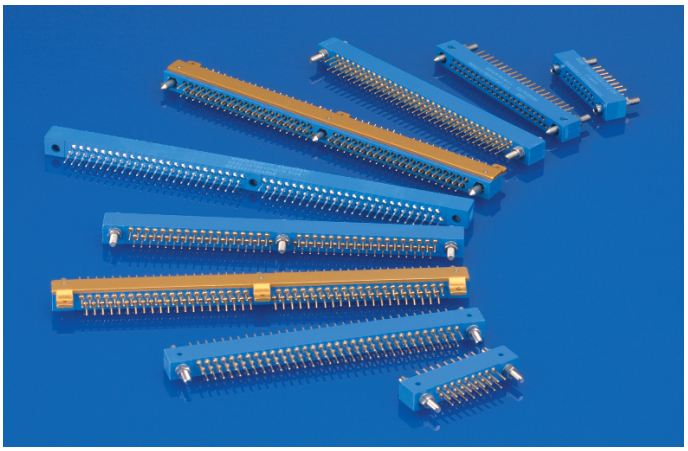


# 4 and 5 Row Printed Circuit Board Connectors

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)

| 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<br>TH = 50µin gold (min) over nickel |
| Female Sockets: | TAH = 50µin gold (min) over nickel on mating surface, gold flash over nickel on termination |

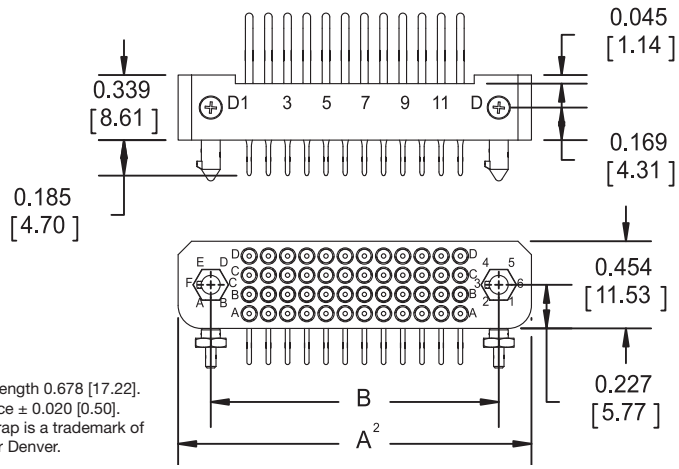
| Number of Contacts | A | B |
|---|---|---|
| 48 | 1.840 [46.74] | 1.500 [38.10] |
| 68 | 2.340 [59.44] | 2.000 [50.80] |
| 80 | 2.640 [67.06] | 2.300 [58.42] |
| 96 | 3.040 [77.22] | 2.700 [68.58] |
| 100 | 3.140 [79.76] | 2.80 [71.12] |
| 108 | 3.340 [84.84] | 3.000 [76.20] |
| 120 | 3.640 [92.46]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

