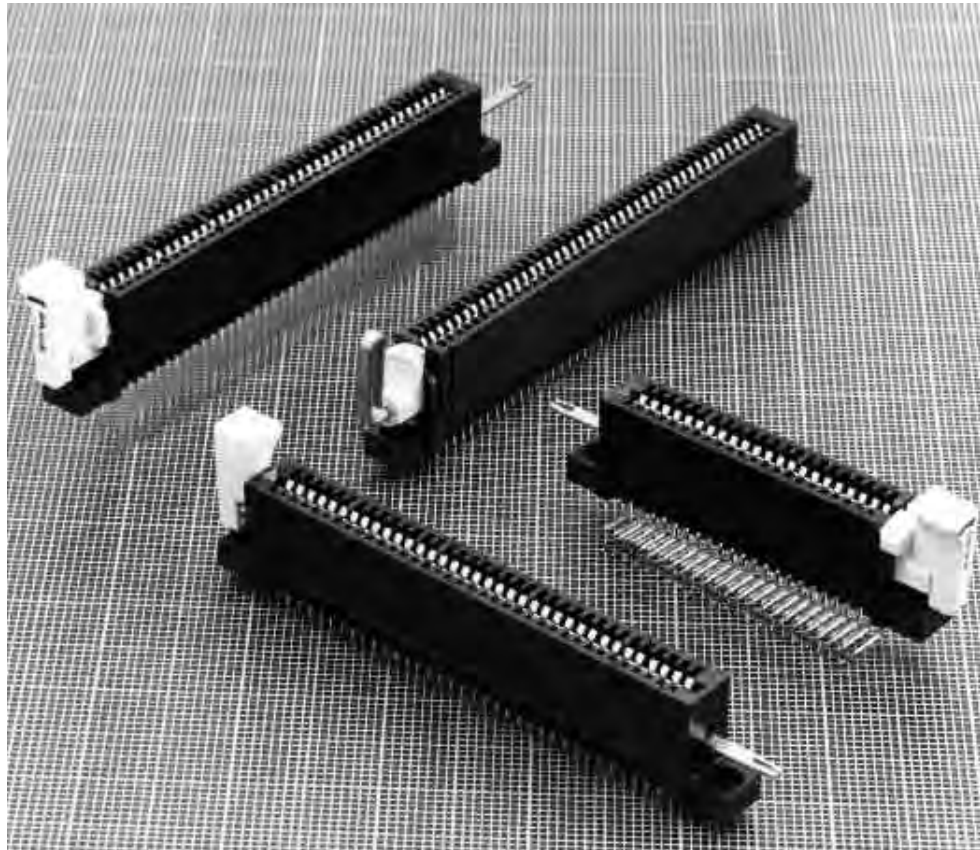


Rotary Cam ZIF Connectors

Product Facts

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



Performance Specifications

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

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

Contact Resistance:
20 milliohms max.

Durability: Tested to 5000 cycles

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

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

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

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

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

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

**Vertical Connector,
Solder Post Terminals**

Material and Finish:

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

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

Related Product Data:

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

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

Performance Specifications—page 73

Dust Cover—page 79

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

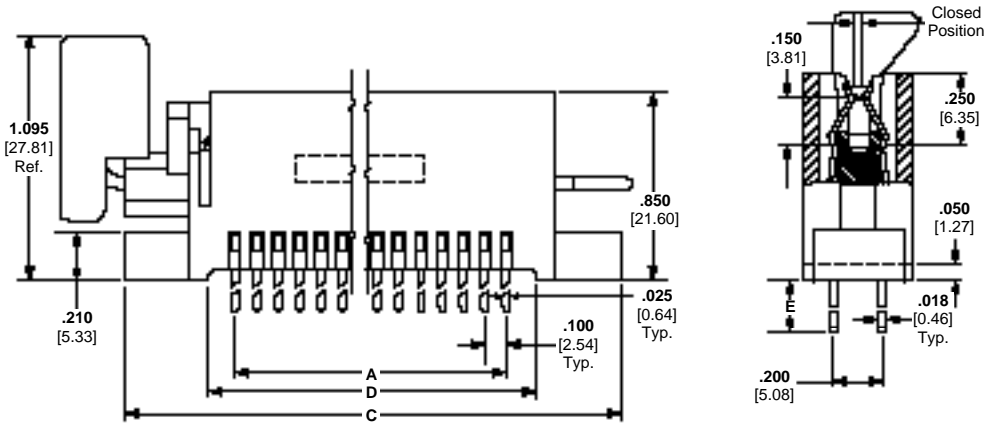
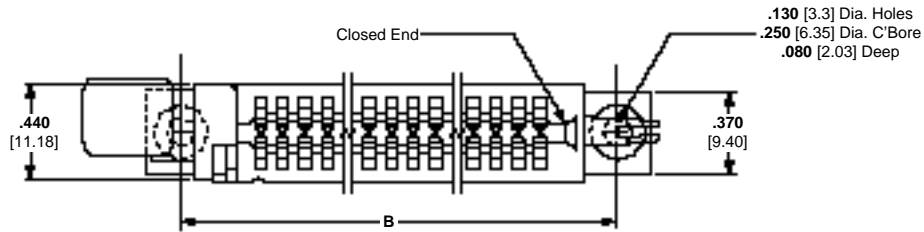
Special Application—pages 82, 96

