AMP Metrimate Pin and Socket Connectors
AMP Metrimate connectors are true metric specification connectors designed for panel, free-hanging or PC board application. These connectors offer improvements in durability, density and electrical performance over competitive soft shell pin and socket connectors. They are ideally suited for equipment manufacturers engaged in both national and international markets. This versatile pin and socket connector line is designed to meet the general requirements of various testing and approval agencies, including UL, CSA, VDE and IEC. Presently, connectors are available in various design configurations and the most popular sizes to satisfy a variety of application requirements. Such designs include: square grid connectors for free-hanging and/or panel mounting; free-hanging in-line connectors; square grid and in-line pin and socket headers for PC board mounting; and drawer connectors for rack and panel mounting with radial float. For high electrical performance and maximum economy, all connectors employ housings made of UL rated 94V-0 thermoplastic.

**Table of Contents**

- **Performance Characteristics** ......................................................... 3-5
- **Metrimate Connector Applications** ............................................. 6-8
- **Contacts:**
  - Type III* (Crimp) ................................................................. 9
  - Type III* (Grounding Pins) .................................................. 10
  - Type III* (Solder) ................................................................. 9-10
  - High Current Upgrade, Type II and III* ................................ 11-12
  - Subminiature Coaxial ......................................................... 13-14
  - Size 8, Power .......................................................................... 15
  - High Current Upgrade, Size 8, Power ....................................... 16
  - 125 POWERBAND Contacts.................................................... 17
- **Drawer Connectors** ................................................................... 18-26
- **Low Profile Drawer Connectors** ................................................. 27-30
- **Square Grid Connectors**
  - (Free-Hanging and Panel Mount) ........................................... 31-33
- **Strain Relief Kits for Square Grid Connectors** ......................... 31
- **Square Grid PC Board Mount Headers** .................................... 34-38
- **In-Line Connectors (Free-Hanging), 5 [0.197] Centerline** ........... 39-40
- **In-Line PC Board Mount Headers, 5 [0.197] Centerline** ............. 41-43
- **Keying Plugs** ........................................................................ 44
- **In-Line Connectors, 5.08 [0.200] Centerline** ............................ 44-47
- **In-Line Coaxial Socket Headers** ............................................. 48-51
- **Rectangular Connectors** ......................................................... 52-53
- **Commoning and Power Distribution Connectors** .................... 54-55
- **Application Tooling** ................................................................. 56-57
- **Technical Documents** ............................................................... 61
- **Part Number Index** ................................................................ 62

**Need more information?**

Call Technical Support:
1-800-522-6752

The Center 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 millimeters and inches. Values in brackets are equivalent U.S. Customary Units.

Metric symbols used are:
- C (Celsius)
- mm² (square millimeter)

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

Specifications subject to change. Consult Tyco Electronics for latest design specifications.


ACTION PIN, AMP, AMPOMATOR, AMP-O-LECTRIC, AMP-O-MATIC, CERTI-CRIMP, COAXICON, LGH, POWERBAND, PRO-CRIMPER and TYCO are trademarks.
Performance Characteristics

Electrical Characteristics
Voltage Rating: UL (600 VAC and VDC), CSA (600 VAC and VDC), VDE (380 VAC, 450 VDC), IEC (440 V)
Dielectric Strength: 2000 Volts, RMS (at sea level)
Current Rating: See contact current carrying capability data below.
Insulation Resistance: 5000 Megohms (Min.)
Termination Resistance: Dependent upon individual contact type. Refer to applicable Product Specification.

Environmental Characteristics
Temperature Range: -55°C to +130°C [-67°F to +266°F]

Mechanical Characteristics
Air Gap: Exceeds 3.2 [.125]
Creep Distance: Exceeds 4 [.157]
Mounting Distance (Live Contact-to-Panel): Exceeds 6 [.237]
Acceptable Panel Thicknesses: 0.8-2.3 [.030-.090]

Contact Current Carrying Capability

![CONTACT CURRENT GUIDE Maximum Current (Amperes)]

<table>
<thead>
<tr>
<th>Pin Diameter</th>
<th>Size 8</th>
<th>.125 POWERBAND Contact</th>
<th>High Current Upgrade Size 8 in a fully-loaded 8-Pos. Drawer Connector (Single contact – 55 Amperes)</th>
<th>High Current Upgrade Louvertac, Type III+</th>
<th>Type III+</th>
<th>Type III+ in a fully-loaded header</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>3.58</strong> [.141]</td>
<td><strong>3.06</strong> [.125]</td>
<td><strong>3.40</strong> [.130]</td>
<td><strong>1.52</strong> [.062]</td>
<td><strong>1.52</strong> [.062]</td>
<td><strong>0.98</strong> [.040]</td>
</tr>
</tbody>
</table>

The total current capacity of each contact in a connector is dependent upon the heat rise resulting from the combination of electrical loads on all the contacts in the connector arrangement and the maximum ambient temperature in which the connector will be operating. Caution must be taken to assure that these combinations of conditions do not cause the internal temperature of the connector to exceed the maximum operating temperature of the housing material. There are several variables which must be considered when determining this maximum current carrying capability for your application.

These variables are:

a. Wire Size—Larger wire will carry more current since it has less resistance to current flow; therefore, it generates less heat. The wire also conducts heat away from the connector.
b. Connector Size—In general, the more circuits in a connector, the less current per contact can be carried.
c. Ambient Temperature - The higher the ambient temperature, the less current can be carried.
Performance Characteristics (Continued)

Can a contact rated at 10 amperes carry 10 amperes?

Maybe yes, but probably not. The reason lies in the test conditions used to rate the contact. If these conditions do not adequately reflect the application conditions, the actual allowable current levels may be lower than specified levels. For example, many manufacturers, including Tyco Electronics, test a single contact in air. This gives an accurate measure of the basic current-carrying capacity of the contact. Use the contact alone in air and it can certainly carry 10 amperes. Use it in a multi-position connector surrounded by other current-carrying contacts or in high ambient temperatures, and the contact should carry less current.

Similarly, as the contact ages and stress relaxation, environmental cycling, and other degradation factors take their toll, the contact’s current-carrying capacity decreases. A prudent design must set current levels for such end-of-design-life (EODL) conditions.

Practical current-carrying capacity is not an absolute, but an application-dependent condition.

New Method Simplifies Ratings

To help the designer set the appropriate current level, Tyco Electronics has developed a method of specifying current-carrying capacity. This method takes into account the various application factors that influence current rating.

The method can be summarized as follows:

- The contact is aged to EODL conditions by durability cycling, thermal cycling, and environmental exposure.
- The contact’s resistance stability is verified.
- The current necessary to produce the specified temperature rise is measured. This T-rise is usually 30°C.
- A rating factor is determined to allow derating of multiple contacts in the same housing and for different conductor sizes.

Temperature

One other factor influencing current levels is the maximum operating temperature, for example, 105°C. If the application has a high ambient temperature (over 75°C) the contact’s T-rise is limited by the maximum operating temperature. For example, an application temperature of 90°C limits the contact T-rise to 15°C. Since current produces heat (i^2r law), the current must be lowered to limit the T-rise.

A contact’s T-rise depends not only on its i^2r Joule heating, but also on its ability to dissipate the heat. Consider a contact in a multi-contact housing. Joule heating in multiple contacts will raise the local ambient temperature. Since the contact will not be able to dissipate its own heat as well by convection, the maximum T-rise will be realized at a lower current level. Consequently, the allowable current level must be lower to maintain an acceptable T-rise.

For a given connector, the current level will be set by the loading density. A connector containing 50% current-carrying contacts will permit higher currents (per contact) than a connector will at 75% loading. The loading percentage assumes an even distribution of contacts within the housing. If all 10 contacts are grouped together in one section of a 20-position connector, the loading density may approach 100%.

The Importance of EODL

As stated, T-rise in a contact depends on both resistance and current. As it ages, a contact’s resistance will increase. The contact designer will specify a maximum resistance for the contact, this level is the end-of-design-life resistance. Before the contact is tested for current, Tyco Electronics subjects it to a sequence of tests that exercise many major failure mechanisms and thereby simulates EODL conditions. Conditioning includes mating cycling, industrial mixed-flowing gases, humidity and temperature cycling, and vibration to sequentially introduce wear, corrosion, stress relaxation, and mechanical disturbance.

Presentation

The presentation of current-carrying capacity in Tyco Electronics product specifications includes two parts:

- First, a base curve showing current levels versus T-rise for a single circuit and the largest wire size. This represents the maximum current capacity of the
contact. The curve is usually flat up to 75°C ambient and then drops off. Up to 75°C, the 30°C T-rise limits the amount of current, and above 75°C the current must be reduced to keep the combination of ambient temperature and T-rise from exceeding the maximum operating temperature of 105°C.

- Next are rating factors, a table of multipliers to account for connector loading and for smaller wire sizes. The designer first determines the base current for the ambient conditions of the application, then multiplies this base current by the rating factors to find the current level for the application’s loading factor and wire size.

**Practical Values**

The current-rating method gives designers practical values applicable to their applications. While the specified current levels for a contact may be lower than for other testing methods, they are more realistic and simplify the system design process. “Spec-manship” is replaced by a realistic assessment of the current-carrying capacity of a contact under varying conditions of temperature, connector loading, and wire size.

**An Example:**

To demonstrate the method of specifying current, consider the following application conditions, an ambient temperature of 65°C, a 50% loading of contacts in the housing, and 20 AWG [0.6 mm²] wire.

- From Figure 1, the base current rating is 14 ampere with 18 AWG [0.8 mm²] wire.
- Figure 2, the rating factor for 50% loading and 20 AWG [0.6 mm²] wire is 0.68.
- The specific rating for this application is the product of the base rating and the rating factor: 14 x 0.68 = 9.5 ampere
- Each of the contacts can carry 9.5 ampere.
- However, if the ambient temperature is 80°C, the allowable T-rise becomes 25°C. The base current must be lowered to 12.8 ampere so that the 105°C maximum operating temperature is not exceeded. The current rating then becomes: 12.8 x 0.68 = 8.7 ampere.

![Graph showing the relationship between base current, ambient temperature, and contact T-rise.](image-url)

**Figure 1**

![Rating factors allow the base current to be adjusted for various connector loading and wire sizes.](image-url)

**Figure 2**
AMP Metrimate Pin and Socket Connectors

**NOTE:** All part numbers are RoHS Compliant

---

**Metrimate Connector Applications**

**Drawer Connectors**

**Standard Drawer Connectors, Rack and Panel Applications**

**Plug**
- 4, 12, 19 and 25 Position Connectors; 8 and 15 Position Power Connectors
  (Pages 18, 19)

**Receptacle**
- 4, 12, 19 and 25 Position Connectors; 8 and 15 Position Power Connectors
  (Pages 18, 19)

**Standard Drawer Connectors, Wire-To-Board**

**Plug**
- 12, 19 and 25 Position Pin Headers (Solder); 25 Position Pin Header (ACTION PIN Contacts); 8 and 15 Position Power Drawer Pin Headers
  (Pages 18, 19)

**Receptacle**
- 25 Position Socket Headers (Solder); 8 and 15 Position Power Drawer Socket Headers
  (Pages 18, 19)

**Low Profile Drawer Connectors, Wire-To-Board, and Wire-To-Wire**

**Plug**
- 23 Position Wire-To-Board (Right-Angle); 18 Position Hybrid (5 Power; 13 Signal) Wire-To-Board (Right-Angle); 30 Position Wire-To-Wire
  (Page 27)

**Receptacle**
- 25 Position Socket Headers (Solder); 8 and 15 Position Power Drawer Socket Headers
  (Pages 18, 19)
Metrimate Connector Applications (Continued)

Square Grid Connectors

Receptacle
4, 6, 9, 12, 18, 24 and 36 Position (Page 31)
A Strain Relief is available for the 6, 9, 12, 18, 24 and 36 Position Connectors. (Pages 31, 33)

Plug
4, 6, 9, 12, 18, 24 and 36 Position (Page 31)
A Strain Relief is available for the 6, 9, 12, 18, 24 and 36 Position Connectors. (Pages 31, 33)
Metrimate Connector Applications (Continued)

In-Line Connectors

- **Receptacle**
  - 1, 3, 6, 10 and 16 Position (Page 39)

- **PC Board Mount Socket Header**, Straight-Thru
  - 3, 6, 10 and 16 Position (Page 4)

- **PC Board Mount Socket Header**, Right-Angle
  - 3, 6, 10 and 16 Position (Page 4)

- **Plug – Free-Hanging**
  - 1, 3, 6, 10 and 16 Position (Page 39)

- **Receptacle – Free-Hanging**
  - 3, 6, 10 and 16 Position (Page 39)

- **PC Board Mount Pin Header**, Straight-Thru
  - 3, 6, 10 and 16 Position (Page 41)

- **PC Board Mount Pin Header**, Right-Angle
  - 3, 6, 10 and 16 Position (Page 41)

- **Plug**
  - 3, 6, 10 and 16 Position (Page 39)
  - 5.08 [0.200] Centerline Connector 6, 10 and 19 Position (Page 44)
### Signal Contacts

#### Type III+, Crimp, Snap-In

- **Material and Finish** - See chart
- **Contact Body** - Copper Nickel Alloy
- **Retention Spring** - Stainless steel

