

AMP Circular Connectors for Commercial Signal & Power Applications



₹ Тусо Electronics

AMP Circular Connectors for **Commercial Signal and Power Applications**

Product Facts

- Lightweight, all-plastic and metal-shell connectors
- CPC connectors are UL 94V-0 rated and made of stabilized, heat resistant, selfextinguishing thermoplastic material
- Metal-shell CPC connector housings made of UL 94V-0 rated thermoplastic
- Operating temperature range: -40°C to +105°C
- Available in panel or chassis mount and free-hanging configurations
- Quick connect/disconnect capability with thread assist, positive detent coupling
- Built-in pin and socket protection
- Polarized for proper mating of connector halves
- Special connector configurations offer special solder and posted contacts, special receptacles with or without threaded inserts
- Full complement of optional accessories
- Recognized under the **Component Program of** Underwriters Laboratories Inc. for 250 VAC, rms or 250 VDC, Service; Series 1 and Series 3 (600 V); Series 4 (600 V) and Series 2, Series 6 (250 V) File No. E28476
- \$Select connectors are recognized for 600 volts service.

Restriction on the use of Hazardous Substances (RoHS)

At Tyco Electronics, we're ready to support your RoHS requirements. We've assessed more than 1.5 million end items/components for RoHS compliance, and issued new part numbers where any change was required to eliminate the restricted materials

Part numbers in this catalog are RoHS Compliant, unless marked otherwise. These products comply with European Union Directive 2002/95/EC as amended 1 January 2006 that restricts the use of lead, mercury, cadmium, hexavalent chromium, PBB, and PBDE in

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millimeters unless otherwise specified. Values in brackets www.tycoelectronics.com are metric equivalents.

Dimensions are in inches and

Certified by Canadian Standards **(SP̃**∞ Association, File No. LR 7189

Introduction

Produced under a Quality Management System certified to ISO 9001 A copy of the

certificate is available upon request.



Six connector series for different interconnection requirements:

- Series 1—Standard density, signal and low-current applications using durable Multimate contacts (.062 [1.57] pin diameter)
- Series 2—High density applications using Size 20 DM and 20 DF contacts (.040 [1.02] pin diameter)
- Series 3—Low density, power applications with Type XII contacts capable of carrying up to 35 amperes of current
- Series 4—Combination of standard and power density application with Type III+ and Type XII contacts
- Series 5—Power density application with Size 8 screw machined and precision formed contacts
- Series 6—Combination of standard and power density application with Type III+ and Size 8 contacts

certain electrical and electronic products sold into the EU as of 1 July 2006.

Note - For purposes of this Catalog, included within the definition of RoHS Compliant are products that are clearly "Out of Scope" of the RoHS Directive such as hand tools and other non-electrical accessories. Information regarding RoHS compliance is provided based on reasonable inquiry of our suppliers and represents our current actual knowledge based on the information provided by our suppliers. This information is subject to change. For latest compliance status, refer to our website referenced at right.

Dimensions are shown for

reference purposes only.

Specifications subject

to change.

MIL-C-5015 Style Circular Plastic Connectors (CPC)

Product Facts

- Intermateable with Metal-Shell sizes 20-14 and 18-10. MIL-C-5015 Style connectors
- High impact resistant plastic housing made of UL 94V-0 rated material
- Lightweight
- Lower cost than standard MIL-C-5015 connectors
- Industry accepted Type III+ pin and socket contacts, available on reels in strip form for high volume, low cost, automatic machine terminations, or in loose piece form for low volume, prototype or maintenance and repair
- Improved alignment (U.S. Standard MIL-C-5015 Connectors) prevents mismating with other housing insert arrangements
- **Recognized under the Component Program of** Underwriters **%** Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, **(**\$₽`® File No. LR 7189

Getting the Information You Need

Our comprehensive on-line **RoHS** Customer Support Center provides a forum to answer your questions and support your RoHS needs. A RoHS FAQ (Frequently Asked Questions) is available with links to more detailed information. You can also submit RoHS questions and receive a response within 24 hours during a normal work week. The Support Center also provides:

- Cross-Reference from Noncompliant to Compliant Products
- Ability to browse RoHS Compliant Products in our on-line catalog

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444 Miniature CPC Connectors

Product Facts

- Compact, high contact density, environmentally sealed connectors
- Uses existing Mini-Universal MATE-N-LOK stamped and formed pin and socket contacts
- Two shell sizes—available in 1 to 4 and 5 to 9 position configurations

Need more information?

Call Technical Support

They are staffed with specialists well versed in Tyco Electronics products. They can provide:

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

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- Downloadable Technical Data
- Customer Information Presentation
- More detailed information regarding the definitions used above

So whatever your questions when it comes to RoHS, we've got the answers at www.tycoelectronics.com/leadfree



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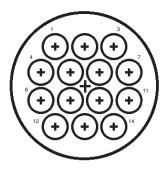
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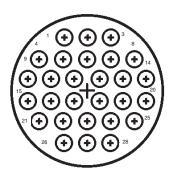
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Connector Series and Types



Series 1—Size 16 Contacts

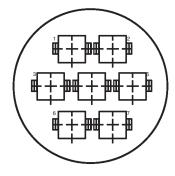
Series 1 connectors permit the use of multiple combinations of signal and coaxial circuits in the same housing by accepting durable Multimate contacts. These pin and socket contacts include Type III+ and subminiature coaxial contacts, interchangeable in the same Multimate contact cavity. Type III+ contacts (.062 [1.57] pin diameter) are capable of carrying a maximum of 13 amperes when crimped in wire. Type III solder contacts and posted contacts for pc board applications are also available. Many connector arrangements offer both standard and reverse sex contact loading—from 4 thru 37 positions.



Series 2—Size 20 Contacts

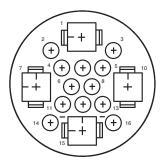
Series 2 connectors accept Size 20 DF (precision formed) and Size 20 DM (screw-machined) pin and socket contacts with a .040 [1.02] pin diameter, Size 20 DF contacts are available in crimp and solder versions, as well as a posted version

for wrap-type and pc board applications. Maximum current carrying capability is 7.5 amperes. Many connector arrangements offer both standard and reverse sex contact loading—from 8 thru 63 positions.



Series 3—Power Contacts

Series 3 connectors accept Type XII power contacts which can carry up to 25 amps per contact. These contacts will accommodate a wire size range of 16 to 10 AWG [1.4 to 5 mm²]. Two connector sizes are available in both standard and reverse sex connector arrangements **3 and 7 positions.**



Series 4—Combination Size 16 and Power Contacts

Series 4 connectors accept Size 16 Multimate and Type XII power contacts, combining the signal and coaxial circuit capabilities of Series 1 connectors with the power circuit capabilities of Series 3 connectors. Available in two connector sizes offering power mixing combinations totaling **16** and **22 positions.**

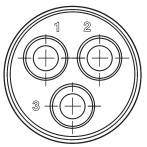
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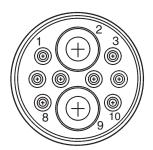
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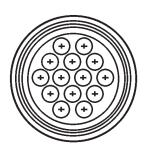
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Connector Series and Types (Continued)







Contact, high current contact in configurations similar to the Series 3 connectors. AMP

offer the electrical

AMP POWERBAND

the revolutionary

Series 6—Combination, Size 16 and .125 POWERBAND Contacts

POWERBAND contacts

Series 5—Power Contacts .125 POWERBAND

Series 5 connectors combine

performance of the new

Series 6 combines the high current and environmental sealing capability of Series 5, POWERBAND contacts, and the reliability of signal carrying, low current Type III+ contacts.

MIL-C-5015 Style—Size 16

This new addition to the AMP

is specifically designed to be

intermateable with Metal-

Shell size 20-14 and 18-10,

systems. The high impact

MIL-C-5015 Style connector

resistant plastic housing offers

the advantages of light weight

Circular Plastic Connector Line

Contacts

meet IEC IP 65 and IP 67 specifications. This combination of power

performance of the best Mil

Spec Size 8 screw-machined

contacts with the economy

and productivity of strip-fed,

precision formed contacts.

environmentally sealable to

Series 5 connectors are

This combination of power and signal contacts is offered in **one connector configuration containing** two .125 POWERBAND **contacts and eight Type III+ signal pin and socket contacts.**

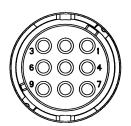
and lower cost than existing metal-shell connectors. In addition the connector design prevents mismating when used with other insert arrangements. As part of the AMP Multimate family of connectors, the MIL-C-5015 style connector offers the Rated at 600 VAC or VDC, 45 amperes maximum in a single contact, the connectors are available in free-hanging and panelmount applications—**one connector configuration containing three .125 POWERBAND contacts.**

economies of crimp Type III+ pin and socket contacts in reel-mounted, strip-form for high volume automatic machine termination, as well as in loose piece-form for low volume, prototype or maintenance and repair.



Metal-Shell, Circular Plastic Connectors

Metal-Shell CPC connectors consist of a black thermoplastic insert in a nickel-plated, zinc alloy shell. These connectors are currently available in shell sizes 14, 22 and 28, and in two basic configurations consisting of plugs and square flange receptacles.



Miniature CPC Connectors

These compact connectors accept existing Mini-Universal MATE-N-LOK pin and socket contacts, 30-18 AWG [.05-.8 mm²]. Two shell sizes (8 or 11) are available, accommodating from 1 to 4 and 5 to 9 positions.

Featuring high contact density and IP67 sealing, these durable connectors are well suited for many wire-to-wire, wire-to-board, and wire-to-panel applications.

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More information on the performance of AMP CPC and metal-shell CPC connectors is available by requesting the following AMP Product Specifications:

Electronics

108-10024-

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CPC Connectors **108-10037**— Type XII Contacts 108-10020-Size 20 DM and 20 DF Contacts 108-10040-Metal-Shell CPC Connectors 108-10042-Type III+ Contacts 108-1579-Sealed CPC Connectors with Removeable Contacts

Performance Characteristics — CPC and Metal-Shell CPC Connectors

Test Description	Procedure	Requirements
Maintenance Aging	Contacts removed and reinserted 10 times using applicable tools	No damage to contacts or housings. Contact retention maintained
Contact Retention	Axial load applied to contact to displace to the rear of the connector	Contacts remain in place when subjected to a minimum 10 lb. load*
Dielectric Withstanding Voltage (MIL-STD-1344, Method 3001)	Connectors subjected to 1500 volts rms at sea level	No breakdown or flashover
Thermal Shock	Connectors subjected to five cycles of temperature change (-55°C and +125°C)	No damage
Vibration (MIL-STD-202, Method 204, Test Condition B)	Connectors vibrated (wired and mated). Contacts wired in series with 100 milliamperes flowing during the test	No damage or loosening of parts. No interruption of electrical continuity longer than 10 microseconds
Physical Shock (MIL-STD-202, Method 213A, Test Condition A)	Connectors shocked 50 G (wired and mated). Contacts wired in series with 100 milliamperes flowing during the test	No damage or loosening of parts. No interruption of electrical continuity longer than 10 microseconds
Durability	Connectors mated and unmated 25 times with tin plated contacts and 500 times with gold plated contacts	No wear through damage to plating
Corrosion (Salt Spray) (MIL-STD-202, Method 101, Test Condition B)	Mated connectors subjected to 5% salt spray for 48 hours	No damage
Protection Against Solids	 a. Test wire is pushed into mated connectors b. Mated connectors subjected to circulating talcum powder 	a. Must not touch live parts b. No dust deposits observed on mating surfaces
Protection Against Water	Water is projected through jets against mated connector from any direction and then temporarily immersed in water	No water deposits shall be observed on mating surfaces of contacts or housings
Temperature Life	Mated connectors subjected to a temperature of +125°C for 200 hours	No damage
Insulation Resistance (MIL-STD-1344, Method 3003)	Measurement made between adjacent contacts with connector mated	5000 megohms minimum ambient temperature
Humidity (MIL-STD-202, Method 103, Test Condition B)	Mated connectors subjected to 10 days moisture test	Minimum insulation resistance of 100 megohms

*For size 16 contacts. Size 8 contacts 25 lb. load, min.

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USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

Levels of Protection for Electric Operating Material According to IEC 60529 and IEC 60947, Appendix C

Environmentally Protected Circular Plastic Connectors, for Mated CPC Connectors Utilizing <u>Peripheral Seals</u> and either <u>Wire Entry Seals</u> (for Discrete Wire Applications) or <u>Heat</u> <u>Shrink Boots</u> (for Jacketed Cable Applications). Available are Various Sizes, Series 1, 5 and 6.

Internal Protection (IP) Definition:

- Per IEC 60947, Appendix C— Pertains to low voltage switchgear and control gear.
- Per IEC 60529—Pertains to degrees of protection provided by enclosures (IP code).

Sample Designation:

(Where x is a numeral value), i.e. IP 65

IP Codes

IP

Index Letter

	X1 egree of Protection ainst ingress of solid foreign objects	X 2 Degree of Protection against ingress of water		
Degree of Protection, X ₁			Protection against ingress of water	
	No Protection	0	No Protection	
1	Protection against objects >50mm diameter— including inadvertently touched by hands	1	Vertical Dripping— Protection against vertical drops of water	
2	Protection against objects >12.5mm—including fingers	2	Dripping <15°— Protection against dripping water when the enclosure is tilted 15° from vertical	
3	Protection against objects >2.5mm diameter including tools	3	Spraying at an angle up to 60° from vertical	
4	Protection against objects >1.0mm diameter— including grains	4	Splashing—Protection against water splashed from any direction	
5	Protection against ingress of solid foreign bodies	5	Jetting—Protection against water stream out of a nozzle, from any direction	
6	6 Protection against ingress of dust		Powerful Jetting—Protection against temporary flooding due to powerful jet streams out of a nozzle from any direction	
		7	Temporary immersion—Protection against temporary immersion	

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CONTACT CURRENT GUIDE Maximum Current (Amperes) for Largest Wire Size

Current Carrying Capabilities

56

50

45

35

23

60

75

60

45

30

15

0

The total current capacity of each contact in a given connector is dependent upon the heat rise resulting from the combination of electrical loads of the contacts in the connector arrangement and the maximum ambient temperature in which the connector will be operating. Caution must be taken so that this combination of conditions does not cause the internal temperature of the connector to exceed the maximum operating temperature of the housing material. Several variables which must be considered when determining this maximum current capability for your application are:

- Wire Size—Larger wire will carry more current since it has less internal resistance to current flow and generates less heat. The wire also conducts heat away from the connector.
- Connector Size—In general, with more circuits in a connector, less current per contact can be carried.
- Current Load Distribution—
 Spreading those lines with greater current loads throughout the connector, particularly around the outer perimeter, will enhance heat dissipation.

13

11.85

7.5

■ Ambient Temperature—With higher ambient temperatures, less current can be carried.

Type XII Upgrade

Size 8 Upgrade

Type I, Type II/III+

Type III+, Type II,

Type III+ Posted

Size 20 Upgrade

Size 8

Type XII

Upgrade

20 DF

.125 POWERBAND Contact

Current Rating Verification Can a contact rated at 10 amps carry 10 amps?

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 ampere. Use it in a multi-position connector surrounded by other currentcarrying 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 currentcarrying capacity decreases. A prudent design must set current levels for such end-ofdesign-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 currentcarrying 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 (the I²R law), the current must be lowered to limit the T-rise.

A contact's T-rise depends not only on its I²R 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-ofdesign-life resistance. Before the contact is tested for current, Tyco Electronics subjects it to a sequence of tests that exercises the 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.

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Current Rating

The presentation of currentcarrying capacity in AMP product specifications includes two parts:

- First, a base curve showing current levels versus T-rise for a single circuit and the largest wire size (See figure 1). 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 (See figure 2). 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 practical 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.

Specific current-carrying data based on EOL and % loading is available from Tyco Electronics. Please contact your local Tyco Electronics Sales Engineer or call Tyco Electronics.

Connector/Contact Acceptability

As previously stated, choosing the correct connector/contact combination is fundamental to the successful function of all connectors. The Selector Chart shown at right, is designed to simplify your choice



of connectors and their acceptable contacts. Once you have selected the wire size, currentcarrying capacity need, number of positions required, and the type of contacts needed in your choice of connector, refer to this matrix for a quick look at exactly what is acceptable in a given connector type.

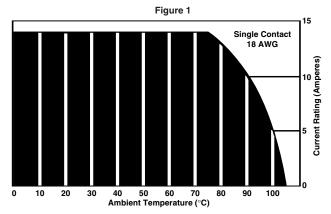
*Note: Data is *not* typical of a specific CPC connector configuration. For specific current rating information based on % connector loading, contact Tyco Electronics.

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 [0.6mm²] wire.

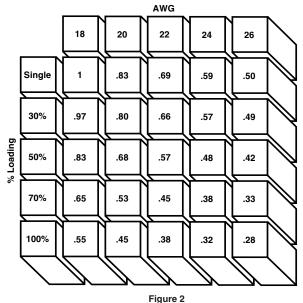
- From Figure 1, the base current rating is 14 ampere with 18 AWG [0.8mm²] wire.
- Figure 2, the rating factor for 50% loading and 20 AWG [0.6mm²] wire is 0.68.
- The specific rating for this application is the product of the base rating and the rating factor:

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 shows the relationship between base current, ambient temperature, and contact T-rise.



Rating factors allow the base current to be adjusted for various connector loading and wire sizes.