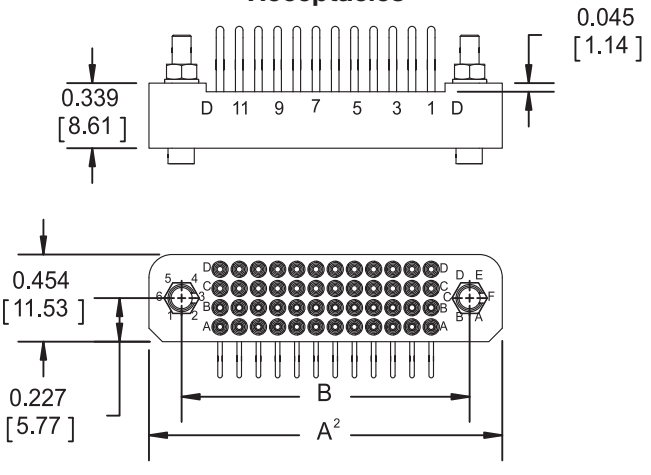
## Connector Dimensions

48 to 228 Contacts

### Plugs




### Receptacles



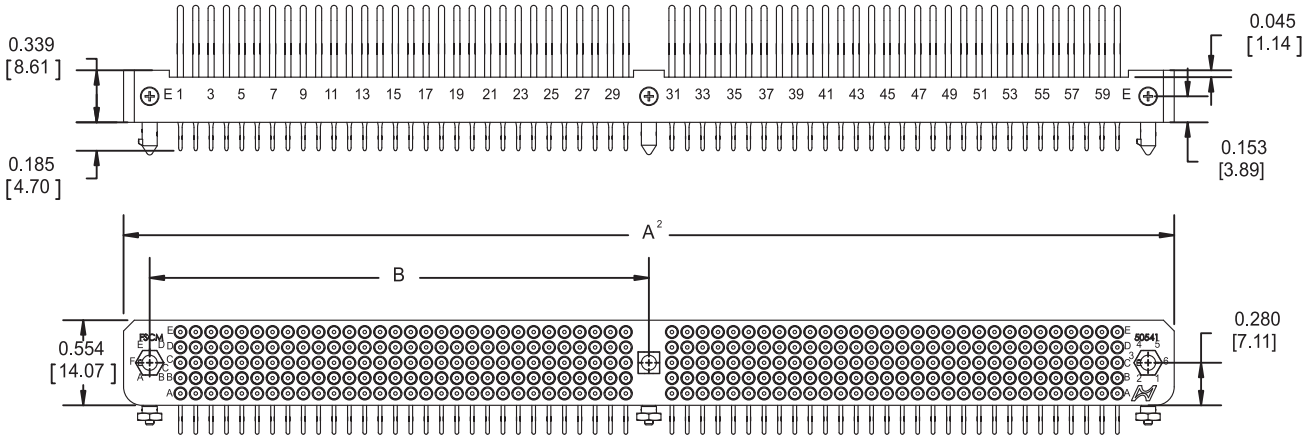

***NOTES:***
1) Mated length 0.678 [17.22].
2) Tolerance ± 0.020 [0.50].
3) Wire Wrap is a trademark of Gardner Denver.

Dimensions are in inches [mm]

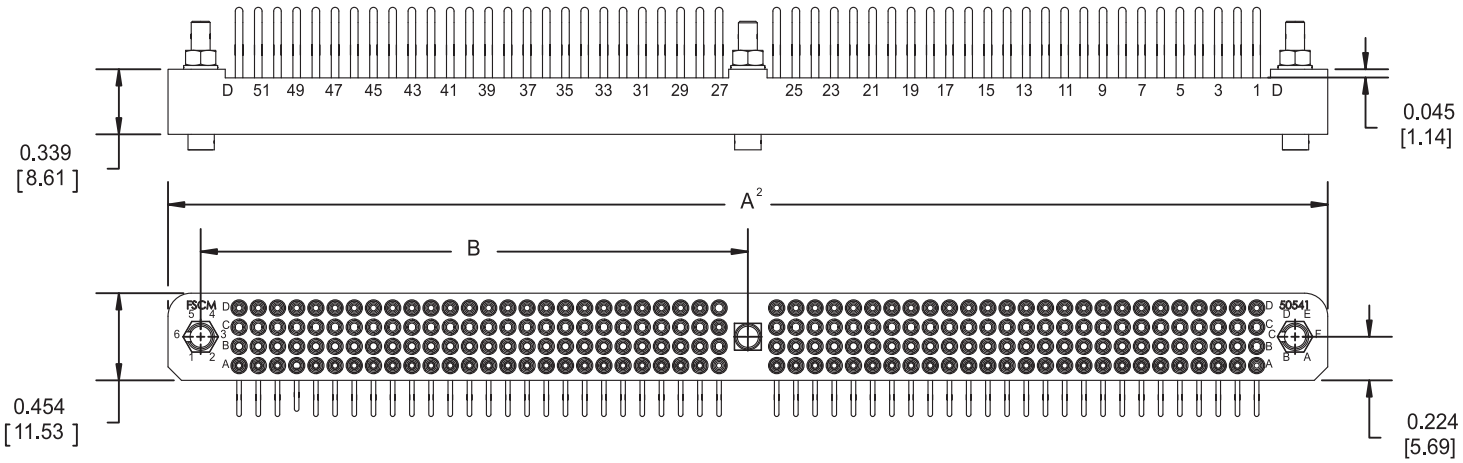
## 4 Row Connectors

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] |

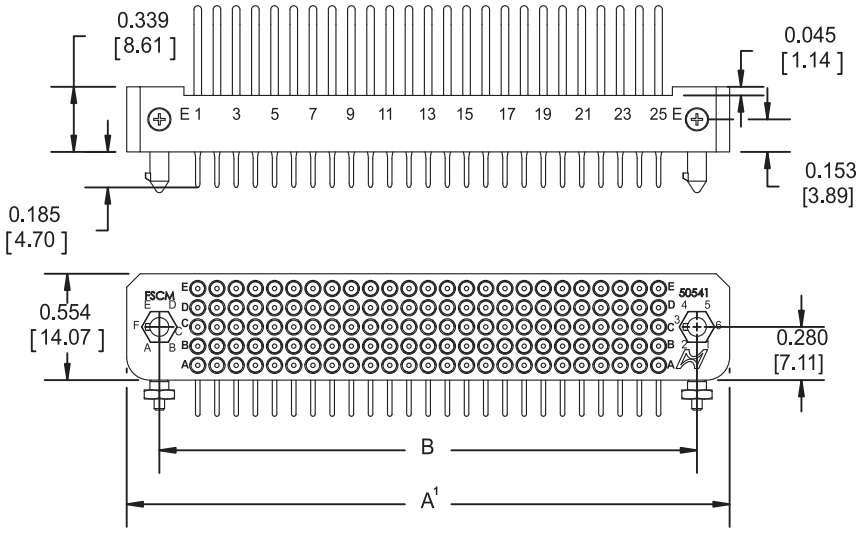
***NOTES:***
1) For insulators longer than 7.00 [178.00], a mother board-daughter board configuration is required.
2) Tolerance ± 0.020 [0.50].
3) Mated length 0.678 [17.22].

