

**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:

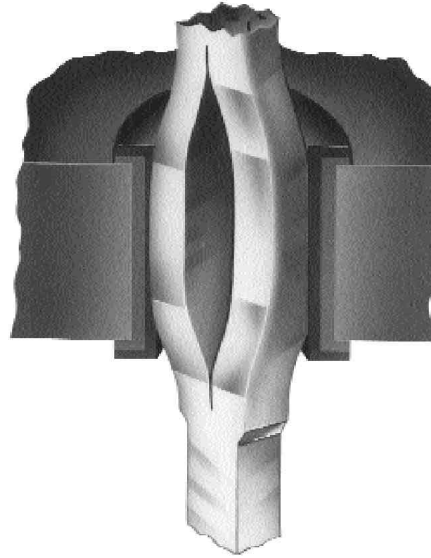
- Faulty solder joints
- Solder fumes; contaminant's are deposited on the contacts

- 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.

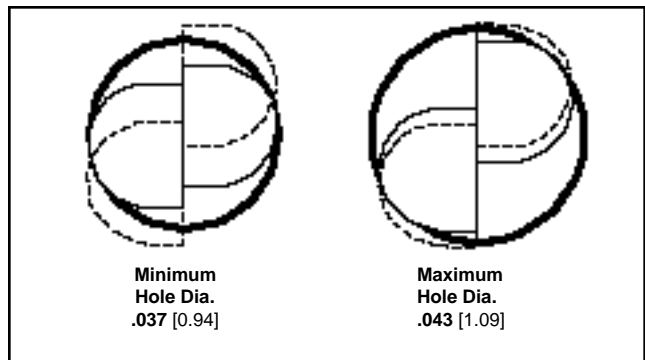


**Principle of the Tyco Electronics Compliant ACTION PIN Contact**

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

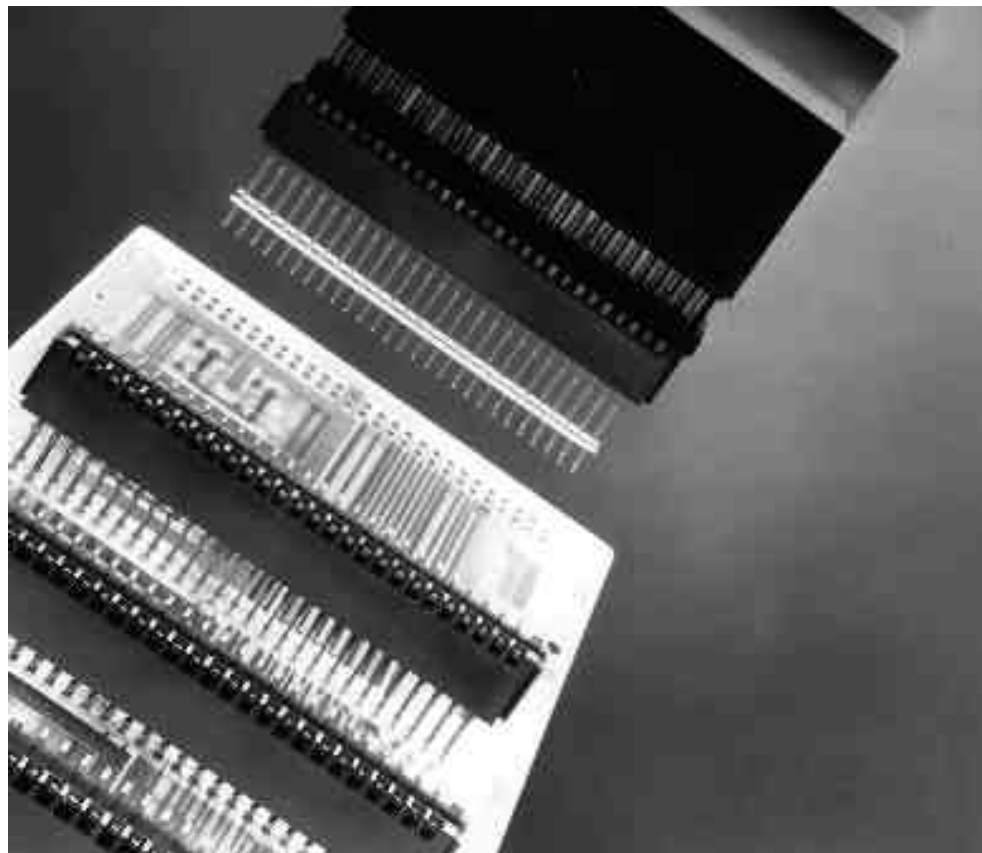
**Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476**



**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

**Beam Contact Design**

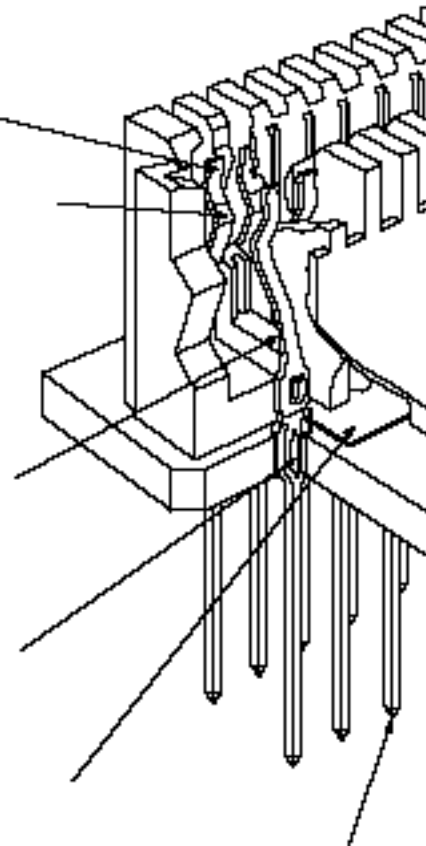
The contact's unique beam accommodates and compensates for daughter board warpage stress providing long-term performance (100 gram normal force).

**Gas-Tight Connector**

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

**Contact Tip Align**

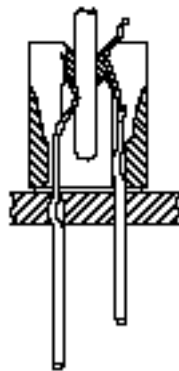
Polyester strip provides stable pin alignment and damage-free entry into PC board.



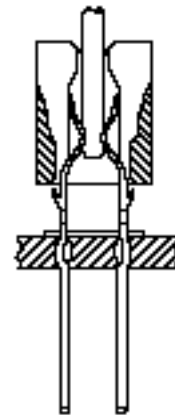
**Precision Plated Post—**

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

**Repairability Details**

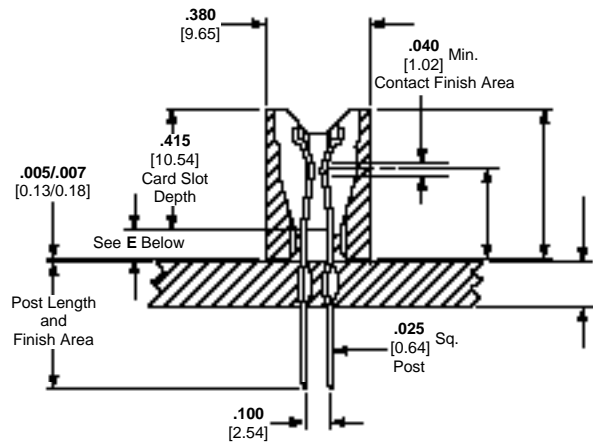
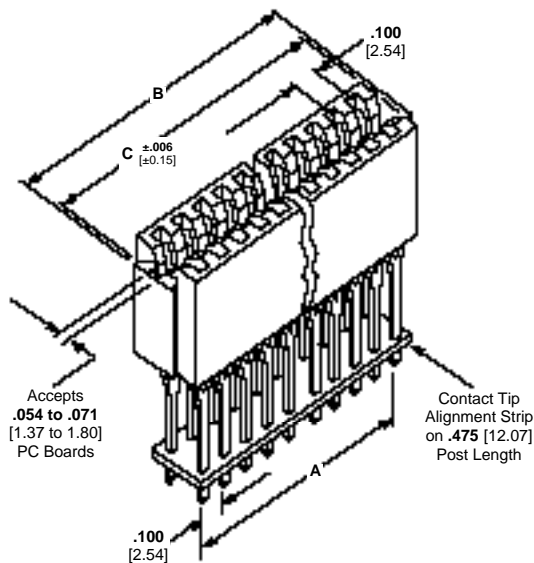


Remove and replace contacts without removing housing. (See page 115 for Contact Replacement Tools.)



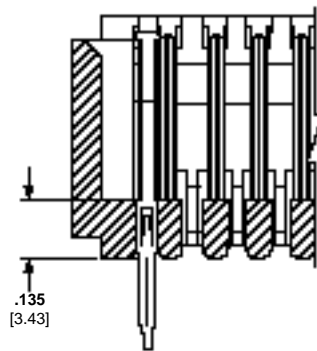
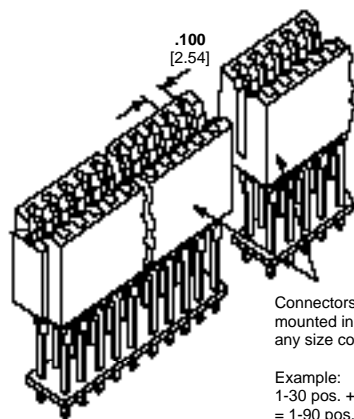
Remove and replace housing without removing contacts.

**Standard Housing**



Press-Fit Board-to-Board Connectors

**Typical Closed End/  
Open End Housing**



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

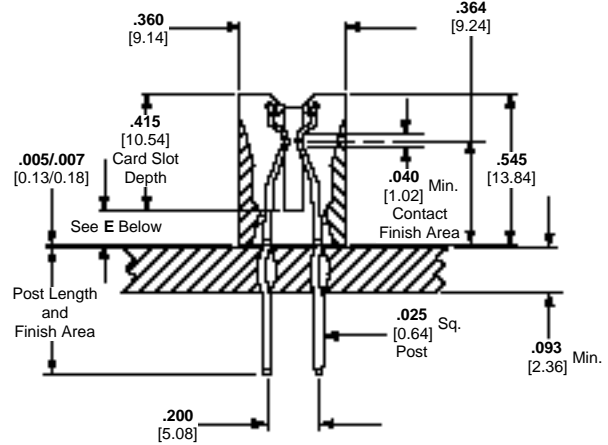
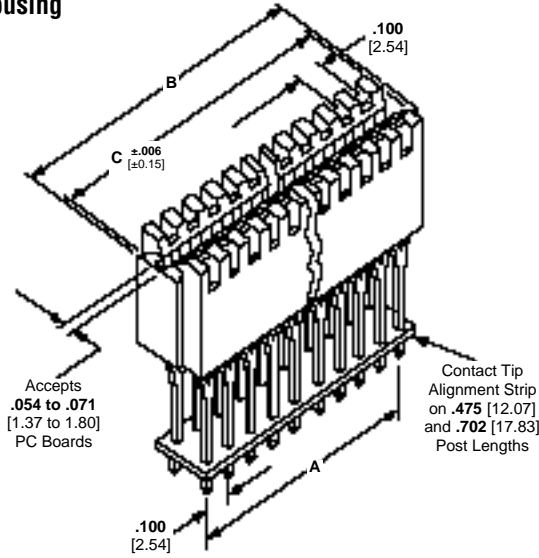
Application Specification  
114-26002

