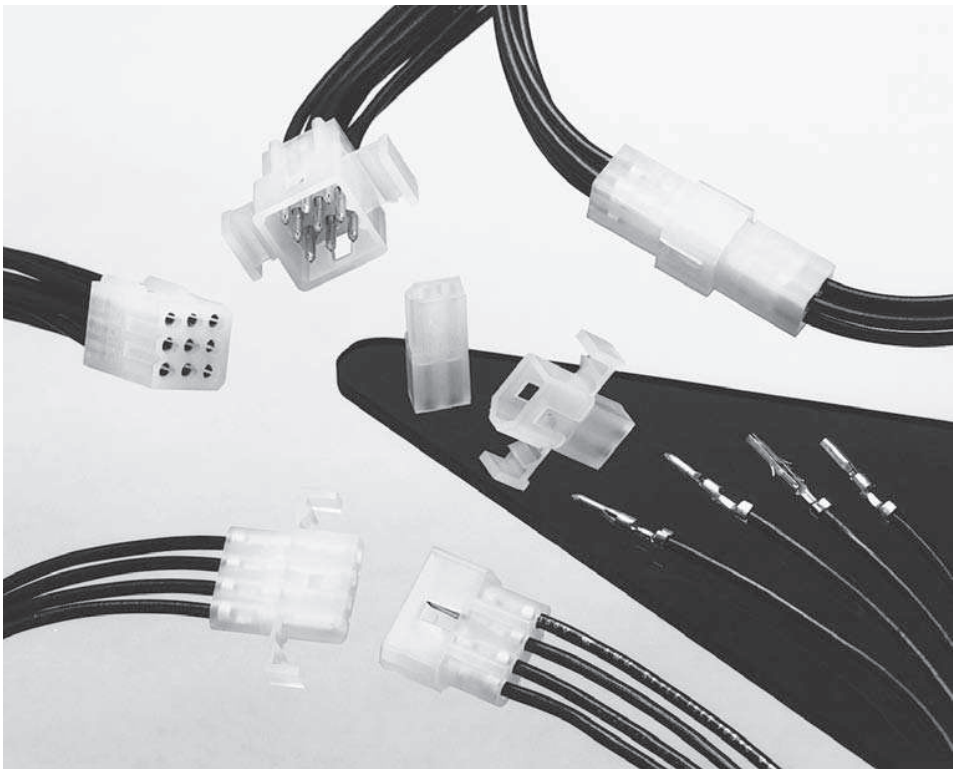
.062 [1.57] Commercial Pin and Socket Connectors

Product Facts

- Polarized
- Cavity identification
- Low contact-mating force
- Dual locking lances
- Detent and positive locking
- Contacts available in brass and phosphor bronze with tin and gold plating
- Panel mount and free-hanging styles
- "F" crimp contacts
- Applicator and hand tool available
- Economical commercial-grade connectors
- Compatible with high-speed application machinery and most other manufacturers' soft shells
- Wire range 30 to 18 AWG [0.05 to 0.9 mm²]
- Accepts wires with insulation diameters as large as .110 [2.79]
- Housings available in 1 to 9 positions
- .062 plug and receptacle housings accept pin or socket contacts. The preferred convention is to use socket contacts with receptacle housings
- Not for interrupting current
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 7189



Performance Characteristics

The .062 Commercial Pin and Socket Connectors performance characteristics found on pages 53-54 are based on free-hanging and panel mount connectors, loaded with contacts crimped on stranded wire.

Durability—10 mating cycles

Dielectric Withstanding Voltage—1.0 kVAC

Insulation Resistance—1000 megohms min. initial

Voltage Rating—250 V AC or DC

Connector Mating—2.5 lb. [11.1 N] max. per contact

Connector Unmating—0.3 lb. [1.3 N] min. per contact

Contact Insertion Force—4.0 lb. [17.8 N] max. per contact

Contact Retention—7 lb. [31.1 N] min.

