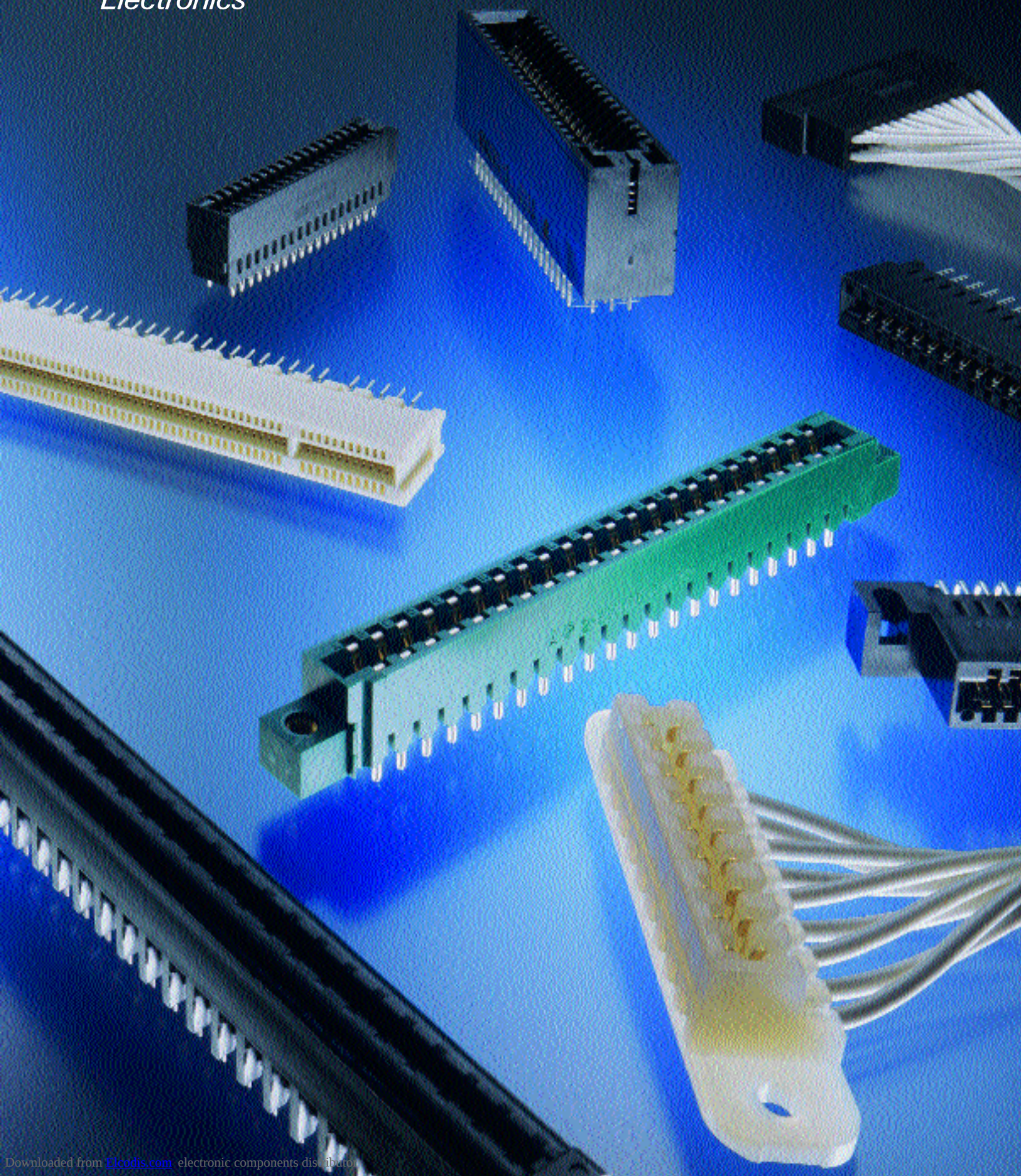


**tyco**

*Electronics*

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

**AMP**



### Introduction

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

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

A comprehensive description and features of a partic-

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

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

### Need more information?

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

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

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

### Dimensioning:

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

Metric symbols used are:

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

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

© Copyright 1992, 1996 and 2002 by Tyco Electronics. All Rights Reserved.

AMP, ACTION PIN, AMP-DURAGOLD, AMP-LEAF, AMP-O-LECTRIC, AMP-O-MATIC, AMPOMATOR, AMP PACE, CERTI-CRIMP, DUO-TYNE, ECONOMATE, TELEDENSITY, and TYCO are trademarks.

Other products, logos, and company names mentioned herein may be trademarks of their respective owners.

### Produced under a Quality Management System certified to ISO 9001

A copy of the certificate is available upon request



## Table of Contents

### Solder Type Board-to-Board Connectors

|                       |     |
|-----------------------|-----|
| Introduction .....    | 2   |
| Selection Guide ..... | 4-6 |

#### Standard Edge Series Connectors

|                                                   |       |
|---------------------------------------------------|-------|
| Standard Edge .050 PCI Card Edge Connectors ..... | 7-10  |
| Standard Edge .050 Series Connectors .....        | 11-14 |
| Standard Edge II Connectors .....                 | 15-27 |

#### Cantilever Beam Dip Solder Tails Overview

|                               |       |
|-------------------------------|-------|
| .100" [2.54] Centerline ..... | 28    |
| .100" [2.54] Centerline ..... | 29-34 |
| .125" [3.18] Centerline ..... | 35-37 |
| .156" [3.96] Centerline ..... | 38-40 |

#### Modified Bellows Contact Overview

|                               |       |
|-------------------------------|-------|
| .100" [2.54] Centerline ..... | 41    |
| .100" [2.54] Centerline ..... | 42-47 |
| .125" [3.18] Centerline ..... | 48-52 |
| .156" [3.96] Centerline ..... | 53-56 |

#### Polarization Keys

|                                     |    |
|-------------------------------------|----|
| Standard Daughter Card Layout ..... | 57 |
|-------------------------------------|----|

#### Low Profile Connectors

|                                         |       |
|-----------------------------------------|-------|
| Twin Leaf Mother Board Connectors ..... | 58-63 |
|-----------------------------------------|-------|

#### Twin Leaf Mother Board Connectors

|                                 |       |
|---------------------------------|-------|
| Rotary Cam ZIF Connectors ..... | 64-72 |
|---------------------------------|-------|

#### Rotary Cam ZIF Connectors

|                             |       |
|-----------------------------|-------|
| Linear ZIF Connectors ..... | 73-82 |
|-----------------------------|-------|

#### Linear ZIF Connectors

### Press-Fit Board-to-Board Connectors

|                                     |         |
|-------------------------------------|---------|
| ACTION PIN Press-Fit Contacts ..... | 83-96   |
| AMP PACE Connectors .....           | 97      |
| TELEDENSITY Connectors .....        | 98-115  |
| ECONOMATE Connectors .....          | 116-118 |
| ECONOMATE Connectors .....          | 119-126 |

#### Cantilever Beam Press-Fit Connectors Overview

|                                 |         |
|---------------------------------|---------|
| .050" [1.27] High Density ..... | 127     |
| .050" [1.27] High Density ..... | 128-129 |
| .100" [2.54] Centerline .....   | 130-140 |
| .100" [2.54] Centerline .....   | 141-144 |
| .125" [3.18] Centerline .....   | 145-148 |
| .156" [3.96] Centerline .....   | 149-151 |

### Wire-to-Board Connectors

|                                                       |          |
|-------------------------------------------------------|----------|
| Introduction .....                                    | 152      |
| Selection Guide .....                                 | 153      |
| Crimp Snap Twin Leaf Connectors .....                 | 154-163  |
| AMP-LEAF Connectors .....                             | 164-172  |
| High Current Connectors .....                         | 173-176  |
| DUO-TYNE Flag Connectors .....                        | 177-180  |
| Printed Circuit Board Connector Hood Assemblies ..... | 181-183  |
| Application Tooling .....                             | 184, 185 |

#### Technical Documents

|                         |          |
|-------------------------|----------|
| Part Number Index ..... | 186, 187 |
|-------------------------|----------|

#### Part Number Index

|                                                    |         |
|----------------------------------------------------|---------|
| Tyco Electronics Related Product Information ..... | 188-201 |
|----------------------------------------------------|---------|

#### Tyco Electronics Related Product Information

## Selection Guide, Board-to-Board Connectors

### Introduction

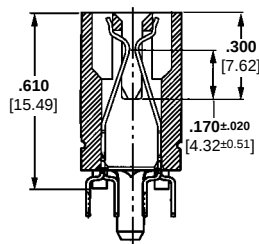
Board-to-board (mother/daughter board) connectors are ideally suited to back-plane wiring or any other application requiring the circuit connection of one printed circuit board to another. Designed to shorten manufacturing time and reduce applied costs, these one-step, pre-assembled connectors are ready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

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

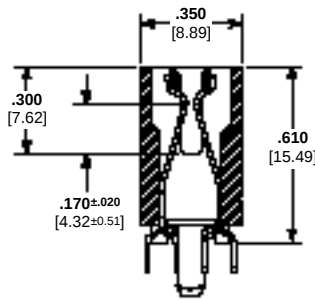
Board-to-board connectors come in a range of contact centerline spacings of .050 [1.27] to .156 [3.96]. A wide range of dual position sizes and post styles are available. One family of connectors features zero insertion force of the daughter board, along with a choice of actuating devices. A variety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

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

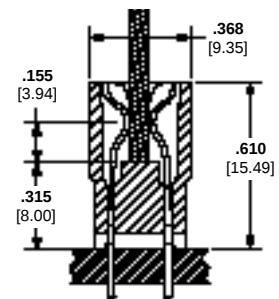
**Standard Edge .050 Series PCI Connectors**  
(Pages 7-10)



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



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



### Centerlines

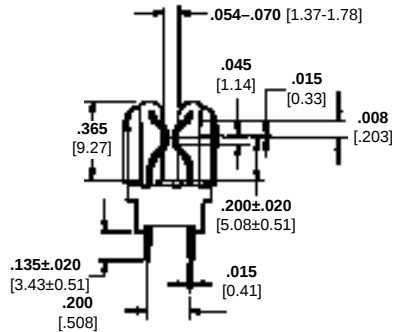
|             |   |   |   |
|-------------|---|---|---|
| .050 [1.27] | X | X |   |
| .100 [2.54] |   |   | X |
| .125 [3.18] |   |   | X |
| .150 [3.81] |   |   |   |
| .156 [3.96] |   |   |   |

### Tail Styles

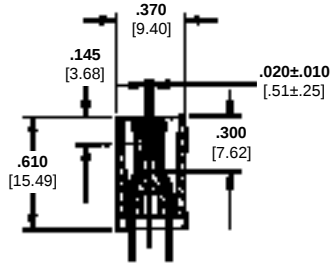
|                    |   |   |   |
|--------------------|---|---|---|
| Solder             | X | X | X |
| Right-Angle Solder |   |   | X |
| Wrap-Type          |   |   | X |
| Card Extender      |   |   | X |
| Solder Eyelet      |   |   |   |
| Press-Fit          |   |   |   |
| Surface-Mount     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

**Selection Guide, Board-to-Board Connectors** (Continued)

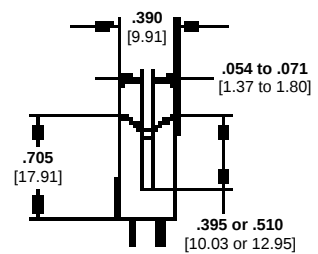
**Standard Edge II Connectors (.150 Centerline)**  
(Pages 15-27)



**Cantilever Beam Connectors Standard Housing**  
(Pages 28-40)



**Cantilever Beam Connectors Scoop Housing**  
(Pages 28-40)



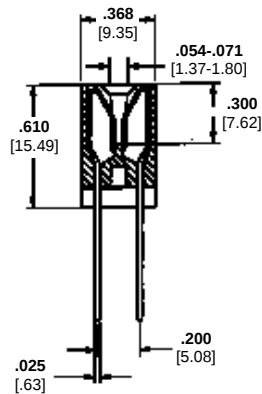
**Centerlines**

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

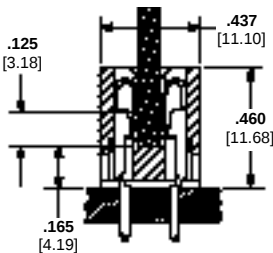
**Tail Styles**

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

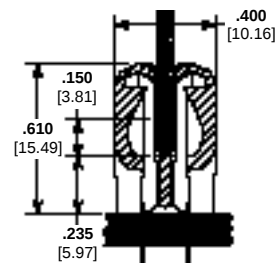
**Modified Bellows Connector**  
(Pages 41-56)



**Low Profile Connectors**  
(Pages 58-63)



**Twin Leaf Mother Board Connectors**  
(Pages 64-72)



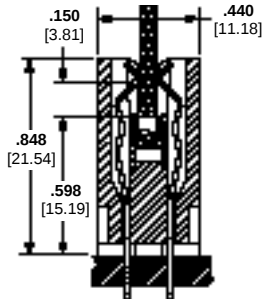
**Centerlines**

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

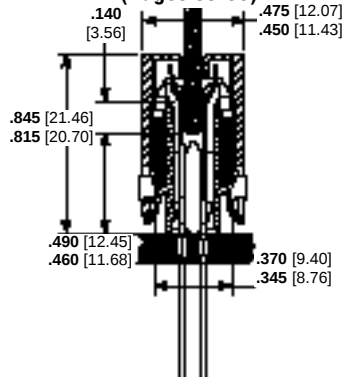
**Tail Styles**

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

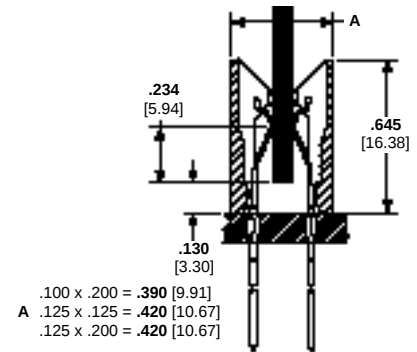
**Rotary Cam ZIF Connectors  
(Pages 73-82)**



**Linear ZIF Connectors  
(Pages 83-96)**



**AMP PACE Connectors,  
Card Scoop Housing  
(Pages 98-115)**



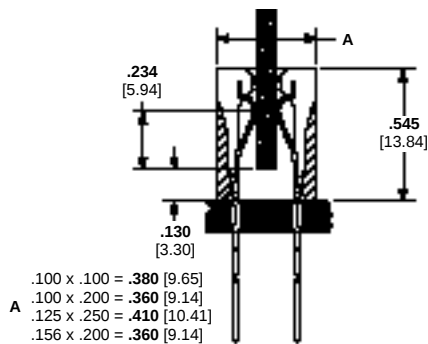
**Centerlines**

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

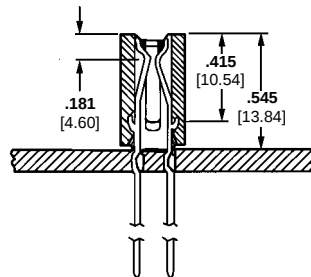
**Tail Styles**

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

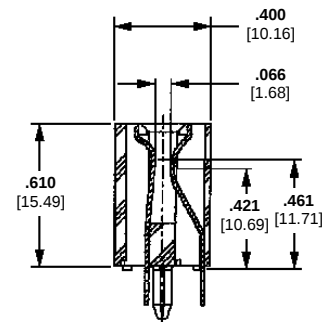
**AMP PACE Connectors,  
Standard Housing  
(Pages 98-115)**



**ECONOMATE  
Connectors  
(Pages 119-126)**



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



**Centerlines**

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

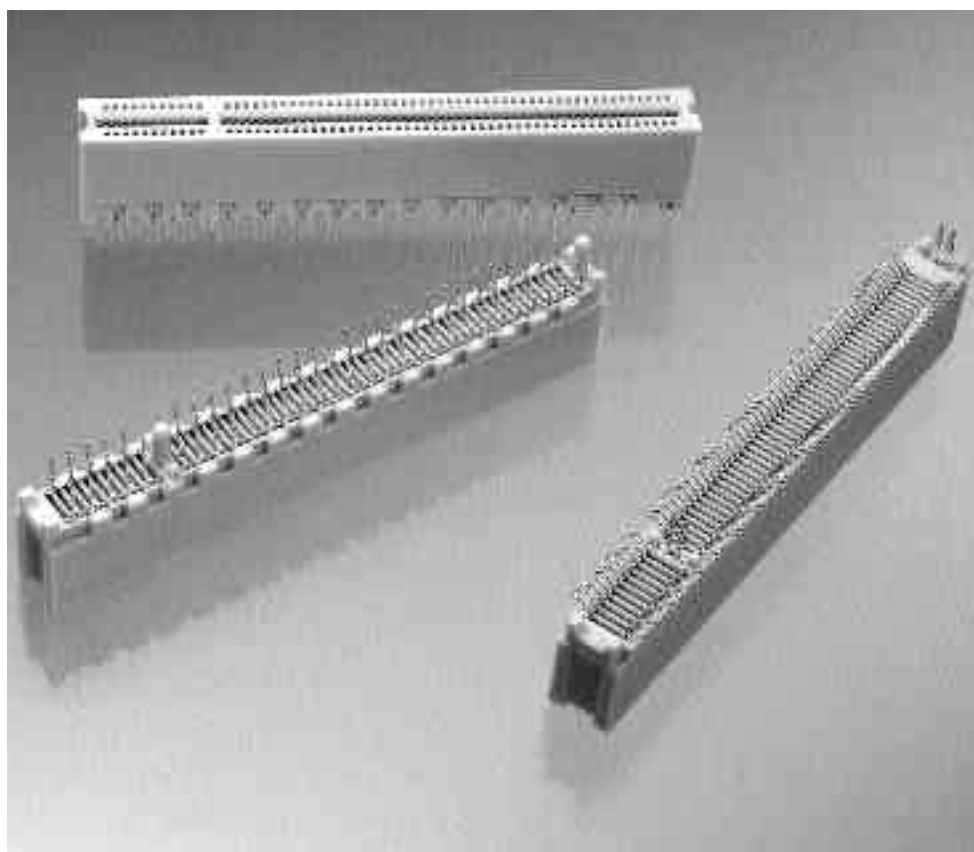
**Tail Styles**

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

## Standard Edge .050 Series PCI Card Edge Connectors

### Product Facts

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



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

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

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

### Performance Specifications:

**Durability**—Tested to 100 mating cycles

**Mating Force**—8 oz [2.22 N] max. per contact pair

**Unmating Force**—.5 oz [0.14 N] min. per contact pair

**Contact Resistance**—20 milliohms max. (initial) 30 milliohms max. (final)

**Insulation Resistance**—1000 megohms min.

**Dielectric Withstanding Voltage**—500 VAC (at sea level)

**Capacitance**—2 picofarads max.

**Current Rating**—1 ampere max.

**Voltage Rating**—203 VAC

**Thermal Shock**—-55°C to +85°C for 5 cycles

**Mixed Flowing Gas**—Class II with mated board for 20 days

### Technical Documents:

**Product Specification**  
108-14034

**Application Specification**  
114-26012

**Qualification Test Report**  
501-203

64 Bit, 5 Volt Signaling

92 Dual Positions  
with 3 Plastic Pylons or  
3 Metal Holdowns

Material and Finish:

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

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

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

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

Related Product Data:

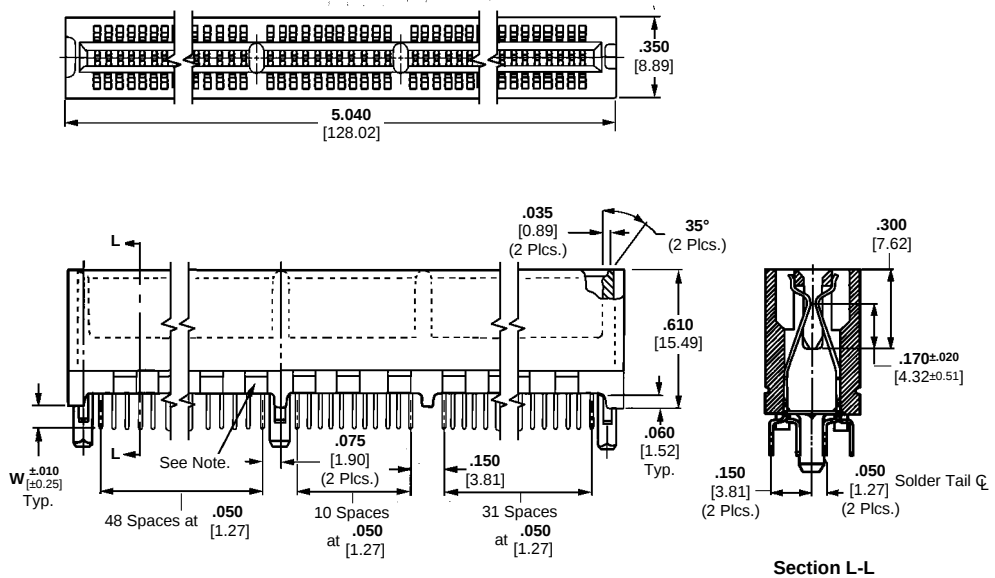
**Performance Specifications**—  
page 7

Technical Documents:

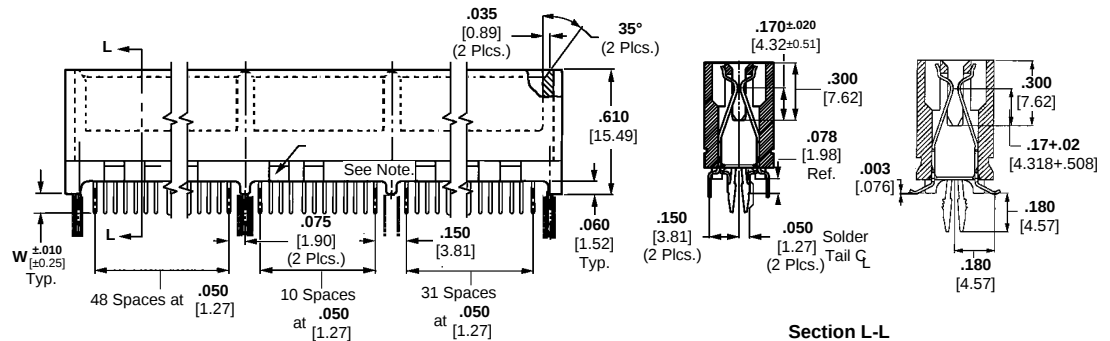
**Product Specification**  
108-14034

**Application Specification**  
114-26012

Plastic Pylons



Metal Holdowns



| W<br>(Post Length) | Contact<br>Finish | Part Numbers        |                     |
|--------------------|-------------------|---------------------|---------------------|
|                    |                   | 5 Volt              |                     |
|                    |                   | 3 Plastic<br>Pylons | 3 Metal<br>Holdowns |
| .100<br>2.54       | Plating B         | 145166-2            | —                   |
|                    | Plating C         | 145166-4            | 145169-4            |
| .125<br>3.18       | Plating C         | 145166-8            | 145169-8            |
| Surface<br>Mount   | Plating C         | —                   | 145113-1            |

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

## Standard Edge .050 Series PCI Card Edge Connectors

### 32 Bit, 3.3 and 5 Volt Signaling

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

**Material and Finish:**

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

**Housing Z**—Nylon 6/6, white

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

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

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

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

**Related Product Data:**

**Performance Specifications—**  
page 7

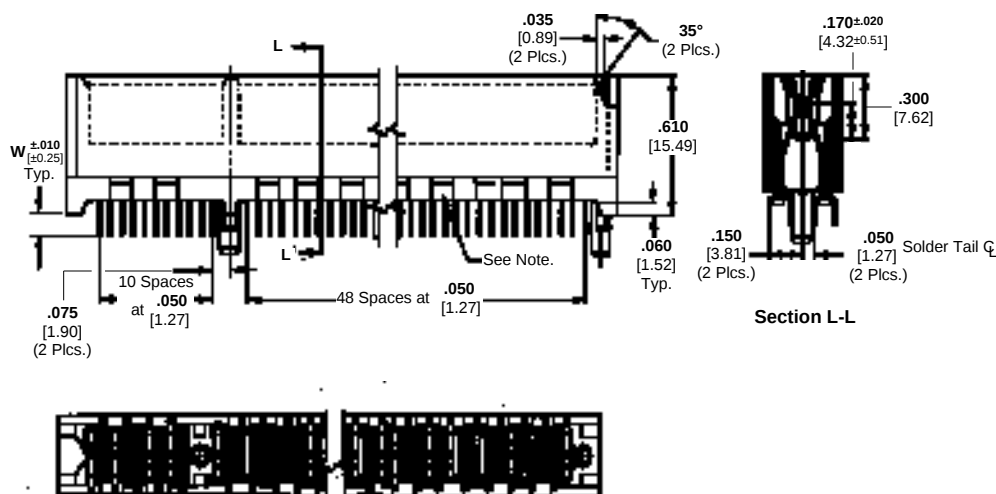
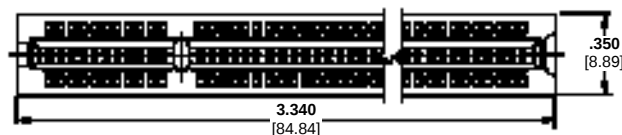
### Technical Documents:

## Product Specification

## Application Specification

114-26012

## Plastic Pylons

**Related Product Data:**

**Performance Specifications—**  
page 7

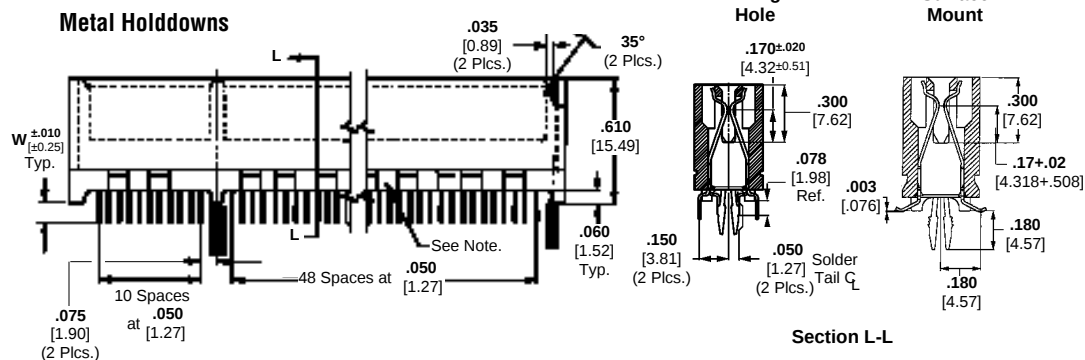
### Technical Documents:

