

MICRO-CRIMP RECTANGULAR CONNECTORS

Series 791 Scoop-Proof



791-018

Panel Plug, Float Mounting



791-018 panel mount plug has stainless steel float bushings. Snap-in, rear-release M39029-type crimp contacts. High-density size 23 contacts are on .075 inch (1.9mm) centers and accept AWG 22-28 wire. Size 16 and size 12 cavities accept power contacts (supplied with connector) or coaxial RF contacts (ordered separately). Wire grommet provides environmental protection. Shell has threaded holes for attaching EMI banding backshell (799-016, sold separately).

- ◆ Crimp, rear-release
- ◆ Float mount blind mate
- ◆ Socket contacts

- Aerospace-grade ultraminiature connector with rugged scoop-proof duo-lobe shell
- Float bushings for rack-and-panel mounting
- Environmental
- 42 arrangements with M39029-type crimp contacts

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
N-13P13	N-13W13			13	
N-153		153			

HOW TO ORDER							
Sample Part Number			791-018S	J-33	TZ	G	B
Basic Part Number	791-018S	Panel Plug, Float Mount, Socket Contacts					
Shell Size-Insert Arr.	See “Insert Arrangements” Table						
Shell Finish	M	Electroless Nickel					
	MT	Nickel / PTFE					
	NF	Olive Drab Cadmium					
	TZ	Tin-Zinc					
	ZR	Black Zinc-Nickel					
Hardware Option Table 1	B	Guide Bushings <i>For blind mating</i>					
	G	Guide Pins <i>For blind mating</i>					
	N	No Hardware <i>Threaded holes</i>					
Polarization Key Option	Enter Letter Designator for Position A, B, C, D, E , or F per Mod Code 555 (see page B-8 for details) Omit for none						

TABLE 1 HARDWARE OPTIONS	
N No Hardware Threaded Blind Holes	G Guide Pins
B Guide Bushing	

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: 75,000 feet ■ Ingress protection: IP67

CONSTRUCTION
■ Contacts: Copper alloy, gold over nickel finish ■ Shell: Aluminum ■ Insulators: High performance thermoplastic ■ Wire grommet: Fluorosilicone/silicone blend ■ Contact retaining clip: Beryllium copper, unplated ■ Hardware: Stainless steel

Application Note
Panel Cutouts
 See page B-54 for recommended panel cutout dimensions for float mount connectors.

Application Note
EMI Banding Backshell 799-016
 See page F-32 for backshell ordering information.

SERIES
791
Scoop
Proof

- ◆ Crimp, rear-release
- ◆ Float mount blind mate
- ◆ Socket contacts

Technical drawing of a 15-pin D-sub connector. The drawing shows the connector's profile with dimensions labeled A, B, C, and D. Dimension A is the height of the connector body. Dimension B is the distance from the center of the mounting hole to the center of the connector body. Dimension C is the distance from the center of the mounting hole to the center of the connector body. Dimension D is the distance from the center of the mounting hole to the center of the connector body. The drawing also shows the connector's pin configuration and the mounting hole.

GUIDE BUSHING. SEE ORDERING INFORMATION FOR OTHER OPTIONS

SIZE

SIZE A,B,C,D,E,F,J,K .320 (8.13) MAX
SIZE G .416 (10.57) MAX
SIZE H,L .430 (10.92) MAX
SIZE M .513 (13.03) MAX
SIZE N .578 (14.68) MAX

 .150 (3.81)
MIN 2X

SIZE M .423 ± .003 (10.74 ± 0.08)

SIZE A,B,C,D,E,F,J,K .310 (7.87) MAX
SIZE G .390 (9.91) MAX
SIZE H,L .420 (10.67) MAX
SIZE M .475 (12.07) MAX
SIZE N .544 (13.82) MAX

Technical drawing of a 100mm length of a 1/2 inch nominal diameter pipe. The drawing shows a cross-section of the pipe with various dimensions labeled. The overall length is 100mm. The wall thickness is .093 ± .005 (2.36 ± 0.13) mm. The maximum length of the pipe is .540 (13.72) MAX. The maximum length of the pipe is E MAX. The maximum length of the pipe is G MAX. The drawing also shows the dimensions for the pipe's end fittings, which are 1/2 inch nominal diameter. The drawing is labeled with 'SIZE A-L', '.720 (18.29)', 'SIZE M,N', and '.760 (19.30)'.