#### Contact Size 16 - Pin Diameter .062 [1.57]

**(Test Current, 13 Ampere)**

<table>
<thead>
<tr>
<th>Wire Size Range</th>
<th>Ins. Dia. Range</th>
<th>Contact Finish</th>
<th>Strip Form Contact No.</th>
<th>Loose Piece Contact No.</th>
<th>Tooling Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A W G</td>
<td>mm²</td>
<td></td>
<td>Pin</td>
<td>Socket</td>
<td></td>
</tr>
<tr>
<td>30-28</td>
<td>0.05-0.09</td>
<td>Gold/Nickel⁰</td>
<td>788085-3 788088-2</td>
<td>788085-1 788088-1 788085-4 788088-3</td>
<td>90716-1 567867-1* 567947-1* or 680602-6*</td>
</tr>
<tr>
<td>30-26</td>
<td>0.05-0.15</td>
<td>Gold/Nickel⁰</td>
<td>66425-7 66424-7</td>
<td>66425-8 66424-8 66425-7 66424-7 66425-7</td>
<td>91515-1 466598-9* or 680602-6*</td>
</tr>
<tr>
<td>26-24</td>
<td>0.12-0.2</td>
<td>Gold/Nickel⁰</td>
<td>66393-8 66394-8</td>
<td>66396-4 66394-8 66393-8</td>
<td>90225-6 466585-3*</td>
</tr>
<tr>
<td>30-16</td>
<td>0.05-0.08</td>
<td>Gold/Nickel⁰</td>
<td>66106-9 66108-9</td>
<td>66107-9 66108-9 66107-9 66108-9</td>
<td>91515-1 466521-6* or 58499-1* or 466908-2***</td>
</tr>
<tr>
<td>30-24</td>
<td>0.05-0.15</td>
<td>Gold/Nickel⁰</td>
<td>66106-9 66108-9</td>
<td>66107-9 66108-9 66107-9 66108-9</td>
<td>91515-1 466521-6* or 58499-1* or 466908-2***</td>
</tr>
<tr>
<td>26-24</td>
<td>0.12-0.2</td>
<td>Gold/Nickel⁰</td>
<td>66106-9 66108-9</td>
<td>66107-9 66108-9 66107-9 66108-9</td>
<td>91515-1 466521-6* or 58499-1* or 466908-2***</td>
</tr>
<tr>
<td>24-20</td>
<td>0.2-0.6</td>
<td>Gold/Nickel⁰</td>
<td>66106-9 66108-9</td>
<td>66107-9 66108-9 66107-9 66108-9</td>
<td>91515-1 466521-6* or 58499-1* or 466907-9*</td>
</tr>
<tr>
<td>20-12</td>
<td>0.2-0.3</td>
<td>Gold/Nickel⁰</td>
<td>66106-9 66108-9</td>
<td>66107-9 66108-9 66107-9 66108-9</td>
<td>91515-1 466521-6* or 58499-1* or 466907-9*</td>
</tr>
<tr>
<td>20-12</td>
<td>0.2-0.3</td>
<td>Gold/Nickel⁰</td>
<td>66106-9 66108-9</td>
<td>66107-9 66108-9 66107-9 66108-9</td>
<td>91515-1 466521-6* or 58499-1* or 466907-9*</td>
</tr>
<tr>
<td>18-16</td>
<td>0.8-1.4</td>
<td>Gold/Nickel⁰</td>
<td>66106-9 66108-9</td>
<td>66107-9 66108-9 66107-9 66108-9</td>
<td>91515-1 466521-6* or 58499-1* or 466907-9*</td>
</tr>
<tr>
<td>22-14</td>
<td>0.2-0.3</td>
<td>Gold/Nickel⁰</td>
<td>66106-9 66108-9</td>
<td>66107-9 66108-9 66107-9 66108-9</td>
<td>91515-1 466521-6* or 58499-1* or 466907-9*</td>
</tr>
<tr>
<td>18-14</td>
<td>0.8-2.0</td>
<td>Gold/Nickel⁰</td>
<td>66106-9 66108-9</td>
<td>66107-9 66108-9 66107-9 66108-9</td>
<td>91515-1 466521-6* or 58499-1* or 466907-9*</td>
</tr>
<tr>
<td>18-16</td>
<td>0.2-0.3</td>
<td>Gold/Nickel⁰</td>
<td>66106-9 66108-9</td>
<td>66107-9 66108-9 66107-9 66108-9</td>
<td>91515-1 466521-6* or 58499-1* or 466907-9*</td>
</tr>
<tr>
<td>18-16</td>
<td>0.8-2.0</td>
<td>Gold/Nickel⁰</td>
<td>66106-9 66108-9</td>
<td>66107-9 66108-9 66107-9 66108-9</td>
<td>91515-1 466521-6* or 58499-1* or 466907-9*</td>
</tr>
</tbody>
</table>

### Related Product Data

**Application Tooling** - Pages 76-79

**Technical Documents**
- 114-10004 application Specification
- 108-10024-2 Product Specification

**Catalog 82045**
- Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are equivalent U.S. Customary Units.
- Dimensions are shown for reference purposes only. Specifications subject to change.

**USA:** 1-800-522-6752
- Canada: 1-905-470-4425

**Mexico:** 01-800-733-8926
- C. America: 52-55-5-729-0425

**South America:** 55-11-361-1014
- Hong Kong: 852-2735-1628
- Japan: 81-44-844-8013
- UK: 44-141-810-8967

**NOTE:** All part numbers are RoHS Compliant
### Signal Contacts (Continued)

#### Type III+, Crimp, Snap-In

<table>
<thead>
<tr>
<th>Contact Size</th>
<th>Material and Finish</th>
<th>Related Product Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>Contact Body: Copper alloy, plated tin or gold, Spring: Stainless steel</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Grounding Pin

- (make first - break last)

#### Related Product Data

- Application Tooling: Pages 56, 57
- Technical Documents: Page 58

#### Wire Size Range

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.12-0.2</td>
<td>0.89-1.4</td>
<td>Tin</td>
<td>164159-3</td>
<td>164162-1</td>
<td>91515-1 or 58495-1*</td>
</tr>
<tr>
<td></td>
<td>.35-0.55</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.2-0.6</td>
<td>1.14-1.78</td>
<td>Bright Tin</td>
<td>164160-3</td>
<td>164163-1</td>
<td>466323-0** or 91515-1 or 58495-1*</td>
</tr>
<tr>
<td></td>
<td>.045-0.70</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.8-1.4</td>
<td>1.98-2.49</td>
<td>Sel. Gold/Nickel2</td>
<td>164161-3</td>
<td>164164-1</td>
<td>466741-0*** or 91523-1 or 58495-1*</td>
</tr>
<tr>
<td></td>
<td>.078-0.95</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Overall insulation crimp diameter, including crimp barrel, must not exceed 3.18 [.125].
2. Gold flash over 0.00076 [.000030] min. nickel on entire contact, with 0.00076 [.000030] gold in contact area.
3. To use with the 626 Pneumatic Tool System: remove the crimping head from the Straight Action Hand Tool (SAHT) Assembly, order SAHT Adapter Part No. (Call Technical Support), Adapter Holder Part No. 356304-1 (with ratchet) or 189928-1 (without), and Power Unit Part No. 189721-1 (hand actuated) or 189722-1 (foot actuated).

#### Type III+ (Precision Formed, Solder)

<table>
<thead>
<tr>
<th>Contact Size</th>
<th>Material and Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>Contact Body: Copper alloy, plated tin to gold, Spring: Stainless steel</td>
</tr>
</tbody>
</table>

#### Related Product Data

- Performance Characteristics: Page 6
- Technical Documents: Page 80

#### Contact Size 16—Pin Diameter .062 [1.57] (Test Current, 13 Ampere)‡

<table>
<thead>
<tr>
<th>Wire Size Range</th>
<th>Contact Finish</th>
<th>Loose Piece Contact No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWG</td>
<td></td>
<td>Pin</td>
</tr>
<tr>
<td>26-20</td>
<td>0.12-0.6</td>
<td>Gold/Nickel¹</td>
</tr>
<tr>
<td>18-16</td>
<td>0.8-1.4</td>
<td>Gold/Nickel¹</td>
</tr>
<tr>
<td>2.49</td>
<td></td>
<td>Solder Tab²</td>
</tr>
</tbody>
</table>

1. 0.00030 [.000012] gold in mating area over 0.00030 [0.000012] min. nickel.
2. Duplex plated 0.00030 [0.000012] gold in mating area over 0.00030 [0.000012] min. nickel on contact body; bright tin on solder tab.
3. Bright tin on entire contact.
4. Designed for up to 14 AWG; but, not to exceed current limitation of contact.

Note: These contacts can be used in MultiMate contact cavities of all connector housings.

‡Single contact, free-air test current is not to be construed as contact rating current. Use only for testing. Refer to contact current carrying capability information on page 8.

Extraction Tool Part No. 725840-1

---

**NOTE:** All part numbers are RoHS Compliant

---

**Gapping:**

- Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are equivalent U.S. Customary Units.
- Dimensions are shown for reference purposes only. Specifications subject to change.
- Contacting Information:
  - USA: 1-800-522-6752
  - Canada: 1-905-470-4425
  - Mexico: 01-800-733-8926
  - C. America: 52-55-5-729-0425
  - UK: 44-141-810-8967
  - South America: 55-11-3611-1514
  - Hong Kong: 852-2735-1628
  - Japan: 81-44-844-8013
  - New Zealand: 0800-808-808
  - China: 400-666-8787

**Tyco Electronics**

- AMP Metrimate Pin and Socket Connectors

**10 Catalog 82045 Revised 06-08 www.tycoelectronics.com**
AMP Metrimate
Pin and Socket Connectors

Power Contacts - High Current Upgrade

Type II and Type III+, Size 16

The features of the High Current Size 16 contact have been designed to fit into the existing AMP Multimate Connectors such as CPC (Circular Plastic Connector), CMC (Circular Metal Connector), G Series, M Series, Econoseal, Metrimate Square Grid and Drawer Connector housings. An initial T-Rise test in free air has shown a 23 amp capability with a 30°C T-Rise. The contact may be crimped onto 14 AWG wire with a Tyco Electronics hand tool P/N 601967-1. Use turret TH502 (1-601967-6) for the pin and turret TH501 (1-601967-5) for the socket.

Material

Pin Body — Leaded Brass; Copper Alloy (Board Mount)
Socket Body — Copper Alloy
Louvertac Band — Beryllium Copper
Retention Spring — Stainless Steel
Finish
Body — Silver
Louvertac Band — Gold

Extraction Tool Part No. 305183

Current-Carrying Capacity. The graph shows current-carrying capacity versus temperature rise for a fully energized 6 position Metrimate Square Grid plug P/N 207152-1 and receptacle P/N 207153-1. These initial representative amperage ratings were conducted with 14 AWG wires that were 2 feet long.

Notes: 1. High Current contacts with Louvertac bands are NOT intermateable with any other contact.
2. Additional information on CPC and CMC connectors is available in Catalog 82021.
3. Additional information on G Series connectors is available in Catalog 82046.
4. Additional information on M Series connectors is available in Catalog 82003.
5. Additional information on Metrimate connectors is available in Catalog 82045.
6. Additional information on Econoseal connectors is available in Catalog 82057.
7. Additional information on LGH connectors is available in Catalog 82024.
**Enhanced High Current Type III+, Crimp, Snap-In**

Material and Finish - See chart  
Contact Body - Copper Nickel Alloy  
Retention Spring - Stainless steel

---

**Contact Size 16—Pin Diameter .062 [1.57]**

<table>
<thead>
<tr>
<th>Wire Size Range</th>
<th>Ins. Dia. Range</th>
<th>Contact Finish</th>
<th>Strip Form Contact No.</th>
<th>Loose Piece Contact No.</th>
<th>Tooling Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWG</td>
<td>mm²</td>
<td></td>
<td>Pin</td>
<td>Socket</td>
<td></td>
</tr>
<tr>
<td>18-14</td>
<td>0.8-2.0</td>
<td>Gold</td>
<td>1-6359-6</td>
<td>1-6358-9</td>
<td>1-6636-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tin</td>
<td>1-6359-9</td>
<td>2-6358-1</td>
<td>1-6636-1</td>
</tr>
</tbody>
</table>

---

1 Overall insulation crimp diameter, including crimp barrel, must not exceed .125 [3.18].  
2 Contacts can ONLY be used in CPC, Series 1 (Arr. 23-24), Series 4 (Arr. 23-13M, 23-16M, 23-22M), and VDE connectors.  
3 To use with the 626 Pneumatic Tool System: remove the crimping head from the Straight Action Hand Tool (SAHT) Assembly, order SAHT Adapter Part No. 217201-1, Adapter Holder Part No. 356304-1 (with ratchet) or 189928-1 (without), and Power Unit Part No. 189721-1 (hand actuated) or 189722-1 (foot actuated).  
**Call Technical Support for Automatic Machine Applicator Part Numbers.**

---

**Ratings**

Base Current:  
Type III+ contacts: 13 amperes, 30°C temperature rise with single contact on 14 AWG wire in free air  
Enhanced High Current Type III+ contacts: 24 amperes, 30°C temperature rise with single contact on 14 AWG wire  

Temperature:  
-55°C to +105°C
Coaxial Contacts

**Subminiature, Crimp, Snap-In, Size 16**

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outer Shell</strong></td>
<td>Brass per MIL-C-50</td>
</tr>
<tr>
<td><strong>Center Conductor</strong></td>
<td>Beryllium copper per QQ-C-533 (Pin); Brass per QQ-B-626 (Socket)</td>
</tr>
<tr>
<td><strong>Inner Dielectric</strong></td>
<td>Polypropylene</td>
</tr>
<tr>
<td><strong>Retention Spring</strong></td>
<td>Stainless steel per QQ-S-766</td>
</tr>
<tr>
<td><strong>Ferrule</strong></td>
<td>Copper per QQ-C-576 or ASTM-B-152 (1-332056-0)</td>
</tr>
</tbody>
</table>

**Finish**
- Outer Shell, Center Conductor - See chart
- Ferrule - Tin-lead per MIL-T-10727

**Note:** Subminiature Coaxial Contacts are used in Metri-mate In-Line Plug and Receptacle Housings (page 39); NOT recommended for use in Metri-mate Standard or Drawer Connectors.