## Product Specification

## Application Specification

114-26012

## Metal Holddowns



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

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

## Standard Edge .050 Series PCI Card Edge Connectors

## 64 Bit, 3.3 Volt Signaling

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

**Material and Finish:**

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

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

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

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

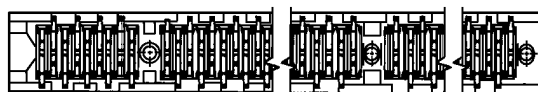
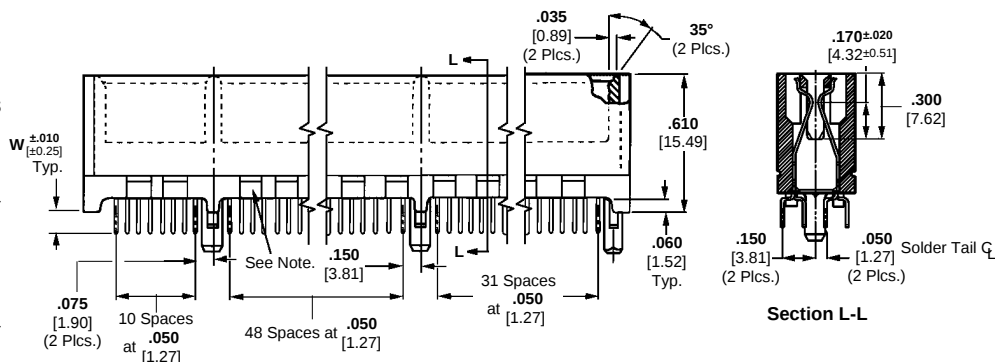
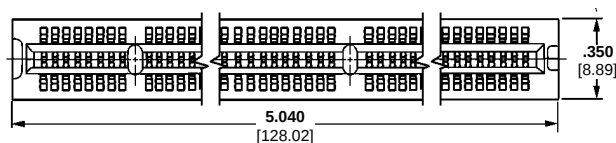
**Related Product Data:**Performance Specifications—  
page 7

### Technical Documents:

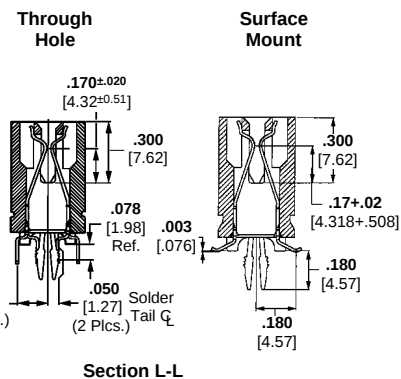
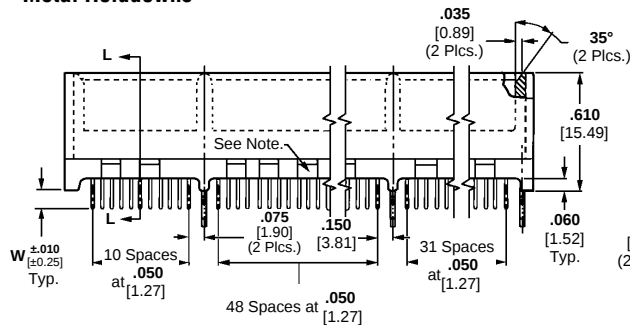
## Product Specification

**Application Specification**  
114-26012

## Plastic Pylons



## Metal Holddowns



| W<br>(Post Length) | Contact<br>Finish | Part Numbers        |                      |
|--------------------|-------------------|---------------------|----------------------|
|                    |                   | 3.3 Volt            |                      |
|                    |                   | 3 Plastic<br>Pylons | 3 Metal<br>Holddowns |
| .100<br>2.54       | Plating B         | —                   | 145168-2             |
| .125<br>3.18       | Plating C         | 145165-4            | 145168-4             |
| .125<br>3.18       | Plating C         | 145165-8            | —                    |
| Surface<br>Mount   | Plating C         | —                   | 145246-1             |

**Notes:**

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

**Product Facts**

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

**Performance Specifications:**

**Contact Current Rating\*** — 1 ampere

**Termination Resistance** —

20 milliohms max. (initial)

30 milliohms max. (final)

**Dielectric Withstanding Voltage** — 500 VAC min.

**Insulation Resistance** — 1000 megohms min.

**Mating Force** — .5 oz. [0.14 N] per contact pair

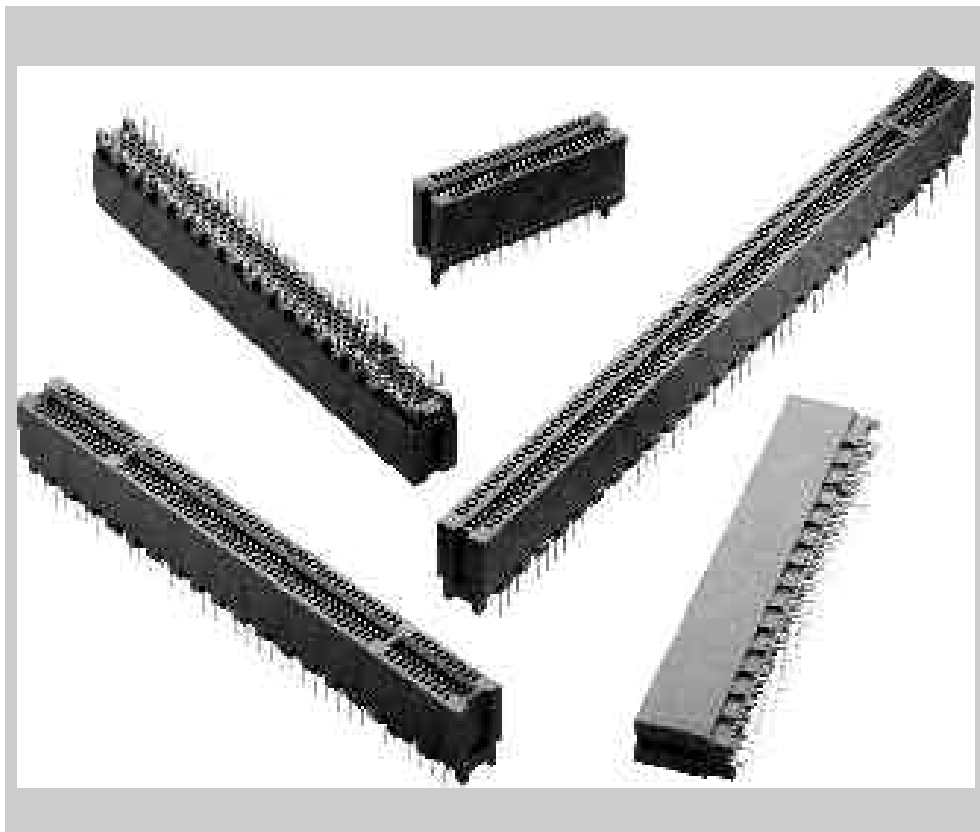
**Unmating Force** — 1 oz. [0.3 N] per contact pair

**Durability (Tested to)** — 100 mating cycles

**Application Temperature** — +215°C for 120 seconds max.

**Temperature Range** — -55°C to +85°C

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

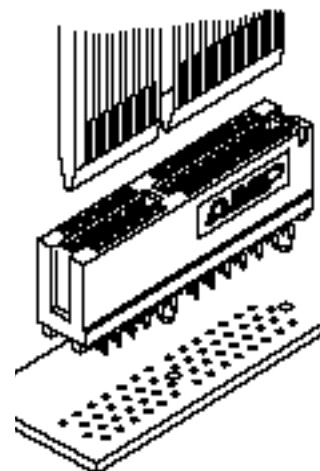
**Standard Edge .050 Series Connectors**


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

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

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

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



**High Density for DataBus Applications**

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

**Material and Finish:**

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

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

**Related Product Data:**

**Performance Specifications**—  
page 11

**Technical Documents:**

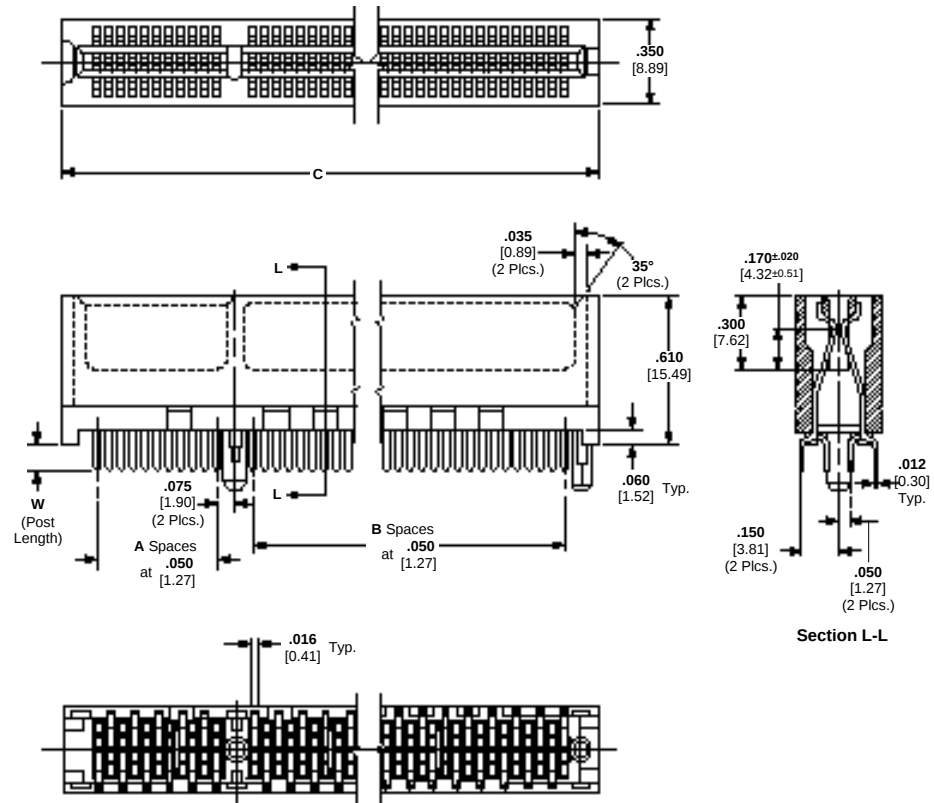
**Product Specification**

108-14034

**Application Specification**

114-26012

**Standard Edge .050 Series Connectors**



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

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

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

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

2. .125 [3.18] post length is available, consult Tyco Electronics.

**Standard Edge .050 Series Connectors**

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

**Material and Finish:**

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

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

**Related Product Data:**

**Performance Specifications**—  
page 11

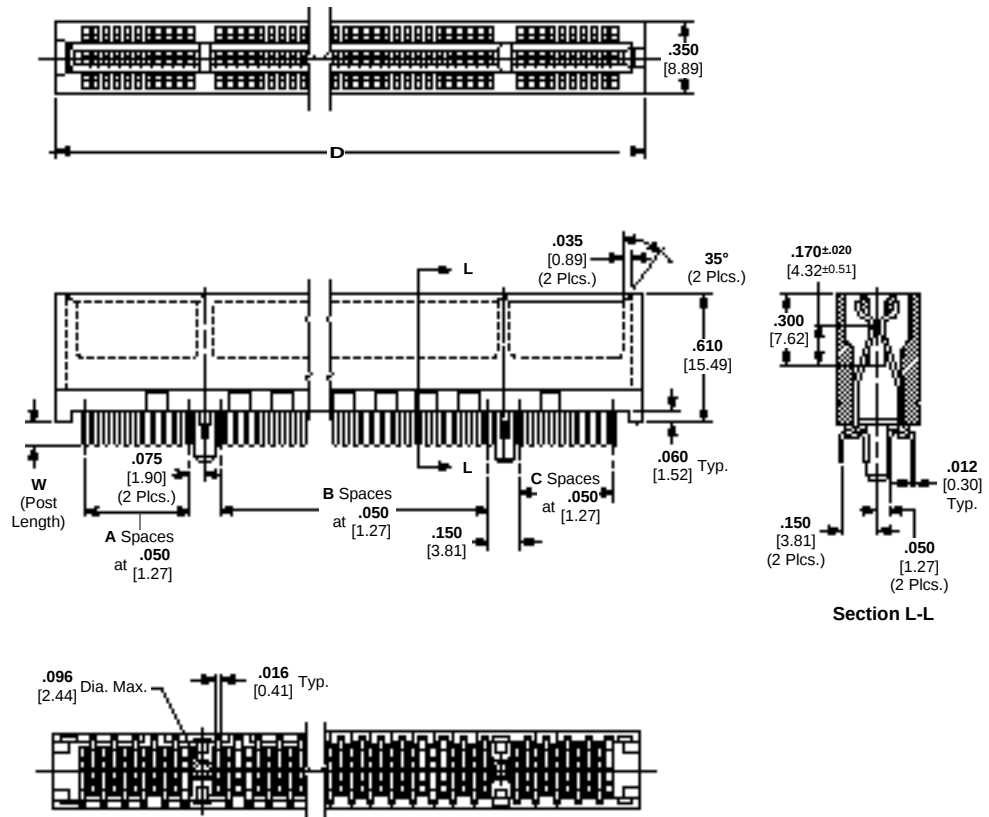
**Technical Documents:**

**Product Specification**

108-14034

**Application Specification**

114-26012



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

\*Connectors used for MCA Bus applications.

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



**Product Facts**

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

**Performance Specifications**

**Contact Rating\*:** 3 amperes continuous (UL and CSA)

**Contact Resistance:** 10 milliohms max.

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

**Voltage Rating (Sea Level):**  
.100 [2.54] centerline—1000 VAC (test)  
.125 [3.18] centerline—1500 VAC (test)  
.150 [3.81] centerline—1500 VAC (test)

**Insulation Resistance:** 5000 megohms min., after exposure to humidity

**Vibration Tolerance:** 10 to 500 hertz

**Contact Engagement Force:** 12 oz [3.3 N] average per pair with .062 [1.57] PC board

**Contact Separation Force:** 2 oz [0.6 N] average per pair with .062 [1.57] PC board

**Humidity Tolerance:** 90%-95% for 96 hours

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



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

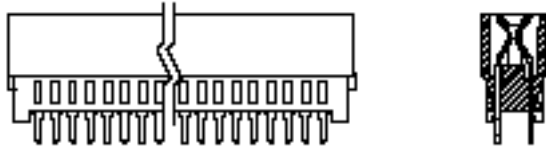
Tyco Electronics offers Standard Edge II Connectors with or without mounting ears, for rack mounting and soldering. Contacts are arranged on .100 [2.54] centers, .125 [3.18] centers, .150 [3.81] centers, .200 [5.08] row-to-row; and .250 [6.35] row-to-row.

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

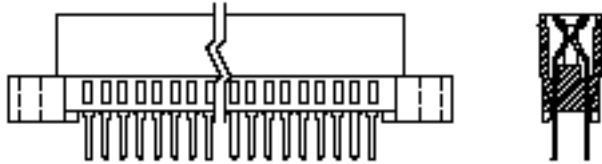
Card extenders with contacts on .100 [2.54] and .125 [3.18] centers also are available.

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

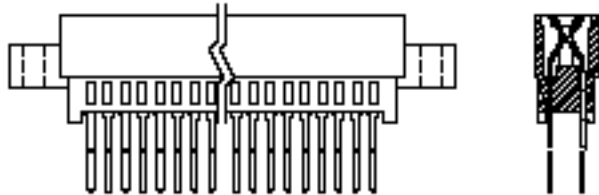
**.100 [2.54] and .125 [3.18] Centerline Solder Posts  
without Mounting Ears**  
Pages 17 and 18



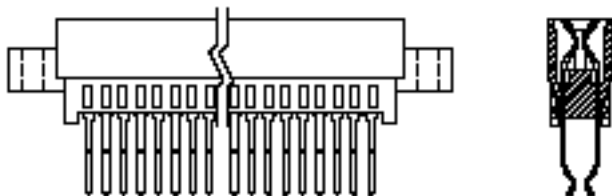
**.100 [2.54] and .125 [3.18] Centerline Solder Posts  
with Low and Mid-High Mounting Ears**  
Page 20



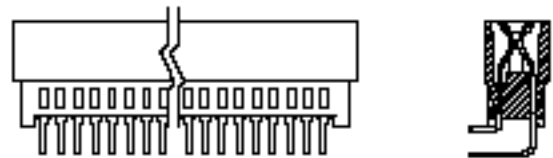
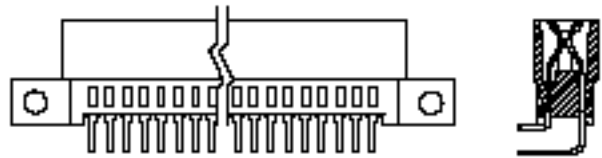
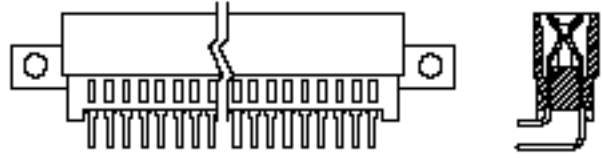
**.100 [2.54] and .125 [3.18] Centerline Wrap-Type Posts  
with Mid-High Mounting Ears**  
Page 21



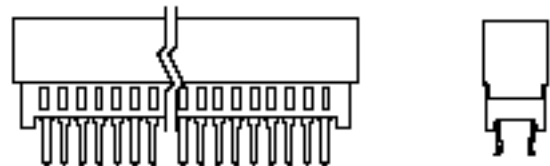
**.100 [2.54] and .125 [3.18] Centerline  
Card Extenders**  
Page 22



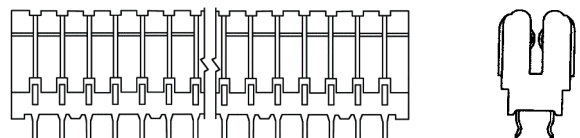
**.100 [2.54] Centerline Right-Angle Posts  
with Low and No Mounting Ears**  
Page 23



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



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



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

**Material and Finish:**

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

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

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

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

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

**Technical Documents:**

**Product Specification**

108-9039

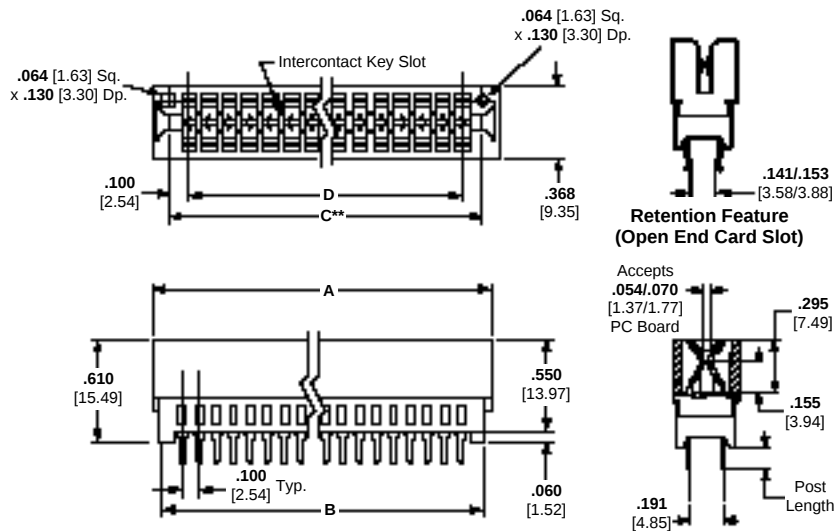
**Intercontact Keying Plug**

**Material:**

Natural color polyester



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



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

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

\*\*C dimension is card slot length.

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

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

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

**Standard Edge II Connectors (Continued)**

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

**Material and Finish:**

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

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

**Related Product Data:**

**Performance Specifications**—  
page 15

**PC Board Hole Layout**—page 26

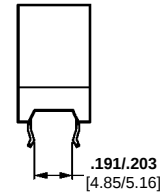
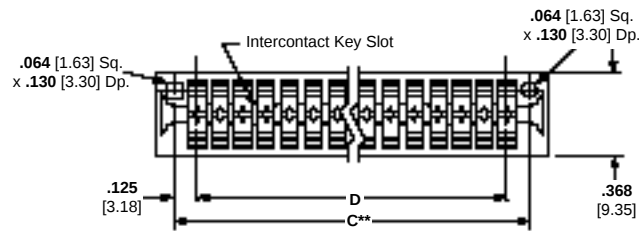
**PC Board Edge Pattern**—page 27

**Special Application**—page 96

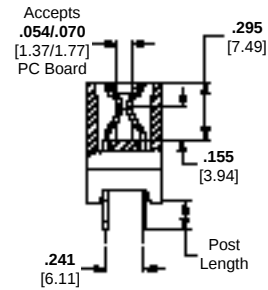
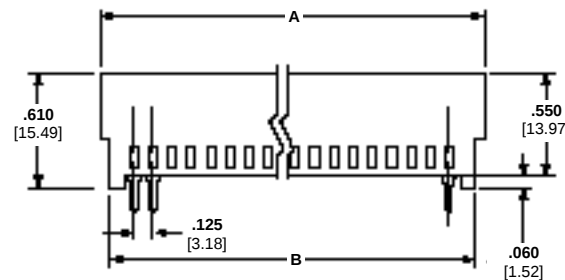
**Technical Documents:**

(pages 186, 187):

Product Specification  
108-9039



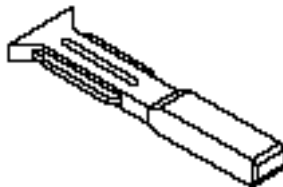
Retention Feature



**Intercontact Keying Plug**

**Material:**

Natural color polyester



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

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

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

\*\*C dimension is card slot length.

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

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

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

**Material and Finish:**

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

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

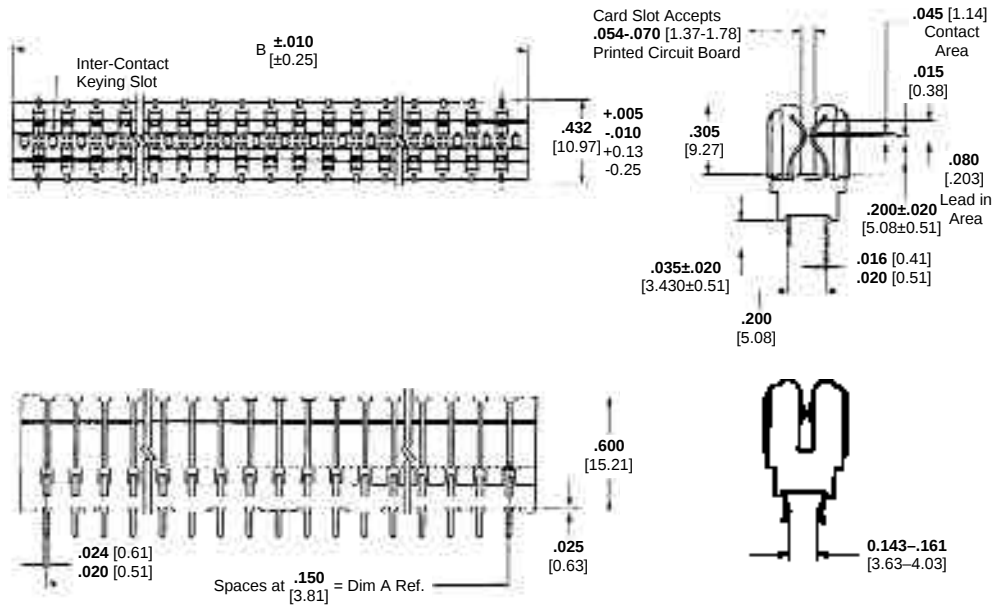
**Related Product Data:**

**Performance Specifications**—  
page 15

**PC Board Hole Layout**—page 26

**PC Board Edge Pattern**—page 27

**Special Application**—page 96



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

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

\*\*C dimension is card slot length.

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

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

**Material and Finish:**

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

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

**Related Product Data:**

**Performance Specifications**—  
page 15

**PC Board Hole Layout**—page 26

**PC Board Edge Pattern**—page 27

**Special Application**—page 96

**Technical Documents:**

(pages 186, 187):

Product Specification  
108-9039

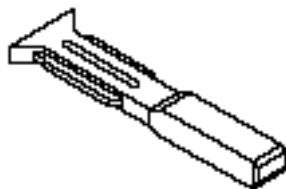
**Intercontact Keying Plugs**

**Material:**

Natural color polyester

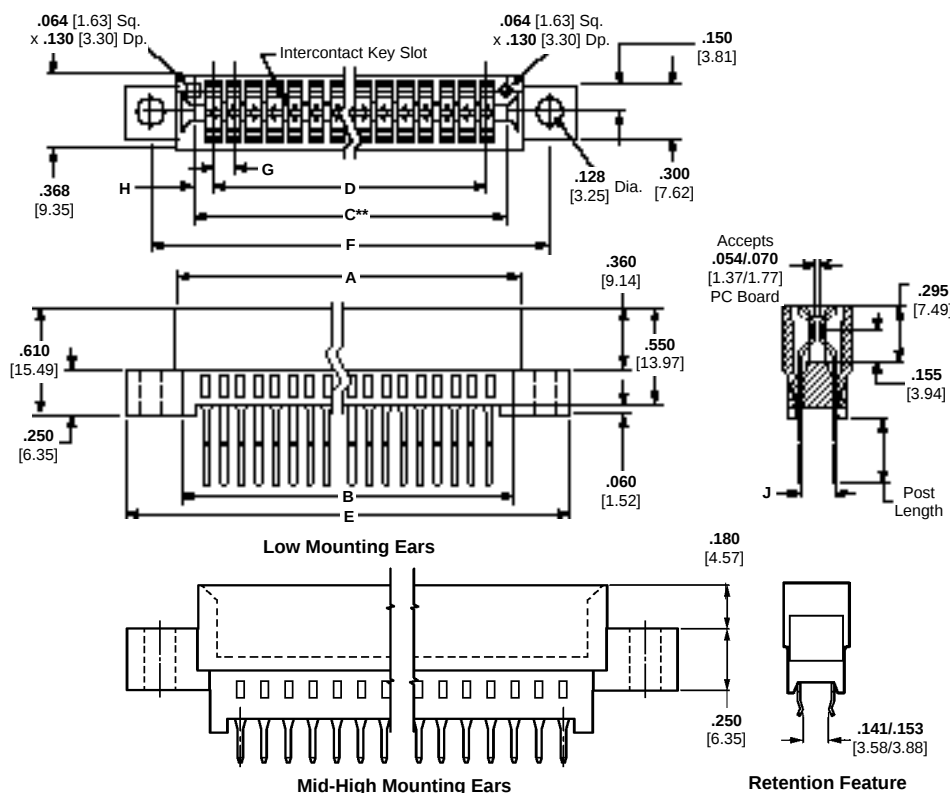


**Part No. 650025-2**  
(.100 [2.54] Centerline)



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

**Standard Edge II Connectors (Continued)**



**.100 [2.54] Centerline**

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

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

\*\*C dimension is card slot length.

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

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

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

**.125 [3.18] Centerline**

| No. of<br>Dual<br>Positions | Dimensions      |                 |                 |                 |                 |                 |              |              |              | Post<br>Length* | Part<br>Numbers                       |
|-----------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------------|--------------|--------------|-----------------|---------------------------------------|
|                             | A               | B               | C**             | D               | E               | F               | G            | H            | J            |                 |                                       |
| 6                           | 1.035<br>26.29  | .875<br>22.22   | .875<br>22.22   | .625<br>15.88   | 1.555<br>39.50  | 1.295<br>32.89  | .125<br>3.18 | .125<br>3.18 | .241<br>6.11 | .125            | 1-531341-3                            |
| 28                          | 3.785<br>96.14  | 3.505<br>89.03  | 3.625<br>92.08  | 3.375<br>85.73  | 4.305<br>109.35 | 4.045<br>102.74 | .125<br>3.18 | .125<br>3.18 | .241<br>6.11 | .187            | 1-530842-7                            |
| 50                          | 6.535<br>165.99 | 6.255<br>158.88 | 6.375<br>161.93 | 6.125<br>155.58 | 7.055<br>179.20 | 6.795<br>172.59 | .125<br>3.18 | .125<br>3.18 | .241<br>6.11 | .125            | 3-531341-0 <sup>2</sup><br>1-530842-1 |

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

\*\*C dimension is card slot length.