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

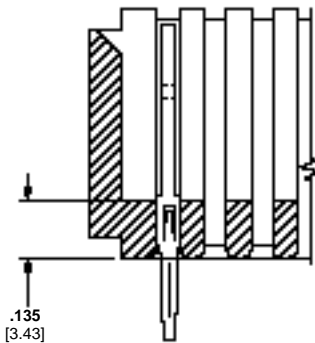
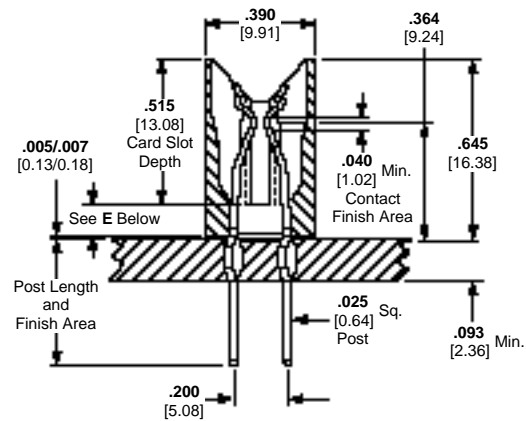
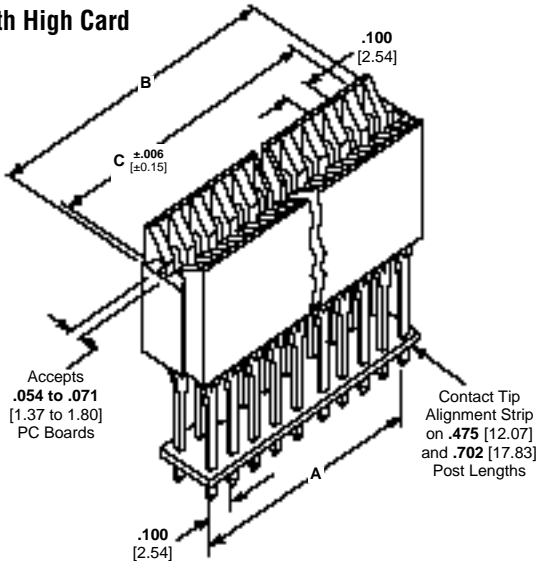
No. of Dual Positions	Dimensions			Post Length	Closed/Closed		Closed/Open Standard
	A	B	C		Standard	Scoop	
15	<b>1.400</b>	<b>1.734</b>	<b>1.604</b>	<b>.180</b>	119734-1	119736-1	—
	35.56	44.04	40.74	4.57	119237-1	—	—
20	<b>1.900</b>	<b>2.234</b>	<b>2.104</b>	<b>.180</b>	119734-6	—	—
	48.26	56.74	53.44	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		
				<b>.702</b>	4-119738-1	4-650124-1
				17.83		
				<b>.702</b>	4-119738-6	—
				17.83		
				<b>.702</b>	119677-1	—
				17.83		

**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,

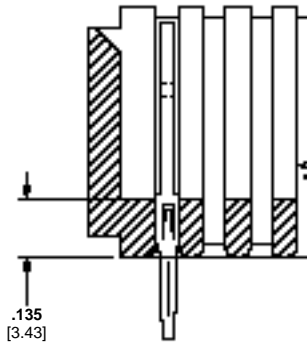
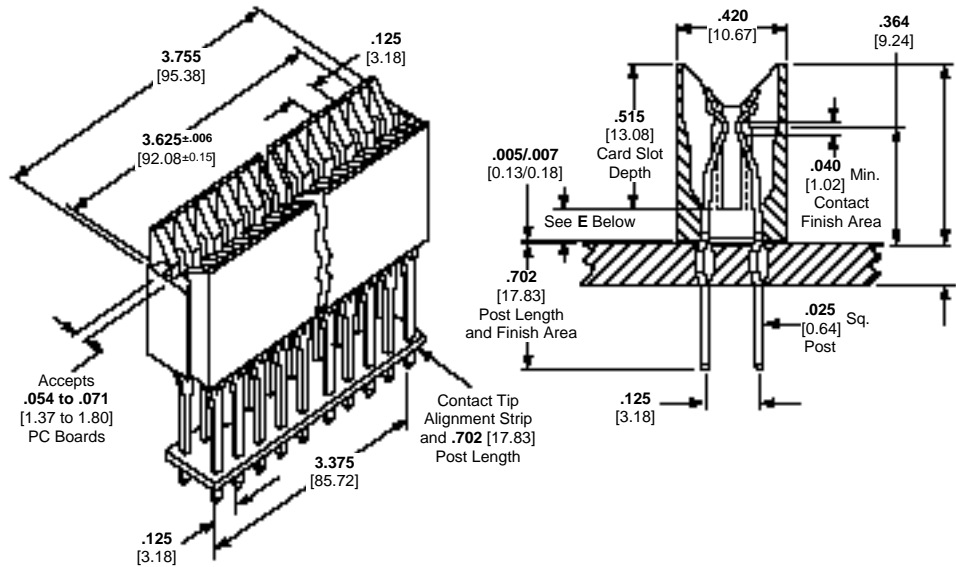
408-9186

**Housing with High Card**

**Scoops**

**28 Dual Positions**

**Part Number 1-119853-4**



Detail E

**Keying Plugs**



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

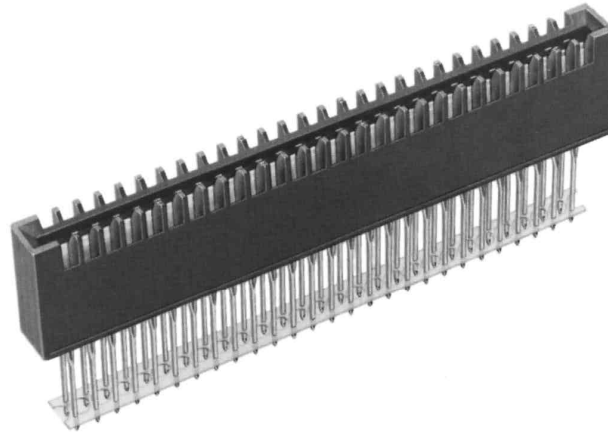


**On-Contact (Plastic)**  
Part No. 119802-2



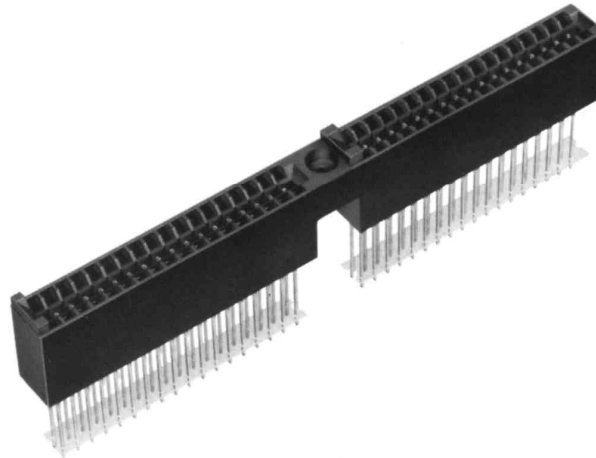
**AMP PACE Connector Specials, .125 x .125 [3.18 x 3.18] Centerline****27 Dual Positions**

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

**18 or 36 Dual Positions**

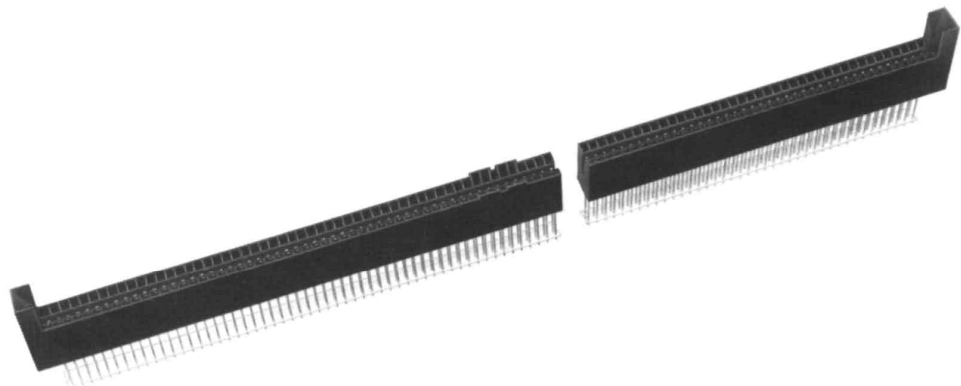
**Tin-Lead Posts**  
**.740 [18.80] Long**  
 Part No. 119552-2

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

**97 Dual Positions**

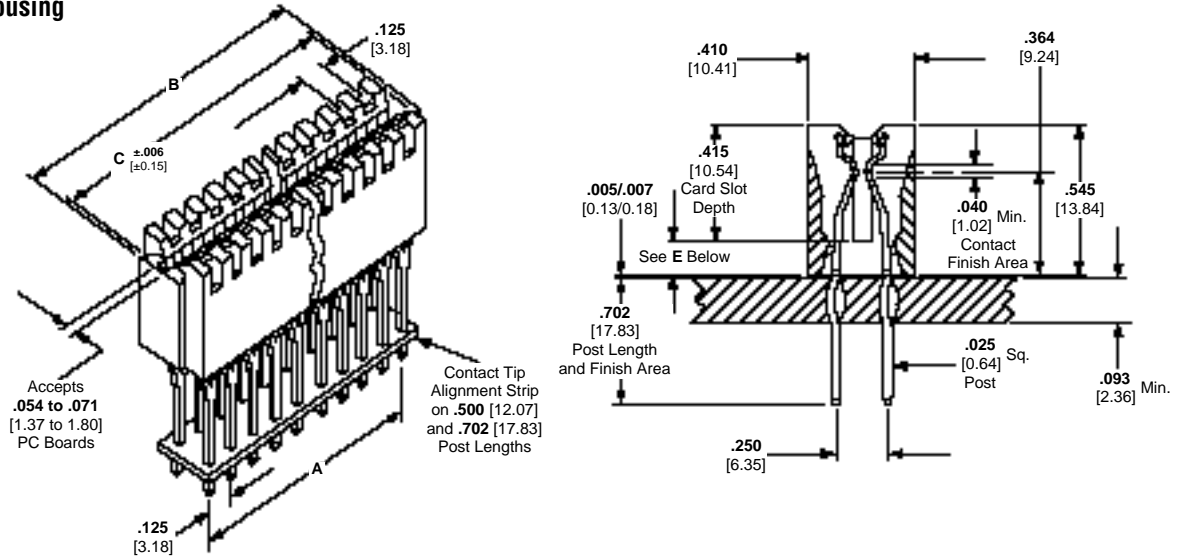
(Two-piece Closed End/Open End with Partial Card Scoops and Card Guides)

Contact Tyco Electronics for specific Part Number information.

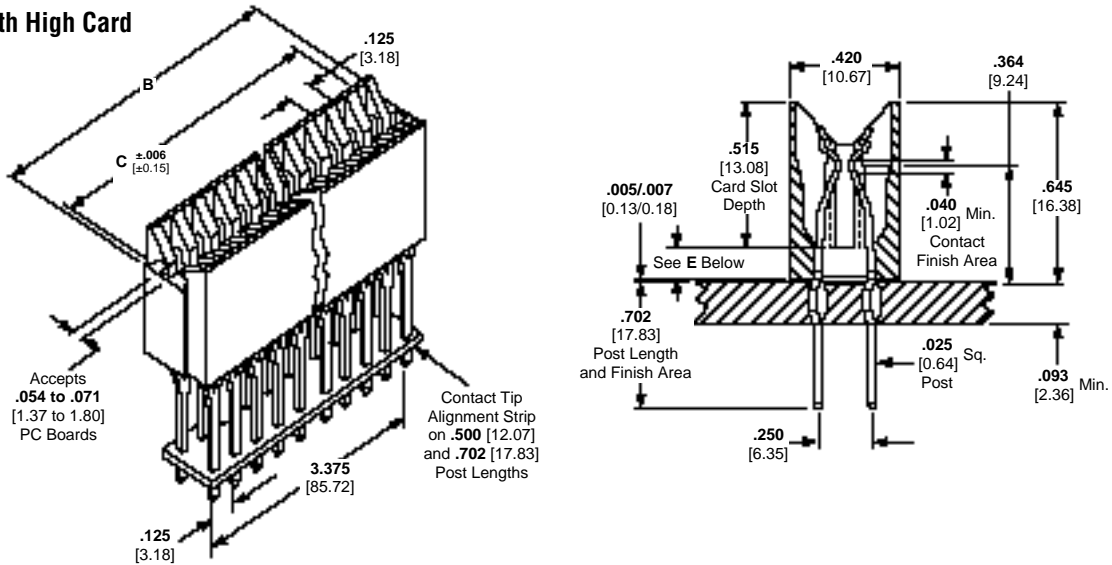


**AMP PACE Connectors, .125 x .250 [3.18 x 6.35] Centerline**

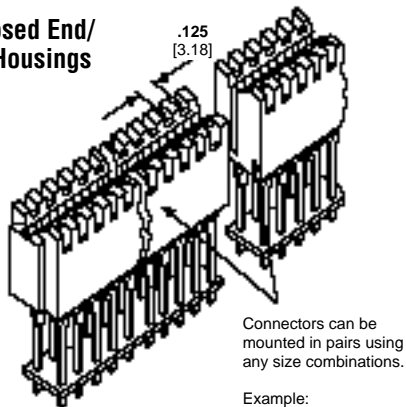
**Standard Housing**



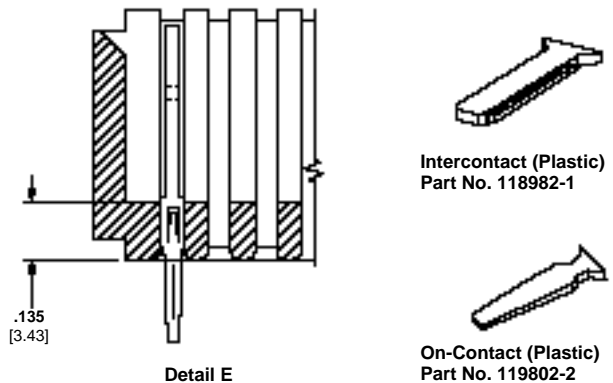
**Housing with High Card Scoops**



**Typical Closed End/  
Open End Housings**



**Keying Plugs**



**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

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**PC Board Edge Pattern**—page 113

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**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

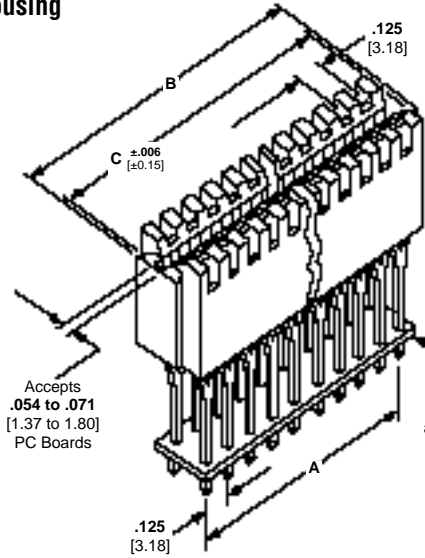
Instruction Sheets 408-2933,  
408-2978, 408-2979, 408-9063,  
408-9091, 408-9119, 408-9186

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.