Technical Documents:

(pages 186, 187):

Product Specification
108-9048

Instruction Sheet 408-7911



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

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

¹Recognized under the Component Program of Underwriters Laboratories Inc.

²Connectors without cam rod and boardlock.

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

Solder Type Board-to-Board Connectors

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

Right-Angle Connector, Solder Post Terminals

Material and Finish:

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

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

Related Product Data:

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

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

Performance Specifications—page 73

Dust Cover—page 79

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

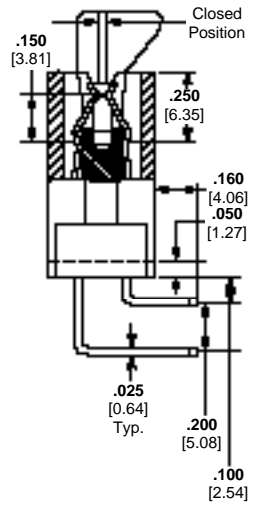
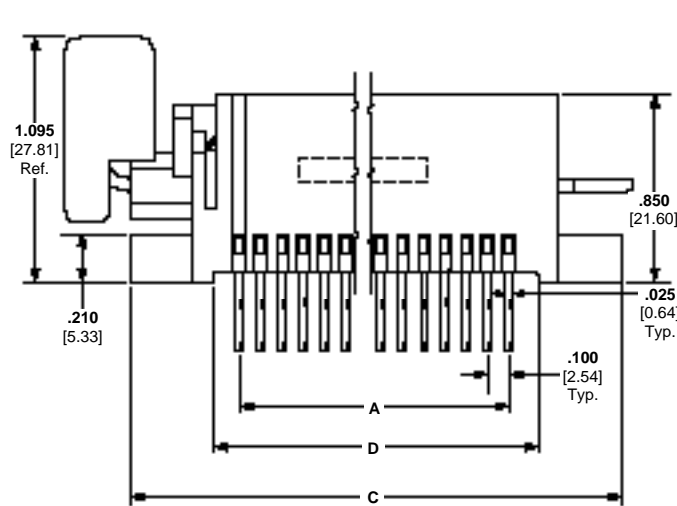
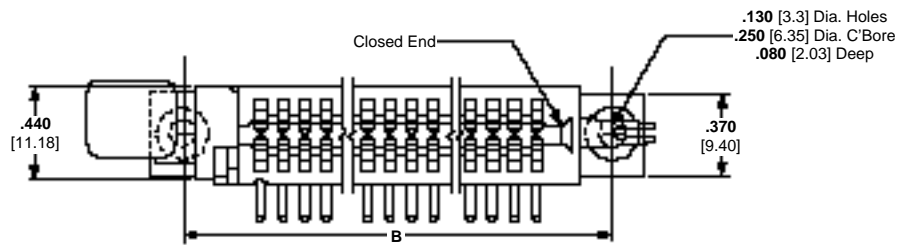
Special Application—page 82, 96

Technical Documents:

(pages 186, 187):

Product Specification 108-9048

Instruction Sheet 408-7911



Bend Right Shown

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

¹Recognized under the Component Program of Underwriters Laboratories Inc.

