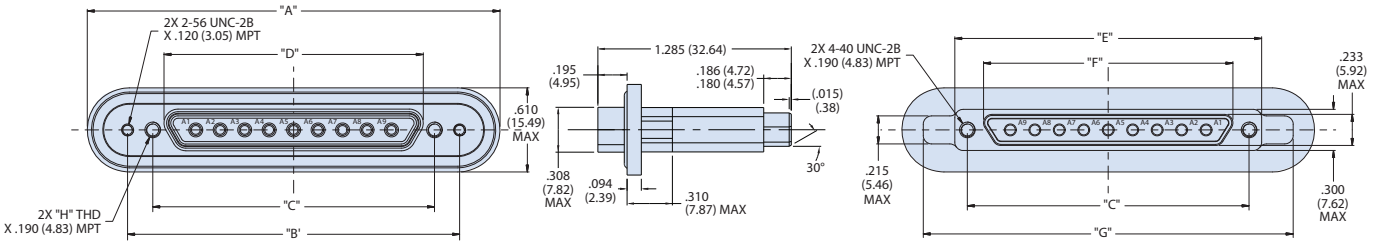
790-090
Rear-Panel Mount Hermetic Feedthrough, Pin-Socket

HOW TO ORDER

	Sample Part Number → 790-090	H	K	9P9	N
Basic Part Number	**790-090** Rear-Panel Mount Hermetic Feedthrough, Pin-Socket				
Class	**H** = Hermetic				
Shell Size	**A**, **B**, **C**, **D**, **E**, **F**, **J**, **K**, **G**, **H**, **L** and **M**				
Arrangement	Refer to 799-009 for Insert Arr. (No "W" Option for Hermetic)				
Mating Hardware Option	**N** = No Mating Hardware **P** = Jackpost	**G** = Male Guide Pins **S** = Female Guide Sockets			



Shell Sizes	A Oal	B Basic	C Basic	D Max	E Max	F Max	G Max	H Typ Unc 2-B
A	1.490 (37.85)	0.925 (23.50)	0.565 (14.35)	0.401 (10.19)	0.760 (19.30)	0.335 (8.51)	1.215 (30.86)	#4-40
B	1.680 (42.67)	1.075 (27.30)	0.715 (18.16)	0.551 (14.00)	0.910 (23.11)	0.485 (12.32)	1.365 (34.67)	
C	1.785 (45.34)	1.225 (31.12)	0.865 (21.97)	0.701 (17.81)	1.060 (26.92)	0.635 (16.13)	1.515 (38.48)	
D	1.975 (50.17)	1.325 (33.65)	0.965 (24.51)	0.801 (20.35)	1.160 (29.46)	0.735 (18.67)	1.615 (41.02)	
E	2.075 (52.71)	1.475 (37.47)	1.115 (28.32)	0.951 (24.16)	1.310 (33.27)	0.885 (22.48)	1.765 (44.83)	
F	2.175 (55.24)	1.625 (41.28)	1.265 (32.13)	1.101 (27.97)	1.460 (37.08)	1.035 (26.29)	1.915 (48.64)	
J	2.665 (67.69)	1.975 (50.17)	1.615 (41.02)	1.460 (37.08)	1.810 (45.97)	1.390 (35.31)	2.265 (57.53)	
K	2.960 (75.18)	2.375 (60.33)	2.015 (51.18)	1.860 (47.24)	2.210 (56.13)	1.795 (45.59)	2.665 (67.69)	

MOUNTING HARDWARE

P Jackpost 	Connector supplied with non-removable jackpost. Shell size "M" has 8-32 UNC-2B thread. Shell sizes "H" And "L" have 6-32 UNC-2B thread. All other sizes Have 4-40 UNC-2B thread.
G Guide Pin 	Connector supplied with non-removable guide pins for blind mate applications. Mates with option "S" guide socket on corresponding plug connector.
S Guide Socket 	Connector supplied with non-removable guide sockets for blind mate applications. Mates with option "G" guide pin on corresponding plug connector.

