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Commercial Single Line Connectors 4-2 to 4-5
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Commercial Single Line Connectors

Product Facts

- All parts made of UL Recognized, 94V-0 rated, plastic material
- Designed to exceed minimum creepage and clearance for specified voltages per applicable international specifications
- Available with or without leads
- Maximum flexibility of application through elimination of predetermined lead lengths
- Machine applied terminations provide for lowest applied cost



The AMP family of Commercial Single Line Connectors provides solutions to high-voltage connection problems at low applied cost. The connectors are excellent for commercial application in industrial environments. Ease of application makes them suitable for large-volume production applications. Crimp, snap-in contacts can be machine terminated or hand-tool crimped.

Housings are self-extinguishing plastic, UL rated 94V-0. 10 KVDC connectors accept 20–24 AWG [0.2–0.6 mm²] wires. 20 KVDC connectors have contacts which accept 22–20 AWG [0.3–0.6 mm²] and 18–16 AWG [0.8–1.4 mm²] conductors. Connectors rated for 30 KVDC offer three choices of contact sizes to cover the 16–8 AWG [1.25–8 mm²] range.

Performance Specifications

All Series

Altitude — Sea level to 10,000 feet [3048 m]

Temperature — 59°F to +185°F [15°C to +85°C]

Product Specification — 108-36034

10 KVDC Connectors

Voltage — 10 KVDC

Current — 5 amperes, continuous, rms

Dielectric Withstanding Test — 15 KVDC for 3 minutes at sea level, 77°F [25°C]

Instruction Sheet — Part Number 867443-1

20 KVDC Connectors

Voltage — 8 KVAC, rms, 60 Hz; 20 KVDC

Current — 7.5 amperes, continuous, rms

Dielectric Withstanding Test — 12 KVAC, rms, 60 Hz for 3 minutes at sea level, 77°F [25°C]; 30 KVDC for 3 minutes at sea level, 77°F [25°C]

Instruction Sheets —

Plugs — Part Number 862749-1

Receptacles — Part Number 862755-1

30 KVDC Connectors

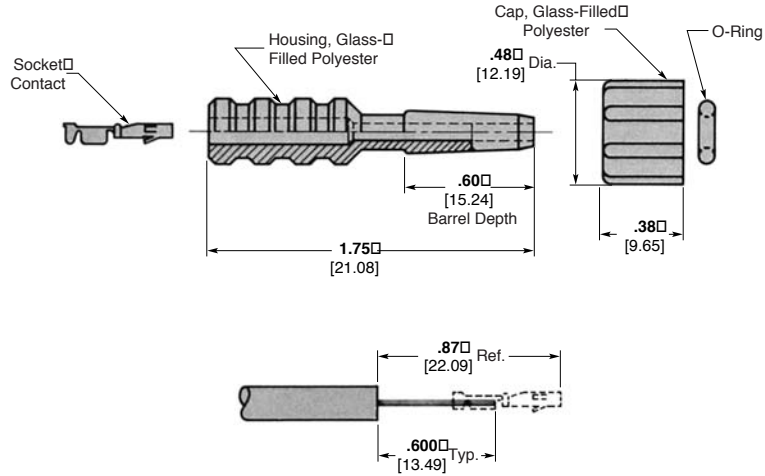
Voltage — 12 KVAC, rms, 60 Hz; 30 KVDC

Current — 25 amperes, continuous, rms

Dielectric Withstanding Test — 16 KVAC, rms, 60 Hz for 3 minutes at sea level, 77°F [25°C]; 40 KVDC for 3 minutes at sea level, 77°F [25°C]

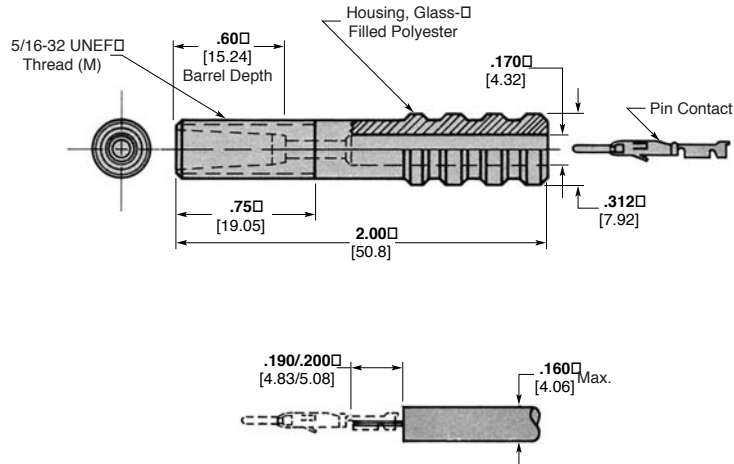
Commercial Single Line 10 KVDC Connectors

