE Flag Connector

**Instruction Sheets:**

- 408-7047** DUO-TYNE Flag Right-Angle Connector
- 408-7486** On-Contact Keying Plug 583661
- 408-7780** Hand Tool 90335-1, 18-16 AWG [0.8-1.4 mm<sup>2</sup>] Wire
- 408-7848** Hand Tool 90027-4, 22-18 AWG [0.3-0.9 mm<sup>2</sup>] Wire
- 408-7849** Hand Tool 90094-4, 26-22 AWG [0.12-0.4 mm<sup>2</sup>] Wire

**Printed Circuit Board Connector Hood Assemblies**

**Instruction Sheet:**

**408-7719** Printed Circuit Board Connector Hood Assemblies

**Part Number Cross Reference—Tyco Part Number to Acquired Part Number**

All Tyco Electronic Part Numbers without a corresponding acquired Part Number are listed as base part numbers only. Complete part numbers (with prefixes and/or suffixes) are shown on the page(s) indicated.  
Contact Engineering if no corresponding Tyco Number is available.

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58200	—	115
58210	—	115
58218	—	115
59881	—	112
60151	—	165
66067	—	166
66084	—	165
66092	—	171
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90028	—	165
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90285	—	155
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98341	—	150
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145098	—	9
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145165	—	10
145166	—	8
145167	—	9
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466424	—	178
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530270	—	72
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530282	—	72
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Tyco Part Number to Acquired Part Number

**Part Number Cross Reference—Tyco Part Number to Acquired Part Number**

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531369	—	175	583725	—	165,167	0-1437261-6	C8D50PF29043	140
531370	—	175	583726	—	165,167	0-1437262-4	C6D06PF29013	148
531373	—	174,175	583752	—	72	0-1437262-5	C6D06PF29043	148
531395	—	75	583753	—	72	0-1437262-6	C6D10PF29022	146
531395	—	75	583754	—	72	0-1437262-7	C6D10PF29043	148
531396	—	75	583755	—	72	0-1437262-9	C6D15PF29022	146
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532563	—	79	583864	—	159	0-1437267-6	A6D10DS29A2	54
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582371	—	179	583990	—	165	0-1437268-8	A7D10RA29AM231	51
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582375	—	179	645115	—	87	0-1437270-1	A8D31DS29B3	43
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582378	—	179	645142	—	92	0-1437270-4	A8D31RA29A	46
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 Fax: +82-2-3274-0524/0531

**Malaysia** – Selangor  
 Phone: +60-3-7053055  
 Fax: +60-3-7053066

**New Zealand** – Auckland  
 Phone: +64-9-634-4580  
 Fax: +64-9-634-4586

**Philippines** – Makati City  
 Phone: +632-867-8641  
 Fax: +632-867-8661

**People's Republic of China**  
 Hong Kong  
 Phone: +852-2735-1628  
 Fax: +852-2735-0243

Shanghai  
 Phone: +86-21-6485-0602  
 Fax: +86-21-6485-0728

Shunde  
 Phone: +86-765-775-1368  
 Fax: +86-765-775-2823

**Singapore** – Singapore  
 Phone: +65-482-0311  
 Fax: +65-482-1012

**Raychem Products**  
 Phone: +65-486-6151  
 Fax: +65-654-5514

**Taiwan** – Taipei  
 Phone: +886-2-2664-9977  
 Fax: +886-2-2664-9900

**Thailand** – Bangkok  
 Phone: +66-2-955-0500  
 Fax: +66-2-955-0505

**Vietnam** – Ho Chi Minh City  
 Phone: +84-8-8232-546/7  
 Fax: +84-8-8221-443

**Europe/Middle East/Africa**

**Austria** – Vienna  
 Phone: +43-190-560-0  
 Fax: +43-190-560-1333

**Belgium** – Kessel-Lo  
 Phone: +32-16-352-300  
 Fax: +32-16-352-352

**Bulgaria** – Sofia  
 Phone: +359-2-971-2152  
 Fax: +359-2-971-2153

**Czech Republic** – Kurim  
 Phone: +420-5-41-162-111  
 Fax: +420-5-41-162-223

**Denmark** – Viby J  
 Phone: +45-70-15-52-00  
 Fax: +45-86-29-51-33

**Egypt** – Cairo  
 Phone: +20-2-417-76-47  
 Fax: +20-2-419-23-34

**Estonia** – Tallinn  
 Phone: +372-65-05-474  
 Fax: +372-65-05-470

**Finland** – Helsinki  
 Phone: +358-95-12-34-20  
 Fax: +358-95-12-34-250

**France** – Cergy-Pontoise  
 Phone: +33-1-3420-8888  
 Fax: +33-1-3420-8600  
**Product Information Center:  
 (Technical Support)**  
 Phone: +33-1-3420-8943  
 Fax: +33-1-3420-8623

