

MICRO-CRIMP RECTANGULAR CONNECTORS

Series 790 High-Density

SERIES™
790
HD

790-044

PCB Plug, Straight Tails

- ◆ Straight PCB termination
- ◆ Socket contacts



790-044 plug has straight PC tails for thru-hole printed circuit board termination. Contacts are sealed with epoxy. Machined aluminum shell has integral standoff and threaded holes for attachment to PC board. Optional gold-plated EMI spring. Available in forty insert arrangements with up to 102 contacts. Contact sizes include high-density #23 contacts on .075 inch (1.9mm) centers, #16 contacts, #12 contacts, and #8 contacts.

- Aerospace-grade microminiature connector with M39029-type straight PCB tail contacts
- Epoxy sealed
- 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			
M-4P4				4

HOW TO ORDER

Sample Part Number		790-044S	H-66	M	E	P	A
Basic Part Number	790-044S	PCB Plug, Straight Tails, Socket Contacts					
Shell Size-Insert Arr.	See <i>“Insert Arrangements”</i> Table						
Shell Finish	<u>M Electroless Nickel</u>						
	<u>MT Nickel / PTFE</u>						
	<u>NF Olive Drab Cadmium</u>						
	<u>TZ Tin-Zinc</u>						
	<u>ZR Black Zinc-Nickel</u>						
EMI Spring	<u>E EMI Spring <i>Shell finishes M and MT only</i></u>						
	N No EMI Spring						
Jackposts	<u>N No Jackposts</u>						
	P Jackposts						
PC Tail Length	<u>A .125 inch (3.2mm)</u>						
	<u>B .250 inch (6.4mm)</u>						
	<u>C .375 inch (9.5mm)</u>						

JACKPOST OPTIONS

N No Jackposts Connector has blind threaded holes	P Jackposts
---	-------------------------------

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

- Socket Contacts: Copper alloy, gold over nickel finish. Stainless steel hood
- Shell: Aluminum
- Insulator: High performance thermoplastic
- EMI spring: Stainless steel, gold plated
- Encapsulant: Epoxy
- Hardware: Stainless steel