Contact Selector Chart

Connector Type	20 DF	Туре І	Type II	Type III+	Posted Type III+	Type XII	Sub-Mini Coax	POWERBAND Contacts
CPC Series 1			~	~	~		~	
CPC Series 2	~							
CPC Series 3						~		
CPC Series 4			~	~		~	~	
CPC Series 5								~
CPC Series 6		~	~	~				~
CPC 5015				~				
CMC Series 1			~	~	~		~	
CMC Series 2	~							
CMC Series 3						~		
CMC Series 4			~	~		 ✓ 	 ✓ 	

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Circular Plastic Connectors, Size 1

CPC Connectors, Series 1

for Cable or Panel Mount (Accepts Type III+, High-Current Power, Type II and Subminiature Coax Contacts)



Listed part numbers are for connectors only; **contacts must be ordered separately.**

Material

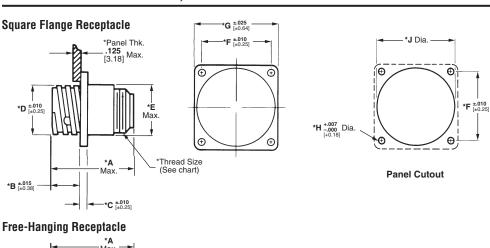
CPC Series 1

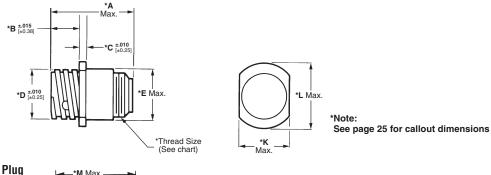
> Housing—Thermoplastic, 94V-0 rated, black

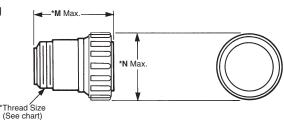
Related Product Data

Contacts—Pages 17-23 Contact Arrangement—Page 24 Component Dimensions—Page 25* Accessories—Pages 38-42, 52-54 Performance Characteristics— Page 6

Application Tooling—Pages 76-79 Technical Documents—Page 80







Standard Sex Connectors (Receptacles accept pin contacts, Plugs accept socket contacts)

Arrangement	Kandara	Square Flan	ge Receptacle			
Shell No. of Size Positions	Keying	With Threaded Inserts ¹	With Mounting Holes	Free-Hanging Receptacle	Plug	
11-4	А	208130-1	206061-1	206153-1	206060-1	
13-9	А	208131-1	206705-1	206705-2	206708-1	
17.10	А	206036-8	206036-1	206036-3	206037-1	
17-16	В	_	213862-1	_	213849-1	
00.04	А	211839-1	206838-1	206838-2	206837-1	
23-24	В	_	213866-1	_	213851-1	
00.07	А	787610-1	206151-1	206151-2	206150-1	
23-37	В	_	213860-1	_	213848-1	

¹Four 4-40 threaded inserts per receptacle.

Reverse Sex Connectors (Receptacles accept socket contacts, Plugs accept pin contacts)

Arrangement	Kandana	Square Flang	ge Receptacle			
Shell No. of Size Positions	Keying	With Threaded With Mounting Inserts ¹ Holes		Free-Hanging Receptacle	Plug	
11-4	А	211102-1	206430-1	206430-2	206429-1	
	А	211103-1	206043-1	206043-3	206044-1	
17-14	В	_	796437-2	_	796449-1	
00.07	А	206306-5	206306-1	206306-2	206305-1	
23-37 –	В	_	213864-1	_	213850-1	



Key Style "A" is the Standard 5 Locating Key arrangement. Key Style "B" is the 4 Locating Key arrangement.

 Shell Size
 Part No.

 11
 213811-1

 12
 213811-1

11	213811-1
13	213813-1
17	213810-1
23	213812-1

Keying

Molded-in keying in two configurations: **A**—Standard Configuration: 5 Keys



B—Optional Configuration: 4 Keys to prevent mismating of standard and reverse sex.



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₹ Тусо Electronics

Circular Plastic Connectors, Series 1, VDE Tested

CPC Connectors, Series 1, for Cable or Panel Mount (Accepts Type III+, High-Current Power, Type II and Subminiature Coax Contacts)



- Designed to meet requirements of VDE as shown in DIN Specification 57627
- Recognized under the Component Program of Underwriters Laboratories Inc. for 600 VAC and 600 VDC service, File No. E28476
- Certified by Canadian Standards **(**\$₽`® Association, File No. LR 7189



Listed part numbers are for connectors only; contacts must be ordered separately.

Material

Housing-Thermoplastic, 94V-0 rated, black

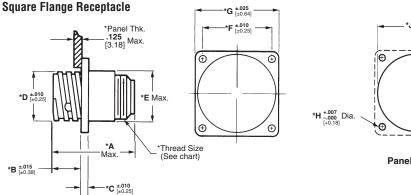
Related Product Data

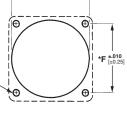
Contacts—Pages 17-23 Contact Arrangement—Page 24 Component Dimensions—Page 25* Accessories—Pages 38-42, 52-54 Performance Characteristics-Page 6

Application Tooling—Pages 76-79 Technical Documents—Page 80

Replacement Coupling Rings

Shell Size	Part No.
13	213813-1
17	213810-1
23	213812-1





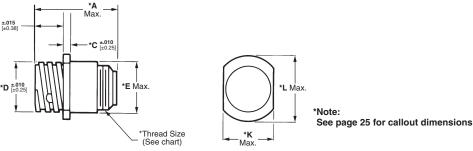
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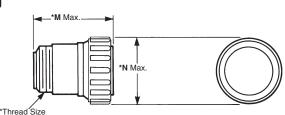
Panel Cutout



*B ±.015

Plug





(See chart)

Standard Sex Connectors (Receptacles accept pin contacts, Plugs accept socket contacts)

Arrangement		Square Flange Receptacle					
Shell No. of Size Positions	Keying	With Threaded Inserts ¹	With Mounting Holes	Plug			
13-7	А	211401-4	211401-1	211399-1			
17-9	А	211767-2	211767-1	211766-1			
23-19	А	211771-2	211771-1	211770-2			
23-19	В	_	213870-1	213853-1			

¹Four 4-40 threaded inserts per receptacle.

Reverse Sex Connectors (Receptacles accept socket contacts, Plugs accept pin contacts)

Arrangement		Square Flar	ige Receptacle			
Shell No. of Size Positions	Keying	With Threaded Inserts ¹	With Mounting Holes	Free-Hanging Receptacle	Plug	
13-7	А	211398-4	211398-1	211398-2	211400-1	
17-9 -	А	—	211769-1	211769-3	211768-1	
	В	_	796439-2	_	796450-1	
00.10	А		211773-1	_	211772-1	
23-19 —	В	_	213868-1	_	213852-1	

¹Four 4-40 threaded inserts per receptacle.

Key Style "A" is the Standard 5 Locating Key arrangement. Key Style "B" is the 4 Locating Key arrangement.

Keying

A—Standard Configuration: 5 Keys

B—Optional Configuration: 4 Keys

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Circular Plastic Connectors, Series 1

⊕

1.435±.015

[36.45^{±0.38}]

Æ

-





Material and Finish

Housing—Thermoplastic, 94V-0 rated, black

Contacts-

A—Duplex plated gold flash on entire contact with .000030 [0.00076] min. gold on contact engagement area, tin on the termination area
 C—Plated tin on the entire contact, tin on the termination area

Related Product Data

Contact Arrangement—Page 24 Performance Characteristics— Page 6 Technical Documents—Page 80

Keying

Molded-in keying in two configurations:

A-Standard Configuration: 5 Keys



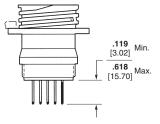
B—Optional Configuration: 4 Keys to prevent mismating of standard and reverse sex.



Note: Posts are .017 [0.43] offset from centerline of contacts. All posts must be oriented in the same plane for proper contact/post location.

Other Available Posted Contacts

Tyco Electronics can make available contacts with various solder tail lengths for loading into the standard or reverse sex, square flange receptacles for applications requiring custom solder tail lengths.





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.420±015 [10.67±0.38] 4 Holes 1.050±010 [26.67±0.25] Dia. .125 [3.18] Max. Panel Thk.

Standard Sex (Posted Pin Contacts)

1.125^{±.010}

[28.58±0.25]

Typ.

1.435±.015

[36.45^{±0.38}]

1.125±.010

[28.58±0.25]

Typ.

Arrangement		le Assemblies	Keying	Dimer	nsions	Contact	Periphera	
No.	Mounting Holes	4-40 Threaded Inserts	Style	Α	В	Finish Code	Seal	
11-4	_	207825-9	А	.119 3.02	.816 20.73	А	Ν	
13-7	_	1-796433-1	А	.220 5.59	.816 20.73	А	Ν	
13-9	208223-9	—	А	.220 5.59	.816 20.73	А	Ν	
13-9	_	1-208223-0	А	.220 5.59	.816 20.73	А	Ν	
		1-207303-4	А	.220	.816	A	N	
17-16	1-207303-5	_		5.59	20.73	С	IN	
17-10	1-207303-3	—	A	.220		.816	А	Ν
	213855-4	213855-3	В	5.59	20.73	~	IN	
23-19	213782-4	_	А	.429 10.90	.679 17.24	А	Ν	
	213859-2	_	В	.618 15.70	.674 17.12	А	Ν	
	_	213588-2	А	.220 5.59	.654 16.61	С	Ν	
23-24	213798-3	—	А	.618 15.70	.679 17.24	А	Ν	
23-24	213780-2	_	А	.220 5.59	.654 16.61	А	Ν	
	213857-2	_	В	.429 10.90	.679 17.24	А	Ν	
	1-206934-1	_	А	.220 5.59	.654 16.61	А	Ν	
	206934-5	_		.119	.654	А	N	
	_	1-206934-7	A	3.02	16.61	~	Y	
23-37	208132-2	_	A			С		
	1-206934-8	_	429		.654	CA	Ν	
	213854-3	_	В	10.90	16.61	A		
	1-206934-9	_	А	.618 15.70	.654 16.61	А	Ν	

CPC Series 1

Square Flange Receptacles, Printed Circuit Board Mount with .025 [0.64] sq. solder tails



Material and Finish

Housing—Thermoplastic, 94V-0 rated, black

Contacts-

A—Duplex plated gold flash on entire contact with .000030 [0.00076] min. gold on contact engagement area, tin on the termination area
 C—Plated tin on the entire contact, tin on the termination area

Related Product Data

Contact Arrangement—Page 24 Performance Characteristics— Page 6

Technical Documents—Page 80 Keying—Page 12

Special CPC Connectors, Square Flange Receptacles, Printed Circuit Board Mount With Round Posted Contacts (Size 16), Contact Arrangement 17-16



Material and Finish Housing—Thermoplastic, 94V-0 rated, heat-stabilized, fire-resistant, selfextinguishing, black

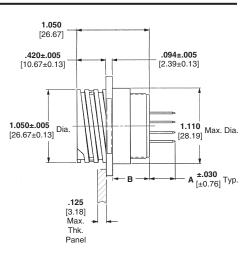
Contacts—Brass Plating—

Connector Part No. 207292-1— Plated tin over .000050 [0.00127] min. nickel on entire contact

Connector Part No. 207292-2— Plated .000030 [0.00076] min. gold over .000050 [0.00127] min. nickel on entire contact

- Notes: 1. Connector can be used for pressure bulkhead feedthru (sealed) applications. 2. Receptacle is **Standard**
 - **Sex**, supplied preloaded with 16 special round posted pin contacts, .030 [0.76] diameter.

1.435±.015 [36.45±0.38] 1.125±.005 [28.58±0.13] 1.435±.015 [36.45±0.38]

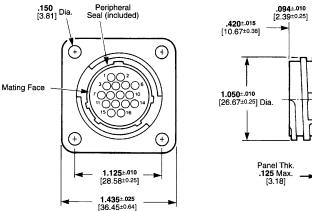


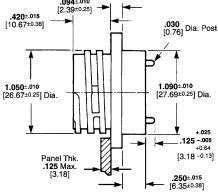
CPC Series 1

Reverse Sex (Posted Socket Contacts)

Arrangement	Receptac	le Assemblies	Keying	Dime	Dimensions		Peripheral
No.	Mounting Holes	4-40 Threaded Inserts	Style	A	B	Finish Code	Seal
11-4	208283-4	_	А	.159 4.04	.536 13.61	А	Ν
11-4	1-788130-1	_	А	.704 17.88	.541 13.74	С	Ν
17-9	1-213826-1	_	А	.220 5.59	.536 13.61	С	Y
	213729-9	213729-6	А	.368 9.35	.536 13.61	А	Ν
17-14	1-213825-7	_	А	.220 5.59	.536 13.61	С	Y
	_	213729-8	А	.159 4.04	.536 13.61	С	Ν
	213858-3	_	В	.645 16.38	.394 10.00	А	Ν
23-19	213781-9	_	А	.557 14.15	.374 9.50	С	Ν
	213827-8	_	А	.368 9.35	.374 9.50	С	Y
	2-208224-1	_	А	.557	.374	А	N
	213856-4		В	14.15	9.50	A	IN
23-37	1-208224-2	_	А	.368 9.35	.374 9.50	С	Ν
20 07	1-213828-6	_	А	.368 9.35	.374 9.50	С	Y
	207890-2	_	А	.159 4.04	.374 9.50	А	Ν

Note: Posts are .017 [0.43] offset from centerline of contacts. All posts must be oriented in the same plane for proper contact/post location.





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Note: All part numbers are RoHS Compliant.

> .420^{±.015} [10.67±0.38]

[26.67^{±0.25}] Dia. 1.050±.010

> Panel Thk .125 Max

> > .250±.015 [6.35±0.38]

[3.18]

Special CPC Connectors, Square Flange Receptacles, With Solder Type Contacts (Size 16), Contact Arrangement 17-16



Material and Finish Housing—Thermoplastic, 94V-0 rated, heat-stabilized, fire-resistant, selfextinguishing, black Contacts—Brass

Plating-

Connector Part No. 206404-1-Plated .000030 [0.00076] min. gold over .000030 [0.00076] min. nickel on entire contact Connector Part No. 206404-2-

Plated tin over .000100 [0.00254] min. copper on entire contact

Special CPC Connectors, Feed-Thru

Pressure Rating up to 30 psi



Material and Finish

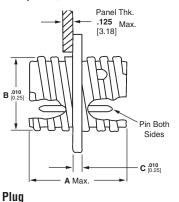
Housing—Thermoplastic, 94V-0 rated, black Contacts-Copper alloy, gold over nickel plated

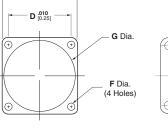
Note: Feed-Thru Receptacles are fully loaded with Size 16, feed-thru pin contacts. Order

Peripheral Seal (included) .150 [3.81] ^{Dia.} $(\overline{+})$ (\mathbf{f}) Mating Face (\pm) (Ŧ 1.125±.010 [28.58±0.25] 1.435±.025 [36.45±0.64]

Notes: 1. Connector can be used for pressure bulkhead feedthru (sealed) applications. 2. Receptacle is standard sex, supplied preloaded with 16 special solder cup pin contacts.

Receptacle, Feed-Thru







.094±.010

[2.39±0.25]

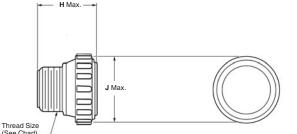
1.090±.010 [27.69±0.25] Dia.

Solder Cup Contact

.156 [3.96]

Panel Cutout

E .025 [0.64]



Part Numbers

Arrangement	Standard Numbering Plug	Reverse Numbering Plug	Feed-Thru Receptacle
11-4	206060-1	206516-1	206518-2
17-16	206037-1	206554-1	206552-1

Dimensions

	Arrangement				D	imension	s				Thread
e: Feed-Thru Receptacles are	Anangement	Α	В	С	D	Е	F	G	Н	J	Size
fully loaded with Size 16, feed-thru pin contacts. Order	11-4	1 .209 30.71	.687 17.45	.094 2.39	.844 21.44	1.125 28.58	.125 3.18	.840 21.34	1.080 27.43	.975 24.77	5/8-24 UNEF-2A
Size 16 crimp, snap-in socket contacts for plugs separately.	17-16	1.209 30.71	1.050 26.67	.094 2.39	1.125 28.58	1.435 36.45	.150 3.81	1.210 30.73	1.080 27.43	1.349 34.26	15/16-20 UNEF-2A

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specified. Values in brackets www.tycoelectronics.com are metric equivalents.

Dimensions are in inches and millimeters unless otherwise

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

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

Note: All part numbers are RoHS Compliant.