**Selection Chart for Coaxial Cable**

<table>
<thead>
<tr>
<th>Cable Size</th>
<th>Contact Finish</th>
<th>Loose Piece Contact No.</th>
<th>Ferrule Part No.</th>
<th>Tooling Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(RG/U)</td>
<td></td>
<td>Pin</td>
<td>Socket</td>
<td></td>
</tr>
<tr>
<td>174, 196</td>
<td>Gold/Nickel</td>
<td>226537-2</td>
<td>51565-2</td>
<td>1-332057-0</td>
</tr>
<tr>
<td></td>
<td>Gold/Copper¹</td>
<td>—</td>
<td>51565-5</td>
<td>69690-2</td>
</tr>
<tr>
<td>196</td>
<td>Gold/Nickel</td>
<td>226537-2</td>
<td>51565-2</td>
<td>225088-1</td>
</tr>
<tr>
<td>(Double Braid)</td>
<td>Gold/Copper¹</td>
<td>—</td>
<td>51565-5</td>
<td>—</td>
</tr>
<tr>
<td>174, 188, 316</td>
<td>Gold/Nickel</td>
<td>226537-1</td>
<td>51565-1</td>
<td>1-332056-0</td>
</tr>
<tr>
<td></td>
<td>Gold/Nickel</td>
<td>—</td>
<td>51565-4</td>
<td>69690-0</td>
</tr>
<tr>
<td></td>
<td>Gold/Copper²</td>
<td>—</td>
<td>51565-4</td>
<td>91911-3**</td>
</tr>
<tr>
<td>179, 187</td>
<td>Gold/Nickel</td>
<td>226537-1</td>
<td>51565-1</td>
<td>1-332056-0</td>
</tr>
<tr>
<td></td>
<td>Gold/Nickel</td>
<td>226537-4</td>
<td>51565-4</td>
<td>69690-1</td>
</tr>
<tr>
<td></td>
<td>Gold/Copper²</td>
<td>—</td>
<td>51565-4</td>
<td>91911-4**</td>
</tr>
<tr>
<td>187</td>
<td>Gold/Nickel</td>
<td>226537-1</td>
<td>51565-1</td>
<td>225088-3</td>
</tr>
<tr>
<td>(Double Braid)</td>
<td>Gold/Copper¹</td>
<td>—</td>
<td>51565-4</td>
<td>—</td>
</tr>
<tr>
<td>161</td>
<td>Gold/Nickel</td>
<td>226537-1</td>
<td>51565-4</td>
<td>1-332056-0</td>
</tr>
<tr>
<td></td>
<td>Gold/Copper²</td>
<td>—</td>
<td>51565-4</td>
<td>—</td>
</tr>
</tbody>
</table>

¹Use hand actuated Power Unit Part No. 189721-2 or foot actuated Power Unit Part No. 189722-2. Both units require “C” Head Die Set Adapter Part No. 318161-1 and an Adapter Holder Part No. 356304-1 (with ratchet) or Part No. 189928-1 (without ratchet). Request Catalog 124208 for information on the 626 Pneumatic Tool System.

**Die Set used with PRO-CRIMPER II hand tool frame Part No. 354940-1.**

Extraction Tool Part No. 305183
Tyco Electronics

AMP Metrimate
Pin and Socket Connectors

NOTE: All part numbers are RoHS Compliant

Coaxial Contacts (Continued)

Selection Chart for Twisted Pair and Shielded Wire

<table>
<thead>
<tr>
<th>Wire Size</th>
<th>Contact Finish</th>
<th>Loose Piece Contact No.</th>
<th>Ferrule Part No.</th>
<th>Tooling Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWG [mm²]</td>
<td></td>
<td>Pin</td>
<td>Socket</td>
<td>Hand Tool</td>
</tr>
<tr>
<td>30</td>
<td>0.05</td>
<td>226537-3</td>
<td>51565-3</td>
<td>1-332057-0</td>
</tr>
<tr>
<td>28</td>
<td>0.08-0.09</td>
<td>226537-3</td>
<td>51565-3</td>
<td>1-332057-0</td>
</tr>
<tr>
<td>28</td>
<td>0.08-0.09</td>
<td>226537-3</td>
<td>51565-3</td>
<td>1-332057-0</td>
</tr>
<tr>
<td>26</td>
<td>0.12-0.15</td>
<td>226537-3</td>
<td>51565-3</td>
<td>1-332057-0</td>
</tr>
<tr>
<td>26</td>
<td>0.12-0.15</td>
<td>226537-3</td>
<td>51565-3</td>
<td>1-332057-0</td>
</tr>
</tbody>
</table>

1.00076 [0.00030] gold over 0.00127 [0.00050] nickel—outer shell and socket center conductor;
0.000076 [0.000030] gold over 0.000254 [0.000100] copper—pin center conductor.
0.000127 [0.000050] gold over 0.000127 [0.000050] nickel—outer shell and socket center conductor;
0.000127 [0.000050] gold over 0.000254 [0.000100] copper—pin center conductor.
* Use hand actuated Power Unit Part No. 189721-2 or foot actuated Power Unit Part No. 189722-2. Both units
require “C” Head Die Set Adapter Part No. 318161-1 and an Adapter Holder Part No. 356304-1 (with ratchet) or
Part No. 189928-1 (without ratchet). Request Catalog 124208 for information on the 626 Pneumatic Tool System.
** Die Set used with PRO-CRIMPER II hand tool frame Part No. 354940-1.

Note: A ferrule is required for each pin and socket.

Extraction Tool Part No. 305183

Material

Outer Shell - Brass per MIL-C-50

Center Conductor - Beryllium copper per QQ-C-533 (Pin);
Brass per QQ-B-626 (Socket)

Inner Dielectric - Polypropylene

Retention Spring - Stainless steel per QQ-S-766

Ferrule - Copper per QQ-C-576 or ASTM-B-152 (1-332056-0)

Finish

Outer Shell, Center
Conductor - See chart
Ferrule - Tin-lead per MIL-T-10727

Note: Subminiature Coaxial Contacts are used in
Metrimate In-Line Plug and Receptacle Housings (page 39); NOT recommended for use in Metrimate Standard or
Drawer Connectors.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-5-729-0425
UK: 44-141-810-8967
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013

Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are equivalent U.S. Customary Units.

Catalog 82045
Revised 06-08
www.tycoelectronics.com

Subminiature, Crimp, Snap-in, Size 16
(Continued)
**Power Contacts**

### Standard, Size 8, 4/8 Indent Crimp

![Pin](image1.png) ![Socket](image2.png)

**Note:** Standard Size 8, High Current Upgrade Size 8 and .125 POWERBAND contacts are not intermateable.

### Material

- **Contact Body** - Copper alloy
- **Retention Clip** - Phosphor bronze
- **Finish**
  - **Contact Body** - 0.00127 [.000050] gold over 0.00127 [.000050] nickel
- **Retention Spring** - Nickel plated

### Power Contacts, Standard, Size 8 (Test Current 50 Amperes)†

<table>
<thead>
<tr>
<th>Wire Range</th>
<th>Contacts</th>
<th>Crimping Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWG [mm²]</td>
<td>Pin 213567-1</td>
<td>Socket 212014-1</td>
</tr>
<tr>
<td>18-16</td>
<td>0.8-1.4</td>
<td>(P) SP867 (S) 608668-2</td>
</tr>
<tr>
<td>14-12</td>
<td>2-3</td>
<td>(P) SP867 (S) 608651-2</td>
</tr>
<tr>
<td>10</td>
<td>5</td>
<td>(P) 608651-3 (S) 608651-2</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>(P) 608651-3 (S) 608651-2</td>
</tr>
</tbody>
</table>

‡ Single contact, free-air test current; not to be construed as contact rating current. Use only for testing. Refer to contact current carrying capability information, page 3.

### Related Product Data

- **Technical Documents**
  - 108-10045 Product Specification
  - 114-10014 Application Specification

---

**NOTE:** All part numbers are RoHS Compliant

---

**AMP Metrimate**

**Pin and Socket Connectors**

**Catalog 82045 Dimensions are in millimeters Dimensions are shown for reference purposes only. Specifications subject to change.**

USA: 1-800-522-6752  
Canada: 1-905-470-4425  
Mexico: 01-800-733-8926  
C. America: 52-55-5-729-0425

Hong Kong: 852-2735-1628  
Japan: 81-44-844-8013  
UK: 44-141-810-8967

---

**Catalog 82045**  
**Revised 06-08**  
**www.tycoelectronics.com**

---

15
AMP Metrimate
Pin and Socket Connectors

Power Contacts - High Current Upgrade (Continued)

Metrimate Drawer Connector, Size 8
The Louvertac bands have the versatility of being designed into contact dimensions used in existing Tyco Electronics connectors.

Metrimate High Current contacts have been designed to fit into the existing Drawer Connector housings. A fully energized 8 position connector with 8 gage wires can handle 30 amps per line with a 30°C T-rise on either the cable-to-cable or cable-to-board.

Cable-to-Cable
Material
Contact Body - Copper Alloys
Louvertac Band - Beryllium Copper
Retention Spring - Stainless Steel
Finish - Gold

Product Specification
108-1449 Metrimate Pin and Socket with Louvertac High Current Contact
Connector Voltage Rating - 600 VAC
• Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
• Certified by Canadian Standards Association, File No. LR7189A

Cable-to-Board
Material
Contact Body - Copper Alloys
Louvertac Band - Beryllium Copper
Retention Spring - Stainless Steel
Finish - Gold

A typical application would have solder tail pins mounted into the receptacle and crimp socket mounted into the plug.
• Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
• Certified by Canadian Standards Association, File No. LR7189A

High Current Contacts

<table>
<thead>
<tr>
<th>Wire Size</th>
<th>Contact Part Numbers</th>
<th>Crimp Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWG</td>
<td>Pin</td>
<td>Socket</td>
</tr>
<tr>
<td>8</td>
<td>193457-1</td>
<td>193458-1</td>
</tr>
<tr>
<td>10</td>
<td>193642-1</td>
<td>193643-1</td>
</tr>
<tr>
<td>12-14</td>
<td>193534-1</td>
<td>193535-1</td>
</tr>
</tbody>
</table>

†Daniels Manufacturing Corp., Orlando, FL

Extraction Tool Part No. 318813-1 or 305183-6

Drawer Connector Housings

<table>
<thead>
<tr>
<th>Size Configuration</th>
<th>Housing Part Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 Positions (8 Size 8 Cavities)</td>
<td>213499-1</td>
</tr>
<tr>
<td>15 Positions (3 Size 8 Cavities &amp; 12 Size 16 Cavities)</td>
<td>213426-1</td>
</tr>
</tbody>
</table>

Extraction Tool Part No. 318813-1

Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are equivalent U.S. Customary Units.

NOTE: All part numbers are RoHS Compliant
.125 POWERBAND Contacts

Pin Diameter - 125 [3.175]
Test Current - 50 Amperes†

Material and Finish
Contact - Copper
Spring - Beryllium copper

Plating Code
A. 0.00508 [.000200] min. silver on contact area, 0.00127 [.000050] min. on remainder, all over 0.00127 [.000050] min. nickel underplate
B. 0.00076 [.000030] min. gold on contact area, gold flash on remainder, all over 0.00127 [.000050] min. nickel underplate

Related Product Data
Application Tooling - Pages 56, 57
Technical Document - Page 58

Extraction Tool
Part No. 318813-1
(Instruction Sheet 408-4374)

Wire Size AWG/mm² Contact Finish Pin Length Contact Part No. Tooling Part No.

| Wire Size | Contact | Pin Length | Strip | Loose Piece | Heavy Duty Miniature (HDM) Applicators (for AMP-O-LECTRIC Hand Tool 69710-1 or 626 Pneumatic Tool System*) Die Sets for Hand Tool 69710-1 or 626 Pneumatic Tool System*
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>14-12 2-5</td>
<td>A Standard</td>
<td>Standard</td>
<td>213845-1</td>
<td>213847-1</td>
<td>213845-3</td>
<td>213847-3</td>
</tr>
<tr>
<td>B Standard</td>
<td>213845-2</td>
<td>213847-2</td>
<td>213845-4</td>
<td>213847-4</td>
<td>680197-3</td>
<td>356611-2 (10 AWG)</td>
</tr>
<tr>
<td>A Extended†</td>
<td>213845-5</td>
<td>-</td>
<td>213845-7</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>B Extended†</td>
<td>213845-6</td>
<td>-</td>
<td>213845-8</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10-8 5-8</td>
<td>A Standard</td>
<td>Standard</td>
<td>213841-1</td>
<td>213843-1</td>
<td>213841-3</td>
<td>213843-3</td>
</tr>
<tr>
<td>B Standard</td>
<td>213841-2</td>
<td>213843-2</td>
<td>213841-4</td>
<td>213843-4</td>
<td>680197-3</td>
<td>356611-2 (10 AWG)</td>
</tr>
<tr>
<td>A Extended†</td>
<td>213841-5</td>
<td>-</td>
<td>213841-7</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>B Extended†</td>
<td>213841-6</td>
<td>-</td>
<td>213841-8</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

†For use in Metrimate Drawer Connectors listed in chart below and Two-Piece Sealed Circular Plastic Connectors (CPC), Series 5 and 6.
‡Single contact, free-air test current; not to be construed as contact rating current. Use only for testing. Refer to contact current carrying capability information, page 3.