SIZE A-F,J,K .568 (14.43) MAX
SIZE G .656 (16.66) MAX
SIZE H,L .674 (17.12) MAX
SIZE M .754 (19.15) MAX
SIZE N .819 (20.80) MAX

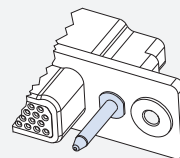
SIZE A, B, C, D, E, F, G, J, K: 2-56 UNC-2B 2 PLCS
SIZE H, L, M, N: 4-40 UNC-2B 2 PLCS

Application Note
Polarization Key Positions
See Mod Code 555 pg. B-8 for details

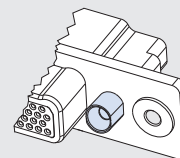
The diagram illustrates the polarization key positions for a Plug and a Receptacle. The Plug is shown on the left with pins labeled A, B, C, D, E, and F. The Receptacle is shown on the right with pins labeled C, B, A, F, E, and D. Both diagrams show the positive (+) terminal on the left and right sides.

DIAMETRAL FLOAT
 SIZE A-L: $.040 \pm .040$ (1.0)
 SIZE M: $.050 \pm .050$ (1.3)
 SIZE N: $.060 \pm .060$ (1.5)

HARDWARE DETAILS

 Guide Pins

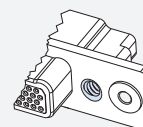
Guide pins for blind mate applications. Non-removable. Requires guide bushing (B) on mating plug.



Guide Bushings

Guide bushings for blind mate applications. Non-removable. Requires guide pins (G) on mating plug.

Contacts are bulk packed with connector. Spare contacts are not included with connector and are ordered separately if required. See "Contacts and Tools" section for additional information.	Contact Size	Skt Contact Part No.	AWG Wire Size	Installing and Removal Tool	Crimp Tools		
					Tool	Positioner	Die Assembly
	23	809-002	22 – 28	809-088	809-015	809-005	—
	16	857-448-16	16 – 20	809-131	809-136	809-137	—
	12	857-448-12	12 – 14	809-132	809-136	809-137	—
8	850-138F	8	859-049	859-025	859-046	859-026	



N No Hardware

Tapped holes. Size A-G, J, K = 6-32, H, L = 8-32, M = 10-32. N = 12-24. 150 (3.8) min. depth.