Square Flange Receptacles,

Right-Angle, Posted

with .025 [0.64] sq. solder tails



Material and Finish

Housing—Thermoplastic, 94V-0 rated, black

Location Wafer—Phenolic, black Contact Posts—.000100 [0.00254] min. tin over .000100 [0.00254] min. copper

Contact Body-

A—.000100 [0.00254] min. tin over
 .000050 [0.00127] min. nickel
 B—.000030 [0.000762] min. gold for a length of .200 [5.08] min. from mating end, with remainder gold flash, both over .000050 [0.00127] min. nickel

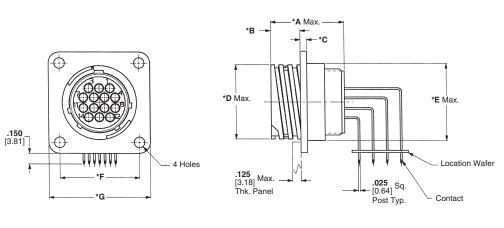
Related Product Data

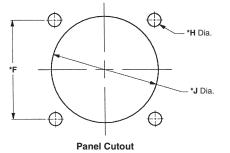
Contact Arrangements—Page 24 Component Dimensions—Page 25* Performance Characteristics—

Page 6

Keying—Standard Configuration: 5 Keys

Technical Documents—Page 80





*Note: See page 25 for callout dimensions

Standard Sex (Posted Pin Contacts)

Amongonant	Receptacle	e Assemblies	Contect Redu	Moting Dive
Arrangement No.	Mounting Holes	4-40 Threaded Inserts	Contact Body Finish Code	Mating Plug Part No.
11-4	1-796403-1	1-796403-2	В	206060-1
13-7	1-796435-1	1-796435-2	В	211399-1
13-9	1-796375-1	1-796375-2	В	206708-1
17-9	1-796497-1	_	В	211766-1
17-16	1-796404-1	_	В	206037-1
23-19	1-796405-1	—	В	211770-2
23-24	1-796387-1	_	А	— 206837-1
20-24	1-796387-2	—	В	- 200637-1
23-37	1-796406-1	_	В	206150-1

Reverse Sex (Posted Socket Contacts)

Awaran	Receptacle	Assemblies	Contect Redu	Mating Dive	
Arrangement No.	Mounting 4-40 Threaded Holes Inserts		Contact Body Finish Code	Mating Plug Part No.	
11-4	1-796407-1	—	В	206429-1	
13-7	1-796500-1	_	В	211400-1	
17-9	1-796501-1	_	В	211768-1	
17-14 (shown)	796348-3	_	А	- 206044-1	
17-14 (SHOWII)	796348-2	_	В	200044-1	
23-19	1-796502-1	_	В	211772-1	
23-37	1-796409-1	_	В	206305-1	

CPC Series

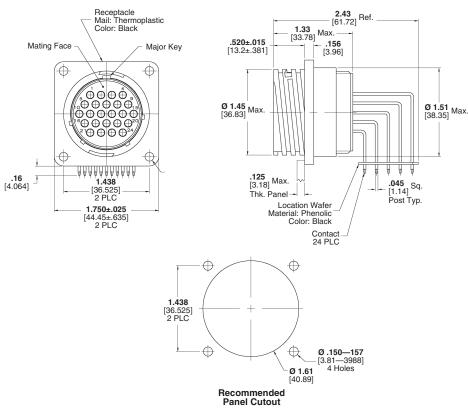
Catalog 82021 Revised 7-07

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

Dimensions are shown for reference purposes only. Specifications subject to change. USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444 South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-208-420-8341

Square Flange Receptacles, Right-Angle, Posted with .045 [1.14] sq. solder tails. For Higher Current Applications



Standard Sex (Posted Pin Contacts)

Arrangement No.	Receptacle Assemblies Mounting Holes	Contact Body Finish Code	Mating Plug Part No. 211399-1	
13-7	1776903-1	В		
17-16	1776904-1	В	206037-1	
23-24	1776905-1	В	206837-1	
23-37	1776906-1	В	206150-1	

CPC Series 1

Material and Finish Housing—Thermoplastic, 94V-0 rated, black

Location Wafer—Phenolic, black Contact Posts—.000100 [0.00254] min. tin over .000100 [0.00254] min. copper

Contact Body-

A—.000100 [0.00254] min. tin over .000050 [0.00127] min. nickel B—.000030 [0.000762] min. gold for a length of .200 [5.08] min. from mating end, with remainder gold flash, both over .000050 [0.00127] min. nickel

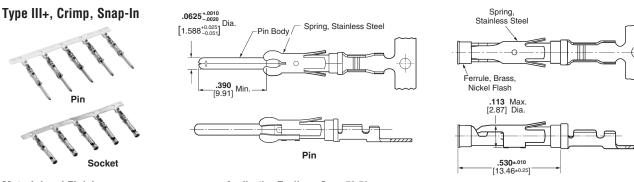
Technical Documents—Page 80

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Catalog 82021 Revised 7-07 www.tycoelectronics.com Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents. Dimensions are shown for reference purposes only. Specifications subject to change. USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

Note: All part numbers are RoHS Compliant.

Signal Contacts



Material and Finish — See chart. Contact Body—Brass or phosphor bronze Retention Spring-Stainless steel

Pin

Application Tooling—Pages 76-79 **Technical Documents** 114-10004 Application Specification 108-10042 Product Specification

Socket

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

	re Size ange	Ins. Dia.	Contact	Stri	p Form tact No.	Loos	e Piece act No.		Part No.
AWG	mm ²	Range	Finish	Pin	Socket	Pin	Socket	Loose Piece Hand Tool	Strip Form Applicators
		.015030	Gold/Nickel ²	788085-3	788088-2	_	_		567867-1***
30-28	0.05-0.09	0.38-0.76	Sel, Gold/Nickel ³	788085-1	788088-1	788085-4	788088-3	90716-1	or 567947-1** or 680602-□*
			Bright Tin	1-66425-2	1-66424-1	100000 1	1000000		01 000002-
		.0400601	Gold/Nickel ²	66425-7	66424-7	66429-3	66428-3	91515-1 ⁶	466598-□**
30-26	0.05-0.15	1.02-1.52	Sel. Gold/Nickel ³	66425-8	66424-8	66429-4	66428-4	31313-1	400330-
00-20	0.05-0.15	.0140301	Gold/Nickel ²	66393-7	66394-7	00423-4	00420-4		
		0.36-0.76	Sel. Gold/Nickel ³	66393-8	66394-8	66406-4	66405-4	90225-26	466585-3***
		0.00 0.10	Bright Tin	1-66106-5	1-66108-5	1-66107-1	1-66109-7		
			Gold/Nickel ²	66106-7	66108-7	66107-3	66109-3	91515-1 ⁶	466321-0***
26-24	0.12-0.2	.0350551	Sel. Gold/Nickel ³	66106-8	66108-8	66107-4	66109-4	or	or
		0.89-1.40	Sel. Gold/Nickel ⁴	00100-0	66108-1		66109-1	58495-1*	466908-2**
			Bright Tin	2-66102-5	3-66104-0	1-66103-8	1-66105-9		
	0.40 0001	Gold/Nickel ²	66102-8	66104-8	66103-3	66105-3	91515-1 ⁶	466323-□**	
	.040080 ¹ 1.02-2.03		66102-9	66104-9	66103-4	66105-4	or	400323-	
	1.02-2.03	Sel. Gold/Nickel ³	2-66102-2	2-66104-3	1-66103-2	1-66105-3	58495-1*	466907-2***	
			Sel. Gold/Nickel ⁴	2-00102-2	66104-3	1-00103-2	66105-1	56495-1	400907-2
24-20 0.2-0.6								400000 4**	
	0.2-0.0	.060120 ⁵	Bright Tin	1-66564-2	1-66563-1	66566-7	66565-7	91542-1 ⁶	466383-4** or 466979-1*
		1.52-3.05	Sel. Gold/Nickel ³	66564-8	66563-8	66566-4	66565-4	51542 1	or 567363-⊡*
			Bright Tin	1-66332-4	1-66331-4	1-66400-0	1-66399-0		
		.0801001	Gold/Nickel ²	66332-7	66331-7	66400-3	66399-3	91523-1 ⁶	466324-🗆**
		2.03-2.54	Sel. Gold/Nickel ³	66332-8	66331-8	66400-4	66399-4	Or OC	Or
		2.00-2.04	Sel. Gold/Nickel ⁴	_	66331-2	_	66399-2	90225-26	466942-1***
			Bright Tin	<u>1-66098-9^s</u> 1-66098-8	1-66100-9	1-66099-5	1-66101-9	91505-16 or	466325-□**
18-16	0.8-1.4	.0801001	Gold/Nickel ²	66098-8	66100-8	66099-3	66101-3	91523-1 ⁶ or	400323-11 Or
10 10	0.0 1.4	2.03-2.54	Sel, Gold/Nickel ³	66098-9	66100-9	66099-4	66101-4	58495-1*	466906-1**
			Sel. Gold/Nickel ⁴	66098-6	00100 5	66099-1		001001	100000
				1-66359-4	1-66358-6	1-66361-2	1-66360-2		
		.0801001	Bright Tin	1-66359-5	1-66358-8	66361-7	66360-2		
			Gold/Nickel ²	66359-9	66358-9	66361-3	66360-3		466326-□**
		2.03-2.54		1-66359-0	1-66358-0	66361-4	66360-4	91519-1 ⁶	or
18-14	0.8-2.0		Sel. Gold/Nickel ³	1-66359-2	1-66358-3	66361-8	66360-4		466923-2***
			Sel. Gold/Nickel ⁴	1-00339-2	66358-1		66360-1		
			Sei. GOIU/INICKEI*		66598-9		00300-1		
		.1101505	Bright Tin	66597-8	1-66598-0	66602-8	66601-9	91521-1 ⁶	466958-1** or
		2.79-3.81	Sel, Gold/Nickel ³	66597-2	66598-2	66602-2	66601-2		567364-□**

exceed .125 [3.18]. 2.000015 [0.00038] gold in the mating area over .000050 [0.00127]

20000 to [totolog action]
 2000030 [0.00076] gold in the mating area, with gold flash on remainder, over .000050 [0.00127] min. nickel.
 4.000030 [0.00076] gold in the mating area, with gold gradient on remainder, over .000050 [0.00127] min. nickel.

*Contacts can ONLY be used in: Metrimate; CPC Series 1 (Arr. 23-24), Series 4 (Arr. 23-13M, 23-16M, 23-22M), and VDE connectors. *To use with the 626 Pneumatic Tool: remove crimping head from Straight Action Hand Tool (SAHT), 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)

Standard reeling of strip form contacts. *Commercial PRO-CRIMPER II hand tool for field repair only. Note: Die Set can be adapted for use with 626 Pneumatic Tool System. Insertion Tool Part No. 91002-1 (for insulation diameters. 007 (17.8] or less), No. 200693-2 (for insulation diameters. 009 (2.29) max.). Extraction Tool Part No. 305183. (Instruction Sheet 408-1216) **Call Technical Support for Machine Applicator Part Numbers

Dimensions are in inches and

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

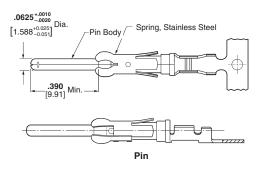
USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

Signal Contacts (Continued)

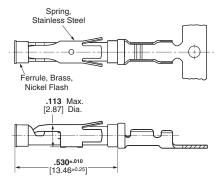


CPC Series 1

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



Related Product Data Application Tooling — Pages 76-79 Technical Documents 114-10004 Application Specification 108-10024-2 Product Specification



Socket

Contact Size 16—Pin Diameter .062 [1.57]

	Wire Size Ins.		Contact		ip Form		e Piece	Tooling Part No.	
	inge	_Dia.	Finish	Con	itact No.	Con	act No.	Loose Piece	Strip Form
AWG	mm ²	Range	T Intern	Pin	Socket	Pin	Socket	Hand Tool	Applicators
	.080100 ¹	Gold	1-66359-6	1-66358-9	1-66361-4	1-66360-4	91519-1 ³	466326-□*** or	
18-14	0.8-2.0	2.03-2.54	Tin	1-66359-9	2-66358-1	1-66361-6	1-66360-6	91219-13	466923-2***
10-14	.110150 ² 2.79-3.81	.110150 ²	Gold	1-66597-0	1-66598-1	66602-9	1-66601-0	01501.13	466958-1***
		Tin	1-66597-1	1-66598-2	1-66602-0	1-66601-2	91521-1 ³	567364-□***	

¹ Overall insulation crimp diameter, including crimp barrel, must not exceed .125 [3.18].

² Contacts can ONLY be used in CPC, Series 1 (Årr. 23-24), Series 4 (Årr. 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

Voltage:	250 Volts AC/DC
	600 Volts AC/DC, Series I, VDE tested and select loaded only
Base Current:	Type III+ contacts: 17 amperes, 30°C temperature rise with single contact on 14 AWG wire
	Enhanced High Current Type III+ contacts: 25 amperes, 30°C temperature rise with single contact on 14 AWG wire
Temperature:	-55°C to +105°C
VDE 0627:	XA/630/4KV/2 - Series I, VDE tested only

Multiplication Rating Factor (F)

Type III+ Contacts (Note: 1 = 17 a	imperes)		Percent Cor	nector Loading	1		
	Single	Circuit	≅	50%	10	0%	
Shell Size	Wire	e Size	Wire Size		Wire Size		
	30 AWG	14 AWG	30 AWG	14 AWG	30 AWG	14 AWG	
11-4	.291	1	.212	.905	.140	.684	
13-9	.278	.995	.175	.750	.134	.567	
17-16	.270	.990	.146	.625	.127	.472	
23-24	.281	.985	.138	.550	.120	.416	
23-37	.275	.985	.131	.497	.114	.376	

Enhanced High Current Type III+ Contacts (14 AWG wire only - Note: 1 = 25 amperes)

Percent Connector Loading

Shell Size	Single Circuit	≅ 50%	100%	
Shell Size	14 AWG	14 AWG	14 AWG	
11-4	.880	.840	.640	
13-9	.880	.640	.480	
17-16	.880	.520	.400	
23-24	.880	.520	.400	
23-37	.880	.440	.320	

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents. Dimensions are shown for reference purposes only. Specifications subject to change. USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

AMP Circular Connectors for **Commercial Signal and Power Applications**

Note: All part numbers are RoHS Compliant.

Signal Contacts (Continued)

Performance Characteristics—Page 6 Application Tooling—Pages 76-79 Technical Documents—Page 80

Type III+ (Precision Formed, Crimp)

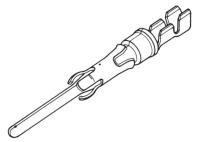
Grounding Pin (make first - break last)

Related Product Data

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

Material and Finish

Contact Body-Copper alloy, plated tin or gold Spring—Stainless steel



Wire Size	e Range	Ins.	Contact	Grounding	Pin Part No.	Strip Form	Loose Piece														
mm ²	AWG	Dia. Range ¹	Finish	Strip Form Loose Piece		Strip Form Loose Piec		Strip Form Loose Piece		Strip Form Loose Piec		Finish Strip Form Loose Piece		Finish Strip Form Loose Piece		Strip Form Loose Piece		Strip Form Loose Pi		Applicator Part No.	Hand Tool Part No.
	00.04	.035055	Tin	164159-3	164162-1		91515-1⁵ or														
0.12-0.2	26-24	0.89-1.4	Sel. Gold/Nickel ⁴	164159-4	164162-2	—	58495-1*														
0.2-0.6	.045070	0.6 04.00	6 24-20 .045070	Bright Tin	164160-3	164163-1	466323-🗆***	91515-1 ⁵ or													
0.2-0.0	24-20	1.14-1.78	Sel. Gold/Nickel ⁴	164160-4	164163-2	or 466907-2***	91505-1⁵ or 58495-1*														
0.0.4.4	.078098	.078098	Tin	164161-3	164164-1	466741***	91523-1 ⁵ or														
0.8-1.4	18-16	1.98-2.49	Sel. Gold/Nickel ⁴	164161-4	164164-2	or 680114-3***	91505-1⁵ or 58495-1*														

¹Overall insulation crimp diameter, including crimp barrel, must not exceed .125 [3.18].

⁴Gold flash over .000030 [0.00076] min. nickel on entire contact, with .000030 [0.00076] gold in contact area.

⁵To 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). *Commercial PRO-CRIMPER II hand tool for field repair only. Note: Die Set can be adapted for use with the 626 Pneumatic Tool System. ***Call Technical Support for Automatic Machine Applicator Part Numbers.

Extraction Tool Part No. 539972-1.

High Current Power Contact—Size 16

The features of the High Current Size 16 contact have been designed to

retrofit into the existing

CPC (Circular Plastic Connector), CMC (Circular Metal Connector), G Series, M Series, Metrimate Square Grid and Drawer Connector housings. An initial T-Rise test in free air has shown a 23 amp capability with a 30° T-Rise. The contact may

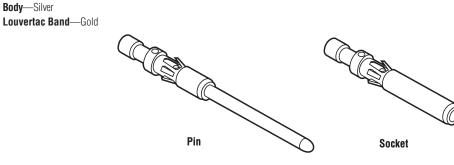
be crimped onto 14 AWG wire with an AMP hand tool Part No. 601967-1. Use turret TH502 (1-601967-6) for the pin and turret TH501 (1-601967-5) for the socket.

AMP Connectors such as

Material

Body-Copper alloy Louvertac Band—Beryllium copper Retention Spring—Stainless steel

Finish



			Contact	Part Nos.	Cı	rimping Tool		
Wire Range		Pi	n	Socket			Turret	
mm ²	AWG	Loose Piece	Tape Mounted	Loose Piece	Tape Mounted	Tool	for Pins	for Sockets
0.8-1.4	18-16	796964-1	796964-2	796966-1	796966-2	601967-1	1-601967-5	1-601967-5
2	14	193844-1	193844-2	193846-1	193846-2	601967-1	1-601967-6	1-601967-5

Extraction Tool Part No. 305183

Catalog 82021 Revised 7-07

www.tycoelectronics.com are metric equivalents.