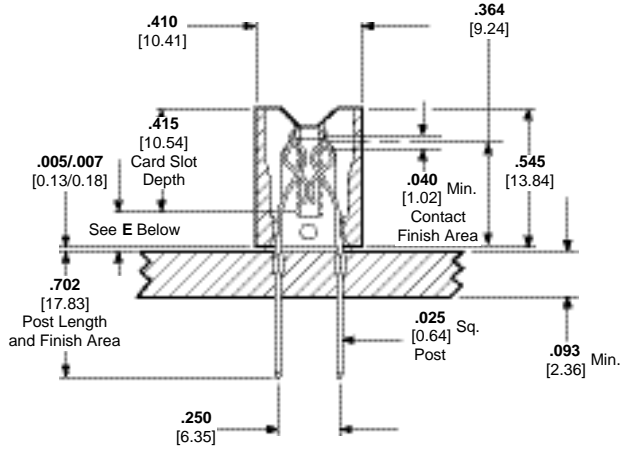
**AMP PACE Connectors, .125 x .250 [3.18 x 6.35] Centerline w/ Make Before Break Contacts**

**Standard Housing**

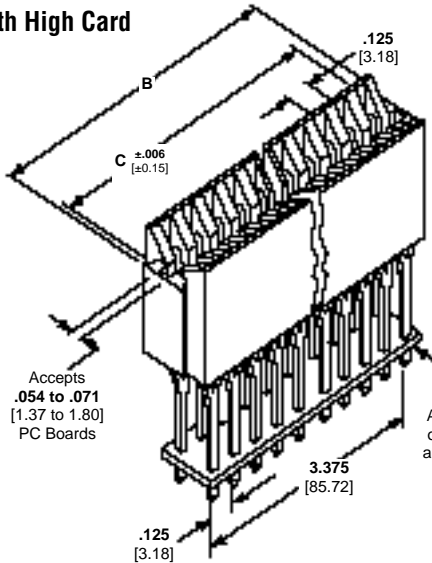


Accepts  
.054 to .071  
[1.37 to 1.80]  
PC Boards

Contact Tip  
Alignment Strip  
on .500 [12.07]  
and .702 [17.83]  
Post Lengths

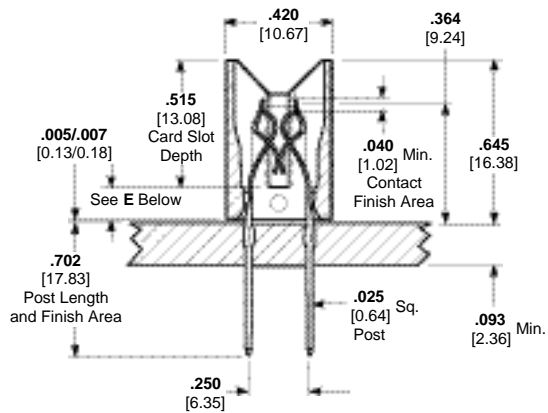


**Housing with High Card Scoops**

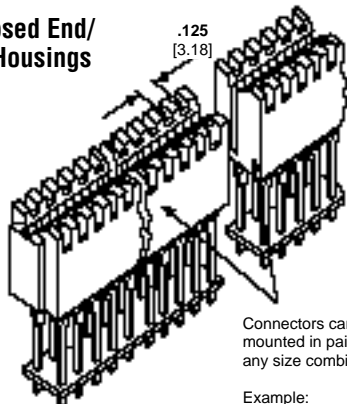


Accepts  
.054 to .071  
[1.37 to 1.80]  
PC Boards

Contact Tip  
Alignment Strip  
on .500 [12.07]  
and .702 [17.83]  
Post Lengths

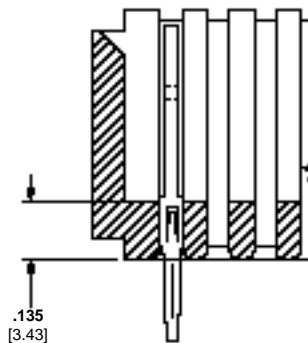


**Typical Closed End/  
Open End Housings**



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

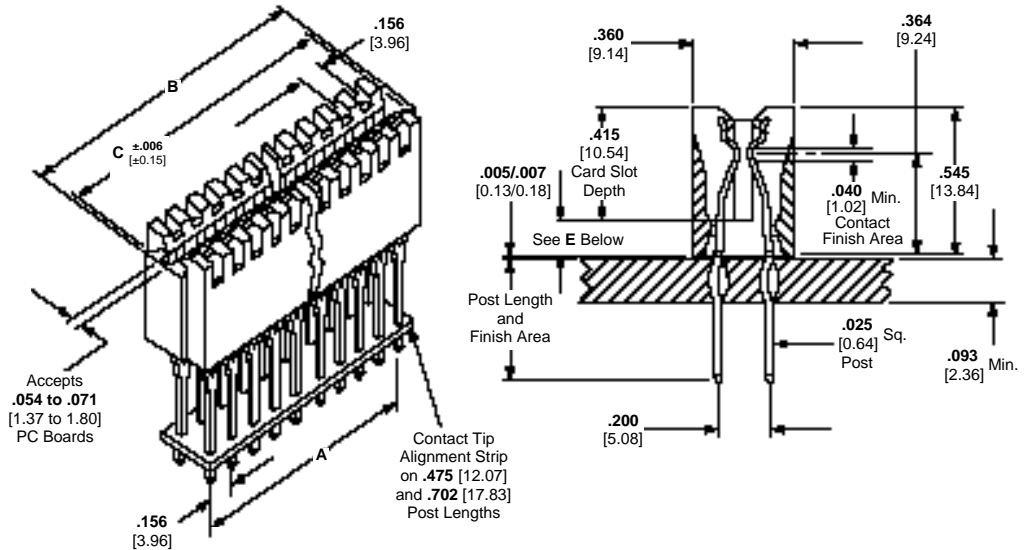
Application Specification

114-26002

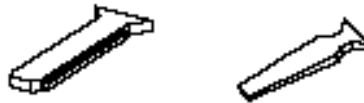
Instruction Sheets 408-6726,

408-9186

**Standard Housing**

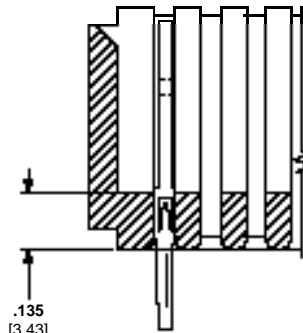


**Keying Plugs**



**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:**

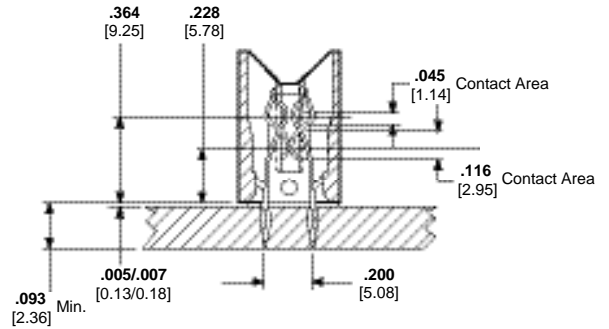
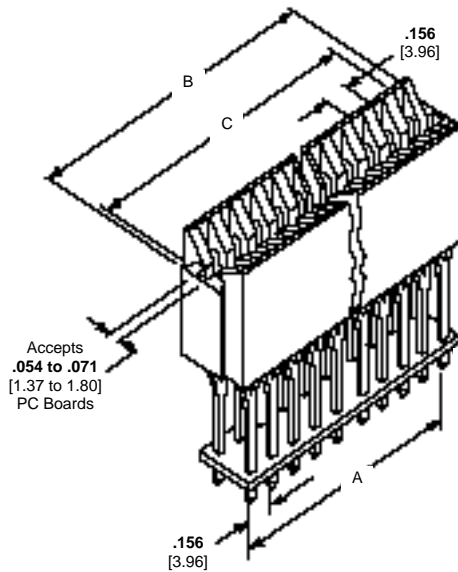
(pages 186, 187):

Product Specifications  
108-14019, 108-26003

Application Specification  
114-26002

Instruction Sheets 408-6726,  
408-9186

**Card Scoop Housing**



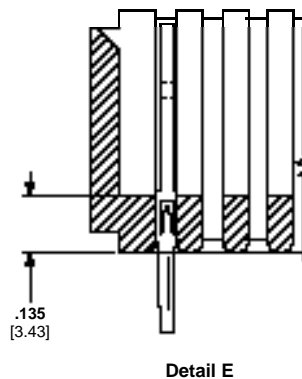
**Keying Plugs**



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



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



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**

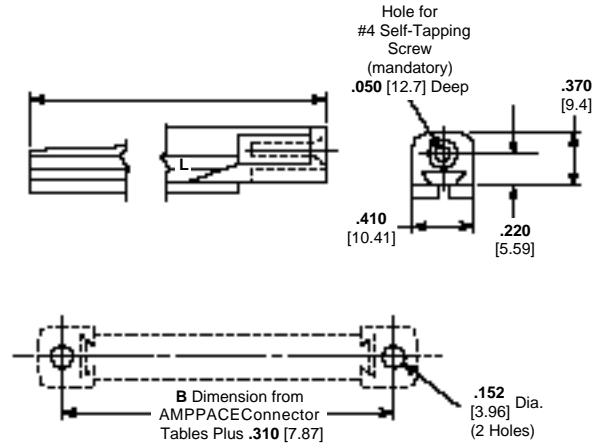
**Material:** Black glass-filled polyester

**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

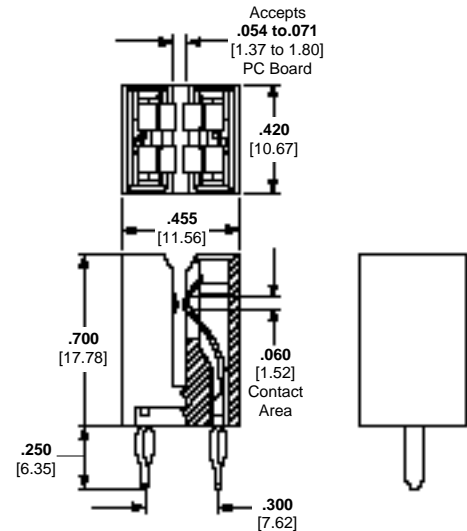
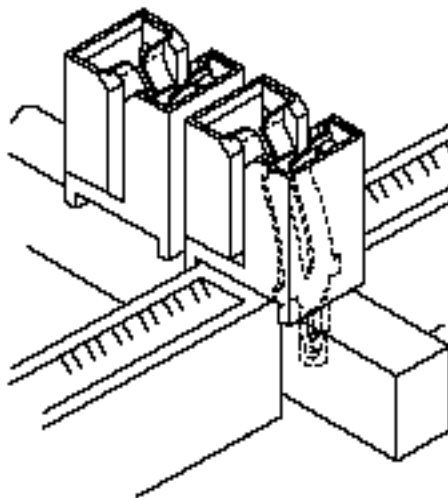
**Contact**—CA 195, 3/4 hard, plated .000050 [0.00127] gold in contact area (front face only); .000100 [0.00254] tin-lead on post, with entire contact under-plated .000050 [0.00127] nickel