MICRO-CRIMP RECTANGULAR CONNECTORS

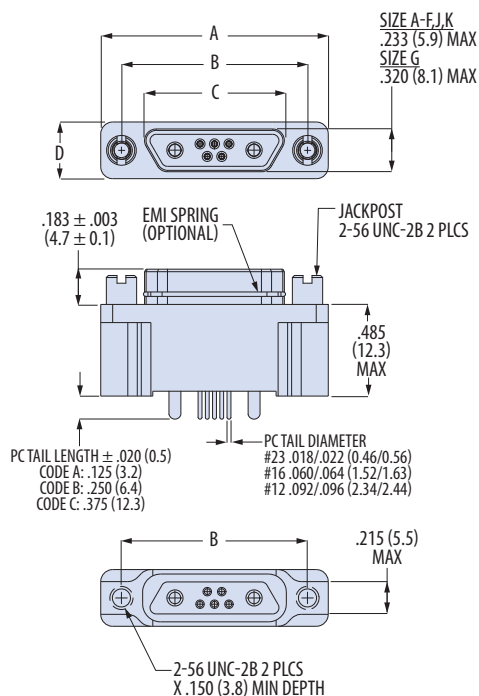
Series 790 High-Density



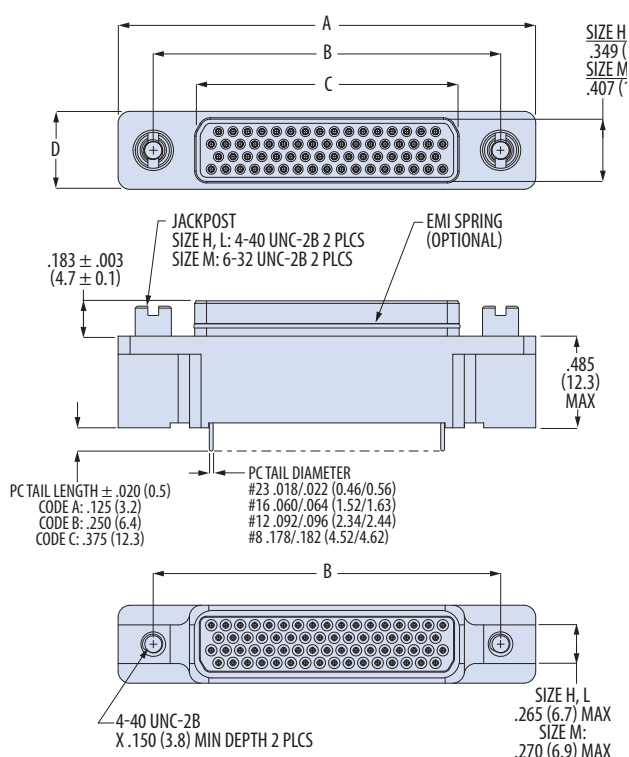
790-044

PCB Plug, Straight Tails

- ◆ Straight PCB termination
- ◆ Socket contacts



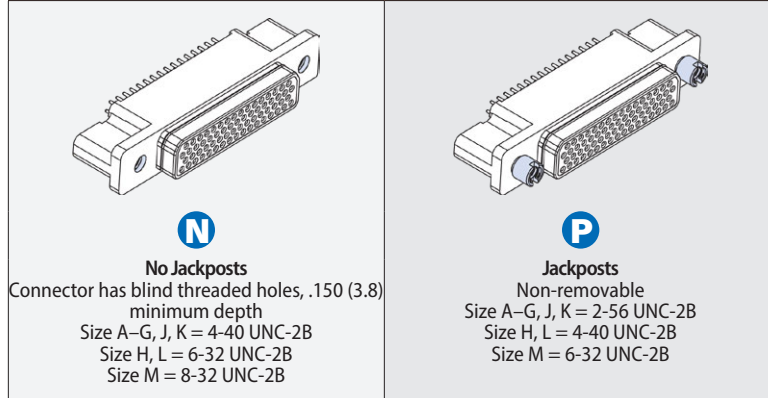
SHELL SIZE A-G, J, K



SHELL SIZE H, L, M

Shell Size	A Max		B ± .005 (0.1)		C Max		D Max	
	in	mm	in	mm	in	mm	in	mm
A	.785	19.9	.565	14.4	.335	8.5	.308	7.8
B	.935	23.7	.715	18.2	.485	12.3	.308	7.8
C	1.085	27.6	.865	22.0	.635	16.1	.308	7.8
D	1.185	30.1	.965	24.5	.735	18.7	.308	7.8
E	1.335	33.9	1.115	28.3	.885	22.5	.308	7.8
F	1.485	37.7	1.265	32.1	1.035	26.3	.308	7.8
G	1.435	36.4	1.215	30.9	1.010	25.7	.395	10.0
H	2.175	55.2	1.800	45.7	1.385	35.2	.410	10.4
J	1.845	46.9	1.615	41.0	1.390	35.3	.308	7.8
K	2.240	56.9	2.015	51.2	1.795	45.6	.308	7.8
L	2.420	61.5	2.036	51.7	1.623	41.2	.410	10.4
M	2.575	65.4	2.200	55.9	1.675	42.5	.470	11.9

JACKPOST OPTIONS



Application Note

PCB Footprints

See Section **G** for PC board layouts.

Straight tails: pages **G-1** – **G-9**

90° tails: pages **G-10** – **G-20**



Application Note

Panel Mounting

For panel mounting, specify connector without jackposts. Use rear panel mount jackpost **799-119**. See page **F-20** for jackpost ordering information and panel cutout dimensions.

MICRO-CRIMP RECTANGULAR CONNECTORS

Series 790 High-Density

SERIES™
790
HD

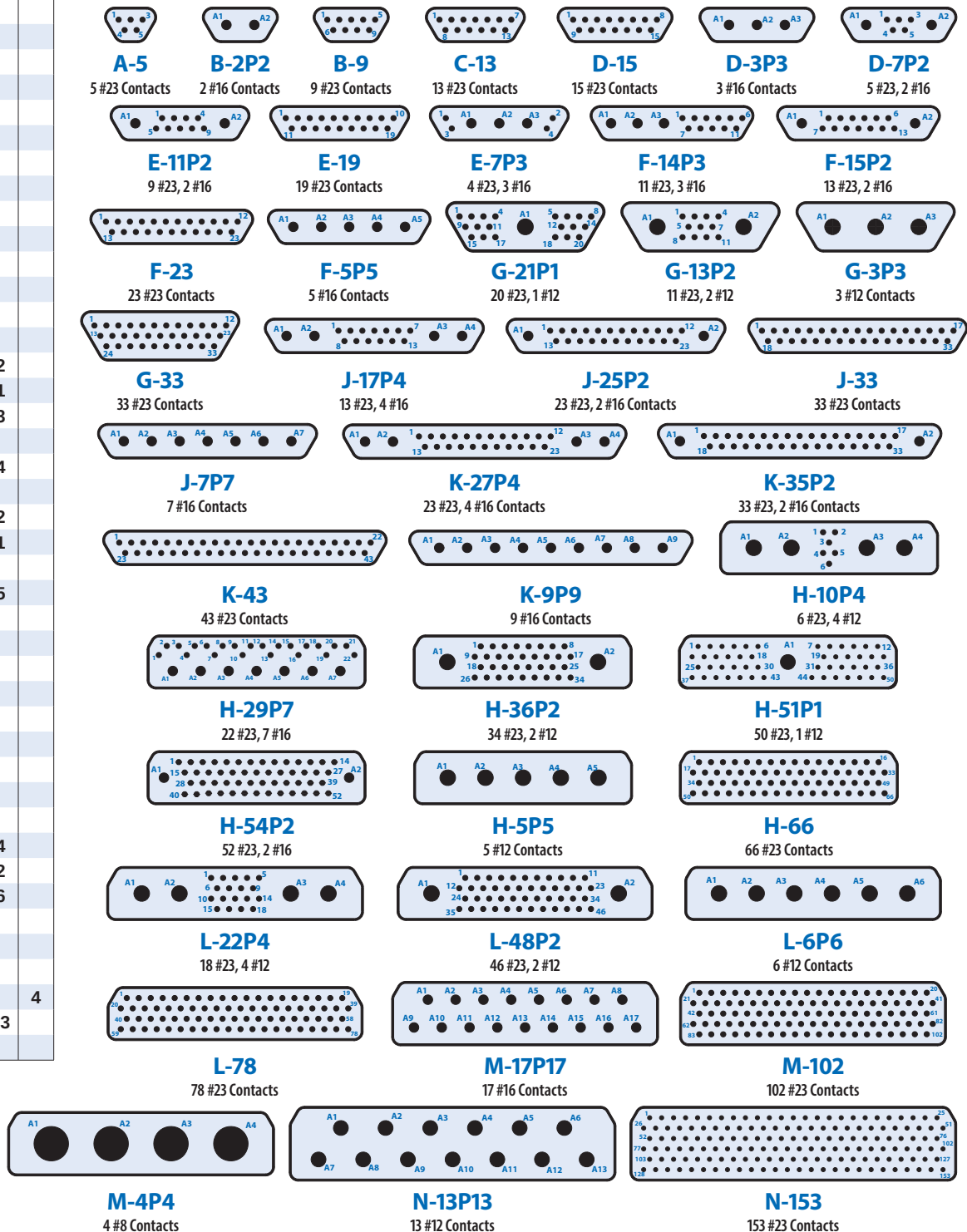
Insert Arrangements

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.