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

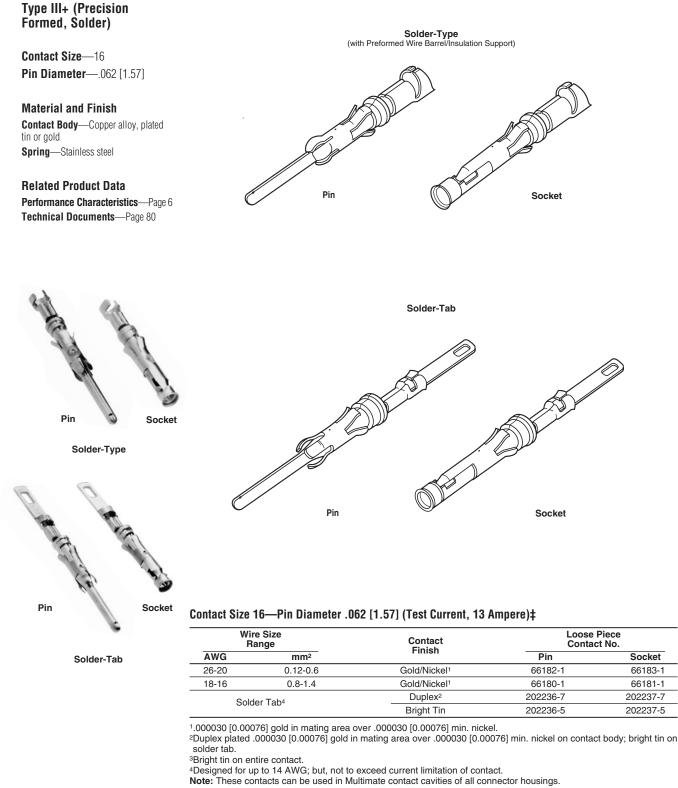
Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444 South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-208-420-8341

CPC Series 1

Note: All part numbers are RoHS Compliant.

Signal Contacts (Continued)



\$\$ 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. 305183

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Catalog 82021 Revised 7-07

www.tycoelectronics.com

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

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

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-208-420-8341

Socket

66183-1

66181-1

202237-7

202237-5



Note: All part numbers are RoHS Compliant.

Signal Contacts (Continued)

Type II, Screw Machined, Crimp

Material

Contact Body—Brass Retention Spring-Stainless steel

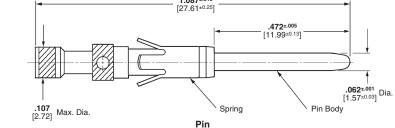
Finish

gold over .000050 [0.00127] nickel. Gold thickness controlled on socket O.D. Retention Spring—Stainless steel

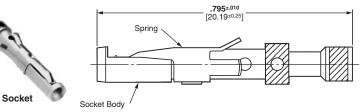
Related Product Data

Application Tooling—Pages 76-79





1.087±.010



Socket

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

								То	oling Part No.	
	e Size Inge	Ins.	Tape M Contac				Contact	Tape Mounted	Loose	Piece
AWG	mm ²	Dia. Range ¹	Pin	Socket	Pin	Socket	Color Code	Dies for AMP-TAPETRONIC Machine 69875	Die Set for 626 Pneumatie Tool System	
		.035055 0.89-1.40	201611-4	—	201611-14	201613-15	Red/Red		90230-1 ⁷	91538-1
28-24	8-24 0.08-0.20	.048065 1.22-1.65	_	_	201334-14	201332-15	Red/Red	90249-2	90230-17	or 601967-1
		.095110 2.41-2.79	—	_	202410-14	202411-15	Green		_	601967-1
04.00	0.0.0.0	.040062 1.02-1.57	201578-4	—	201578-14	201580-15	Yellow/Red	00040.0	00000 17	91538-1 or 58541-1
24-20	0.2-0.6	.055088 1.40-2.16	201330-6	201328-9	201330-14	201328-15	Yellow/Red	90249-2	90230-17	or 601967-1
18 (Two)	0.9-0.9 (Two)	No. Ins. Support	—	—	202725-14	202726-14	Blue	—	90231-2 ⁷	91539-1 or 601967-1
		.080105 2.03-2.67	_	_	202507-14	202508-15	_	—	_	90136-1 or 601967-1
18-16	0.8-1.4	N. I.	200336-6	200333-8	200336-14	200333-14	Blue/Blue	90250-1	90231-27	91539-1
		No Ins. Support	_	_	204219-1 ^{5,6}	_	Blue/Blue	—	_	58541-1 or 601967-1
		N. I.a.	212618-2 ³	201568-3	201570-14	201568-15	Violet/Blue	90250-1	90231-27	91539-1
14	2	No Ins. Support	201570-2	—	212618-1 ^{3,6,†}	_	_	_	_	58541-1 or 601967-1

¹Overall insulation crimp diameter, including crimp barrel, must not exceed .125 [3.18].

²For AMP-TAPETRONIC Machine No. 69875, order contacts by Tape Mounted Contact No., plus packaging code "IM REEL" (5000 parts per reel). ³Grounding pin is used to provide a make-first/break-last condition when mating and unmating connector halves.

4Use turret TH502 (1-601967-6) with hand tool 601967-1.

⁵Use turret TH501 (1-601967-5) with hand tool 601967-1.

 ⁶Pin length is .630^{±005} [16.002^{±127}] on these two pins.
 ⁷Die Set requires "C" Head Adapter Part No. 318161-1; Adapter Holder Part No. 356304-1 (with ratchet) or 189928-1 (without); and Power Unit Part No. 189721-2 (hand actuated) or 189722-2 (foot actuated).

*Commercial PRO-CRIMPER II Hand Tool for field repair use only. Note: Die Set can be adapted for use with the 626 Pneumatic Tool System. †Does not use Hand Tool 91539-1 or 601967-1.

\$2 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. Insertion Tool Part No. 200893-2 (for insulation diameters .070 [1.78] or less).

Extraction Tool Part No. 305183.

Catalog 82021 Revised 7-07

www.tycoelectronics.com

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

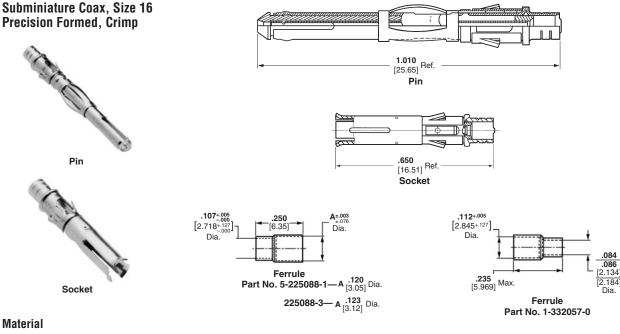
Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444 South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-208-420-8341

AMP Circular Connectors for **Commercial Signal and Power Applications**

Note: All part numbers are RoHS Compliant.

Coaxial Contacts



Selection Chart for Coaxial Cable

					Tooling Part	No.	
Cable Size	Contact	Loose Conta		Ferrule Part No.	Die Sets for Hand Tool 69710-1	Hand	
(RG/U)	Finish	Pin	Socket	Part No.	or 626 Pneumatic Tool System	Tool or Die Set*	
178, 196	Gold/Nickel Gold/Copper ¹	226537-2	51565-2	1-332057-0†	69690-2 ⁷	69656-2	
170, 100	Gold/Nickel Gold/Copper ²	old/Nickel - 51565-5 Id/Copper ²		1 002007 0	00000 2	00000 2	
196 (Double Braid)	Gold/Nickel Gold/Copper ¹	226537-2	51565-2	5-225088-1†	_	69656-9	
	Gold/Nickel Gold/Copper ²	_	51565-5	J-223000-11		03030-3	
174, 188, 316	Gold/Nickel Gold/Copper ¹	226537-1	51565-1	1-332056-0	69690 ⁷	91911-3*	
	Gold/Nickel Gold/Copper ²	226537-4	51565-4	1-332030-0	09090		
174	Gold/Nickel Gold/Copper ¹	226537-1	51565-1	5-225088-3		69656-7	
(Double Braid)	Gold/Nickel Gold/Copper ²	226537-4	51565-4	5-225006-5	—	09000-7	
179, 187	Gold/Nickel Gold/Copper ¹	226537-1	51565-1	1-332056-0	69690-1 ⁷	91911-4*	
179, 107	Gold/Nickel Gold/Copper ²	226537-4	51565-4	1-332030-0	69690-1	91911-4	
187	Gold/Nickel Gold/Copper ¹	226537-1	51565-1	5-225088-1†		69656-8	
(Double Braid)	Gold/Nickel Gold/Copper ²	226537-4	51565-4	0-220000-11		09000-0	
161	Gold/Nickel Gold/Copper ¹	226537-1	51565-1	1-332056-0			
וסו	Gold/Nickel Gold/Copper ²	226537-4	51565-4	1-332030-0	—	_	

1.000030 [0.00076] gold over .000050 [0.00127] nickel—outer shell and socket center conductor; .000030 [0.00076] gold over .000100 [0.00254] copper-pin center conductor.

².000050 [0.00127] gold over .000050 [0.00127] nickel—outer shell and socket center conductor; .000050 [0.00127] gold over .000100 [0.00254] copper-pin center conductor.

⁷Die Set requires "C" Head Adapter Part No. 318161-1; Adapter Holder Part No. 356304-1 (with ratchet) or 189928-1 (without); and Power Unit Part No. 189721-2 (hand actuated) or 189722-2 (foot actuated).

†Does not use Hand Tool 91539-1 or 601967-1. *Used with PRO-CRIMPER II Hand Tool Frame Part No. 354940-1.

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

Finish

Outer Shell, Center Conductor-See charts Ferrule[†]—Bright tin per MIL-T-10727

Related Product Data

Application Tooling—Pages 76-79

Catalog 82021

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

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

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

Selection Chart for Twisted Pair and Shielded Wire

Tooling Part No.

Coaxial Contacts (Continued)

Subminiature Coax, Size 16 **Precision Formed, Crimp**

(Continued)

Finish

Ferrule[†]—Bright tin per MIL-T-10727

Related Product Data

Application Tooling—Pages 76-79

Wire Size	Contact	Loose Conta	Piece ct No.	Ferrule	Die Sets for Hand Tool 69710-1	Hand	
AWG mm ²	Finish	Pin	Socket	Part No.	or 626 Pneumatic Tool System	Tool or Die Set*	
30 0.05	Gold/Nickel Gold/Copper ¹	226537-3	51565-3	1-332057-0†	69690-2 ⁷	69656-2	
(Twisted Pair, Solid)	Gold/Nickel Gold/Copper ²	226537-6	51565-6	1-002007-01	03030-2	03030-2	
28 0.08-0.09	Gold/Nickel Gold/Copper ¹	226537-3	51565-3	1-332057-0†	69690 ⁷	91911-3*	
(Twisted Pair, Solid)	Gold/Nickel Gold/Copper ²	226537-6	51565-6	1-332037-01	09090		
28 0.08-0.09 (Twisted Pair,	Gold/Nickel Gold/Copper ¹	226537-3	51565-3	1-332057-0†	69690-1 ⁷ or	91911-4*	
Stranded 7 Str., .0050 [0.13] Dia.)	Gold/Nickel Gold/Copper ²	226537-6	51565-6	1-332037-01	69690-2 ⁷	or 69656-2	
26 0.12-0.15 (Twisted Pair, Solid	Gold/Nickel Gold/Copper ¹	226537-3	51565-3	1-332057-0†	69690 ⁷	01011 2*	
or Stranded 7 Str., .0063 [0.16] Dia.)	Gold/Nickel Gold/Copper ²	226537-6	51565-6	1-332057-01	09090	91911-3*	
26 0.12-0.15 (Shielded, .075 [1.91]	Gold/Nickel Gold/Copper ¹	226537-1	51565-1	1-332057-0†	69690-3 ⁷	60656 2	
(Shielded, .075 [1.91] Max. O.D.)	Gold/Nickel Gold/Copper ²	226537-4	51565-4	1-332037-01	09090-3	69656-3	

Loose Diese

¹.000030 [0.00076] gold over .000050 [0.00127] nickel—outer shell and socket center conductor; .000030 [0.00076] gold over .000100 [0.00254] copper—pin center conductor. ².000050 [0.00127] gold over .000050 [0.00127] nickel—outer shell and socket center conductor; .000050 [0.00127]

gold over .000100 [0.00254] copper—pin center conductor. 7Die Set requires "C" Head Adapter Part No. 318161-1; Adapter Holder Part No. 356304-1 (with ratchet) or 189928-1 (without); and Power Unit Part No. 189721-2 (hand actuated) or 189722-2 (foot actuated).

*Used with PRO-CRIMPER II Hand Tool Frame Part No. 354940-1.

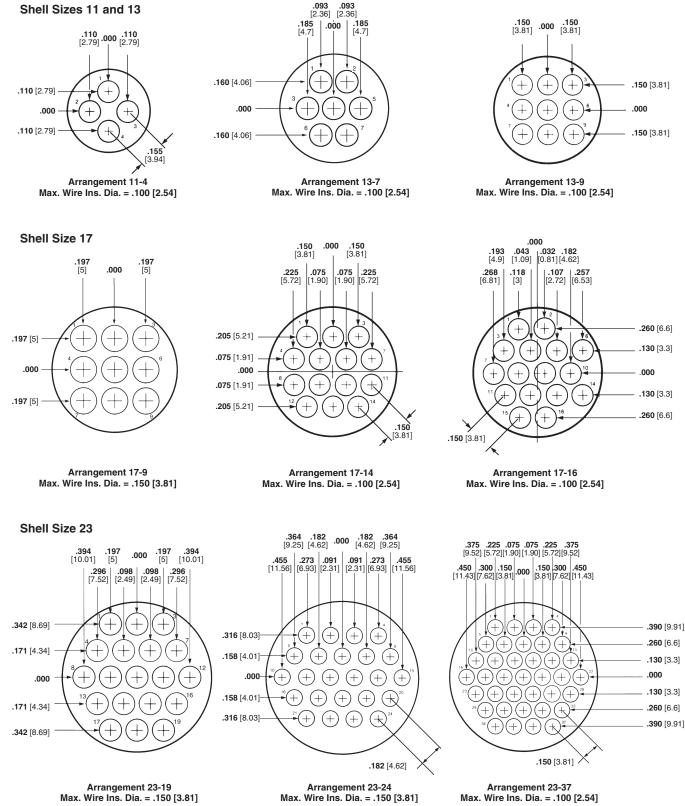
Note: A ferrule is required for each pin and socket.

Extraction Tool Part No. 305183.

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USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444 CPC Series 1





Note: Contact arrangements shown are for pin mating face (plug or receptacle). Socket mating face is mirror image.

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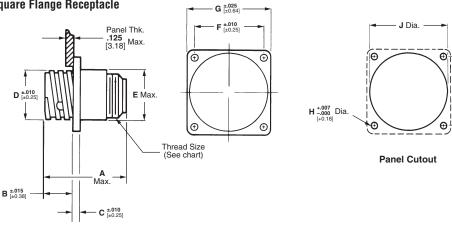
Catalog 82021

Revised 7-07

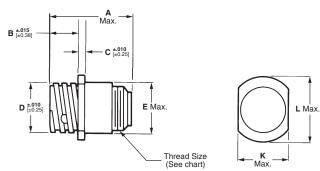
Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents. Dimensions are shown for reference purposes only. Specifications subject to change. USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

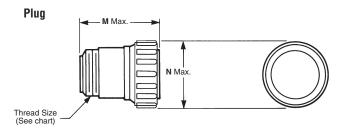
Component Dimensions, Series 1

Square Flange Receptacle



Free-Hanging Receptacle





Shell	0						D	imensior	ıs						Thread
Size	Sex	Α	в	С	D	Е	F	G	Н	J	к	L	М	N	Size
11	Rev.	1.070 27.18	.420	.094	.687	.740	.844	1.125	.125	.840	.817	.935	1.365 34.67	.975	5/8-24
	Std.	1.350 34.29	10.67	2.39	17.45	18.8	21.44	.44 28.58	3.18	21.34	20.75	23.75	1.080 27.43	24.77	UNEF-2A
13	Std.	1.350 34.29	.420 10.67	.094 2.39	.812 20.62	.879 22.33	.969 24.61	1.281 32.54	.125 3.18	.979 24.87	.874 22.2	1.072 27.23	1.080 27.43	1.105 28.07	3/4-20 UNEF-2A
17	Rev.	1.070 27.18	.420	.094	1.050	1.110	1.125	1.435	.150	1.210	1.161	1.310	1.365 34.67	1.349	15/16-20
17	Std.	1.350 34.29	10.67	2.39	26.67	28.19	28.58	36.45	3.81	30.73	29.49	33.27	1.080 27.43	34.26	UNEF-2A
23	Rev.	1.070 27.18	.520	.156	1.438	1.510	1.438	1.750	.150	1.610	1.505	1.733	1.365 34.67	1.788	1-3/8-18
	Std.	1.350 34.29	13.21	3.96	36.53	38.35	36.53	44.45	3.81	40.89	38.23	44.02	1.080 27.43	45.42	UNEF-2A

Catalog 82021 Revised 7-07

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

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

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444 South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-208-420-8341

25

CPC Series

F ±.010 [±0.25]

are metric equivalents.

₹ Тусо Electronics

Circular Plastic Connectors, Series 2

CPC Connectors, Series 2

for Cable or Panel Mount (Accepts Size 20 DM or DF Crimp, Snap-In Contacts)



Listed part numbers are for connectors only; contacts must be ordered separately.