**Related Product Data:**

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

**Technical Documents:**

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

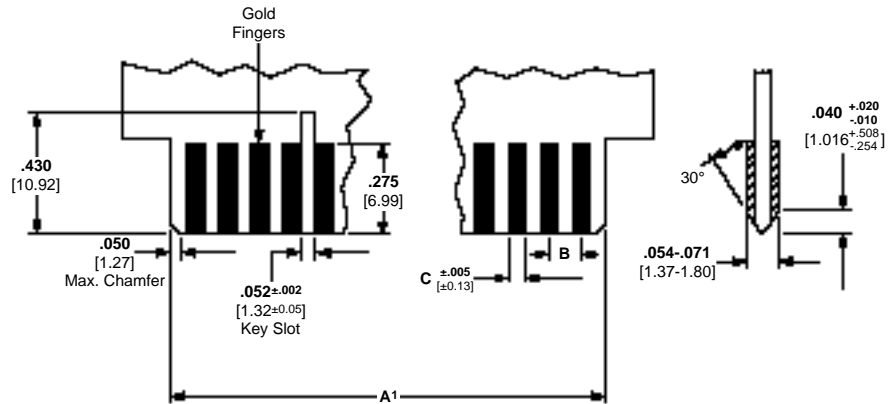


Part No. 119341-1  
Seating Tool 59881-1



**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 PACE Connectors** (Continued)

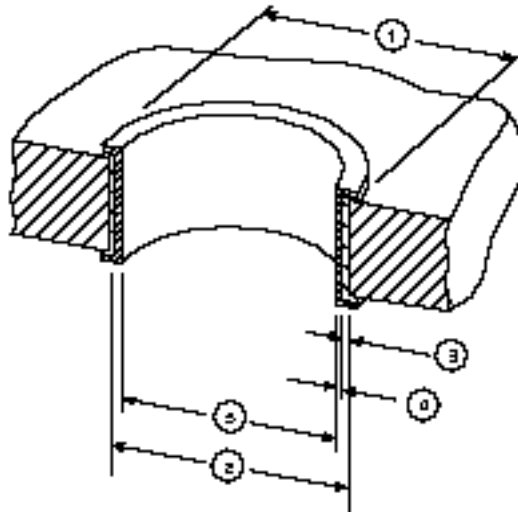
**AMP ACTION PIN  
Press-Fit Contacts**



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
.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.

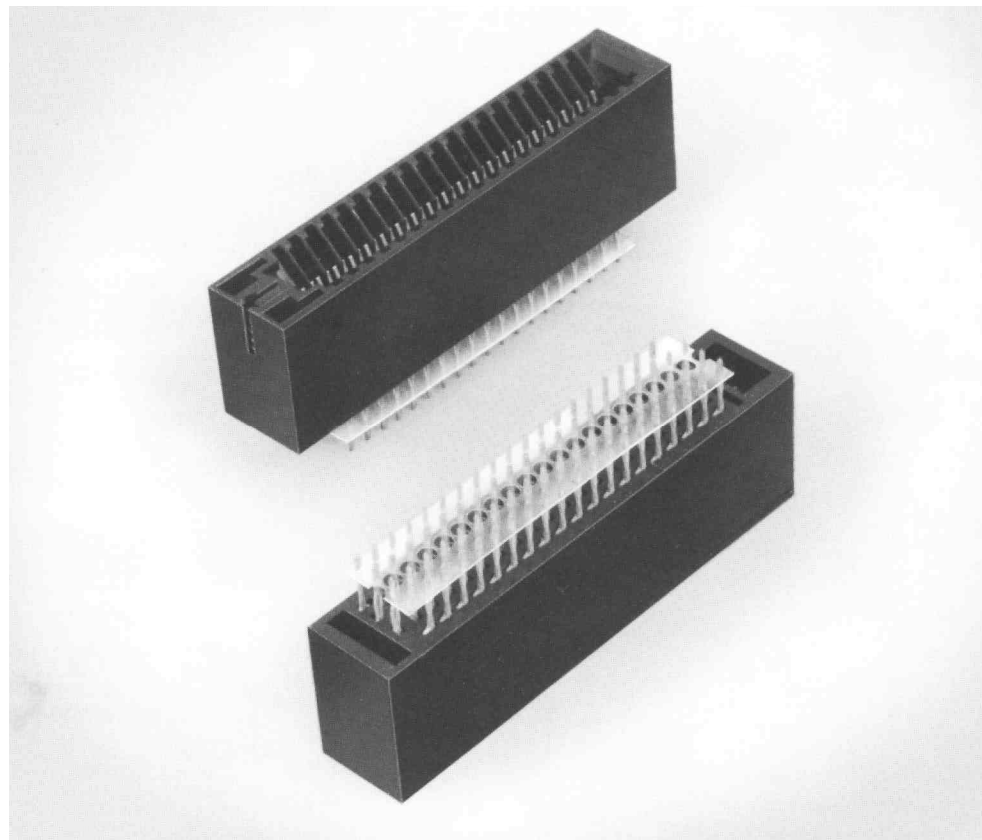
**Durability (Mating Cycles):**  
100 min.

**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:**

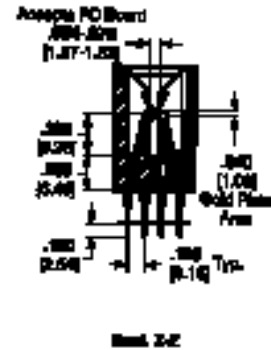
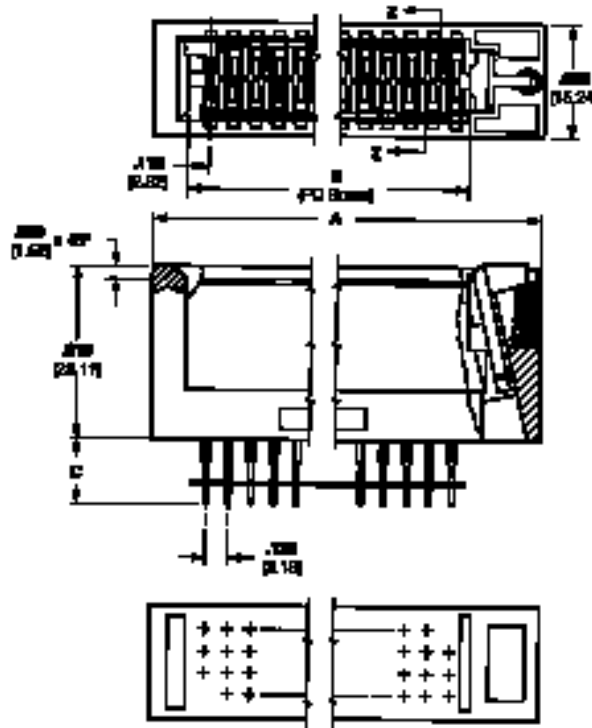
**Performance Specifications**—page 116

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

**Technical Document**—pages 186, 187

**Product Specification**—108-26003

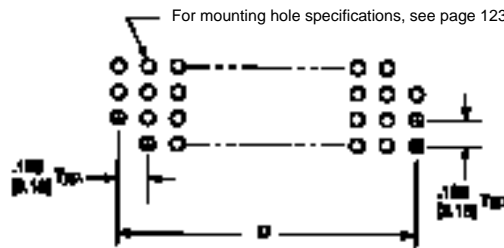
**Instruction Sheet**—408 6866



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)**

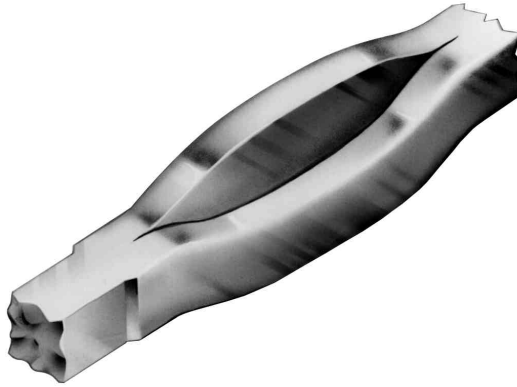


Note: ACTION PIN posts require .093 [2.36] min. thick PC board.

Press-Fit Board-to-Board Connectors

**TELEDENSITY Connectors** (Continued)

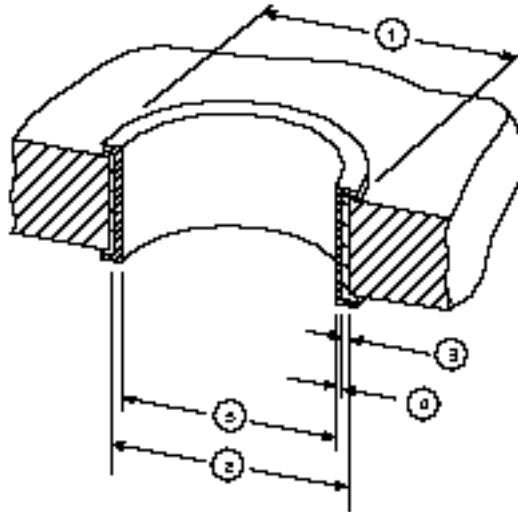
**AMP ACTION PIN  
Press-Fit Contacts**



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:**

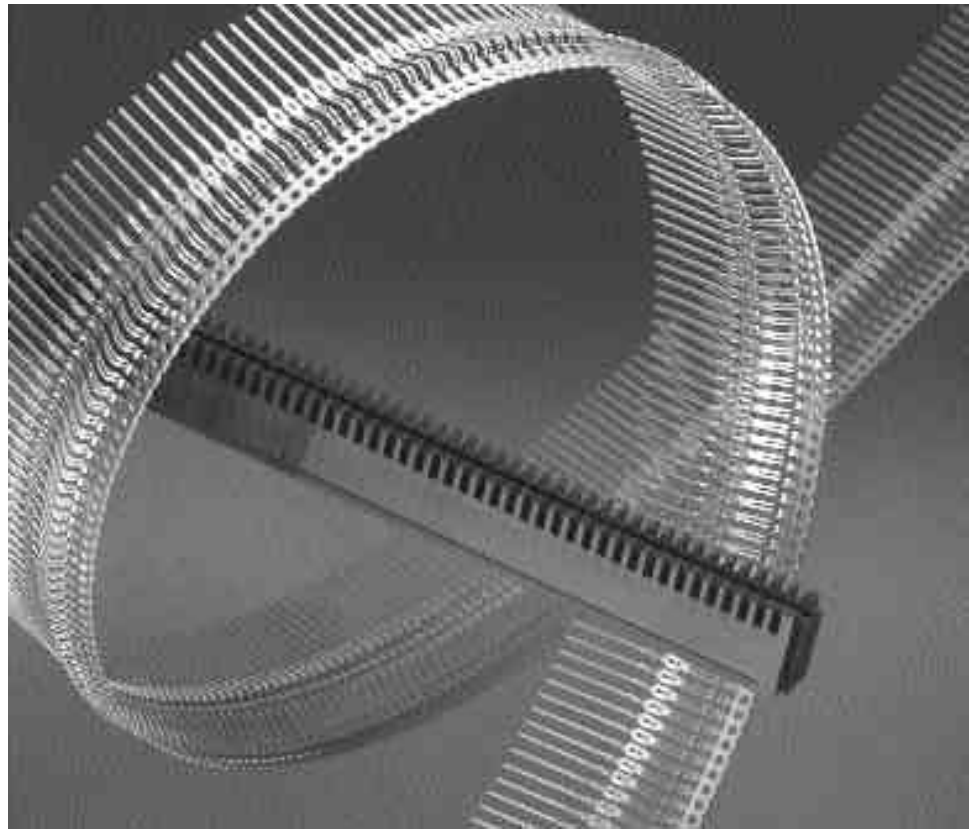
1 oz [0.28 N] (min.) per contact pair

**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:

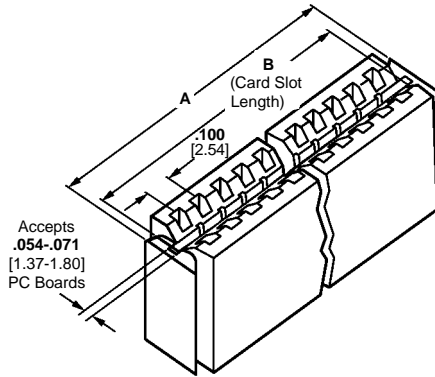
**Housing**—Black glass-filled nylon

**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

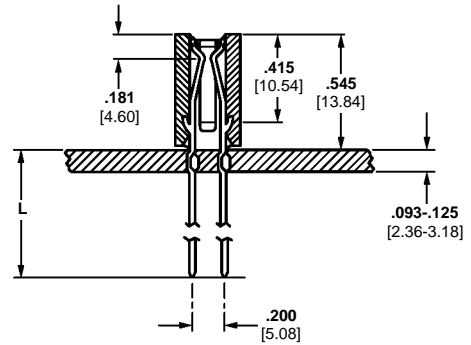
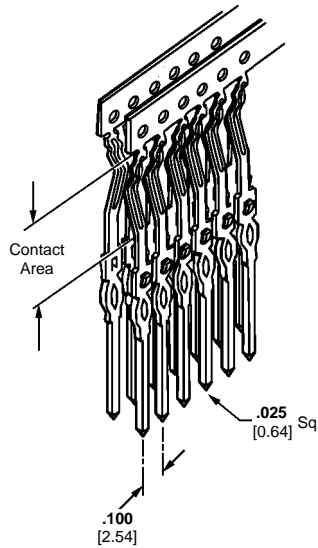
**ACTION PIN Contact Mounting Hole Specifications**—page 125