Dimensions are in inches [mm]

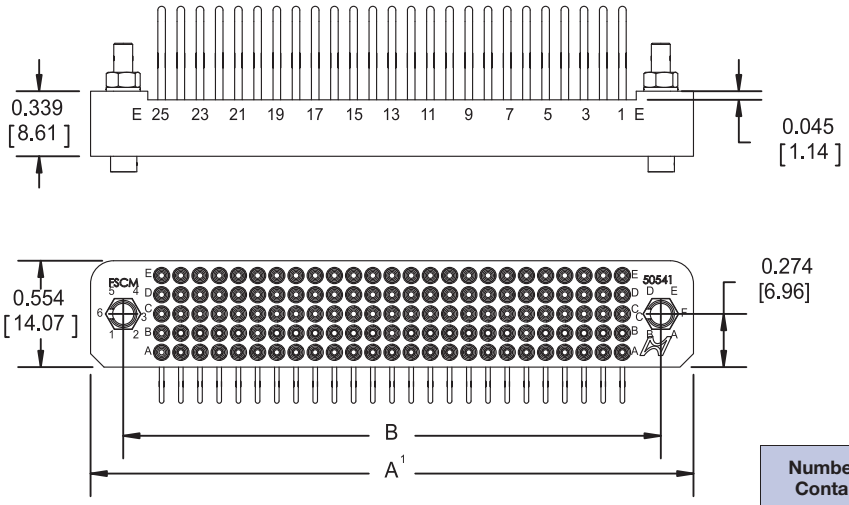
## 5 Row Connectors

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] |

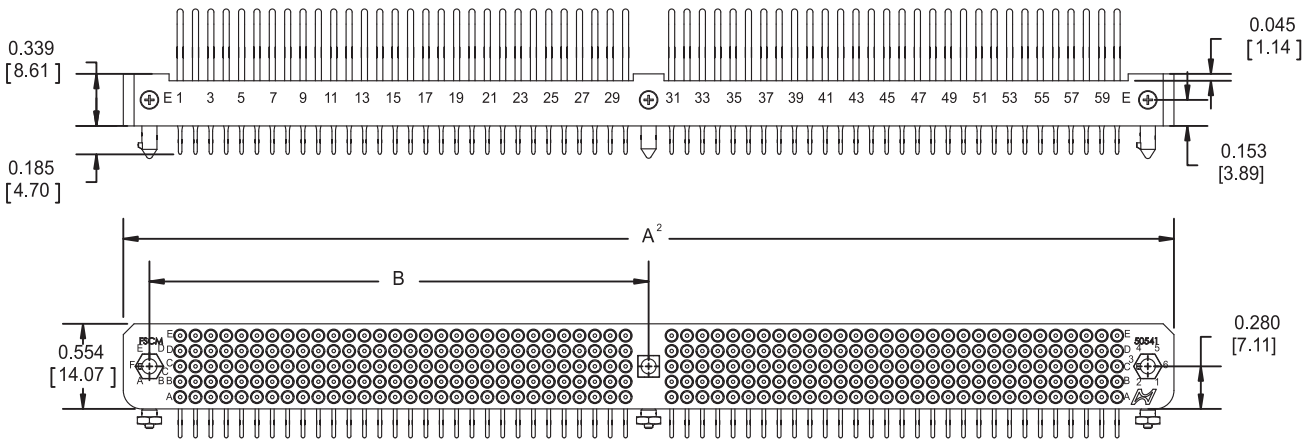
***NOTES:***
1) Tolerance ± 0.020 [0.50].
2) Mated length 0.678 [17.22].

Dimensions are in inches [mm]