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

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

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

**Standard Edge II Connectors (Continued)**

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

**Material and Finish:**

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

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

**Related Product Data:**

**Performance Specifications**—  
page 15

**PC Board Hole Layout**—page 26

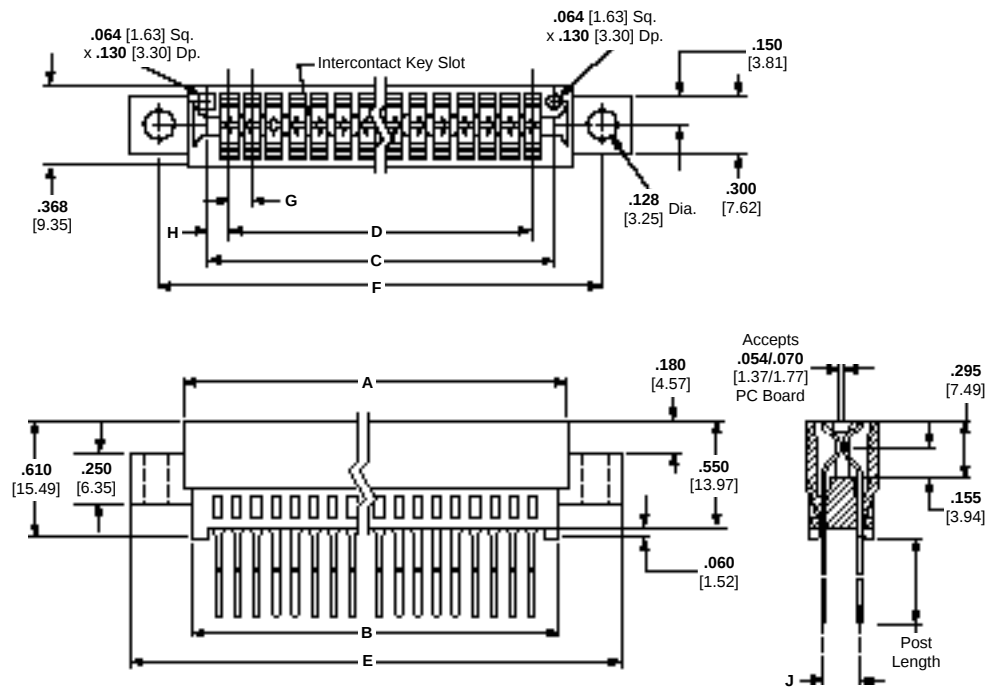
**PC Board Edge Pattern**—page 27

**Special Application**—page 96

**Technical Documents:**

(pages 186, 187):

Product Specification  
108-9039



**Intercontact Keying Plugs**

**Material:**

Natural color polyester



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

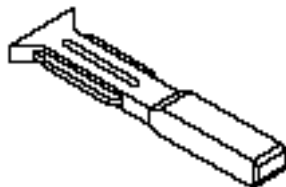
**.100 [2.54] Centerline**

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

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

\*\*C dimension is card slot length.

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



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

**.125 [3.18] Centerline**

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

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

\*\*C dimension is card slot length.

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

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

### Material and Finish:

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

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

### Related Product Data:

**Performance Specifications**—

page 15

**PC Board Hole Layout**—page 26

**PC Board Edge Pattern**—page 27

### Technical Documents:

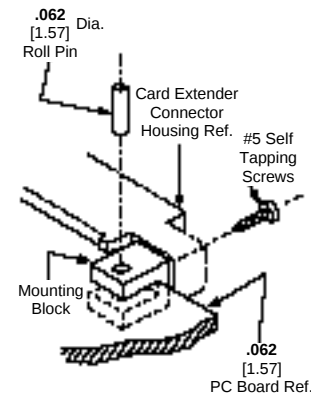
(pages 186, 187):

Product Specification  
108-9039

### Mounting Block

#### Material:

Natural color nylon



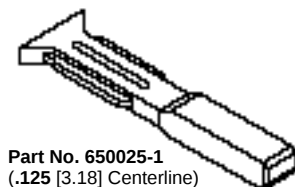
#### Kit Part No. 531250-4

Each kit includes 2 mounting blocks, 2 self tapping screws, #5 x .437 [11.10] and 2 roll pins, .075 x .250 [1.57 x 6.35]

### Intercontact Keying Plugs

#### Material:

Natural color polyester

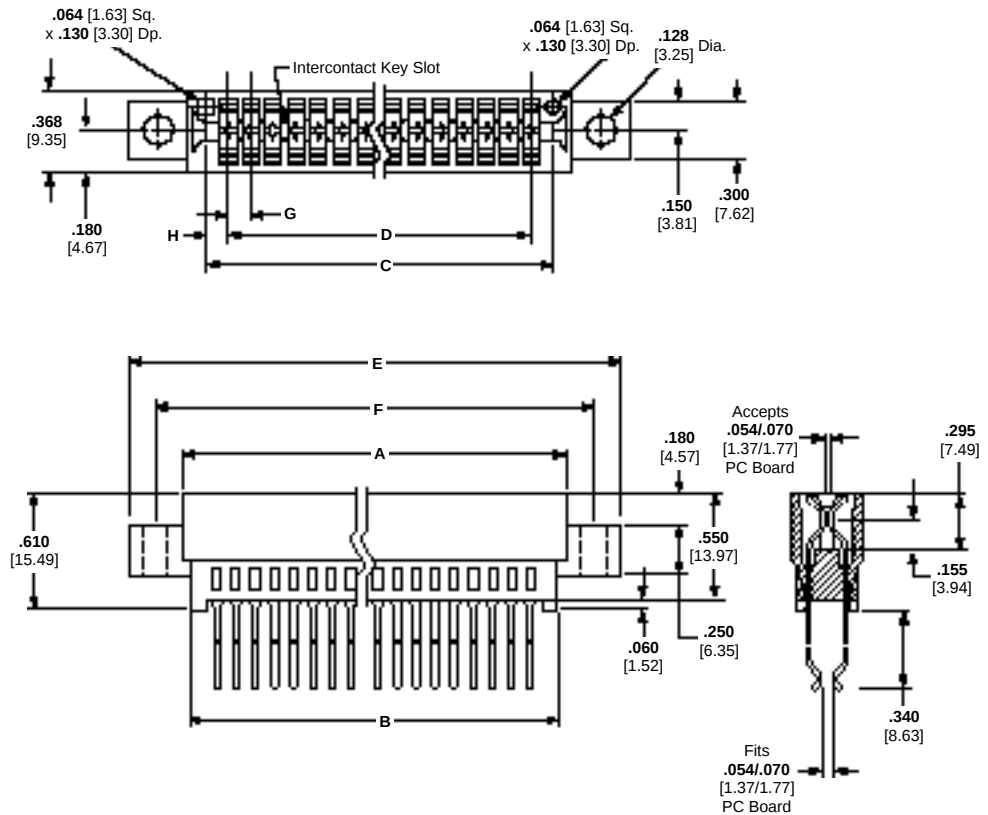


**Part No. 650025-1**  
(.125 [3.18] Centerline)



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

## Standard Edge II Connectors (Continued)



### .100 [2.54] Centerline

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

\*C dimension is card slot length.

†No mounting ears.

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

### .125 [3.18] Centerline

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

\*C dimension is card slot length.

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

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

### Material and Finish:

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

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

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

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

### Related Product Data:

**Performance Specifications**—  
page 15

### Technical Documents:

**Product Specification**  
108-9039

## Intercontact Keying Plug

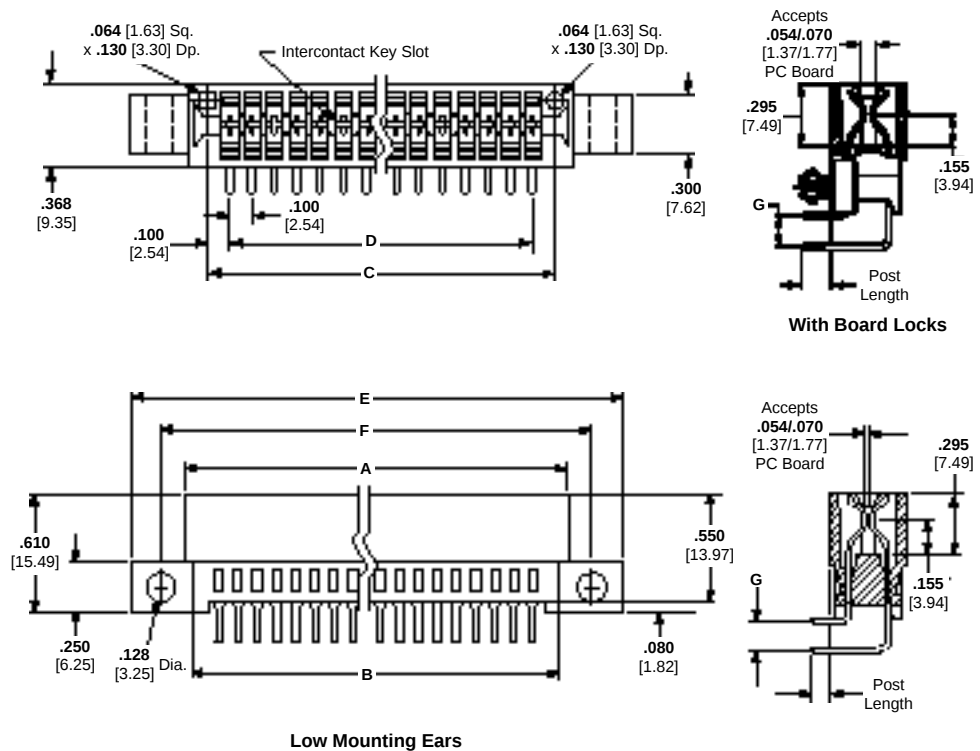
### Material:

Natural color polyester



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

## Standard Edge II Card Edge Connectors



Low Mounting Ears

### Low Mounting Ears

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

\*C dimension is card slot length.

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

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

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

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

### No Mounting Ears

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

\*C dimension is card slot length.

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

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

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

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

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

**Material and Finish:**

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

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

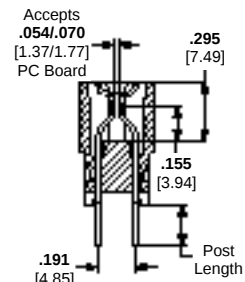
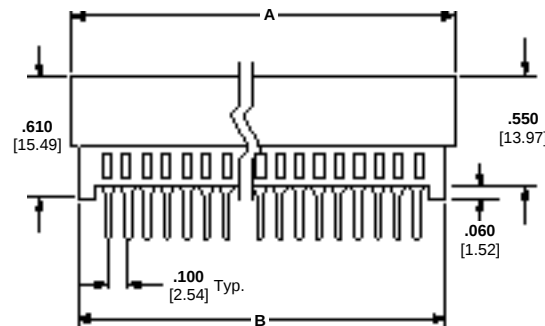
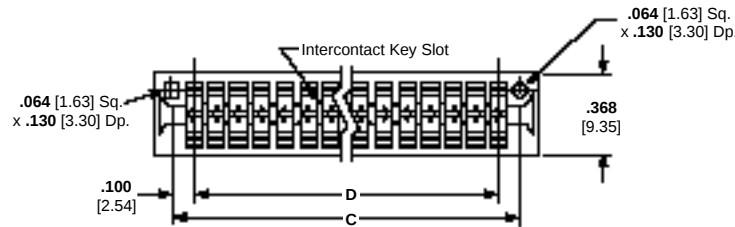
**Plating A**—.000030 [0.00076] gold in  
contact area, tin on posts, with entire  
contact nickel underplated

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

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

**Technical Documents:**

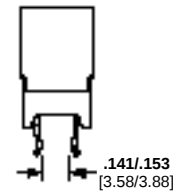
**Product Specification**  
108-9039



**Intercontact Keying Plug**

**Material:**

Natural color polyester



Retention Feature

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

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

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

\*\*C dimension is card slot length.

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

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

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

**Material and Finish:**

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

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

**Technical Documents:**

**Product Specification**  
108-9039

**Intercontact Keying Plug**

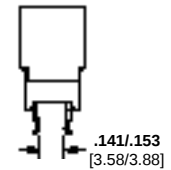
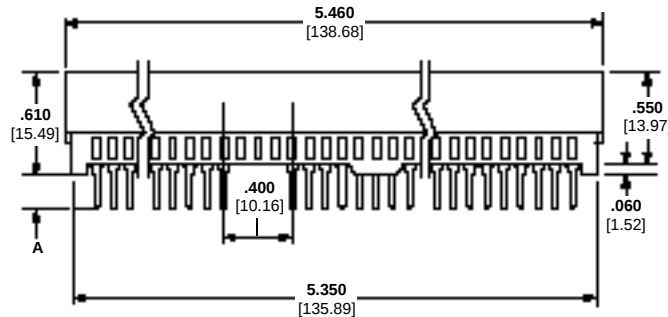
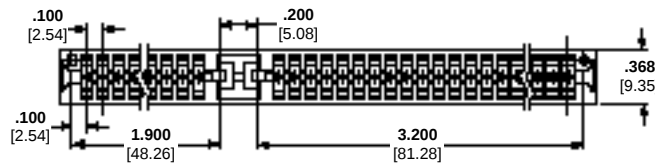
**Material:**

Natural color polyester

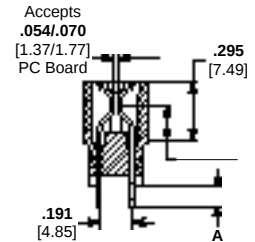


**Part Number 650025-2**  
(.100 [2.54] Centerline)

**Standard Edge II Card Edge Connectors**



**Retention Feature**



**Solder Posts**

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

<sup>1</sup> Housing material is high temperature glass-filled polyester, gray.

<sup>2</sup> Contact area is gold flash.

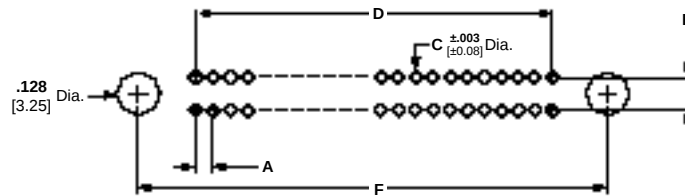
**Notes:** 1. Card slot length is 5.300 [134.62].

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

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

Recommended  
PC Board Hole Layouts

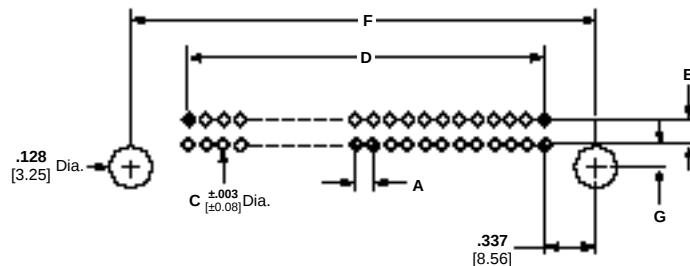
Vertical Post Connectors



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

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

Right-Angle Post Connectors



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

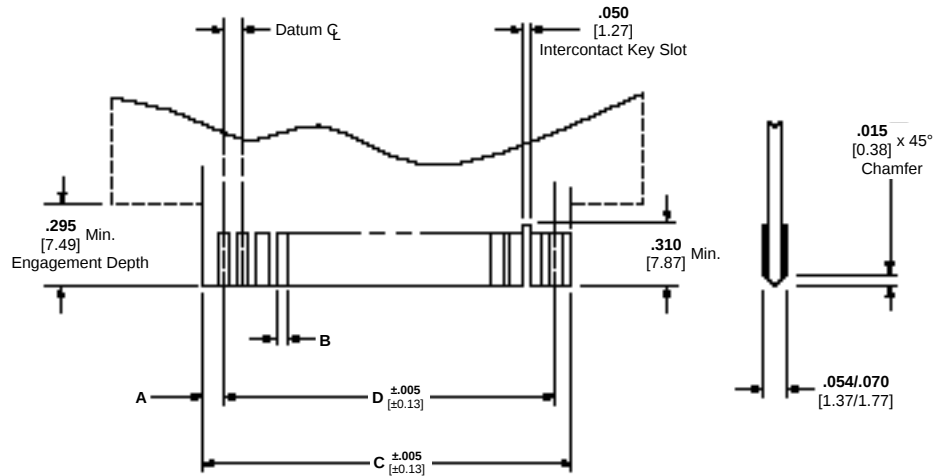
- Notes:**
1. Refer to page 23 for **D** and **F** Dimensions and Dual Positions.
  2. Refer to page 23 for **D** Dimensions and Dual Positions.
  3. No Mounting Ears, Dimensions do not apply.

**Recommended  
PC Board Edge Pattern**

Card Edge Connectors  
(Solder Type, Board-to-Board)

**Standard Edge II Connectors (Continued)**

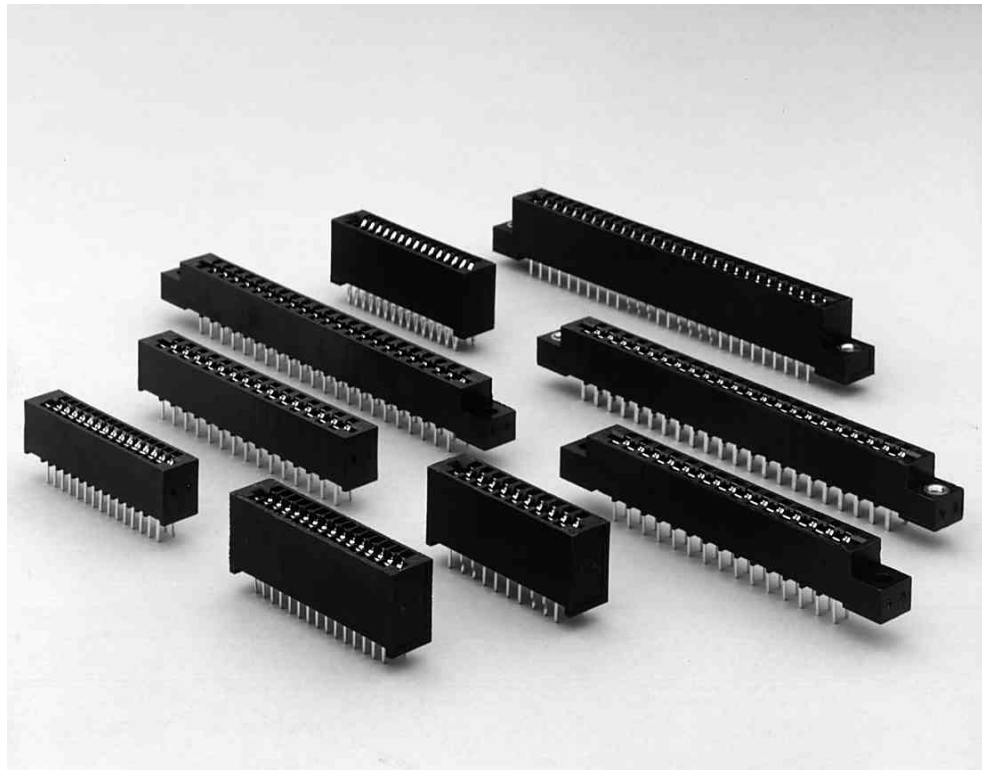
**PC Board Edge Pattern for  
.100 [2.54] and .125 [3.18]  
Centerline**



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

**Product Facts**

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

**Cantilever Series Card Edge Connectors**

**Description**

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

**Design Advantages**

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

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

**Cantilever Beam**

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

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

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

## Product Facts

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

## Physical Properties:

**Insulation Resistance**—5000 megohms minimum.

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

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

**Color**—Black

**Contacts**—High strength copper alloy.

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

## Electrical Properties:

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

**Current Rating**—3 Amperes

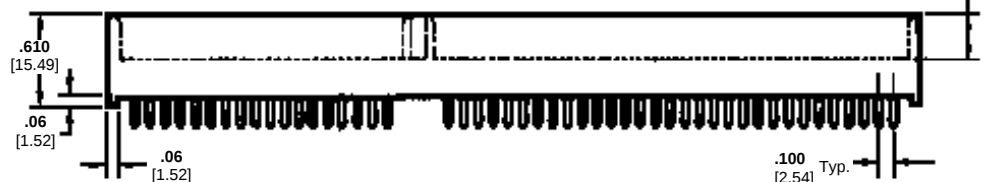
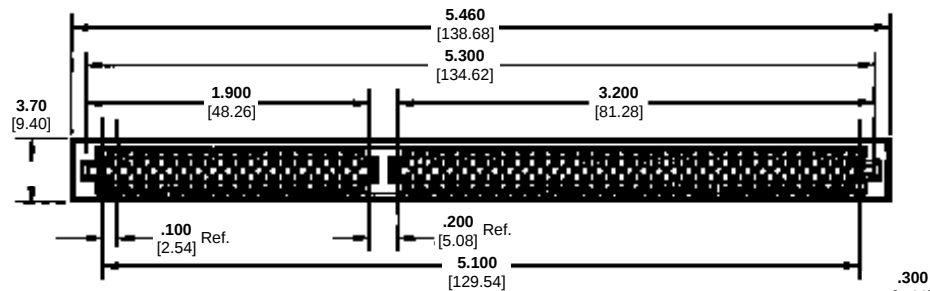
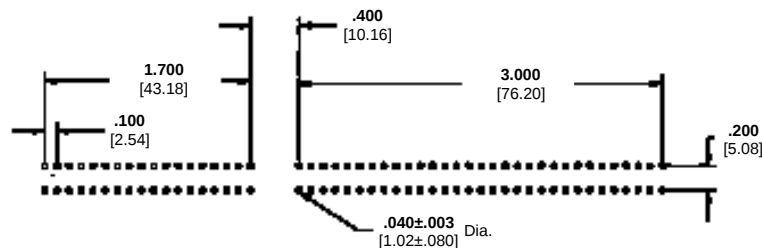
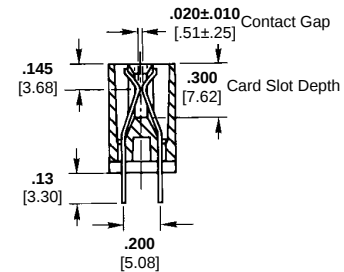
**Initial Contact Resistance**—10 milliohms

## Environmental Properties:

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

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

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



## Ordering Information

### Acquired Part Number

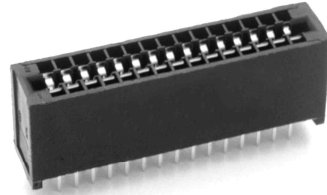
**C8D52DS29C1M191** — Insulator with molded-in polarizing key with card guide chamber. The card slot lengths are 1.900 [48.26] and 3.200 [81.28]. Includes retention tails for .062 [1.57] PCB to hold connectors securely during handling.