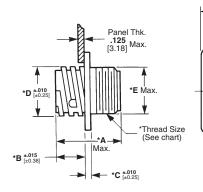
Material

CPC Series 2

Housing—Thermoplastic, 94V-0 rated, black

Related Product Data

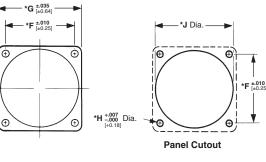
Contacts—Pages 29-30 Contact Arrangement—Page 31 Component Dimensions—Page 32* Accessories—Pages 38-42 Performance Characteristics-Page 6 Application Tooling—Pages 76-79 Technical Documents—Page 80



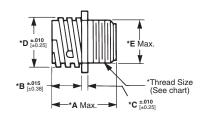
Square Flange Receptacle

Free-Hanging Receptacle

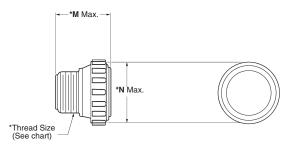
Plug



*Note: See page 32 for callout dimensions







Standard Sex Connectors

(Receptacles accept Size 20 DM or DF pin contacts, Plugs accept Size 20 DM or DF socket contacts)

	Square Flang	je Receptacle	Receptacle Free-Hanging				
Arrangement	With Mounting Holes	With Threaded Inserts ¹					
11-8	205841-1	205841-3	205841-2	205838-1			
11-9	206486-1	206852-8	206486-2	206485-1			
17-28	205840-3	205840-4	206152-1	205839-3			
23-63	205843-1	_	205843-2	205842-1			

¹Four 4-40 threaded inserts per receptacle.

Reverse Sex Connectors

(Receptacles accept Size 20 DM or DF socket contacts, Plugs accept Size 20 DM or DF pin contacts) Square Flange Receptacle

Replacement Couplin

Shell Size	Part No.				
11	213811-1				
17	213810-1				
23	213812-1				

ng Rings	Arrangement	With Mounting Holes	With Threaded Inserts ¹	Free-Hanging Receptacle	Plug	
Part No.	11-8	206433-1	206433-3	206433-2	206434-1	_
13811-1	17-28	206038-1	206038-4	206038-2	206039-1	
13810-1	23-57	206438-1		206438-2	206437-1	
13812-1						-

¹Four 4-40 threaded inserts per receptacle.

Note: For Standard and Reverse Sex Connectors the maximum wire insulation diameter is .068 [1.73].

26

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

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

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

Note: All part numbers are RoHS Compliant.

Circular Plastic Connectors, Series 2 (Continued)

Receptacles, Printed Circuit Board Mount

with .025 [0.64] sq. solder tails



Material and Finish

Housing—Thermoplastic, 94V-0 rated, black

Contacts-

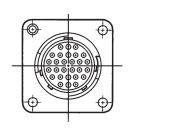
A—Duplex plated gold flash on entire contact with .000030 [0.00076] min. gold on contact engagement area, tin on the termination area, all over .000050 [0.00127] min. nickel underplating
 B—Plated gold flash on the entire

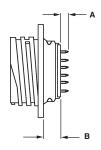
contact, tin on the termination area

Related Product Data

Contact Arrangement—Page 31 Performance Characteristics— Page 6

Technical Documents—Page 80 Accessories—Pages 38-42





Standard Sex (Posted Pin Contacts)

Arrangement	Receptac	le Assemblies	Dimer	nsions	Contact
Shell No. of Size Positions	Mounting Holes	4-40 Threaded Inserts ¹	А	В	Finish Code
11-9	1-206852-2	—	.125 3.18	.230 5.84	А
	1-206852-1	—	.352 8.94	.230 5.84	А
17.00	1-207369-1	—	.125 3.18	.230 5.84	А
17-28	1-207369-3	—	.352 8.94	.230 5.84	А
23-63	1-206455-2	—	.227 5.77	.338 8.59	А
20 00	1-206455-1	_	.449 11.40	.338 8.59	А

¹Four 4-40 threaded inserts per receptacle.

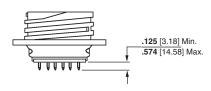
Reverse Sex (Posted Socket Contacts)

Arrangement	Receptac	le Assemblies	Dimer	nsions	Contact	
Shell No. of Size Positions	Mounting Holes	4-40 Threaded Inserts ¹	А	В	Finish Code	
11-8	1-208657-1	—	.352 8.94	.285 7.24	А	
11-8	_	1-208657-0	.574 14.58	.230 7.24	А	
17-28	1-207216-6	—	.125 3.18	.230 5.84	В	
17-20	1-207216-7 —		.352 8.94	.230 5.84	А	
23-57	1-796329-1	_	.232 5.89	.333 8.46	А	

¹Four 4-40 threaded inserts per receptacle.

Other Available Posted Contacts

Tyco Electronics can make available contacts with various solder tail lengths for loading into the standard or reverse sex, square flange receptacles for applications requiring custom solder tail lengths.



Catalog 82021 Revised 7-07

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Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents. Dimensions are shown for reference purposes only. Specifications subject to change. USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444 South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-208-420-8341

Thread Size (See chart)

Square Flange Feed-Thru Receptacles (with Permanently Sealed .040 [1.02] Dia. Solid Pins) **Note:** All part numbers are RoHS Compliant.

Circular Plastic Connectors, Series 2 (Continued)

Special CPC Connectors,

Series 2 (Pressure rated up to 30 psi)



Listed plug connector part numbers are for connectors only; **contacts must be ordered separately.**

Material

Housing—Thermoplastic, 94V-0 rated, black

Feed-Thru Contacts—Copper alloy, plated gold over nickel

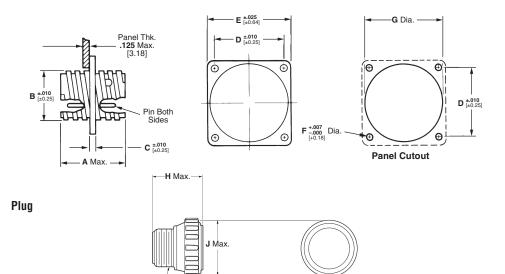
Related Product Data

Socket Contacts (for Plugs)— Pages 29-30

Contact Arrangement—Page 31 Performance Characteristics—

Page 6

Accessories—Pages 38-42 Technical Documents—Page 80



Arrangement		Dimensions								Thread
No.	Α	В	С	D	E	F	G	Н	J	Size
11-8	1.035	.688	.188	.844	1.125	.125	.840	.800	.975	5/8-24
	26.29	17.48	4.78	21.44	28.58	3.18	21.34	20.32	24.77	UNEF-2A
17-28	1.040	1.050	.188	1.125	1.435	.150	1.210	.800	1.349	15/16-20
	26.42	26.67	4.78	28.58	36.45	3.81	30.73	20.32	34.26	UNEF-2A

Part Numbers

Arrangement No.	Standard Numbering Plug	Reverse Numbering Plug	Square Flange Feed-Thru Receptacle
11-8	205838-1	206460-1	206458-1
17-28	206125-1	206126-1	206127-1

Note: One plug must have standard numbering of cavities, and the other plug must have reverse numbering of cavities.

28 Catalog 82021

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents. Dimensions are shown for reference purposes only. Specifications subject to change. USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

Note: All part numbers are RoHS Compliant.

Signal Contacts

Size 20 DF, Precision Formed, Crimp Contacts

Contact Size—20 Pin Diameter—.040 [1.02] *Test Current—7.5 ampere (Single contact, free-air test current; not to be construed as contact rating current. Use only for testing.) *Note: Total current capacity of each contact in any given connector is dependent on the heat rise resulting from the combination of electrical loads of all contacts in the connector arrangement and the maximum ambient temperature in which the connector will be operating. See page 8.



Socket

Material

Pin Body—Brass Socket—Phosphor bronze

Contact Finish

A—Select gold flash over nickel on entire contact, with additional .000030 [0.00076] gold on mating end
B—Duplex plated .000030 [0.00076] gold on mating end, tin

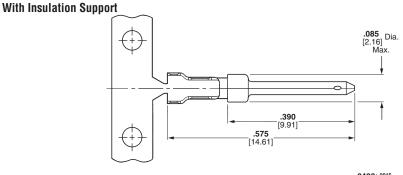
on termination end, with entire contact nickel underplated **C**—Gold flash over nickel on entire contact

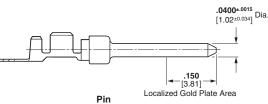
D—Duplex plated gold flash on mating end, tin on termination end, with entire contact nickel underplated

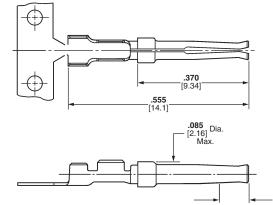
Related Product Data

Application Tooling—Pages 76-79 Technical Documents—Page 80 Product Specification—108-40005

Insertion/Extraction Tool Part No. 91285-1 Instruction Sheet—408-9404 This tool includes interchangeable tips to Insert/Extract: Size 22, 28-22 AWG [0.08-0.03 mm²] Crimp Contacts Size 20, 28-20 AWG [0.08-0.6 mm²] Crimp and Solder Cup Contacts Size 20, Posted Contacts







Socket

.100 [2.54] Localized Gold Plate Area

Wire	Ins.	Contact		Contact	Toolin	g	Color Code			
Size	Dia.	Code Finish	Р	in	So	cket	Strip Form	Hand	(Loose	
Range	Max.	Finish	Strip Form	Loose Piece	Strip Form	Loose Piece	Applicator ⁺⁺	Tool	Piece)	
		А	66507-3	66507-9	66505-3	66505-9				
	.040	В	1658540-4	1658540-5	1658538-2	_	466423-□††	01500 15	Blue	
28-24 AWG [0.08-0.2	1.02	С	66507-4	1-66507-0	66505-4	1-66505-0	or 466901-1 ⁺⁺ or 1016015-1 ⁺⁺	91503-15	Dot	
		D	1658540-1	1658540-2	1658538-3	5-66505-9				
mm ²]	000	А	66682-2	66682-4	66683-2	66683-4	466758-2††		Dissil	
	.060 1.52	В	5066682-9	—	1-5066683-0	_	or 466963-1 ⁺⁺	91549-1 ⁵	Black Dot	
	-	D	5066682-6	—	5066683-7	_	or 567804-1 ⁺⁺			
26-22		А	745254-2	745254-6	745253-2	745253-6				
AWG	.050	В	1658544-2	1658544-1	1658543-2	1658543-1	466968-1**	91525-15	Yellow	
[0.12-0.4	1.27	С	745254-3	745254-7	745253-3	745253-7	or 567036-□ ^{††} or 567849-1 ^{††}	91525-10	Dot	
mm ²]		D	1658544-3	1-745254-6	1658543-3	1-745253-6				
24-20		А	66506-3	66506-9	66504-3	66504-9	466422-□††			
AWG	.060	В	1658539-1	1658539-3	1658537-3	1658537-4	or 466900-1 ^{+†}	91503-15	Red	
[0.2-0.6	1.52	С	66506-4	1-66506-0	66504-4	1-66504-0	or 567801-1 ⁺⁺	31303-1-	Dot	
mm²]		D	1658539-2	1658539-4	1658537-1	1658537-2	or 1016002-1 ⁺⁺			

⁵To 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).

†+For complete information on AMP Strip Form Applicators for fully automatic and semiautomatic machines, contact Technical Support.

Note: Commercial PRO-CRIMPER III Maintenance and Repair Hand Tool for Wire Size 28-24 AWG [0.08-0.2 mm²] (Ins. Dia. Max. .040 [1.02]), and Wire Size 24-20 AWG [0.2-0.6 mm²] (Ins. Dia. Max. .060 [1.52])—Part No. 58448-2. Note: Die Set Part No. 58448-3 can be adapted for use with the 626 Pneumatic Tool System.

Catalog 82021 Revised 7-07

www.tycoelectronics.com specified. V are metric (

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents. Dimensions are shown for reference purposes only. Specifications subject to change. USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

Note: All part numbers are RoHS Compliant.

Signal Contacts (Continued)

Size 20 DM. Screw-Machined, **Crimp Contacts** Pin Diameter—.040 [1.02]

Test Current*-7.5 amperes (Single contact, free-air test current; not to be construed as contact rating current. Use only for testing.)

Material and Finish

CPC Series 2

Pin Body—Copper alloy per QQ-B-626 Socket Body-Beryllium copper

per QQ-C-530 Socket Sleeve—Passivated stainless

steel per QQ-S-766 Plating pin and socket body-.000050-.000100 [0.00127-0.00254] min. gold over .000100-.000150 [0.00254-0.00381] min. copper

Gold plating per MIL-G-45204 Copper plating per MIL-C-14550

Type 20 DF, Solder **Contacts**

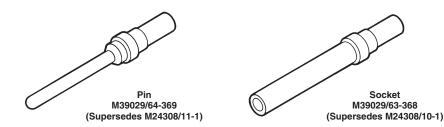
Test Current*-7.5 amperes (Single contact, free-air test current; not to be construed as contact rating current. Use only for testing.)

Material and Finish

Pin—Brass, plated gold flash over nickel on entire contact with additional .000030 [0.00076] min. gold on mating end

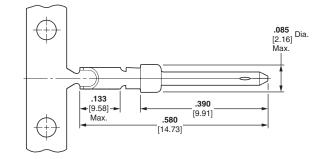
Socket—Phosphor bronze, plated gold flash over nickel on entire contact with additional .000030 [0.00076] min. gold on mating end

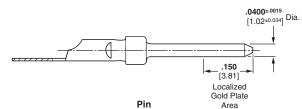
*Note: Total current capacity of each contact in a given connector is dependent on the heat rise resulting from the combination of electrical loads of all contacts in the connector arrangement and the maximum ambient temperature in which the connector will be operating. See page 8.

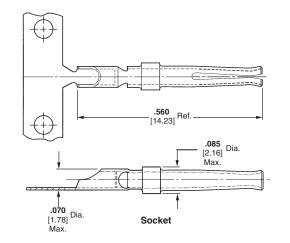


Wire Size	Inc. Die	Contact	Tape Mounted	Loose Piece	Contacts	Hand To	ol Nos.	Position	er Nos.
Range ¹ AWG mm ²	Ins. Dia. (Max.)	Contact Configuration	Contacts ² Part No.	Military No. (M39029/)	Part No.	Military (M22520/)	Part No.	Military (M22520/)	Part No.
24-20 0.2-0.6	.068 1.73	Pin	205089-2	64-369	205089-1	02-01	601966-1	2-08	601966-5
24-20 0.2-0.0	1.73	Socket	205090-2	63-368	205090-1	02-01	001900-1	2-00	001900-5

¹Overall insulation crimp diameter, including crimp barrel, must not exceed .125 [3.18]. 2.000015 [0.00038] gold in the mating area over .000050 [0.00127] nickel.







Strip Contac	Form ct No.	Loose Piece Contact No.					
Pin	Socket	Pin	Socket				
66570-2	66569-2	66570-3	66569-3				

Note: Contacts to be soldered to wire before being inserted into housing, 18 AWG [0.8 - 0.9 mm²] max. wire size.

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Catalog 82021 Revised 7-07

millimeters unless otherwise specified. Values in brackets www.tycoelectronics.com are metric equivalents.

Dimensions are in inches and

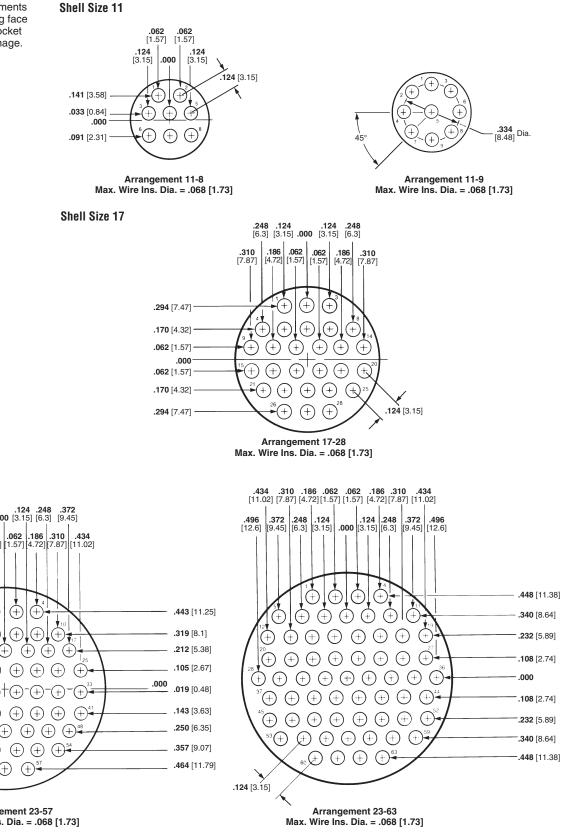
Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

Note: All part numbers are RoHS Compliant.

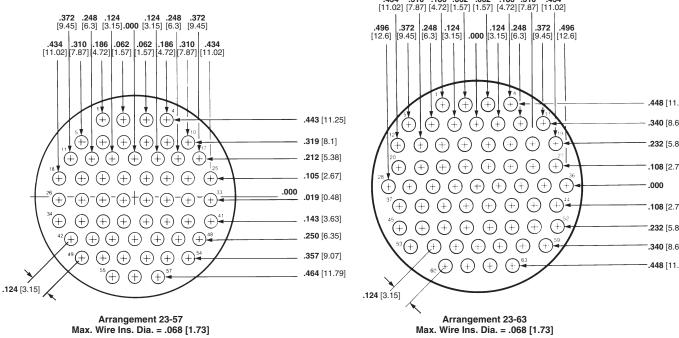
Note: Contact arrangements shown are of pin mating face (plug or receptacle). Socket mating face is mirror image.





