



MIL-DTL-55302 QPL'D 4 and 5 Row Printed Circuit Board Connectors

48, 68, 80, 96, 100, 108, 120, 125, 128, 136, 140, 160, 184, 196, 200, 208, 228, 230, 240, 264, 300, 320, 330, 352, 390, 392, and 490 Contacts

- 4 row and 5 row printed circuit board connectors
- 0.100 x 0.100 [2.54 x 2.54] grid spacing
- Straight dip, right angle solder, crimp, solder cup, and Wire Wrap® terminations
- 0.024 [0.60] diameter pins/sockets rated at 4 Amps
- Average insertion force of 1 ounce per contact
- Contacts removable from wiring side (front release, rear removable)
- Alignment and keying provided by the end guides - 36 combinations (user changeable in most cases)

General Specifications

Number Contacts	48, 68, 80, 96, 100, 108, 120, 125, 128, 136, 140, 160, 184, 196, 200, 208, 228, 230, 240, 264, 300, 320, 330, 352, 390, 392 and 490
Contact Diameter	0.024 [0.60]
Current Rating	4 Amps at 30° C Rise
Contact Resistance	< 5 milliohms
Extraction Force	0.3 to 2.0 oz. per contact
Contact Life Cycles	100,000
Breakdown Voltage Between Contacts	> 1400V RMS
Dielectric Withstanding Voltage	> 1050V RMS
Insulation Resistance	> 10 ⁶ Megohms at 500 VDC
Temperature Rating	-55° C to 125° C
Insulator Material	Diallyl-phthalate
Contact Material Plating	Beryllium copper wires and brass body Gold over nickel
Guides Hardware Material Plating	Nickel plated Brass and passivated stainless steel

Plating Reference

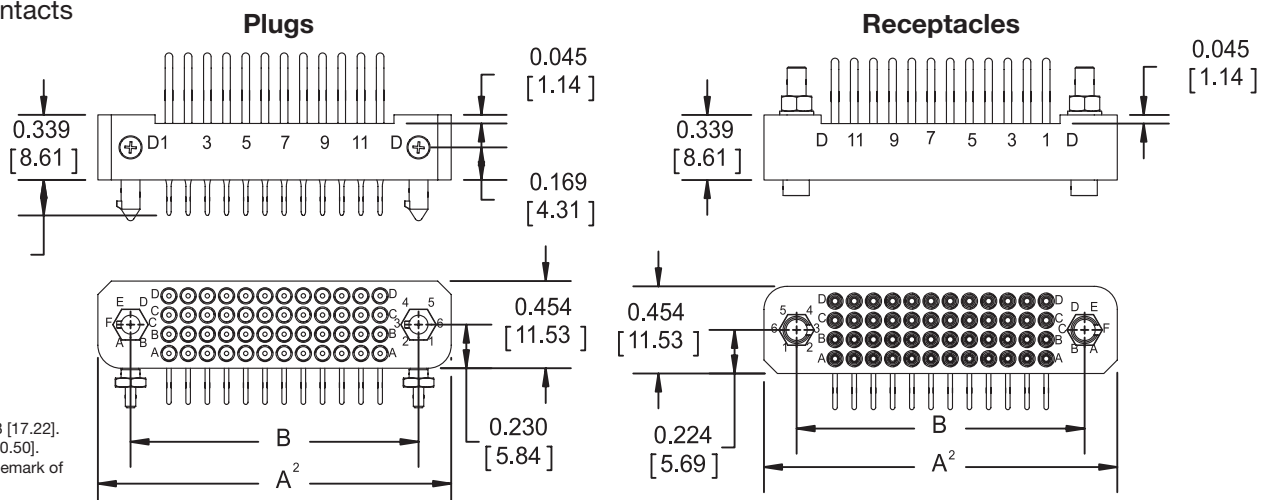
Male Pins:	T = 10µin gold (min) over nickel TH = 50µin gold (min) over nickel
Female Sockets:	TAH = 50µin gold (min) over nickel on mating surface, gold flash over nickel on termination

Number of Contacts	A	B
48	1.840 [46.74]	1.500 [38.10]
68	2.340 [59.44]	2.000 [50.80]
80	2.640 [67.06]	2.300 [58.42]
96	3.040 [77.22]	2.700 [68.58]
100	3.140 [79.76]	2.80 [71.12]
108	3.340 [84.84]	3.000 [76.20]
120	3.640 [92.46]	3.300 [83.82]

Number of Contacts	A	B
128	3.840 [97.54]	3.500 [88.90]
136	4.040 [102.62]	3.700 [93.98]
160	4.640 [117.86]	4.300 [109.22]
184	5.240 [133.10]	4.900 [124.46]
196	5.540 [140.72]	5.200 [132.08]
228	6.340 [161.04]	6.000 [152.40]

Connector Dimensions

48 to 228 Contacts



NOTES:

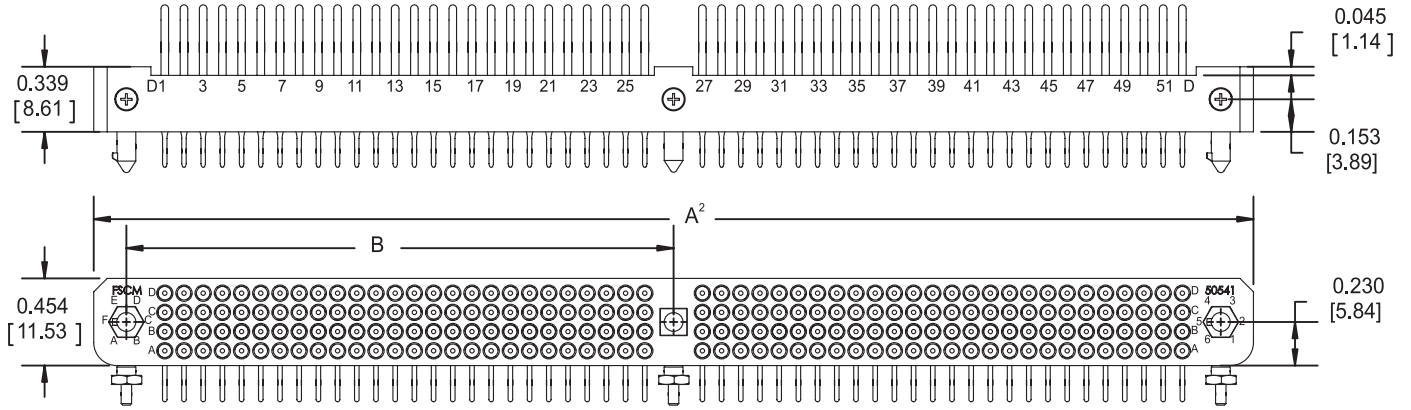
- 1) Mated length 0.678 [17.22].
- 2) Tolerance ± 0.020 [0.50].
- 3) Wire Wrap is a trademark of Gardner Denver.