Plug Kits



Recommended Wire Preparation
(Ref. Socket Contact Part Number 203802-6)

Receptacle Kit



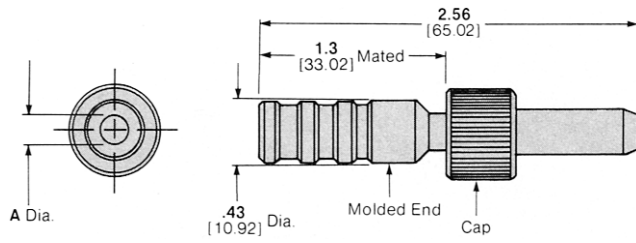
Recommended Wire Preparation
(Ref. Pin Contact Part Number 203816-6)

Voltage Rating	Description	Wire Size		Max. Ins. Dia.	Contact Type	Kit Part Number	Tooling Part Number	
		AWG	mm ²				Hand Tool	Extraction Tool
10 KVDC	Plug Kits*	20-24	0.2-0.6	.105 2.66	Type XI Socket	867157-1	91544-1	91038-3
				.160 4.06	Type XI Socket	867157-2	91544-1	91038-3
	Receptacle Kit*	20-24	0.2-0.6	.160 4.06	Type XI Pin	867156-1	91544-1	91038-3

* Contact included with kit.

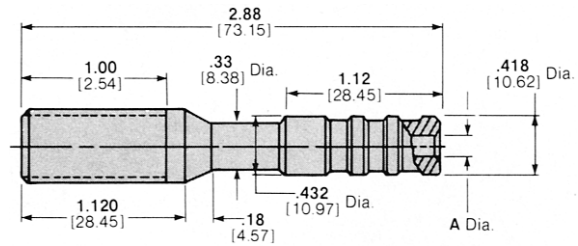
Commercial Single Line 20 KVDC Connectors

Plug Kits

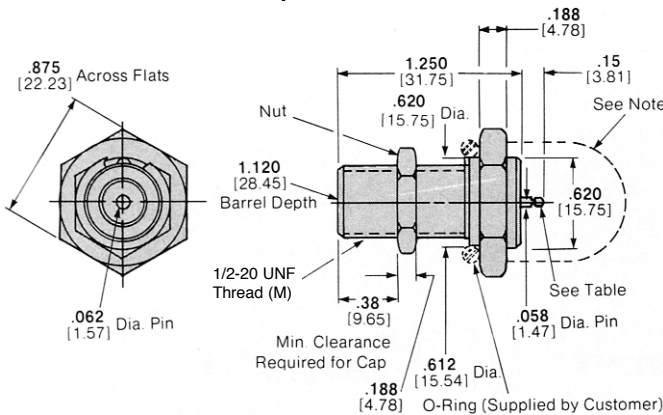


These plugs mate with receptacles shown on this page.

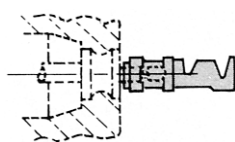
Free-Hanging Receptacle Kits



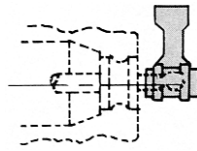
Bulkhead-Mounted Receptacle Kits



Note: If bulkhead and mounting hardware are metal at ground potential, the back end of the receptacle must be protected against arc-over and breakdown.

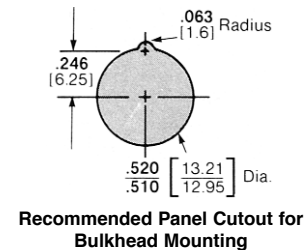
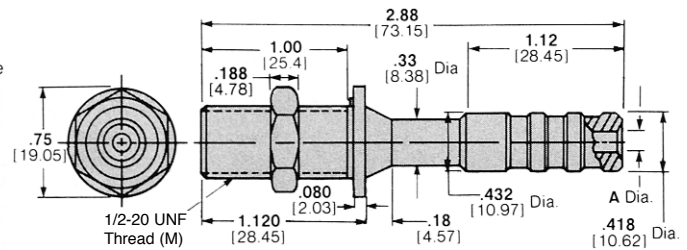