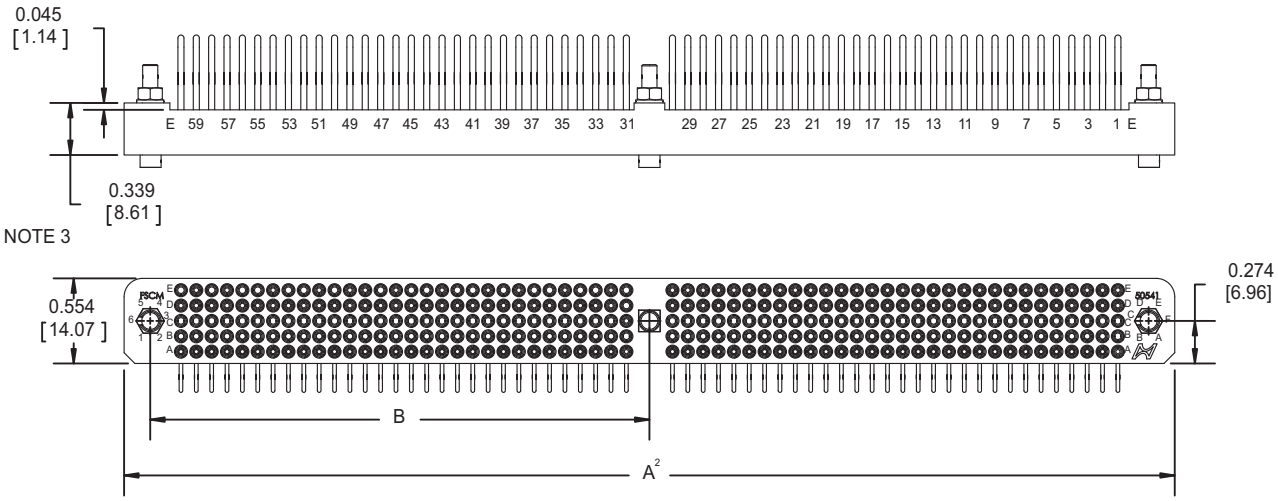
## 5 Row Connectors

300, 320, 330, 390 and 490 Contacts

### Plugs




### Receptacles




| 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].

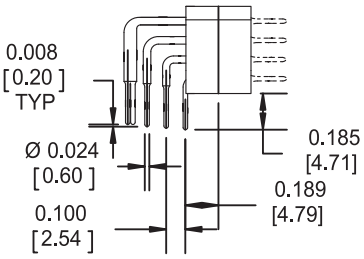
Dimensions are in inches [mm]

# Terminal Styles

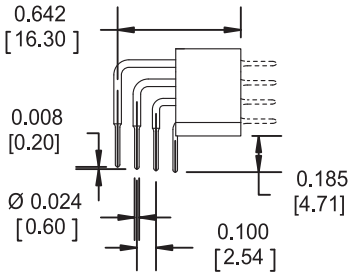
## Ref. B

• For 1/8" PC Board

**Plugs**
Female/Male

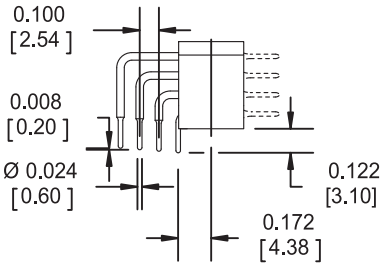


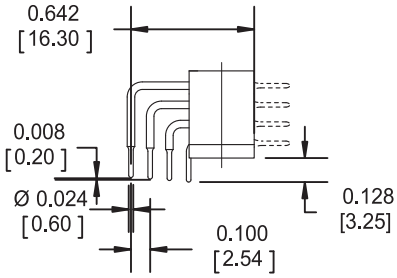

**Receptacles**
Female/Male



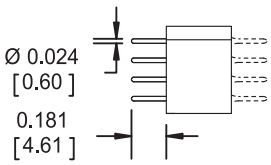

## Ref. C

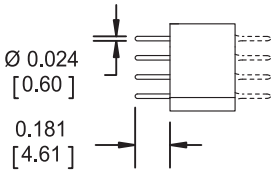
• For 1/16" PC Board



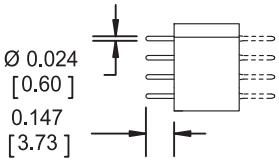



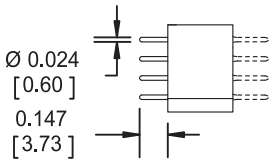

## Ref. D



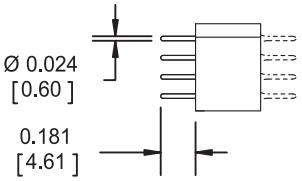

## Ref. DD*

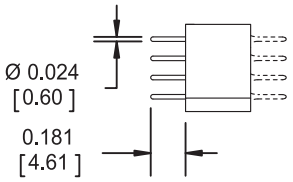



## Ref. FD*

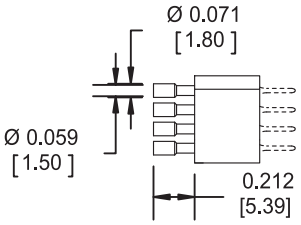
Front Removable Straight Dip Solder Contacts

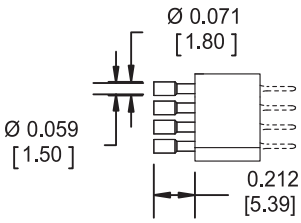



## Ref. H2

• 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) |

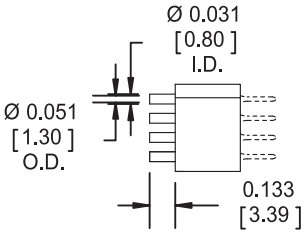
Dimensions are in inches [mm]