RATINGS

- **Test Criteria:** Hermeticity - <1 x 10-7 sccHe/sec @ 1 Atm. Delta
- **D.W.V.**
  #23 Pins: 500 VAC Pin-to-Shell
  #16 Pins: 1200 VAC Pin-to-Shell
  #12 Pins: 1200 VAC Pin-to-Shell
  I.R. - 5,000 megohms minimum @ 500 VDC
- **Glenair 790-090** will mate with any Series 79 plug/receptacle with same shell size and insert
- **Glenair 790-090** is designed to utilize 799-016 EMI backshells.

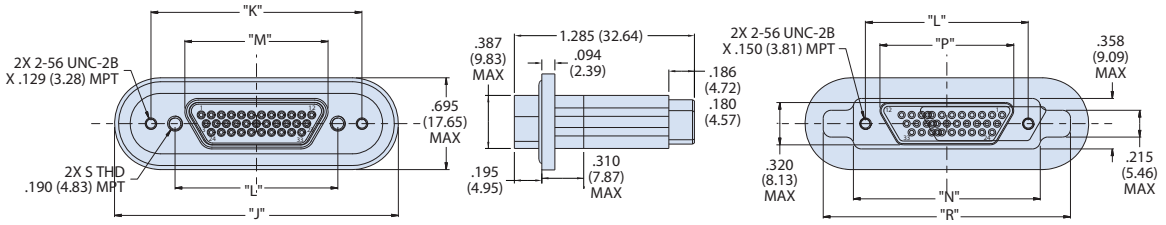
CONSTRUCTION

- **Shell:** Kovar Alloy / Nickel Plate
- **Contacts, Hermetic:** Kovar Alloy / Gold Plate
- **Contacts, Sockets:** Copper Alloy / Gold Plate
- **Insulator, Hermetic:** Vitreous Glass
- **Insulator, Sockets:** Rigid Dielectric
- **Seals:** Fluorosilicone Blend / None
- **Mating Hardware:** CRES / Passivated

790-090

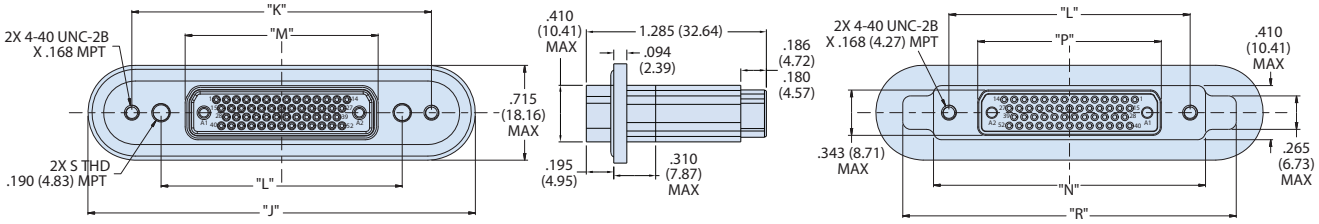
Rear-Panel Mount Hermetic Feedthrough, Pin-Socket

SHELL SIZE G



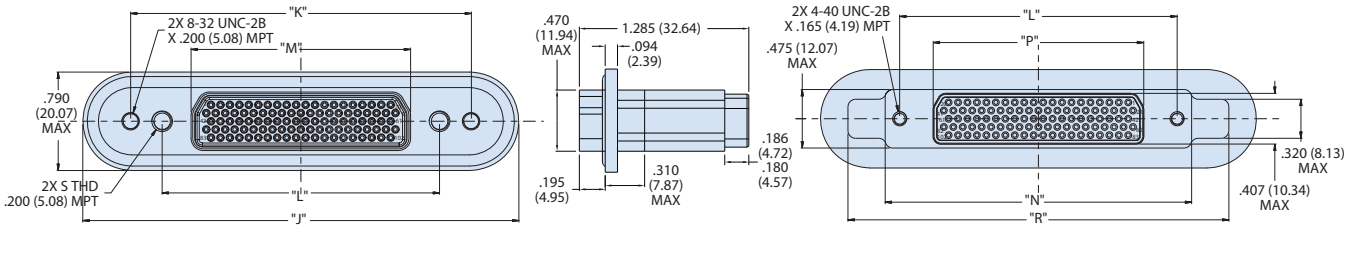
Shell Size	J Oal	K Basic	L Basic	M Max	N Max	P Max	R Max	S Typ Unc 2-B
G	2.130 (54.10)	1.575 (40.00)	1.215 (30.86)	1.079 (27.41)	1.410 (35.81)	1.010 (25.65)	1.861 (47.27)	#4-40