Note: Standard Size 8, High Current Upgrade Size 8, and .125 POWERBAND contacts are not intermateable.

* A typical 626 Pneumatic Tool System requires: a power unit (Part No. 189721-2, hand actuated or 189722-2, foot actuated), an adapter holder (Part No. 356500) with ratchet), and “C” Head adapter Part No. 318161-1.

.125 POWERBAND Metrimate Drawer Connectors

<table>
<thead>
<tr>
<th>No. of Pos.</th>
<th>Housing Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Plug</td>
</tr>
<tr>
<td>213886-1**</td>
<td>213500-3**</td>
</tr>
</tbody>
</table>

Color: blue

*For use with .125 POWERBAND contacts (Extended Pin Length), listed above.
AMP Metrimate
Pin and Socket Connectors

Standard Drawer Connector Panel Mount

Product Facts
- 4-, 12-, 19- and 25-position connectors for Size 16 contacts
- 8-position connector for Size 8 power contacts, and a 15-position connector for 3 Size 8 power contacts and 12 Size 16 contacts
- Provides “blind” mating with up to 2.3 [0.090] mis-alignment in any direction
- Guide pins molded into plug half
- Plug and receptacle can be front- or rear-panel mounted

Material
Black glass-filled thermoplastic, 94V-0 rated

Related Product Data
Contacts - Pages 9-17
Mounting Screw - Page 20
Keying Plug - Page 44
Dimensional Specifications and Recommended Panel Cutouts - Pages 21-26
Performance Characteristics - Page 3
Technical Documents - Page 58
Product Specifications - 108-10033
108-10045
Application Specifications - 114-10039
114-10014

Standard Drawer Connectors

<table>
<thead>
<tr>
<th>No. of Pos.</th>
<th>Connector Housing Part Nos.*</th>
<th>PC Header Part Nos.</th>
<th>Grounding Pins should not be used in these receptacle cavities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Plug Receptacle With 8/32 Inserts</td>
<td>Pin Headers</td>
<td>ACTION PIN</td>
</tr>
<tr>
<td>4</td>
<td>212608-1 212691-1 213749-1</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>12</td>
<td>211758-1 211759-1 213749-1</td>
<td>213824-3A</td>
<td>—</td>
</tr>
<tr>
<td>19</td>
<td>208210-2 208209-2</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>25</td>
<td>21150-1 21149-1</td>
<td>—</td>
<td>213672-3A 1-796590-1 1-796590-2</td>
</tr>
</tbody>
</table>

*Housings only, order contacts separately. See pages 9-12 for contact specifications.

PC Header Plating Code:
*Contact brass plated 0.00076 [0.000030] min. gold on mating end, gold flash remainder, both over 0.00127 [0.000050] min. nickel underplating. Post end brass plated 0.00254 [0.000100] min. tin over 0.00254 [0.000100] min. copper. Spring—Stainless steel.
*Contact phosphor bronze plated 0.00254 [0.000100] min. tin over 0.00127 [0.000050] min. nickel.
*Contact phosphor bronze plated 0.00076 [0.000030] min. gold on the mating area, 0.00038 [0.000150] min. gold on the ACTION PIN contact end, all over 0.00127 [0.000050] min. nickel.

Note: Select loaded configurations including grounding pins can be made available; consult Tyco Electronics.
AMP Metrimate
Pin and Socket Connectors

**Power Drawer Connector, Size 8***

*For use with Size 8 contacts found on page 15

**Blindmate Power Connectors**

<table>
<thead>
<tr>
<th>No. of</th>
<th>Housing Part No.*</th>
<th>With 8/32 Insert</th>
<th>PCB Headers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pos.</td>
<td>Plug</td>
<td>Receptacle</td>
<td>Pin</td>
</tr>
<tr>
<td>8</td>
<td>213499-1</td>
<td>213500-1</td>
<td>213752-1</td>
</tr>
<tr>
<td>(8 size 8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>213426-1</td>
<td>213427-1</td>
<td>213715-2†</td>
</tr>
<tr>
<td>(3 size 8, 12 size 16)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Loaded with Size 16 contacts only.

**Power Drawer Connector, .125 POWERBAND***

*For use with .125 POWERBAND contacts found on page 17

**.125 POWERBAND Connectors**

<table>
<thead>
<tr>
<th>No. of</th>
<th>Housing Part No.</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pos.</td>
<td>Plug</td>
<td>Receptacle</td>
</tr>
<tr>
<td>8</td>
<td>213886-1†</td>
<td>213500-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>213500-1</td>
</tr>
</tbody>
</table>

Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are equivalent U.S. Customary Units. Specifications subject to change.
Mounting Screw

**Material**
Stainless steel

<table>
<thead>
<tr>
<th>Thread Size</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>M4 x 0.7-6H/6g</td>
<td>208211-1</td>
</tr>
<tr>
<td>SAE 6/32</td>
<td>208211-4</td>
</tr>
</tbody>
</table>

**Note:** These shoulder screws are used for mounting the plug housing and they provide float for positioning of misaligned connectors. Two are required for each plug. Mounting screws are to be ordered separately. Nuts are to be supplied by the customer.

**Screw Kits**

**Part No. 213283-2**

Kit Includes: 2—M4 screws, 2—Springs, 2—Washers

Screw Kits are recommended in order to compensate for misaligned connector halves and to provide float in X, Y, and Z directions.
NOTE: All part numbers are RoHS Compliant

AMP Metrmate
Pin and Socket Connectors

Drawer Connector Specifications

4 Position Housings

Plug (for Sockets)

Receptacle (for Pins)

12 Position Housings

Plug (for Sockets)

Receptacle (for Pins)
NOTE: All part numbers are RoHS Compliant

### Drawer Connector Specifications (Continued)

#### 19 Position Housings

**Plug (for Sockets)**

![Plug Diagram](image)

**Receptacle (for Pins)**

![Receptacle Diagram](image)
**AMP Metrimate Pin and Socket Connectors**

**NOTE:** All part numbers are RoHS Compliant

---

**Drawer Connector Specifications (Continued)**

### 25 Position Housings

#### Plug (for Sockets)

- **Flange Hole & Pad for Mounting Screw (2)**
- **Mating Face**

#### Receptacle (for Pins)

- **Mating Face**

---

---

---

---
NOTE: All part numbers are RoHS Compliant

Receptacle with ACTION PIN Contacts

Recommended PC Board Layout

Receptacle (Posted)

Recommended PC Board Layout
### Recommended Panel Cutouts

#### Recommended Panel Cutout for Plugs (Socket Housings)

**Dimensions:**

- A: 2.3 x 45°
- B: 14 [0.552]
- C: 12.8 [0.502]
- D: 6.7 [0.265]
- E: 4.5 [0.176]
- F: 17.3 [0.680]
- G: 45.3 [1.783]
- H: 45°

#### Recommended Panel Cutout for Receptacles (Pin Housings)

**Dimensions:**

- A: 2.4 x 45°
- B: 15.9 [0.626]
- C: 29.2 [1.150]
- D: 6.4 [0.251]
- E: 4.5 [0.176]
- F: 17.3 [0.680]
- G: 45°
- H: 45.3 [1.783]

### Table: Drawer Connector Specifications

<table>
<thead>
<tr>
<th>No. of Positions</th>
<th>Positions</th>
<th>Dimensions</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Plug</td>
<td>45.3</td>
<td>14</td>
<td>17.3</td>
<td>4.5</td>
<td>17.3</td>
<td>26.2</td>
<td>36.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Receptacle</td>
<td>40.5</td>
<td>13.9</td>
<td>12.8</td>
<td>6.7</td>
<td>17.3</td>
<td>26.2</td>
<td>31.5</td>
<td>3.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.595</td>
<td>547</td>
<td>502</td>
<td>265</td>
<td>680</td>
<td>1.032</td>
<td>1.240</td>
<td>1.430</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Plug</td>
<td>55.45</td>
<td>14</td>
<td>27.4</td>
<td>4.5</td>
<td>17.3</td>
<td>36.4</td>
<td>36.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Receptacle</td>
<td>50.7</td>
<td>13.9</td>
<td>22.9</td>
<td>6.7</td>
<td>17.3</td>
<td>36.4</td>
<td>31.5</td>
<td>3.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.995</td>
<td>547</td>
<td>902</td>
<td>265</td>
<td>680</td>
<td>1.432</td>
<td>1.240</td>
<td>1.430</td>
<td></td>
</tr>
<tr>
<td>19, Power Connectors-8 &amp; 15</td>
<td>Plug</td>
<td>56.3</td>
<td>15.93</td>
<td>24.4</td>
<td>8.8</td>
<td>17.8</td>
<td>42</td>
<td>32</td>
<td>4.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Receptacle</td>
<td>2.215</td>
<td>627</td>
<td>960</td>
<td>346</td>
<td>702</td>
<td>1.652</td>
<td>1.262</td>
<td>1.80</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Plug</td>
<td>68.7</td>
<td>15.9</td>
<td>36.8</td>
<td>6.4</td>
<td>17.8</td>
<td>49.6</td>
<td>36.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Receptacle</td>
<td>63.9</td>
<td>15.93</td>
<td>32</td>
<td>8.8</td>
<td>17.8</td>
<td>49.6</td>
<td>32</td>
<td>4.6</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** All part numbers are RoHS Compliant.
AMP Metrimate
Pin and Socket Connectors

Power Drawer Connector Specifications

8 Position Housings
(Size 8)

Plug (for Sockets)

Receptacle (for Pins)
(Size 8 or POWERBAND Pins)

15 Position Housings
(Accept 3 Size 8 Contacts and 12 Size 16 Contacts)

Plug (for Sockets)

Receptacle (for Pins)

NOTE: All part numbers are RoHS Compliant

Dimensions are in millimeters unless otherwise specified. Values in brackets are equivalent U.S. Customary Units.

Dimensions are shown for reference purposes only. Specifications subject to change.

Catalog 82045
Revised 06-08
www.tycoelectronics.com

USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-5-729-0425
South America: 55-11-3611-1514
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-141-810-8967

0.380 Dia. Mounting Hole (2)
Low Profile Drawer Connectors

18 Position Hybrid
Drawer Connector
Right-Angle Header
Part No. 213942-6

Product Facts
- 13 signal (Type III+)
- Two Size 8 Power—HOT PLUGGABLE!
  (10 amps AC)
- Three .125 POWERBAND Contacts

Material and Finish
Housing - Black glass-filled thermoplastic, 94V-0 rated
Contacts - Copper alloy duplex plated 0.00076 [.000030] min.
gold on mating end, tin on termination end, with entire contact nickel underplated

Recommended PC Board Layout
Low Profile Drawer Connectors (Continued)

18 Position Plug Housing
(for Sockets)
Part No. 213940-1

Material and Finish

Housing - Black glass-filled thermoplastic, 94V-0 rated

Recommended Panel Cutout
Low Profile Drawer Connectors (Continued)

23 Position Plug Housing (for Sockets)
Part No. 213766-1

Material and Finish
Housing - Black glass-filled thermoplastic, 94V-0 rated

23 Position Receptacle Header
Part No. 213768-4

Material and Finish
Housing - Black glass-filled thermoplastic, 94V-0 rated
Contacts - Copper alloy duplex plated 0.00076 [0.00030] min. gold on mating end, tin-lead on termination end, with entire contact nickel underplated

Recommended PC Board Layout
30 Position Plug Housing (for Sockets)
Part No. 213973-1

30 Position Receptacle Housing (for Pins)
Part No. 213974-1
Square Grid Connectors

Free-Hanging and Panel Mount Connectors

Material
Red thermoplastic, 94V-0 rated

Related Product Data
Mateable PC Board Headers - page 34
Contacts - Pages 9-14
Keying Plug - Page 44
Strain Relief Kits - See below
Dimensional Specifications and Recommended Panel Cutout - Pages 32 and 33
Performance Characteristics - Page 3
Technical Documents - Page 58
Product Specification - 108-10033
Application Specification - 114-10040

Strain Relief Kits
(For use with plugs and/or receptacles)

Material
Red thermoplastic, 94V-0 rated

Related Product Data
Dimensional Specifications - page 33

<table>
<thead>
<tr>
<th>No. of Positions</th>
<th>Housing Part No.*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Plug</td>
</tr>
<tr>
<td>4</td>
<td>207015-1</td>
</tr>
<tr>
<td>6</td>
<td>207152-1</td>
</tr>
<tr>
<td>9</td>
<td>207439-1</td>
</tr>
<tr>
<td>12</td>
<td>207017-1</td>
</tr>
<tr>
<td>18</td>
<td>207442-1</td>
</tr>
<tr>
<td>24</td>
<td>207304-1</td>
</tr>
<tr>
<td>36</td>
<td>207019-1</td>
</tr>
</tbody>
</table>

*Housing only, order contacts separately. See pages 9–14 for contact specifications.