**Application Tooling**—page 126

### Technical Documents:

(pages 186, 187):

Product Specification  
108-26002



### Keying Plugs

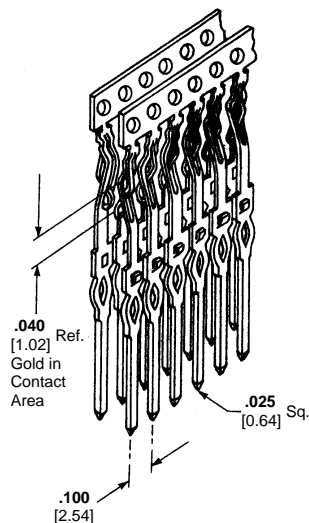
#### Make-Before-Break Contacts



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



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



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	—

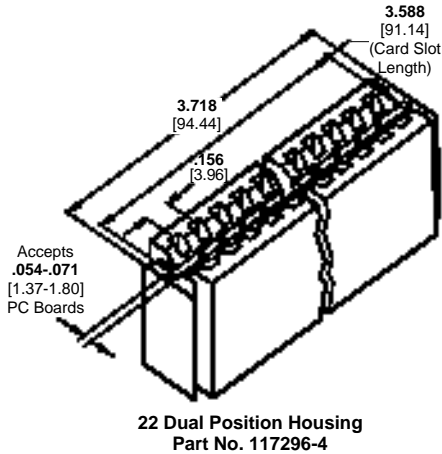


**ECONOMATE Connectors** (Continued)

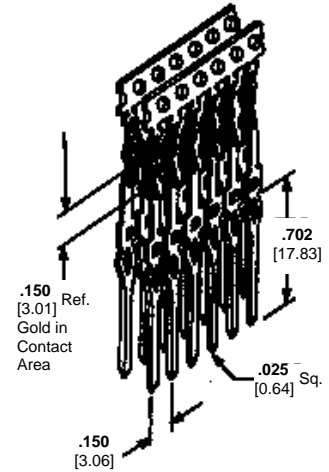
**.156 x .200 [3.96 x 5.08]**  
**Centerline Spacing**

**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

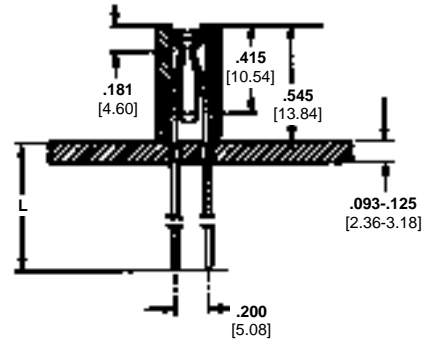
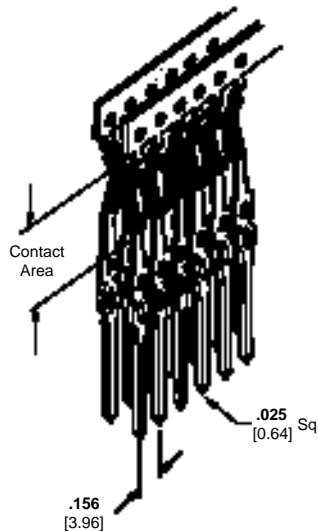
**Technical Documents:**

- (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**

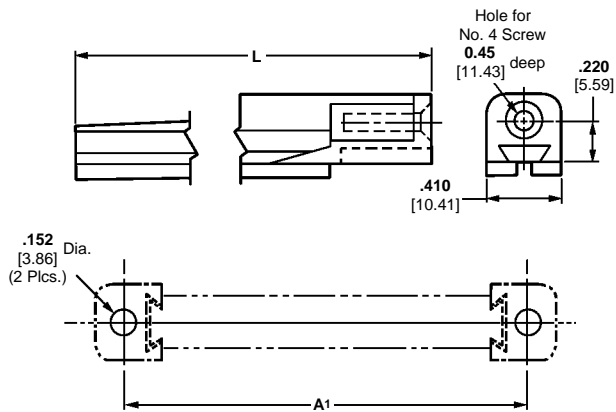
**Material:** Black glass-filled nylon

**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:**

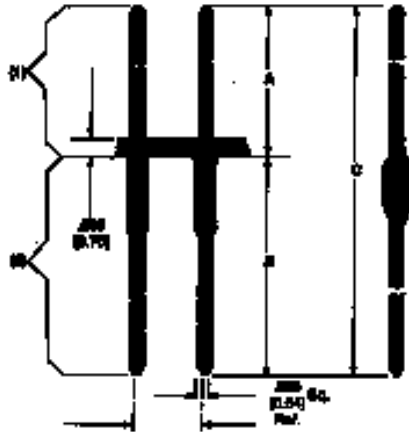
Copper Alloy 725

**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	
.318 8.08	.687 17.45	1.005 25.53	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
.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

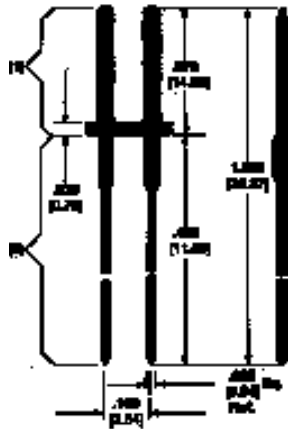
**Finish** –

- 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		
.703 17.68	.548 13.92	.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
		117311-7	1-117311-0

\*Use AMP Cut and Transfer Machine for center carrier post insertion. Consult Tyco Electronics.

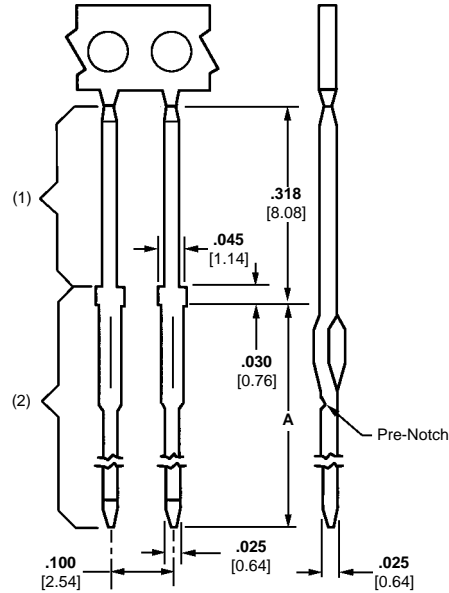
**ECONOMATE Connectors** (Continued)

**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**



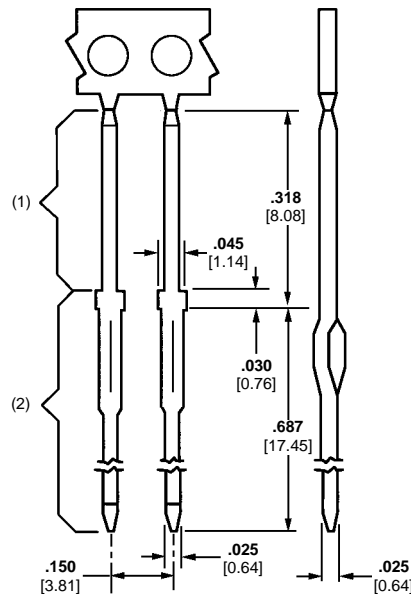
Dimension A	Feed-Through Post Part Numbers*			
	Plating A	Plating B	Plating C	Plating D
.687 17.45	117249-7 3-117249-1 <sup>1</sup>	1-117249-2	117249-2	6-117249-5
.500 12.70	3-117249-2	—	—	5-117249-6

\*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

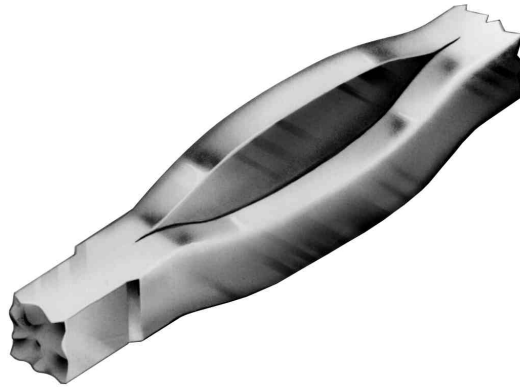


50,000 per reel  
Part No. 117269-5

Press-Fit  
Board-to-Board Connectors

**ECONOMATE Connectors** (Continued)

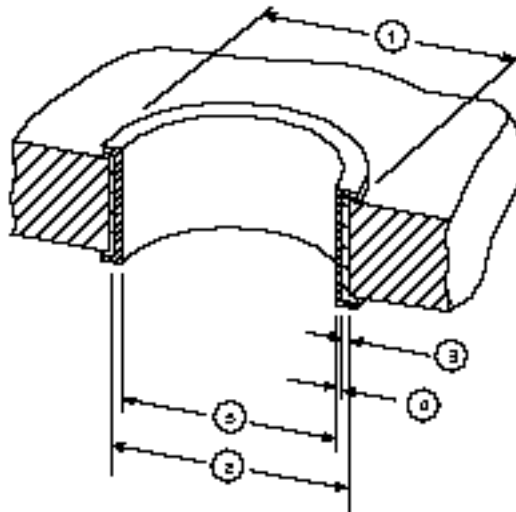
**AMP ACTION PIN  
Press-Fit Contacts**



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**

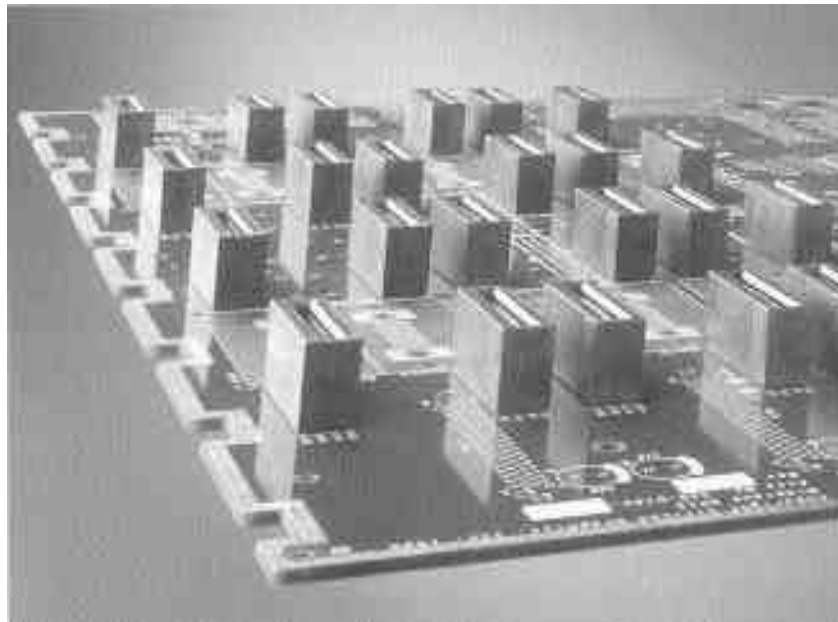
ACTION PIN Contacts				ACTION PIN Assembly Tool Numbers
Centerline	Pin Length	No. of Positions	Part Numbers	
.100 2.54	.500-.687 12.70-17.45	8-60	117249-□	Applicator 265910-□ Carrier Removal Tool 265924-□ Pin Replacement Tool 265871-7
.125 3.18	.687 17.45	8-60	117272-□	Applicator 265911-□ Carrier Removal 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