Straight Socket
Part Number 60789-1



Right-Angle Socket
Part Number 61276-2

Bulkhead-Mounted Receptacle Kits With Rear Insulation Collar



Recommended Panel Cutout for Bulkhead Mounting

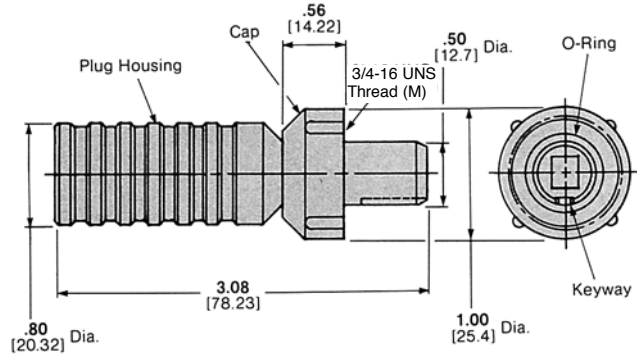
Voltage Rating	Description	Wire Size		Max. Ins. Dia.	Contact Part Number	Kit Part Number	RoHS Kit Part Number	Tooling Part Number		
		AWG	mm ²					Hand Tool	Extraction Tool	
20 KVDC	Plug Kits*	22-20	0.3-0.6	.185 4.7	66399-1	861610-1	5-861610-1	91523-1	861751-1	
		18-16	0.8-1.4		66101-2	861610-3	5-861610-3	91505-1	861751-1	
		—	—		none	861610-5	5-861610-5	—	861751-1	
		22-20	0.3-0.6		66399-1	861610-4	5-861610-4	91523-1	861751-1	
		18-16	0.8-1.4		.302 7.67	66101-2	861610-2	5-861610-2	91505-1	861751-1
		—	—		—	none	861610-6	—	861751-1	
	Free-Hanging Receptacle Kits*	22-20	0.3-0.6	.185 4.7	66400-1	861753-1	5-861753-1	91523-1	861751-1	
		18-16	0.8-1.4	4.7	66099-2	861753-3	—	91505-1	861751-1	
		22-20	0.3-0.6	.302 7.67	66400-1	861753-4	5-861753-4	91523-1	861751-1	
		18-16	0.8-1.4	7.67	66099-2	861753-2	5-861753-2	91505-1	861751-1	
	Bulkhead-Mounted Receptacle Kits*	—	—	—	60789-1 (Straight)**	861611-2	—	91507-1	—	
		—	—	—	61276-2 (Right-Angle)**	861611-3	—	91507-1	—	
	Bulkhead-Mounted Receptacle Kits* (with Rear Insulation Collar)	22-20	0.3-0.6	.185 4.7	66400-1	862197-1	—	91523-1	861751-1	
		18-16	0.8-1.4		66099-2	862197-3	—	91505-1	861751-1	
		—	—		none	862197-5	—	—	861751-1	
		22-20	0.3-0.6		66400-1	862197-4	—	91523-1	861751-1	
		18-16	0.8-1.4		.302 7.67	66099-2	862197-2	—	91505-1	861751-1
		—	—		—	none	862197-6	—	861751-1	

* Contact included with kit.

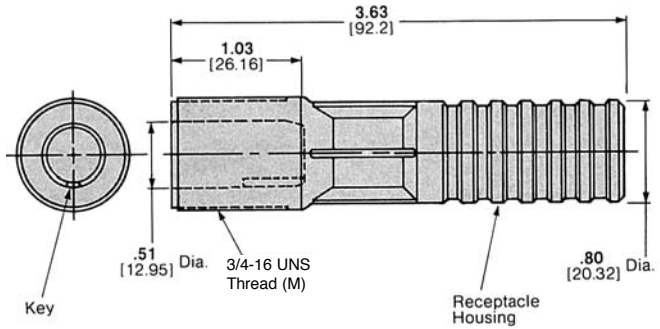
** Crimp-on Contacts.