Dimensions are in inches [mm]

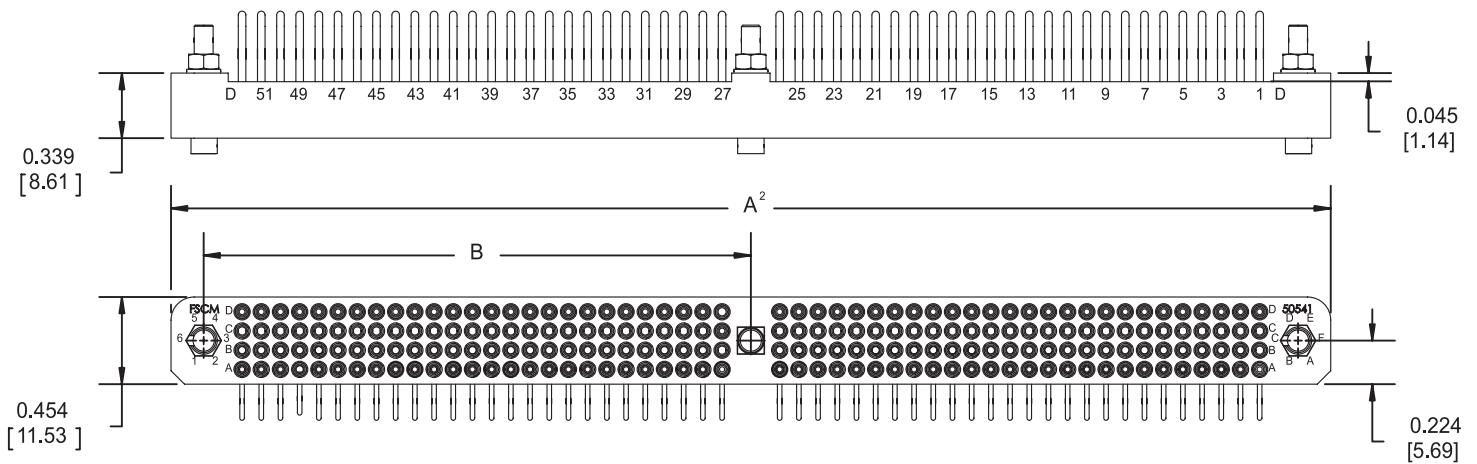
4 Row Connectors

208, 240, 264, 352 and 392 Contacts

Plugs



Receptacles



Number of Contacts	A	B
208	6.040 [153.42]	2.850 [72.39]
240	6.840 [173.74]	3.250 [82.55]
264	7.438 [188.92]	3.550 [90.17]
352	9.640 [244.86]	4.650 [118.11]
392	10.640 [270.26]	5.150 [130.81]

NOTES:

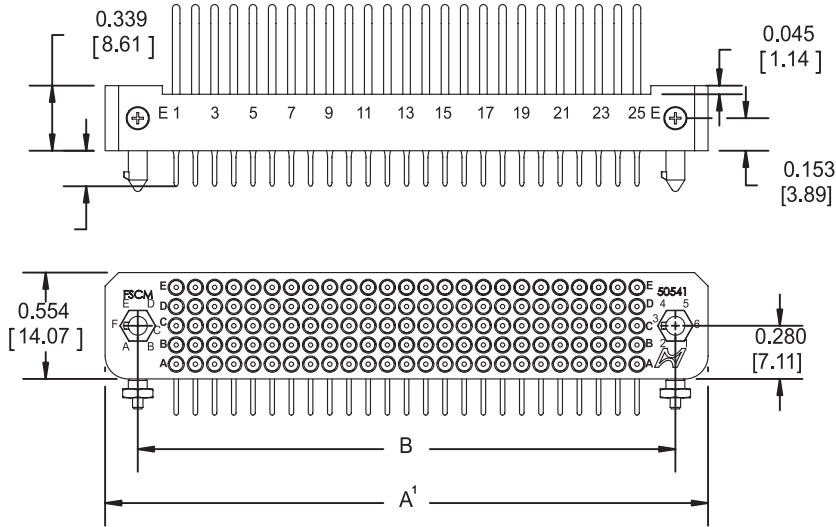
- 1) For insulators longer than 7.00 [178.00], a mother board-daughter board configuration is required.
- 2) Tolerance ± 0.020 [0.50].
- 3) Mated length 0.678 [17.22].

Dimensions are in inches [mm]

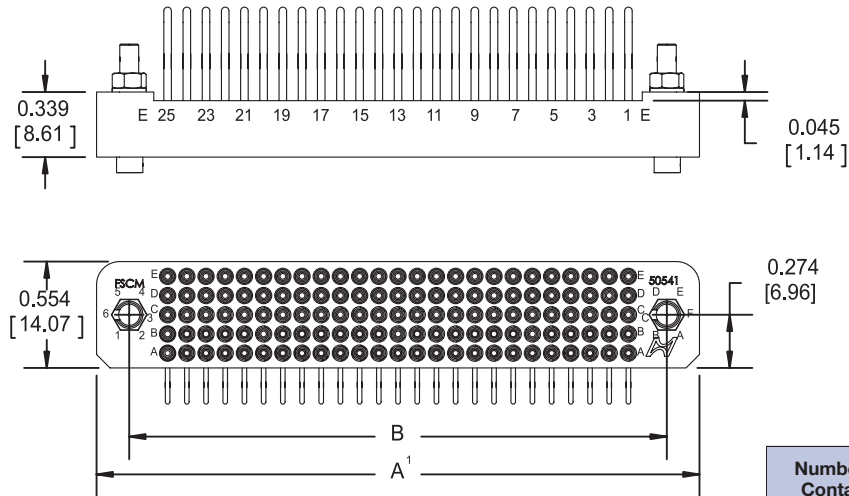
5 Row Connectors

125, 140, 160, 200, 230 and 240 Contacts

Plugs



Receptacles



Number of Contacts	A	B
125	3.140 [79.76]	2.800 [71.12]
140	3.440 [87.38]	3.100 [78.74]
160	3.840 [97.54]	3.500 [88.92]
200	4.640 [117.86]	4.300 [109.22]
230	5.240 [133.10]	4.900 [124.46]
240	5.440 [138.10]	5.100 [129.54]

