790-070

Cable Plug with Solder Cup Contacts

- Solder cup pin contacts
- Non-environmental

Solder cup contacts. 790-070 cable plug has snap-in, rear-release solder cup socket contacts. Non-environmental. Contacts are supplied loose. Contacts can be removed with standard extraction tools. High-density size 23 contacts are on .075 inch (1.9mm) centers and accept AWG 22 or smaller wire. Machined aluminum shell has groove for attaching EMI banding backshell (799-015, sold separately). Optional gold-plated EMI spring.

- User-installed solder cup contacts
- 40 insert arrangements with up to 102 contacts
- Non-environmental, no wire grommet

INSERT ARRANGEMENTS

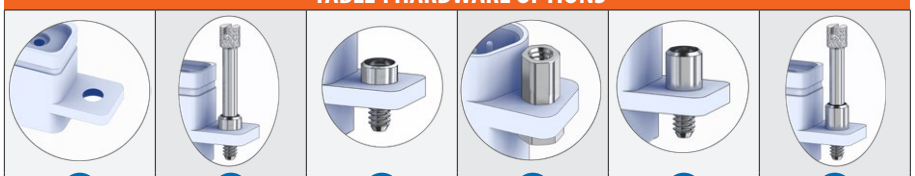
FULL COMPLEMENT OF CONTACTS	#8, #12 OR #16 CONTACTS PURCHASED SEPARATELY	No. of Contacts #23	#16	#12	#8
A-5		5			
B-2P2	B-2W2		2		
B-9		9			
C-13		13			
D-15		15			
D-3P3	D-3W3		3		
D-7P2	D-7W2	5	2		
E-11P2	E-11W2	9	2		
E-19		19			
E-7P3	E-7W3	4	3		
F-14P3	F-14W3	11	3		
F-15P2	F-15W2	13	2		
F-23		23			
F-5P5	F-5W5		5		
G-13P2	G-13W2	11		2	
G-21P1	G-21W1	20		1	
G-3P3	G-3W3			3	
G-33		33			
H-10P4	H-10W4	6		4	
H-29P7	H-29W7	22	7		
H-36P2	H-36W2	34		2	
H-51P1	H-51W1	50		1	
H-54P2	H-54W2	52	2		
H-5P5	H-5W5			5	
H-66		66			
J-17P4	J-17W4	13	4		
J-25P2	J-25W2	23	2		
J-33		33			
J-7P7	J-7W7		7		
K-27P4	K-27W4	23	4		
K-35P2	K-35W2	33	2		
K-43		43			
K-9P9	K-9W9		9		
L-22P4	L-22W4	18		4	
L-48P2	L-48W2	46		2	
L-6P6	L-6W6			6	
L-78		78			
M-17P17	M-17W17		17		
M-102		102			
M-4P4	M-4W4				4

HOW TO ORDER

Sample Part Number 790-070S D-3P3 E M S

Basic Part Number	790-070S	Cable Plug, Solder Cup Socket Contacts
Shell Size-Insert Arr.	See "***Insert Arrangements***" Table	
EMI Spring	E	EMI Spring *Shell finishes M and MT only*
	N	No EMI Spring
Shell Finish	M	Electroless Nickel
	MT	Nickel / PTFE
	NF	Olive Drab Cadmium
	TZ	Tin-Zinc
	ZR	Black Zinc-Nickel
Hardware Option Table 1	N	Thru-Hole *No hardware*
	K	Extended Jackscrews *Slot head male*
	L	Jackscrews *Socket head male*
	P	Female Jackposts
	S	Screwlocks *Socket head male*
	T	Extended Screwlocks *Slot head male*

TABLE 1 HARDWARE OPTIONS



N	K	L	P	S	T
No Hardware Thru Mounting Holes	Extended Jackscrew Slot Head	Jackscrew Socket Head	Female Jackpost With Nut and Lockwasher	Screwlock Socket Head	Extended Screwlock Slot Head

Screwlocks allow connector to be plugged in before the screws are tightened. Jackscrews must be tightened in order to mate connector.