**C8D52DS29C1M195** — Same as above. No retention tails.

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

**Product Facts**

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



**Physical Properties:**

**Insulation Resistance**—5000 megohms minimum.

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

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

**Color**—Black

**Contacts**—High strength copper alloy.

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

**Electrical Properties:**

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

**Current Rating**—3 Amperes

**Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

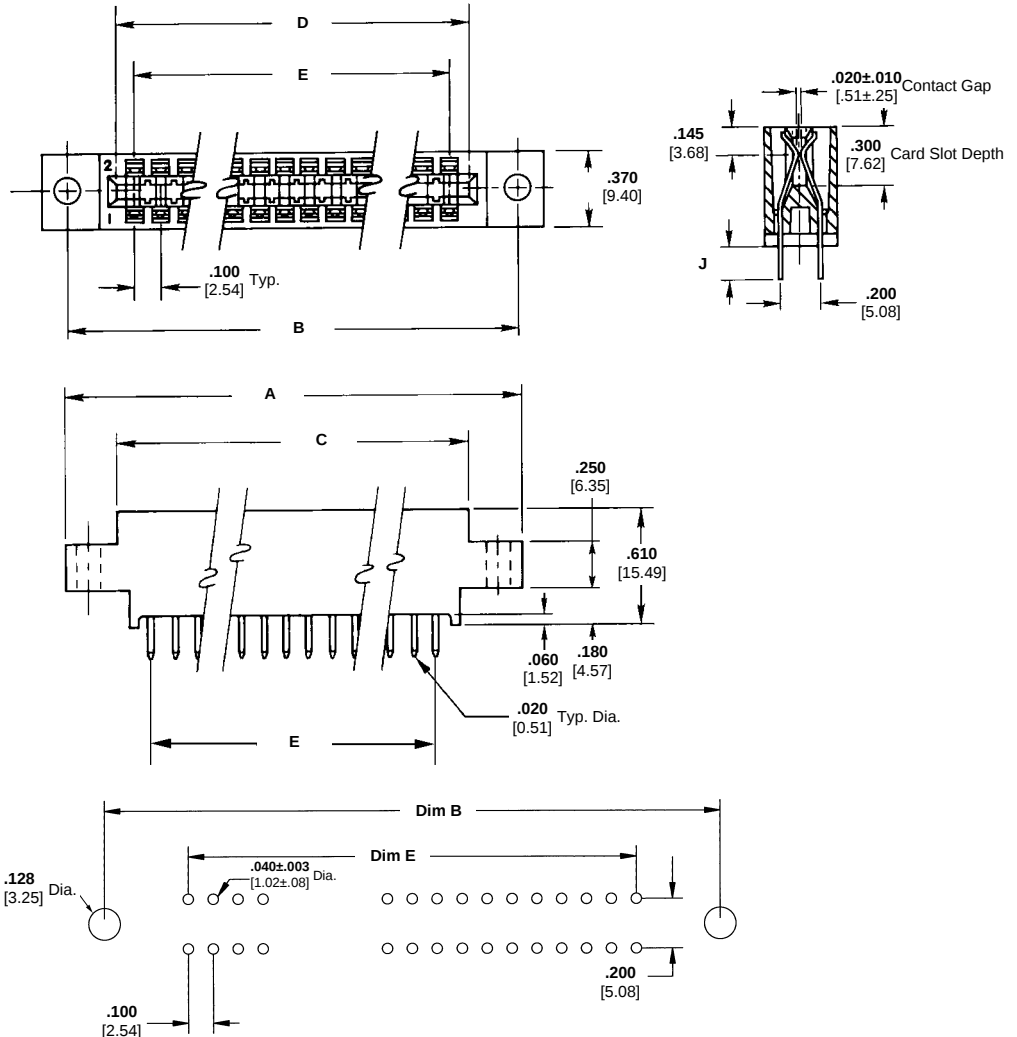
**Operating Temperature**—-55°C to +125°C

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

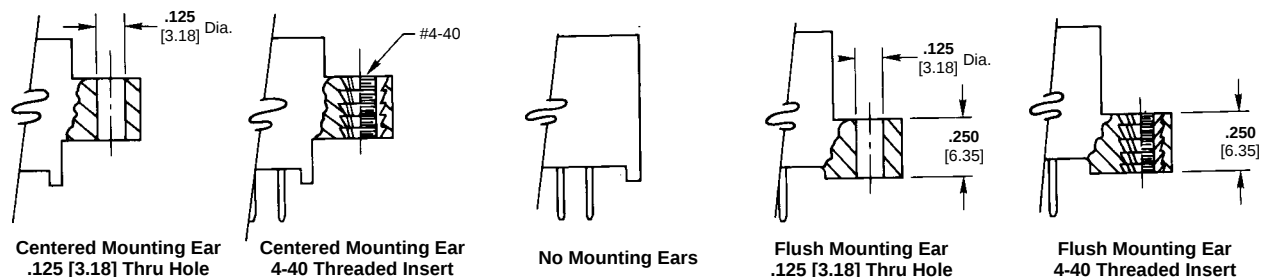
**Vibration**—MIL-STD-202 method 204

**Related Product Data:**

**Daughter Card Edge Pattern**—page 57



**Mounting Styles**



## Ordering Information

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

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

Ordering Information

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

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

**Product Facts**

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

**Physical Properties:**

**Insulation Resistance**—5000 megohms minimum.

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

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

**Color**—Black

**Contacts**—High strength copper alloy.

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

**Electrical Properties:**

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

**Current Rating**—3 Amperes

**Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

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

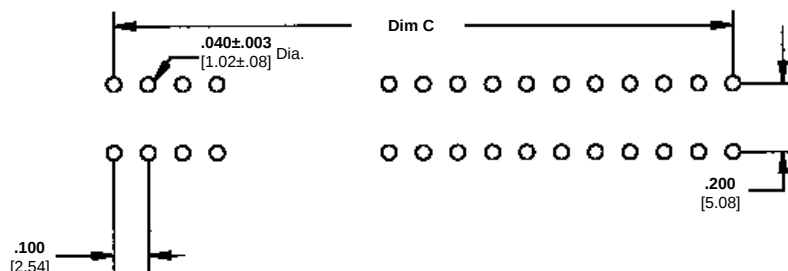
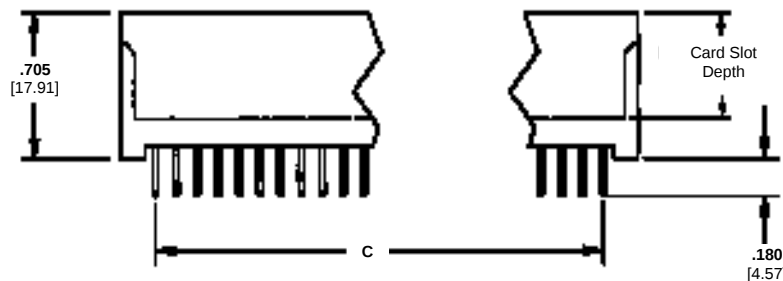
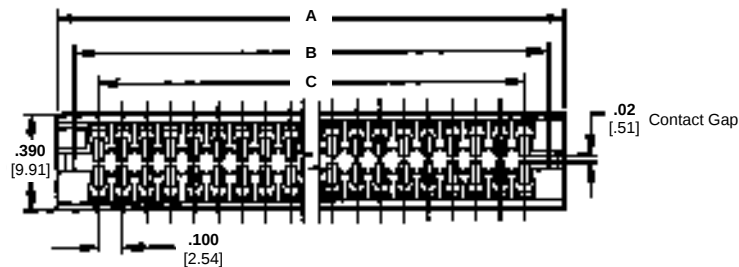
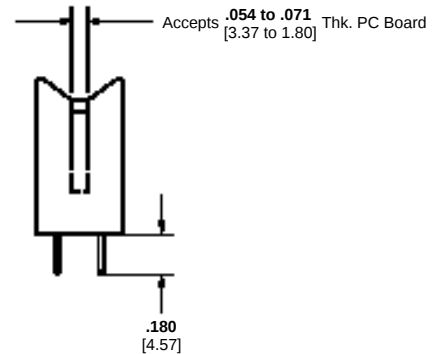
**Temperature Cycling**—MIL-STD-202 method 107

**Vibration**—MIL-STD-202 method 204

**Related Product Data**

**Daughter Card Edge Pattern**—page 57

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



**Ordering Information**

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

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

# Product Facts

■ Recognized under the  
Component Program  
of Underwriters  
Laboratories Inc.,  
File No. E60980



■ Certified  
by Canadian  
Standards  
Association,  
File No. LR49571



## Physical Properties:

**Insulation Resistance**—  
5000 megohms minimum.

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

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

**Color**—Black

**Contacts**—High strength copper alloy.

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

## Electrical Properties:

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

**Current Rating**—3 Amperes

**Initial Contact Resistance**—  
10 milliohms

## Environmental Properties:

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

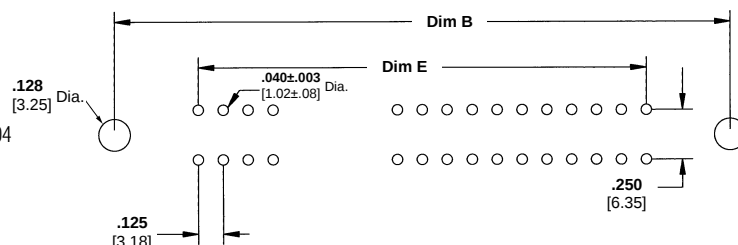
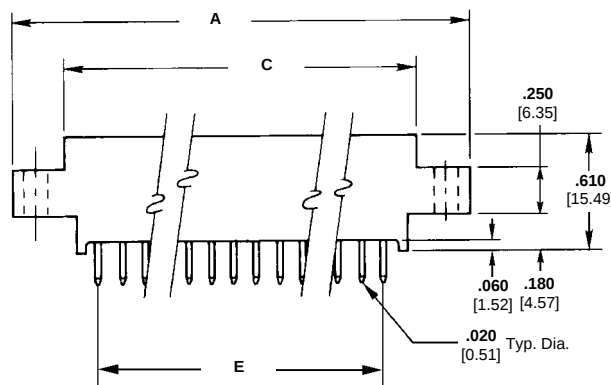
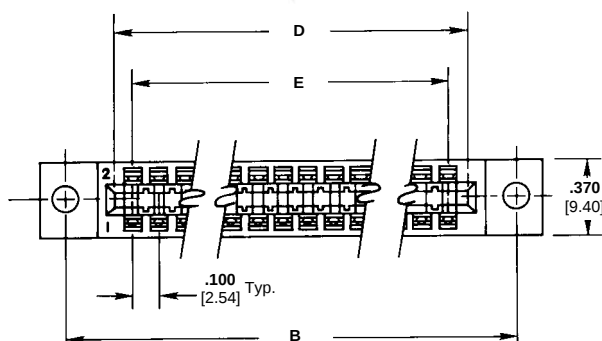
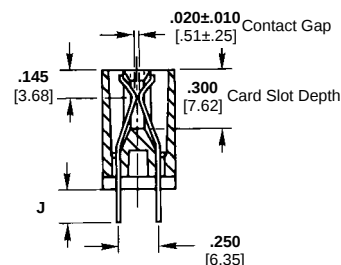
**Temperature Cycling**—  
MIL-STD-202 method 107

**Vibration**—MIL-STD-202 method 204

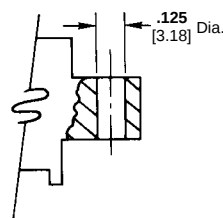
## Related Product Data:

**Daughter Card Edge Pattern**—  
page 57

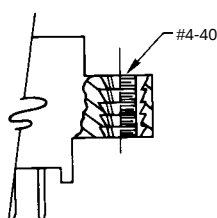
## Cantilever Series Connectors .125 x .250 [3.18 x 6.35] Centerline, Dip Solder Tails, .300 [7.62] Card Slot Depth



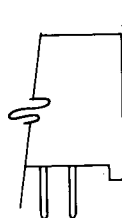
## Mounting Styles



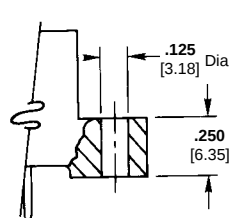
Centered Mounting Ear  
.125 [3.18] Thru Hole



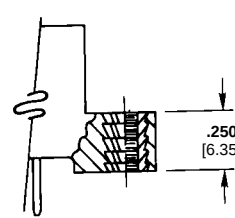
Centered Mounting Ear  
4-40 Threaded Insert



No Mounting Ears



Flush Mounting Ear  
.125 [3.18] Thru Hole



Flush Mounting Ear  
4-40 Threaded Insert

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

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

Ordering Information

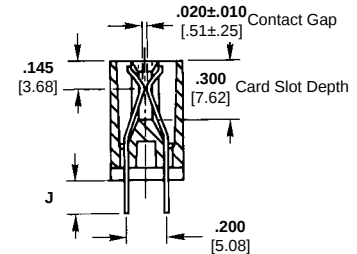
.125" [3.18] Centerline / .250" [6.35] Row-to-Row

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

**Product Facts**

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

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



**Physical Properties:**

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

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

**Electrical Properties:**

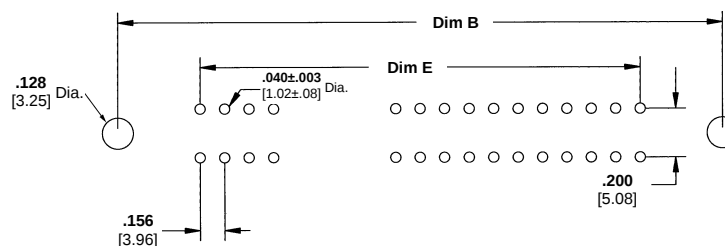
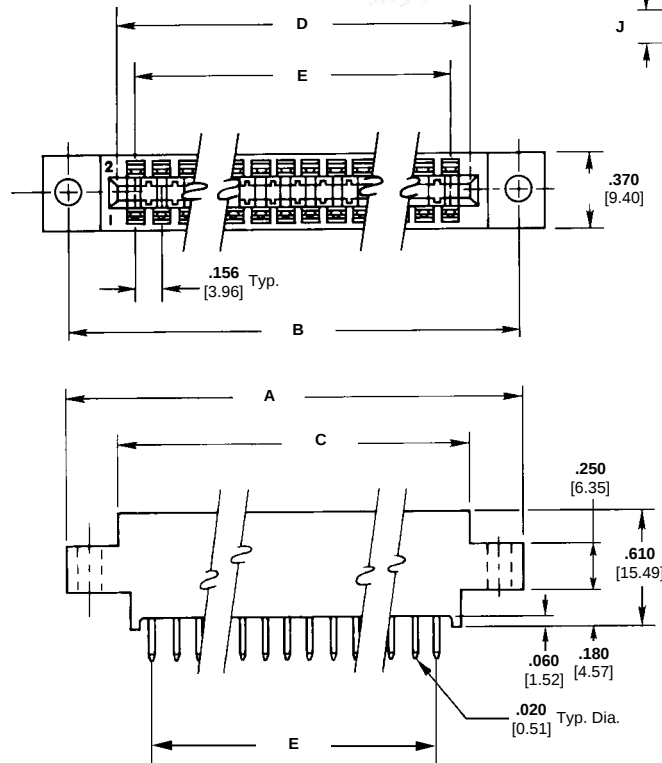
**Operation Voltage**—1500 VDC (sea level)  
**Current Rating**—3 Amperes  
**Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

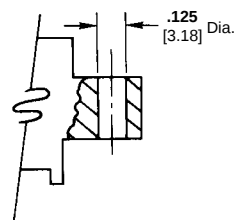
**Operating Temperature**—-55°C to +125°C  
**Temperature Cycling**—MIL-STD-202 method 107  
**Vibration**—MIL-STD-202 method 204

**Related Product Data:**

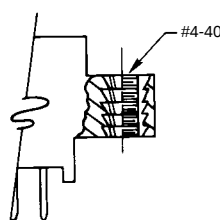
**Daughter Card Edge Pattern**—page 57



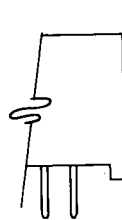
**Mounting Styles**



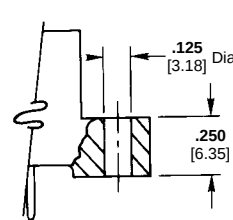
Centered Mounting Ear  
.125 [3.18] Thru Hole



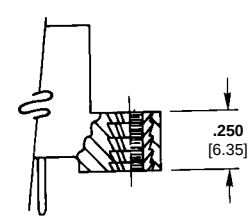
Centered Mounting Ear  
4-40 Threaded Insert



No Mounting Ears



Flush Mounting Ear  
.125 [3.18] Thru Hole



Flush Mounting Ear  
4-40 Threaded Insert

## Ordering Information

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

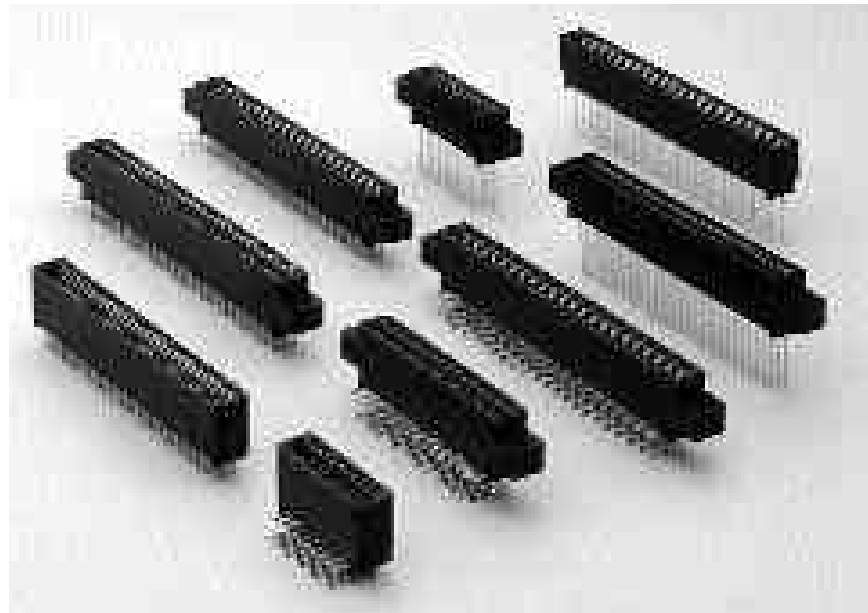
| No. of<br>Dual<br>Readout<br>Positions | Dimensions      |                 |                 |                 |                 | Mounting Ear Options                                  |                                                     |                        |                                 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

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

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

### Product Facts

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



Bifurcated contact design provides maximum reliability

### Description/Application

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

### Modified Bellows

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

**Product Facts**

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



**Physical Properties:**

**Insulation Resistance**—5000 megohms minimum.

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

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

**Color**—Black

**Contacts**—High strength copper alloy.

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

**Electrical Properties:**

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

**Current Rating**—3 Amperes

**Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

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

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

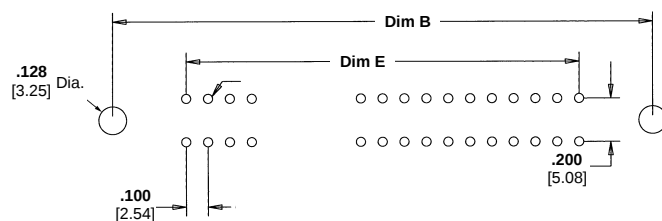
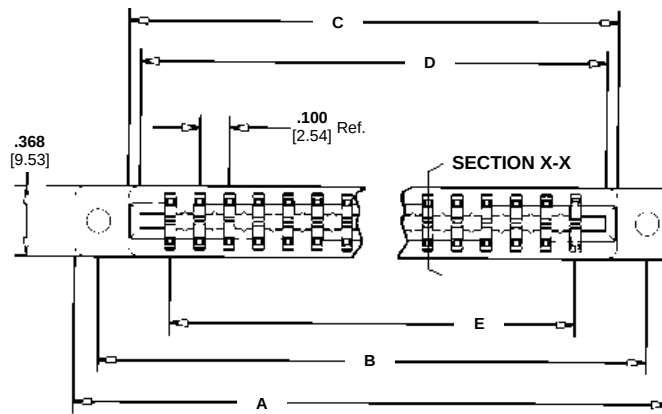
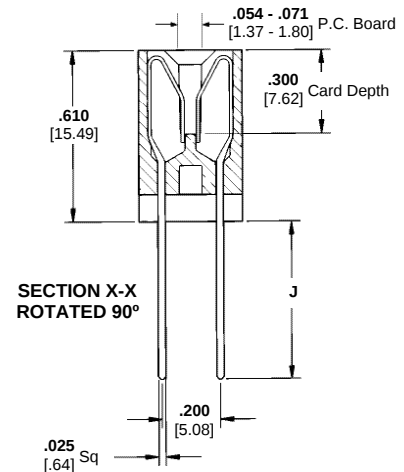
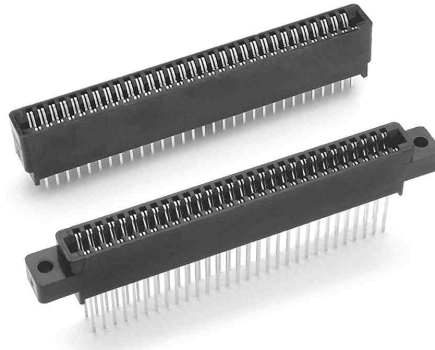
**Vibration**—MIL-STD-202 method 204

**Related Product Data:**

**Polarization Key**—page 57

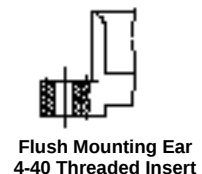
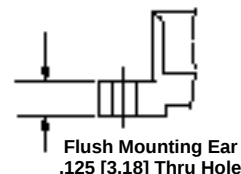
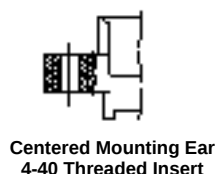
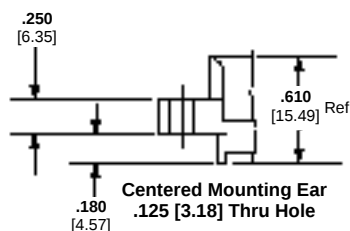
**Daughter Card Edge Pattern**—page 57

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



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

**Mounting Styles**



Ordering Information

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

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

Ordering Information

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

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

**Product Facts**

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

**Physical Properties:**

**Insulation Resistance**—5000 megohms minimum.

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

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

**Color**—Black

**Contacts**—High strength copper alloy.

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

**Electrical Properties:**

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

**Current Rating**—3 Amperes

**Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

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

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

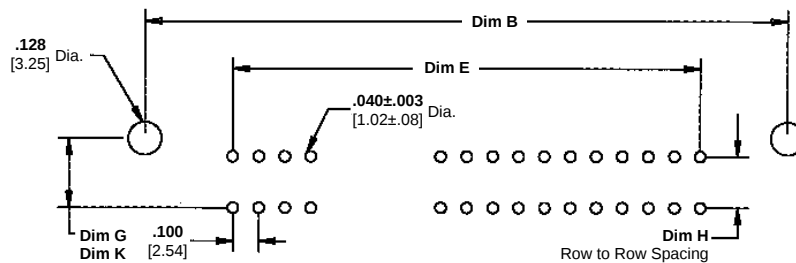
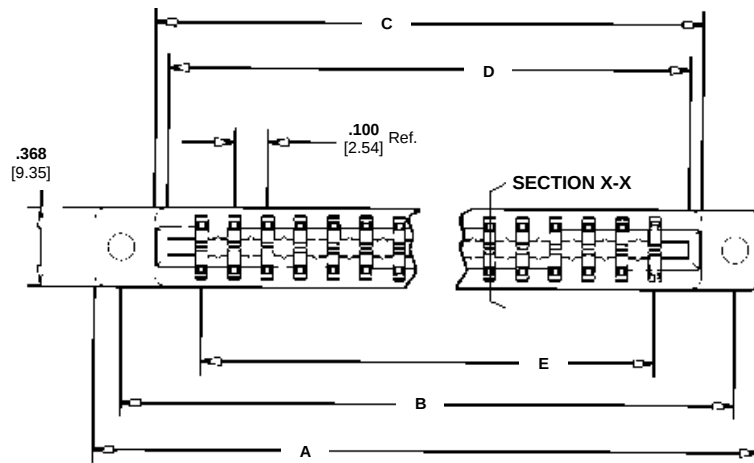
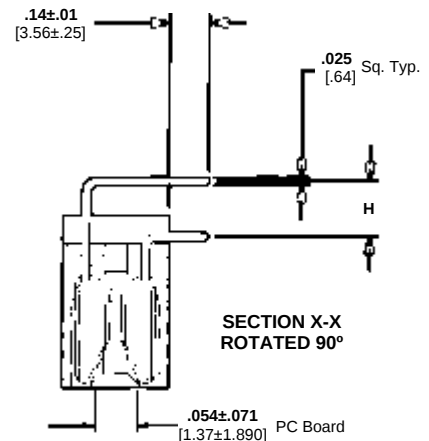
**Vibration**—MIL-STD-202 method 204

**Related Product Data:**

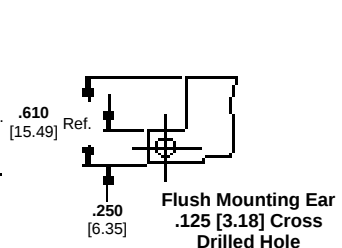
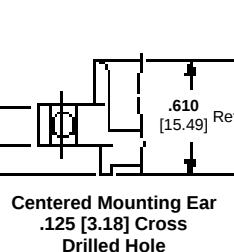
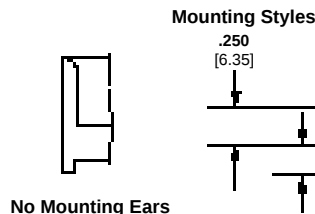
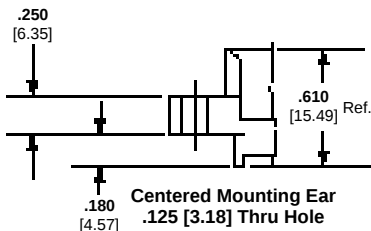
**Polarization Key**—page 57

**Daughter Card Edge Pattern**—page 57

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



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



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

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

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

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

*Electronics*

**Product Facts**

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

**Physical Properties:**

**Insulation Resistance**—5000 megohms minimum.

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

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

**Color**—Black

**Contacts**—High strength copper alloy.

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

**Electrical Properties:**

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

**Current Rating**—3 Amperes

**Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

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

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

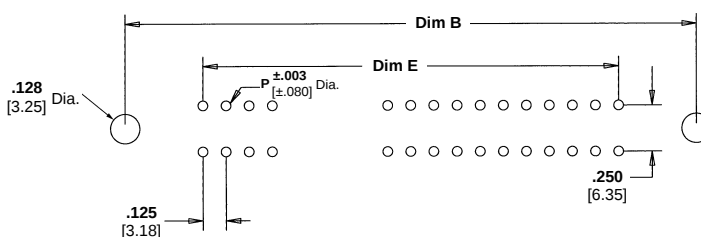
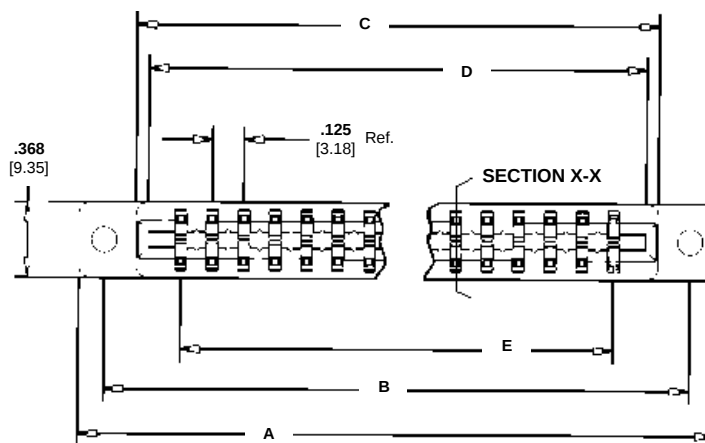
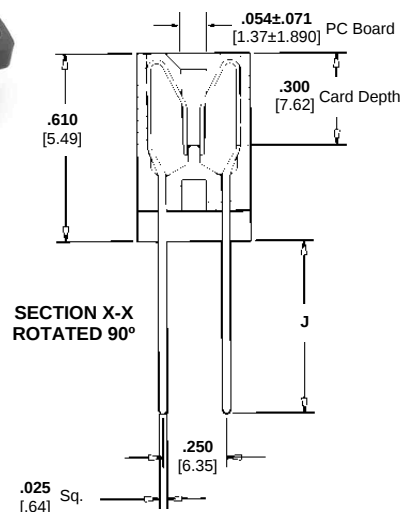
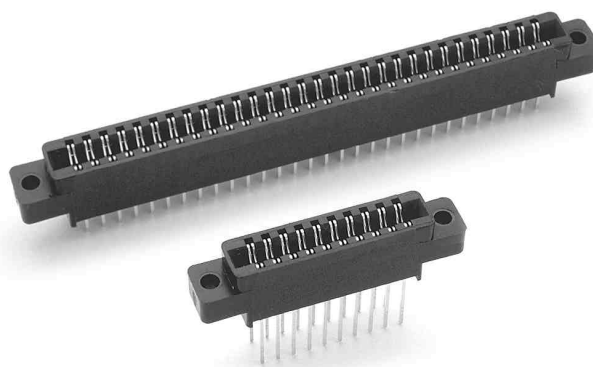
**Vibration**—MIL-STD-202 method 204

**Related Product Data:**

**Polarization Key**—page 57

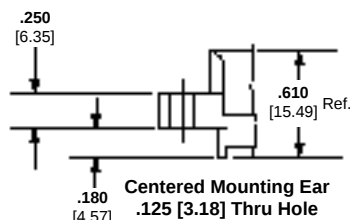
**Daughter Card Edge Pattern**—page 57

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



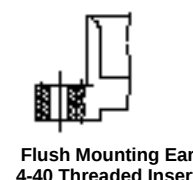
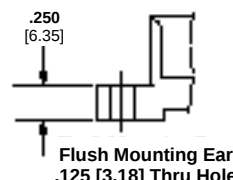
P=.040 [1.02] Dip Solder Applications  
P=.042 [1.07] For Wire Wrap Applications