SHELL SIZE H & L



Shell Size	J Oal	K Basic	L Basic	Max	N Max	P Max	R Max	S Typ Unc 2-B
H	2.900 (73.66)	2.236 (56.79)	1.800 (45.72)	1.450 (36.83)	2.045 (51.94)	1.385 (35.18)	2.500 (63.50)	#6-32
L	3.100 (78.74)	2.472 (62.79)	2.036 (51.71)	1.686 (42.82)	2.281 (57.94)	1.623 (41.22)	2.736 (69.49)	#6-32

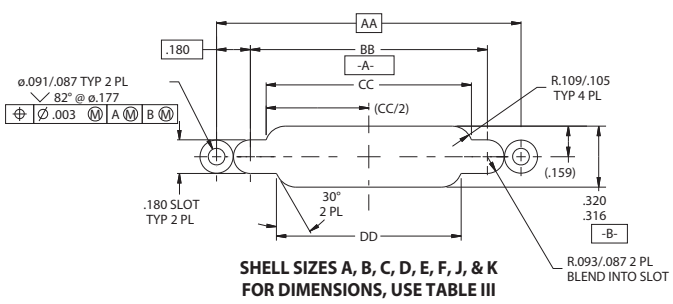
SHELL SIZE M



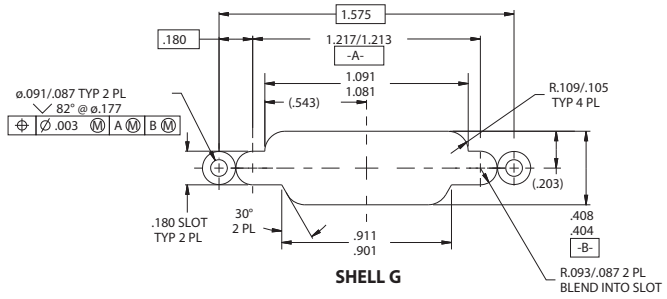
Shell Size	J Oal	K Basic	L Basic	M Max	N Max	P Max	R Max	S Typ Unc 2-B
M	3.475 (88.27)	2.770 (70.36)	2.200 (55.88)	1.745 (44.32)	2.485 (63.12)	1.675 (42.55)	3.085 (78.36)	#8-32

790-090

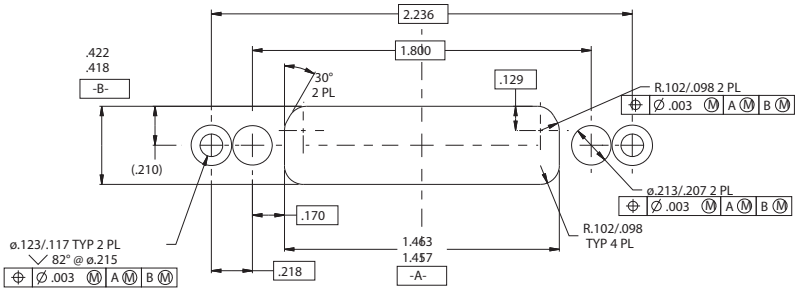
Rear-Panel Mount Hermetic Feedthrough, Pin-Socket