15 lb. [66.6 N] min. for contacts 770983-1 and 794380-1

Technical Documents

Product Specification
108-1037 .062 Commercial Pin and Socket Connectors

Application Specification
114-1013 .062 Commercial Pin and Socket Connectors

Catalog 82181
Revised 4-08

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
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.062 [1.57] Commercial Pin and Socket Connectors (Continued)

Performance Characteristics (Continued)

Maximum Current—Maximum current rating of .062 Commercial Pin and Socket connectors is limited by the maximum operating temperature of the housings which is 105°C including the temperature rise of the contacts which is a maximum of 30°C. There are several variables which have a direct effect on this maximum current-carrying capability for a given connector and must be considered for each application. These variables are:

Wire Size—Larger wire will carry more current since it has less internal resistance to current flow and thus generates less heat. Longer wire lengths also enhance current-carrying capabilities since the wire conducts heat away from the connector.

Connector Size—In general, the more circuits in a connector, the less current can be carried.

Ambient Temperature—The higher the ambient temperature, the less current can be carried in any given connector.

Related Product Data

Product Specification—
108-1037

Application Specification—
114-1013

Current Rating Verification for 30°C Maximum Temperature Rise 100% Energized

Wire-to-Wire
.062 Commercial Pin and Socket Connectors Calculated Current Table

Number of Circuits	Wire Gauge			
	18	20	22	24
2	7.00	6.00	5.00	4.00
3	7.00	6.00	5.00	4.00
4	6.00	6.00	5.00	4.00
4	6.00	5.00	4.00	3.00
6	6.00	5.00	4.00	3.00
9	5.00	4.00	4.00	3.00

Values are based on initial Temperature Rise versus Current Testing and are intended to be a guide in the selection of a connector family. All applications should be tested by the end user. The values listed are per circuit for fully loaded housings being 100% energized. **Note:** All combinations were not tested, and this chart contains interpolated and extrapolated values.

Minimum Wire Lengths for T-Rise vs. Current Testing

AWG	Min. Length (in.)	AWG	Min. Length (in.)
30	2.6	18	9.4
28	3.2	16	11.3
26	4.1	14	13.7
24	5.1	12	16.4
20	7.8	10	19.3

Note: If wire lengths used are less than those listed above, the current-carrying ability of the system will be reduced due to less heat being conducted away from the connector. The customer should fully test all applications.

Termination Resistance/Contact Crimp Tensile Force

Wire Size		Termination Resistance		Contact Crimp Tensile Force	
AWG	mm^2	Test Current (Amps)	Resistance Milliohms (Max. Init.)	Force (Min.) lbs.	Force (Min.) N
24	0.2	1.5	3.50	10	44.5
22	0.3–0.4	3.0	3.50	10	44.5
20	0.5–0.6	4.5	3.00	13	57.8
18	0.8–0.9	6.0	3.00	14	62.3

Note: This is the total resistance between wire crimps of a mated pin and socket.

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.062 [1.57] Commercial Pin and Socket Connectors (Continued)

Contacts

Pin Diameter .062 [1.57]

Material

.008 [0.20] Stock Thickness

Pin and socket contacts can be used in either plug or receptacle housings. It is preferred to use socket contacts in receptacle housings.

Related Product Data

Performance Characteristics—pages 53-54

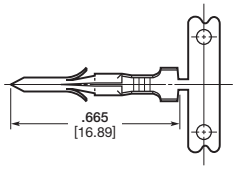
Housings—pages 56-57

Panel Cutouts—page 57

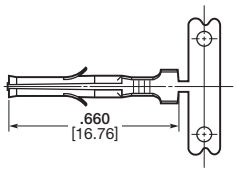
Technical Documents—pages 53 and 205-206