NOTES:

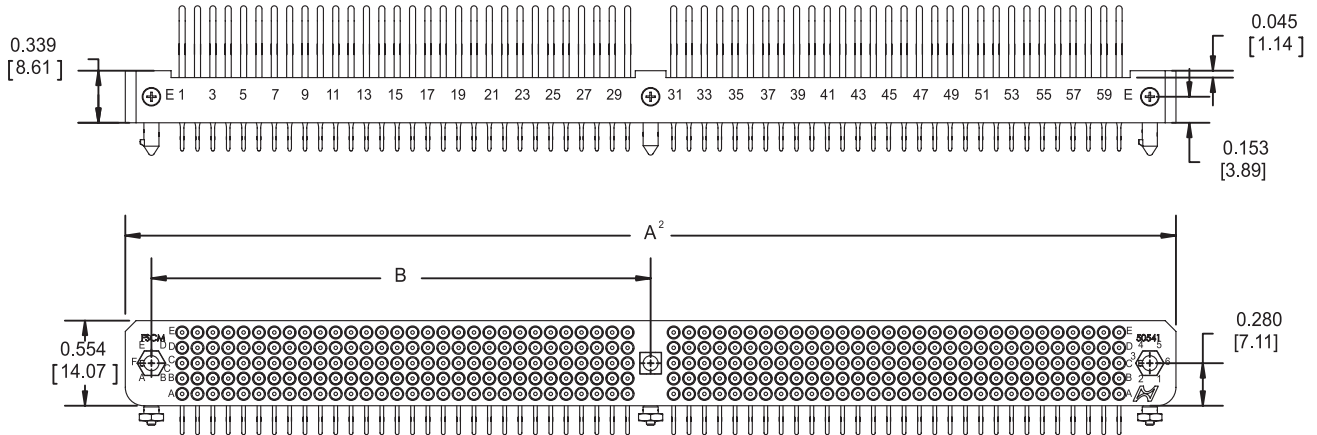
- 1) Tolerance ± 0.020 [0.50].
- 2) Mated length 0.678 [17.22].

Dimensions are in inches [mm]

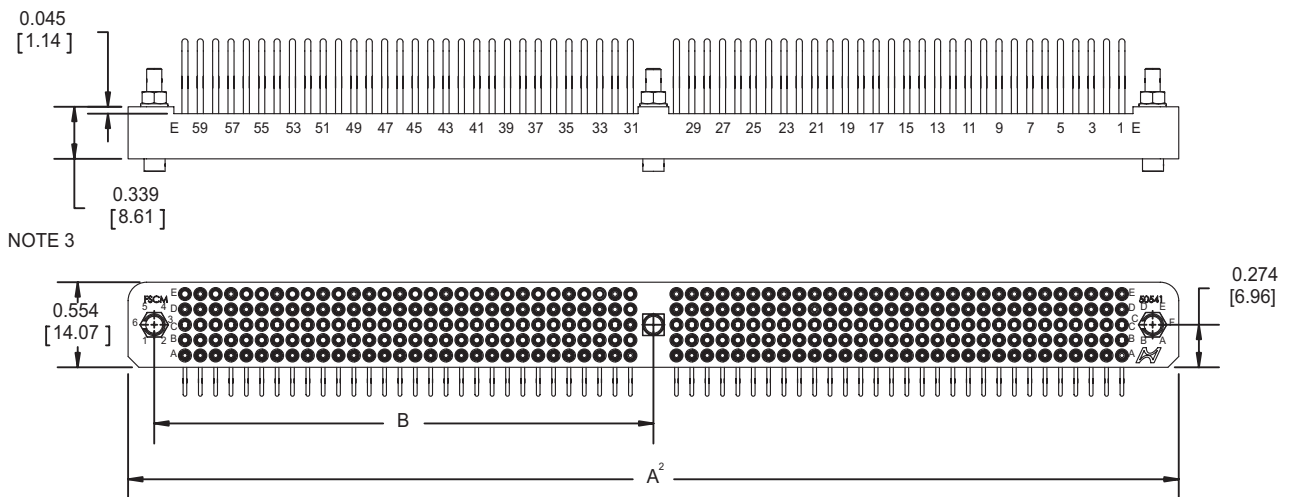
5 Row Connectors

300, 320, 330, 390 and 490 Contacts

Plugs



Receptacles



NOTE 3

Number of Contacts	A	B
300	6.840 [173.74]	3.250 [82.55]
320	7.240 [183.90]	3.450 [87.63]
330	7.440 [188.98]	3.550 [90.17]
390	8.640 [219.46]	4.150 [105.41]
490	10.640 [270.26]	5.150 [130.81]

NOTES:

- 1) For insulators longer than 7.00 [178.00], a mother board-daughter board configuration is required.
- 2) Tolerance ± 0.020 [0.50].
- 3) Mated length 0.678 [17.22].

Dimensions are in inches [mm]

Terminal Styles

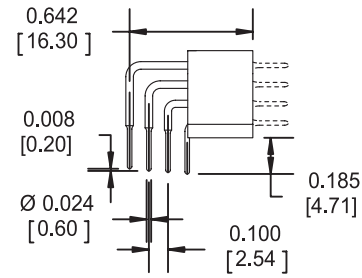
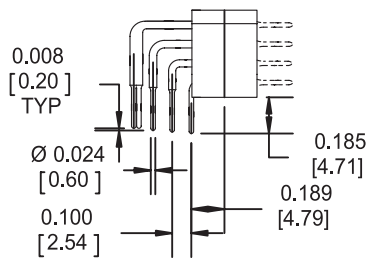
Ref.