CPC Series

Shell Size 23



Catalog 82021 Revised 7-07

www.tycoelectronics.com

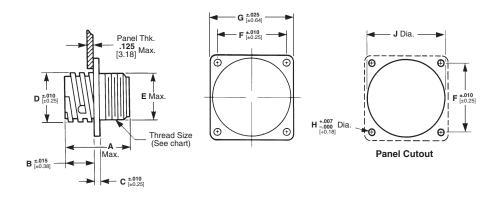
Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

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

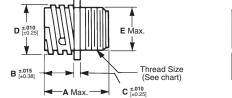
USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

Component Dimensions, Series 2

Square Flange Receptacle

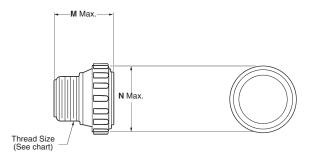


Free-Hanging Receptacle





Plug



Arrangement		Dimensions												
No.	Α	В	С	D	Е	F	G	н	J	К	L	М	N	Size
11-8	.809	.420	.094	.688	.630	.844	1.125	.125	.840	.817	.935	.800	.975	5/8-24
11-9	20.55	10.67	2.39	17.48	16	21.44	28.58	3.18	21.34	20.75	23.75	20.32	24.77	UNEF-2A
17-28	.809 20.55	.420 10.67	.094 2.39	1.050 26.67	.943 23.95	1.125 28.58	1.435 36.45	.150 3.81	1.210 30.73	1.161 29.49	1.310 33.27	.800 20.32	1.349 34.26	15/16-20 UNEF-2A
23-57 23-63	.924 23.47	.420 10.67	.156 3.96	1.438 36.53	1.515 38.48	1.438 36.53	1.750 44.45	.150 3.81	1.610 40.89	1.500 38.1	1.733 44.02	.915 23.24	1.788 45.42	1-3/8-18 UNEF-2A

Note: All dimensions apply to both standard and reverse sex connectors.

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millimeters unless otherwise specified. Values in brackets www.tycoelectronics.com are metric equivalents.

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

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

Circular Plastic Connectors, Series 3

CPC Connectors, Series 3



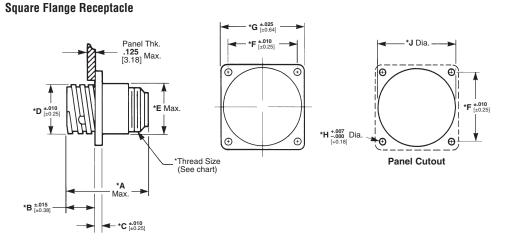
Listed part numbers are for connectors only; **contacts must be ordered separately.**

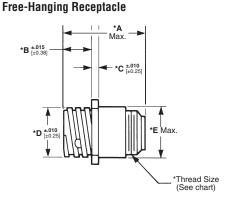
Material

Housing—Thermoplastic, 94V-0 rated, black

Related Product Data

Contacts—Page 34–35 Contact Arrangement—Page 35 Component Dimensions—Page 36* Accessories—Pages 38-42 Performance Characteristics— Page 6 Application Tooling—Pages 76-79 Technical Documents—Page 80



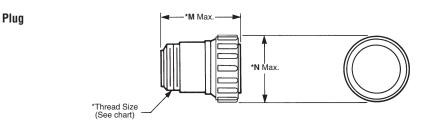




*L Max

*K

Max.



Standard Sex Connectors

(Receptacles accept Type XII Male/pin contacts, Plugs accept Type XII Female/socket contacts)

	Square Flan	ge Receptacle	Free Hereine	
Arrangement	With Mounting Holes	With Threaded Inserts ¹	Free-Hanging Receptacle	Plug
17-3	206036-2	213581-1	206207-1	206037-2
23-7	206137-1	206137-5	206137-2	206136-1

¹Four 4-40 threaded inserts per receptacle.

Reverse Sex Connectors

(Receptacles accept Type XII Female/socket contacts, Plugs accepts Type XII Male/pin contacts)

	Square Flan	ge Receptacle	Ence Henrice		
Arrangement	With Mounting Holes	With Threaded Inserts ¹	Free-Hanging Receptacle	Plug	
17-3	206425-1	206425-5	206425-2	206426-1	
23-7	206227-1	206227-6	206227-2	206226-1	

Replacement Coupling Rings

Shell Size	Part No.
17	213810-1
23	213812-1

¹Four 4-40 threaded inserts per receptacle.

Note: Maximum wire insulation diameter is .220 [5.59].

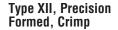
Catalog 82021 Revised 7-07

www.tycoelectronics.com specified. Va

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents. Dimensions are shown for reference purposes only. Specifications subject to change. USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444 South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-208-420-8341

Note: All part numbers are RoHS Compliant.

Power Contacts, Series 3



Material

Copper

Finish

A—Tin B-.000030 [0.00076] selective gold over .000030 [0.00076] nickel **C**—.000100 [0.00254] silver plated contacts with lubricant added

Test Current Rating

Silver or Gold—35 amperes ‡ Tin-15 amperes ‡

not to be construed as contact rating current. Use only for testing. Refer to contact current carrying capability information, page 8.

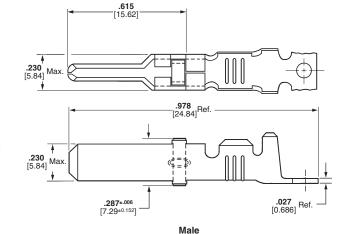
Related Product Data

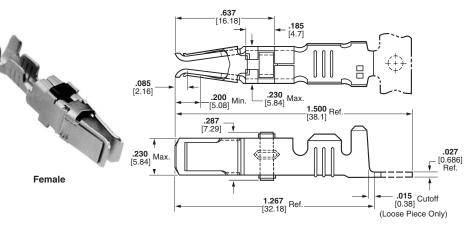
Application Tooling—Pages 76-79 Technical Documents—Page 80



Extraction Tool Part No. 91019-3







Female

				St	rip Form Co	ntact Part No	os.	Loose	Piece	Tooling								
Wire Size Range ¹		Ins. Dia.	Contact Finish			Heavy Duty Miniature***		Contact Part Nos.		Heavy Duty Miniature	Die Set for Hand Tool 69710-1							
AWG	mm ²	Range		Male	Female	Male	Female	Male	Female	Applicator	or 626 Pneumatic Tool System							
			А	66255-1	66740-7	66255-5	1-66740-2	66261-1	66740-8									
		.135160 3.43-4.06	A	66256-1 ²		66256-5 ²		66262-1 ²	_		90145-2 ^{3,7} and 90145-1 ^{4,7}							
	16 1.25-1.4			66255-2	66740-5	66255-6	1-66740-1	66261-2	66740-6	567455-□***								
and 14-12	and 2-3			66256-2 ²	_	66256-4 ²		66262-2 ²	_									
			C⁵	66255-7	66740-1	66255-8	66740-9	66261-4	66740-2									
			03	66256-6 ²	—	66256-7 ²		66262-4 ²	_									
		.190220	А	66253-1	66741-7	66253-5	1-66741-2	66259-1	66741-8									
			.190220	.190220						А	66254-1 ²	—	_	—	66260-1 ²	_		
10	5-6				В	66253-2	66741-5	66253-6	1-66741-1	66259-2	66741-6	567021-□***	00140 17					
10	0-0	4.83-5.59	D	66254-2 ²	_	—		66260-2 ²	_	507021-	90140-17							
			C ⁵	66253-4	66741-1	66253-8	66741-9	66259-4	66741-2									
				03	66254-4 ²	_	_	_	66260-4 ²									

¹Wire strip length-.281 [7.14].

²Ground contact

³Die insert Part No. 90145-2 is for crimping 16 AWG [1.25-1.4 mm²] wire.

⁴Die insert Part No. 90145-1 is for crimping 14-12 AWG [2-3 mm²] wire.

⁵Recommended for high current/vibration applications where fretting corrosion is a problem.

7Die Set requires "C" Head Adapter Part No. 318161-1; Adapter Holder Part No. 356304-1 (with ratchet) or 189928-1 (without); and Power Unit Part No. 189721-2 (hand actuated) or 189722-2 (foot actuated).

Extraction Tool No. 91019-3. ***Call Technical Support for Automatic Machine Applicator Part Numbers.

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Catalog 82021 Revised 7-07

www.tycoelectronics.com

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

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

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

Electronics

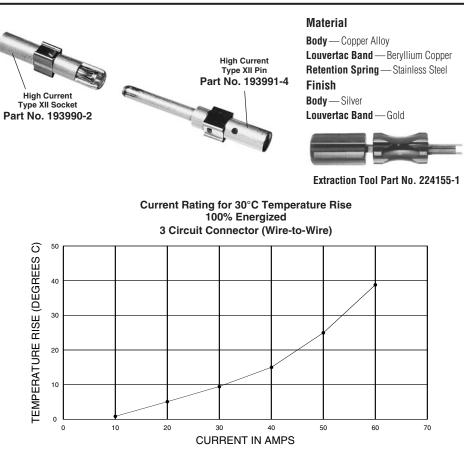
Power Contacts, Series 3 (Continued)

High Current Type XII Crimp Contacts

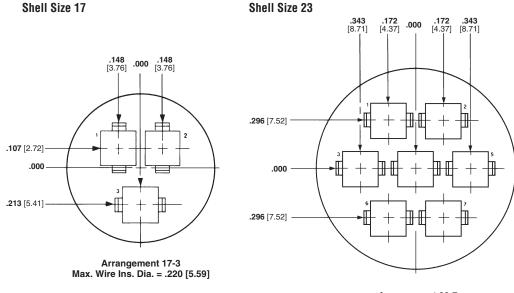
The Multimate features of the High Current Type XII contact have been designed to fit into the existing AMP Connectors such as CPC (Circular Plastic Connector), CMC (Circular Plastic Metal-Shell Connector), G Series, M Series, and CMPC (Circular Multipin Connector) housings. An initial T-Rise test in free air has shown a 60 amp capability with a 30° T-Rise with 8 gage wires. The contact may be crimped onto 8 AWG wire with a Daniels Hand Tool M310 or AMP P/N 356114-1 and Positioner TP1068 or AMP P/N 356119-1.

Current-Carrying Capacity

The graph shows current-carrying capacity versus temperature rise for a fully energized 3 position CPC plug P/N 206037-2 and receptacle P/N 206036-2. These initial representative amperage ratings were conducted with 8 AWG wires that were 3 feet long.



Contact Arrangements, Series 3



Arrangement 23-7 Max. Wire Ins. Dia. = .220 [5.59]

Note: Contact arrangements shown are of pin mating face (plug or receptacle). Socket mating face is mirror image.

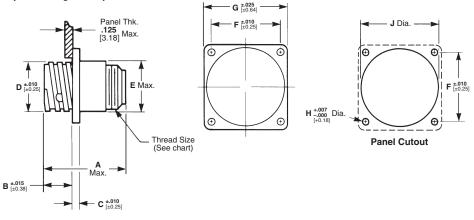
Catalog 82021 Revised 7-07

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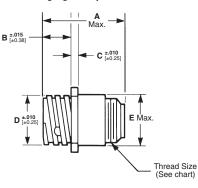
Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents. Dimensions are shown for reference purposes only. Specifications subject to change. USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444 South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-208-420-8341

Component Dimensions, Series 3

Square Flange Receptacle

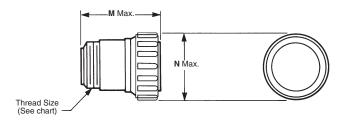


Free Hanging Receptacle





Plug



Arrangement No.		Dimensions												
	Α	В	С	D	Е	F	G	н	J	К	L	М	Ν	Size
17-3	1.635	.420	.094	1.050	1.110	1.125	1.435	.150	1.210	1.161	1.310	1.645	1.349	15/16-20
	41.53	10.67	2.39	26.67	28.19	28.58	36.45	3.81	30.73	29.49	33.27	41.78	34.26	UNEF-2A
23-7	1.635	.520	.156	1.438	1.510	1.438	1.750	.150	1.610	1.505	1.733	1.645	1.788	1-3/8-18
	41.53	13.21	3.96	36.53	38.35	36.53	44.45	3.81	40.89	38.23	44.02	41.78	45.42	UNEF-2A

Note: All dimensions apply to both standard and reverse sex.

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CPC Series 3

Revised 7-07 millimeters unless otherwise specified. Values in brackets www.tycoelectronics.com are metric equivalents.

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents. Dimensions are shown for reference purposes only. Specifications subject to change. USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

CPC Connectors, Series 4, Standard Sex



Listed part numbers are for connectors only; contacts must be ordered separately.

Material

Housing—Thermoplastic, 94V-0 rated, black; 23-9M - Nylon 6/6, glass filled, black

Related Product Data

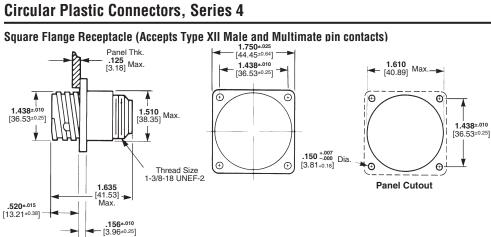
Contacts—Pages 17-21 and 34-35 Contact Arrangements-Below Accessories—Pages 38-42 Performance Characteristics-Page 6 Application Tooling—Pages 76-79 Technical Documents—Page 80

Replacement Coupling Ring

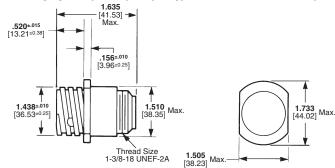
Shell Size	Part No.
23	213812-1

Contact Arrangements, Series 4 Shell Size 23

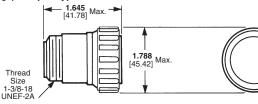
Note: Contact arrangements shown are of pin mating face (plug or receptacle). Socket mating face is mirror image.



Free-Hanging Receptacle (Accepts Type XII Male and Multimate pin contacts)



Plug (Accepts Type XII Female and Multimate socket contacts)

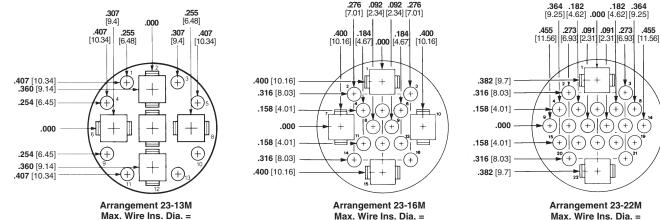


UNEF-2A /					
Arrangement	No. of C	avities	Square Flange	Free-Hanging	Plug
Anangement	Power	Multimate	Receptacle	Receptacle	Flug
23-9M	6 (POWERBAND)	3	1776247-2 ¹	_	206136-4
23-13M	5 (Type XII)	8	211825-1	211825-2	211824-1
23-16M	4 (Type XII)	12	207486-1	207486-2	207485-1
23-22M	2 (Type XII)	20	206613-1	206613-3	206612-1

¹Four 4-40 threaded inserts per receptacle. Note: Maximum wire insulation diameter is .150 [3.81] for Multimate contacts; .220 [5.59] for Power contacts.

.150 [3.81] for Multimate Contacts,

.220 [5.59] for Power Contacts



Arrangement 23-22M Max. Wire Ins. Dia. = .150 [3.81] for Multimate Contacts, .220 [5.59] for Power Contacts

South America: 55-11-2103-6000

Hong Kong: 852-2735-1628

Japan: 81-44-844-8013

UK: 44-208-420-8341

NEW

Arrangement 23-9M

[8.71] .172 [4.37]

.000

.343

[8.71]

.172

[4.37]

.000

.296 .079 | .079 .296 [7.52] [2.01] | [2.01] [7.52]

Catalog 82021 Revised 7-07

millimeters unless otherwise specified. Values in brackets www.tycoelectronics.com are metric equivalents.

Dimensions are in inches and

.150 [3.81] for Multimate Contacts,

.220 [5.59] for Power Contacts

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

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444 CPC Series 4

.455

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₹ Тусо Electronics

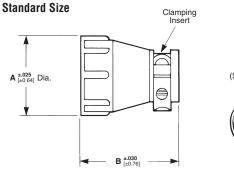
CPC Connector Accessories

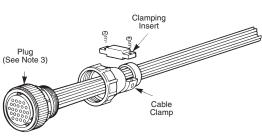
Cable Clamps

Cable clamps provide strain relief and can be used on all series receptacles and plugs.

Material

Black thermoplastic heat-stabilized, fire-resistant, self-extinguishing, UL 94V-0 rated





Shell	Dime	nsions	Cable	Thread	Par	t No.
Size	A	B	O.D. (Max.)	Size	Individually Packaged	Bulk Packaged*
11	.825 20.96	1.250 31.75	.329 8.36	5/8-24 UNEF-2B	1-206062-4	1-206062-7** (400)
13	.950 24.13	1.400 35.56	.453 11.51	3/4-20 UNEF-2B	206966-7	206966-9** (200)
17	1.125 28.58	1.400 35.56	.453 11.51	15/16-20 UNEF-2B	206070-8	1-206070-0** (200)
23	1.600 40.64	1.555 39.5	.703 17.86	1-3/8-18 UNEF-2B	206138-8	1-206138-0** (100)

*Numbers in parentheses specify, in multiples, the minimum quantity of parts that can be ordered.