Application Tooling—pages 207-210

Product Specification—108-1037-1



Pin



Socket

Wire Size AWG	Wire Size mm²	Ins. Dia.	Material & Finish	Contact Part Numbers Pin Strip Form	Pin Loose Pieces	Socket Strip Form	Socket Loose Pieces	HDM Applicator Part No.	Hand Tool Part No.
30-24	0.05-0.2	.060 1.52 Max.	Brass Pre-tin	640391-1	794018-1	640392-1	794019-1	466686-1[3] 466686-2[3] 466686-3[3]	90870-1
				—	—	794046-1[2]	—		
			Brass, Select Gold[1]	640391-5[1]	—	640392-5[1]	—		
			Phos. Brz., Pre-tin	—	—	640392-2	—		
24-18	0.2-0.9	.050-.110 1.27-2.79	Brass Pre-tin	350629-1	794017-1	350628-1	794016-1	687996-1[3] 687996-2[3] 687996-3[3]	90869-1
				770983-1[4]	—	794380-1[4]	—		
						794103-1[2]			
			Phos. Brz., Pre-tin	350629-8	—	350628-2	—		
			Brass, Select Gold[1]	350629-5[1]	—	350628-5[1]	—		
			Phos. Brz., Select Gold[1]	—	—	350628-6[1]	—		

[1]Select Gold—.000030 [.000762] min. in mating area over .000050 [.00127] nickel.
[2]Lanceless Socket for Overmolding.
[3]HDM Applicator part number ending in -1 is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-LECTRIC Model K Machine, -3 is used on AMP-O-LECTRIC Model G Machine. See pages 207-210 for further information.
[4]Contact Retention 15 lbs. [66.6 N] min.

Note: Phosphor bronze contacts should be used in high-temperature/humidity cycling applications.

Note: All part numbers are RoHS Compliant.

Contact Insertion Tool (for Pins and Sockets) Part No. 91002-1 IS 408-7347

Contact Extraction Tool Part No. 318831-1 IS 408-4370

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.062 [1.57] Commercial Pin and Socket Connectors (Continued)