Commercial Single Line 30 KVDC Connectors

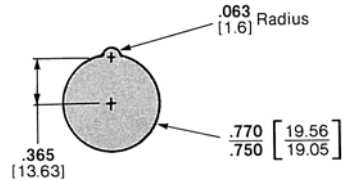
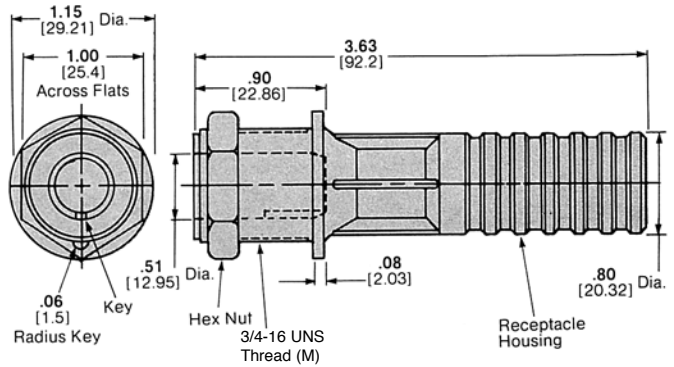
Plug Kits



Free-Hanging Receptacle Kit



Bulkhead-Mounted Receptacle Kits With Rear Insulation Collar



Recommended Panel Cutout for Bulkhead Mounting

Voltage Rating	Description	Wire Size		Max. Ins. Dia.	Contact Part Number		Kit Part Number		Tooling Part Number	
		AWG	mm ²		Non-RoHS	RoHS	Non-RoHS	RoHS	Die Set**	Extraction Tool
30 KVDC	Plug Kits*	10	5-6	.50 12.7	66741-8 (Type XII)	2-66741-1	863103-1	5-863103-1	90140-1	863558-1
		14-12	2-3		66740-8 (Type XII)	2-66740-1	863103-2	5-863103-2	90145-1	863558-1
		16	1.4		66740-8 (Type XII)	2-66740-1	863103-3	5-863103-3	90145-2	863558-1
	Free Hanging Receptacle Kits*	10	5-6	.50 12.7	66259-1 (Type XII)	66259-5	863104-1	5-863104-1	90140-1	863558-1
		16	1.4		66261-1 (Type XII)	—	863104-3	—	90145-2	863558-1
		10	5-6		66259-1 (Type XII)	66259-5	863350-1	5-863350-1	90140-1	863558-1
	Bulkhead-Mounted Receptacle Kits*	14-12	2-3	.50 12.7	66261-1 (Type XII)	66261-5	863350-2	5-863350-2	90145-1	863558-1
		16	1.4		66261-1 (Type XII)	66261-5	863350-3	5-863350-3	90145-2	863558-1

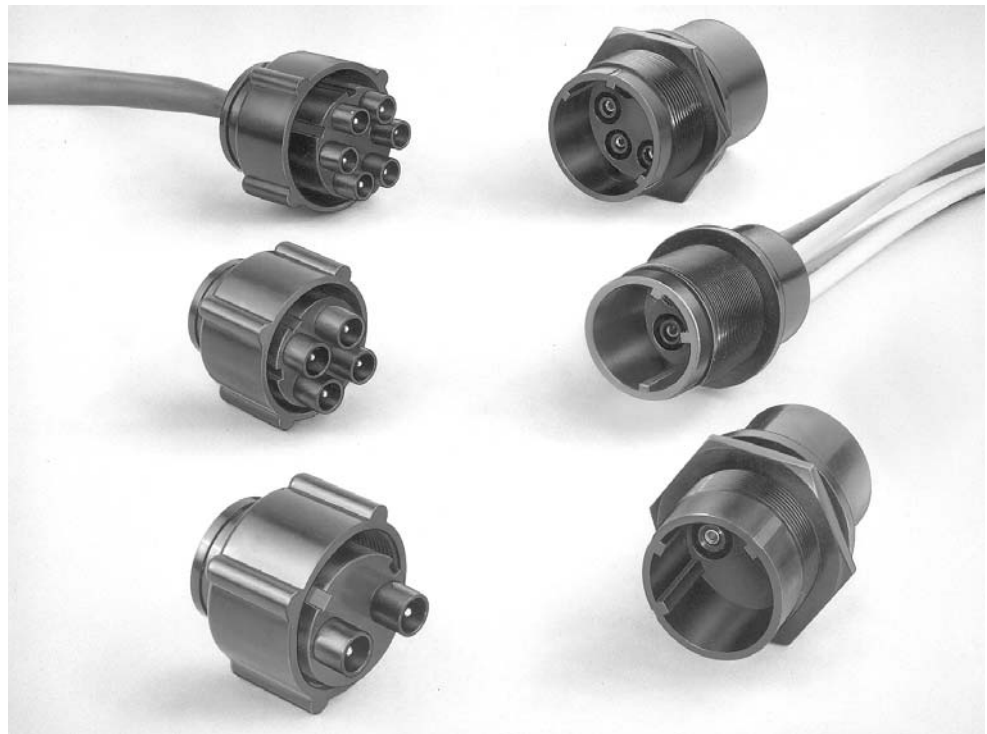
* Contact included with kit.