# Terminal Styles

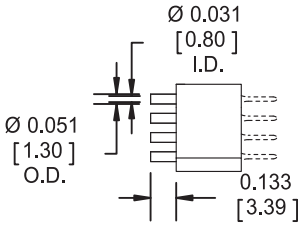
## R

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

**Plugs** Female/Male

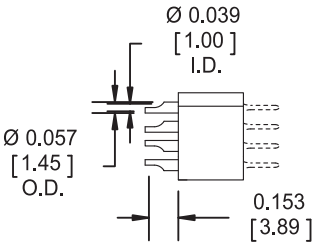


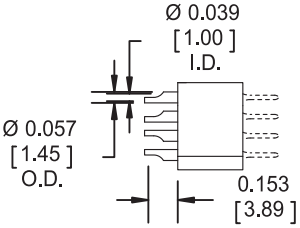

**Receptacles** Female/Male




## S

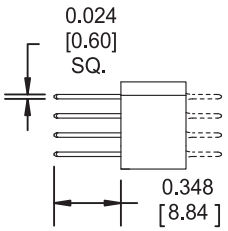
- Accepts up to 22 AWG Wire
- Stripped Back 0.126 [3.20]

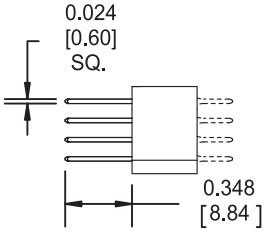



## W**

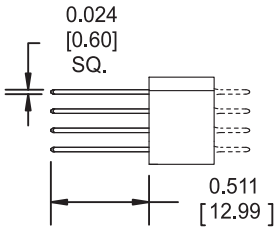
- 2 Wraps 30 and 28 AWG

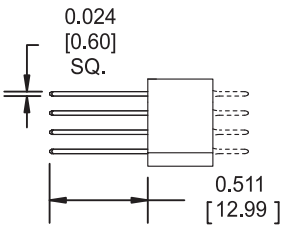



## Y

- 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<br>H = 50µin gold (min) over nickel |
| Female Sockets: | AH = 50µin gold (min) over nickel on mating surface, gold flash over nickel on termination<br>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

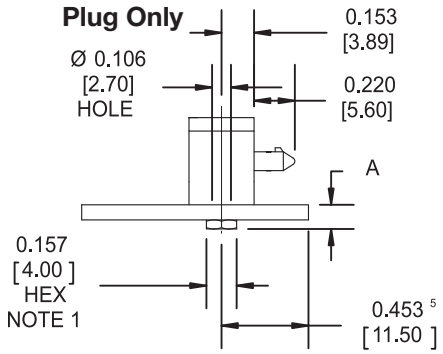
| KA Series Replacement Contact Part Numbers | | | |
|---|---|---|---|
| Ref. | Standard Sockets | Standard Pins | Beryllium Copper Pins |
| B (row 1) | YSK006-028AH | YPN006-034 | YPN006-072H |
| B (row 2) | YSK006-029AH | YPN006-035 | YPN006-075H |
| B (row 3) | YSK006-030AH | YPN006-036 | YPN006-073H |
| 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