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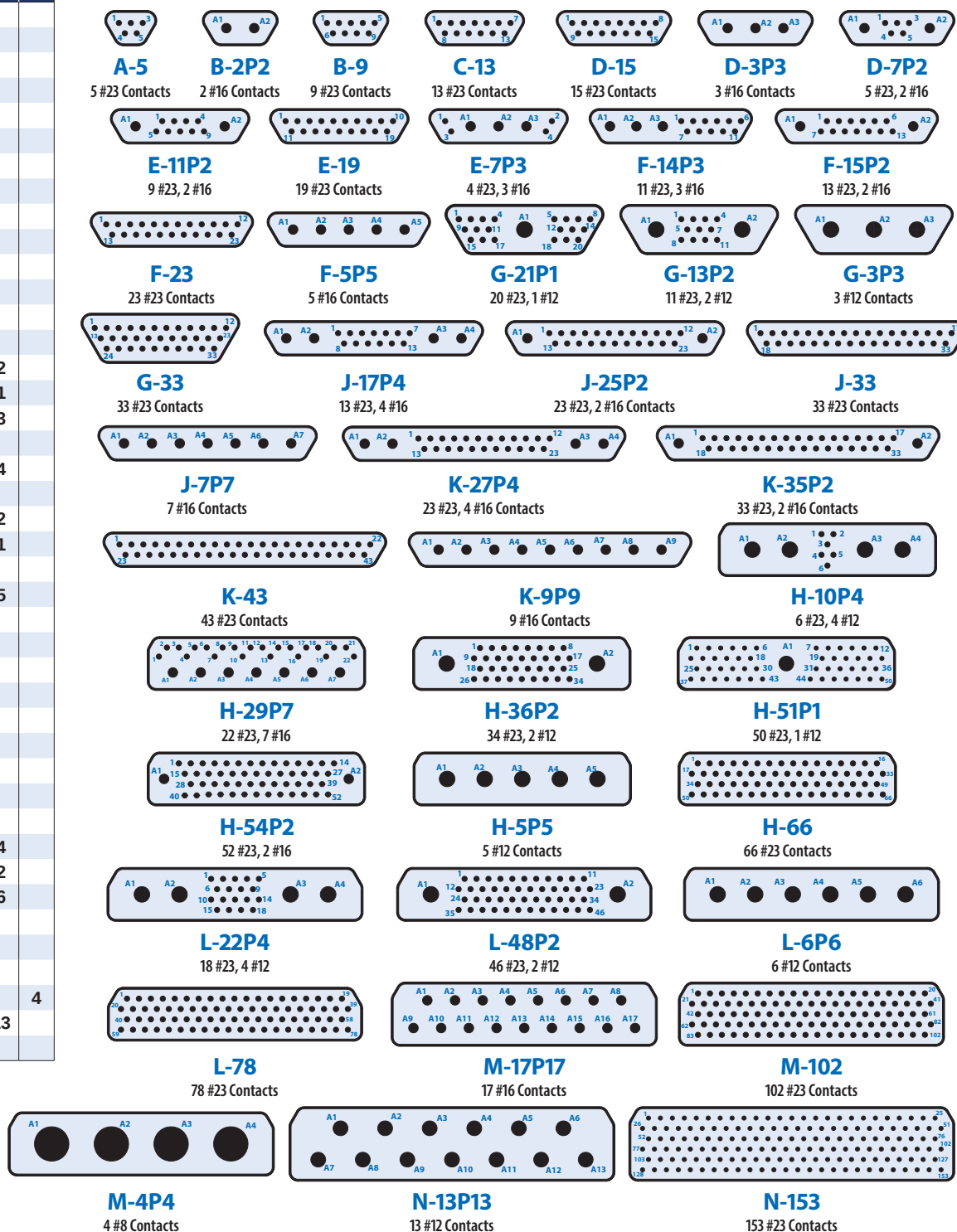


Insert Arrangements

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.



MICRO-CRIMP RECTANGULAR CONNECTORS

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Series 791 Material and Finish Options

SERIES 791 SCOOP-PROOF

The Series 791 Scoop-Proof 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.

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.

SERIES 79 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.

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

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Series 791 Scoop-Proof



Specifications

SERIES 791 SCOOP-PROOF

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
O-ring	Fluorosilicone
EMI spring	Beryllium copper, electroless nickel plated
EMI shroud (90° PCB)	Aluminum
Encapsulant (PCB)	Epoxy
Hardware	Stainless steel, passivated

RATINGS

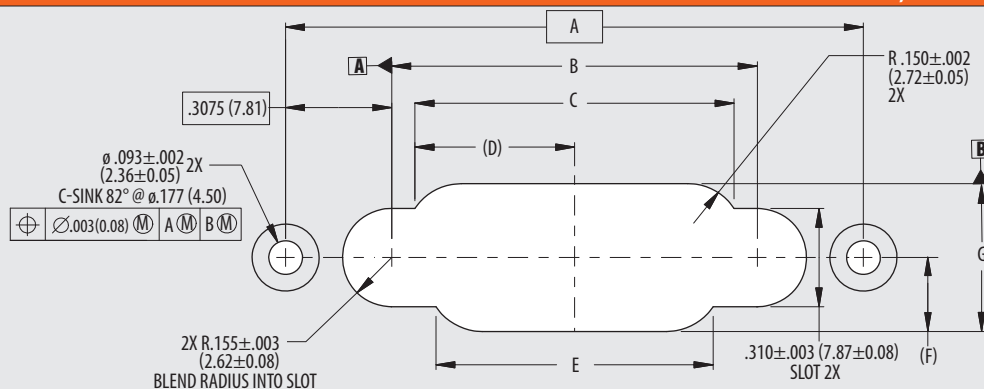
Voltage (DWV)	Size 23 contacts: 750 VAC Size 8, 12 and 16 contacts: 1800 VAC	
Current Rating	Contact Size	Current (A)
	#23	5
	#16	13
	#12	23
	#8	46
Operating Temperature	-65 to +150 °C	
Ingress Protection	IP67	
Durability	500 mating cycles	