MICRO-CRIMP RECTANGULAR CONNECTORS

Series 790 High-Density



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

Series 790 High-Density



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

SERIES 79 MICRO-CRIMP RECTANGULAR CONNECTORS

PCB Footprints for Series 790 and 791



Straight PCB Footprints for Series 790 and 791 Connectors

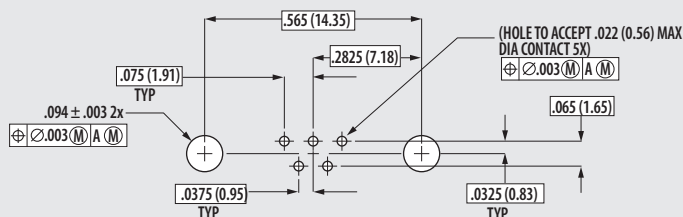
PCB FOOTPRINTS FOR SERIES 790 AND 791 CONNECTORS WITH STRAIGHT PC TAILS



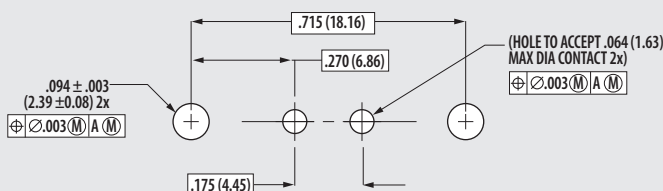
PCB hole patterns are shown for the **component mounting side** of the circuit board.
Circuit board drill patterns for Series 790 and 791 connectors with straight tails: 790-028, 790-029, 790-043, 790-044, 791-013, 791-014, 791-021, 791-033



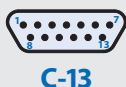
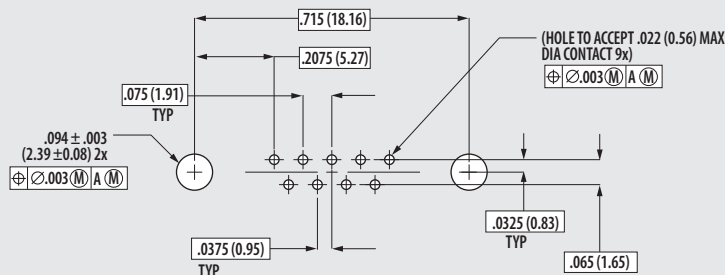
A-5
Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



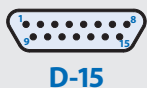
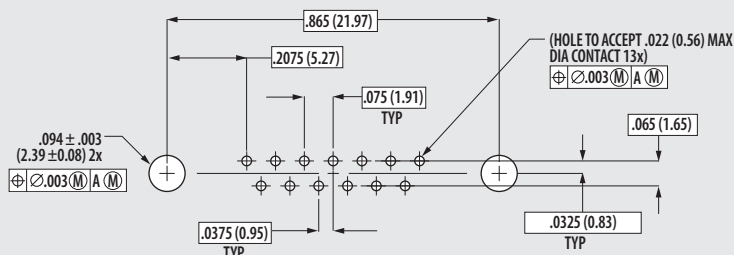
B-2P2
Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



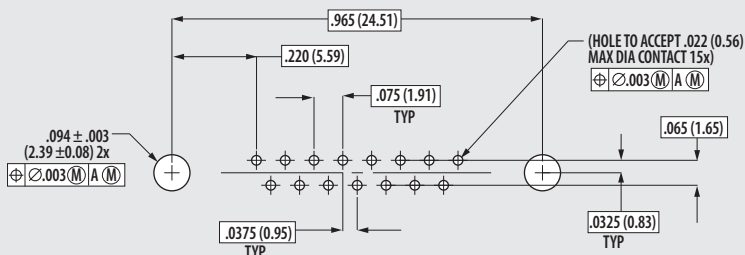
B-9
Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



C-13
Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



D-15
Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



SERIES 79 MICRO-CRIMP RECTANGULAR CONNECTORS

PCB Footprints for Series 790 and 791

SERIES
79
TM

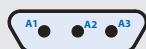
Straight PCB Footprints for Series 790 and 791 Connectors

PCB FOOTPRINTS FOR SERIES 790 AND 791 CONNECTORS WITH STRAIGHT PC TAILS



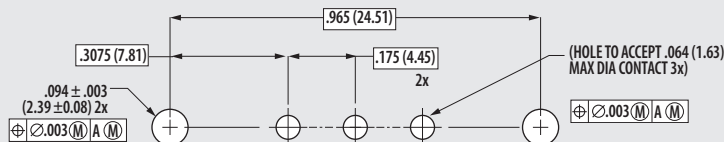
PCB hole patterns are shown for the *component mounting side* of the circuit board.

Circuit board drill patterns for Series 790 and 791 connectors with straight tails: 790-028, 790-029, 790-043, 790-044, 791-013, 791-014, 791-021, 791-033