**Mounting Styles**



Centered Mounting Ear  
4-40 Threaded Insert

No Mounting Ears



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

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

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

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

*Electronics*

**Product Facts**

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

**Physical Properties:**

**Insulation Resistance**—5000 megohms minimum.

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

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

**Color**—Black

**Contacts**—High strength copper alloy.

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

**Electrical Properties:**

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

**Current Rating**—3 Amperes

**Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

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

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

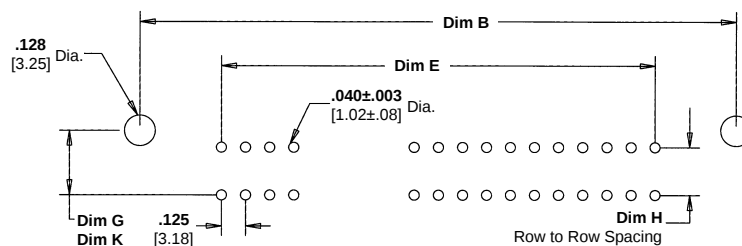
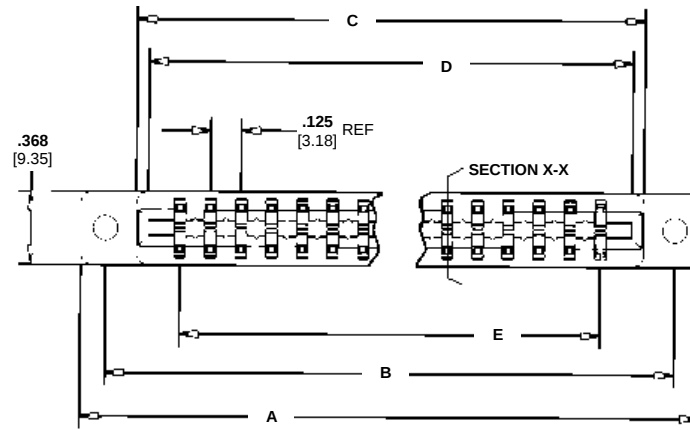
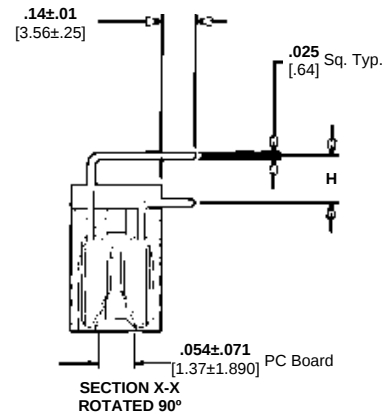
**Vibration**—MIL-STD-202 method 204

**Related Product Data:**

**Polarization Key**—page 57

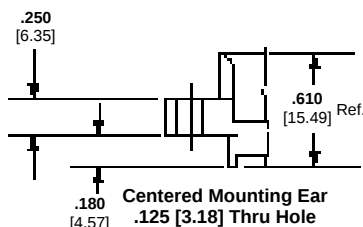
**Daughter Card Edge Pattern**—page 57

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

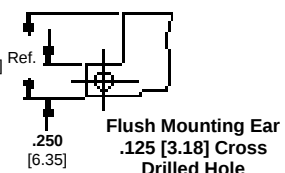
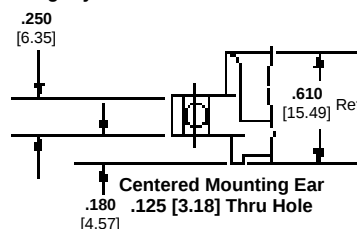


Dim G - Centered Mounting Ear .125 [3.18] Cross Drilled Hole Only  
Dim K - Flush Mounting Ear .125 [3.18] Cross Drilled Hole Only

**Mounting Styles**



**No Mounting Ears**



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

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

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

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

**Product Facts**

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

**Physical Properties:**

**Insulation Resistance**—5000 megohms minimum.

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

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

**Color**—Black

**Contacts**—High strength copper alloy.

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

**Electrical Properties:**

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

**Current Rating**—3 Amperes

**Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

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

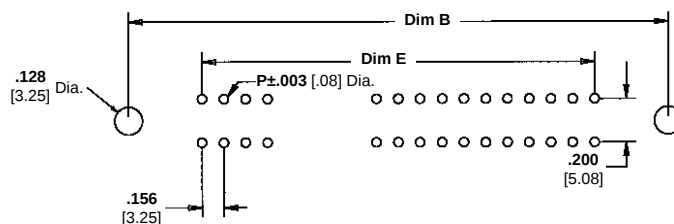
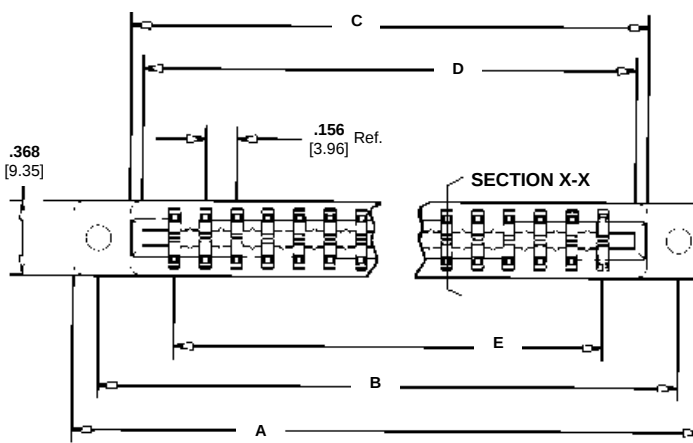
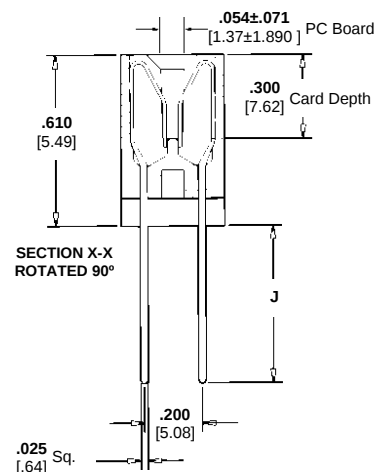
**Temperature Cycling**—MIL-STD-202 method 107

**Vibration**—MIL-STD-202 method 204

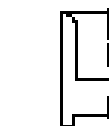
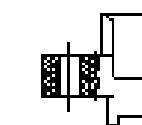
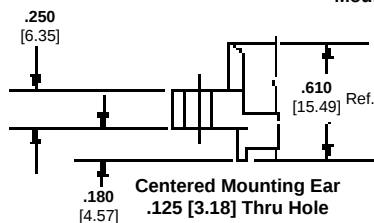
**Related Product Data:**

**Polarization Key**—page 57

**Daughter Card Edge Pattern**—page 57

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


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

**Mounting Styles**


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

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

**Product Facts**

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

**Physical Properties:**

**Insulation Resistance**—5000 megohms minimum.

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

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

**Color**—Black

**Contacts**—High strength copper alloy.

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

**Electrical Properties:**

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

**Current Rating**—3 Amperes

**Initial Contact Resistance**—10 milliohms

**Environmental Properties:**

**Operating Temperature**— $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$

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

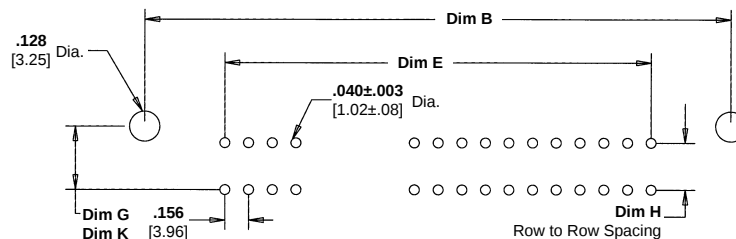
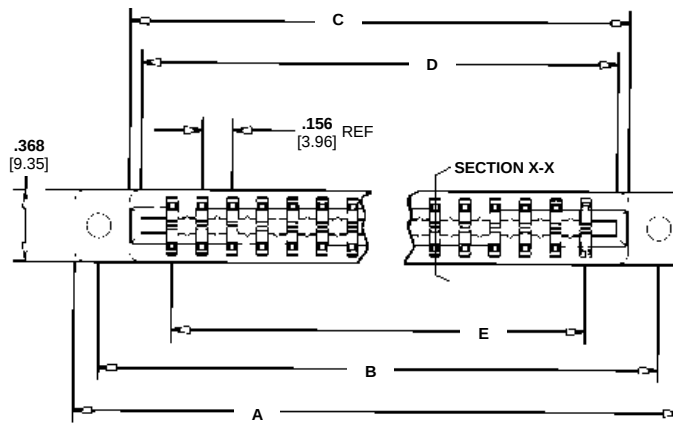
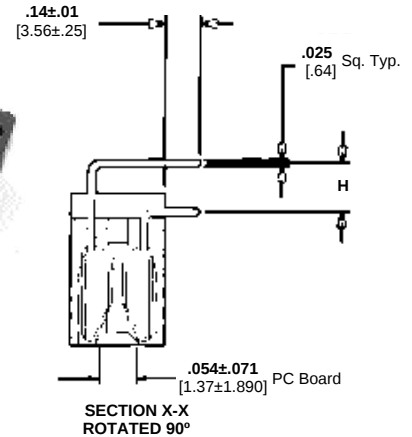
**Vibration**—MIL-STD-202 method 204

**Related Product Data:**

**Polarization Key**—page 57

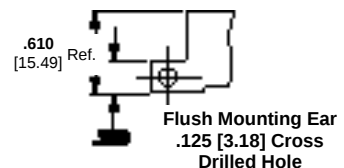
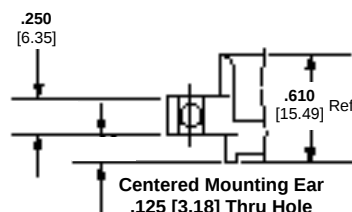
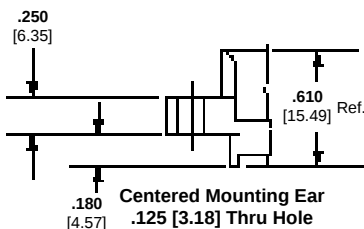
**Daughter Card Edge Pattern**—page 57

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



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

**Mounting Styles**



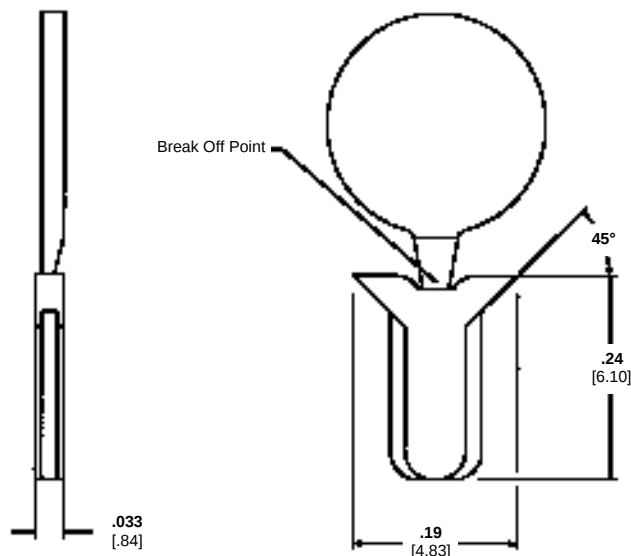
## .156" [3.96] Centerline / .200" [5.08] and .150" [3.81] Row-to-Row (Dim. "H") Spacing

| No. of Dual Readout Positions              | Dimensions      |                 |                 |                 |                 | Centered Mounting Ear Only G | Flush Mounting Ear Only K | Mounting Ear Options                         |                  |                                                       |                                                    |
|--------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------------------|---------------------------|----------------------------------------------|------------------|-------------------------------------------------------|----------------------------------------------------|
|                                            | A               | B               | C               | D               | E               |                              |                           | Centered Mounting Ear .125" [3.18] Thru Hole | No Mounting Ears | Centered Mounting Ear .125" [3.18] Cross-Drilled Hole | Flush Mounting Ear .125" [3.18] Cross-Drilled Hole |
| .200" [5.08] Row-to-Row (Dim. "H") Spacing |                 |                 |                 |                 |                 |                              |                           |                                              |                  |                                                       |                                                    |
| 6                                          | 1.784<br>45.31  | 1.534<br>38.96  | 1.221<br>31.01  | 1.100<br>27.94  | 0.780<br>19.81  | 0.470<br>11.94               | 0.290<br>7.37             | A6D06RA29A                                   | A6D06RA29C       | A6D06RA29E                                            | A6D06RA29F                                         |
| 10                                         | 2.408<br>61.16  | 2.158<br>54.81  | 1.845<br>46.86  | 1.724<br>43.79  | 1.404<br>35.66  | 0.470<br>11.94               | 0.290<br>7.37             | A6D10RA29A                                   | A6D10RA29C       | A6D10RA29E                                            | A6D10RA29F                                         |
| 12                                         | 2.720<br>69.09  | 2.470<br>62.74  | 2.157<br>54.79  | 2.036<br>51.71  | 1.716<br>43.59  | 0.470<br>11.94               | 0.290<br>7.37             | A6D12RA29A                                   | A6D12RA29C       | A6D12RA29E                                            | A6D12RA29F                                         |
| 15                                         | 3.188<br>80.98  | 2.938<br>74.63  | 2.625<br>66.68  | 2.504<br>63.60  | 2.184<br>55.47  | 0.470<br>11.94               | 0.290<br>7.37             | A6D15RA29A                                   | A6D15RA29C       | A6D15RA29E                                            | A6D15RA29F                                         |
| 18                                         | 3.656<br>92.86  | 3.406<br>86.51  | 3.093<br>78.56  | 2.972<br>75.49  | 2.652<br>67.36  | 0.470<br>11.94               | 0.290<br>7.37             | A6D18RA29A                                   | A6D18RA29C       | A6D18RA29E                                            | A6D18RA29F                                         |
| 22                                         | 4.280<br>108.71 | 4.030<br>102.36 | 3.717<br>94.41  | 3.596<br>91.34  | 3.276<br>83.21  | 0.470<br>11.94               | 0.290<br>7.37             | A6D22RA29A                                   | A6D22RA29C       | A6D22RA29E                                            | A6D22RA29F                                         |
| 25                                         | 4.748<br>120.60 | 4.498<br>114.25 | 4.185<br>106.30 | 4.064<br>103.23 | 3.744<br>95.10  | 0.470<br>11.94               | 0.290<br>7.37             | A6D25RA29A                                   | A6D25RA29C       | A6D25RA29E                                            | A6D25RA29F                                         |
| 28                                         | 5.216<br>132.49 | 4.966<br>126.14 | 4.653<br>118.19 | 4.532<br>115.11 | 4.212<br>106.98 | 0.470<br>11.94               | 0.290<br>7.37             | A6D28RA29A                                   | A6D28RA29C       | A6D28RA29E                                            | A6D28RA29F                                         |
| 36                                         | 6.464<br>164.19 | 6.214<br>157.84 | 5.901<br>149.89 | 5.780<br>146.81 | 5.460<br>138.68 | 0.470<br>11.94               | 0.290<br>7.37             | A6D36RA29A                                   | A6D36RA29C       | A6D36RA29E                                            | A6D36RA29F                                         |
| 40                                         | 7.088<br>180.04 | 6.838<br>173.69 | 6.525<br>165.74 | 6.404<br>213.46 | 6.084<br>154.53 | 0.470<br>11.94               | 0.290<br>7.37             | A6D40RA29A                                   | A6D40RA29C       | A6D40RA29E                                            | A6D40RA29F                                         |
| 43                                         | 7.556<br>191.92 | 7.306<br>185.57 | 6.993<br>177.62 | 6.872<br>174.55 | 6.552<br>166.42 | 0.470<br>11.94               | 0.290<br>7.37             | A6D43RA29A                                   | A6D43RA29C       | A6D43RA29E                                            | A6D43RA29F                                         |
| .150" [3.81] Row-to-Row (Dim. "H") Spacing |                 |                 |                 |                 |                 |                              |                           |                                              |                  |                                                       |                                                    |
| 6                                          | 1.784<br>45.31  | 1.534<br>38.96  | 1.221<br>31.01  | 1.100<br>27.94  | 0.780<br>19.81  | 0.420<br>10.67               | 0.240<br>6.10             | A6D06RA29AM233                               | A6D06RA29CM233   | A6D06RA29EM233                                        | A6D06RA29FM233                                     |
| 10                                         | 2.408<br>61.16  | 2.158<br>54.81  | 1.845<br>46.86  | 1.724<br>43.79  | 1.404<br>35.66  | 0.420<br>10.67               | 0.240<br>6.10             | A6D10RA29AM233                               | A6D10RA29CM233   | A6D10RA29EM233                                        | A6D10RA29FM233                                     |
| 12                                         | 2.720<br>69.09  | 2.470<br>62.74  | 2.157<br>54.79  | 2.036<br>51.71  | 1.716<br>43.59  | 0.420<br>10.67               | 0.240<br>6.10             | A6D12RA29AM233                               | A6D12RA29CM233   | A6D12RA29EM233                                        | A6D12RA29FM233                                     |
| 15                                         | 3.188<br>80.98  | 2.938<br>74.63  | 2.625<br>66.68  | 2.504<br>63.60  | 2.184<br>55.47  | 0.420<br>10.67               | 0.240<br>6.10             | A6D15RA29AM233                               | A6D15RA29CM233   | A6D15RA29EM233                                        | A6D15RA29FM233                                     |
| 18                                         | 3.656<br>92.86  | 3.406<br>86.51  | 3.093<br>78.56  | 2.972<br>75.49  | 2.652<br>67.36  | 0.420<br>10.67               | 0.240<br>6.10             | A6D18RA29AM233                               | A6D18RA29CM233   | A6D18RA29EM233                                        | A6D18RA29FM233                                     |
| 22                                         | 4.280<br>108.71 | 4.030<br>102.36 | 3.717<br>94.41  | 3.596<br>91.34  | 3.276<br>83.21  | 0.420<br>10.67               | 0.240<br>6.10             | A6D22RA29AM233                               | A6D22RA29CM233   | A6D22RA29EM233                                        | A6D22RA29FM233                                     |
| 25                                         | 4.748<br>120.60 | 4.498<br>114.25 | 4.185<br>106.30 | 4.064<br>103.23 | 3.744<br>95.10  | 0.420<br>10.67               | 0.240<br>6.10             | A6D25RA29AM233                               | A6D25RA29CM233   | A6D25RA29EM233                                        | A6D25RA29FM233                                     |
| 28                                         | 5.216<br>132.49 | 4.966<br>126.14 | 4.653<br>118.19 | 4.532<br>115.11 | 4.212<br>106.98 | 0.420<br>10.67               | 0.240<br>6.10             | A6D28RA29AM233                               | A6D28RA29CM233   | A6D28RA29EM233                                        | A6D28RA29FM233                                     |
| 36                                         | 6.464<br>164.19 | 6.214<br>157.84 | 5.901<br>149.89 | 5.780<br>146.81 | 5.460<br>138.68 | 0.420<br>10.67               | 0.240<br>6.10             | A6D36RA29AM233                               | A6D36RA29CM233   | A6D36RA29EM233                                        | A6D36RA29FM233                                     |
| 40                                         | 7.088<br>180.04 | 6.838<br>173.69 | 6.525<br>165.74 | 6.404<br>162.66 | 6.084<br>154.53 | 0.420<br>10.67               | 0.240<br>6.10             | A6D40RA29AM233                               | A6D40RA29CM233   | A6D40RA29EM233                                        | A6D40RA29FM233                                     |
| 43                                         | 7.556<br>191.92 | 7.306<br>185.57 | 6.993<br>177.62 | 6.872<br>174.55 | 6.552<br>166.42 | 0.420<br>10.67               | 0.240<br>6.10             | A6D43RA29AM233                               | A6D43RA29CM233   | A6D43RA29EM233                                        | A6D43RA29FM233                                     |

### Description/Application

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

### Card Edge Polarization Keys

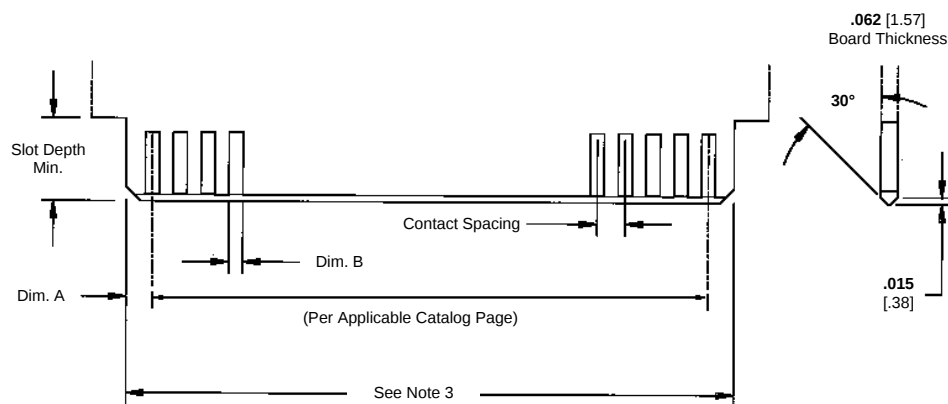


#### Ordering Information

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

### Card Edge Connectors Recommended Daughter Card Edge Pattern

Per MIL-C-21097E



#### Daughter Card

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

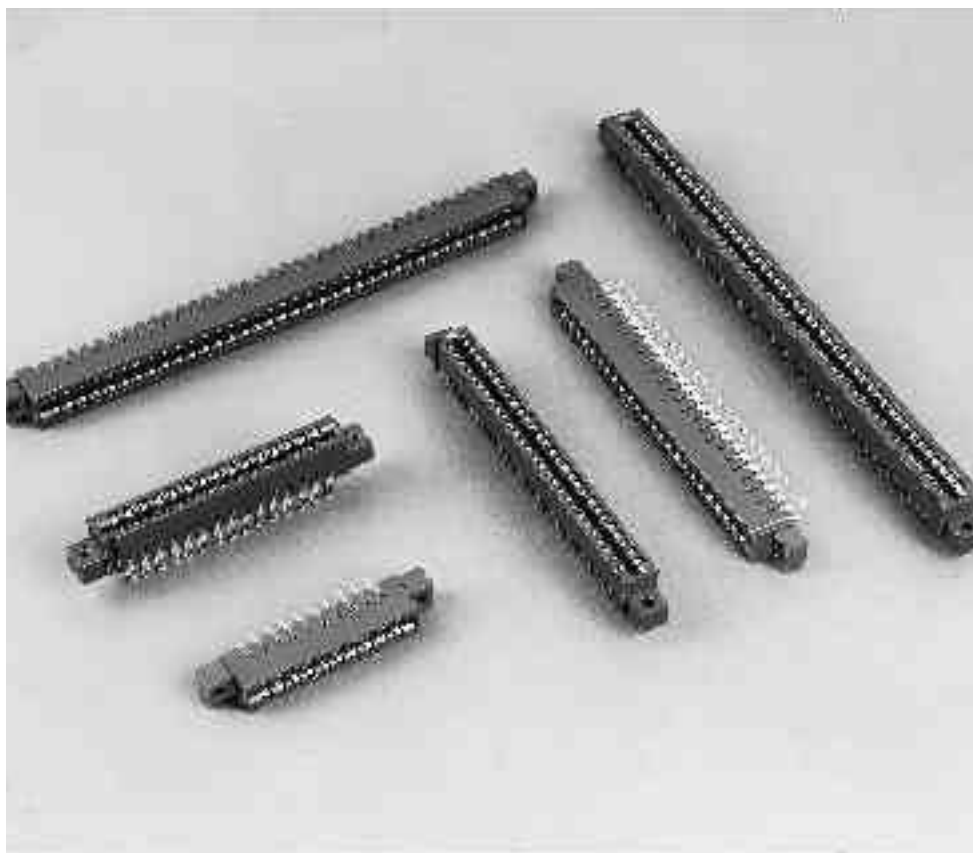
\* Except MIL-C-21097E 8-4 which is .070 [1.78]

#### NOTES:

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

**Product Facts**

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


**Low Profile Connectors**


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

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

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

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

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

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

provisions, probe slots and identification of number one position.