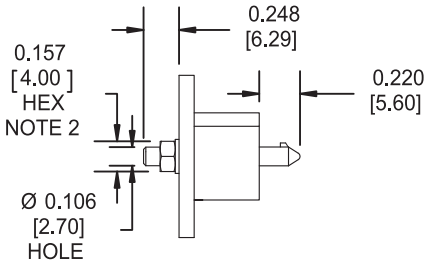
**Plug Only**




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

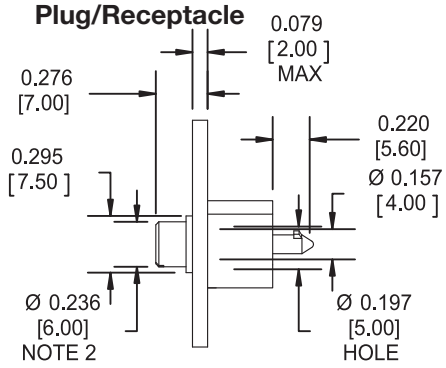
## 11

**Plug/Receptacle**



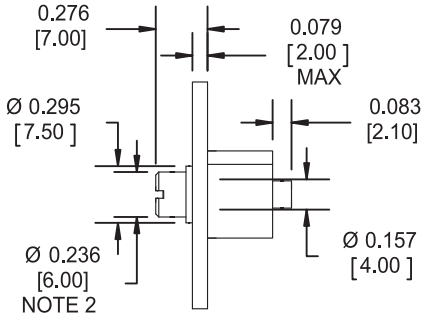

## 13 Float Mounting

**Plug/Receptacle**



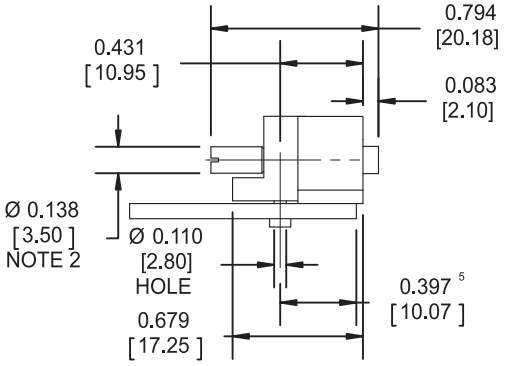

## 23 Float Mounting

**Plug/Receptacle**



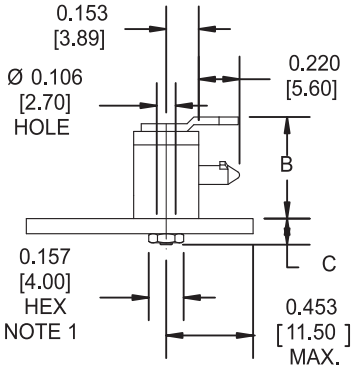

## 24

**Plug/Receptacle**



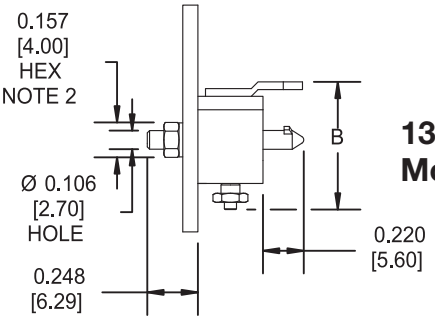

## 101

**Plug with Pin Protector**



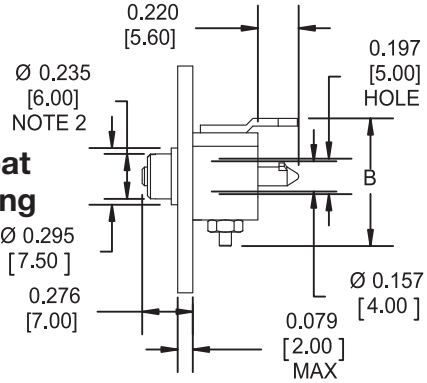

## 111

**Plug with Pin Protector**




## 131 Float Mounting

**Plug with Pin Protector**




| | Dimension B (Max) | | Dimension C (Max) | |
|---|---|---|---|---|
| Style | 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] | — | — |

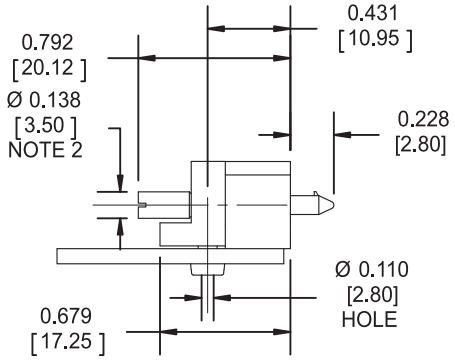
***NOTES:***
1) 15.00 oz. in torque.
2) 35.20 oz. in torque.
3) The dimensions between the mounting holes are the same as between the guides.
4) Mounting bracket is 0.25 [6.35] wide.
5) PC board may be extended to 0.453 [11.50] max. for use as a pin protector.

Dimensions are in inches [mm]