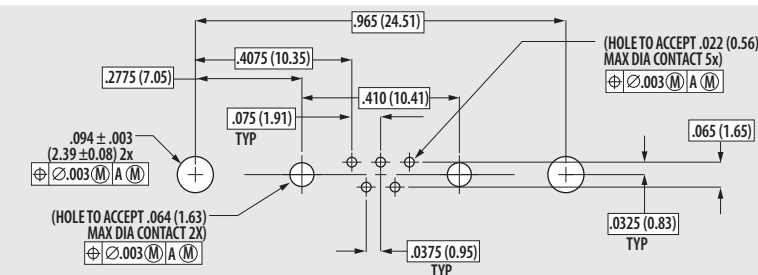
D-3P3

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



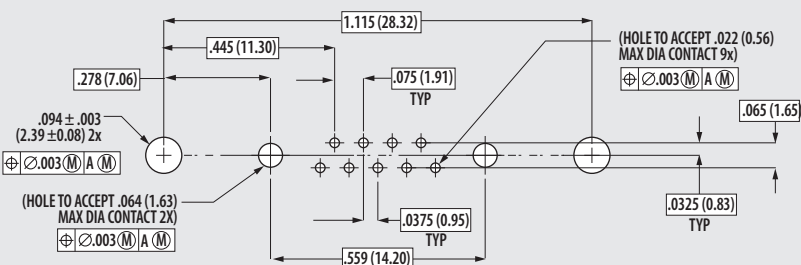
D-7P2

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



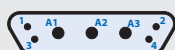
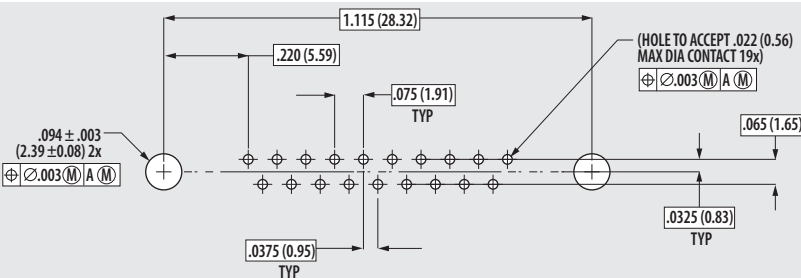
E-11P2

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



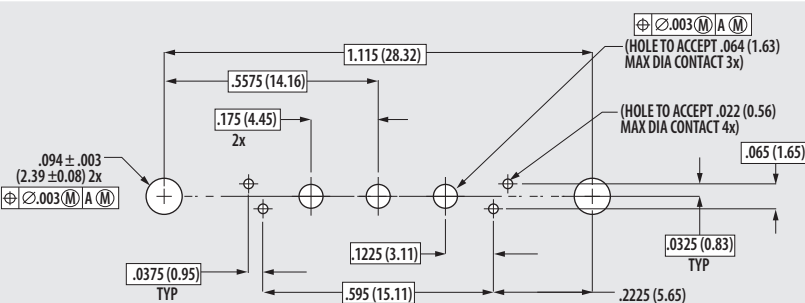
E-19

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



E-7P3

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



SERIES 79 MICRO-CRIMP RECTANGULAR CONNECTORS

PCB Footprints for Series 790 and 791



Straight PCB Footprints for Series 790 and 791 Connectors

PCB FOOTPRINTS FOR SERIES 790 AND 791 CONNECTORS WITH STRAIGHT PC TAILS



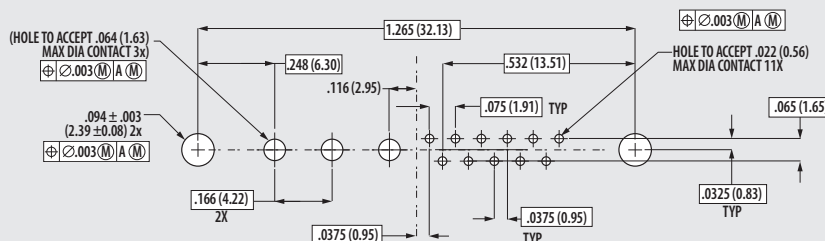
PCB hole patterns are shown for the *component mounting side* of the circuit board.
Circuit board drill patterns for Series 790 and 791 connectors with straight tails: 790-028, 790-029, 790-043, 790-044, 791-013, 791-014, 791-021, 791-033



F-14P3

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.

Non-symmetrical arrangement
Pattern must be reversed for use with plug (socket) connector.

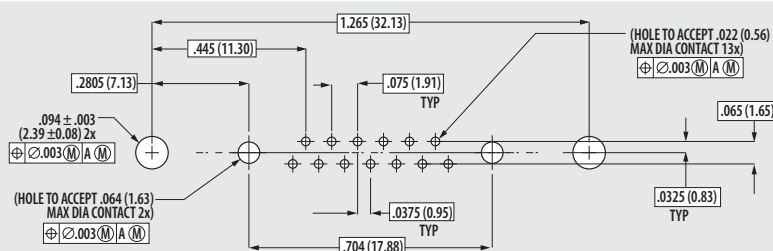


PCB HOLE PATTERN IS FOR PIN CONNECTOR. SOCKET CONNECTOR IS MIRRORED.



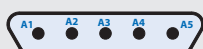
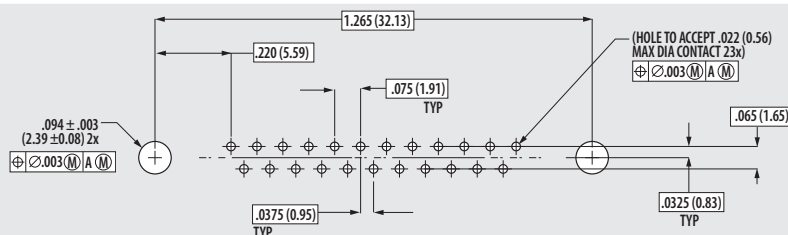
F-15P2