Plugs Female/Male

Receptacles Female/Male

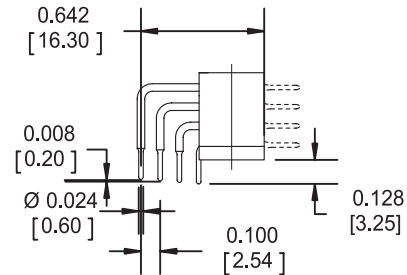
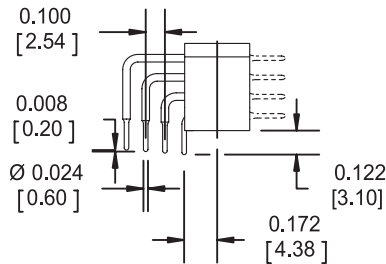
B

• For 1/8" PC Board

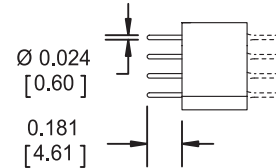
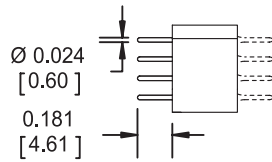


C

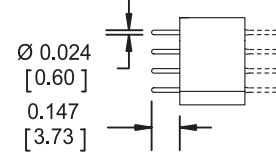
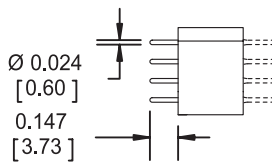
• For 1/16" PC Board



D

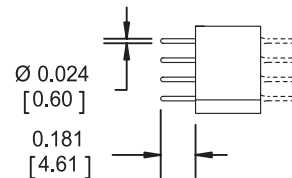
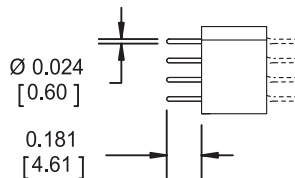


DD*



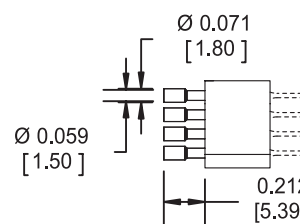
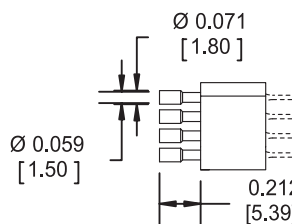
FD*

Front Removable Straight Dip Solder Contacts



H2

• Accepts 22 and 26 AWG Wire
• Stripped Back 0.146 [3.70]



NOTES:

- 1) Crimp contacts will be shipped unmounted. When inserting contacts in the blocks/insulators be sure that the rear of the contact body is aligned with the flats in the insulator.
- 2) All tails are ± 0.015 [0.40] long.

* Consult factory for availability.

Ref.	Terminal Style
B	Right angle dip solder (1/8" board)
C	Right angle dip solder (1/16" board)
D/DD/FD	Straight dip solder
H2 ¹	Double crimp (for insulation)

Dimensions are in inches [mm]

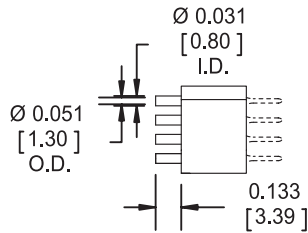
Terminal Styles

Ref.

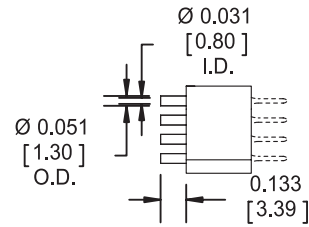
R

- Accepts 22, 24, and 26 AWG Wire
- Stripped Back 0.173 [4.40]

Plugs
Female/Male

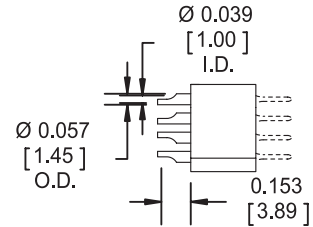
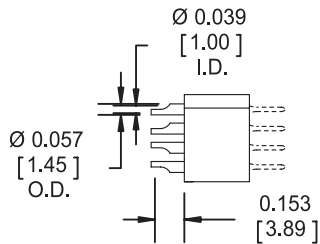


Receptacles
Female/Male



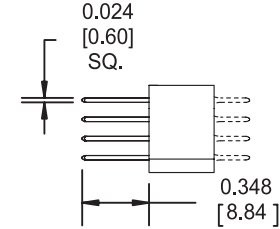
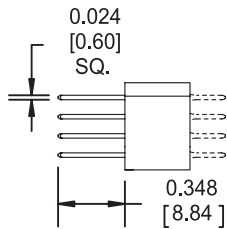
S

- Accepts up to 22 AWG Wire
- Stripped Back 0.126 [3.20]



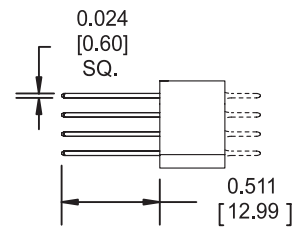
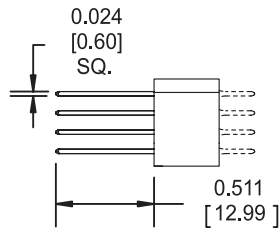
W**

- 2 Wraps 30 and 28 AWG



Y

- 3 Wraps 28 and 30 AWG
- 2 Wraps 24 and 26 AWG



Ref.	Terminal Style
R ²	Crimp
S	Solder cup
W	Wire Wrap ^{®4} (2 wraps)
Y	Wire Wrap ^{®4} (3 wraps)

Plating Reference	
Male Pins:	G = 10µin gold (min) over nickel H = 50µin gold (min) over nickel
Female Sockets:	AH = 50µin gold (min) over nickel on mating surface, gold flash over nickel on termination ANH = 50µin gold (min) over nickel on mating surface, nickel over copper flash on socket body components, gold flash over nickel on termination

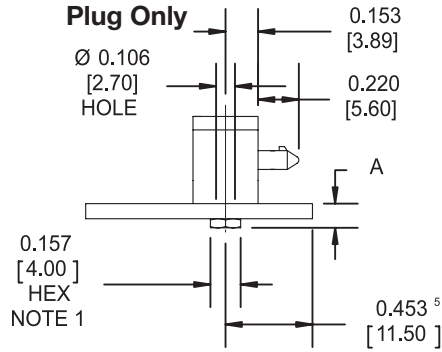
- NOTES:**
- 1) All tails are ± 0.015 [0.40] long.
 - 2) Crimp contacts will be shipped unmounted. When inserting contacts into blocks/insulators be sure that the rear of the contact is aligned with the flats in the insulator.
 - 3) Front removable contacts.
- ** Consult factory

KA Series Replacement Contact Part Numbers			
Ref.	Standard Sockets	Standard Pins	Beryllium Copper Pins
B (row 1)	YSK006-028AH	YPN006-034	YPN006-072H
B (row 2)	YSK006-029AH	YPN006-035	YPN006-075H
B (row 3)	YSK006-030AH	YPN006-036	YPN006-073H
B (row 4)	YSK006-074AH	YPN006-148	—
B (row 5)	YSK006-094AH	YPN006-172	—
C (row 1)	YSK006-013AH	YPN006-023	YPN006-048H
C (row 2)	YSK006-006AH	YPN006-016	YPN006-050H
C (row 3)	YSK006-014AH	YPN006-024	YPN006-077H
C (row 4)	YSK006-090AH	YPN006-159	—
C (row 5)	YSK006-092AH	YPN006-171	—
D	YSK006-005AH	YPN006-015	YPN006-049H
DD	YSK006-096AH	YPN006-106	—
FD ³	YSK006-274AH	YPN006-470	YPN006-487H
H2	YSK006-009AH	YPN006-019	—
R	YSK006-011AH	YPN006-021	—
S	YSK006-010AH	YPN006-020	—
W	YSK006-020AH	YPN006-039	—
Y	YSK006-012AH	YPN006-022	—