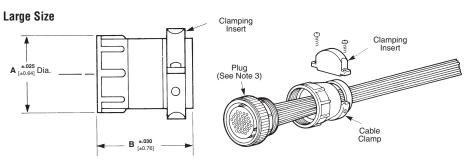
**Packaging includes two screws: shell sizes 11-17, screw length .500 [12.7]; shell size 23, screw length .625 [15.88]. Notes: 1. Clamping areas adjustable by inverting or changing clamping inserts. The quantity of inserts supplied with

each assembly is as follows: for size 11 cable clamps, one insert; for all other cable clamps, two inserts. 2. Components for all cable clamps are packaged unassembled. This includes the cable clamp, two screws and the clamping inserts.

Cable clamps can be threaded directly onto plugs or receptacles, or onto back-shell extenders (page 40). Notes: 3. Replacement screws are available in the following sizes: 3/8 in. [9.52]-5019024-1, 1/2 in. [12.7]-4.

5019024-2, 5/8 in. [15.88]—5019024-3, 1 in. [25.4]—5019024-4, 3/4 in. [19.05]—5019024-5.

5. Cable clamp inserts not sold separately.



Chall	Dime	nsions	Cable	Thread	Par	t No.
Shell Size	A	B	O.D. (Max.)	Thread Size	Individually Packaged	Bulk Packaged*
11	.850 21.59	1.450 36.83	.453 11.51	5/8-24 UNEF-2B	206358-5	206358-6** (200)
13	1.131 28.73	1.655 42.04	.703 17.86	3/4-20 UNEF-2B	207008-5	207008-6** (100)
17	1.131 28.73	1.655 42.04	.703 17.86	15/16-20 UNEF-2B	206322-9	1-206322-0** (100)
23	1.600 40.64	1.655 42.04	1.125 28.58	1-3/8-18 UNEF-2B	206512-5	206512-6** (75)

*Numbers in parentheses specify, in multiples, the minimum quantity of parts that can be ordered.

**Packaging includes two screws: shell size 11, screw length .500 [12.7]; shell sizes 13-23, screw length .625 [15.88]. Notes: 1. Clamping areas adjustable by inverting or changing clamping inserts. The quantity of inserts supplied with each assembly is as follows: for size 23 cable clamps, four inserts; for all other cable clamps, two inserts. 2. Components for all cable clamps are packaged unassembled. This includes the cable clamp, two screws

and the clamping inserts. Notes: 3. Cable clamps can be threaded directly onto plugs or receptacles, or onto back-shell extenders (page 40).

Replacement screws are available in the following sizes: 3/8 in. [9.52]-5019024-1, 1/2 in. [12.7]-4. **5019024-2**, 5/8 in. [15.88]—**5019024-3**, 1 in. [25.4]—**5019024-4**, 3/4 in. [19.05]—**5019024-5**. Cable clamp inserts not sold separately.

5.

The clamping area can be adjusted by reversing the clamping insert as shown below.



For additional information concerning cable clamps, refer to Instruction Sheet 408-7582.

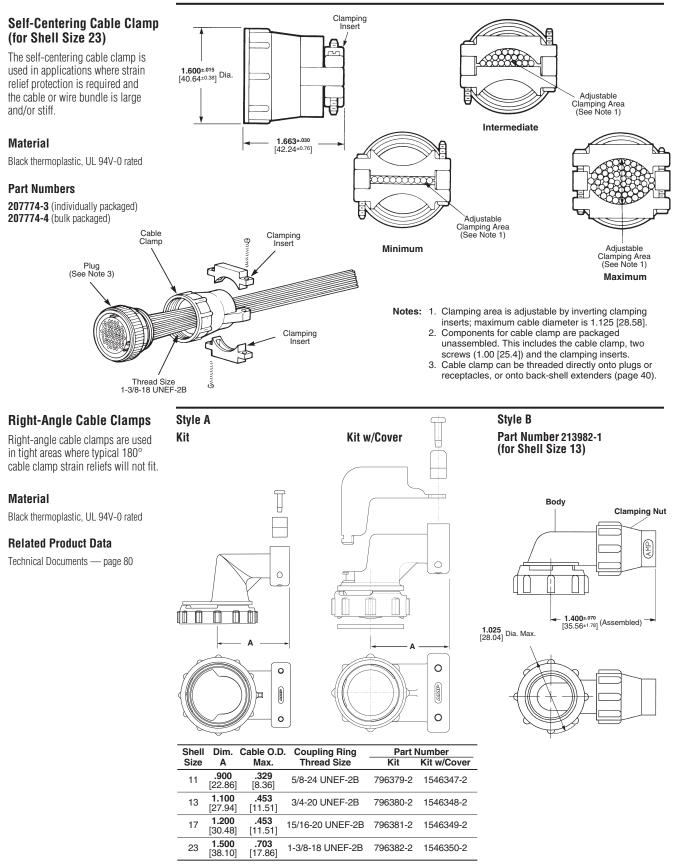
Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

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

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444 South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-208-420-8341

CPC Connector Accessories

CPC Connector Accessories (Continued)



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Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents. Dimensions are shown for reference purposes only. Specifications subject to change. USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444 South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-208-420-8341

CPC Connector Accessories (Continued)

Back-Shell Extender (for Shell Size 23)

₹тусо

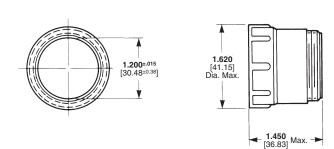
A back-shell extender is used with a cable clamp in applications where added length and/or additional wire breakout are required.

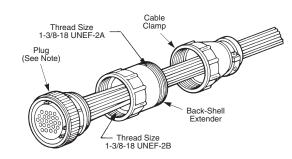
Electronics

Material

Black glass-filled thermoplastic

Part No. 207055-1





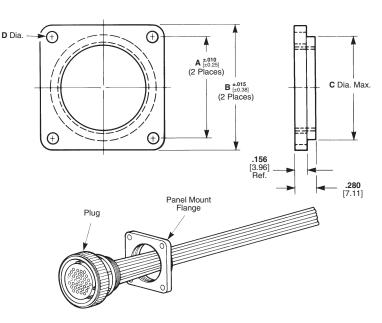
Note: Back-shell extenders can be threaded directly onto plugs or receptacles and will accept cable clamps of the appropriate size (pages 38 and 39).

Panel Mount Flanges (for Plugs only)

A panel mount flange is used in applications that require the plug half of a connector to be panel mounted.

Material

Black thermoplastic



Shell		Dimer	nsions		Part
Size	Α	В	С	D	No.
11	.844 21.44	1.125 28.58	.750 19.05	.125 3.18	207299-1
13	.969 24.61	1.280 32.51	.875 22.22	.125 3.18	207299-2
17	1.125 28.58	1.435 36.45	1.110 28.19	.150 3.81	207299-3
23	1.438 36.53	1.750 44.45	1.510 38.35	.150 3.81	207299-4

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Catalog 82021

Revised 7-07 millimeter specified. www.tycoelectronics.com are metric

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents. Dimensions are shown for reference purposes only. Specifications subject to change. USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

CPC Connector Accessories (Continued)

Flexible Cable Boot and Internal Cable Grip (for Shell Size 11)

Electronics

₹ Тусо

Flexible cable boots, with internal cable grip installed, provide strain relief capabilities for jacketed cable in applications where aesthetic appearance is essential. They can be threaded onto plugs or receptacles.

Material

Black thermoplastic

Cable Range

.150-.250 [3.81-6.35] Dia.

Part Numbers

207489-1 (Cable Boot) 207490-1 (Cable Grip)

Flexible Cable Boot and Internal Cable Grip (for Shell Size 17)

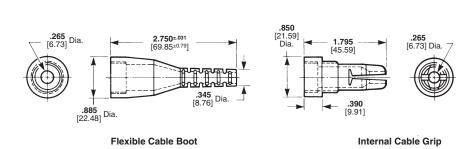
Flexible cable boots, with internal cable grip installed, provide strain relief capabilities for jacketed cable in applications where aesthetic appearance is essential. They can be threaded onto plugs or receptacles.

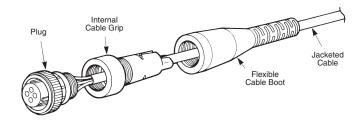
Material

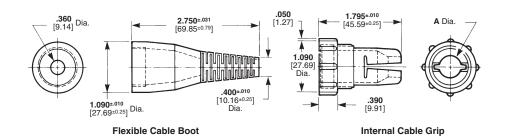
Black thermoplastic

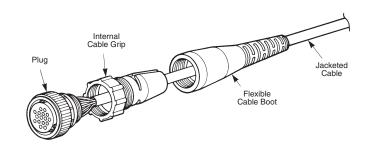
Part Numbers

207241-1 (Cable Boot) 207387-1 (Cable Grip) A Dia. = .325 [8.26] for cable range of .200-.250 [5.08-6.35] 207387-2 (Cable Grip) A Dia. = .385 [9.78] for cable range of .250-.350 [6.35-8.89]









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Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents. Dimensions are shown for reference purposes only. Specifications subject to change. USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444 South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-208-420-8341

Note: All part numbers are RoHS Compliant.

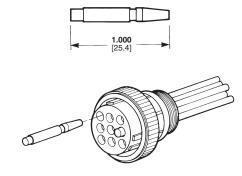
CPC Connector Accessories (Continued)

Keying Plugs

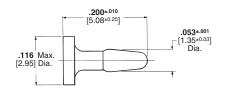
Keying plugs are used to provide keying capabilities for all connector series. Keying plugs are used in socket cavities of standard sex plugs and reverse sex receptacles, except when used with sealing caps.

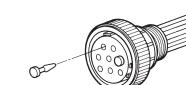
Material

Nylon, natural, UL 94V-2 rated



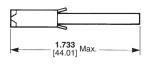
Series 1 and Series 4 Keying Plug (for Types III+ and Subminiature COAXICON Contacts) Part No. 200821-1





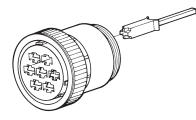
Series 2 Keying Plug (for Size 20 DM and 20 DF Contacts)

Part No. 206509-1



Material

(206508-1) Nylon, natural, UL 94V-2 rated (207597-1) Thermoplastic, black, UL 94V-0 rated



Series 3 and Series 4 Keying Plugs (for Type XII Contacts)

Part Nos. 206508-1 (Socket Cavities)—Shown Above 207597-1 (Pin Cavities)

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Catalog 82021 Revised 7-07

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Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents. Dimensions are shown for reference purposes only. Specifications subject to change. USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444 South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-208-420-8341

Material

Polyphenylene oxide, white, UL 94V-1 rated

One-Piece Sealed Circular Plastic Connectors

Product Facts

₹ Тусо

 Economical environmentally sealed connector designed for industrial applications

Electronics

- Meets major Industrial Standards
- High strength, impact resistant thermoplastic housing, rated UL 94V-0
- Contains wire entry and peripheral seals
- AMP POWERBAND precision formed power contact (Series 5 and 6)
- Type III+ precision formed signal/low current contacts (Series 1 and Series 6)
- Other configurations in Series 1 can be made available, contact your local Tyco Electronics Sales Engineer or Tyco Electronics, Harrisburg, PA



The new Sealed One-Piece Circular Plastic Connectors are the latest product innovation to the sealed CPC product family. This design allows for easy assembly. The housing and the seal are attached. A newly designed wire entry seal protects the rear of the connector and a peripheral seal protects the connector interface. Simply crimp the contact onto a wire and insert the crimped wire contact through the seal and into the housing cavity. The connector loads the same as if the seal wasn't there. All connector cavities come in a sealed condition. No plugs are required if you do not use a position cavity. We have the

capability to provide this product sealing to you in all the shell sizes. If you don't see your particular size configuration, contact your local Tyco Electronics Sales Engineer or call Tyco Electronics for the latest information.

Industry Standards One-Piece Sealed CPC products meet –

 IP 67 (Temporary immersion)

Fluid Protection Against – diesel fuel, gear and engine lubricants, gasoline, anti-freeze, hydraulic fluid, water, salt sprays, etc.

Performance Characteristics

meets the same performance characteristics as shown on page 6.

Operating Temperature Range -50°C to +125°C [-58°F to +257°F]

UL Voltage Rating— Series 1 600 V (AC or DC) Series 6 250 V (AC or DC) .125 POWERBAND Power Contact – 45 amps, single contact rating at 30°C T-Rise Type III+ Contacts – 13 amps, single contact

rating at 30°C T-Rise Flammability Rating—

UL 94V-0 rated

Sealing Capability— Per IP 67

Housing Material—

High strength, impact resistant thermoplastic

Fluid Resistance-

Diesel fuel, gear and engine lubricants, gasoline, anti-freeze, hydraulic fluid, water

Catalog 82021 Revised 7-07

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Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents. Dimensions are shown for reference purposes only. Specifications subject to change. USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

Sealed CPC Receptacles, **Special Series 1 with** Pre-Installed, Bonded **Peripheral Seal**



Listed part numbers are for connectors only; contacts must be ordered separately.

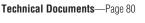
Material and Finish

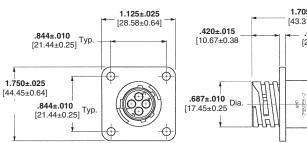
Housing—Thermoplastic, UL 94V-0 rated, black Seal—Elastomer, gray

Related Product Data

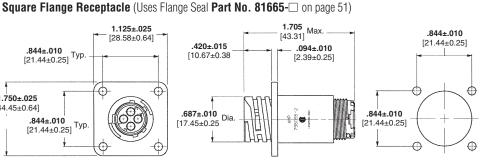
Contacts-Pages 17-22 Contact Arrangement—Page 24 **Component Dimensions**— Size 11-4 shown; request Customer Drawings for other sizes Accessories—Pages 38-42 and 51-54 Performance Characteristics-

Page 6 Application Tooling—Pages 76-79



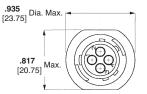


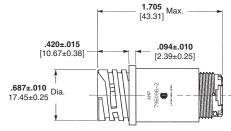
One-Piece Sealed Circular Plastic Connectors, Series 1

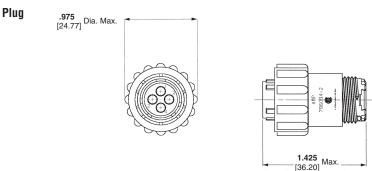


Recommended Panel Cutout

Free-Hanging Receptacle







Arrang	gement		Square Flang	je Recptacle			
	No. of ositions	Sex	With Mounting Holes	With Threaded Inserts ¹	Free-Hanging Receptacle	Plug	Insulation Diameter
	1-4 —	Standard	796095-2	-	796096-2	796094-2	.065100 [1.65-2.54]
11	1-4	Reverse	788154-2	-	788155-2	788153-2	.065100 [1.65-2.54]
13	3-9	Standard	788158-2	-	788159-2	788157-2	.065100 [1.65-2.54]
17-	-14	Reverse	796272-1	-	796273-1	796271-1	.065100 [1.65-2.54]
17	-16 —	Standard	796275-1	796275-3	796276-1	796274-1	.065100 [1.65-2.54]
17-	-10	Standard	796275-2	-	796276-2	796274-2	.040080 [1.01-2.03]
23-	-24	Standard	796190-1	-	796291-1	796188-1	.065120 [1.65-3.04]
23-	-37	Standard	796286-1	-	796287-1	796288-1	.065100 [1.65-2.54]

¹Four 4-40 threaded inserts per receptacle.

Assembly Accessories

Seal Protectors are recommended to aid contact insertion through the wire entry seal. They are reusable.



Part Number 208337-1 (Insert Pins) Part Number 208338-1 (Insert Sockets)

Wire Entry Seal Plug

Part Number 796075-1 (6 per carrier strip) Material—Polypropylene, natural



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One-Piece Sealed CPC Connectors

Catalog 82021 Revised 7-07

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

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

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

CPC Connectors, Series 5 Sealed – Reverse Sex



Listed part numbers are for connectors only; contacts must be ordered separately.

Material

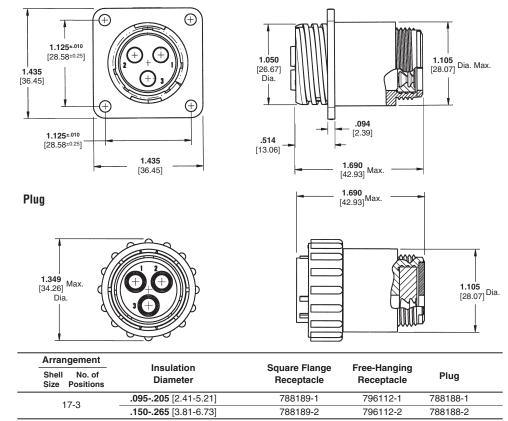
Housing-Nylon, glass-filled UL rated 94V-0, black

Related Product Data

Contacts—Page 47 Accessories—Page 51 Application Tooling—Pages 76-79 Technical Documents—Page 80

One-Piece Sealed Circular Plastic Connectors, Series 5

Square Flange Receptacle (Uses Flange Seal Part No. 81665-2 on page 51)



CPC Connectors, Series 6 Sealed



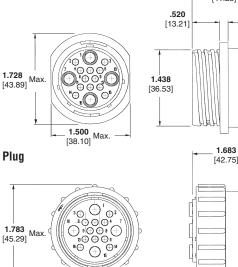
Listed part numbers are for connectors only; contacts must be ordered separately.