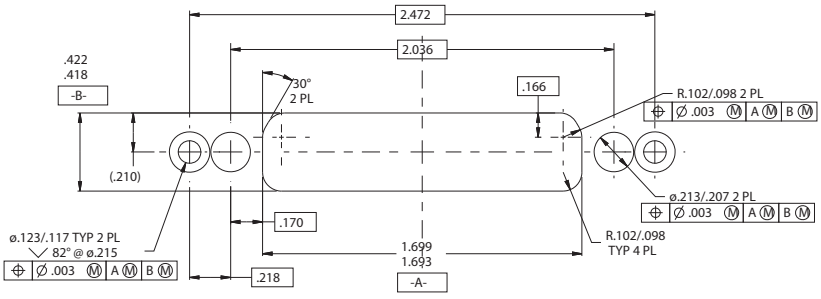
SHELL SIZES A, B, C, D, E, F, J, & K
FOR DIMENSIONS, USE TABLE III



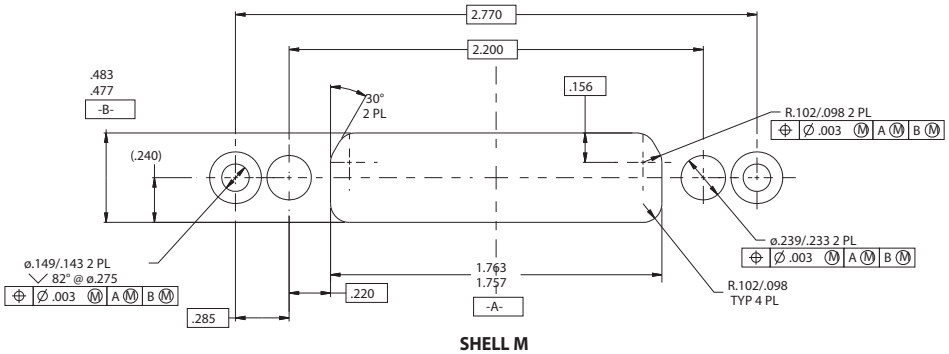
SHELL G



SHELL H



SHELL L



SHELL M

TABLE III

Shell Size	AA BASIC	BB ±.002	CC ±.005	DD ±.005
A	0.925 (23.50)	0.565 (14.35)	0.396 (10.06)	0.286 (7.26)
B	1.075 (27.30)	0.715 (18.16)	0.546 (13.87)	0.436 (11.07)
C	1.225 (31.12)	0.865 (21.97)	0.696 (17.68)	0.586 (14.88)
D	1.325 (33.65)	0.965 (24.51)	0.796 (20.22)	0.686 (17.42)
E	1.475 (37.47)	1.115 (28.32)	0.946 (24.03)	0.836 (21.23)
F	1.625 (41.28)	1.265 (32.13)	1.096 (27.84)	0.986 (25.04)
J	1.975 (50.17)	1.615 (41.02)	1.448 (36.78)	1.345 (34.16)
K	2.375 (60.33)	2.015 (51.18)	1.848 (46.94)	1.740 (44.20)