Dimensions are in inches [mm]

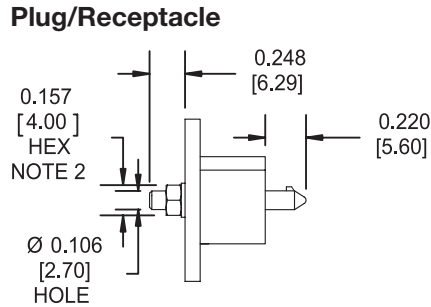
Standard Mounting Styles

10

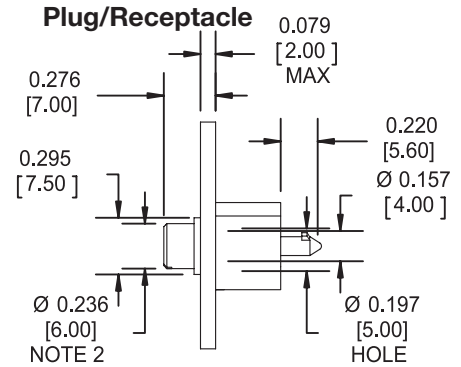


Terminal	Dimension A	
	4 row	5 row
B	0.203 [5.16]	0.232 [5.89]
C	0.164 [4.16]	0.153 [3.89]

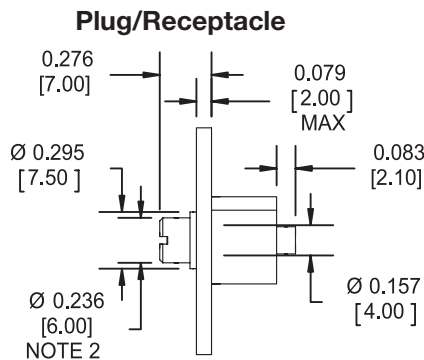
11



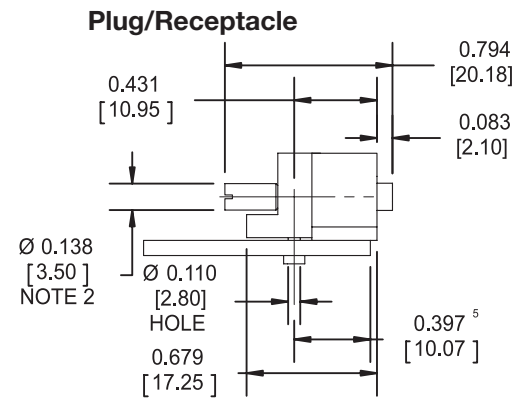
13 Float Mounting



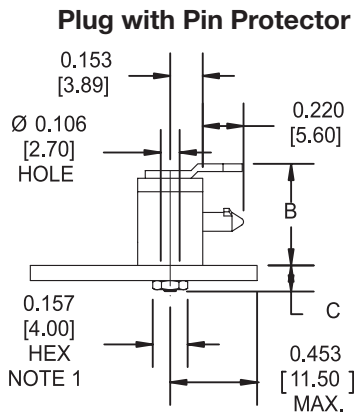
23 Float Mounting



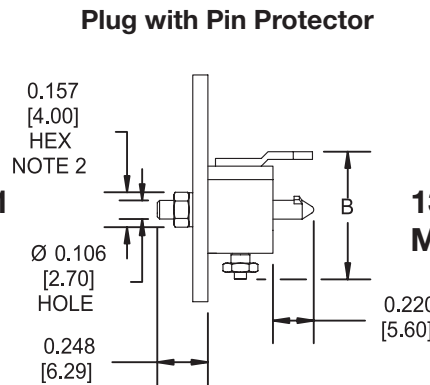
24



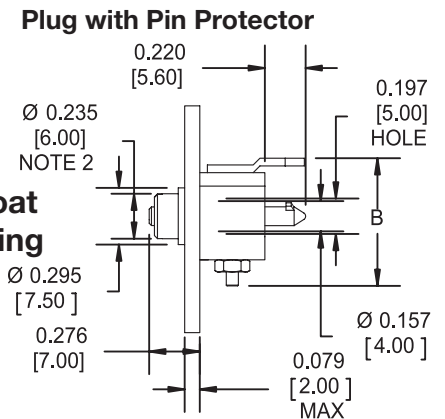
101



111



131 Float Mounting



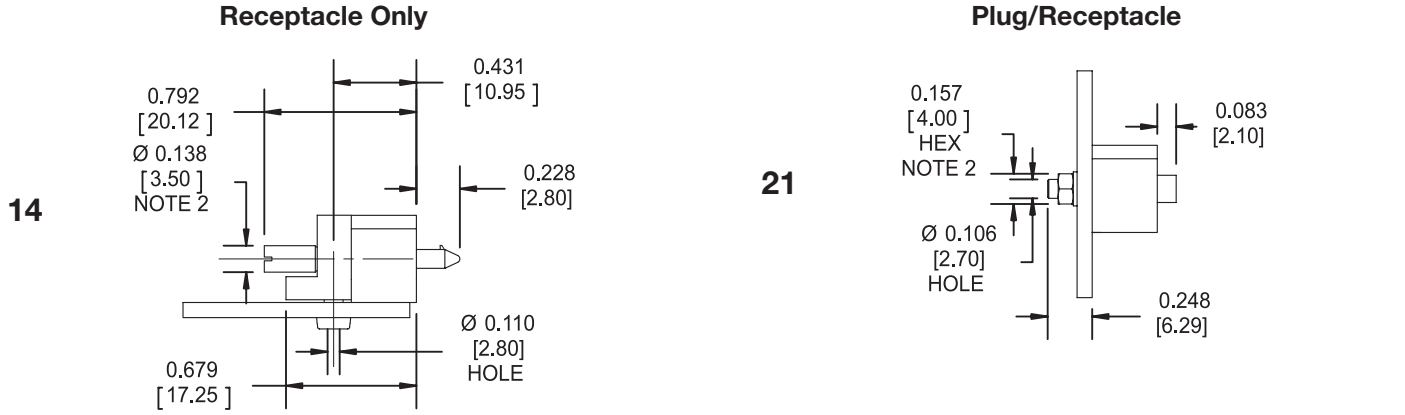
NOTES:

- 1) 15.00 oz. in torque.
- 2) 35.20 oz. in torque.
- 3) The dimensions between the mounting holes are the same as between the guides.
- 4) Mounting bracket is 0.25 [6.35] wide.
- 5) PC board may be extended to 0.453 [11.50] max. for use as a pin protector.