Press-Fit Board-to-Board Connectors

**.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.

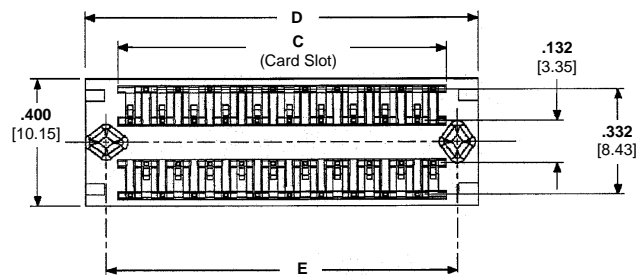
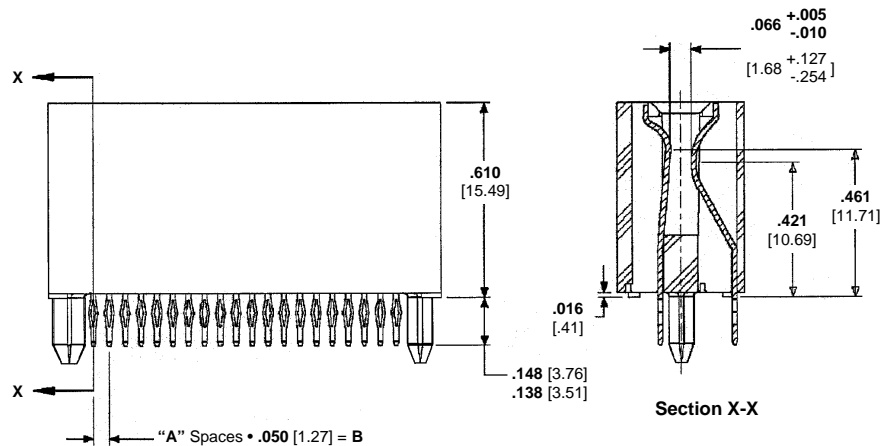
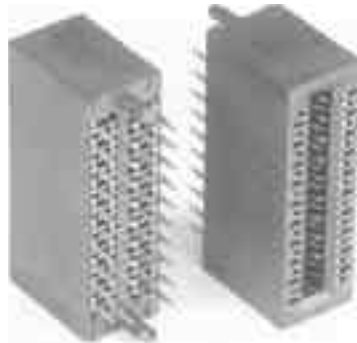
**Mating Force**—2 oz. per contact

**Housing**—High Temp. Glass filled thermoplastic, UL rating 94V-0

**Color**—Black

**Spring Contact**—BeCu

**Contact Plating**—Palladium Nickel



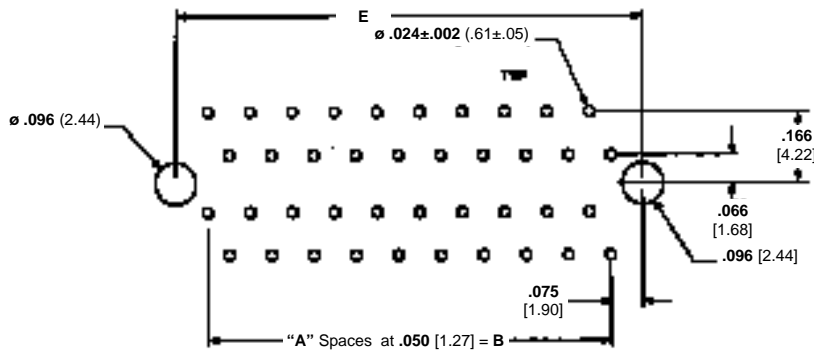
**Note:** Dimension E is Connector Mounting PC Hole Pattern.

Press-Fit Board-to-Board Connectors

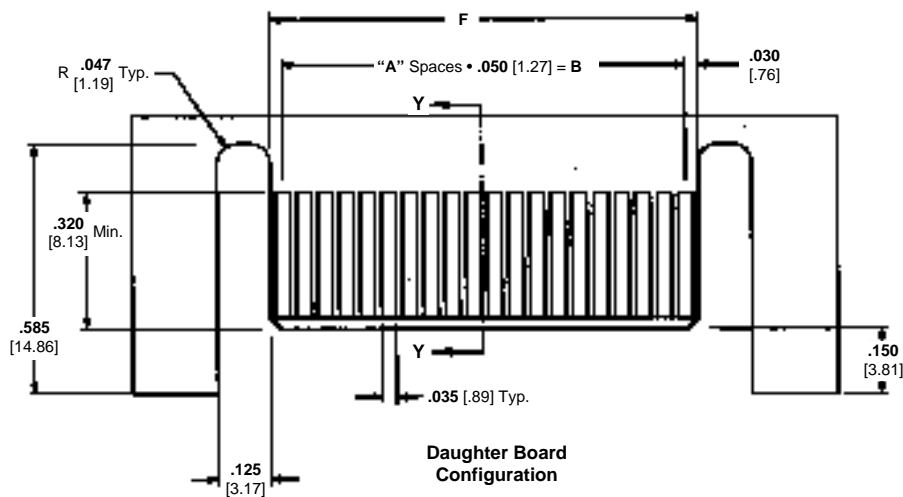


**Ordering Information**

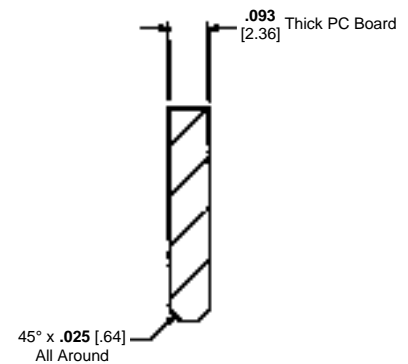
No. of Dual Readout Position	Dimensions						TYCO Part Number	Acquired Part Number
	A	B	C	D	E	F		
20	19	0.950 [24.13]	1.040 [26.42]	1.230 [31.24]	1.100 [27.94]	1.010 [25.65]	147668-2	C9D020PF60048
30	29	1.450 [36.83]	1.540 [39.12]	1.730 [43.94]	1.600 [40.64]	1.510 [38.35]	147668-3	C9D030PF60048
40	39	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



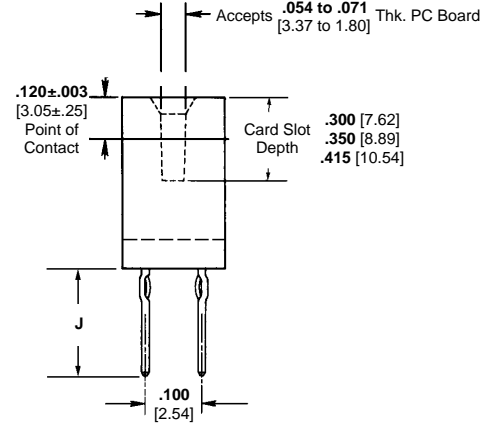
Section Y-Y

Press-Fit  
Board-to-Board Connectors

**.100 x .100 [2.54 x 2.54] Centerline Press Fit, with Standoffs**

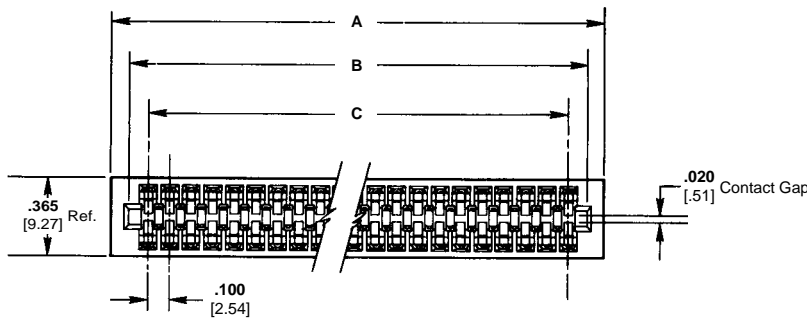
**Product Facts**

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



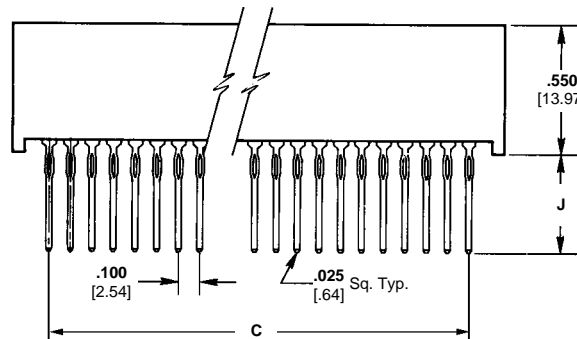
**Physical Properties:**

- 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:**

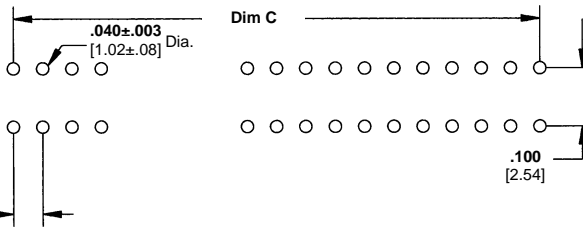
- Operating Temperature**—-55°C to +125°C
- Temperature Cycling**—MIL-STD-202 method 107
- Vibration**—MIL-STD-202, method 204

**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

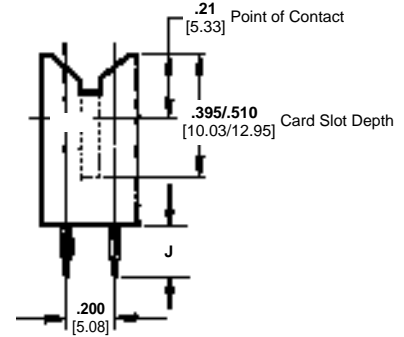
No. of Dual Readout Positions	Dimensions			Acquired Part Numbers		
	A	B	C	.300 [7.62] Card Slot Depth	.350 [8.84] Card Slot Depth	.415 [10.54] Card Slot Depth
Tail Length .625 [15.88] (Dim. "J")						
18	<b>2.034</b> 51.66	<b>1.904</b> 48.36	<b>1.700</b> 43.18	C1D18PF29017	C1D18PF29137	C1D18PF29047
20	<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**

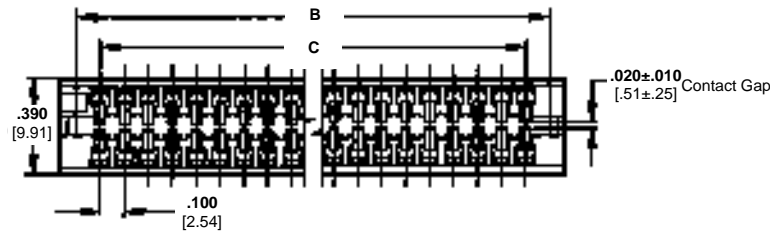
**Product Facts**

- **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:**

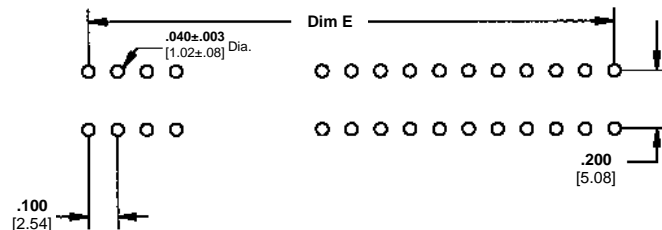
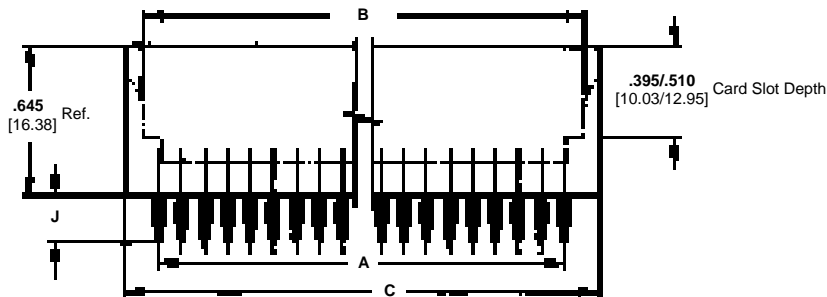
- Operating Temperature**—-55°C to +125°C
- Temperature Cycling**—MIL-STD-202 method 107
- Vibration**—MIL-STD-202, method 204

**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

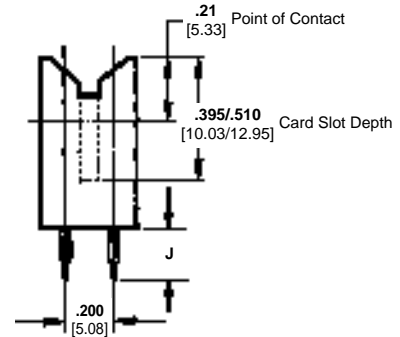
No. of Dual Readout Positions	Dimensions			Acquired Part Numbers	
	A	B	C	.510 [12.95] Card Slot Depth	.395 [10.03] Card Slot Depth
<b>Tail Length .670 [17.02] (DIM "J")</b>					
18	<b>2.034</b> 51.66	<b>1.904</b> 48.36	<b>1.700</b> 43.18	W8D18PF29012	W8D18PF29042
20	<b>2.234</b> 56.74	<b>2.104</b> 53.44	<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**