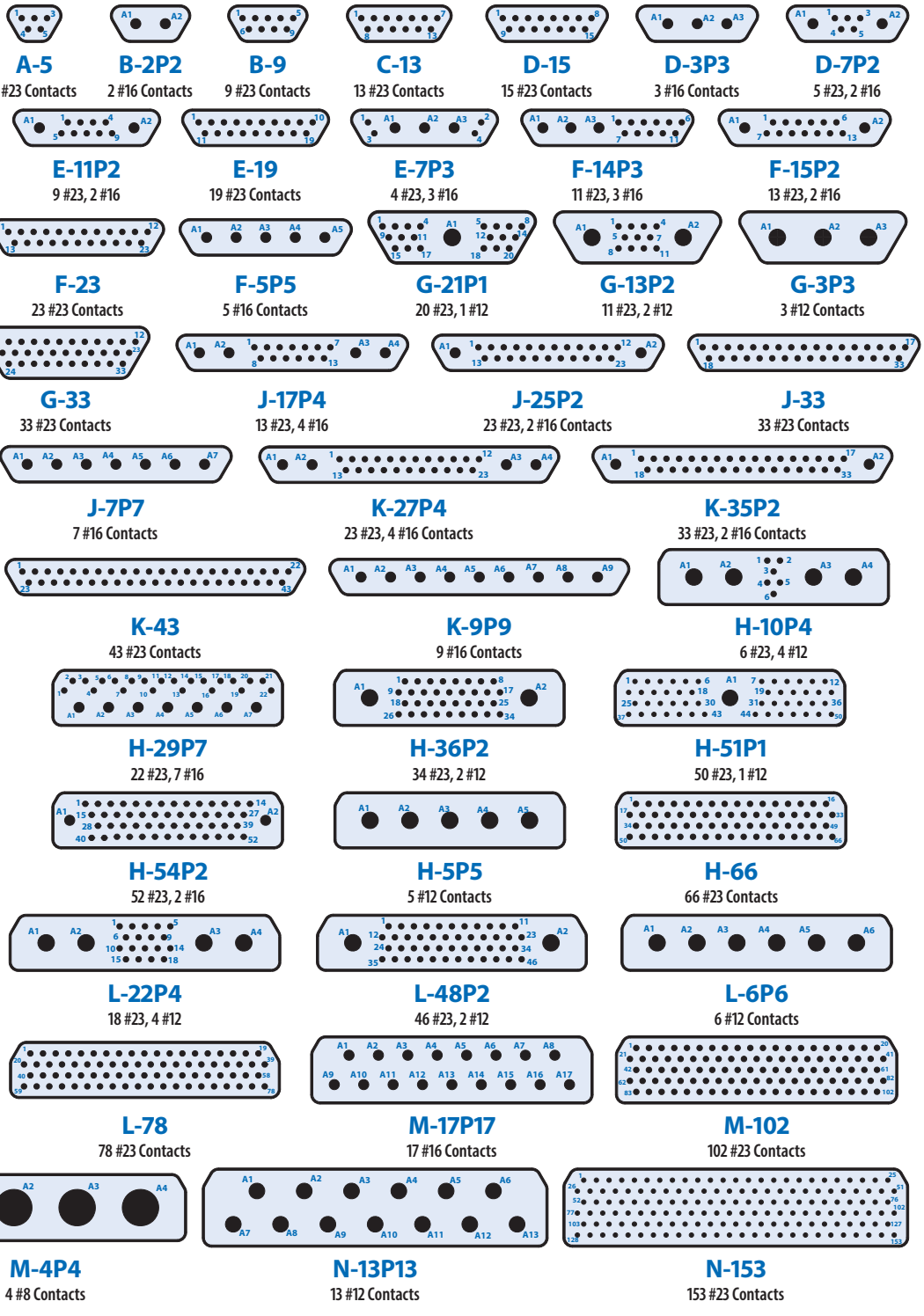
Insert Arrangements

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
D-7P2 — 5 #23, 2 #16
E-11P2 — 9 #23, 2 #16
E-19 — 19 #23 Contacts
E-7P3 — 4 #23, 3 #16
F-14P3 — 11 #23, 3 #16
F-15P2 — 13 #23, 2 #16
F-23 — 23 #23 Contacts
F-5P5 — 5 #16 Contacts
G-21P1 — 20 #23, 1 #12
G-13P2 — 11 #23, 2 #12
G-3P3 — 3 #12 Contacts
G-33 — 33 #23 Contacts
J-17P4 — 13 #23, 4 #16
J-25P2 — 23 #23, 2 #16 Contacts
J-33 — 33 #23 Contacts
J-7P7 — 7 #16 Contacts
K-27P4 — 23 #23, 4 #16 Contacts
K-35P2 — 33 #23, 2 #16 Contacts
K-43 — 43 #23 Contacts
K-9P9 — 9 #16 Contacts
H-10P4 — 6 #23, 4 #12
H-29P7 — 22 #23, 7 #16
H-36P2 — 34 #23, 2 #12
H-51P1 — 50 #23, 1 #12
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

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.