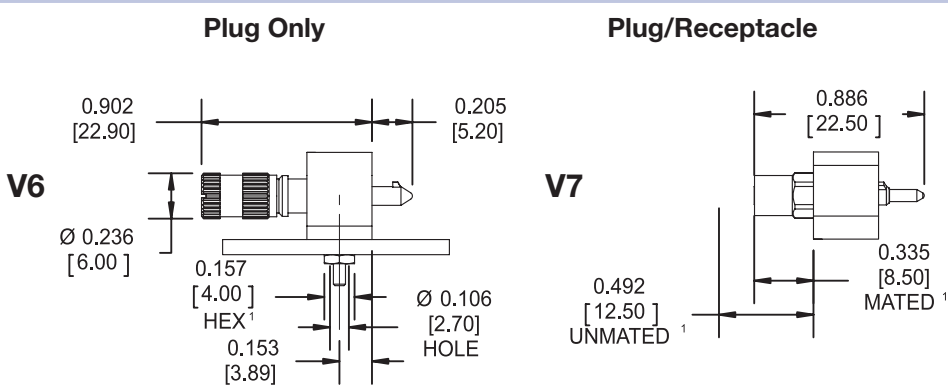
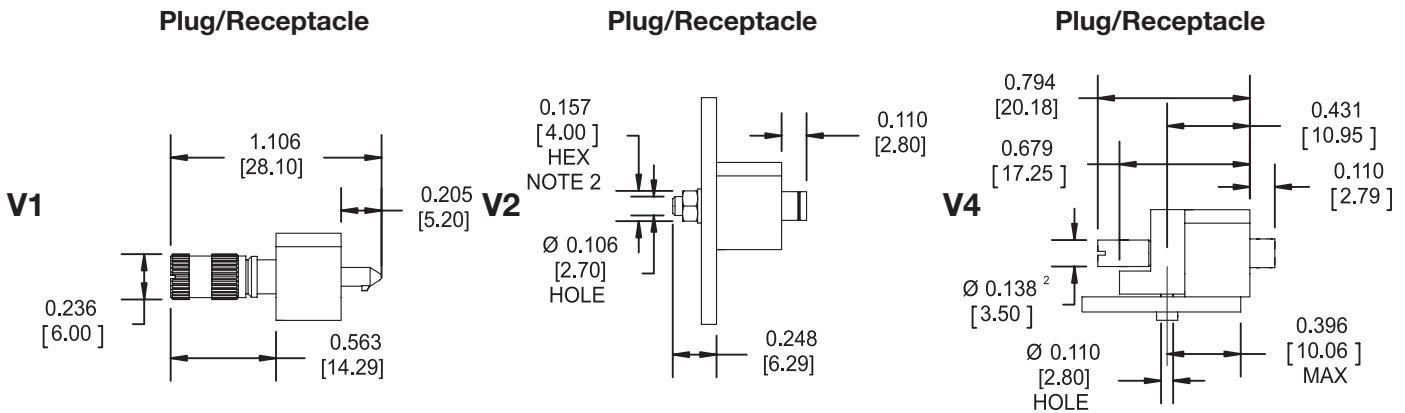
Style	Dimension B (Max)		Dimension C (Max)	
	4 row	5 row	4 row	5 row
101	0.541 [13.74]	0.661 [16.78]	0.168 [4.26]	0.236 [5.91]
111	0.781 [19.84]	0.900 [22.86]	—	—
131	0.781 [19.84]	0.900 [22.86]	—	—

Dimensions are in inches [mm]

Standard Mounting Styles



Locking Mounting Styles



Style	Will Only Mate With	Locking Method
V1	V2, V4	Push, 1/4 Turn
V2	V1, V6	Push, 1/4 Turn
V4	V1, V6	Push, 1/4 Turn
V6	V2, V4	Push, 1/4 Turn
V7	V9, V15	Screw
V30	V33	Screw
V31	V32	Screw
V32	V31, V33	Screw
V33	V30, V32	Screw

NOTES:
 1) 15.00 oz. in torque.
 2) 35.20 oz. in torque.
 3) The dimensions between the mounting holes are the same as between the guides.
 4) Mounting bracket is 0.25 [6.35] wide.

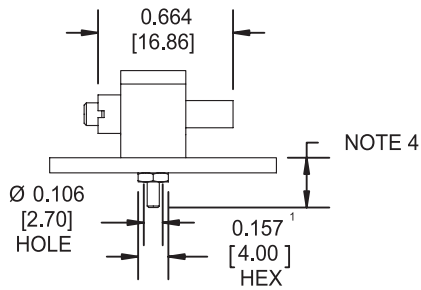
Dimensions are in inches [mm]

Locking Mounting Styles

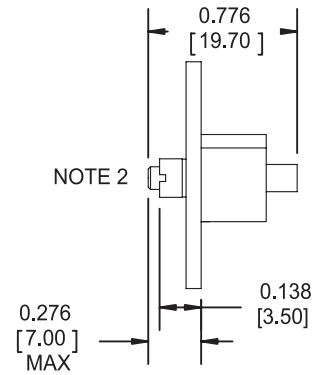
Plug Only

Plug/Receptacle

V9



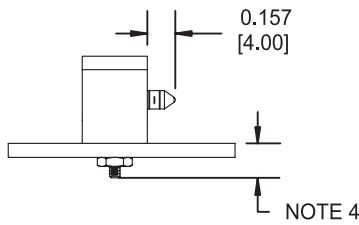
V15



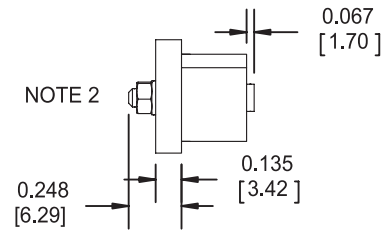
Plug Only

Plug/Receptacle

V30
Stationary
Jackscrew



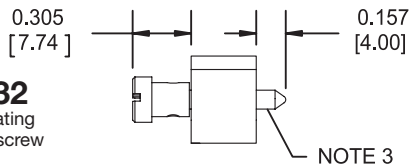
V31
Stationary
Jackscrew



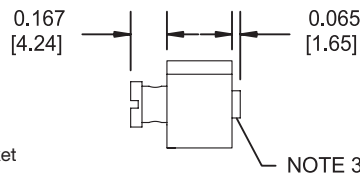
Plug Only

Plug Only

V32
Rotating
Jackscrew



V33
Rotating
Jack Socket



Style	Will Only Mate With	Locking Method
V1	V2, V4	Push, 1/4 Turn
V2	V1, V6	Push, 1/4 Turn
V4	V1, V6	Push, 1/4 Turn
V7	V9, V15	Screw
V9	V7	Screw
V15	V7	Screw
V30	V33	Screw
V31	V32	Screw
V32	V31, V33	Screw
V33	V32	Screw