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



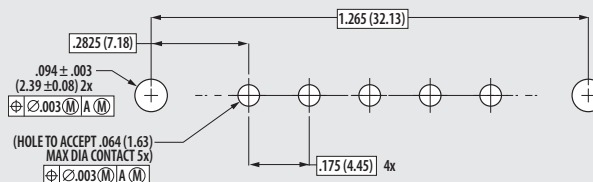
F-23

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



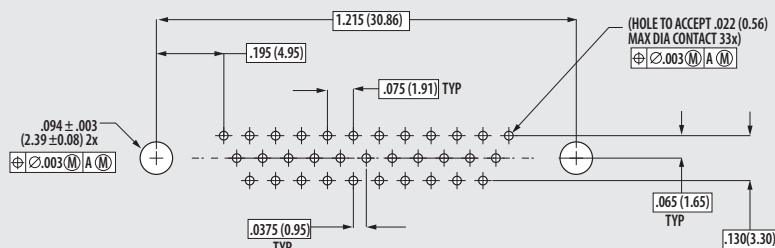
F-5P5

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



G-33

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



PCB FOOTPRINTS FOR SERIES 790, 791

SERIES 79 MICRO-CRIMP RECTANGULAR CONNECTORS

PCB Footprints for Series 790 and 791

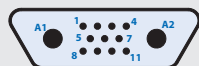
SERIES
79
TM

Straight PCB Footprints for Series 790 and 791 Connectors

PCB FOOTPRINTS FOR SERIES 790 AND 791 CONNECTORS WITH STRAIGHT PC TAILS

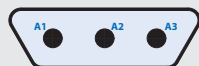
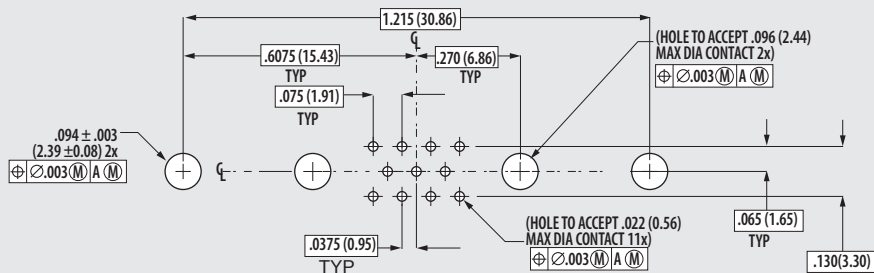


PCB hole patterns are shown for the *component mounting side* of the circuit board.
Circuit board drill patterns for Series 790 and 791 connectors with straight tails:
790-028, 790-029, 790-043, 790-044, 791-013, 791-014, 791-021, 791-033



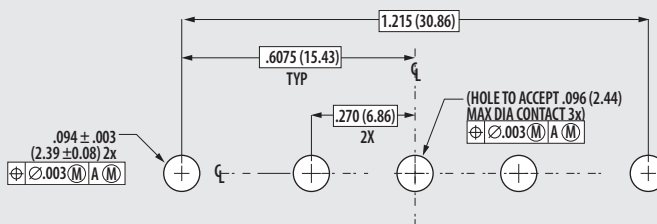
G-13P2

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



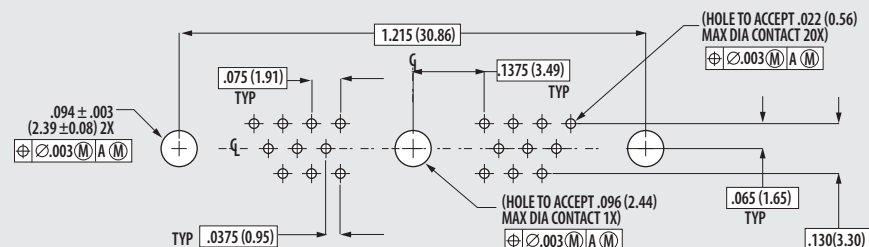
G-3P3

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



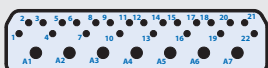
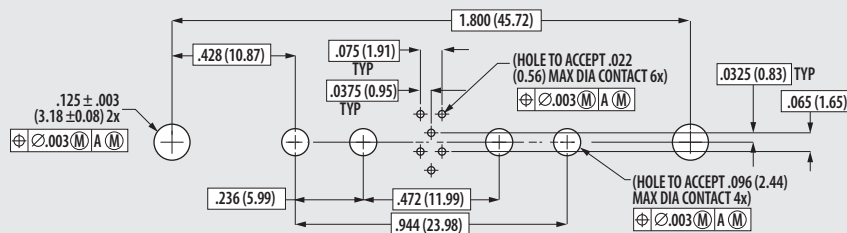
G-21P1

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



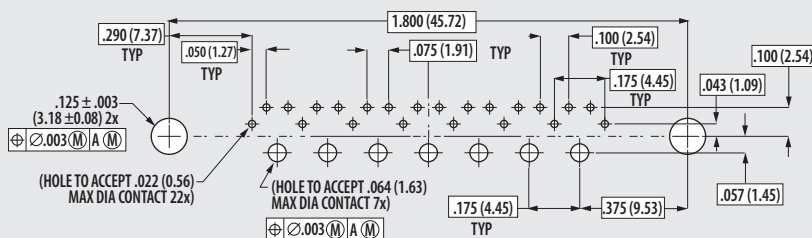
H-10P4

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



H-29P7

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



SERIES 79 MICRO-CRIMP RECTANGULAR CONNECTORS

PCB Footprints for Series 790 and 791



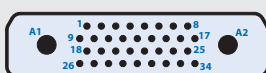
Straight PCB Footprints for Series 790 and 791 Connectors

PCB FOOTPRINTS FOR SERIES 790 AND 791 CONNECTORS WITH STRAIGHT PC TAILS



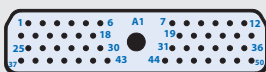
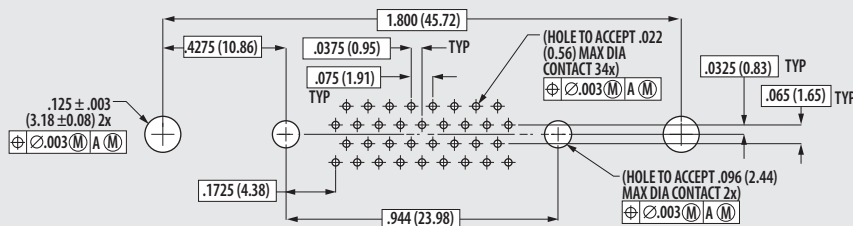
PCB hole patterns are shown for the *component mounting side* of the circuit board.