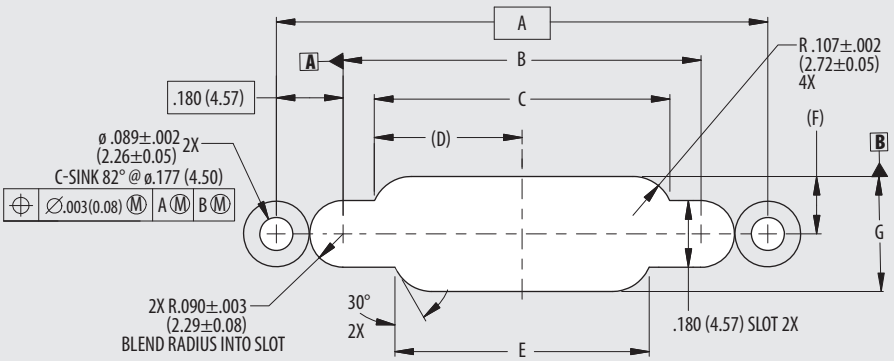
ALTERNATE SHELL MATERIAL AND FINISH CODES

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

Panel Cutouts for Series 790 Panel Mount Connectors

PANEL CUTOUT FOR SERIES 790 PLUG AND RECEPTACLE SIZES A–G, J–K



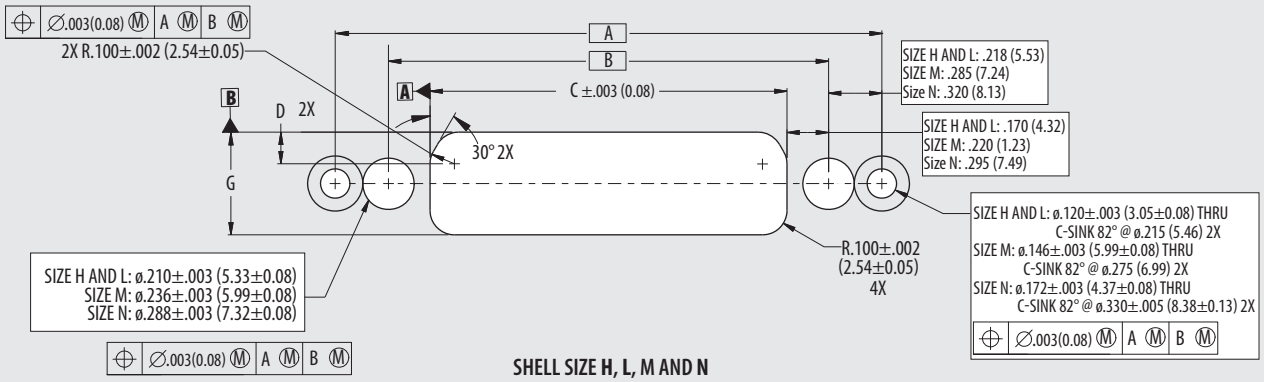
SHELL SIZE A–G, J, AND K

Use this cutout for Series 790 connectors with panel mount flange, shell sizes A–G, J, K

790-026 790-027 790-028 790-029 790-036 790-037 790-091 797-744 240-790-028 240-790-029 240-790-071 240-790-072

Shell Size	A Basic		B ± .002 (0.05)		C		D		E		F		G	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
A	.925	23.50	.565	14.35	.396	10.06	.198	5.03	.286	7.26	.157	3.99	.314	7.98
B	1.075	27.31	.715	18.16	.546	13.87	.273	6.93	.436	11.07	.157	3.99	.314	7.98
C	1.225	31.12	.865	21.97	.696	17.68	.348	8.84	.586	14.88	.157	3.99	.314	7.98
D	1.325	33.66	.965	24.51	.796	20.22	.398	10.11	.686	17.42	.157	3.99	.314	7.98
E	1.475	37.47	1.115	28.32	.946	24.03	.473	12.01	.836	21.23	.157	3.99	.314	7.98
F	1.625	41.28	1.265	32.13	1.096	27.84	.548	13.92	.986	25.04	.157	3.99	.314	7.98
G	1.575	40.01	1.215	30.86	1.086	27.58	.543	13.79	.906	23.01	.203	5.16	.406	10.31
J	1.975	50.17	1.615	41.02	1.448	36.78	.724	18.39	1.345	34.16	.157	3.99	.314	7.98
K	2.375	60.33	2.015	51.18	1.848	46.94	.924	23.47	1.740	44.20	.157	3.99	.314	7.98

PANEL CUTOUT FOR SERIES 790 PLUG AND RECEPTACLE SIZES H,L,M,N



SHELL SIZE H, L, M AND N

Use this cutout for Series 790 connectors with panel mount flange, shell sizes H, L, M, N

790-026 790-027 790-028 790-029 790-036 790-037 790-091 797-744 240-790-028 240-790-029 240-790-071 240-790-072

Shell Size	A Basic		B ± .002 (0.05)		C		D		G	
	in	mm	in	mm	in	mm	in	mm	in	mm
H	2.236	63.50	1.800	45.72	1.460	37.08	.129	3.28	.420	10.67
L	2.472	69.49	2.036	51.71	1.696	43.08	.166	4.22	.420	10.67
M	2.770	78.36	2.200	55.88	1.760	44.70	.156	3.96	.480	12.19
N	3.365	85.47	2.725	69.22	2.135	54.23	.162	4.11	.545	13.84