<table>
<thead>
<tr>
<th>No. of Positions (Connector)</th>
<th>Cable O.D. (Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>9.5</td>
</tr>
<tr>
<td></td>
<td>.375</td>
</tr>
<tr>
<td>9</td>
<td>11.7</td>
</tr>
<tr>
<td></td>
<td>.460</td>
</tr>
<tr>
<td>12</td>
<td>13.45</td>
</tr>
<tr>
<td></td>
<td>.530</td>
</tr>
<tr>
<td>18</td>
<td>16.5</td>
</tr>
<tr>
<td></td>
<td>.650</td>
</tr>
<tr>
<td>24</td>
<td>19.05</td>
</tr>
<tr>
<td></td>
<td>.750</td>
</tr>
<tr>
<td>36</td>
<td>23.3</td>
</tr>
<tr>
<td></td>
<td>.918</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Strain Relief Kit No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>207600-1</td>
</tr>
<tr>
<td>207601-1</td>
</tr>
<tr>
<td>207602-1</td>
</tr>
<tr>
<td>207603-1</td>
</tr>
<tr>
<td>207604-1</td>
</tr>
<tr>
<td>207605-1</td>
</tr>
<tr>
<td>207088-1</td>
</tr>
<tr>
<td>213792-1</td>
</tr>
<tr>
<td>213793-1</td>
</tr>
<tr>
<td>207602-1</td>
</tr>
<tr>
<td>207603-1</td>
</tr>
<tr>
<td>207604-1</td>
</tr>
<tr>
<td>207605-1</td>
</tr>
<tr>
<td>213797-1</td>
</tr>
<tr>
<td>213798-1</td>
</tr>
</tbody>
</table>

Notes:
1. Cable gates are supplied with each strain relief kit to accommodate various cable diameters up to the maximum specified.
2. Components for all strain relief kits are packaged unassembled.
Square Grid Connector Specifications

4 and 6 Position Housings

Plug (for Sockets)

<table>
<thead>
<tr>
<th>Positions A B C D</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 [0.197] Typ.</td>
</tr>
<tr>
<td>17.85 [0.703] Max.</td>
</tr>
</tbody>
</table>

Receptacle (for Pins)

<table>
<thead>
<tr>
<th>Positions A B C D</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 [0.197] Typ.</td>
</tr>
<tr>
<td>17.85 [0.703] Max.</td>
</tr>
</tbody>
</table>

9, 12 and 18 Position Housings

Plug (for Sockets)

<table>
<thead>
<tr>
<th>Positions A B C D</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 [0.197] Typ.</td>
</tr>
<tr>
<td>23.8 [0.937] Max.</td>
</tr>
</tbody>
</table>

Receptacle (for Pins)

<table>
<thead>
<tr>
<th>Positions A B C D</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 [0.197] Typ.</td>
</tr>
<tr>
<td>23.8 [0.937] Max.</td>
</tr>
</tbody>
</table>

Recommended Panel Cutout

(for Plug or Receptacle)

Note: All part numbers are RoHS Compliant

Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are equivalent U.S. Customary Units.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-5-729-0425

South America: 55-11-3611-1514
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-141-810-8967

www.tycoelectronics.com

Panel thickness 0.76-2.29 [0.030-0.090]
### 24 and 36 Position Housings

**Plug** (for Sockets)

**Receptacle** (for Pins)

#### Square Grid Connector Specifications (Continued)

**Strain Relief Kits (for 6, 9, 12, 18, 24 and 36 Position Connectors)**

<table>
<thead>
<tr>
<th>No. of Positions</th>
<th>Connector Dimensions</th>
<th>Panel Cutout Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>24</td>
<td>40.45</td>
<td>32.85</td>
</tr>
<tr>
<td></td>
<td>1.592</td>
<td>1.293</td>
</tr>
<tr>
<td>36</td>
<td>55.45</td>
<td>47.85</td>
</tr>
<tr>
<td></td>
<td>2.183</td>
<td>1.885</td>
</tr>
</tbody>
</table>

**Note:** Panel thickness 0.76-2.29 [.030-.090]

---

**Strain Relief Kits (for 6, 9, 12, 18, 24 and 36 Position Connectors)**

<table>
<thead>
<tr>
<th>No. of Positions</th>
<th>Dimensions</th>
<th>Cable O.D. (Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>6</td>
<td>17.75</td>
<td>25.53</td>
</tr>
<tr>
<td></td>
<td>.700</td>
<td>1.005</td>
</tr>
<tr>
<td>9</td>
<td>23.9</td>
<td>32.4</td>
</tr>
<tr>
<td></td>
<td>.940</td>
<td>1.275</td>
</tr>
<tr>
<td>12</td>
<td>23.9</td>
<td>32.4</td>
</tr>
<tr>
<td></td>
<td>.940</td>
<td>1.275</td>
</tr>
<tr>
<td>18</td>
<td>23.9</td>
<td>38.1</td>
</tr>
<tr>
<td></td>
<td>.940</td>
<td>1.500</td>
</tr>
<tr>
<td>24</td>
<td>27.94</td>
<td>38.1</td>
</tr>
<tr>
<td></td>
<td>1.100</td>
<td>1.500</td>
</tr>
<tr>
<td>36</td>
<td>27.94</td>
<td>38.1</td>
</tr>
<tr>
<td></td>
<td>1.100</td>
<td>1.500</td>
</tr>
</tbody>
</table>

*Plug shown for illustration purposes only. Strain Relief Kits can be used on either plug or receptacle.*
## Square Grid Connectors

### PC Board Mount Headers

#### Material and Finish
- **Housing**: Red thermoplastic, 94V-0 rated
- **Pin Contacts**: Copper alloy, plated tin or gold duplex
- **Socket Contacts**: Phosphor bronze, plated tin or gold duplex

#### Related Product Data
- **Mateable Free-Hanging Connectors**: Page 31
  - (Pin and Socket Headers do not mate.)
- **Dimensional Specifications and Recommended PC Board Layout**: Pages 35–38
- **Performance Characteristics**: Page 3
- **Technical Documents**: Page 58
- **Product Specification**: 103-10033
- **Application Specification**: 114-10040

### Square Grid Connectors Table

<table>
<thead>
<tr>
<th>No. of Positions</th>
<th>Contact Plating</th>
<th>Pin Header Part No.</th>
<th>Mates with Plug Part No. (Page 31)</th>
<th>Socket Header Part No.</th>
<th>Mates with Receptacle Part No. (Page 31)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Tin</td>
<td>207119-8</td>
<td>207496-7</td>
<td>207015-1</td>
<td>207016-1</td>
</tr>
<tr>
<td></td>
<td>Gold*</td>
<td>1-207119-0</td>
<td>1-207119-1</td>
<td>1-207496-9</td>
<td>1-207016-0</td>
</tr>
<tr>
<td>6</td>
<td>Tin</td>
<td>207158-7</td>
<td>207524-7</td>
<td>207152-1</td>
<td>207153-1</td>
</tr>
<tr>
<td></td>
<td>Gold*</td>
<td>1-207158-0</td>
<td>1-207158-1</td>
<td>1-207524-9</td>
<td>1-207153-0</td>
</tr>
<tr>
<td>9</td>
<td>Tin</td>
<td>207441-7</td>
<td>207528-7</td>
<td>207439-1</td>
<td>207440-1</td>
</tr>
<tr>
<td></td>
<td>Gold*</td>
<td>1-207441-0</td>
<td>1-207441-9</td>
<td>1-207528-9</td>
<td>1-207440-0</td>
</tr>
<tr>
<td>12</td>
<td>Tin</td>
<td>207120-9</td>
<td>207530-7</td>
<td>207017-1</td>
<td>207018-1</td>
</tr>
<tr>
<td></td>
<td>Gold*</td>
<td>1-207120-0</td>
<td>1-207120-1</td>
<td>1-207530-8</td>
<td>1-207018-0</td>
</tr>
<tr>
<td>18</td>
<td>Tin</td>
<td>207444-9</td>
<td>207530-9</td>
<td>207442-1</td>
<td>207443-1</td>
</tr>
<tr>
<td></td>
<td>Gold*</td>
<td>1-207444-0</td>
<td>1-207444-1</td>
<td>1-207530-0</td>
<td>1-207443-0</td>
</tr>
<tr>
<td>24</td>
<td>Tin</td>
<td>1-206763-1</td>
<td>207304-1</td>
<td>207305-1</td>
<td>207306-1</td>
</tr>
<tr>
<td></td>
<td>Gold*</td>
<td>1-206763-3</td>
<td>1-206763-2</td>
<td>1-207305-0</td>
<td>1-207306-1</td>
</tr>
<tr>
<td>36</td>
<td>Tin</td>
<td>207121-8</td>
<td>207534-8</td>
<td>207019-1</td>
<td>207020-1</td>
</tr>
<tr>
<td></td>
<td>Gold*</td>
<td>1-207121-0</td>
<td>1-207534-9</td>
<td>1-207019-0</td>
<td>1-207020-1</td>
</tr>
</tbody>
</table>

*Duplex plated 0.00076 [0.00030] gold on mating end, tin on termination end, with entire contact nickel underplated.

**Note**: Pin and Socket Headers do not mate.
Square Grid Pin Header Specifications

4 and 6 Position Headers

9, 12 and 18 Position Headers

Recommended PC Board Layout

<table>
<thead>
<tr>
<th>No. of Positions</th>
<th>Header Dimensions</th>
<th>PC Board Layout Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>4</td>
<td>22.61</td>
<td>17.4</td>
</tr>
<tr>
<td></td>
<td>1.090</td>
<td>.685</td>
</tr>
<tr>
<td>6</td>
<td>27.69</td>
<td>22.4</td>
</tr>
<tr>
<td></td>
<td>1.090</td>
<td>.882</td>
</tr>
<tr>
<td>9</td>
<td>27.69</td>
<td>22.4</td>
</tr>
<tr>
<td></td>
<td>1.090</td>
<td>.882</td>
</tr>
<tr>
<td>12</td>
<td>32.5</td>
<td>27.3</td>
</tr>
<tr>
<td></td>
<td>1.280</td>
<td>1.075</td>
</tr>
<tr>
<td>18</td>
<td>47.32</td>
<td>40.6</td>
</tr>
<tr>
<td></td>
<td>1.863</td>
<td>1.598</td>
</tr>
</tbody>
</table>

*D Diam.—2.65 [.104] for No. 2 screw; 3.3 [.130] for No. 4 screw.

NOTE: All part numbers are RoHS Compliant.
### Square Grid Pin Header Specifications (Continued)

#### 24 and 36 Position Headers

**Recommended PC Board Layout**

<table>
<thead>
<tr>
<th>No. of Positions</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>B</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>47.32</td>
<td>40.6</td>
<td>32.85</td>
<td>29.36</td>
<td>40.6</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>1.863</td>
<td>1.598</td>
<td>1.293</td>
<td>1.156</td>
<td>1.598</td>
<td>.984</td>
</tr>
<tr>
<td>36</td>
<td>62.31</td>
<td>55.58</td>
<td>48.01</td>
<td>29.87</td>
<td>55.58</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>2.453</td>
<td>2.188</td>
<td>1.890</td>
<td>1.176</td>
<td>2.188</td>
<td>1.575</td>
</tr>
</tbody>
</table>

Typical tolerances:
- A ±.005
- B ±.005
- C ±.005
- D ±.005
- E ±.005

Pin No. 1

Dimensions are in millimeters

---

**NOTE:** All part numbers are RoHS Compliant.
Square Grid Socket Header Specifications

4 and 6 Position Headers

9, 12 and 18 Position Headers

<table>
<thead>
<tr>
<th>No. of Positions</th>
<th>Header Dimensions</th>
<th>PC Board Layout Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>4</td>
<td>22.61</td>
<td>.890</td>
</tr>
<tr>
<td>6</td>
<td>27.69</td>
<td>1.090</td>
</tr>
<tr>
<td>9</td>
<td>27.69</td>
<td>1.090</td>
</tr>
<tr>
<td>12</td>
<td>32.5</td>
<td>1.280</td>
</tr>
<tr>
<td>18</td>
<td>47.32</td>
<td>1.863</td>
</tr>
</tbody>
</table>

*C Dia.—2.65 [.104] for No. 2 screw; 3.3 [.130] for No. 4 screw.
Square Grid Pin Header Specifications (Continued)

24 and 36 Position Headers

![Diagram of 24 and 36 Position Headers]

<table>
<thead>
<tr>
<th>No. of Positions</th>
<th>Header Dimensions (mm)</th>
<th>PC Board Layout Dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>24</td>
<td>47.32</td>
<td>40.6</td>
</tr>
<tr>
<td></td>
<td>1.863</td>
<td>1.598</td>
</tr>
<tr>
<td>36</td>
<td>62.31</td>
<td>55.58</td>
</tr>
<tr>
<td></td>
<td>2.453</td>
<td>2.188</td>
</tr>
</tbody>
</table>

NOTE: All part numbers are RoHS Compliant.
### Free-Hanging Connectors

**Material**
Red thermoplastic, 94V-0 rated

**Related Product Data**
- **Mateable PC Board Mount Headers** - Pages 41 and 48-51
- **Contacts** - Pages 9-14
- **Keying Plug** - Page 44
- **Dimensional Specifications** - Page 40
- **Performance Characteristics** - Page 3
- **Technical Documents** - Page 58
- **Product Specification** - 108-10033
- **Application Specification** - 114-10040

---

#### Illustrations

1. **Plug Housing**
   - (Accepts Socket Contacts)

2. **Receptacle Housing**
   - (Accepts Pin Contacts)

---

#### Table: Housing Part No.

<table>
<thead>
<tr>
<th>No. of Positions</th>
<th>Housing Part No.*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Plug</td>
</tr>
<tr>
<td>1 (Positive Latch)</td>
<td>207535-1**</td>
</tr>
<tr>
<td>1 (Breakaway Latch)</td>
<td>211076-1**</td>
</tr>
<tr>
<td>3</td>
<td>207360-1</td>
</tr>
<tr>
<td>6</td>
<td>207377-1</td>
</tr>
<tr>
<td>10</td>
<td>207396-1</td>
</tr>
<tr>
<td>16</td>
<td>207542-1</td>
</tr>
</tbody>
</table>

*Housing only, order contacts separately. See pages 9-14 for contact specifications.