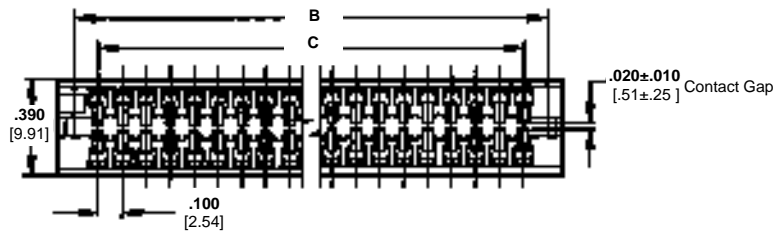
**Product Facts**

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



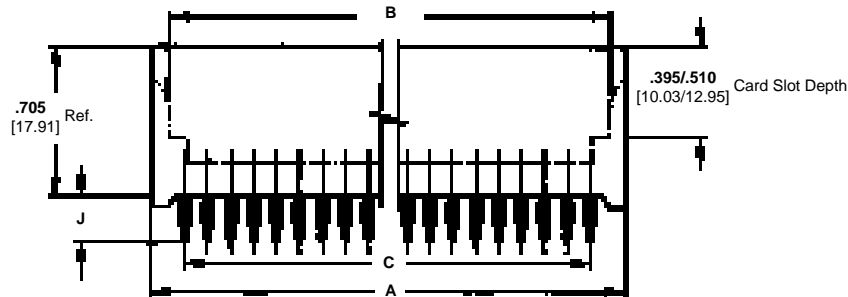
**Physical Properties:**

- 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:**

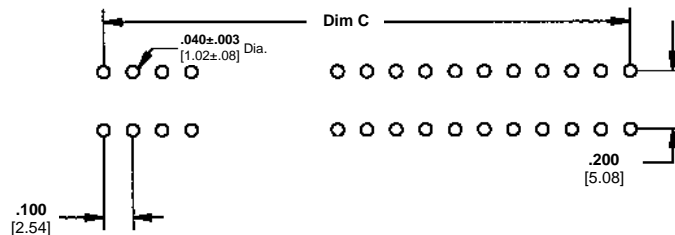
- Operating Temperature**—-55°C to +125°C
- Temperature Cycling**—MIL-STD-202 method 107
- Vibration**—MIL-STD-202, method 204

**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

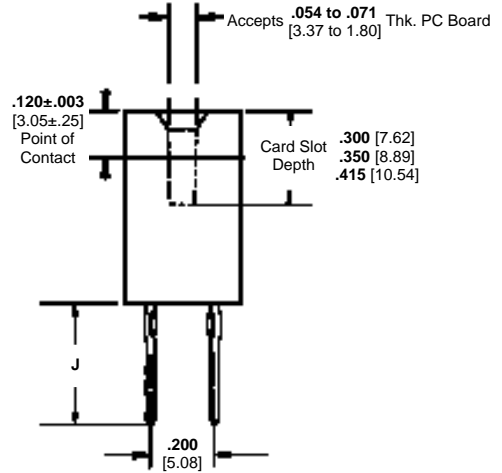
Press-Fit  
Board-to-Board Connectors



**.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:**

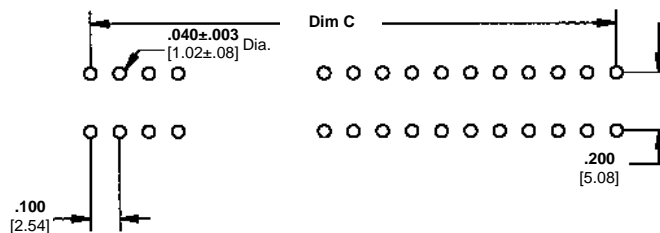
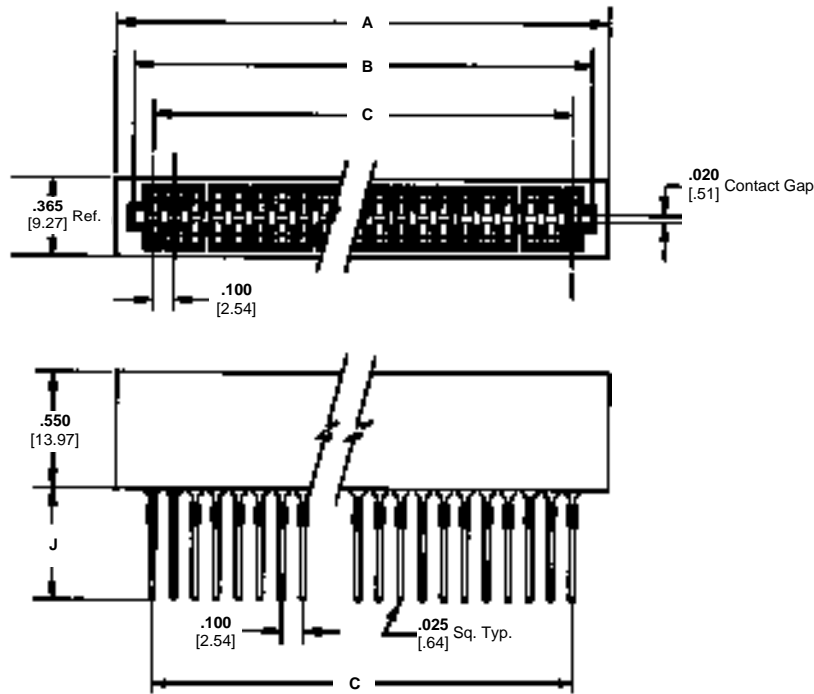
- Operating Temperature**—-55°C to +125°C
- Temperature Cycling**—MIL-STD-202 method 107
- Vibration**—MIL-STD-202, method 204

**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

**Ordering Information**

.100" [2.54] Centerline / .200" [5.08] Row-to-Row without Standoffs

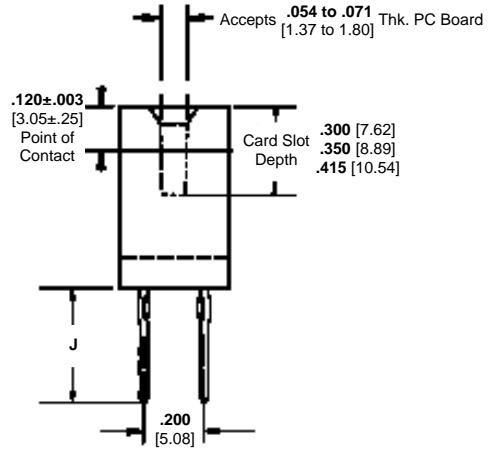
No. of Dual Readout Positions	Dimensions			Acquired Part Numbers		
	A	B	C	.300 [7.62] Card Slot Depth	.350 [8.89] Card Slot Depth	.415 [10.54] Card Slot Depth
<b>Tail Length .670 [17.02] ("J")</b>						
6	0.860 21.84	0.700 17.78	0.500 12.70	C8D06PF29032	C8D06PF29142	C8D06PF29022
10	1.260 32.00	1.100 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**

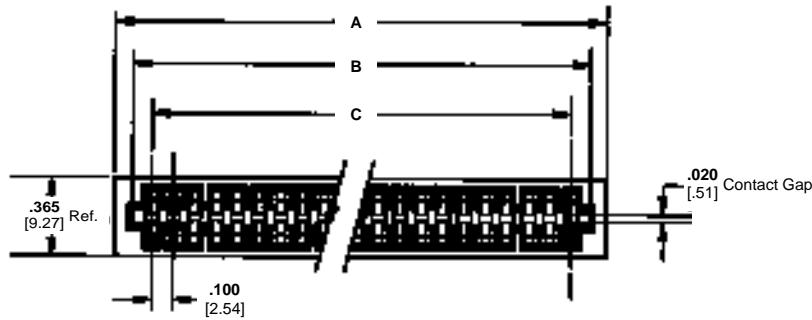
**Product Facts**

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



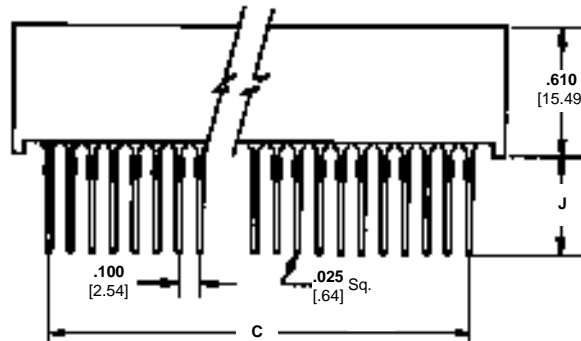
**Physical Properties:**

- 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

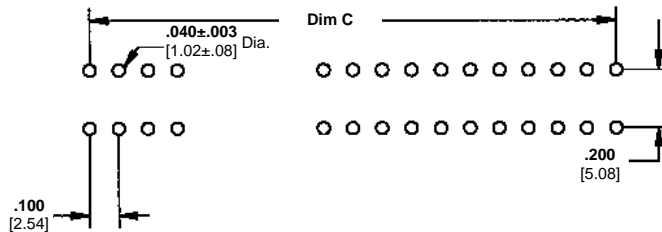


**Environmental Properties:**

- 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

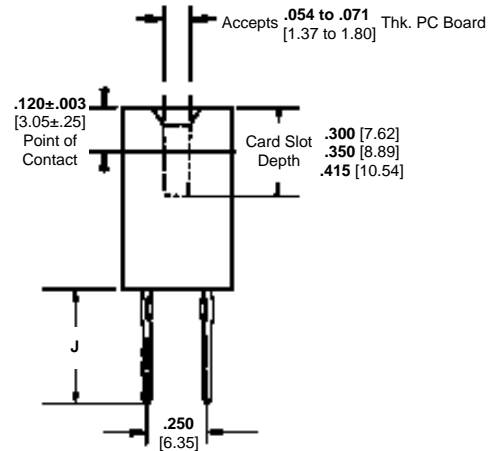
No. of Dual Readout Positions	Dimensions			Acquired Part Numbers		
	A	B	C	.300 [7.62] Card Slot Depth	.350 [8.89] Card Slot Depth	.415 [10.54] Card Slot Depth
<b>Tail Length .670 [17.02] (dim "J")</b>						
6	0.860 21.84	0.700 17.78	0.500 12.70	C8D06PF29012	C8D06PF29132	C8D06PF29042
10	1.260 32.00	1.100 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:**

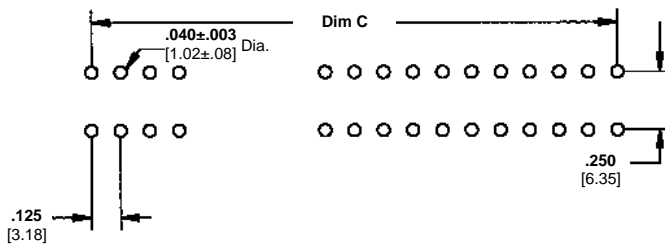
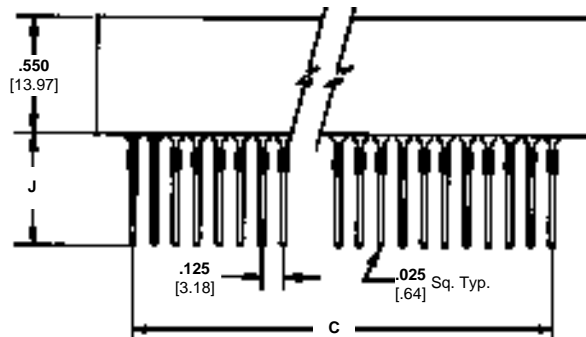
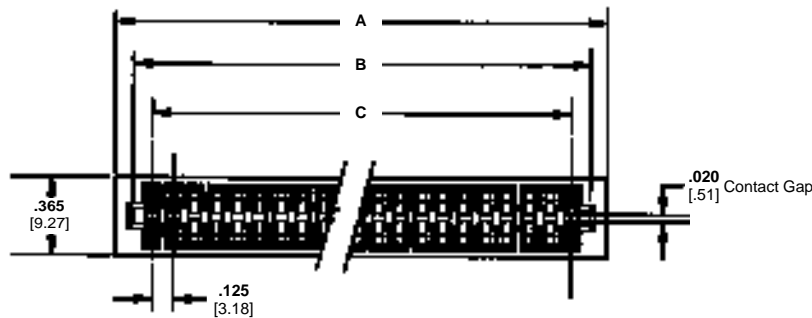
- Operating Temperature**—-55°C to +125°C
- Temperature Cycling**—MIL-STD-202 method 107
- Vibration**—MIL-STD-202, method 204