NOTES:

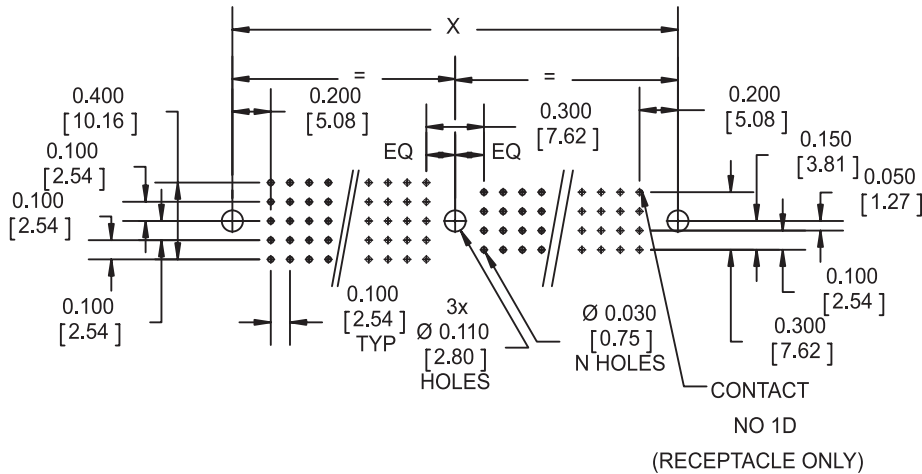
- 1) 15.00 oz. in torque.
- 2) 35.20 oz. in torque.
- 3) 52.30 oz. in torque.
- 4) Right angle mounting screw length is determined by contact terminal length.

Dimensions are in inches [mm]

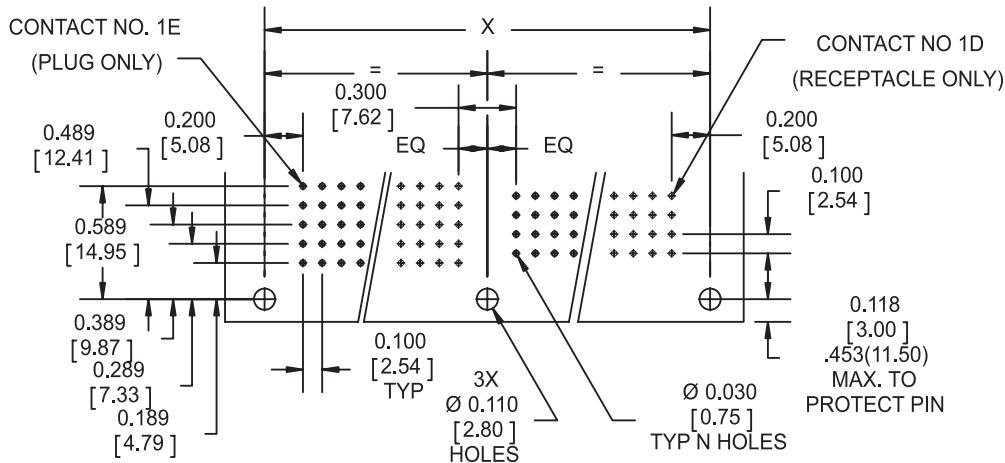
Mounting Dimensions Cutout For Panel Application

(Center hole is not required for 48 through 184 positions)

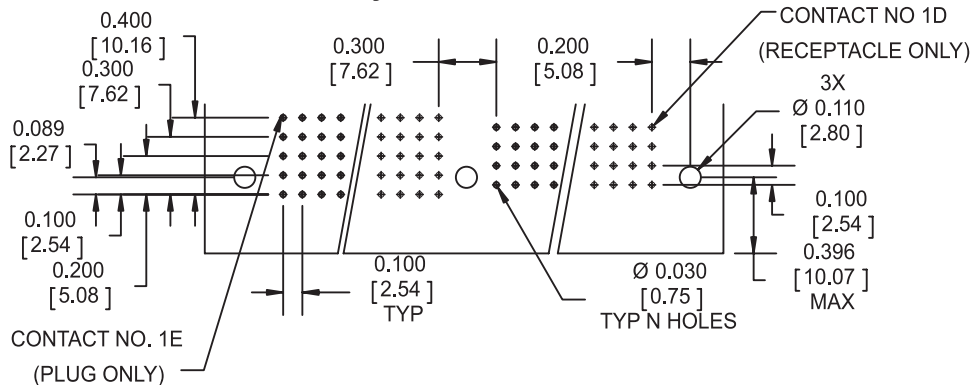
Mother Board Application Style 11, 21, V2 and V31



Daughter Board Application Style 10, 30, V3, V9 and V30



Daughter Board Application Style 24 and V4



Number of Contacts	X
48	1.500 [38.10]
68	2.000 [50.80]
80	2.300 [58.42]
96	2.700 [68.58]
100	2.800 [71.12]
108	3.000 [76.20]
120	3.300 [83.82]
125	2.800 [71.12]
128	3.500 [88.90]
136	3.700 [93.98]
140	3.100 [78.74]
160 (5 row)	3.500 [88.92]
160 (4 row)	4.300 [109.22]
184	4.900 [124.46]
196	5.200 [132.08]
200	4.300 [109.22]
208	5.700 [144.78]
228	6.000 [152.40]
230	4.900 [124.46]
240 (5 row)	5.100 [129.54]
240 (4 row)	6.500 [165.10]
264	7.100 [180.34]
300	6.500 [165.10]
320	6.900 [175.26]
330	7.100 [180.34]
352	9.300 [236.22]
390	8.300 [210.82]
392	10.300 [261.62]
490	10.300 [261.62]

NOTE:
For connectors with center guide float mounts, rows adjacent to center guide will not be loaded. Example: a KA490 will actually have 480 contacts; a KA392 will actually have 384 contacts.