**Note**: 1-Position Housings with Positive Latch NOT designed to be unmated; Breakaway Latch designed to be unmated.

---

#### Diagram: In-Line Connectors, 5 [.197] Centerline

1. **1 position Housing (Breakaway Latch shown)**
   - (Hermaphroditic Housing Accepts Pins or Sockets and Mates With Itself.)

---

**In-Line Connectors**

Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are equivalent U.S. Customary Units.

- **USA**: 1-800-522-6752
- **Canada**: 1-905-470-4425
- **Mexico**: 01-800-733-8926
- **C. America**: 52-55-5-729-0425
- **UK**: 44-141-810-8967
- **Hong Kong**: 852-2735-1628
- **Japan**: 81-44-844-8013
- **South America**: 55-11-361-1514
- **Australia**: 1300-766-347
- **New Zealand**: 0800-808-808

© AMP Incorporated 2007

Revised 06-08

www.tycoelectronics.com
In-Line Connector Specifications, 5 [0.197] Centerline

**Single Position Hermaphroditic Housings**

- Positive Latch
- Breakaway Latch

**3 Position Housings**

- **Plug** (for Sockets)
- **Receptacle** (for Pins)

**6, 10 and 16 Position Housings**

- **Plug** (for Sockets)
- **Receptacle** (for Pins)

**34.67±0.51**

[1.365 ±.020]

9.6

[.378]

Breakaway Latch

Serrations in this area are optional.

**Raised Cavity Identification** (on Rear Face)

<table>
<thead>
<tr>
<th>No. of Positions</th>
<th>Dimensions</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>38.7</td>
<td>41.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.524</td>
<td>1.625</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>58.7</td>
<td>61.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.312</td>
<td>2.413</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>89.79*</td>
<td>91.19</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.535</td>
<td>3.59</td>
<td></td>
</tr>
</tbody>
</table>

*A Dim. is Max. for 16-position housing.

---

**NOTE:** All part numbers are RoHS Compliant.
AMP Metrimate Pin and Socket Connectors

**In-Line Connectors, 5 [.197] Centerline**

**PC Board Mount Headers**

**Material and Finish**
- **Housing**: Red thermoplastic, 94V-0 rated
- **Pin Contacts**: Copper alloy, plated tin or gold duplex
- **Socket Contacts**: Phosphor bronze, plated tin or gold duplex

**Related Product Data**
- **Mateable Free-Hanging Connectors**: Page 39 (Pin and Socket Headers do not mate.)
- **Dimensional Specifications and Recommended PC Board Layout**: Pages 42, 43
- **Performance Characteristics**: Page 3
- **Technical Documents**: Page 58
- **Product Specification**: 108-10033
- **Application Specification**: 114-10040

**No. of Contact Pin Header Part No. Mates with Plug Part No. (Page 39)**

<table>
<thead>
<tr>
<th>No. of Positions</th>
<th>Contact Plating</th>
<th>Pin Header Part No.</th>
<th>Mates with Plug Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Straight-Thru</td>
<td>Right-Angle</td>
</tr>
<tr>
<td>3</td>
<td>Tin</td>
<td>207365-7</td>
<td>207541-6</td>
</tr>
<tr>
<td></td>
<td>Gold*</td>
<td>207365-8</td>
<td>207541-7</td>
</tr>
<tr>
<td>6</td>
<td>Tin</td>
<td>207583-6</td>
<td>207378-6</td>
</tr>
<tr>
<td></td>
<td>Gold*</td>
<td>207583-7</td>
<td>207378-7</td>
</tr>
<tr>
<td>10</td>
<td>Tin</td>
<td>207584-7</td>
<td>207398-6</td>
</tr>
<tr>
<td></td>
<td>Gold*</td>
<td>207584-8</td>
<td>207398-7</td>
</tr>
<tr>
<td>16</td>
<td>Tin</td>
<td>207599-6</td>
<td>207544-8</td>
</tr>
<tr>
<td></td>
<td>Gold*</td>
<td>207599-7</td>
<td>207544-7</td>
</tr>
</tbody>
</table>

*Duplex plated 0.00076 [.000030] gold on mating end, tin on termination end, with entire contact nickel underplated.

**No. of Contact Socket Header Part No. Mates with Receptacle Part No. (Page 39)**

<table>
<thead>
<tr>
<th>No. of Positions</th>
<th>Contact Plating</th>
<th>Socket Header Part No.</th>
<th>Mates with Receptacle Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Straight-Thru</td>
<td>Right-Angle</td>
</tr>
<tr>
<td>3</td>
<td>Tin</td>
<td>207609-6</td>
<td>207608-6</td>
</tr>
<tr>
<td></td>
<td>Gold*</td>
<td>207609-7</td>
<td>207608-7</td>
</tr>
<tr>
<td>6</td>
<td>Tin</td>
<td>207611-6</td>
<td>207610-6</td>
</tr>
<tr>
<td></td>
<td>Gold*</td>
<td>207611-7</td>
<td>207610-7</td>
</tr>
<tr>
<td>10</td>
<td>Tin</td>
<td>207613-6</td>
<td>207612-6</td>
</tr>
<tr>
<td></td>
<td>Gold*</td>
<td>207613-7</td>
<td>207612-7</td>
</tr>
<tr>
<td>16</td>
<td>Tin</td>
<td>207615-6</td>
<td>207614-6</td>
</tr>
<tr>
<td></td>
<td>Gold*</td>
<td>207615-7</td>
<td>207614-7</td>
</tr>
</tbody>
</table>

*Duplex plated 0.00076 [.000030] gold on mating end, tin on termination end, with entire contact nickel underplated.

**Note**: Pin and Socket Headers do not mate.
### In-Line Pin Header Specifications, 5 [0.197] Centerline

#### Straight-Thru

**3 Position Header**

<table>
<thead>
<tr>
<th>No. of Positions</th>
<th>Header Dimensions</th>
<th>PC Board Layout Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>3</td>
<td>36.86</td>
<td>31.6</td>
</tr>
<tr>
<td></td>
<td>1.451</td>
<td>1.244</td>
</tr>
<tr>
<td>6</td>
<td>51.87</td>
<td>46.6</td>
</tr>
<tr>
<td></td>
<td>2.042</td>
<td>1.834</td>
</tr>
<tr>
<td>10</td>
<td>71.86</td>
<td>66.6</td>
</tr>
<tr>
<td></td>
<td>2.829</td>
<td>2.622</td>
</tr>
<tr>
<td>16</td>
<td>102.64</td>
<td>96.6</td>
</tr>
<tr>
<td></td>
<td>4.041</td>
<td>3.803</td>
</tr>
</tbody>
</table>

*C Dia.—2.65 [0.104] for No. 2 screw; 2.85 [0.112] for No. 3 screw.

#### Right-Angle

**3 Position Header**

**6, 10 and 16 Position Headers**

- Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are equivalent U.S. Customary Units.
- Dimensions are shown for reference purposes only. Specifications subject to change.
- **NOTE:** All part numbers are RoHS Compliant.
### In-Line Socket Header, 5 [0.197] Centerline

#### Straight-Thru

**3 Position Header**

![Diagram of Straight-Thru 3 Position Header]

- **Dimensions:**
  - A: 36.55 [1.44] mm
  - B: 31.6 [1.25] mm
  - C*: 2.65 [0.10] mm

#### Right-Angle

**3 Position Header**

![Diagram of Right-Angle 3 Position Header]

- **Dimensions:**
  - A: 31.6 [1.25] mm
  - B: 2.65 [0.10] mm
  - C*: 10.8 [0.43] mm

### 6, 10 and 16 Position Headers

#### In-Line Connectors

- **Dimensions:**
  - A: 4.72 [0.19] mm
  - B: 2.54 [0.10] mm
  - C*: 19.5 [0.77] mm

#### Recommended PC Board Layout

- **Dimensions:**
  - A: 2.54 [0.10] mm
  - B: 19.5 [0.77] mm
  - C*: 5.10 [0.20] mm

### Table: Header and PC Board Layout Dimensions

<table>
<thead>
<tr>
<th>No. of Positions</th>
<th>Header Dimensions</th>
<th>PC Board Layout Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>3</td>
<td>36.55</td>
<td>31.6</td>
</tr>
<tr>
<td></td>
<td>1.44</td>
<td>1.25</td>
</tr>
<tr>
<td>6</td>
<td>51.59</td>
<td>46.6</td>
</tr>
<tr>
<td></td>
<td>2.03</td>
<td>1.84</td>
</tr>
<tr>
<td>10</td>
<td>71.6</td>
<td>66.6</td>
</tr>
<tr>
<td></td>
<td>2.82</td>
<td>2.62</td>
</tr>
<tr>
<td>16</td>
<td>101.7</td>
<td>96.6</td>
</tr>
<tr>
<td></td>
<td>4.00</td>
<td>3.80</td>
</tr>
</tbody>
</table>

*C Dia.—2.65 [0.10] for No. 2 screw; 2.85 [0.11] for No. 3 screw.
In-Line Connectors, 5.08 [.200] Centerline

Free-Hanging Connector and PC Board Mount Pin Header

Material and Finish
Connector
Red thermoplastic, 94V-0 rated
Header
Housing - Red thermoplastic, 94V-0 rated
Contact - Copper alloy, plated tin or gold duplex

Related Product Data
Contacts - Pages 9–14
Keying Plug - See Below
Dimensional Specifications and Recommended PC Board Layout - Pages 45–47
Performance Characteristics - Page 3
Technical Documents - Page 58

Keying Wedge
Part No. 208400-1
(for use with In-Line Plug Connectors, above)

Keying Plugs
(for use with all types)

Material
Nylon

Related Product Data
Used with:
Square Grid Connectors - Pages 31–34
In-Line Connectors - Pages 39–41
Drawer Connectors - Pages 18, 19

For Plug Housings

For Socket Headers

**NOTE:** All part numbers are RoHS Compliant
6 Position Plug Housing
(for Sockets)

10 Position Plug Housing
(for Sockets)

19 Position Plug Housing
(for Sockets)

NOTE: All part numbers are RoHS Compliant
In-Line Right-Angle Pin Header Specifications,
5.08 [.200] Centerline

6 Position Header

![Diagram of 6 Position Header]

10 Position Header

![Diagram of 10 Position Header]

Recommended PC Board Layout

NOTE: All part numbers are RoHS Compliant
AMP Metrimate
Pin and Socket Connectors

NOTE: All part numbers are RoHS Compliant

In-Line Right-Angle Pin Header Specifications,
5.08 [.200] Centerline (Continued)

19 Position Header

Recommended Pcb Board Layout
**In-Line Coaxial Socket Headers, Straight-Thru (PC Board Mount)**

### 3 Circuit Assembly
**Part No. 208708-1**

#### Material and Finish
*(Coaxial Contacts)*

**Center Conductor** - Copper alloy plated 0.00127 [0.00050] gold over 0.00076 [0.00030] nickel

**Outer Shell** - Copper alloy, plated 0.00038 [0.00015] gold over 0.00127 [0.00050] nickel

---

**Recommended PC Board Layout**

*Drill 1.6 [.063] Dia. holes in rows “W” and “Y” for subminiature coaxial contacts; and in row “X” only for power contacts.*

**Notes:**
1. All cavities are preloaded with subminiature coaxial socket contacts.
2. 3 circuit assembly mates with in-line receptacle, **Part No. 207359-1** (page 39).
In-Line Coaxial Socket Headers, Straight-Thru (PC Board Mount) (Continued)

10 Position Circuit Assemblies

Material and Finish
Coaxial Contacts
Center Conductor - Copper Alloy plated 0.00076 [.000030] gold over 0.00127 [.000050] nickel
Outer Shell - Copper alloy, plated 0.00038 [.000015] gold over 0.00127 [.000050] nickel

Power Contacts
Body - Copper Alloy plated 0.00076 [.000030] gold on mating area, 0.00381 [.000150] tin on remainder, both over 0.00127 [.000050] nickel
Hood - Stainless steel

Coaxial Contacts

PC Board Layout

<table>
<thead>
<tr>
<th>No. of Positions</th>
<th>Dimensions</th>
<th>B</th>
<th>C**</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>66.6</td>
<td>2.85</td>
<td>1.12</td>
<td>1.772</td>
</tr>
</tbody>
</table>

**C Dia. = 2.85 [.112] for No. 3 Screw.

In-Line Coaxial Socket Headers, Straight-Thru

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>71.6</td>
<td>66.6</td>
<td>3</td>
<td>All</td>
<td>208309-1</td>
<td>207397-1</td>
</tr>
<tr>
<td></td>
<td>2.869</td>
<td>2.622</td>
<td></td>
<td>3, 8 thru 10</td>
<td>208309-3</td>
<td>(Page 39)</td>
</tr>
</tbody>
</table>

* Drill 1.6 [.063] Dia. holes in rows "W" and "Y" for subminiature coaxial contacts; and in row "X" only for power contacts.
In-Line Coaxial Socket Headers, Straight-Thru (PC Board Mount)

3 Circuit Assembly
Part No. 208222-2

Material and Finish
Coaxial Contacts
Center Conductor - Copper Alloy plated 0.00127 [.000050] gold over 0.00076 [.000030] nickel

Outer Shell - Copper alloy, plated 0.00038 [.000015] gold over 0.00127 [.000050] nickel

Recommended PC Board Layout

* Drill 1.6 [.063] Dia. holes in rows “X” and “Y” for subminiature coaxial contacts.

