

MICRO-CRIMP RECTANGULAR CONNECTORS

Series 790 High-Density

SERIES™
790
HD

240-790-070

Cable Plug, Filtered

- ◆ Solder cup termination
- ◆ Socket contacts



240-790-070 cable plug has ceramic filter array to attenuate unwanted signals. Solder cup contacts. Available with two filter types (C, Pi) and 11 filter classes ranging from 35 pF to 240K pF. Shell has groove for attaching EMI banding backshell (799-293, sold separately). Available with jackscrews or screwlocks.

- Aerospace-grade microminiature rectangular connector with ceramic filter
- 39 insert arrangements with up to 102 contacts
- Environmental

INSERT ARRANGEMENTS

Insert Arrangement	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			

HOW TO ORDER

Sample Part Number

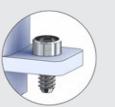
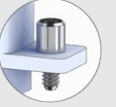
Sample Part Number		240-790-070S	F-23	ME	E	P	C	S
Basic Part Number	240-790-070S	Cable Receptacle, Filtered, Socket Contacts						
Shell Size-Insert Arr.	See “ <i>Insert Arrangements</i> ” Table							
Shell Finish	ME	Electroless Nickel						
	MT	Nickel / PTFE						
	NF	Olive Drab Cadmium						
	TZ	Tin-Zinc						
	ZR	Black Zinc-Nickel						
EMI Spring	E	EMI Spring <i>Shell finishes ME and MT only</i>						
	N	No EMI Spring						
Filter Type	C	C Circuit						
	P	Pi Circuit						
Filter Capacitance Class	See “ <i>Filter Capacitance Class</i> ” Table							
Hardware Option <i>Table 1</i>	N	Thru-Hole <i>No Hardware</i>						
	K	Extended Jackscrews <i>Slot head male</i>						
	L	Jackscrews <i>Socket head male</i>						
	P	Female Jackposts						
	S	Screwlocks <i>Socket head male</i>						
	T	Extended Screwlocks <i>Slot head male</i>						

FILTER CAPACITANCE CLASS

Filter Class	Capacitance Range (pF)	
	Filter Type P	Filter Type C
X*†	160,000-240,000	80,000-120,000
Y*	80,000-120,000	40,000-60,000
Z*	60,000-90,000	30,000-45,000
A	38,000-56,000	19,000-28,000
B	32,000-45,000	16,000-22,500
C	18,000-33,000	9,000-16,500
D	8,000-12,000	4,000-6,000
E	3,300-5,000	1,650-2,500
F	800-1,300	400-650
G	400-600	200-300
J	70-120	35-60

* Filter classes X, Y and Z are 250 VDC. All others are 500 VDC.
† Class X filters not available for arrangements with 3 or more rows of contacts.

TABLE 1 HARDWARE OPTIONS

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

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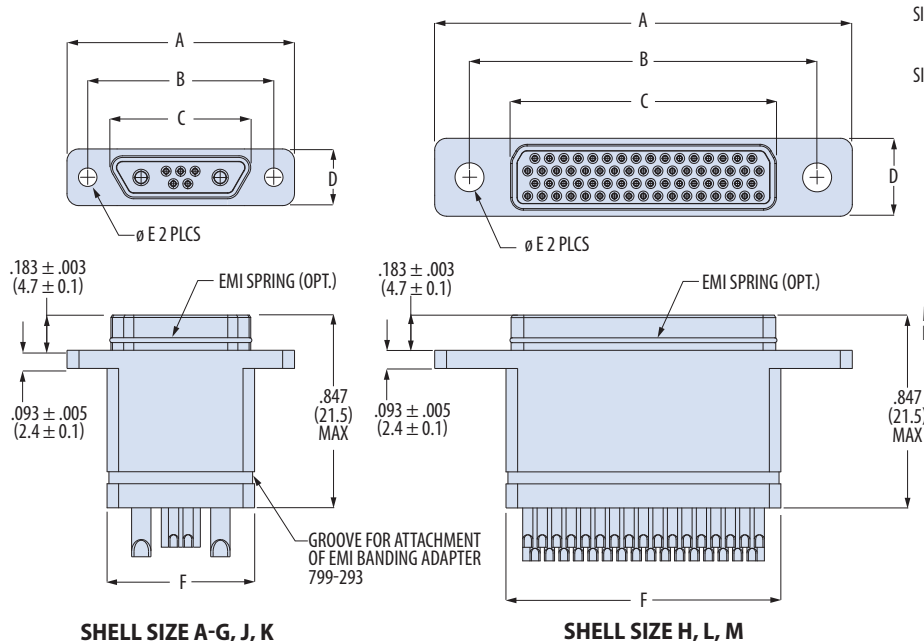


240-790-070

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SERIES 790 HIGH-DENSITY



SIZE #23 ALL ARRANGEMENTS
.200 ± .060 (5.08 ± 1.52)

SIZE #16 AND SIZE #12 IN COMBO
ARRANGEMENTS
.250 ± .060 (6.35 ± 1.52)

SIZE #16 AND SIZE #12 IN POWER
ARRANGEMENTS
.340 ± .060 (8.64 ± 1.52)

SIZE #23 CENTER ROWS
.270 ± .060 (6.86 ± 1.52)
M-102 ARRANGEMENT CENTER
ROW .340 ± .060 (8.64 ± 1.52)



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.