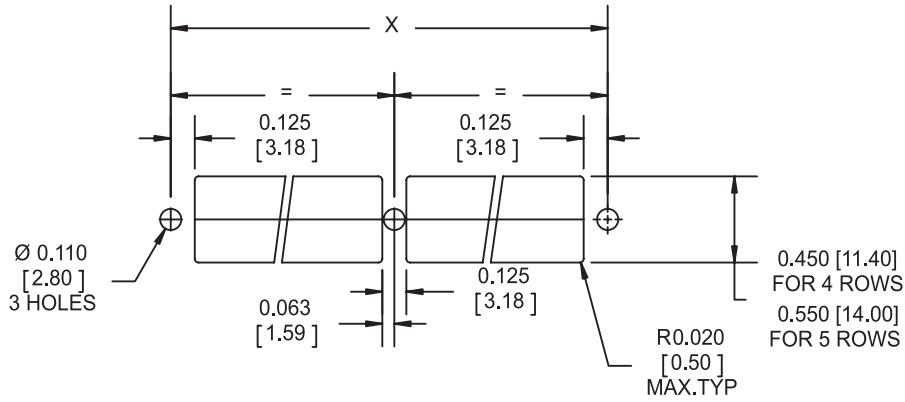
Dimensions are in inches [mm]

Mounting Dimensions

Cutout For Panel Application

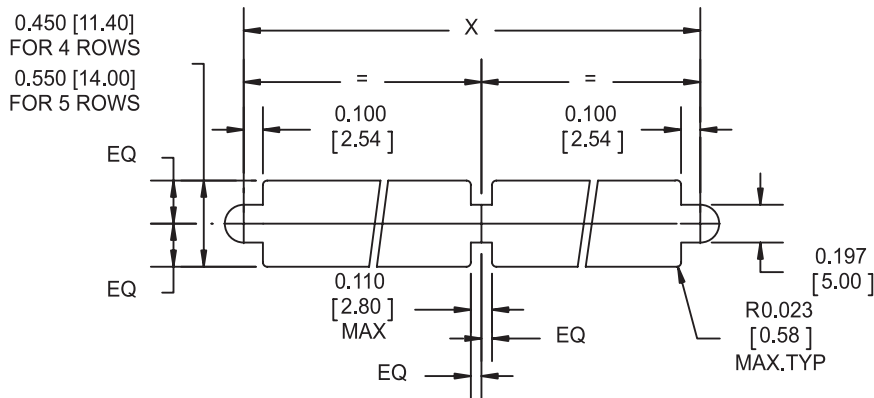
(Center hole is not required for 48 through 184 positions)

Fixed Mounting Style 11, 21, V2 and V31



Number of Contacts	X
48	1.500 [38.10]
68	2.000 [50.80]
80	2.300 [58.42]
96	2.700 [68.58]
100	2.800 [71.12]
108	3.000 [76.20]
120	3.300 [83.82]
125	2.800 [71.12]
128	3.500 [88.90]
136	3.700 [93.98]
140	3.100 [78.74]
160 (5 row)	3.500 [88.92]
160 (4 row)	4.300 [109.22]
184	4.900 [124.46]
196	5.200 [132.08]
200	4.300 [109.22]
208	5.700 [144.78]
228	6.000 [152.40]
230	4.900 [124.46]
240 (5 row)	5.100 [129.54]
240 (4 row)	6.500 [165.10]
264	7.100 [180.34]
300	6.500 [165.10]
320	6.900 [175.26]
330	7.100 [180.34]
352	9.300 [236.22]
390	8.300 [210.82]
392	10.300 [261.62]
490	10.300 [261.62]

Float Mounting Style 13 and 23



NOTE:

For connectors with center guide float mounts, rows adjacent to center guide will not be loaded. Example: a KA490 will actually have 480 contacts; a KA392 will actually have 384 contacts.

Dimensions are in inches [mm]

Ordering Information For 4 and 5 Row Connectors

	KA	48	/254	D	P	V1	M	R	00	T	A1
Number of Contacts	48, 68, 96, 100, 108, 120, 125, 128, 136, 140, 160, 184, 196, 200, 208, 228, 230, 240, 264, 300, 320, 330, 352, 390, 392, 490 [Special sizes from 48 – 392 (4 row) and from 60 – 490 (5 row) are available. Please consult factory.]								Keying Orientation	(Omit for default)	
Number of Rows	D = 4 rows E = 5 rows								Plating	T, TH, TAH	
Insulator	P = Plug E = Receptacle								Mounting Hardware	(Omit for locking hardware) 00 ¹ , 10 ² , 11, 13, 14, 21, 23, 24, 101	
Locking Mounting Hardware¹	(Omit for nonlocking hardware) V1, V2, V4, V6 ² , V7, V9 ² , V15, V30 ² , V31, V32, V33								Terminal Styles	(Omit for no contacts) B = 90° PCB (1/8" printed circuit board) C = 90° PCB (1/16" printed circuit board) D = Straight PCB FD = Front removable D contacts H2 = Double crimp ⁵ R = Crimp ⁵ S = Solder cup W = Wire Wrap (2 wraps) Y = Wire Wrap (3 wraps)	
Contact Gender	M = Male F = Female N = No contacts										

Accessories

Extraction Tool:	
For standard contacts.....	S/DEM 1.0060
Crimp Tools:	
<i>Ref. R and H2 contacts – 1 crimp</i>	
Manual crimp tool	MS3198.1 or M22520/2-01 or AFM8
Positioner for contacts.....	K547
<i>Ref. H2 contacts</i>	
<i>2 crimps in two operations</i>	
Manual crimp tool	MS3198.1 or M22520/2-01 or AFM8
Positioner for contacts (wire)	K547
Positioner for contacts (insulation)	K640
<i>2 crimps in operation</i>	
This requires a special tool. Please submit wire samples and consult factory for further information.	
Crimping instructions doc number S50063	
Other Accessories:	
Insertion tool	S/MONT 1.0060
Spanner wrench for receptacle with front removable contacts	T136
Replacement Contacts: see page 3/74	

NOTES:

- 1) Important! See mating Combination Chart for Intermatability.
- 2) Available in plugs only.
- 3) In order the keep mating forces as low as possible, it is recommended that the connectors are fixtured during soldering.
- 4) Connectors with no hardware.
- 5) Crimp contacts will be shipped unmounted. When inserting contacts into the blocks/insulators, be sure that the two flats at the rear of the contact body are aligned with the flats in the insulator.

Dimensions are in inches [mm]