** Die Set for Hand Tool Part Number 69710-1 or 626 Pneumatic Tool System.

Multi-Pin Circular Commercial Connectors, 27 KVDC

Product Facts

- Housing made of UL recognized, 94V-0 rated, self-extinguishing polyester materials
- Standard housing color is black — other colors available
- Operating and storage temperature range: -55°C to +125°C [-67°F to +257°F]
- Operates up to 27 KVDC
- Will withstand a 35 KVDC hipot test
- Safe handling of high-voltage — no exposed contacts
- Lightweight, compact design
- Threaded coupling provides positive, quick connect/disconnect
- Resilient silicone rubber “O” rings provide positive sealing for mated connectors
- Can be panel or bulkhead mounted or used in free-hanging applications
- Size 16 gold-plated contacts with 13 ampere rating accommodate wide range of wire sizes — 24-20 AWG and 18-16-14 AWG — may be hand tool or machine crimped or soldered
- Two shell sizes available: smaller size offers 2-, 3- and 4-contact configurations; larger diameter shell contains 6 or 7 contacts



AMP Multi-Pin Circular Connectors provide reliable, safe, low cost means of connecting high voltages in critical applications and environments. They are lightweight, extremely compact and can be operated within a temperature range of -67°F to 257°F [-55°C to +125°C] and to 27 KVDC.

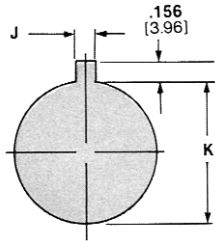
Circular multi-pin high voltage connectors are available in two basic shell sizes offering 2-, 3-, 4-, 6- and 7-

contact configurations. All are equipped with threaded couplings for positive, quick connect/disconnect capability and can be panel or bulkhead mounted or used as free-hanging connectors. They incorporate many outstanding design features to assure their complete electrical, mechanical and environmental integrity.

To satisfy customer requirements, the connectors are supplied pre-assembled

(with attached leads) or in kit form. Each kit includes a plug, receptacle and an appropriate number of pins and sockets that can be hand tool or machine crimped or soldered to wire. Pre-assembled connectors can be furnished with leads of virtually any length and color. All are fully potted and tested so that they are of high quality and meet performance specifications.

Multi-Pin Circular Commercial Connectors, 27 KVDC (Continued)



Recommended Panel Cutout for Bulkhead Mounting

Mounting Nut — maximum torque is 20 in.-lb. [.225 Nm].

Material

Housing, Cap Nut and Strain Relief — Glass-reinforced polyester
O-Ring — Silicone rubber

Contacts — Type II, gold plated per MIL-G-45204

Instruction Sheet — IS 408-9169

Hand Tools

24-20 AWG [0.2-0.6 mm²] — Part Number 58305-1

18-16 AWG [0.8-1.4 mm²] — Part Number 45098

14 AWG [2 mm²] — Part Number 45098

Extraction Tool

Part Number 861751-1

Component Parts

Pin (loose piece) —
 24-20 AWG [0.2-0.6 mm²] Part Number 200679-1
 18-16 AWG [0.8-1.4 mm²] Part Number 200681-1
 14 AWG [2 mm²] Part Number 201645-1

Socket (loose piece) —
 24-20 AWG [0.2-0.6 mm²] Part Number 201328-1
 18-16 AWG [0.8-1.4 mm²] Part Number 200333-1
 14 AWG [2 mm²] Part Number 201568-1
 O-ring (package of 50) Part Number 862798-1

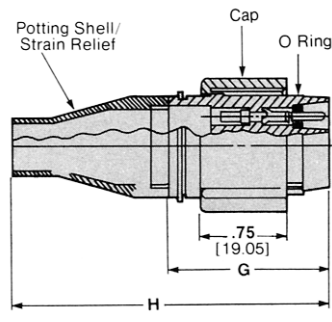
Potting shell/strain relief (2, 3 and 4 contact plugs) — Part Number 862544-1