RATINGS

- **Voltage (DWV):** size 23 contacts 750 VAC, Size 8, 12 and 16: 1800 VAC
- **Current:** #23 5A, #16 13A, #12 23A, #8 46A
- **Operating temperature:** -65 to +150 °C
- **Durability:** 500 mating cycles
- **Shock:** 300 g
- **Vibration:** 20 g random
- **Altitude immersion:** *not rated*
- **Ingress protection:** *not rated*

CONSTRUCTION

- **Socket Contacts:** Copper alloy, gold over nickel finish. Stainless steel hood.
- **Shell:** Aluminum
- **Insulators:** High performance thermoplastic
- **EMI spring:** Stainless steel, gold plated
- **Contact retaining clip:** Beryllium copper, unplated
- **Hardware:** Stainless steel

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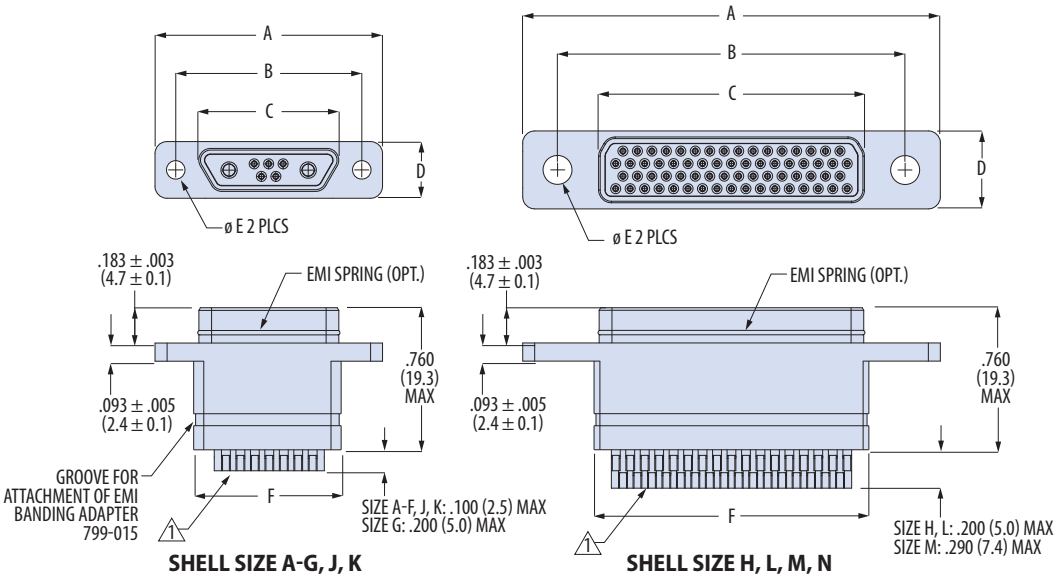
Dimensions in Inches (millimeters) are subject to change without notice.

790-070

Cable Plug with Solder Cup Contacts

- Solder cup pin contacts
- Non-environmental



SHELL SIZE A-G, J, K

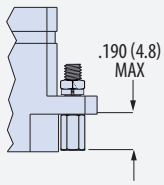
SHELL SIZE H, L, M, N

1 USER-INSTALLED SOLDER CUP CONTACTS ARE SUPPLIED LOOSE AND SNAP INTO CONNECTOR.

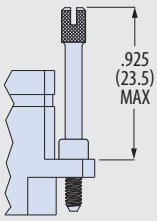
Shell Size	A Max		B ± .005 (0.1)		C Max		D Max		ø E ± .004 (0.1)		F Max	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
A	.785	19.9	.565	14.4	.335	8.5	.308	7.8	.092	2.3	.390	9.9
B	.935	23.7	.715	18.2	.485	12.3	.308	7.8	.092	2.3	.540	13.7
C	1.085	27.6	.865	22.0	.635	16.1	.308	7.8	.092	2.3	.690	17.5
D	1.185	30.1	.965	24.5	.735	18.7	.308	7.8	.092	2.3	.790	20.1
E	1.335	33.9	1.115	28.3	.885	22.5	.308	7.8	.092	2.3	.940	23.9
F	1.485	37.7	1.265	32.1	1.035	26.3	.308	7.8	.092	2.3	1.090	27.7
G	1.435	36.4	1.215	30.9	1.010	25.7	.395	10.0	.092	2.3	1.055	26.8
H	2.175	55.2	1.800	45.7	1.385	35.2	.410	10.4	.149	3.8	1.440	36.6
J	1.845	46.9	1.615	41.0	1.390	35.3	.308	7.8	.092	2.3	1.450	36.8
K	2.240	56.9	2.015	51.2	1.795	45.6	.308	7.8	.092	2.3	1.840	46.7
L	2.420	61.5	2.036	51.7	1.623	41.2	.410	10.4	.149	3.8	1.675	42.5
M	2.575	65.4	2.200	55.9	1.675	42.5	.470	11.9	.172	4.4	1.740	44.2