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

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

Material and Finish:

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

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

Related Product Data:

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

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

Performance Specifications—page 73

Dust Cover—page 79

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

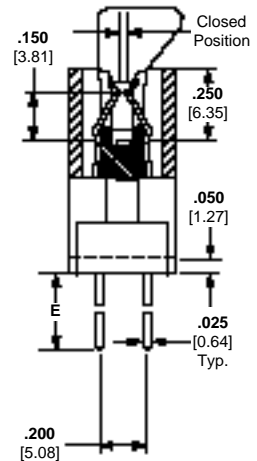
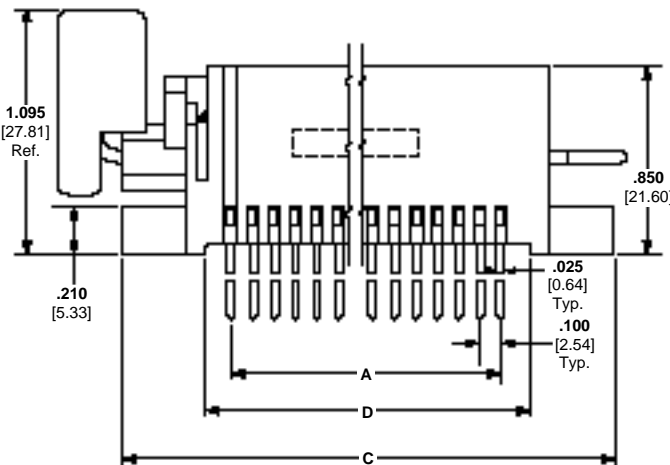
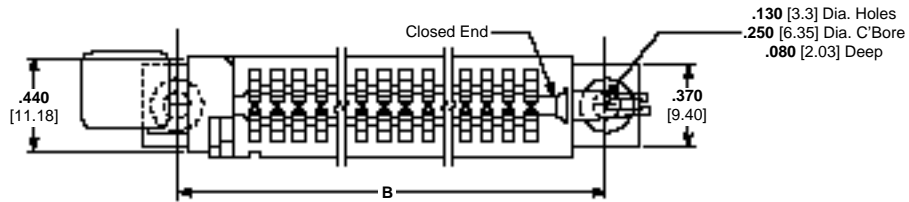
Special Application—pages 82, 96

Technical Documents:

(pages 186, 187):

Product Specification 108-9048

Instruction Sheet 408-7911



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

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

¹Recognized under the Component Program of Underwriters Laboratories Inc.

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

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

**Vertical Connector,
Solder Post Terminals**

Material and Finish:

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

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

Related Product Data:

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

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

Performance Specifications—page 73

Dust Cover—page 79

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

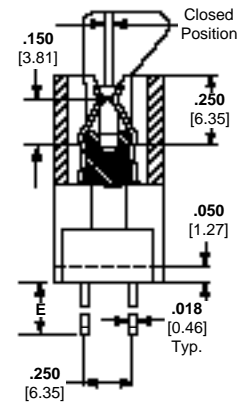
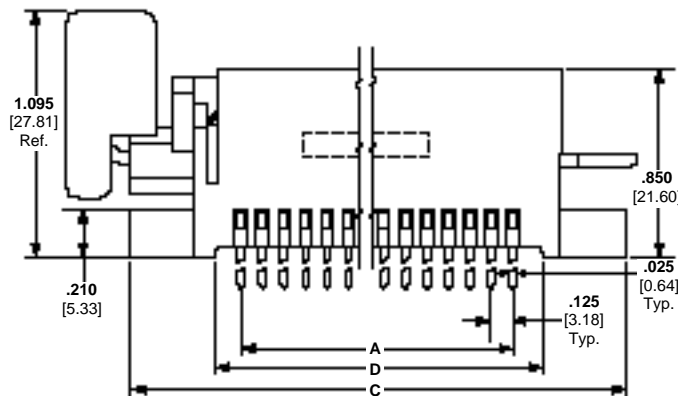
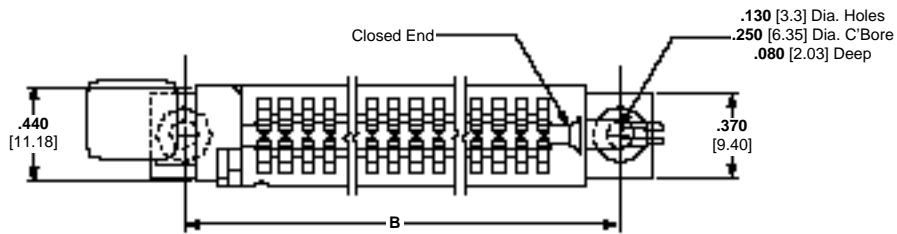
Special Application—pages 82, 96

Technical Documents:

(pages 186,187):

Product Specification 108-9048

Instruction Sheet 408-7911



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

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

¹Recognized under the Component Program of Underwriters Laboratories Inc.