Notes:
1. All cavities are preloaded with subminiature coaxial socket contacts.
2. 3 circuit assembly mates with in-line receptacle. Part No. 207359-1 (page 39).
6 Circuit Assembly
Part No. 208212-3

Material and Finish

Coaxial Contacts

Center Conductor - Copper alloy plated 0.00127 [0.00050] gold over 0.00076 [0.00030] nickel

Outer Shell - Copper alloy, plated 0.00038 [0.00015] gold over 0.00127 [0.00050] nickel

Mounting Holes

(See chart below.)

Recommended PC Board Layout

*Drill 1.6 [.063] Dia. holes in rows "X" and "Y" for subminiature coaxial contacts; and in row "Y" only for power contacts.

**Dia. = 2.65 [.104] for No. 2 Screw.

Notes:
1. All cavities are preloaded with subminiature coaxial socket contacts.
2. 6 circuit assembly mates with in-line receptacle. Part No. 207376-1 (page 39).
AMP Metrimate
Pin and Socket Connectors

Rectangular Connectors

62 Position Rectangular Connector (Panel Mount)

Material
Black thermoplastic, 94V-0 rated

Recommended Panel Cutout for Front & Rear Mounted Plug and Rear Mounted Receptacle

Recommended Panel Cutout for Front Mounted Receptacle

*All dimensional tolerances listed are +0.3 [-.012, -.001].
Rectangular Connectors (Continued)

62 Position PC Pin Headers (Mates with Plug
Part No. 208334-4)

Material
Black thermoplastic, 94V-0 rated

Related Product Data
Mateable Plug - Page 52
Performance Characteristics - Page 3
Technical Documents - Page 58
Product Specification - 108-10033
Application Specification - 114-10040

Part No. 211580-4 with posts 19.76 [.778]
Part No. 211580-5 with posts 3.56 [.140]

Recommended PC Board Layout
Commoning Connectors

Product Facts
- 36-circuit commoning system
- Choice of bussing configurations: full bus and split bus of 8-8-8-8-4. Other arrangements are available, consult Tyco Electronics.
- Compact design: 95.1 [3.744] x 33 [1.300]
- Mounts onto machine frame and other panel areas

Material and Finish
Contacts - Copper alloy, tin plated

Notes:
1. See chart below for bus configurations.
2. These connectors mate with 36-circuit Square Grid Plug Part No. 207019-1 (page 31).
3. Dimensional tolerances are not illustrated. This information is available on engineering drawings; use product part number when ordering drawings.

<table>
<thead>
<tr>
<th>Bus Configuration</th>
<th>Commoning Arrangements</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split 8-8-8-8-4</td>
<td></td>
<td>208062-8</td>
</tr>
<tr>
<td></td>
<td>1 thru 8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9 thru 16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>17 thru 24</td>
<td></td>
</tr>
<tr>
<td></td>
<td>25 thru 32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>33 thru 36</td>
<td></td>
</tr>
<tr>
<td>Full</td>
<td>All Circuits Common</td>
<td>208062-9</td>
</tr>
</tbody>
</table>

Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are equivalent U.S. Customary Units.

NOTE: All part numbers are RoHS Compliant
Power Distribution Connectors

Product Facts
- 36-circuit power distribution system
- High current capability
- Compact design: 95.1 [3.744] x 33 [1.300]
- Accommodates one or two voltages (with split bus)

<table>
<thead>
<tr>
<th>Bus Configuration</th>
<th>Contact Connector Plating</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Bus</td>
<td>Tin</td>
<td>208063-5</td>
</tr>
<tr>
<td>Split Bus</td>
<td>Tin</td>
<td>208063-6</td>
</tr>
<tr>
<td>(See Note 1)</td>
<td>Sel. Gold/Nickel</td>
<td>208063-7</td>
</tr>
</tbody>
</table>

0.00076 [.000030] gold on mating area, 0.00381 [.000150] tin on remainder, both over 0.00127 [.000050] nickel.

Notes:
1. Copper bus for Part Nos. 208063-6 and 208063-7 is divided lengthwise, providing dual 18-circuit buses. Other bussing configurations can be made available, consult Tyco Electronics.
2. These connectors mate with 36-circuit Square Grid Receptacle Part No. 207020-1 (page 31).
3. Dimensional tolerances are not illustrated. This information is available on Tyco Electronics engineering drawings; use product part number when ordering drawings.

Heat Rise Characteristics
The following graph indicates the maximum temperature rise of a power distribution connector with various currents being applied. The specific connector under test is a fully bussed, 36-circuit power distribution connector with 7-8 mm² [8 AWG] input wire. The mating connector is a standard 36-circuit Metrimate receptacle with all contacts terminated to 1 219 [48] leads using 2 mm² [14 AWG] wire.

Max. Temperature Rise, ºC

<table>
<thead>
<tr>
<th>Current Applied</th>
<th>Temperature Rise</th>
</tr>
</thead>
<tbody>
<tr>
<td>A — 13 amperes, one central contact.</td>
<td>5</td>
</tr>
<tr>
<td>B — 13 amperes (combined), two adjacent central contacts.</td>
<td>10</td>
</tr>
<tr>
<td>C — 20 amperes (combined), four central contacts.</td>
<td>15</td>
</tr>
<tr>
<td>D — 40 amperes (combined), four central contacts.</td>
<td>20</td>
</tr>
<tr>
<td>E — 60 amperes (combined), four central, three end contacts.</td>
<td>25</td>
</tr>
<tr>
<td>F — 50 amperes (combined), four corner contacts.</td>
<td>30</td>
</tr>
<tr>
<td>G — 100 amperes (combined), 36 contacts.</td>
<td>35</td>
</tr>
<tr>
<td>H — 155 amperes (combined), 36 contacts.</td>
<td>40</td>
</tr>
</tbody>
</table>
Application Tooling

Mechanical Hand Tools for Interchangeable Die Sets

These tools are ideal for small production, prototype and experimental applications. They are used for terminating pin and socket contacts to wire and feature a ratchet device to provide consistently formed crimps.

SDE (Standard Die Envelope) Die Sets

SDE die sets provide cost-effective flexibility, through many options for a common die-set outline. The SDE die sets can be adapted for use with CERTI-CRIMP hand tools, PRO-CRIMPER III hand tools, the SDE Terminator and the 626 Pneumatic Tool System.

PRO-CRIMPER III Hand Tool, Part No. 58495-1

Commercial grade hand tool for crimping various products. Features ratchet control to provide complete crimp cycle. Accepts both pinned- and shouldered-style die sets. Locators are provided with pinned-style die sets for proper contact and wire positioning, and to help minimize contact rotation and bending during crimping. Approximate weight 1.3 lb [0.60 kg].

CERTI-CRIMP Straight Action Hand Tools (SAHT)

Premium grade hand tools. Feature ratchet control to provide complete crimp cycle. Die sets close in a straight line. Include a contact locator and wire stop, plus an insulation crimp adjustment lever, when applicable. Approximate weight 1.3 lb [0.59 kg].

CERTI-CRIMP “C” Head Straight Action Hand Tool (SAHT), Part No. 69710-1

Premium grade hand tool. Features ratchet control to provide complete crimp cycle. The interchangeable die sets close in a straight line to minimize contact or terminal rotation during crimping. When applicable, user-assist features such as a contact or terminal locator and a wire stop, are built into the die set. Approximate weight 1.9 lb [0.86 kg].

Electric Machine for Interchangeable Die Sets

SDE Terminator, Part No. 1490076-2

An electric crimp terminator with compact design features a die set holder that is compatible with all AMP SDE (PRO-CRIMPER III Tool) die sets. Hand- or foot-actuated options are available. CE Approved.

For more information, request Catalog 1654003.

For use with Type III+ contacts, see pages 17-19.
For more information, request Catalog 1773379-1, Instruction Sheet 408-9930.

For more information, request Catalog 65780.

For Type III+ contacts, see pages 17-19.
For more information, request Catalog 65780, Instruction Sheet 408-2095.

For more information, request Catalog 1654714.
**Application Tooling (Continued)**

**Pneumatic Hand Tool for Interchangeable Die Sets**

Effortless crimping for a broad range of terminals, either bench-mounted or hand-held for working in cramped quarters.
- Lightweight tool eliminates physical force required by hand tools
- Hand- or foot-switch operation
- Termination wire range from 26-6 AWG (0.12-13.0mm²), plus coaxial and fiber optic cable
- Works with existing AMP-compatible crimp heads and die sets
- Ratchet control option provides complete crimp cycle, eliminating partial crimps
- Use rotating head assembly to reach difficult termination locations

For more information, request Catalog 124208.

**Battery-Powered Crimp Tool Kits**

The Battery-Powered Crimp Tool Kit is a fast, ergonomically-designed tool is ideal for use at the bench, on the line, or in the field. It’s completely portable, lightweight (3.48 lbs including battery) and compact. The charge delivers over 100 crimps - charge time is 40 mins. The kit includes the tool, 2 batteries and the charger.

P/N 1213890-1 — SDE Battery Powered Crimp Tool Kit (dies not included)
P/N 1213805-1 — CERTI-CRIMP II, SA Battery Powered Crimp Tool Kit (heads not included)
P/N 1213840-1 — CERTI-CRIMP, Large Die, C-Head Adapter Battery Powered Crimp Tool Kit (dies not included)
P/N 1213819-1 — CERTI-CRIMP, Large Die, Straight-Action Adapter Battery Powered Crimp Tool Kit (dies not included)

For more information, request Catalog 1773381.

**CRIMP MACHINES**

**AMP-O-LECTRIC Model “G” Terminating Machines, Part Nos. 354500-1, -9, -11**

Semiautomatic bench machines for crimping reeled terminals and contacts, featuring a quiet and reliable direct motor drive, microprocessor controls for ease of setup and operation, and guarding and lighting designed for operator convenience and safety. All models are equipped with either manual or automatic precision adjustment of crimp height. Machine-mounted sensors are available for crimp quality monitoring using conventional miniature-style applicators.

For more information, request Catalog 1654956-2, Video 198116, Catalog 82275 [Crimp Quality Monitor (CQM)], Video 198094.

Note: New Stripping Module available, see page 79.

**AMP-TAPETRONIC Machine, Part No. 69875**

AMP-O-LECTRIC Model “K” Terminating Machine with a permanently-mounted applicator that accepts interchangeable die sets to apply a variety of tape-mounted terminals and splices. Many of the die sets can also be used in AMP-O-LECTRIC Terminating Machines with a tape applicator.

For more information, contact Tyco Electronics.
Application Tooling (Continued)

**Crimp Quality Monitor (CQM)**

Part No. 1320420-2

The unique system provides 100% on-the-fly crimp inspection. It measures the crimp height of each termination, and evaluates the quality of each crimp. If a crimp is questionable, the monitor alerts the operator with both visual and audible alarms. It also provides ports for printing and networking. When used with AMP-O-LECTRIC Model “G” Termination Machines, the monitor is mounted to the machine. When used with AMPOMATOR CLS IV Lead Making Machines, it is integrated into the machine’s operating system.

For more information, request Catalog 82275.

**Crimp Force Monitor (CFM)**

Your Quality Program calls for more than a Good Crimping System. It demands proof — the proof you get with the SLE crimp force monitor. It has high-resolution piezo-quartz sensor technology for a more precise identification of typical crimping faults. Sure, you can sample and test crimp height with a micrometer. In fact, that’s how you standardize your process. But for ongoing quality control, testing every crimp, SLE is the choice. It’s known worldwide, and meets our standards or a high performance terminating system. That’s how you can be sure.

High quality crimping — with verification — means higher production and productivity.