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

RATINGS

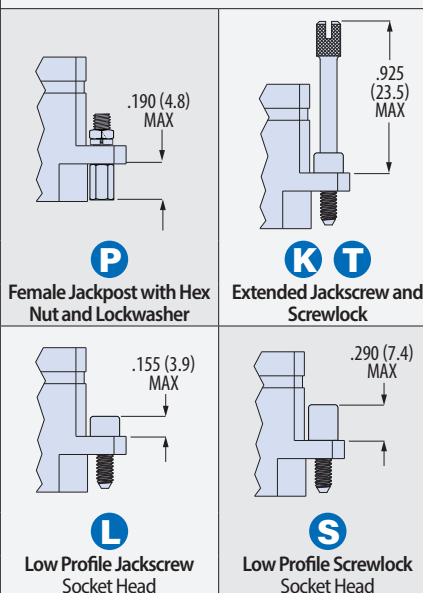
- Voltage (DWV): 500 VDC. Class X, Y, Z: 250 VDC.
- Current rating for arrangements with all contacts the same size: #23 5A, #16 13A, #12 23A
- Current rating for arrangements with mixed contact sizes: #23 5A, #16 7.5A, #12 13A
- Operating temperature: -55 to +125 °C
- Durability: 500 mating cycles
- Shock: 300 g
- Vibration: 20 g random
- Insulation resistance: 5000 megohm @ 200 VDC. Class X, Y, Z: 1000 megohm @ 83 VDC

CONSTRUCTION

- Contacts: Copper alloy, gold over nickel finish
- Shell: Aluminum
- Insulators: High performance dielectric
- EMI spring: Stainless steel, gold plated
- Hardware: Stainless steel

HARDWARE DIMENSIONS

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



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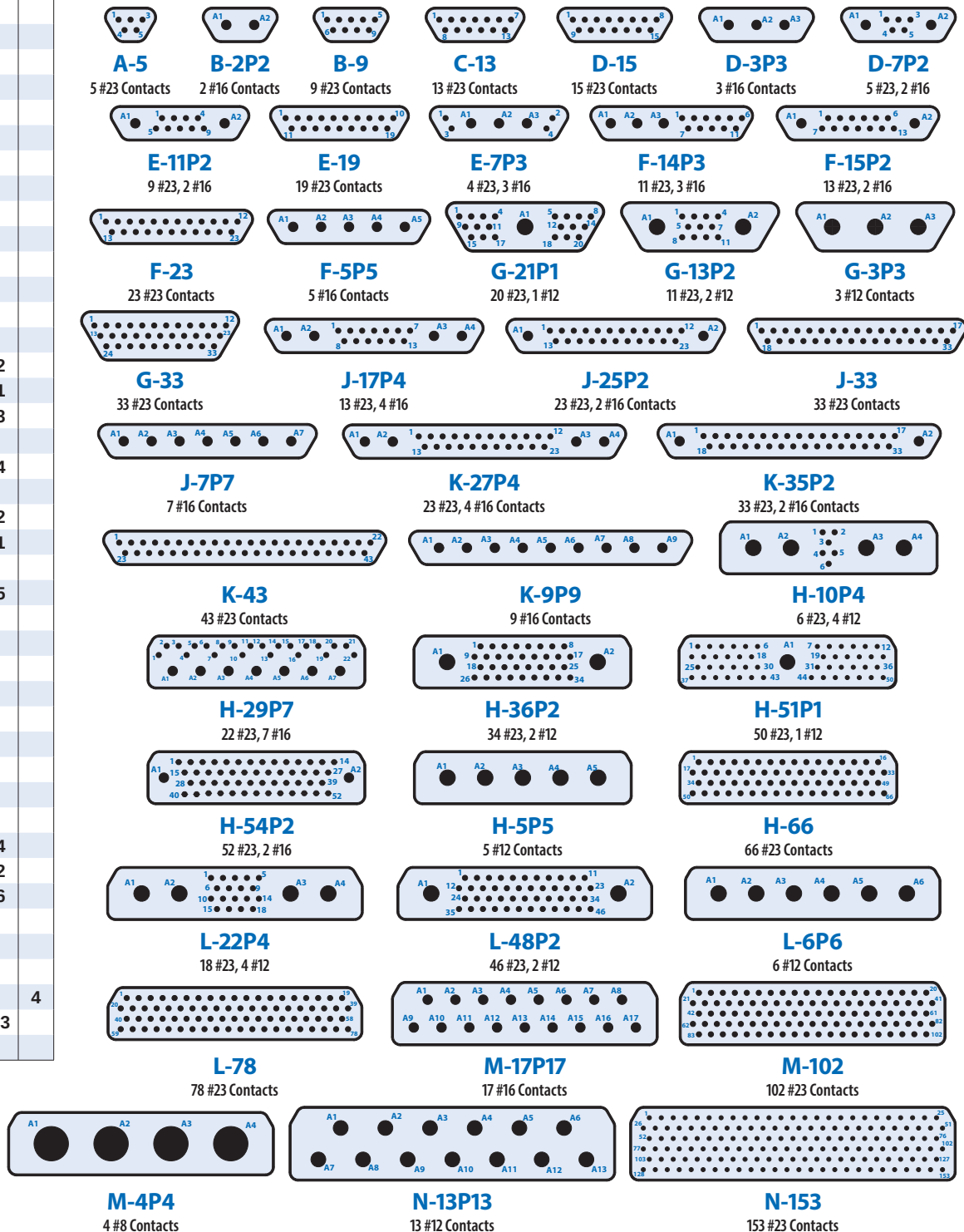
Insert Arrangements

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INSERT ARRANGEMENTS				
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E-11P2	9	2		
E-19	19			
E-7P3	4	3		
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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		
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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.



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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

MICRO-CRIMP RECTANGULAR CONNECTORS

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Series 790 Material and Finish Options

SERIES 790 HIGH-DENSITY

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