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

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

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

**Low Profile Connectors, .125 [3.18] Centerline**

**Material and Finish:**

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

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

**Related Product Data:**

**Keying Plug**—page 63

**PC Board Hole Layouts**—See below

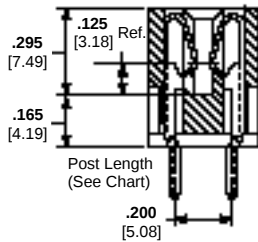
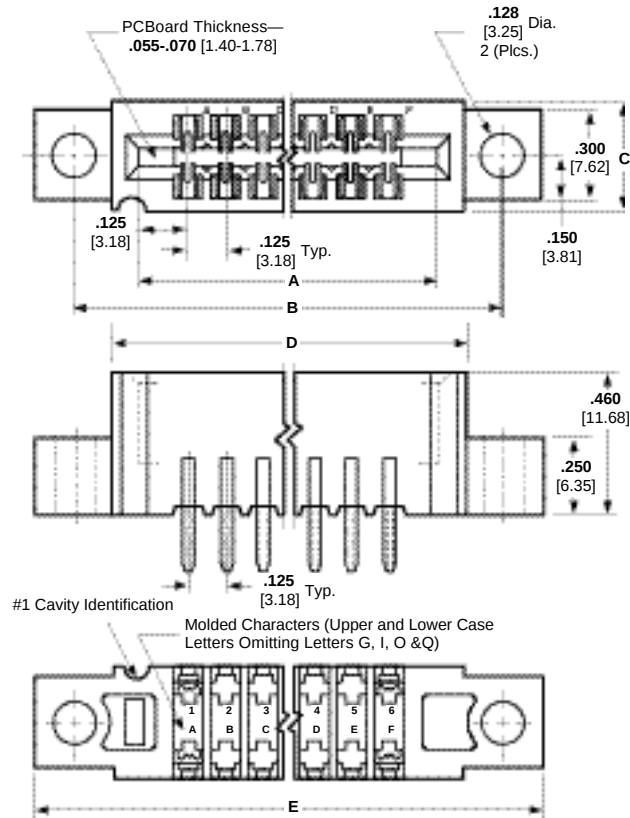
**PC Board Edge Pattern**—page 63

**Technical Documents:**

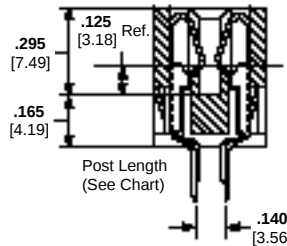
(pages 186, 187):

Product Specification  
108-9044

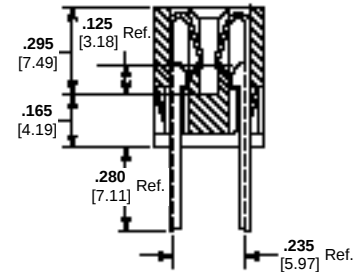
Instruction Sheet 408-7772



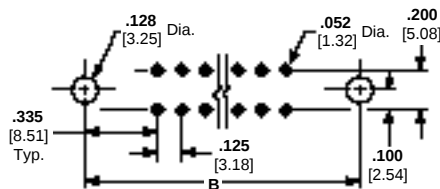
**Flow Solder Post**  
.200 [5.08] Row-to-Row Spacing



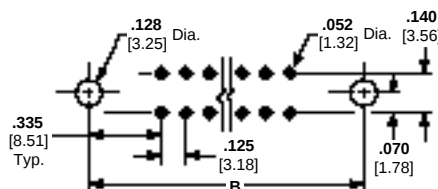
**Flow Solder Post**  
.140 [3.56] Row-to-Row Spacing



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



**Recommended  
PC Board Hole Layout**



**Recommended  
PC Board Hole Layout**

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

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

| No. of<br>Dual<br>Positions | Dimensions      |                 |               |                 |                 | Post<br>Length* | With<br>Mounting<br>Ears | Without<br>Mounting<br>Ears |
|-----------------------------|-----------------|-----------------|---------------|-----------------|-----------------|-----------------|--------------------------|-----------------------------|
|                             | A               | B               | C             | D               | E               |                 |                          |                             |
| 6                           | .875<br>22.23   | —               | .370<br>9.40  | 1.035<br>26.29  | —               | .150            | —                        | 2-530671-1                  |
| 10                          | 1.375<br>34.93  | 1.795<br>45.59  | .370<br>9.40  | 1.535<br>38.99  | 2.055<br>52.20  | .150<br>.180    | —<br>2-530663-2          | 2-530671-2<br>—             |
| 15                          | 2.000<br>50.80  | 2.420<br>61.47  | .370<br>9.40  | 2.160<br>54.86  | 2.680<br>68.07  | .150            | —                        | 2-530671-3                  |
| 18                          | 2.375<br>60.33  | 2.795<br>70.99  | .370<br>9.40  | 2.535<br>64.39  | 3.055<br>77.60  | .180            | 2-530663-4               | 2-530671-4                  |
| 22                          | 2.875<br>73.03  | 3.295<br>83.69  | .370<br>9.40  | 3.035<br>77.09  | 3.555<br>90.30  | .150            | 2-530662-5               | 2-530671-5                  |
| 24                          | 3.125<br>79.38  | —               | .370<br>9.40  | 3.285<br>83.44  | —               | .150            | —                        | 3-530671-3                  |
| 28                          | 3.625<br>92.08  | 4.045<br>102.74 | .370<br>9.40  | 3.785<br>96.14  | 4.305<br>109.35 | .150            | 2-530662-6               | 2-530671-6                  |
| 30                          | 3.875<br>98.43  | —               | .370<br>9.40  | 4.035<br>102.49 | —               | .150            | —                        | 2-530671-7                  |
| 36                          | 4.625<br>117.48 | 5.045<br>128.14 | .370<br>9.40  | 4.785<br>121.54 | 5.305<br>134.75 | .150<br>.180    | —<br>—                   | 2-530671-9<br>2-530672-9    |
| 40                          | 5.125<br>130.18 | 5.545<br>140.84 | .437<br>11.10 | 5.285<br>134.24 | 5.805<br>147.45 | .150            | —                        | 3-530671-0                  |
| 50                          | 6.375<br>161.93 | 6.795<br>172.59 | .437<br>11.10 | 6.535<br>165.99 | 7.055<br>179.20 | .150            | 3-530662-2               | —                           |

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

| No. of<br>Dual<br>Positions | Dimensions      |                 |               |                 |                 | Post<br>Length* | With<br>Mounting<br>Ears | Without<br>Mounting<br>Ears |
|-----------------------------|-----------------|-----------------|---------------|-----------------|-----------------|-----------------|--------------------------|-----------------------------|
|                             | A               | B               | C             | D               | E               |                 |                          |                             |
| 15                          | 2.000<br>50.80  | —               | .370<br>9.40  | 2.160<br>54.86  | —               | .150            | —                        | 2-530673-3                  |
| 28                          | 3.625<br>92.08  | —               | .370<br>9.40  | 3.785<br>96.14  | —               | .150<br>.180    | —<br>2-530674-6          | 2-530673-6<br>—             |
| 50                          | 6.375<br>161.93 | 6.795<br>172.59 | .437<br>11.10 | 6.535<br>165.99 | 7.055<br>179.20 | .180            | 3-530659-2               | —                           |

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

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

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

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

**Low Profile Connectors, .156 [3.96] Centerline**

**Material and Finish:**

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

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

**Insert**—Brass

**Related Product Data:**

**Keying Plug**—page 63

**PC Board Hole Layouts**—See below

**PC Board Edge Pattern**—page 63

**Technical Documents:**

(pages 186, 187):

Product Specification

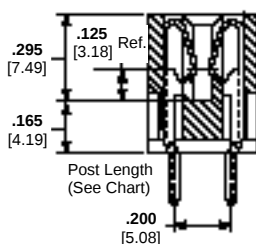
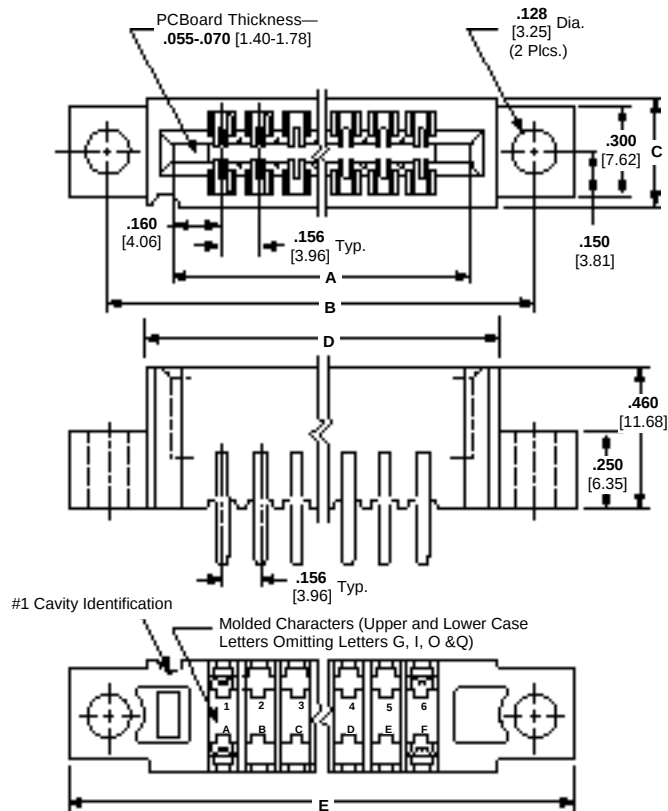
108-9044

Instruction Sheet 408-7772

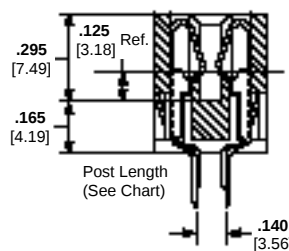
**Mounting Ear with Insert**



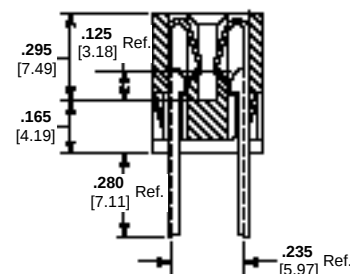
Threaded Inserts  
4-40 NC-2B  
(2 per connector)



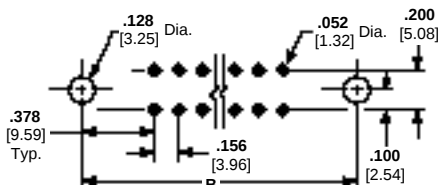
**Flow Solder Post**  
.200 [5.08] Row-to-Row Spacing



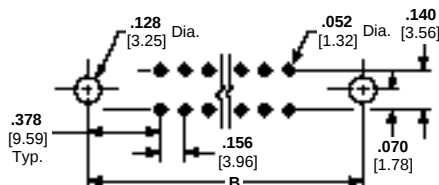
**Flow Solder Post**  
.140 [3.56] Row-to-Row Spacing



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



**Recommended  
PC Board Hole Layout**



**Recommended  
PC Board Hole Layout**

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

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

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

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

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

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

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

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

## Keying Plug

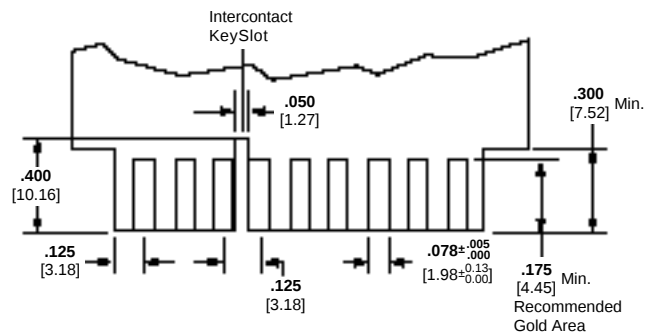
**Material:** Glass-filled nylon  
**Part No.** 650025-2

## Intercontact Key

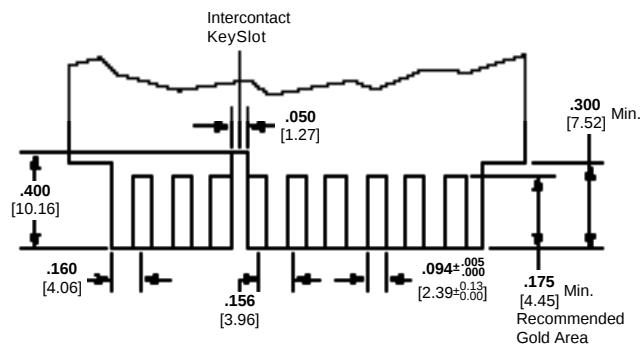


## Recommended PC Board Edge Patterns

### .125 [3.18] Centerline Boards



### .156 [3.96] Centerline Boards



### Product Facts

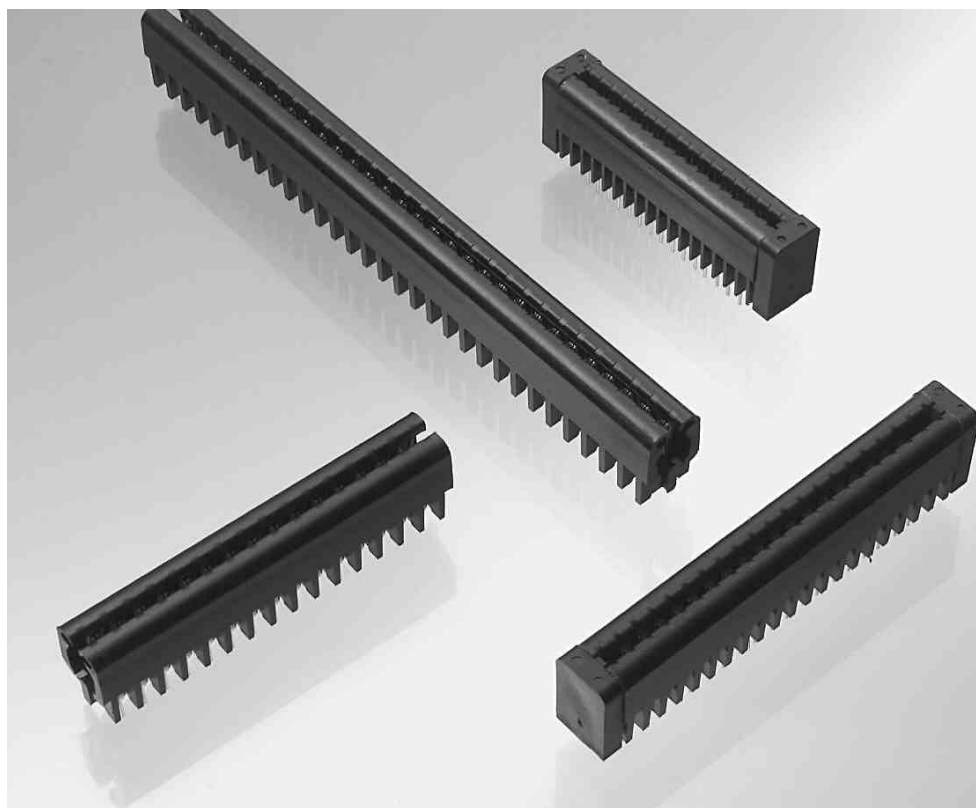
- Wide variety of sizes available from 3 dual positions and up—no initial tooling investment required for new versions
- Connectors can be selectively loaded with contacts in custom patterns
- Connectors tooled on all standard centerlines—.100 [2.54], .125 [3.18], .150 [3.81], .156 [3.96], and .200 [5.08]

**Note:** .200 [5.08] centerline capabilities provided by loading every-other dual position of .100 [2.54] centerline housings.

- Closed card entry protects contacts and daughter board pads
- Adapts to a wide range of mother board thicknesses to .104 [2.64] maximum
- Phosphor bronze contacts selectively plated for top performance and maximum economy
- Protective channel helps prevent overstress of contacts
- Daughter board keying available in intercontact or on-contact styles
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476



## Twin Leaf Mother Board Connectors



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

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

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

### Performance Specifications

#### Contact Rating\*:

3 amperes continuous

#### Temperature Rating:

-55°C to +105°C

#### Insulation Resistance:

5,000 megohms

#### Dielectric Withstanding Voltage:

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

#### Termination Resistance:

10 milliohms, max.

**Durability:** Tested to 100 cycles (engage/withdraw)

**Contact Plating:** .000015 [0.00038] selective gold plating on contact area; bright tin on solder tie

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

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

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

**Material and Finish:**

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

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

**Related Product Data:**

**Performance Specifications**—  
page 64

**Card Guides**—pages 70, 71

**Keying Plugs**—page 72

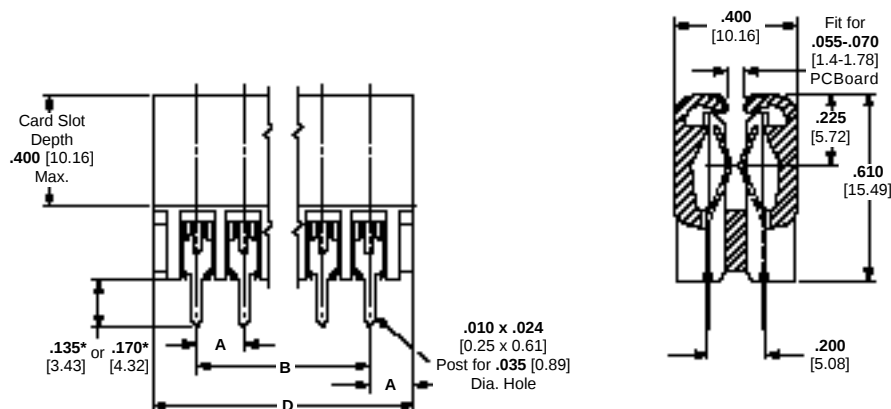
**PC Board Hole Layouts**—page 71

**Technical Documents:**

(pages 186, 187):

Product Specification  
108-9027

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



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

| No. of Dual Positions | A = .100 [2.54]<br>Centerline Spacing |                 |              | A = .125 [3.18]<br>Centerline Spacing |                 |                       | A = .150 [3.81]<br>Centerline Spacing |                 |                                     | A = .156 [3.96]<br>Centerline Spacing |                 |              |
|-----------------------|---------------------------------------|-----------------|--------------|---------------------------------------|-----------------|-----------------------|---------------------------------------|-----------------|-------------------------------------|---------------------------------------|-----------------|--------------|
|                       | B                                     | D               | Part Numbers | B                                     | D               | Part Numbers          | B                                     | D               | Part Numbers                        | B                                     | D               | Part Numbers |
| 2                     | —                                     | —               | —            | —                                     | —               | —                     | .300<br>7.62                          | .600<br>15.24   | 1-583694-1                          | —                                     | —               | —            |
| 3                     | .200<br>5.08                          | .400<br>10.16   | 583485-6     | —                                     | —               | —                     | .300<br>7.62                          | .600<br>15.24   | 645155-11.3                         | .312<br>7.92                          | .624<br>15.85   | 4-583486-8   |
| 4                     | —                                     | —               | —            | —                                     | —               | —                     | .450<br>11.43                         | .750<br>19.05   | 583407-5                            | —                                     | —               | —            |
| 5                     | .400<br>10.16                         | .600<br>15.24   | 583485-7     | —                                     | —               | —                     | .600<br>15.24                         | .900<br>22.86   | 583407-6                            | —                                     | —               | —            |
| 8                     | —                                     | —               | —            | —                                     | —               | —                     | 1.050<br>26.67                        | 1.350<br>34.29  | 583407-9                            | —                                     | —               | —            |
| 9                     | —                                     | —               | —            | 1.000<br>25.40                        | 1.250<br>31.75  | 583533-7              | —                                     | —               | —                                   | —                                     | —               | —            |
| 10                    | .900<br>22.86                         | 1.100<br>27.94  | 1-583485-2   | —                                     | —               | —                     | —                                     | —               | —                                   | 1.400<br>35.56                        | 1.720<br>43.69  | 4-583486-1   |
| 11                    | —                                     | —               | —            | —                                     | —               | —                     | 1.500<br>38.10                        | 1.800<br>45.72  | 1-583407-2                          | —                                     | —               | —            |
| 14                    | 1.300<br>33.02                        | 1.500<br>38.10  | 1-583485-6   | —                                     | —               | —                     | —                                     | —               | —                                   | —                                     | —               | —            |
| 15                    | —                                     | —               | —            | —                                     | —               | —                     | 2.100<br>53.34                        | 2.400<br>60.96  | 1-583407-5                          | —                                     | —               | —            |
| 18                    | —                                     | —               | —            | 2.125<br>53.97                        | 2.375<br>60.32  | 1-583533-6            | —                                     | —               | —                                   | 2.652<br>67.36                        | 2.964<br>75.28  | 3-583486-3   |
| 20                    | —                                     | —               | —            | —                                     | —               | —                     | 2.850<br>72.39                        | 3.150<br>80.01  | 2-583407-0<br>530292-9 <sup>3</sup> | —                                     | —               | —            |
| 22                    | —                                     | —               | —            | 2.625<br>66.67                        | 2.875<br>73.02  | 2-583533-0            | —                                     | —               | —                                   | —                                     | —               | —            |
| 28                    | —                                     | —               | —            | —                                     | —               | —                     | 4.050<br>102.87                       | 4.350<br>110.49 | 583407-1                            | 4.212<br>106.99                       | 4.524<br>114.91 | 2-583486-3   |
| 30                    | —                                     | —               | —            | 3.625<br>92.08                        | 3.875<br>98.43  | 531534-2 <sup>2</sup> | —                                     | —               | —                                   | 4.524<br>114.91                       | 4.836<br>122.83 | 2-583486-1   |
| 31                    | —                                     | —               | —            | —                                     | —               | —                     | 4.500<br>53.34                        | 4.800<br>60.96  | 530292-3 <sup>3</sup>               | —                                     | —               | —            |
| 33                    | —                                     | —               | —            | —                                     | —               | —                     | —                                     | —               | —                                   | 4.992<br>126.80                       | 5.304<br>134.72 | 1-583486-8   |
| 36                    | —                                     | —               | —            | —                                     | —               | —                     | —                                     | —               | —                                   | 5.460<br>138.68                       | 5.772<br>146.61 | 1-583486-5   |
| 40                    | —                                     | —               | —            | 4.875<br>123.83                       | 5.125<br>130.18 | 3-583533-8            | 5.850<br>148.59                       | 6.150<br>156.21 | 3-583407-8                          | 6.084<br>154.53                       | 6.396<br>162.46 | 1-583486-1   |
| 43                    | —                                     | —               | —            | —                                     | —               | —                     | —                                     | —               | —                                   | 6.552<br>166.42                       | 6.864<br>174.35 | 583486-8     |
| 50                    | 4.900<br>124.46                       | 5.100<br>129.54 | 583485-3     | 6.130<br>155.70                       | 6.380<br>162.05 | 5-583533-01           | 7.350<br>186.69                       | 7.650<br>194.31 | 4-583407-8                          | 7.640<br>194.06                       | 7.960<br>202.18 | 583486-1     |
| 56                    | —                                     | —               | —            | —                                     | —               | —                     | —                                     | —               | —                                   | 8.580<br>217.93                       | 8.892<br>225.86 | 5-583486-0   |
| 65                    | 6.400<br>162.56                       | 6.600<br>167.64 | 5-583485-6   | —                                     | —               | —                     | —                                     | —               | —                                   | —                                     | —               | —            |
| 80                    | 7.900<br>200.66                       | 8.100<br>205.74 | 5-583485-5   | —                                     | —               | —                     | —                                     | —               | —                                   | —                                     | —               | —            |

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

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

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

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

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

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

**Material and Finish:**

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

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

**Related Product Data:**

**Performance Specifications**—  
page 64

**Keying Plugs**—page 72

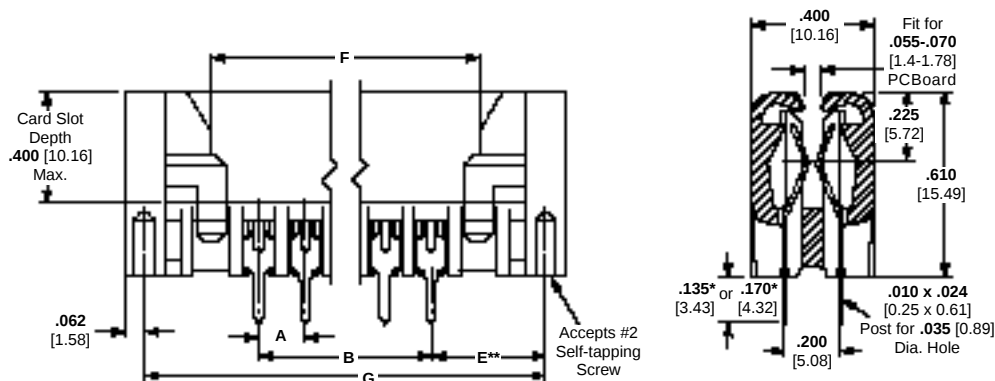
**PC Board Hole Layouts**—page 71

**Technical Documents:**

(pages 186, 187):

Product Specification  
108-9027

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



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

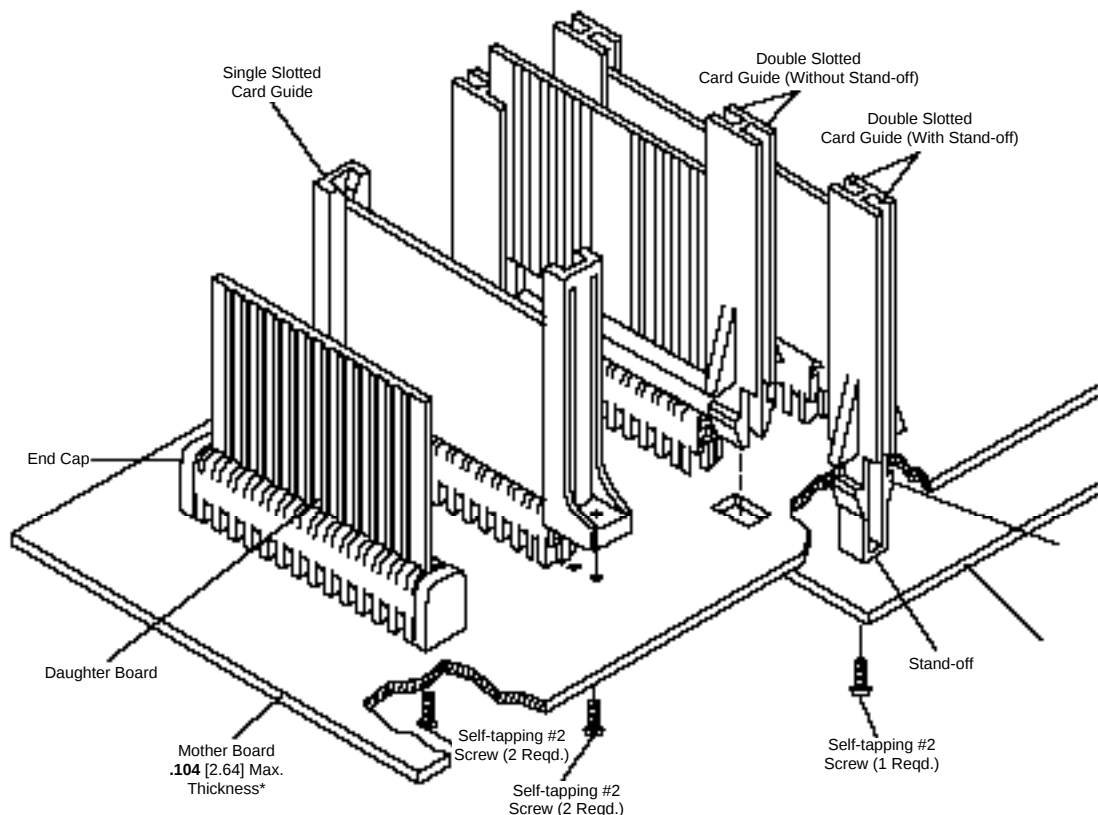
\*\*See page 27 for dimensions.

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

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

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

**Typical Connector and Card Guide Assembly**



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

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

**Card Guides**

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

**Part No. 583671-1**

**Related Product Data:**

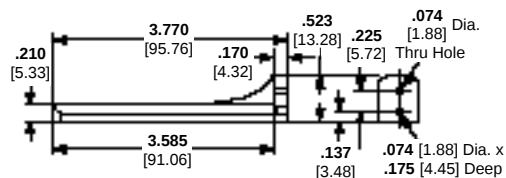
**Connectors used with**—page 65

**Technical Documents:**

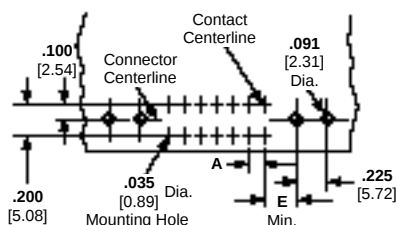
(pages 186, 187):

Instruction Sheets 408-7498,  
408-7506

**Single Slotted**



**Single Slotted Card Guide  
and Connector Mounting**



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

## Card Guides

(Continued)

**Material:** Nylon, natural

**Part No. 583425-1**

## Related Product Data:

Connectors used with—page 65

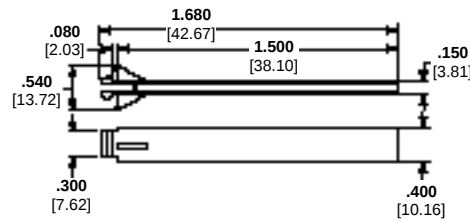
## Technical Documents:

(pages 186, 187):

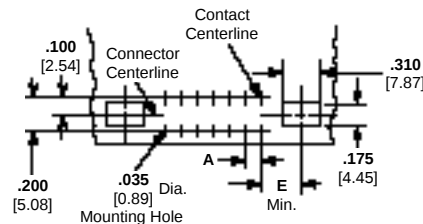
Instruction Sheets 408-7498,  
408-7506

## Twin Leaf Mother Board Connectors (Continued)

### Double Slotted Without Stand-off



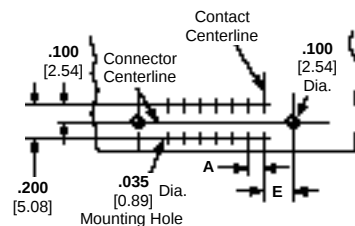
### Double Slotted Card Guide and Connector Mounting



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

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

## Recommended PC Board Layout for Connectors With End Caps



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

## Keying Plugs

**Material:** Nylon, natural

### Technical Documents:

(pages 186, 187):

Instruction Sheet 408-7479



Type A



Type B

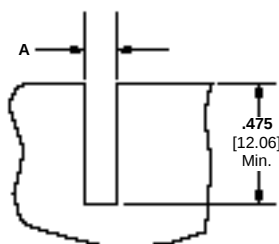


On-Contact

Intercontact

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

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



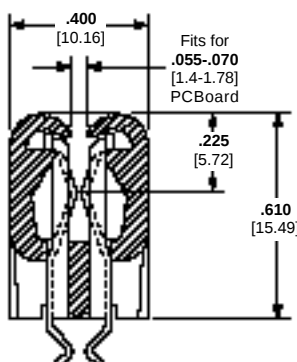
| Connector Centerlines | Dimension A  |             |
|-----------------------|--------------|-------------|
|                       | Intercontact | On-Contact  |
| <b>.100</b>           | <b>.040</b>  | <b>.129</b> |
| 2.54                  | 1.02         | 3.28        |
| <b>.125</b>           |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

Recommended PC Board Cutout for Keying Plugs

## Other Twin Leaf Mother Board Connectors

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

## Card Extender Connectors



## Connectors With End Caps

| Centerlines         | Part Number Series* |
|---------------------|---------------------|
| <b>.150</b><br>3.81 | 530278              |
| <b>.156</b><br>3.96 | 530267              |

\*Consult Tyco Electronics for specific connector sizes.