Potting shell/strain relief (6 and 7 contact plugs) — Part Number 862695-1

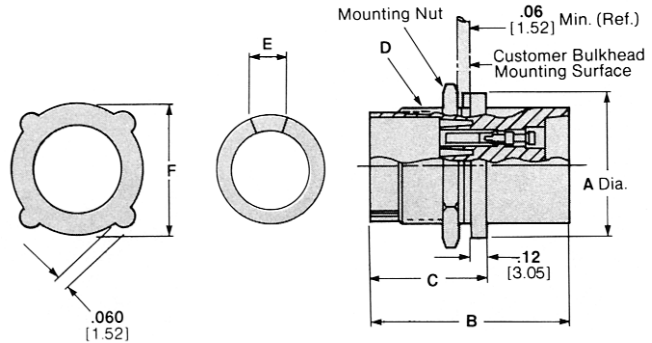
Potting shell (short, for 6 and 7 contact plugs, 1.125 [28.58] long) — Part Number 863995-1

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Plug



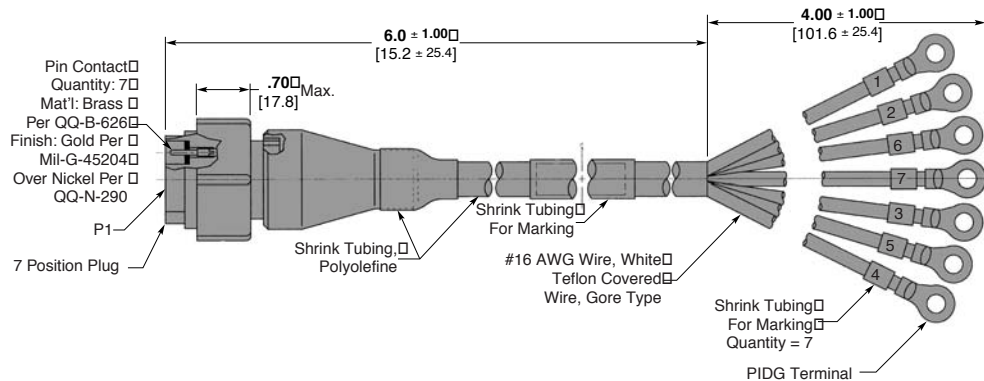
Receptacle



Dimensions

Contacts	A	B	C	D	E	F	G	H	J	K
2, 3, 4	1.25 31.75	1.75 44.45	1.00 25.4	1 (28 UN) 25.4	.125 3.18	1.31 33.27	1.38 35.05	2.00 50.8	1.56 3.96	1.015-1.031 25.78-26.19
6, 7	1.50 38.1	2.00 50.8	1.06 26.92	1.25 (20 UN) 31.75	.190 4.85	1.56 39.62	1.48 37.59	3.30 83.82	.203 5.16	1.260-1.270 32.00-32.26

Cable Assembly, 7 Pos. Plug



Part Number 447288-1

Note: 4-Pos. Receptacle Housing Dim. (Typ.)—1.75 [44.45] L x 1.25 [31.75] Dia.

Number of Contacts	Wire Range		Receptacle Kit (with sockets)	Plug Kit (with pins)	Plug (with Strain Relief) and Receptacle Kit
	AWG	mm ²			
2	24-20	0.2-0.6	859529-4	860261-4	863015-1
	18-16	0.8-1.4	859529-5	860261-5	863015-2
	14*	2	859529-6	860261-6	863015-3
3	24-20	0.2-0.6	859528-4	860263-4	863016-1
	18-16	0.8-1.4	859528-5	860263-5	863016-2
	14*	2	859528-6	860263-6	863016-3
4	24-20	0.2-0.6	859526-4	860265-4	863017-1
	18-16	0.8-1.4	859526-5	860265-5	863017-2
	14*	2	859526-6	860265-6	863017-3
6	24-20	0.2-0.6	859527-4	860267-4	863018-1
	18-16	0.8-1.4	859527-5	860267-5	863018-2
	14*	2	859527-6	860267-6	863018-3
7	24-20	0.2-0.6	861647-7	861648-7	863019-1
	18-16	0.8-1.4	861647-8	861648-8	863019-2
	14*	2	861647-9	861648-9	863019-3

Note: Contacts are packaged separately within the connector kit for shipment. Connectors are available with leads attached.

*Use Type II, Size 16 contacts, with a wire barrel sized to accept 14 AWG conductor.

Engineering Notes