Circuit board drill patterns for Series 790 and 791 connectors with straight tails: 790-028, 790-029, 790-043, 790-044, 791-013, 791-014, 791-021, 791-033



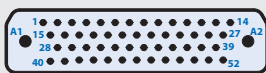
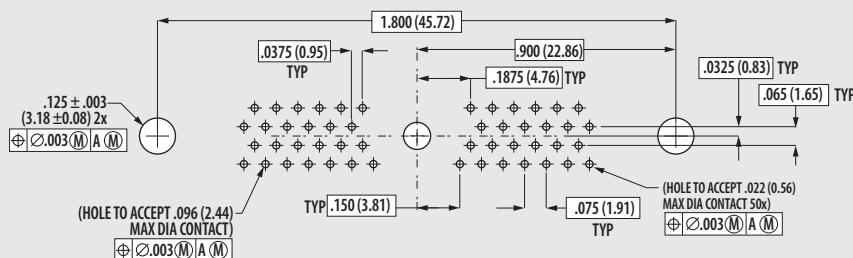
H-36P2

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



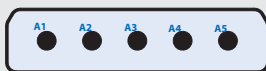
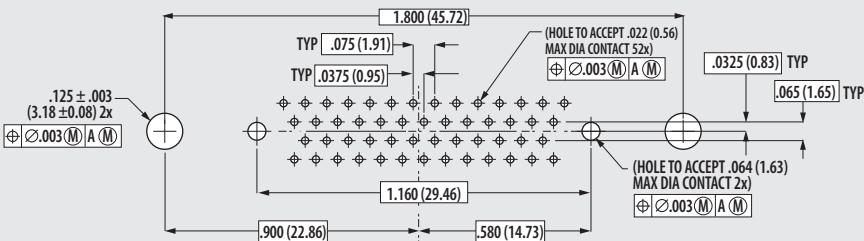
H-51P1

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



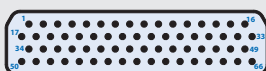
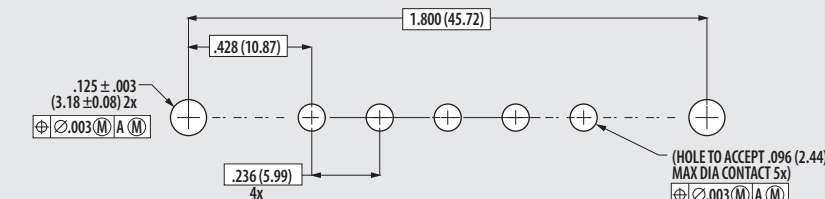
H-54P2

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



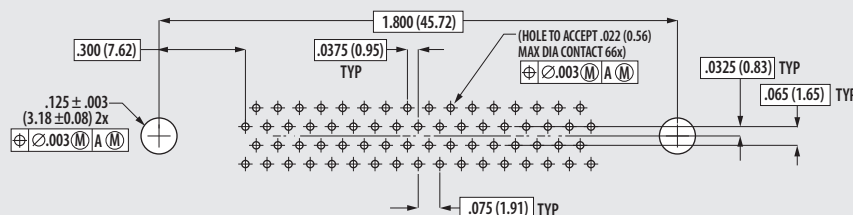
H-5P5

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



H-66

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



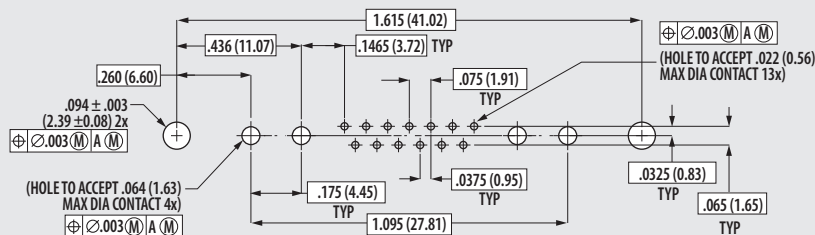
PCB FOOTPRINTS FOR SERIES 790, 791

PCB FOOTPRINTS FOR SERIES 790, 791

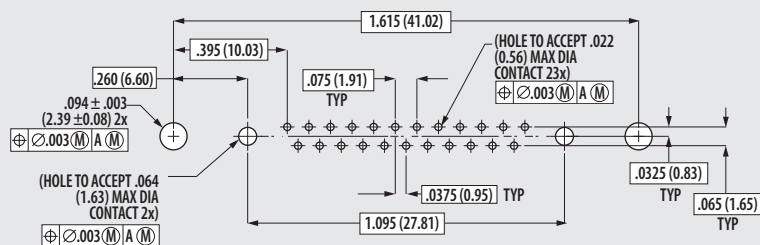
Circuit board drill patterns for Series 790 and 791 connectors with straight tails: 790-028, 790-029, 790-043, 790-044, 791-013, 791-014, 791-021, 791-033



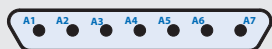
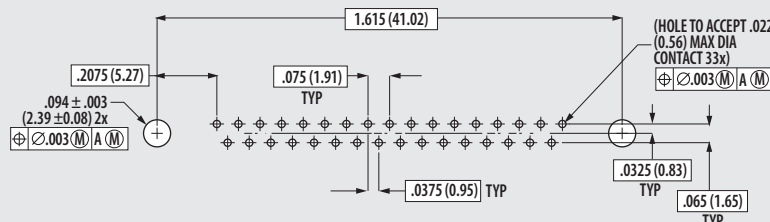
Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



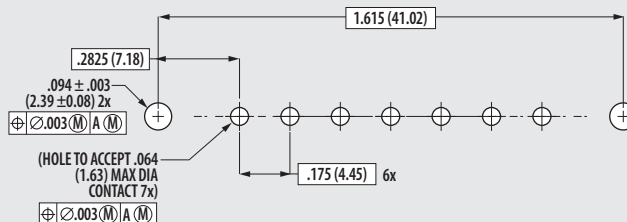
Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