# Standard Mounting Styles

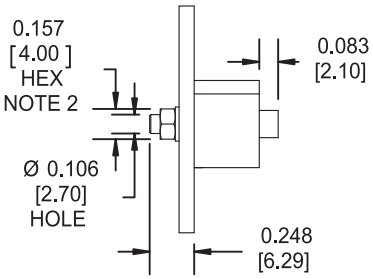
### Receptacle Only

**14**




### Plug/Receptacle

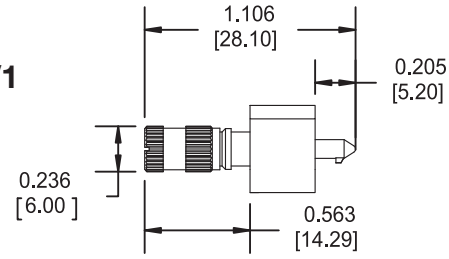
**21**




# Locking Mounting Styles

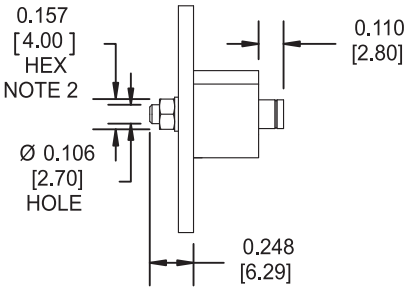
### Plug/Receptacle

**V1**



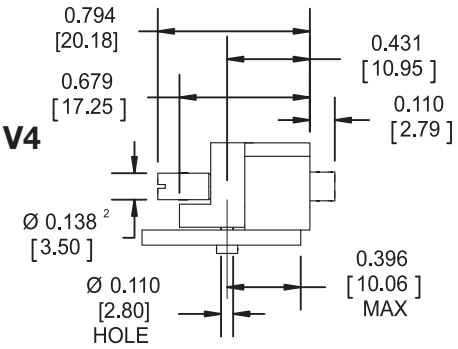

### Plug/Receptacle

**V2**



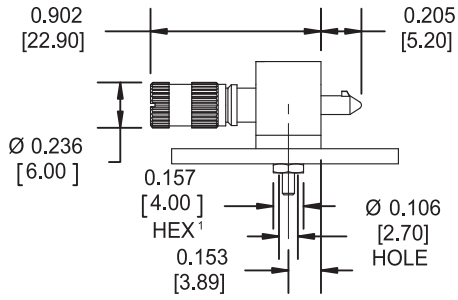

### Plug/Receptacle

**V4**



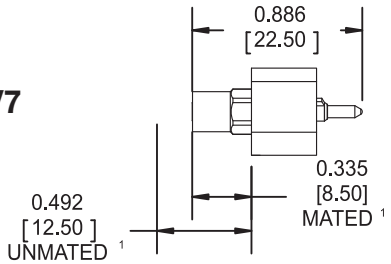

### Plug Only

**V6**




### Plug/Receptacle

**V7**




| 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 |

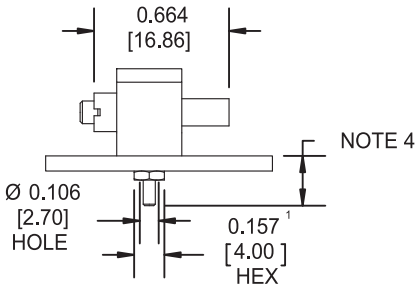
***NOTES:***
1) 15.00 oz. in torque.
2) 35.20 oz. in torque.
3) The dimensions between the mounting holes are the same as between the guides.
4) Mounting bracket is 0.25 [6.35] wide.

Dimensions are in inches [mm]

# Locking Mounting Styles

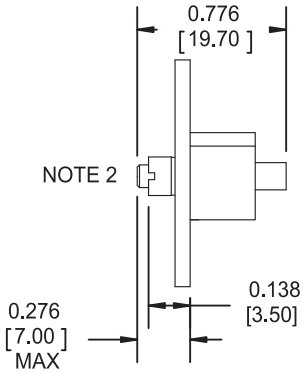
## Plug Only

**V9**



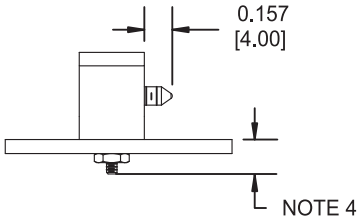

## Plug/Receptacle

**V15**



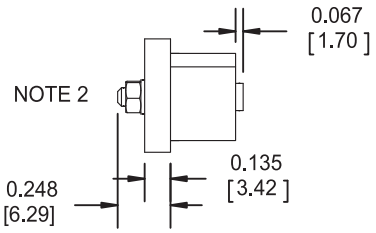

## Plug Only

**V30**
Stationary
Jackscrew



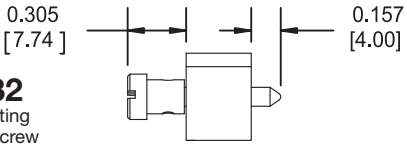

## Plug/Receptacle

**V31**
Stationary
Jackscrew



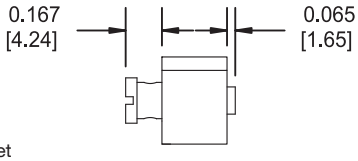

## Plug Only

**V32**
Rotating
Jackscrew




## Plug Only

**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.

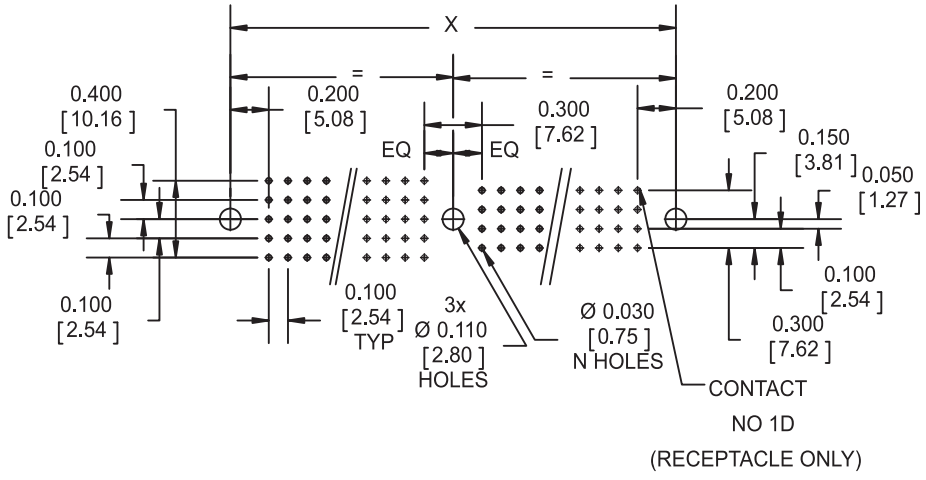
Dimensions are in inches [mm]