HARDWARE DIMENSIONS

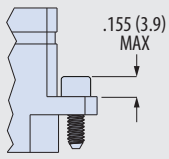
Shell Size	Thread Size
A – G, J, K	#2-56
H, L	#4-40
M	#6-32



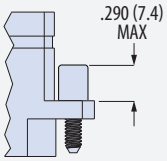
P Female Jackpost with Hex Nut and Lockwasher



K **T** Extended Jackscrew and Screwlock



L Low Profile Jackscrew Socket Head



S Low Profile Screwlock Socket Head

Application Note

Panel Mounting

For panel mounting, specify connector with Hardware Option N (thru-holes). Use rear panel mount jackpost **799-117**. See page **F-18** for jackpost ordering information, page **F-19** for panel cutout dimensions.

Application Note

EMI Banding Backshells

799-011
See page **F-24** for backshell ordering information

799-293
See page **F-28** for backshell ordering information

Insert Arrangements

SERIES 790 HIGH-DENSITY

INSERT ARRANGEMENTS

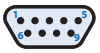
Insert Arr.	No. of Contacts #23	#16	#12	#8
A-5	5			
B-2P2		2		
B-9	9			
C-13	13			
D-15	15			
D-3P3		3		
D-7P2	5	2		
E-11P2	9	2		
E-19	19			
E-7P3	4	3		
F-14P3	11	3		
F-15P2	13	2		
F-23	23			
F-5P5		5		
G-13P2	11		2	
G-21P1	20		1	
G-3P3			3	
G-33	33			
H-10P4	6		4	
H-29P7	22	7		
H-36P2	34		2	
H-51P1	50		1	
H-54P2	52	2		
H-5P5			5	
H-66	66			
J-17P4	13	4		
J-25P2	23	2		
J-33	33			
J-7P7		7		
K-27P4	23	4		
K-35P2	33	2		
K-43	43			
K-9P9		9		
L-22P4	18		4	
L-48P2	46		2	
L-6P6			6	
L-78	78			
M-17P17		17		
M-102	102			
M-4P4				4
N-13P13			13	
N-153	153			

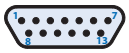
⚠ Cavity Numbers

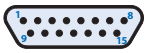
Cavity numbers shown are for mating face of receptacle (pin) connector. Plug (socket) numbers are reversed.