## 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



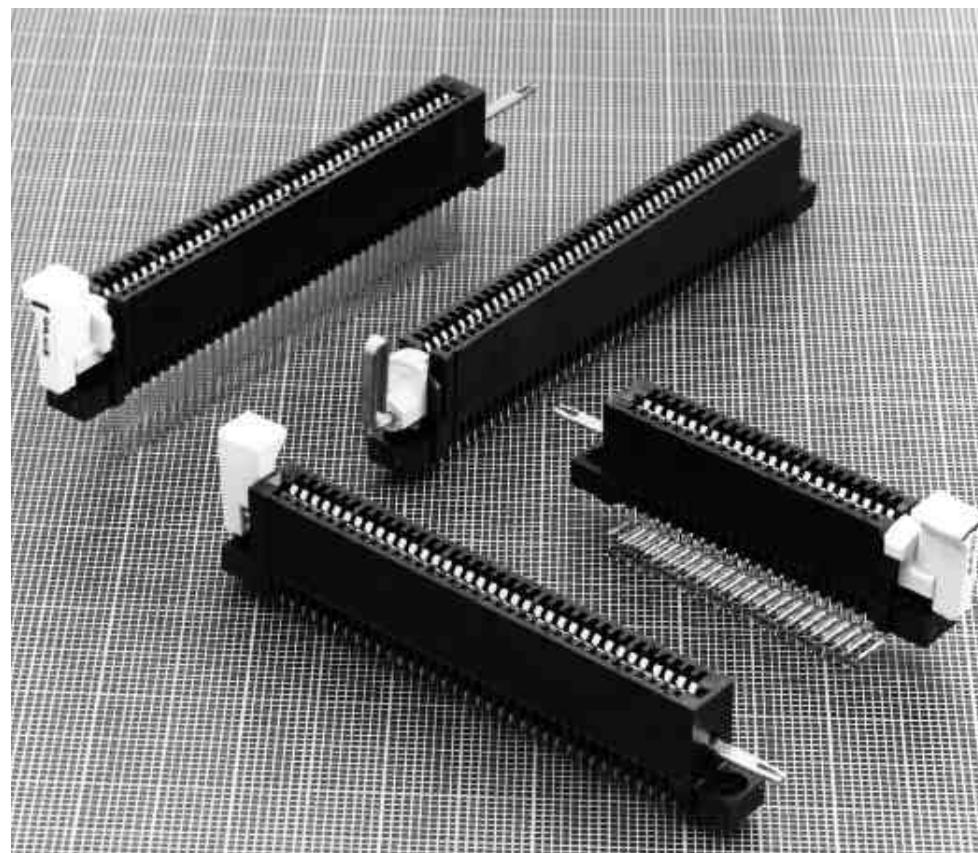
### Performance Specifications

**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 under-plated 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.

## 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

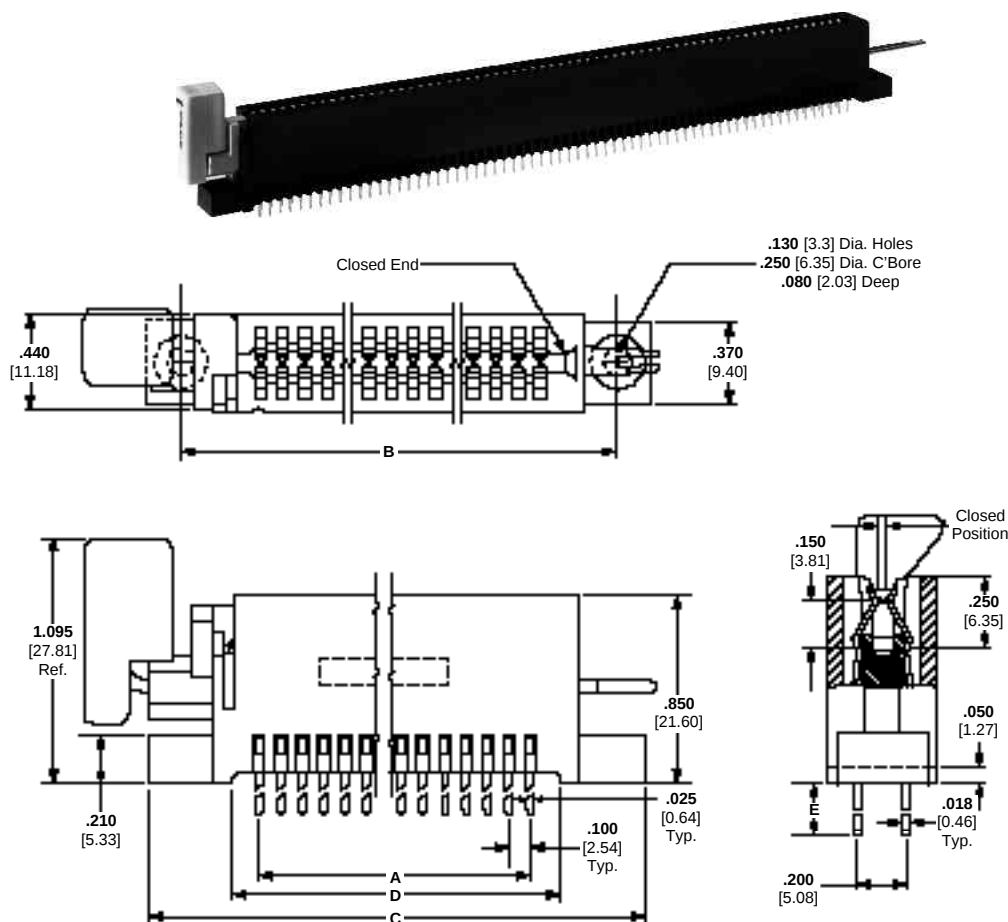
**Special Application**—pages 82, 96

### Technical Documents:

(pages 186, 187):

Product Specification  
108-9048

Instruction Sheet 408-7911



| No. of<br>Dual<br>Positions | Dimensions |        |        |        |      | Part Numbers                 |                                |                     |
|-----------------------------|------------|--------|--------|--------|------|------------------------------|--------------------------------|---------------------|
|                             | A          | B      | C      | D      | E*   | Open<br>One End <sup>1</sup> | Open<br>Both Ends <sup>1</sup> | Closed<br>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                   | —                              | —                   |
|                             | 106.68     | 124.46 | 132.08 | 111.76 | .160 | 1-531020-7                   | —                              | —                   |
| 50                          | 4.900      | 5.600  | 5.900  | 5.100  | .125 | 2-531020-8 <sup>2</sup>      | —                              | —                   |
|                             | 124.46     | 142.24 | 149.86 | 129.54 | .160 | 531020-8                     | 531021-8                       | —                   |
| 60                          | 5.900      | 6.600  | 6.900  | 6.100  | .160 | 1-531020-8                   | —                              | 1-531019-8          |
|                             | 149.86     | 167.64 | 175.26 | 154.94 |      | 2-531020-9 <sup>2</sup>      | —                              | —                   |
| 65                          | 6.400      | 7.100  | 7.400  | 6.600  | .125 | 1-531020-9                   | 1-531021-9                     | 1-531019-9          |
|                             | 162.56     | 180.34 | 187.96 | 167.64 | .160 | 1-531020-0                   | —                              | —                   |
|                             |            |        |        |        |      | 2-531020-0                   | —                              | —                   |
|                             |            |        |        |        |      | 3-531020-0 <sup>2</sup>      | —                              | —                   |

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

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

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

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

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

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

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

**Material and Finish:**

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

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

**Related Product Data:**

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

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

**Performance Specifications**—  
page 73

**Dust Cover**—page 79

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

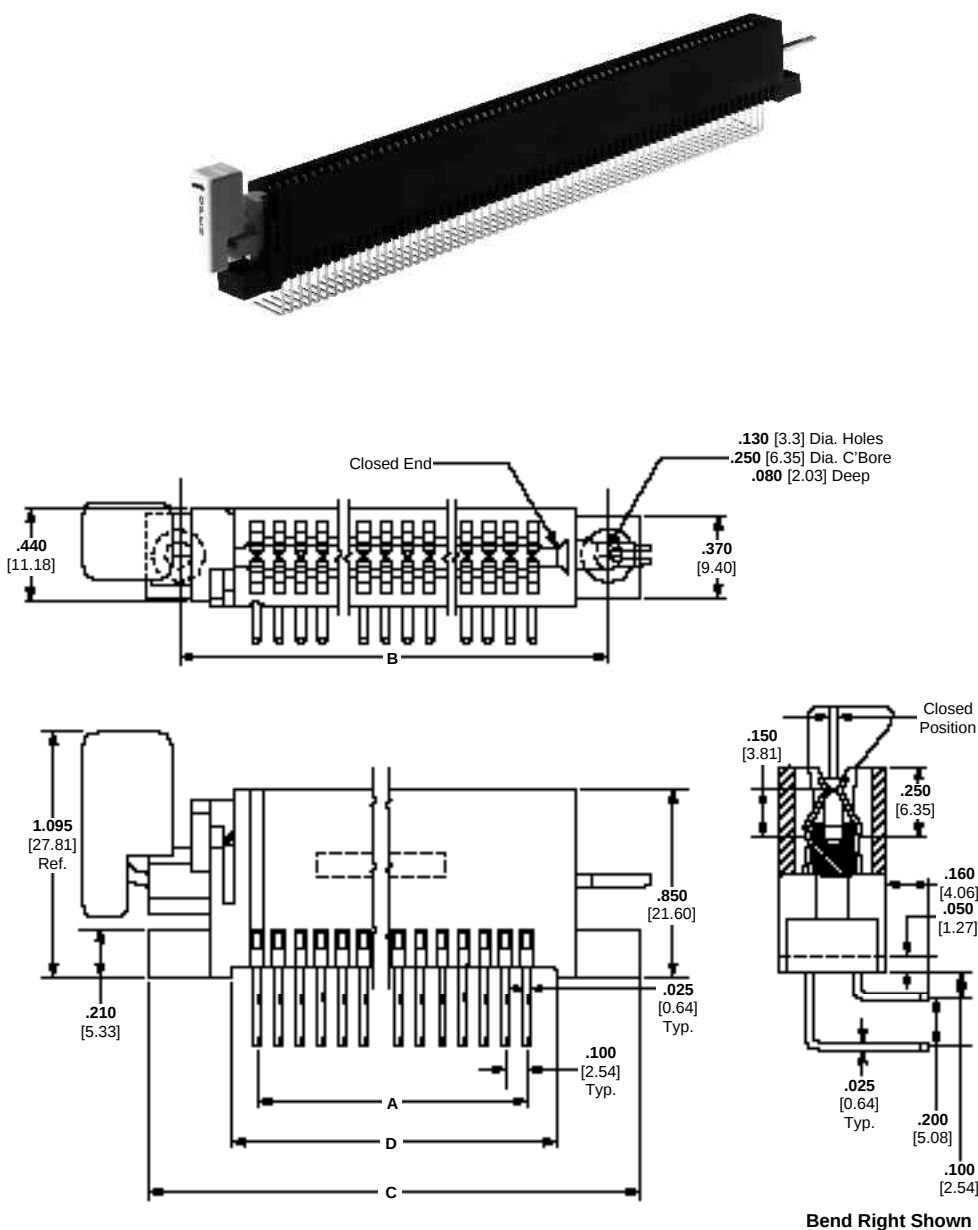
**Special Application**—page 82, 96

**Technical Documents:**

(pages 186, 187):

Product Specification  
108-9048

Instruction Sheet 408-7911



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

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

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

## Vertical Connector, Wrap-Type Post Terminals

### Material and Finish:

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

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

### Related Product Data:

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

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

**Performance Specifications**—  
page 73

**Dust Cover**—page 79

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

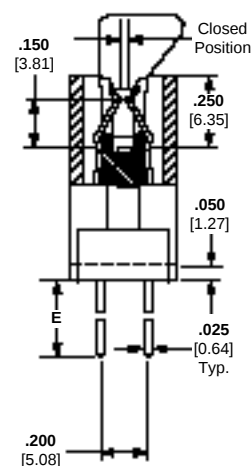
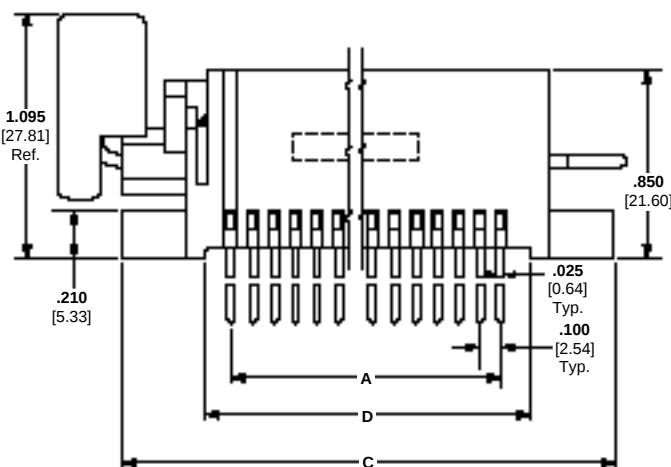
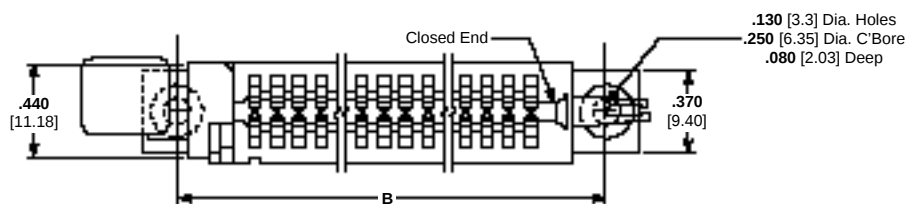
**Special Application**—pages 82, 96

### Technical Documents:

(pages 186, 187):

Product Specification  
108-9048

Instruction Sheet 408-7911



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

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

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

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

**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

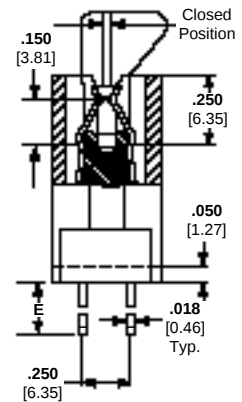
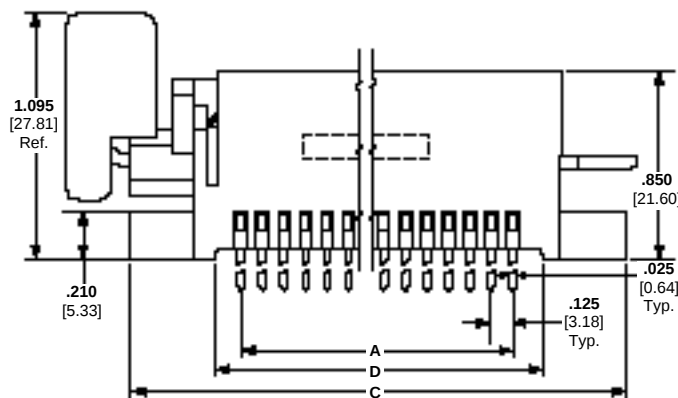
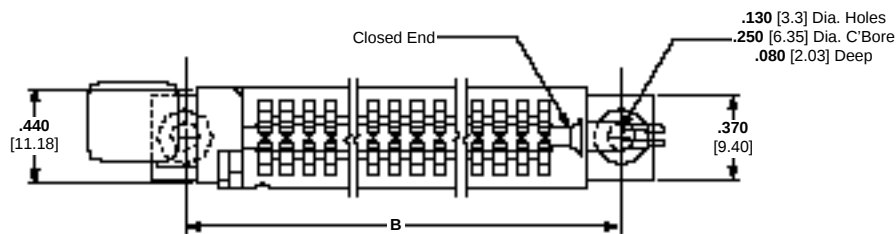
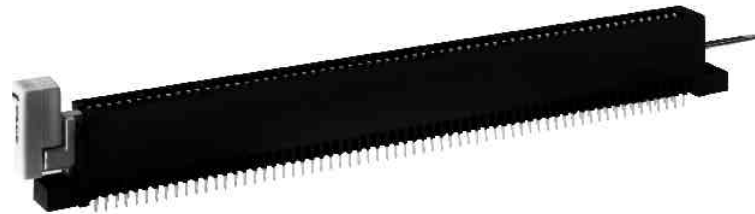
**Special Application**—pages 82, 96

**Technical Documents:**

(pages 186,187):

Product Specification  
108-9048

Instruction Sheet 408-7911



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

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

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

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

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

**Vertical Connector,  
Solder Post Terminals**

**Material and Finish:**

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

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

**Related Product Data:**

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

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

**Performance Specifications**—  
page 73

**Dust Cover**—page 79

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

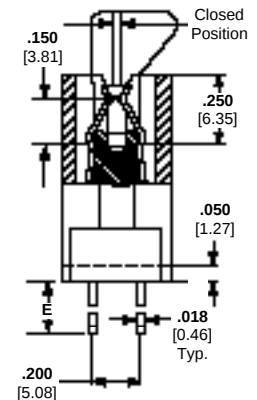
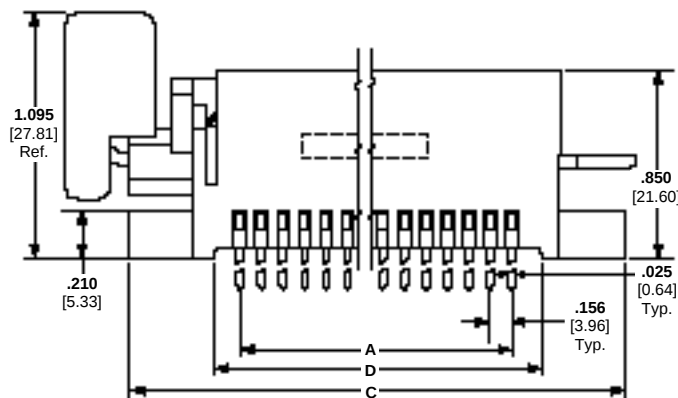
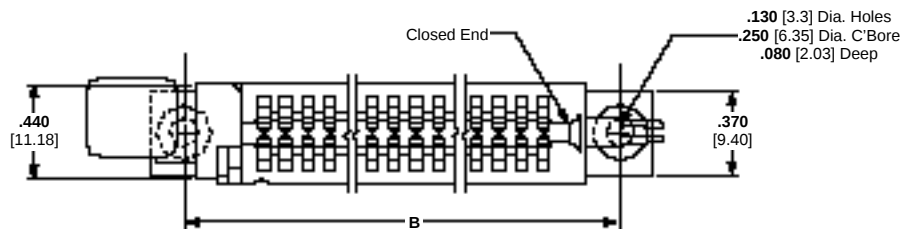
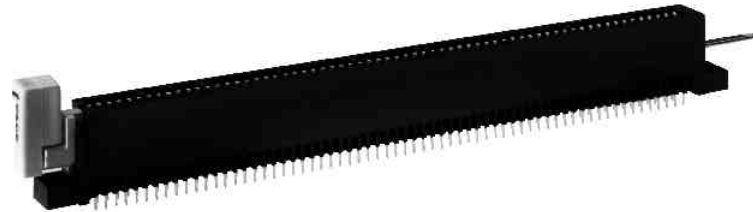
**Special Application**—pages 82, 96

**Technical Documents:**

(pages 186, 187):

Product Specification  
108-9048

Instruction Sheet 408-7911



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

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

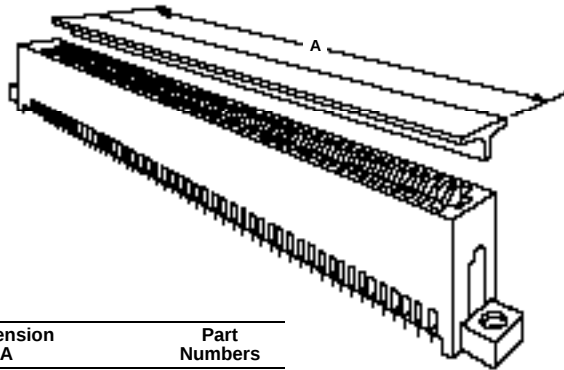
<sup>1</sup>Recognized under the Component Program of Underwriters Laboratories Inc.

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

**Accessories**

**Dust Covers**

**Material:** Rigid vinyl, black



| Dimension<br>A           | Part<br>Numbers |
|--------------------------|-----------------|
| <b>11.050</b><br>280.67  | 531863-2        |
| <b>48.000</b><br>1219.20 | 531863-1        |

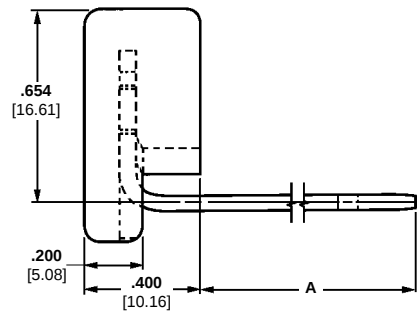
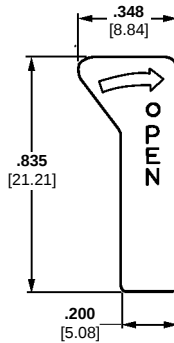
**Note:** Other lengths can be made available upon request, consult Tyco Electronics.

**Cam Rods with Boot**

**Material:**

**Cam Rod**—Stainless steel

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



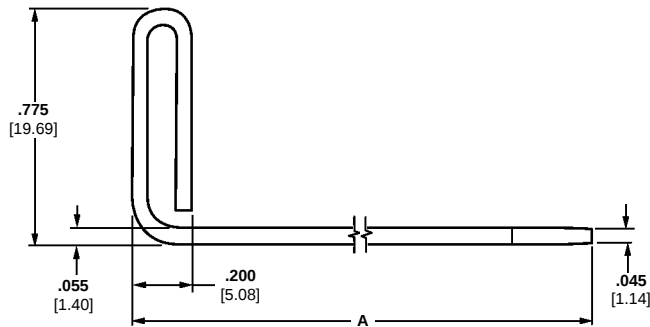
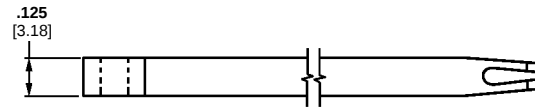
| Dimension<br>A         | Part<br>Numbers |
|------------------------|-----------------|
| <b>3.185</b><br>80.90  | 650083-1        |
| <b>3.705</b><br>94.11  | 650083-2        |
| <b>4.470</b><br>113.54 | 650083-3        |
| <b>5.285</b><br>134.24 | 650083-4        |
| <b>5.900</b><br>149.86 | 650083-6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

| Dimension<br>A         | Part<br>Numbers |
|------------------------|-----------------|
| <b>6.385</b><br>162.18 | 650083-7        |
| <b>6.985</b><br>177.42 | 650083-8        |
| <b>7.485</b><br>190.12 | 650083-9        |
| <b>7.725</b><br>196.22 | 1-532563-0      |
| <b>8.320</b><br>211.34 | 1-650083-7      |

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

**Cam Rods without Boot**

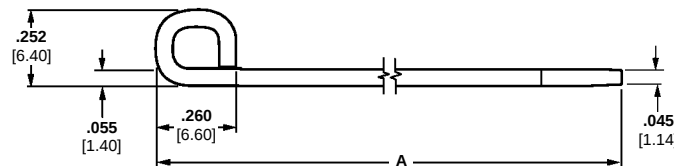
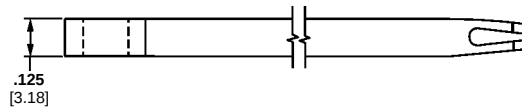
**Material:** Stainless steel



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

| Dimension A             | Part Numbers |
|-------------------------|--------------|
| <b>6.000</b><br>152.40  | 531004-7     |
| <b>6.250</b><br>158.75  | 1-531004-6   |
| <b>6.750</b><br>171.45  | 1-531004-7   |
| <b>8.250</b><br>209.55  | 3-531004-2   |
| <b>12.500</b><br>317.50 | 2-531004-0   |

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

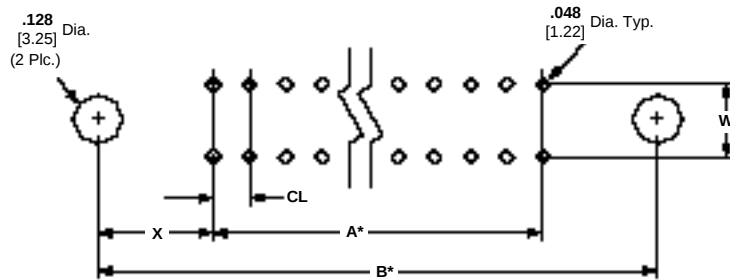


| Dimension A             | Part Numbers |
|-------------------------|--------------|
| <b>3.380</b><br>85.85   | 645293-3     |
| <b>4.50</b><br>114.30   | 645293-8     |
| <b>5.200</b><br>132.08  | 645293-6     |
| <b>6.90</b><br>175.30   | 645293-7     |
| <b>13.120</b><br>333.25 | 645293-5     |

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

## Recommended PC Board Hole Layouts

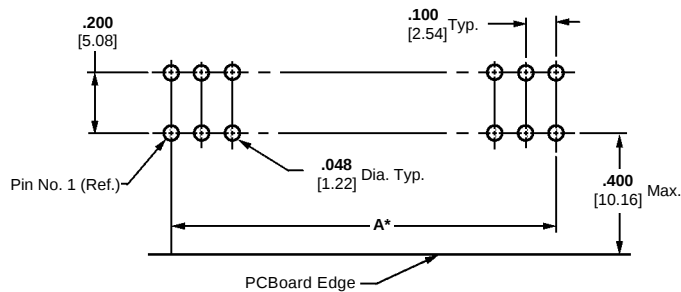
### Mother Board Hole Layout, Vertical Through-Board Connectors



\*Refer to individual connector specifications.