**AMP 3K/40 and AMP 5K/40 Terminating Machines**

The AMP 3K/40 and AMP 5K/40 Terminators are designed for customers that require the increased output and quality of a semi-automated machine at a competitive price. By incorporating the most commonly requested features as standard and offering a long list of optional equipment, these terminators offer flexibility to meet the specific needs of various applications at the lowest possible cost.

**Features**
- 3,000 lb [1361 kg] max. crimp force (AMP 3K/40);
- 5,000 lb [2268 kg] max. crimp force (AMP 5K/40)
- Toolless removal of applicators and guards
- Jog capability
- Quiet, fast operation - 80/76 dBA and cycle time less than 0.400 seconds
- Accepts Heavy Duty Mini style applicators
- Wide range of optional equipment such as toolless precision crimp height adjust, batch counter, CQM capability and work light

For more information, request Catalog 1654956-2

**System III Applicator**

The System III Applicator introduces several new technologies into the applicator including a precision servo-electric motorized feeding system, a built-in data module for storing terminal crimp and set-up information, a precision fit round ram, and a newly designed terminal depressor. It still utilizes the proven quality of the HD-M crimper and anvil tooling.

For more information, request Catalog 1654956-8

---

**NOTE:** All part numbers are RoHS Compliant

---

\*Application Tooling \*
LEAD MAKERS
Komax gamma 333 PC Lead-Making Machine

This fully-automatic, PC-controlled leadmaker can be equipped with up to three processing stations enabling the crimping of both ends of the wire, double-crimp connections with three different contacts, single-ended seal applications, tinning or ink-jet marking. Features include ultra-short conversions times, easy-to-use graphic-based TopWin interface with multiple-language capability, crimp force analyzer with statistical analysis, seal monitoring, and integrated good/bad sorting.

For more information, request Catalog 1307901.

AMPOMATOR System III Leadmaker

The AMPOMATOR System III Leadmaker is designed for the demands of low-volume/high mix manufacturing and precision quality. This leadmaker combines the best wire processing capabilities with new technologies in terminal feeding and machine set-up found in the System III Applicator to offer significant advantages for higher throughput and efficiencies.

For more information, request Catalog 1654956-5

Komax 433-S alpha Lead-Making Machine

The 433-S alpha offers maximum flexibility for applying seals to one or both ends of the wire with the corresponding terminal. When equipped with the mci 711 crimp terminator and mci 761 seal applicator, the fully-automated 433-S alpha forms a highly compact system with optimum accessibility. Dynamic servo-drives provide fine travel settings on all motor axes and the wire straightening unit with quick-release lock and automatic lead-in feature reduces wire changeover time. The TopWin software provides for fast, simple data input.

For more information, request Catalog 1307801.

APPLICATORS
End-Feed Heavy-Duty Miniature Applicators (coded HDM)

Interchangeable applicators for crimping products reeled end-to-end (primarily open-barrel terminals). Used in bench and lead-making machines; most designs can be used, or adapted for use with minor tooling changes, dial-in settings for different wire sizes and insulation diameters. Mechanical or air-powered feed systems, depending on the product applied.

For more information, request Catalog 296393-2 and Instruction Sheet 408-8039.

EDGE Applicator Counter

The new EDGE counter tracks wearable tool usage for the most effective maintenance planning. The completely electronic counter, with clear LCD display, indicates cycles since installation. By performing maintenance at measured intervals with pre-set limits, operators avoid breakdowns and rejects caused by tool wear or mis-adjustment. A wireless interface transfers counters to a PC running the optional Edge Counter Software Pack.

The EDGE is standard on all new applicators and can be retrofitted to most existing Tyco Electronics applicators.

For more information, request Catalog 1773385.

Side-Feed Heavy-Duty Miniature Applicators (coded HDM)

Interchangeable applicators for crimping products reeled side-by-side on single or dual carrier strips (primarily closed-barrel terminals and open-barrel contacts). Similar design as the end-feed version. All side-feed applicators include a wire stop to help correctly position the wire end in the crimping target area.

For more information, request Catalog 296393-2 and Instruction Sheet 408-8040.
Application Tooling (Continued)

Stripper-Crimper Applicators (coded SCA)

Interchangeable applicators for crimping products in AMP-O-MATIC Stripper-Crimper Machines. Consist of separate ram and lower tooling assemblies. Similar dial-in settings for different wire sizes and insulation diameters as HDM applicators. Available with sensors for use with the Crimp Quality Monitor.

For more information, request Catalog 65004 (AMP-O-MATIC Stripper-Crimper Machines), Catalog 82275 [Crimp Quality Monitor (CQM)].

Cosmic 30M Wire Stripping Machine, 5-528367-0

The Cosmic 30M is a high precision, high speed electrical wire stripper that is very easy to operate. It’s equipped with a four blade system and an optional gripper for more difficult wires. There is a digital display for the wire diameter that can be set at 0.01 mm increments.

For more information, request Catalog 1773385-2.

Cosmic 927R Micro-Cable Stripper

The compact, lightweight, benchtop Cosmic 927R was designed and developed to reliably strip various insulation materials and micro-cable. From conductor diameter 36 to 10 AWG, the stripping diameter display can be set to within 0.1 mm increments.

For more information, request Catalog 1773385-4.

STRIPPER-CRIMPER MACHINES

AMP-O-MATIC Stripper-Crimper Machines, Part Nos. 1320895-1, -2

Semiautomatic bench crimping machines that also strip the wire, and are therefore used for terminating jacketed cable. Feature manual precision adjustment of crimp height, keyed strip blades for faster, more accurate setups, and an efficient scrap removal system. All adjustments can be made from the front of the machines without special tools. Available with crimp quality monitoring.

For more information, request Catalog 65004, Video 198075, Catalog 82275 [Crimp Quality Monitor (CQM)], Video 198094.

Stripping Module (for the AMP 3K/40 and AMP 5K/40 Terminating Machines and AMP-O-LECTRIC Model “G” Terminator on page 77)

The combination of the Stripping Module with the AMP 3K/40 and AMP 5K/40 Terminating Machines or the AMP-O-LECTRIC Model “G” Terminator provides an economic and proficient method of stripping the wire and crimping terminals on the same machine. The module accepts End- and Side-Feed HDM Applicators (32-14 AWG) and operates in three modes: crimp only, strip only, or strip and crimp. It can be installed on existing machines in the field or purchased as one unit from the factory.

For more information, request Catalog 1309085.
Technical Documents

The following is a list of technical documents covering the application, performance and maintenance of Metrimate Connectors.

**Product Specifications** describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

- 108-10033  Metrimate Connectors
- 108-10042  Contacts, Type III+ Stamped and Formed
- 108-12011  Subminiature COAXICON Contacts
- 108-1317   Power Drawer Connectors
- 108-1682   Power Drawer Connectors with .125 POWERBAND Contacts
- 108-1449   Power Drawer with High Current Louvertac Size 8
- 108-10033-1 Metrimate Connectors loaded with contacts

**Application Specifications** describe requirements for using the product in its intended application and/or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person.

- 114-10014  Contacts, Pin and Socket, Power Application of
- 114-10004  Contacts, Type III+
- 114-10039  Drawer Connectors
- 114-10040  Metrimate Connectors
- 114-10043  POWERBAND Contacts

**Instruction Sheets** provide instructions for assembling or applying the product. They are intended for the Manufacturing Assembler or Operator.

- 408-7846   Metrimate Connectors (Square Grid)
- 408-1379   Pin and Socket Contacts
- 408-7347   Insertion Tool 91002-1, Type III+ Contacts
- 408-2024-2 Subminiature COAXICON Contacts, Instruction, Maintenance and Inspection
- 408-1216   Extraction Tool 305183, Type III+ and Subminiature COAXICON Contacts
- 408-4374   Extraction Tool 318813-1
- 408-4391   CERTI-CRIMP SAHT 90716-1
- 408-8547   Operation and Maintenance of CERTI-CRIMP II Straight Action Hand Tools
- 408-7414   CERTI-CRIMP SAHT 90225-2
- 408-9819   PRO-CRIMPER II Hand Tool 58495-1
- 408-1817   Insertion Tool 200893-2
- 408-2095   'C' Head Hand Tool 69710-1
- 408-9930   PRO-CRIMPER II Hand Crimping Tool Frame Assembly 354940-1

**Customer Manuals** provide a compilation of customer prints, product specifications, application specifications, features and benefits, IS sheets, test specifications and could include a product catalog.

- 409-5862   AMP 626 Pneumatic Tool Assemblies
### Part Number Index

**AMP MetriMate**

**Pin and Socket Connectors**

*Part No.* | *Page No.*
--- | ---
207020 | 31, 34, 55
207088 | 31
207119 | 34
207120 | 34
207121 | 34
207152 | 31, 34
207153 | 31, 34
207158 | 34
207304 | 31, 34
207305 | 31, 34
207359 | 39, 41, 48, 50
207360 | 39, 41
207365 | 41
207376 | 39, 41, 51
207377 | 39, 41
207378 | 41
207396 | 39, 41
207397 | 39, 41, 49
207398 | 41
207439 | 31, 34
207440 | 31, 34
207441 | 34
207442 | 31, 34
207443 | 31, 34
207444 | 34
207496 | 34
207524 | 34
207526 | 34
207528 | 34
207530 | 34
207532 | 34
207534 | 34
207535 | 39
207541 | 41
207542 | 39, 41
207543 | 39, 41
207544 | 41
207583 | 41
207584 | 41
207599 | 41
207600 | 31
207601 | 31
207602 | 31
207603 | 31
207604 | 31
207608 | 31
207609 | 41
207610 | 41
207611 | 41
207612 | 41
207613 | 41
207614 | 41
207615 | 41
207654 | 44
208062 | 54
208063 | 55
208099 | 44
208100 | 44
208116 | 44
208117 | 44
208209 | 18
208210 | 18
208211 | 20
208222 | 50
208309 | 49
208212 | 51

### Tooling

- **207602** | 31, 34, 55
- **208334** | 52, 53
- **206400** | 44
- **206403** | 44
- **206404** | 44
- **206407** | 52
- **206628** | 52
- **206706** | 48
- **211076** | 39
- **211108** | 44
- **211149** | 18
- **211150** | 18, 24
- **211580** | 52, 53
- **211758** | 18
- **211759** | 18
- **212008** | 15
- **212014** | 15
- **212026** | 18
- **212059** | 18
- **212630** | 44
- **213283** | 20
- **213426** | 16, 19
- **213427** | 16, 19
- **213499** | 16, 19
- **213500** | 16, 17, 19
- **213552** | 15
- **213558** | 18
- **213567** | 18
- **213662** | 18
- **213672** | 18
- **213713** | 19
- **213737** | 15
- **213738** | 18
- **213740** | 18
- **213747** | 18
- **213750** | 17
- **213752** | 19
- **213766** | 27, 29
- **213768** | 27, 29
- **213773** | 18
- **213790** | 31
- **213793** | 31
- **213794** | 31
- **213795** | 31
- **213796** | 31
- **213797** | 31
- **213824** | 18
- **213841** | 17
- **213843** | 17
- **213845** | 17
- **213847** | 17
- **213881** | 18
- **213882** | 19
- **213883** | 19
- **213886** | 17, 19
- **213908** | 19
- **213940** | 27, 28
- **213942** | 27
- **213973** | 27, 30
- **213974** | 27, 30
- **225068** | 13
- **226537** | 13, 14
- **266180** | 18
- **266181** | 10
- **266182** | 10
- **266183** | 10

**Note:** This numerical index lists all cataloged part numbers by base number only. Complete part numbers (with prefixes and/or suffixes) are shown on the page indicated.

**Catalog 82045**

**Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are equivalent U.S. Customary Units.**

**USA:** 1-800-522-6752

**Canada:** 1-905-470-4425

**Mexico:** 01-800-733-8926

**C. America:** 52-55-5-729-0425

**South America:** 55-11-3611-1514

**Hong Kong:** 852-2735-1628

**Japan:** 81-41-844-8013

**UK:** 01-800-733-8926

**Part Number Index**

**Part No.** | **Page No.**
--- | ---
51565 | 13, 14
66098 | 9
66099 | 9
66100 | 9
66101 | 9
66102 | 9
66103 | 9
66104 | 9
66105 | 9
66106 | 9
66107 | 9
66108 | 9
66109 | 9
66331 | 9
66332 | 9
66358 | 9, 12
66359 | 9, 12
66360 | 9, 12
66361 | 9, 12
66363 | 9
66394 | 9
66399 | 9
66400 | 9
66405 | 9
66406 | 9
66424 | 9
66425 | 9
66429 | 9
66563 | 9
66564 | 9
66565 | 9
66566 | 9
66597 | 9, 12
66598 | 9, 12
66601 | 9, 12
66602 | 9, 12
164159 | 10
164160 | 10
164161 | 10
164162 | 10
164163 | 10
164164 | 10
193457 | 16
193458 | 16
193534 | 16
193535 | 16
193642 | 16
193643 | 16
193814 | 16
193844 | 11
193846 | 11
194264 | 11
200236 | 10
202237 | 11
206763 | 34
207015 | 31, 34
207016 | 31, 34
207017 | 31, 34
207018 | 31, 34
207019 | 31, 34, 54

**NOTE:** All part numbers are RoHS Compliant