Housings

Free-Hanging or Panel Mount

.145 [3.68] Centerline spacing

Material

Housing—Nylon, natural color

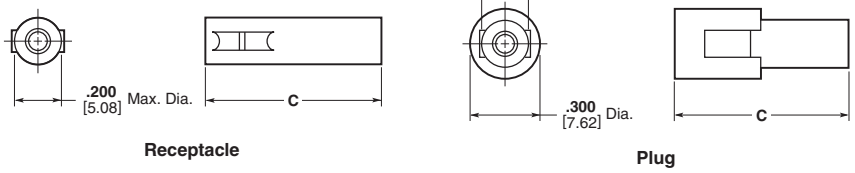
Flammability Rating—UL94V-2

Related Product Data

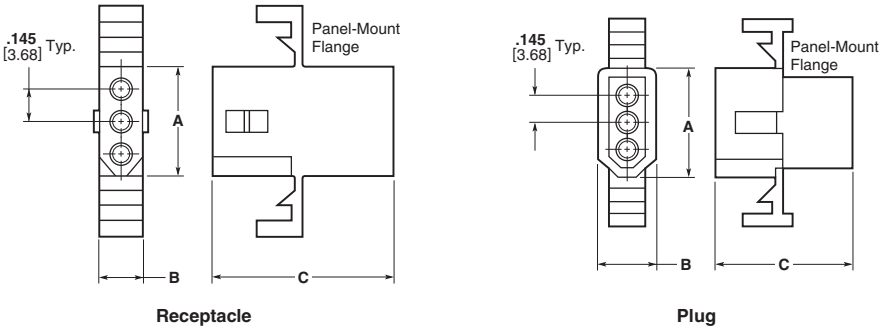
Contacts—page 55

Product Specification—108-1037

1 Circuit



2, 3, and 4 Circuit, In-Line



No. of Circuits	Dimensions						Receptacle Part Numbers		Plug Part Numbers	
	Receptacle			Plug			Panel Mount	Free-Hanging	Panel Mount	Free-Hanging
	A	B	C	A	B	C				
1	—	—	.785 19.94	—	—	.750 19.05	—	770277-1	—	770278-1
2	.340 8.64	.199 5.05	.820 20.83	.440 11.18	.300 7.62	.780 19.81	770343-1	770342-1 770419-11	770341-1	770340-1
3	.490 12.45	.199 5.05	.785 19.94	.590 14.99	.300 7.62	.750 19.05	770326-1	770333-1	770332-1	770331-1
4 (In-Line)	.635 16.13	.199 5.05	.785 19.94	.733 18.62	.300 7.62	.750 19.05	770335-1	770274-1	770334-1	770275-1
4 (Matrix)	.345 8.76	.345 8.76	.878 22.30	.445 11.30	.445 11.30	.868 22.04	770441-1	770442-1	770443-1	770433-1
6	.345 8.76	.495 12.57	.785 19.94	.445 11.30	.600 15.24	.750 19.05	770354-1	770356-1	770353-1	770355-1
9	.490 12.45	.495 12.57	.790 20.07	.590 14.99	.600 15.24	.750 19.05	770427-1	770429-1	770426-1	770428-1

[1]Positive Lock

Note: **All part numbers are RoHS Compliant.**

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.062 [1.57] Commercial Pin and Socket Connectors (Continued)

Housings

Free-Hanging or Panel Mount

.145 [3.68] Centerline spacing

Material

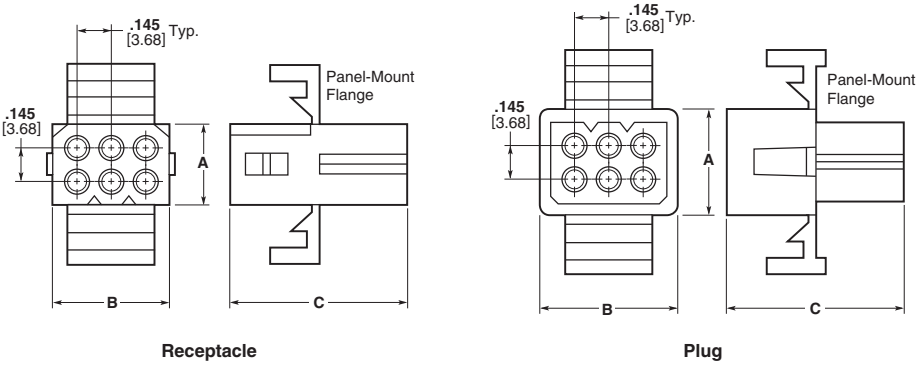
Housing — Nylon, natural color

Flammability Rating — UL94V-2

Related Product Data

Contacts — page 55

4, 6, and 9 Circuit, Matrix

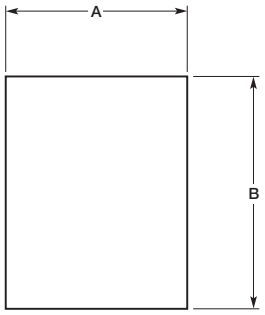


Recommended Panel Cutouts

Maximum panel thickness is .060 [1.52].

Related Product Data

Product Specification — 108-1037



No. of Circuits	Panel Cutout Dimensions			
	Receptacle		Plug	
	A	B	A	B
2	**.265** 6.73	**.505** 12.83	**.318** 8.08	**.609** 15.47
3	**.265** 6.73	**.650** 16.51	**.318** 8.08	**.754** 19.15
4 (In-Line)	**.260** 6.60	**.785** 19.94	**.312** 7.92	**.865** 21.97
4 (Matrix)	**.400** 10.16	**.506** 12.85	**.465** 11.81	**.615** 15.62
6	**.505** 12.83	**.552** 14.02	**.607** 15.42	**.615** 15.62
9	**.552** 14.02	**.650** 16.51	**.615** 15.62	**.752** 19.10

Note: The panel should be punched so that the housing enters in the same direction as the punch.

Note: All part numbers are RoHS Compliant.

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