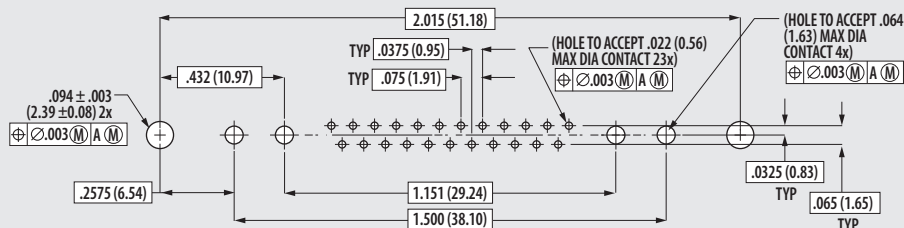
Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



SERIES 79 MICRO-CRIMP RECTANGULAR CONNECTORS

PCB Footprints for Series 790 and 791



Straight PCB Footprints for Series 790 and 791 Connectors

PCB FOOTPRINTS FOR SERIES 790 AND 791 CONNECTORS WITH STRAIGHT PC TAILS

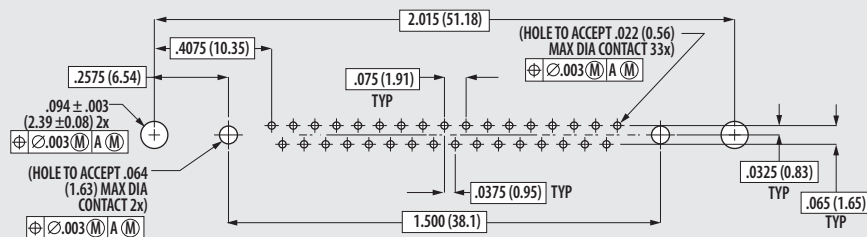


PCB hole patterns are shown for the *component mounting side* of the circuit board.
Circuit board drill patterns for Series 790 and 791 connectors with straight tails: 790-028, 790-029, 790-043, 790-044, 791-013, 791-014, 791-021, 791-033



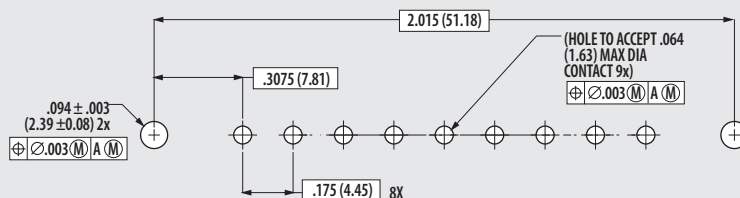
K-35P2

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



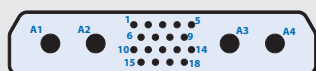
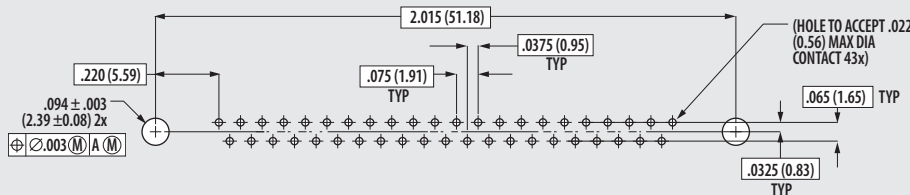
K-43

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



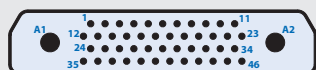
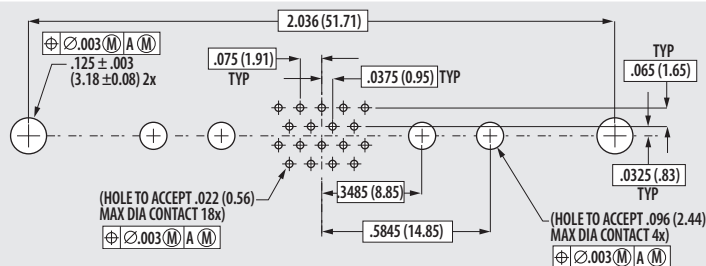
K-9P9

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



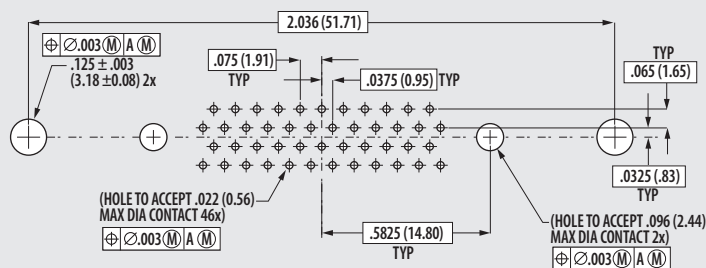
L-22P4

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



L-48P2

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



SERIES 79 MICRO-CRIMP RECTANGULAR CONNECTORS

PCB Footprints for Series 790 and 791

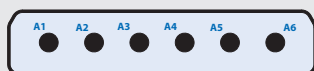
SERIES
79
TM

Straight PCB Footprints for Series 790 and 791 Connectors

PCB FOOTPRINTS FOR SERIES 790 AND 791 CONNECTORS WITH STRAIGHT PC TAILS

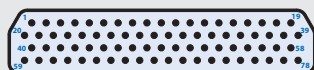
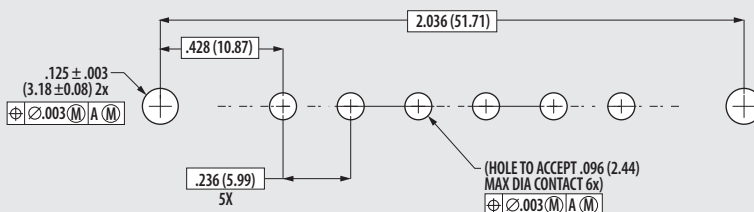


PCB hole patterns are shown for the *component mounting side* of the circuit board.
Circuit board drill patterns for Series 790 and 791 connectors with straight tails: 790-028, 790-029, 790-043, 790-044, 791-013, 791-014, 791-021, 791-033