Material

Housing-Nylon, glass-filled UL rated 94V-0, black

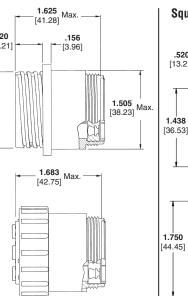
Related Product Data

Contacts-Pages 17-23 and 47 Application Tooling—Pages 76-79 Technical Documents—Page 80

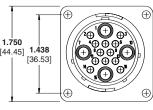


One-Piece Sealed Circular Plastic Connectors, Series 6

Free-Hanging Receptacle



Square Flange Receptacle 1.625 Max. [41.28] .520 156 [13.21] [3.96] 1.505 [38.23]



Arrangement	Insulation	Diameter	0	Square Flange	Free-Hanging	Dive
Shell No. of Size Positions	Power	Signal	Sex	Receptacle w/Mounting Holes	Receptacle	Plug
23-16	.095205	.065100	Standard	796466-1	796207-1	796203-1
23-10	[2.41-5.21]	[1.65-2.54]	Reverse	_	796330-1	796332-1

Catalog 82021 Revised 7-07

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

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

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444 South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-208-420-8341

Two-Piece Sealed Circular Plastic Connectors

Product Facts

- Economical environmentally sealed connector designed for industrial applications
- Meets major Industrial Standards
- High strength, impact resistant thermoplastic housing, rated UL 94V-0
- Contains wire entry, peripheral, and full interfacial seals
- AMP POWERBAND precision formed power contact (Series 5 and 6)
- Type III+ precision formed signal/low current contacts (Series 6)
- Other configurations in Series 1 can be made available, contact your local Tyco Electronics Sales Engineer or Tyco Electronics, Harrisburg, PA

Technical Documents Instruction Sheet

408-4317 Two-Piece Sealed CPC Connectors

Product Specification 108-1579 Sealed CPC Connectors with Removable Contacts Sealed CPC connectors are the latest additions to the growing family of AMP Circular Plastic Connectors. Sealed CPC connectors were developed as part of the Series 5 and 6 product line, specifically to meet the increasing demand for an economical environmentally sealed connector.

Sealed CPC connectors are designed to meet the requirements of UL, CSA, and VDE for environmentally sealed connectors used in industrial applications.

In addition, sealed CPC connectors are designed to meet the latest SAE and ASAE requirements as outlined in the standards listed here.

Sealed CPC connectors incorporated the latest technology in thermoplastic design and use the new AMP POWERBAND precision formed high current contact.

Illustrated above are the Series 5 (power) and Series 6 (power/signal mix) sealed connector configurations. Other sizes are available in a Series 1 (signal/low current) configuration. Contact your local Tyco Electronics Sales Engineer, or call Tyco Electronics for the latest design information.

Industry Standards Two-Piece Sealed CPC connectors meet-

IP65

Performance Characteristics **Operating Temperature Range**-

-50°C to +125°C [-58°F to +257°F]

UL Voltage Rating— Series 5 600 V (AC or DC) Series 6 250 V (AC or DC) .125 POWERBAND Power Contact -45 amps, single contact rating at 30°C T-Rise Type III+ Contacts -13 amps, single contact

rating at 30°C T-Rise Flammability Rating-UL 94V-0 rated

Sealing Capability-Per IP 65

Housing Material-High strength, impact resistant thermoplastic

Fluid Resistance-

Diesel fuel, gear and engine lubricants, gasoline, anti-freeze, hydraulic fluid, water

Catalog 82021 Revised 7-07

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

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

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

Sealed Circular Plastic Connectors

Multimate Size 16 Contacts

Precision formed signal/low current Pin Diameter—.062 [1.57] Test Current—13 amps max.

.125 POWERBAND Contacts

Precision formed high current

Pin Diameter—.125 [3.175] Test Current—50 amps max.

Extraction Tool

Part Number 318813-1 (Instruction Sheet 408-4374)

Material and Finish

Contacts—Copper with beryllium copper spring

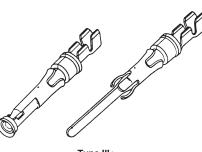
Plating Code

A — Post plated .000200 [0.00508] min. silver in mating area with .000050 [0.00127] min. silver on remainder of contact, all over .000050 [0.00127] min. nickel

B — Post plated .000030 [0.00076] min. gold in mating area with gold flash on remainder of contact, all over .000050 [0.00127] min. nickel

Related Product Data

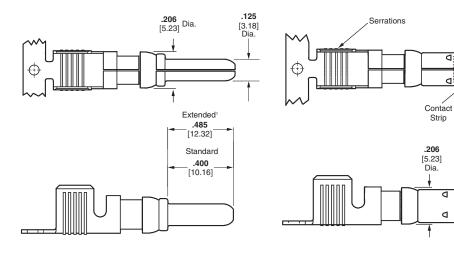
Application Tooling—Pages 76-79 Technical Documents—Page 80



Type III+ Precision Formed Contacts

Type II Screw-Machined Contacts

See pages 17-23 for complete product information and part numbers of Size 16 contacts applicable in Sealed CPC Connectors.



.125 POWERBAND Pin Contact

.125 POWERBAND Socket Contact

				Contact F	Part No.		Tooling Part	No.
Wire Size AWG/mm ²	Contact Finish	Pin Length	s	strip	Loos	e Piece	Heavy Duty Miniature (HDM) Applicators (for AMP-O-LECTRIC	
	1 minori	Length	Pin	Socket	Pin	Socket	Modèl G Machine, Base Part No. 354500)	or 626 Pneumatic Tool System*
	А	Standard	213845-1	213847-1	213845-3	213847-3		
14-12	В	Standard	213845-2	213847-2	213845-4	213847-4	000105 0	050010.1
2-3	A	Extended ¹	213845-5	_	213845-7		680195-3	356612-1
	В	Extended ¹	213845-6	_	213845-8			
	А	Standard	213841-1	213843-1	213841-3	213843-3		050011 1 (0 4)4(0)
10-8	В	Standard	213841-2	213843-2	213841-4	213843-4	000107.0	356611-1 (8 AWG)
5-8	A	Extended ¹	213841-5	_	213841-7	_	- 680197-3 356611-2 (10	356611-2 (10 AWG)
	В	Extended ¹	213841-6	_	213841-8			

¹For use in One-Piece or 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 8.

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. 356304-1, with ratchet), and "C" Head adapter Part No. 318161-1.

Specifically designed for AMP CPC Connectors, Series 5 and 6, the new .125 POWERBAND contact offers the performance of a

MIL-Spec screw machined Size 8 contact with the economy of a stamped and formed, strip-feed contact. Strip-feed contacts offer maximum production capabilities using standard AMP bench-mount, semiautomatic termination equipment. For low volume,

prototype or maintenance and repair requirements, the .125 POWERBAND contact is available in loose piece form.

Japan: 81-44-844-8013

UK: 44-208-420-8341

Catalog 82021 Revised 7-07

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

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

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444 South America: 55-11-2103-6000 Hong Kong: 852-2735-1628

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.420

[10.67]

1.050

[26.67]

Dia.

.065±.003 [1.65^{±0.08}]

Тур.

.420

[10.67]

1.050

[26.67]

Dia.

.065±.003

[1.65^{±0.08}]

Typ.

Two-Piece Sealed Circular Plastic Connectors, Series 5

Square Flange Receptacle (Uses Flange Seal Part No. 81665-2 on page 51)

CPC Connectors, Series 5 Sealed - Reverse Sex



Listed part numbers are for connectors only; contacts must be ordered separately.

Material

Housing-Nylon, glass-filled UL rated 94V-0, black

Related Product Data

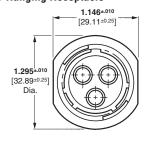
Contacts—Pages 47 Accessories—Page 51 Application Tooling—Pages 76-79 Technical Documents—Page 80

Replacement Coupling Ring

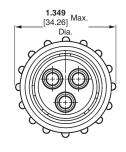
Shell Size	Part No.	
17-3	213810-1	

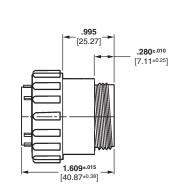
1.435^{±.015} [36.45^{±0.38}] 1.125±.010 [28.58±0.25] Тур. ⊕ Æ 1.435^{±.015} [36.45^{±0.38}] 1.125±.010 [28.58±0.25] Тур. ⊕

Free-Hanging Receptacle



Plug (With Full Interfacial Seal)





.094

[2.39]

1.675±.013

[42.54±0.33]

Тур.

.094

[2 39]

1.675±.013

42.54±0.33] Тур.

.280±.010

[7.11±0.25]

1.090±0.15

[27.69±0.38]

Dia.

.280±.010

. [7.11^{±0.25}]

1.090±.015

[27.69±0.38]

Dia.

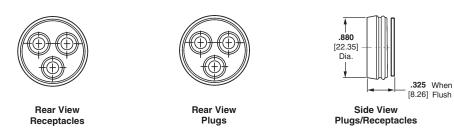
Reverse Sex (Receptacles accept socket contacts, Plugs accept pin contacts)

Arrangement	Square Flange Receptacle	Free-Hanging Receptacle	Plug
17-3 - Connector	213889-2	213890-2	213905-1
17-3 - Wire Entry Seal Kit	213899-1	213899-1	213899-1

Kit includes (1) Silicon Wire Entry Seal and (1) Pressure Plate. Wire entry seals require cable clamp kits.

Wire Entry Seals*

*Cable clamp kit 213902-3 required. (Similar to 206322-9. See page 38 for dimensional detail of cable clamp) or cable clamp kit 213904-3. (Similar to 206070-8. See page 38 for dimensional detail of cable clamp).



Note: Minimum insulation diameter is .156 [3.96]; Maximum insulation diameter is .260 [6.60].

48

Catalog 82021 Revised 7-07

millimeters unless otherwise specified. Values in brackets www.tycoelectronics.com are metric equivalents.

Dimensions are in inches and

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

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444

Two-Piece Sealed Circular Plastic Connectors, Series 6

Square Flange Receptacle (Uses Flange Seal Part No. 81665-2 on page 51)

CPC Connectors, Series 6 Sealed – Reverse Sex



Listed part numbers are for connectors only; **contacts must be ordered separately.**

Material

Housing—Nylon, glass-filled UL rated 94V-0, black

Related Product Data

Contacts—Pages 17-21 and 47 Accessories—Page 51 Application Tooling—Pages 76-79 Technical Documents—Page 80

Replacement Coupling Ring

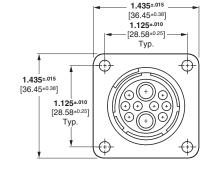
Part No.

213810-1

Shell Size

17-10

Plug



1.146±.010

[29.11±0.25]

(+)

 $\Theta \oplus \Theta \oplus \Theta$

(+

1.349 Max.

[34.26] Dia.

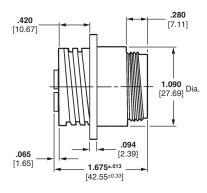
 $\Theta \overline{\Theta} \Theta$

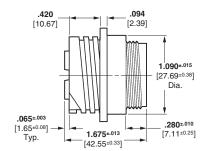
Free-Hanging Receptacle

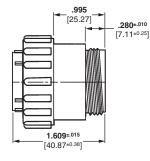
1.295±.010

[32.89±0.25]

Dia







Reverse Sex (Receptacles accept socket contacts, Plugs accept pin contacts)

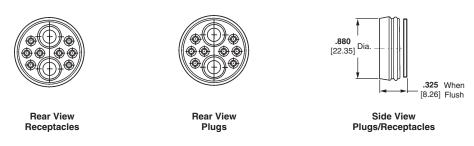
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Arrangement	Square Flange Receptacle	Free-Hanging Receptacle	Plug
17-10 Connector	213893-2	213894-2	213906-1
17-10 Wire Entry Seal Kit	213900-1	213900-1	213900-1

Kit includes (1) Silicon Wire Entry Seal and (1) Pressure Plate. *Wire entry seals require cable clamp kits.

Wire Entry Seal*

*Cable clamp kit 213902-3 required. (Similar to 206322-9. See page 38 for dimensional detail of cable clamp) or cable clamp kit 213904-3. (Similar to 206070-8. See page 38 for dimensional detail of cable clamp).



Note: Minimum insulation diameter is .156 [3.96]; maximum insulation diameter is .260 [6.60] for power contacts. Minimum insulation diameter is .060 [1.50]; maximum insulation diameter is .130 [3.30] for signal contacts.

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specified. Valu

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents. Dimensions are shown for reference purposes only. Specifications subject to change. USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 52-55-1106-0800 C. America: 57-1-254-4444 **Two-Piece Sealed CPC Connectors**

49

South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-208-420-8341

www.tycoelectronics.com

Two-Piece Sealed Circular Plastic Connectors, Special Series 1

Square Flange Receptacle (Uses Flange Seal Part No. 81665-
on page 51)

Sealed CPC Receptacles, Special Series 1 with Pre-Installed, Bonded Peripheral Seal



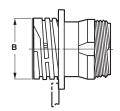
Listed part numbers are for connectors only; **contacts must be ordered separately.**

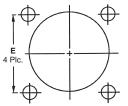
Material and Finish

Housing—Thermoplastic, UL 94V-0 rated, black Seal—Elastomer, gray

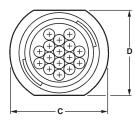
Related Product Data

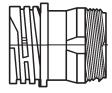
Contacts—Pages 17-21 Contact Arrangement—Page 24 Accessories—Pages 38-42 and 51 Performance Characteristics— Page 6 Application Tooling—Pages 76-79 Technical Documents—Page 80 **Free-Hanging Receptacle**





Recommended Panel Cutout



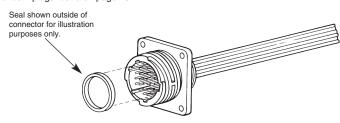


Shell Size	Dimension E
11	.844 21.44
13	.969 24.61
17	1.125 28.58
23	1.438 36.53

Arrendent				Series I Rece	ptacles with Perip	heral Seal			Mates with
Arrangement	Dime	nsions	Sex	Square Flan	ige Part No.	Dime	nsions	Free-Hanging	Plug Part No.
Shell No. of Size Positions	Α	В	Sex	With Mounting Holes	With Threaded Inserts ¹	С	D	Part No.	Ū
11.4	1.125	.607	Std.	206061-2	-	.935	.817	206153-2	206060-1
11-4	28.58	15.42	Rev.	206430-3	-	23.75	20.75	206430-4	206429-1
13-7	1.281	.812	Std.	211401-3	-	1.072	.874		211399-1
13-9	32.54	20.62	Std.	206705-3	208131-2	27.23	22.20	206705-4	206708-1
17-16	1.435	1.050	Std.	206036-4	-	1.310	1.161	206036-5	206037-1
17-14	36.45	26.67	Rev.	206043-4	-	33.27	29.49	206043-5	206044-1
23-24	1.750	1.438 -	Std.	206838-3	-	1.733	1.505	206838-4	206837-1
23-37	44.45	36.53	Std.	206151-3	_	44.02	38.23	206151-4	206150-1
20 07		-	Rev.	206306-3	-			206306-4	206305-1

¹Four 4-40 threaded inserts per receptacle.

Notes: 1. For detailed performance data on peripheral seals, refer to Product Specification No. 108-10024. 2. Receptacles mate with Series 1 plugs found on page 10.



Receptacles with pre-installed, bonded peripheral seals are recommended for use in sealing/splash-proof applications, or where connectors will be subjected to vibration.

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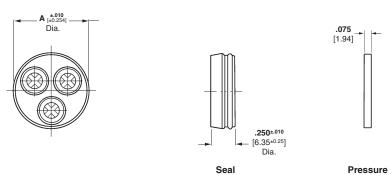
Two-Piece Circular Plastic Connector Sealing Accessories

Wire Entry Seal Kits

for Plug and Receptacle Housings

Material and Finish

Seal—Silicon, black Pressure Plate—Nylon, black



Pressu

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	Arrangement No.	Insulation Dia. Range	Dimension A	Kit for Pins	Kit for Sockets
	13-9	.075125 1.91-3.18	.681 17.30	213926-1	213925-1
	17-3	.178265 4.52-6.73	.790 20.07	213899-1	213899-1
	17-10	.178265 4.52-6.73 .075125 1.91-3.18	.790 20.07	213900-1	213900-1
_	17-14	.075125 1.91-3.16	.790 20.07	213919-2	213919-1
	17-16	.075125 1.91-3.16	.790 20.07	213920-2	213920-1

Notes: 1. Kits include one Gang Seal and one Pressure Plate marked for cavity identification.

2. Arrangement No. 17-10 Insulation Dia. Range .176-.265 [4.52-6.73] for two holes, .075-125 [1.95-3.18] for eight holes.

One-Piece or Two-Piece Sealed CPC Sealing Accessories

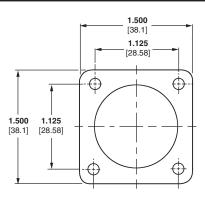
Flange Seals

Material Neoprene, black

Related Product Data

Dimensions—Shell Size 17 shown; request Customer Drawings for other sizes

Shell Size	Part No.
11	81665-3
13	81665-4
17 (shown)	81665-2
23	81665-5



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