**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

**Ordering Information**

.125 [3.18] Centerline /.250 [6.35] Row-to-Row without Standoffs

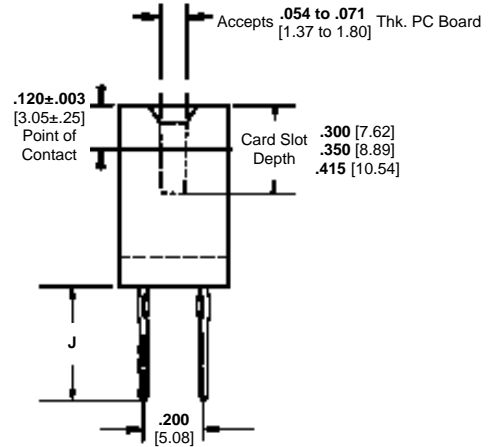
No. of Dual Readout Positions	Dimensions			Acquired Part Numbers		
	A	B	C	.300 [7.62] Card Slot Depth	.350 [8.89] Card Slot Depth	.415 [10.54] Card Slot Depth
<b>Tail Length .670 [17.02] (DIM "J")</b>						
6	1.035 26.29	0.875 22.23	0.625 15.88	C7D06PF29032	C7D06PF29142	C7D06PF29022
10	1.535 38.99	1.375 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:**

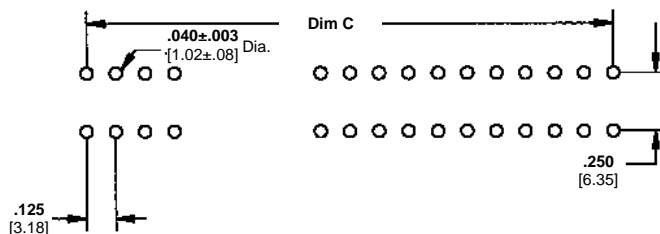
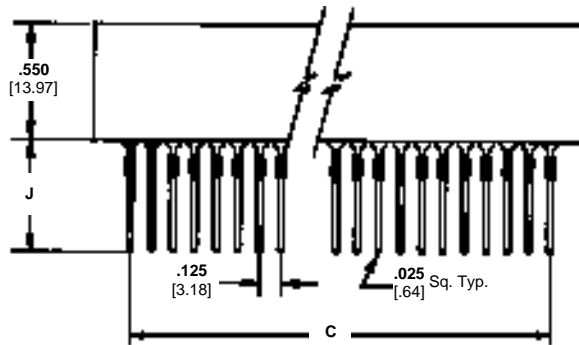
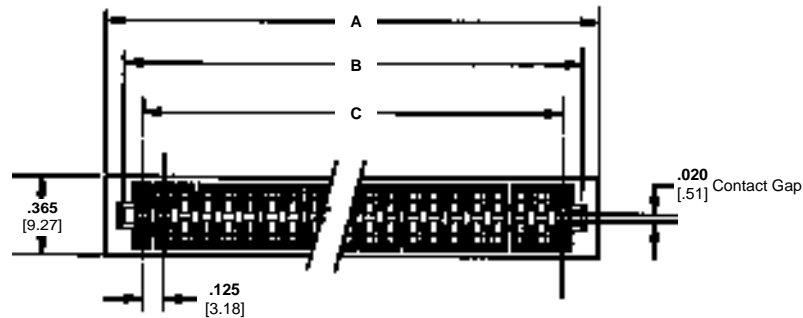
- Operating Temperature**—-55°C to +125°C
- Temperature Cycling**—MIL-STD-202 method 107
- Vibration**—MIL-STD-202, method 204

**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

**Ordering Information**

.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

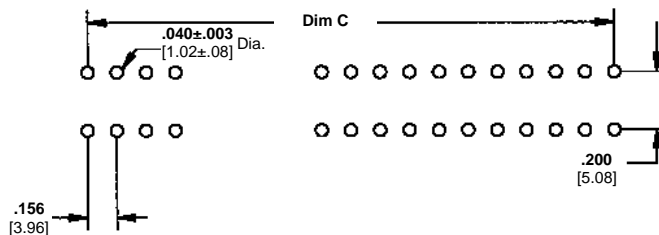
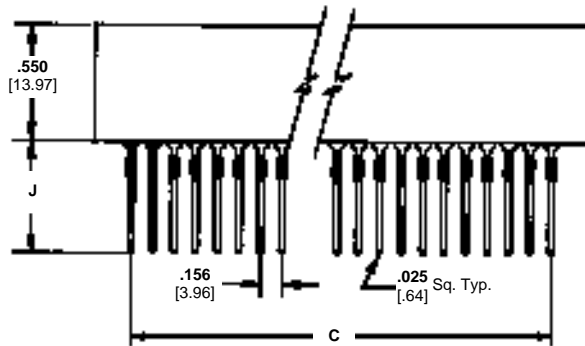
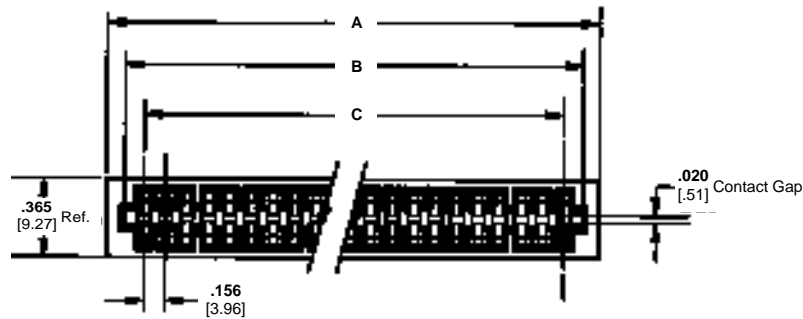
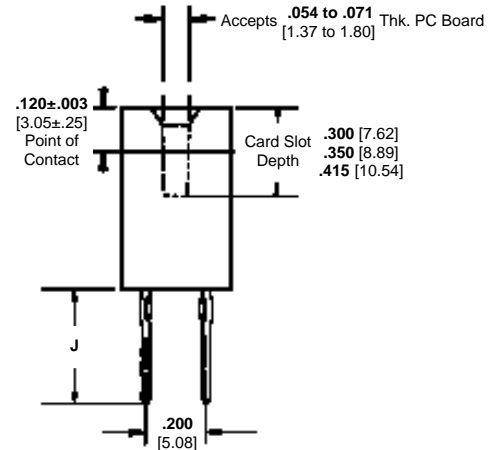
**Vibration**—MIL-STD-202, method 204

**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

.156 [3.18] Centerline/.200 [5.08] Row-to-Row without Standoffs

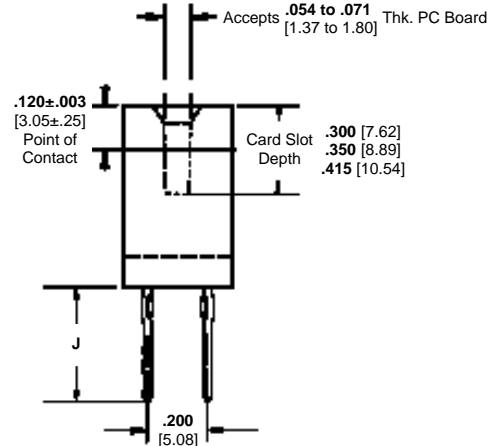
No. of Dual Readout Positions	Dimensions			Acquired Part Numbers		
	A	B	C	.300 [7.62] Card Slot Depth	.350 [8.84] Card Slot Depth	.415 [10.54] Card Slot Depth
<b>.670 [17.02] Tail Length (DIM "J")</b>						
6	1.221 31.01	1.100 27.94	0.780 19.81	C6D06PF29032	C6D06PF29142	C6D06PF29022
10	1.845 46.86	1.724 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:**

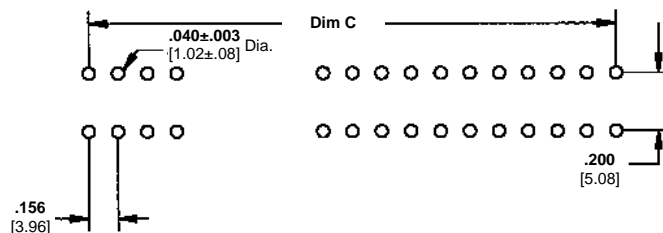
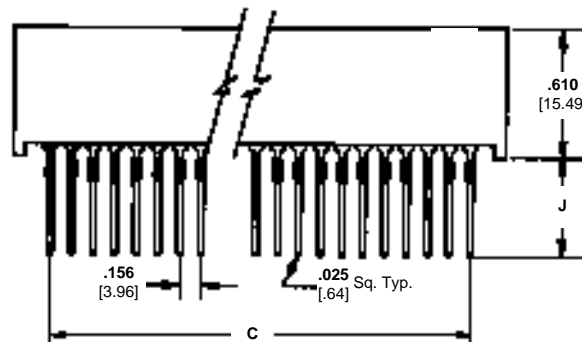
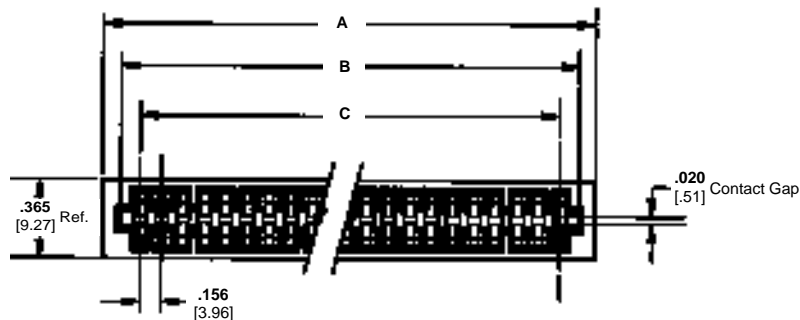
- Operating Temperature**—-55°C to +125°C
- Temperature Cycling**—MIL-STD-202 method 107
- Vibration**—MIL-STD-202, method 204

**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

.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.

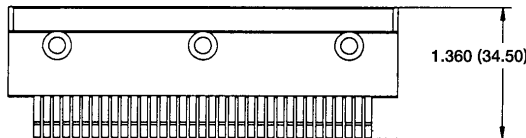
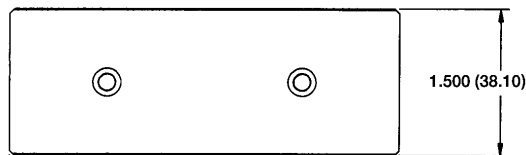
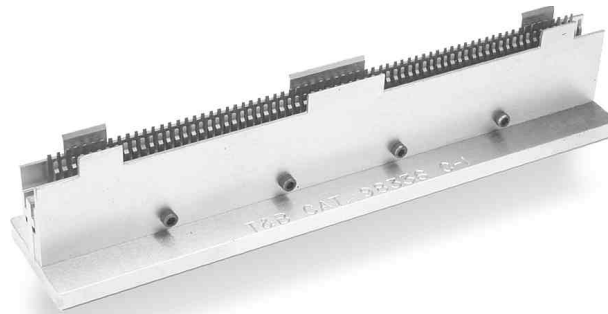


**Automatic Pick, Place and Press (AP3)**

- 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**

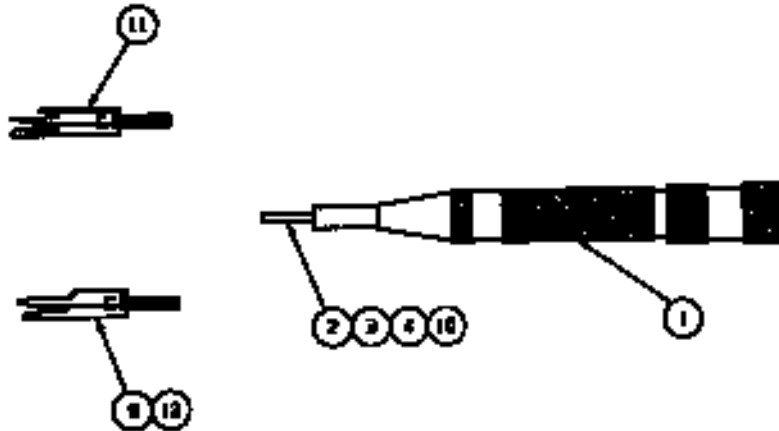
Center-to Center	Connector Prefix	Max. No. Of Positions	Tool Part Number		Replacement Blade Part Number	
			Acquired P/N	TYCO	Acquired P/N	Tyco
.100 x .100 2.54 x 2.54	C1	70	98336	3-1437266-5	98293	1437274-1
.100 x .100 2.54 x 2.54	C1	100	98341	—	98293	1437274-1
.156 x .200 3.96 x 5.08	C6	43	98231	1-1437266-1	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

Press-Fit Board-to-Board Connectors