A-5
5 #23 Contacts

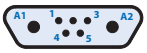
B-2P2
2 #16 Contacts


B-9
9 #23 Contacts


C-13
13 #23 Contacts


D-15
15 #23 Contacts

D-3P3
3 #16 Contacts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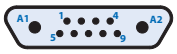
5 #23, 2 #16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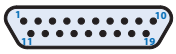
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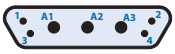
19 #23 Contacts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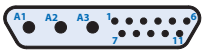
4 #23, 3 #16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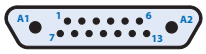
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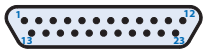
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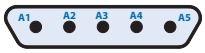
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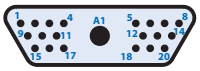
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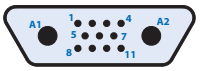
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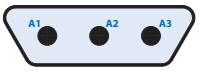
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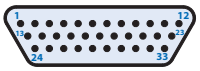
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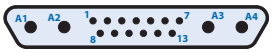
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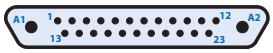
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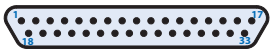
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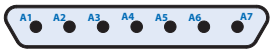
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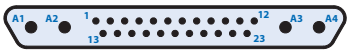
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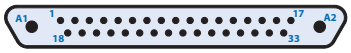
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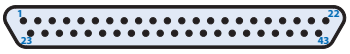
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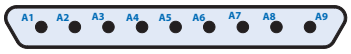
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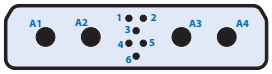
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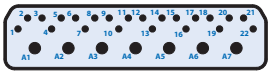
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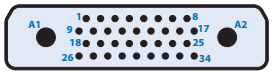
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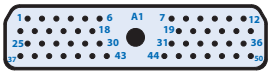
H-51P1
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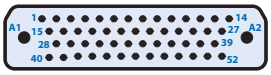
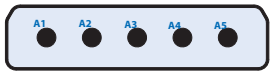
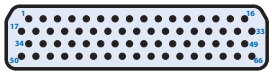
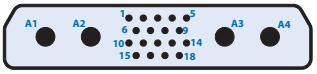
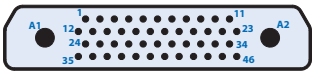
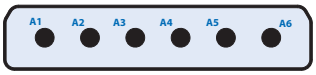

H-54P2
52 #23, 2 #16

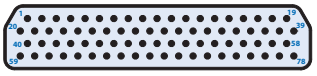

H-5P5
5 #12 Contacts

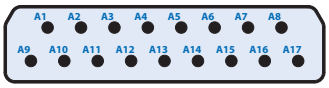

H-66
66 #23 Contacts

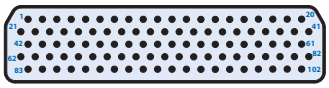

L-22P4
18 #23, 4 #12

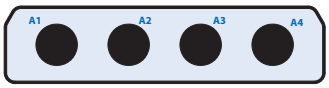

L-48P2
46 #23, 2 #12

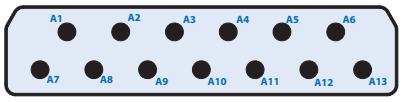

L-6P6
6 #12 Contacts

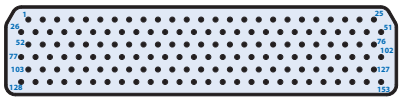

L-78
78 #23 Contacts


M-17P17
17 #16 Contacts


M-102
102 #23 Contacts


M-4P4
4 #8 Contacts


N-13P13
13 #12 Contacts


N-153
153 #23 Contacts

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Dimensions in Inches (millimeters) are subject to change without notice.

Specifications

Construction

Contacts	Copper alloy, gold over nickel finish
Hood, socket contact	Stainless steel, passivated
Clip, contact retaining	Beryllium copper
Clip, insert retaining	Beryllium copper
Insulators	High performance thermoplastic
Grommet and face seal	Fluorosilicone/silicone blend
Shell	Aluminum
Gasket, panel	Cho-Seal 1287 Ag/Al filled fluorosilicone
EMI spring	Stainless steel, gold plated
EMI shroud (90° PCB)	Aluminum
Encapsulant (PCB)	Epoxy
Hardware	Stainless steel, passivated

Ratings

Voltage (DWV)	Size 23 contacts: 750 VAC Size 8, 12 and 16 contacts: 1800 VAC
Current Rating	

Contact Size	Current (A)
#23	5
#16	13
#12	23
#8	46

Operating Temperature	-65 to +150 °C
Ingress Protection	IP67
Durability	500 mating cycles