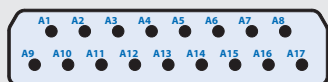
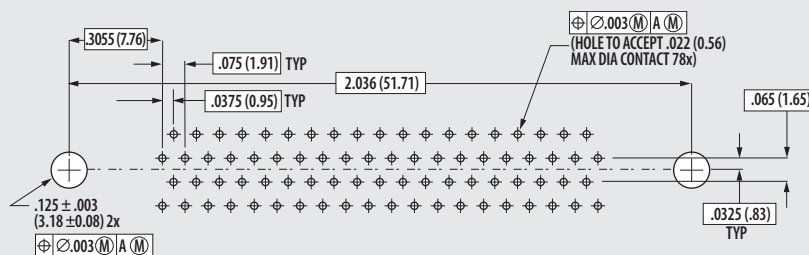
L-6P6

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



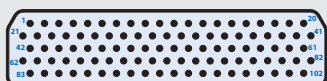
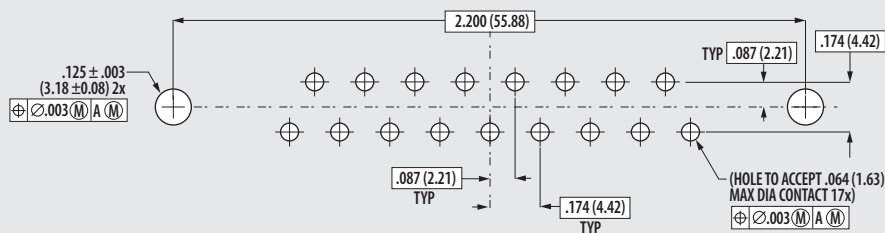
L-78

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



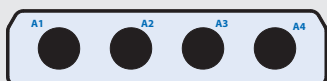
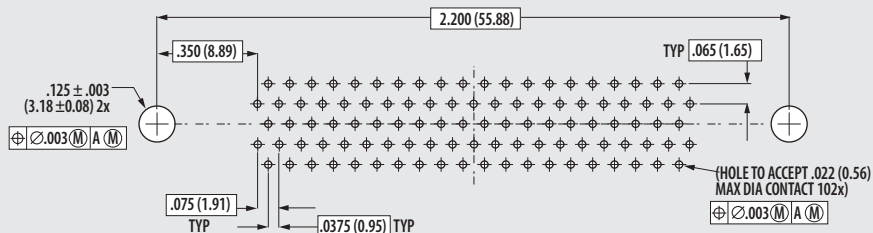
M-17P17

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



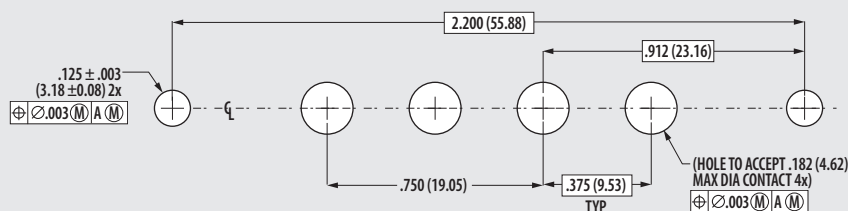
M-102

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



M-4P4

Contact numbers are mating face of pin connector.
Socket connector contact numbers are reversed.



SERIES 79 MICRO-CRIMP RECTANGULAR CONNECTORS

PCB Footprints for Series 790 and 791

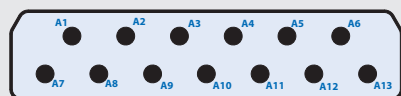


Straight PCB Footprints for Series 790 and 791 Connectors

PCB FOOTPRINTS FOR SERIES 790 AND 791 CONNECTORS WITH STRAIGHT PC TAILS

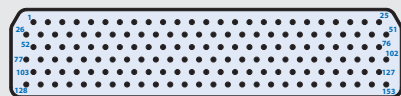
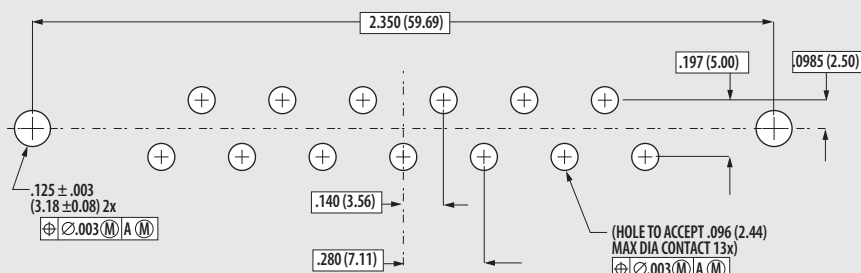


PCB hole patterns are shown for the *component mounting side* of the circuit board.
Circuit board drill patterns for Series 790 and 791 connectors with straight tails: 790-028, 790-029, 790-043, 790-044, 791-013, 791-014, 791-021, 791-033



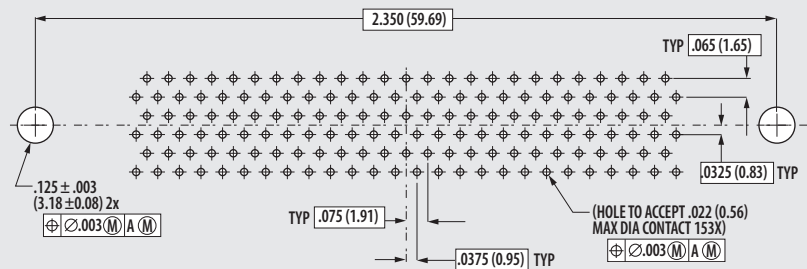
N-13P13

Contact numbers are mating face of pin connector. Socket connector contact numbers are reversed.



N-153

Contact numbers are mating face of pin connector. Socket connector contact numbers are reversed.



PCB FOOTPRINTS FOR SERIES 790, 791