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

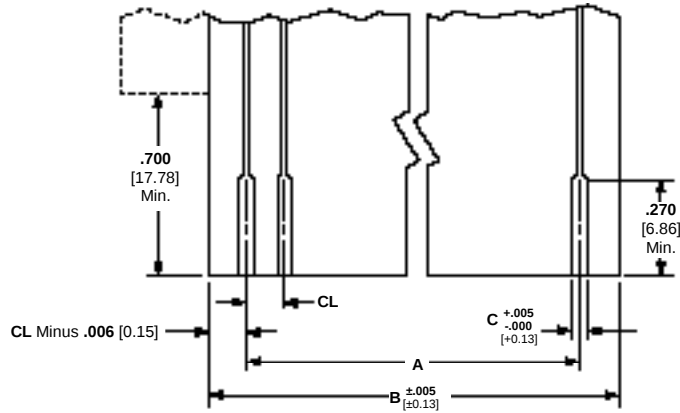
### Mother Board Hole Layout, Right-Angle Through-Board Connectors



\*Refer to individual connector specifications.

## Recommended PC Board Edge Pattern

### Daughter Board Edge Pattern



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

### Special Application

### Tandem Application



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

## Linear ZIF Connectors

### Product Facts

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

### Performance Specifications

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

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

**Contact Resistance:**  
16 milliohms max.

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

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



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

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

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

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

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

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

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

**Housing with Solder Posts**

**Lever Style, Side Entry**

**Material and Finish:**

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

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

**Related Product Data:**

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

**Performance Specifications**—page 83

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

**Special Application**—page 96



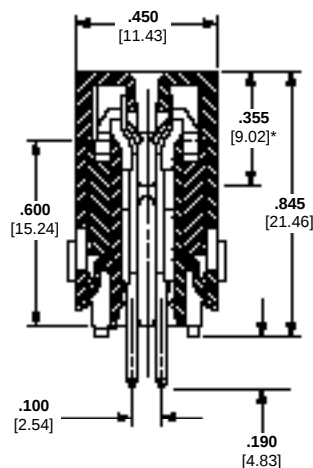
**Technical Documents:**

(pages 186, 187):

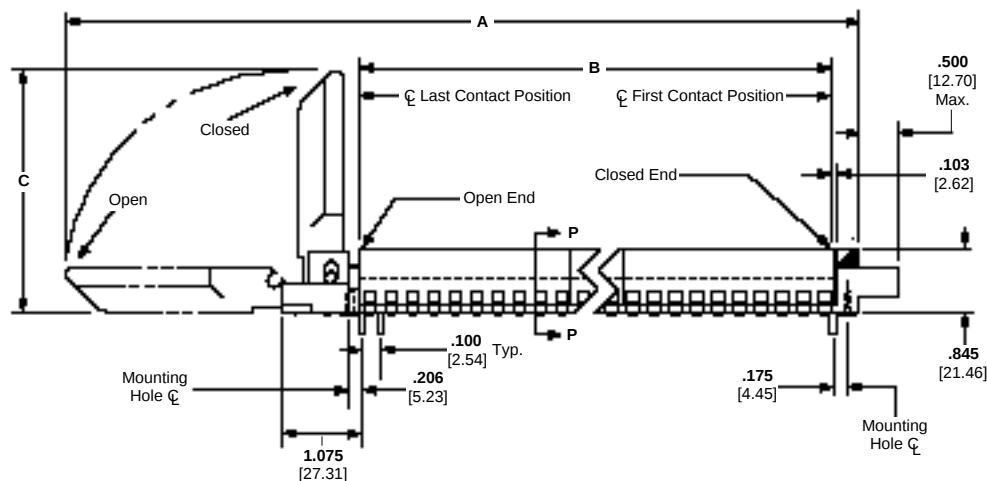
Product Specification  
108-14015

Application Specification  
114-26003

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



Section P-P



\*Card slot depth.

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

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

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

**Panel Assembly**

**Lever Style, Side Entry**

**Material and Finish:**

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

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

**Related Product Data:**

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

**Performance Specifications**—page 83

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

**ACTION PIN Contacts**—pages 88, 94

**Tooling**—page 95

**Special Application**—page 96

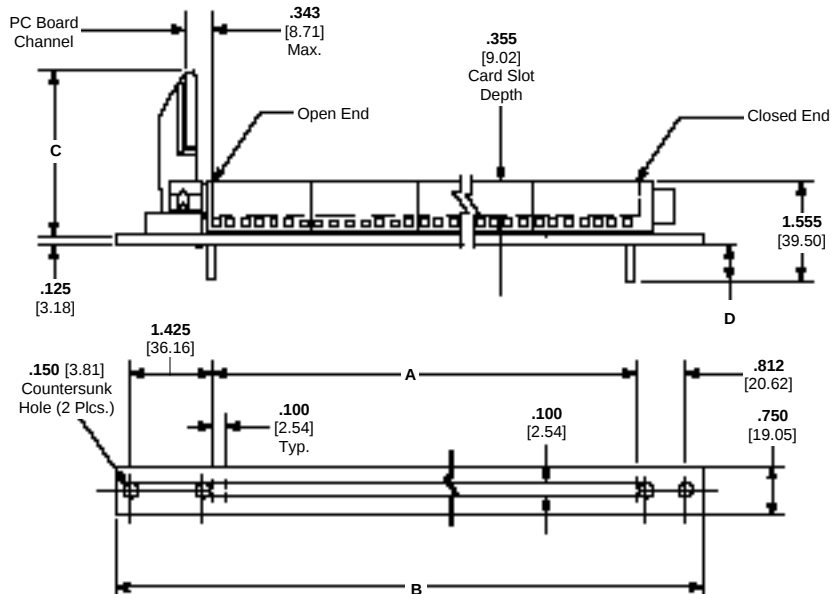
**Technical Documents:**

(pages 186, 187):

Product Specification  
108-14015

Application Specification  
114-26003

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



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

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

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

**Panel Assembly**

**Lever Style, Top Entry**

**Material and Finish:**

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

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

**Related Product Data:**

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

**Performance Specifications**—page 83

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

**ACTION PIN Contacts**—pages 88, 94

**Tooling**—page 95

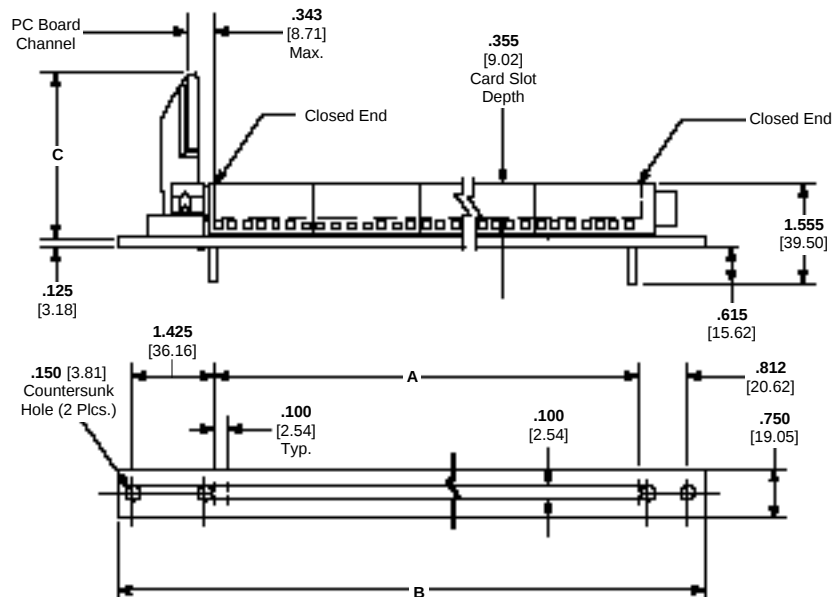
**Technical Documents:**

(pages 186, 187):

Product Specifications  
108-14015, 108-26003

Application Specification  
114-26003

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



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

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

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

**Housing**

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

**Related Product Data:**

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

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

**Performance Specifications**—  
page 83

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

**ACTION PIN Contacts**—  
pages 88, 94

**Tooling**—page 95

**Special Application**—page 96

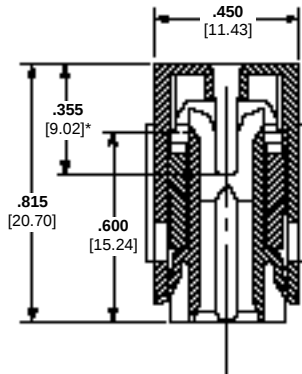
**Technical Documents:**

(pages 186, 187):

Product Specifications  
108-14015, 108-26003

Application Specification  
108-26003

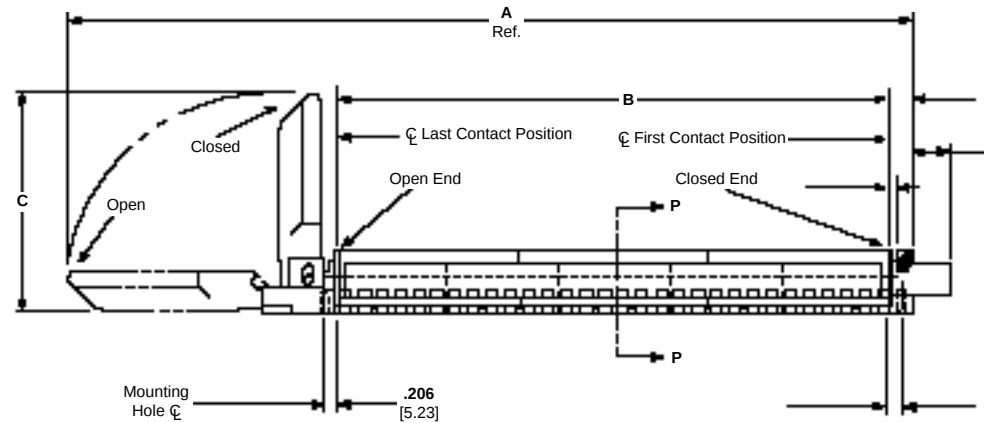
Instruction Sheets 408-2995,  
408-2999, 408-6915



Section P-P

\*Card slot depth.

**Lever Style, Side Entry**



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

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

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

**Material and Finish:**

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

**Related Product Data:**

**Performance Specifications—**  
page 83

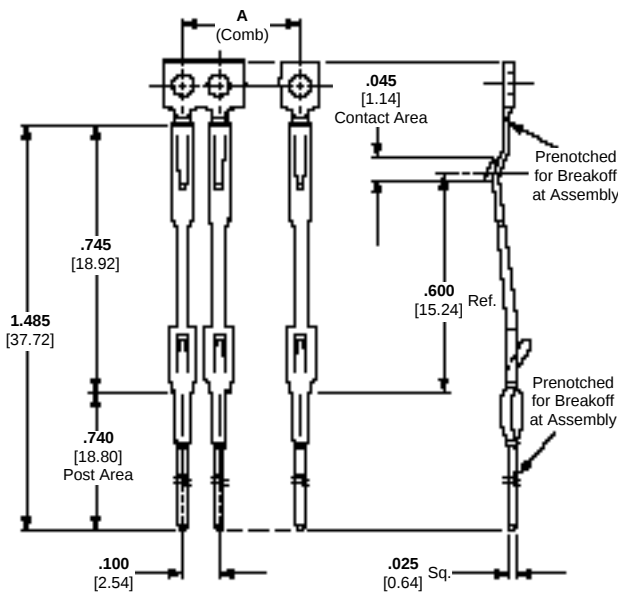
**ACTION PIN Contact Description  
and Application Specification—**  
page 94

**Tooling—**page 95

**Technical Documents:**

(pages 186, 187):

Instruction Sheet 408-2665



**Contact Combs**

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

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

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

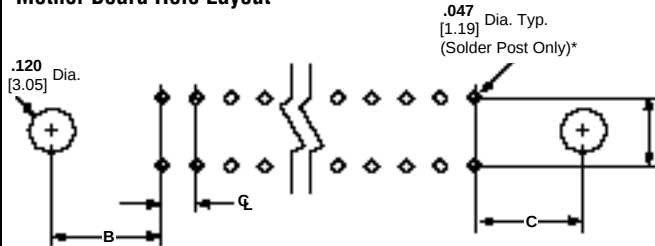
**Reeled Contacts**

| Number of<br>Contacts<br>Per Reel | Part<br>Number |
|-----------------------------------|----------------|
| 35,000                            | 119196-6       |

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

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

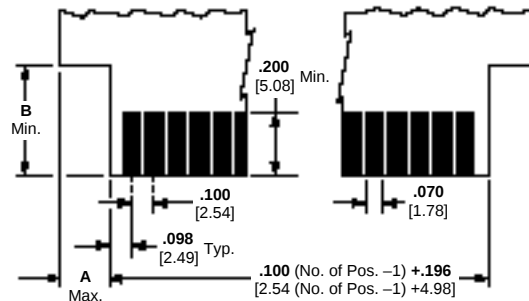
**Mother Board Hole Layout**



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

| Connector<br>Style | Dimensions   |              |              |              |
|--------------------|--------------|--------------|--------------|--------------|
|                    | CL           | A            | B            | C            |
| Lever              | .100<br>2.54 | .100<br>2.54 | .206<br>5.23 | .175<br>4.45 |

**Daughter Board Edge Pattern**



| Connector<br>Style | Entry<br>Style | Dimensions   |              |
|--------------------|----------------|--------------|--------------|
|                    |                | A            | B            |
| Lever              | Side           | .240<br>6.10 | —            |
|                    | Top            | .240<br>6.10 | .320<br>8.13 |

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

**Panel Assembly**

**Lever Style, Side Entry**

**Material and Finish:**

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

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

**Related Product Data:**

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

**Performance Specifications**—page 83

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

**ACTION PIN Contacts**—pages 93, 94

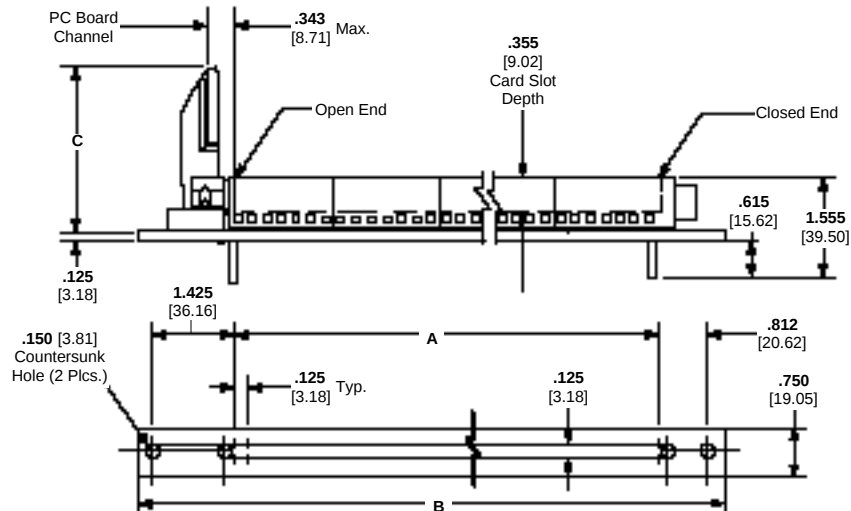
**Tooling**—page 95

**Special Application**—page 96

**Technical Documents:**

(pages 186, 187):

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



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

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

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

**Panel Assembly**

**Bell Crank Style, Top Entry**

**Material and Finish:**

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

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

**Related Product Data:**

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

**Performance Specifications**—page 83

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

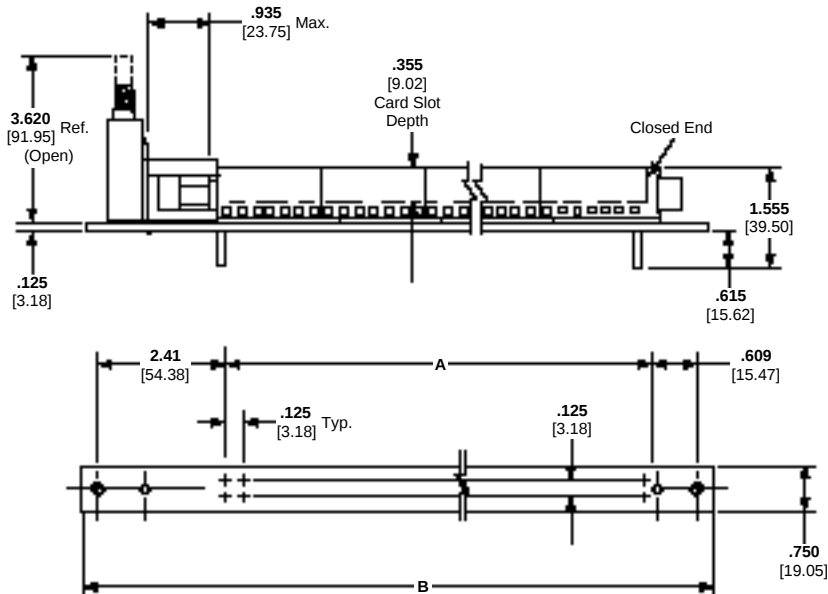
**ACTION PIN Contacts**—pages 93, 94

**Tooling**—page 95

**Technical Documents:**

(pages 186, 187):

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



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

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

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

**Housing**

**Lever Style, Side Entry**

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

**Related Product Data:**

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

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

**Performance Specifications**—  
page 83

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

**ACTION PIN Contacts**—  
pages 93, 94

**Tooling**—page 95

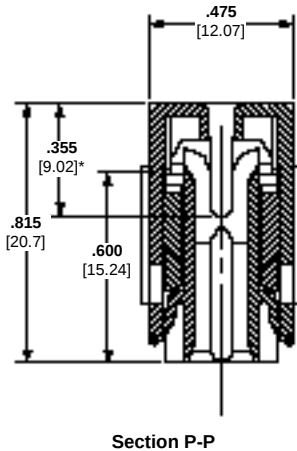
**Special Application**—page 96



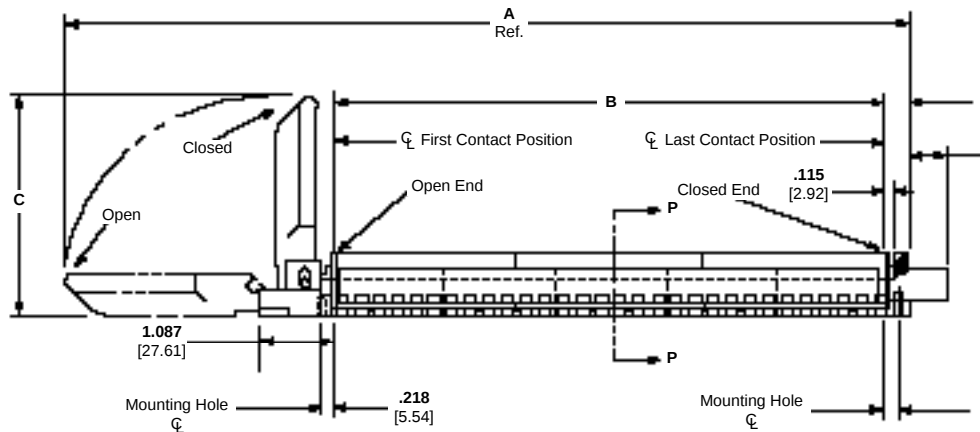
**Technical Documents:**

(pages 186, 187):

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



\*Card slot depth.



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

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

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

## Housing

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

**Related Product Data:**

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

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

**Performance Specifications—**  
page 83

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

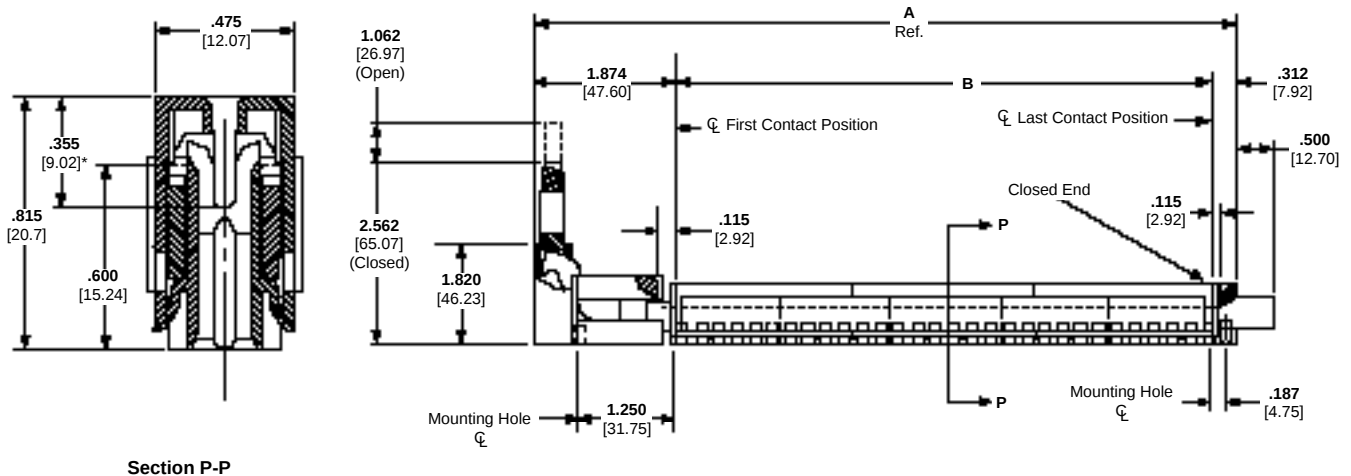
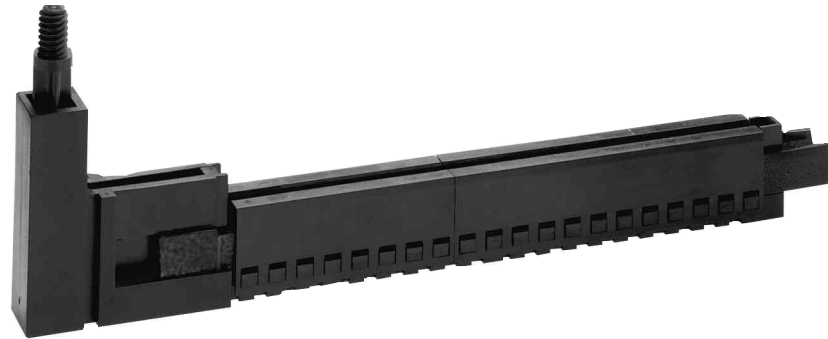
**ACTION PIN Contacts**—  
pages 93, 94

**Tooling**—page 95

### Technical Documents:

(pages 186, 187):

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



\*Card slot depth.

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

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

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

**Material and Finish:**

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

**Related Product Data:**

**Performance Specifications—**  
page 83

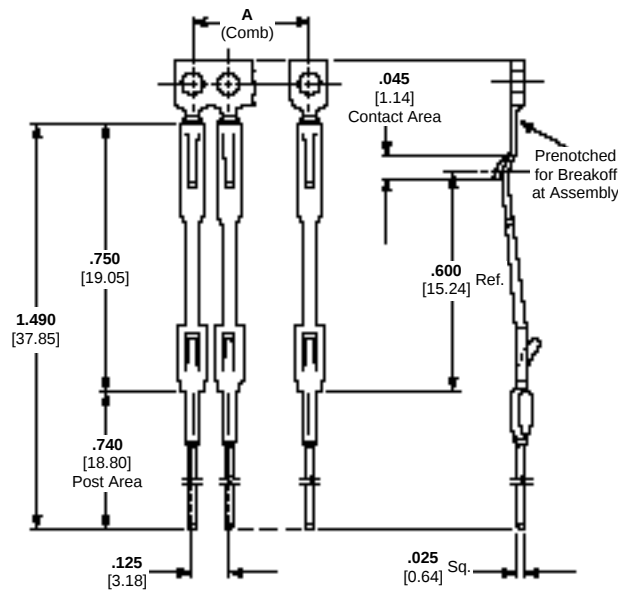
**ACTION PIN Contact Description  
and Application Specification—**  
page 94

**Tooling—**page 95

**Technical Documents:**

(pages 186, 187):

Instruction Sheet 408-2665



**Contact Combs**

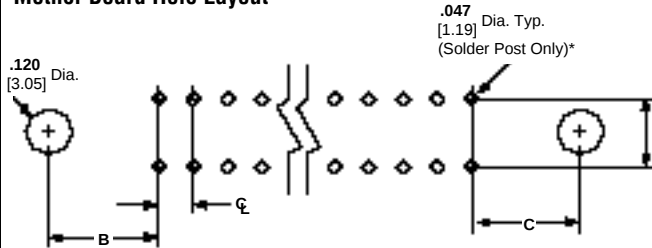
| Number of<br>Contacts<br>Per Comb* | Dimension<br>A  | Part<br>Number |
|------------------------------------|-----------------|----------------|
| 56                                 | 6.875<br>174.63 | 1-119950-2     |

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

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

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

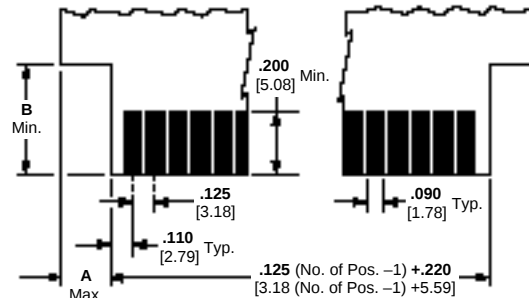
**Mother Board Hole Layout**



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

| Connector<br>Style | Dimensions   |              |                |              |
|--------------------|--------------|--------------|----------------|--------------|
|                    | ℄            | A            | B              | C            |
| Lever              | .125<br>3.18 | .125<br>3.18 | .218<br>5.54   | .187<br>4.75 |
| Bell-Crank         | .125<br>3.18 | .125<br>3.18 | 1.250<br>31.75 | .187<br>4.75 |

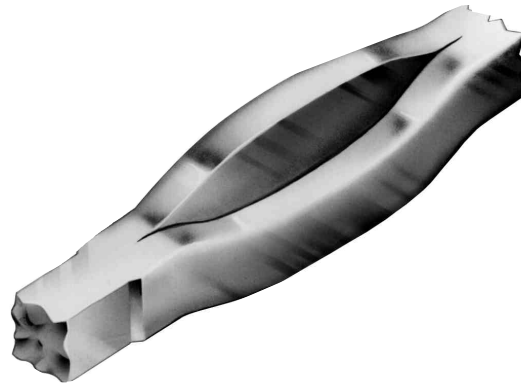
**Daughter Board Edge Pattern**



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

**Linear ZIF Connectors** (Continued)

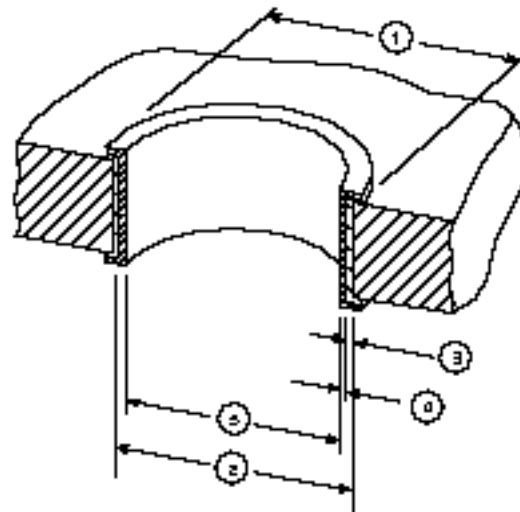
**AMP ACTION PIN  
Press-Fit Contacts**



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

**ACTION PIN Contact/PC Board Applications**

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

\*Maximum hardness of copper layer is 150 Knoop.

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

**Linear ZIF Connectors** (Continued)

**Tooling**

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

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

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

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

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

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

**Special Application**

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