Product Specifications

Description	Requirement	Procedure
Contact Resistance	SAE AS39029 Table 5	EIA-364-06
Low Level Contact Resistance	SAE AS39029 Table 4	EIA-364-23
Insulation Resistance	5000 megohms minimum	EIA-364-21
Dielectric Withstanding Voltage	#23 contacts 750 volts, #8, 12 & 16 contacts 1800 volts	EIA-364-20
Current Rating	#23: 5A, #16: 13A, #12: 23A, #8: 46A	EIA-364-70 Method 1
Shell-to-shell Resistance	2.5 millivolt drop maximum (connector with EMI spring)	EIA-364-83
Shielding Effectiveness	100 – 1000MHz: >50 dB , 1 – 4GHz: >41dB, 4 – 10GHz: >35 dB	EIA-364-66
Ingress Protection	IP67 rating	IEC-60529
Vibration, Sine	20 g	EIA-364-28 Test Condition IV
Vibration, Random	16.91 g rms	EIA-364-28 Test Condition V Letter E
Mechanical Shock	300 g	EIA-364-27 Condition D
Thermal Shock	-65 to +150 °C	EIA-364-32 Test Condition IV
Humidity	10 Day, +25 to +65° C	EIA-364-31 Method IV, Step 7b vibration deleted
Mechanical Durability	500 mating cycles	EIA-364-09
Salt Spray	Plating code M: 48 hours, MT, ZR, N, TZ: 500 hours	EIA-364-26
Solderability, PC Tail Contacts	95% solder coverage. Smooth, bright and even finish.	EIA-364-52 Category 3, 8 hours steam aging
Resistance To Soldering Heat	260° C, 10 seconds	EIA-364-56
Fluid Immersion	No damage from immersion in various fuels and oils.	EIA-364-10
Altitude Immersion	75,000 feet	EIA-364-03
Contact Retention	MIL-DTL-38999 Table XVIII	EIA-364-29
Contact Separation Force	SAE AS39029 Table 9	EIA-364-37
Magnetic Permeability	2 µ maximum.	EIA-364-54

Series 790 Material and Finish Options

The Series 790 Micro-Crimp® connector is available in five preferred finishes: electroless nickel, nickel-PTFE, tin-zinc, cadmium, and zinc-nickel.

Additional material and finish options are available. Replace the preferred plating code with the alternate code from the table below.

SERIES 790 SHELL FINISH OPTIONS

	Electroless Nickel	Nickel-PTFE	Tin-Zinc	Olive Drab Cadmium	Black Zinc-Nickel
Glenair Code	M	MT	TZ	N	ZR
Corrosion Resistance	Fair	Excellent	Excellent	Excellent	Excellent
Salt Spray Hours	48	500	500	500	500
Conductivity	Excellent	Excellent	Very Good	Very Good	Very Good
RoHS Compliant[1]	Yes	Yes	Yes	No	Yes

[1] Does not contain cadmium or hexavalent chromium. Meets EU requirements.

TIN-ZINC PLATING

The United States Department of Defense (DOD) has mandated the elimination of cadmium from DOD weapons systems because of toxicity concerns. The European Union has also restricted the use of cadmium on electronics equipment (RoHS). Tin-Zinc is a RoHS cadmium-free sacrificial finish that offers high conductivity and shielding performance, corrosion resistance, solderability, and proven compatibility with legacy cadmium and zinc-nickel finishes. Tin-Zinc is DLA-qualified and RoHS compliant.

ALTERNATE SHELL MATERIAL AND FINISH CODES

Code	Shell Material	Shell Finish	Finish Specification	Salt Spray Hrs.	Electrical Conductivity	RoHS[1]
C	Alum	Anodize, Black	MIL-PRF-8625	48	Non-Conductive	✓
E[2]	Alum	Chem Film, Gold	MIL-DTL-5541	168	Conductive	
J	Alum	Cadmium, Yellow	AMS-QQ-P-416	500	Conductive	
Z1	SST	Passivate	AMS2700	500	Conductive	✓
Z2	Alum	Gold	MIL-DTL-45204	48	Conductive	✓
ZM	SST	Electroless Nickel	AMS-C-26074	500	Conductive	✓
ZMT	SST	Nickel-PTFE	AMS2454	1000	Conductive	✓
ZW	SST	Cadmium, Olive Drab	AMS-QQ-P-416	500	Conductive	
ZZR	SST	Zinc-Nickel, Black	ASTM B841	500	Conductive	✓

[1] Does not contain cadmium or hexavalent chromium. Meets EU requirements.
[2] Maximum temperature = +125°C