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

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

**Vertical Connector,
Solder Post Terminals**

Material and Finish:

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

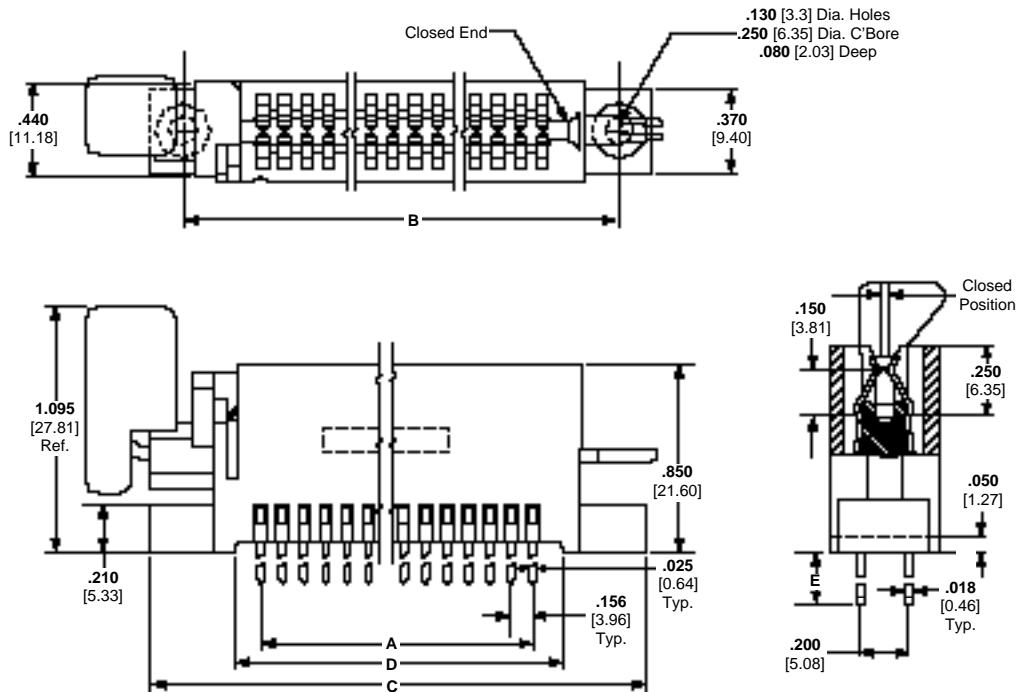


Related Product Data:

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

Technical Documents:

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



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

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

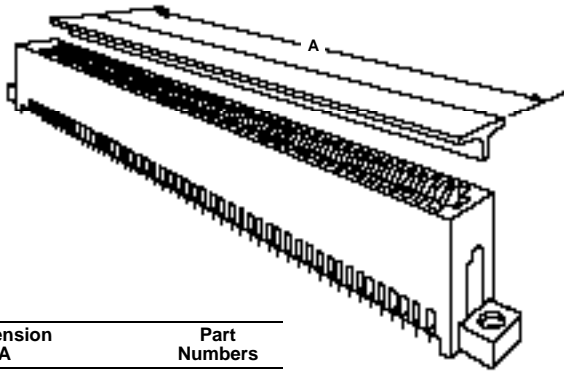
¹Recognized under the Component Program of Underwriters Laboratories Inc.

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

Accessories

Dust Covers

Material: Rigid vinyl, black



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

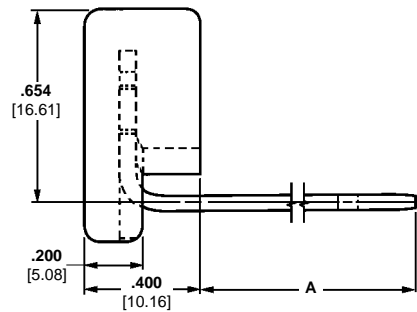
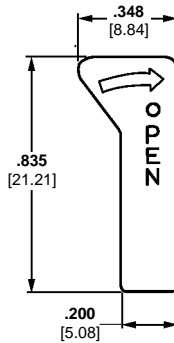
Note: Other lengths can be made available upon request, consult Tyco Electronics.