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

Panel Cutouts, 791 Series, Float Mounting

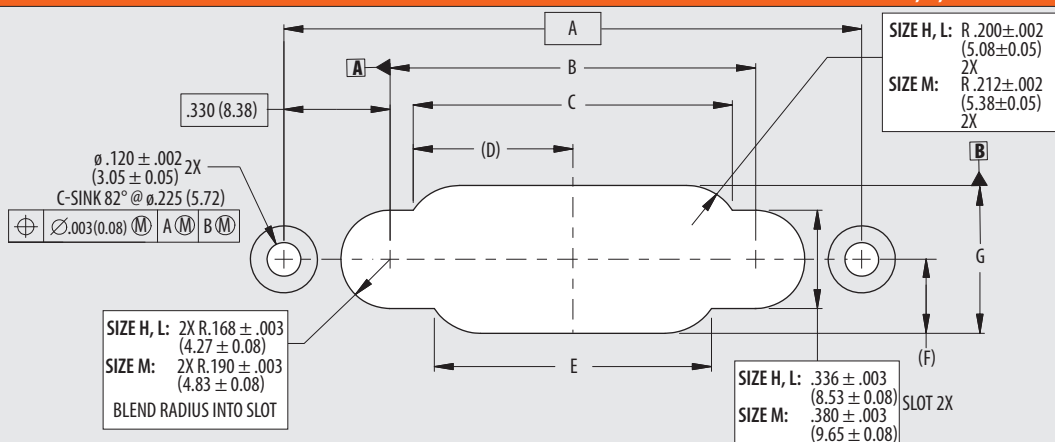
PANEL CUTOUT FOR SERIES 791-017P AND 791-018S FLOAT MOUNT CONNECTOR SIZES A-G, J AND K



PANEL CUTOUT FOR 791-017P AND 791-018S FLOAT MOUNT CONNECTORS
SHELL SIZE A-G, J, AND K

Shell Size	A Basic		B ± .002 (0.05)		C		D		E		F		G ± .002 (0.05)	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
A	1.365	34.67	.750	19.05	.571	14.50	.2855	7.25	.507	12.88	.239	6.07	.498	12.65
B	1.515	38.48	.900	22.86	.721	18.31	.3605	9.16	.657	16.69	.239	6.07	.498	12.65
C	1.665	42.29	1.050	26.67	.871	22.12	.4355	11.06	.807	20.50	.239	6.07	.498	12.65
D	1.740	44.20	1.125	28.58	.946	24.03	.473	12.01	.882	22.40	.239	6.07	.498	12.65
E	1.890	48.01	1.275	32.39	1.096	27.84	.548	13.92	1.032	26.21	.239	6.07	.498	12.65
F	2.040	51.82	1.425	36.20	1.246	31.65	.623	15.82	1.182	30.02	.239	6.07	.498	12.65
G	2.003	50.88	1.388	35.26	1.223	31.06	.6115	15.53	1.194	30.33	.283	7.19	.586	14.88
J	2.415	61.34	1.800	45.72	1.621	41.17	.8105	20.59	1.557	39.55	.239	6.07	.498	12.65
K	2.790	70.87	2.175	55.25	1.996	50.70	.998	25.35	1.932	49.07	.239	6.07	.498	12.65

PANEL CUTOUT FOR SERIES 791-017P AND 791-018S FLOAT MOUNT CONNECTOR SIZES H, L, AND M



PANEL CUTOUT FOR 791-017P AND 791-018S FLOAT MOUNT CONNECTORS
SHELL SIZE H, L, M

Shell Size	A Basic		B ± .002 (0.05)		C		D		E		F		G ± .002 (0.05)	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
H	2.560	65.02	1.900	48.26	1.617	41.07	.8085	20.54	1.610	40.89	.300	7.62	.620	15.75
L	2.796	71.02	2.136	54.25	1.853	47.07	.9265	23.53	1.846	46.89	.300	7.62	.620	15.75
M	2.940	74.68	2.200	55.88	1.948	49.48	.974	24.74	1.935	49.15	.340	8.64	.723	18.36