**France**  
**Tyco Electronics Export** – St Ouen L'Aumone  
 Phone: +33-1-3440-7200  
 Fax: +33-1-3440-7220 or  
 +33-1-3440-7230

**Germany** – Bensheim  
 Phone: +49-6251-133-0  
 Fax: +49-6251-133-1600  
**Product Information Center:  
 (Technical Support)**  
 Phone: +49-6251-133-1999  
 Fax: +49-6251-133-1988

**Germany** – Langen  
 Phone: +49-6103-709-0  
 Fax: +49-6103-709-1223

**Germany** – Speyer  
 Phone: +49-6232-30-0  
 Fax: +49-6232-30-2243

**Germany**  
**HTS Division** – Neunkirchen  
 Phone: +49-2247-305-0  
 Fax: +49-2247-305-122

**Great Britain** – Stanmore Middlesex  
 Phone: +44-181-954-2356  
 Fax: +44-181-954-6234  
**Product Information Center:  
 (Technical Support)**  
 Freephone GB: 0800-267-666  
 Phone: +44-141 810 8967...69  
 Fax: +44-141 810 8971

**Great Britain** – Dorcan, Swindon  
**Raychem Products**  
 Phone: +44-1793-528171  
 Fax: +44-1793-572516

**Greece** – Athens  
 Phone: +30-1-9370-396/397  
 Fax: +30-1-9370-655

**Hungary** – Budapest  
 Phone: +36-1-289-1000  
 Fax: +36-1-289-1010

**Ireland** – Dublin  
 Phone: +353-1-820-3000  
 Fax: +353-1-820-9790

**Israel** – Yokneam  
 Phone: +972-4-959-0508  
 Fax: +972-4-959-0506

**Italy** – Collegno (Torino)  
 Phone: +39-011-4012-111  
 Fax: +39-011-4031-116

**Lithuania** – Vilnius  
 Phone: +370-5-21-31-402  
 Fax: +370-5-21-31-403

**Netherlands** – 's-Hertogenbosch  
 Phone: +31-73-6246-246  
 Fax: +31-73-6212-365  
**Product Information Center:  
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 Fax: +31-73-6246-998

**Norway** – Nesbru  
 Phone: +47-66-77-88-99  
 Fax: +47-66-77-88-55

**Poland** – Warsaw  
 Phone: +48-22-5490-888  
 Fax: +48-22-5490-880

**Romania** – Bucharest  
 Phone: +40-1-311-3479+3596  
 Fax: +40-1-312-0574

**Russia** – Moscow  
 Phone: +7-095-926-55-06...09  
 Fax: +7-095-926-55-05

**Russia** – St. Petersburg  
 Phone: +7-812-325-30-83  
 Fax: +7-812-325-32-88

**Scotland** – Dundee  
**Madison Cable Products**  
 Phone: +44-1382-508080  
 Fax: +44-1382-505060

**Slovakia** – Banská Bystrica  
 Phone: +421-48-415-20-11/12  
 Fax: +421-48-415-20-13

**Slovenia** – Ljubljana  
 Phone: +386-1561-3270  
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**South Africa** – Port Elizabeth  
 Phone: +27-41-405-4500  
 Fax: +27-41-486-1314

**Spain** – Barcelona  
 Phone: +34-93-291-0330  
 Fax: +34-93-201-7879  
**Product Information Center:  
 (Technical Support):**  
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 Fax: +34-93-200-3779

**Sweden** – Upplands Väsby  
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 Fax: +46-8-50-72-50-01

**Switzerland** – Steinach  
 Phone: +41-71-447-0447  
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**Turkey** – Istanbul  
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