Cam Rods with Boot

Material:

Cam Rod—Stainless steel

Boot—Glass-filled polyester, yellow



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

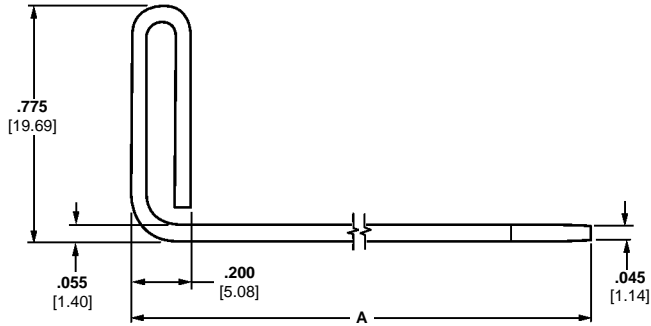
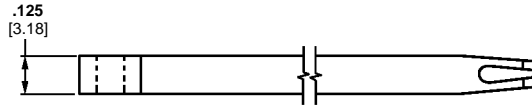
Dimension A	Part Numbers
6.385 162.18	650083-7
6.985 177.42	650083-8
7.485 190.12	650083-9
7.725 196.22	1-532563-0
8.320 211.34	1-650083-7

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

Cam Rods without Boot

Material: Stainless steel

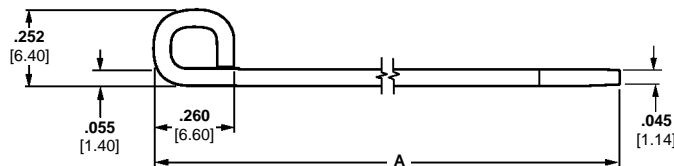
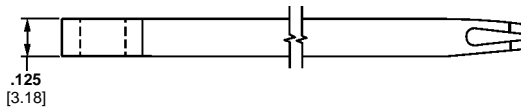
Solder Type Board-to-Board Connectors



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

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

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

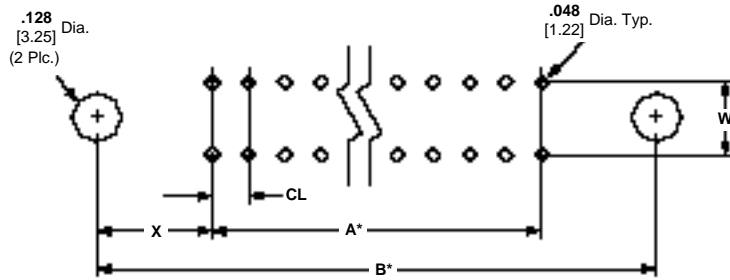


Dimension A	Part Numbers
3.380 85.85	645293-3
4.50 114.30	645293-8
5.200 132.08	645293-6
6.90 175.30	645293-7
13.120 333.25	645293-5

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

Recommended PC Board Hole Layouts

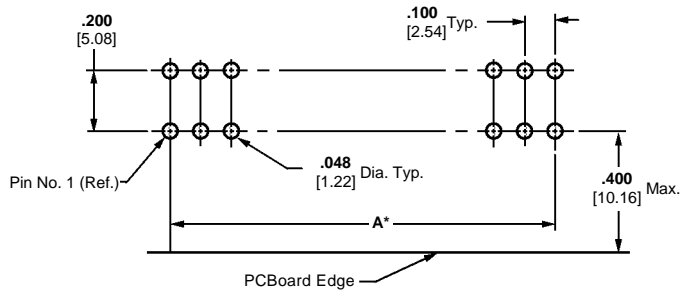
Mother Board Hole Layout, Vertical Through-Board Connectors



*Refer to individual connector specifications.

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

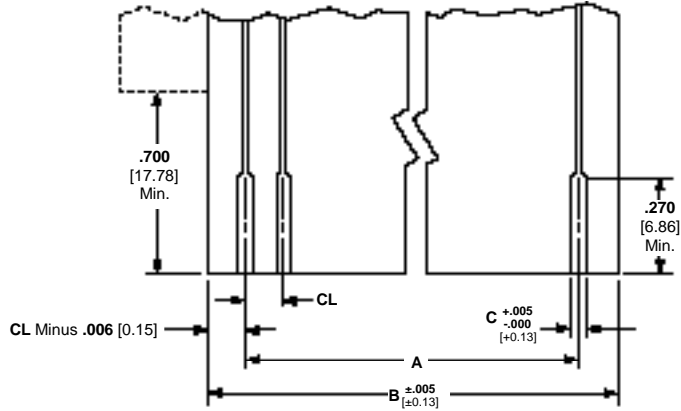
Mother Board Hole Layout, Right-Angle Through-Board Connectors



*Refer to individual connector specifications.

Recommended PC Board Edge Pattern

Daughter Board Edge Pattern



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

Special Application

Tandem Application



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