MICRO-CRIMP RECTANGULAR CONNECTORS

Series 791 Scoop-Proof



Series 791 Polarization Keying Option

OPTIONAL POLARIZATION KEYS



To prevent mis-mating of identical shell size and insert arrangement connectors

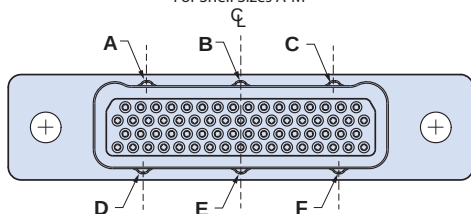
Series 791 connectors are available with an integral polarizing key. Keyed plug connectors have a raised boss on the shell. Receptacles have corresponding keyway. Ordering is simple—just add the keying position letter designator to the end of the part number.

Note: keyed receptacles will mate with unkeyed plugs. Additional polarization keying positions are available, consult the factory for designators and key locations.

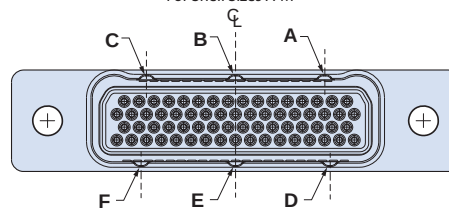
HOW TO ORDER

Step 1	Create a Series 791 connector part number:	791-003SH-66MP
Step 2	Add the keying position letter designator A, B, C, D, E, or F to the part number.	791-003SH-66MPB

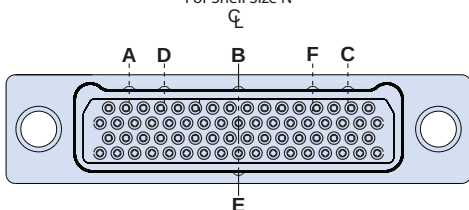
MOD-555 KEY LOCATIONS PLUG CONNECTOR MATING FACE
For Shell Sizes A-M



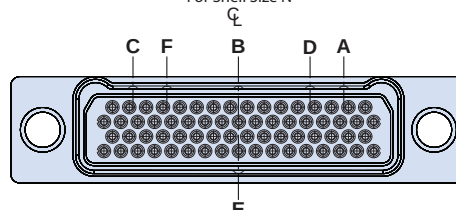
MOD-555 KEY LOCATIONS RECEPTACLE CONNECTOR MATING FACE
For Shell Sizes A-M



MOD-555 KEY LOCATIONS PLUG CONNECTOR MATING FACE
For Shell Size N



MOD-555 KEY LOCATIONS RECEPTACLE CONNECTOR MATING FACE
For Shell Size N



POLARIZING KEY LOCATIONS SHELL SIZES A-M

Shell Size	Key Position Offset From Vertical Centerline											
	Position A		Position B		Position C		Position D		Position E		Position F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
A	N/A	N/A	.000	0.00	N/A	N/A	.025	0.64	.000	0.00	.025	0.64
B	.090	2.29	.000	0.00	.090	2.29	.050	1.27	.000	0.00	.050	1.27
C	.130	3.30	.000	0.00	.130	3.30	.100	2.54	.000	0.00	.100	2.54
D	.180	4.57	.000	0.00	.180	4.57	.125	3.18	.000	0.00	.125	3.18
E	.200	5.08	.000	0.00	.200	5.08	.150	3.81	.000	0.00	.150	3.81
F	.300	7.62	.000	0.00	.300	7.62	.250	6.35	.000	0.00	.250	6.35
G	.300	7.62	.000	0.00	.300	7.62	.200	5.08	.000	0.00	.200	5.08
H	.450	11.43	.000	0.00	.450	11.43	.500	12.70	.000	0.00	.500	12.70
J	.450	11.43	.000	0.00	.450	11.43	.400	10.16	.000	0.00	.400	10.16
K	.650	16.51	.000	0.00	.650	16.51	.550	13.97	.000	0.00	.550	13.97
L	.550	13.97	.000	0.00	.550	13.97	.600	15.24	.000	0.00	.600	15.24
M	.550	13.97	.000	0.00	.550	13.97	.600	15.24	.000	0.00	.600	15.24
N	.700	17.78	.000	0.00	.700	17.78	.475	12.06	.000	0.00	.475	12.06