# Mounting Dimensions

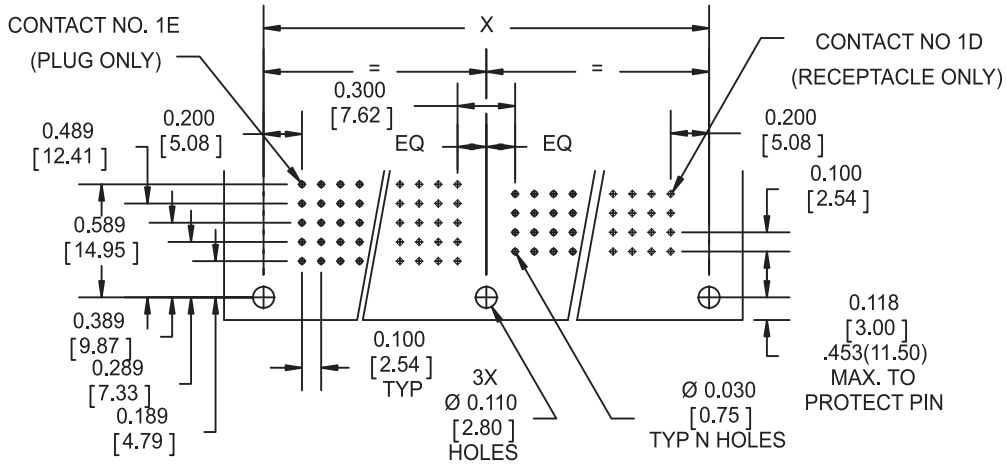
## Cutout For Panel Application

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

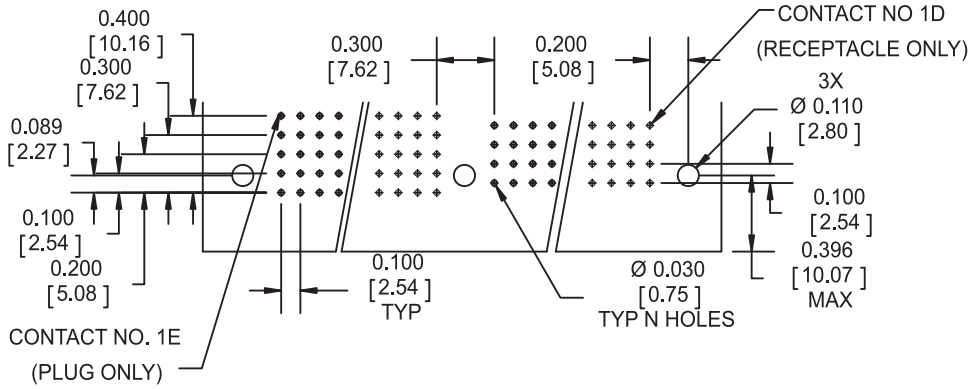
### Mother Board Application
### Style 11, 21, V2 and V31




### 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.

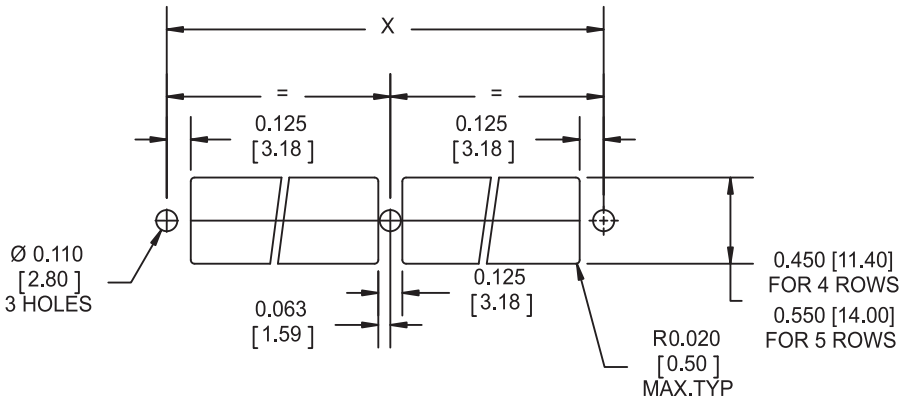
Dimensions are in inches [mm]

# Mounting Dimensions

## Cutout For Panel Application

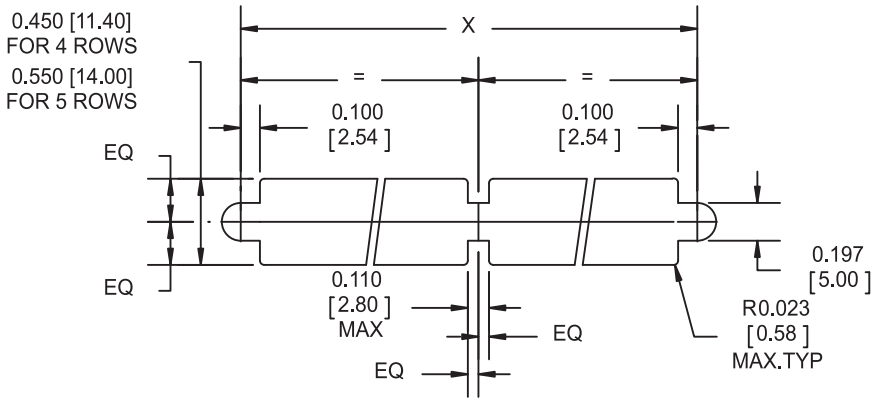
(Center hole is not required for 48 through 184 positions)

### 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

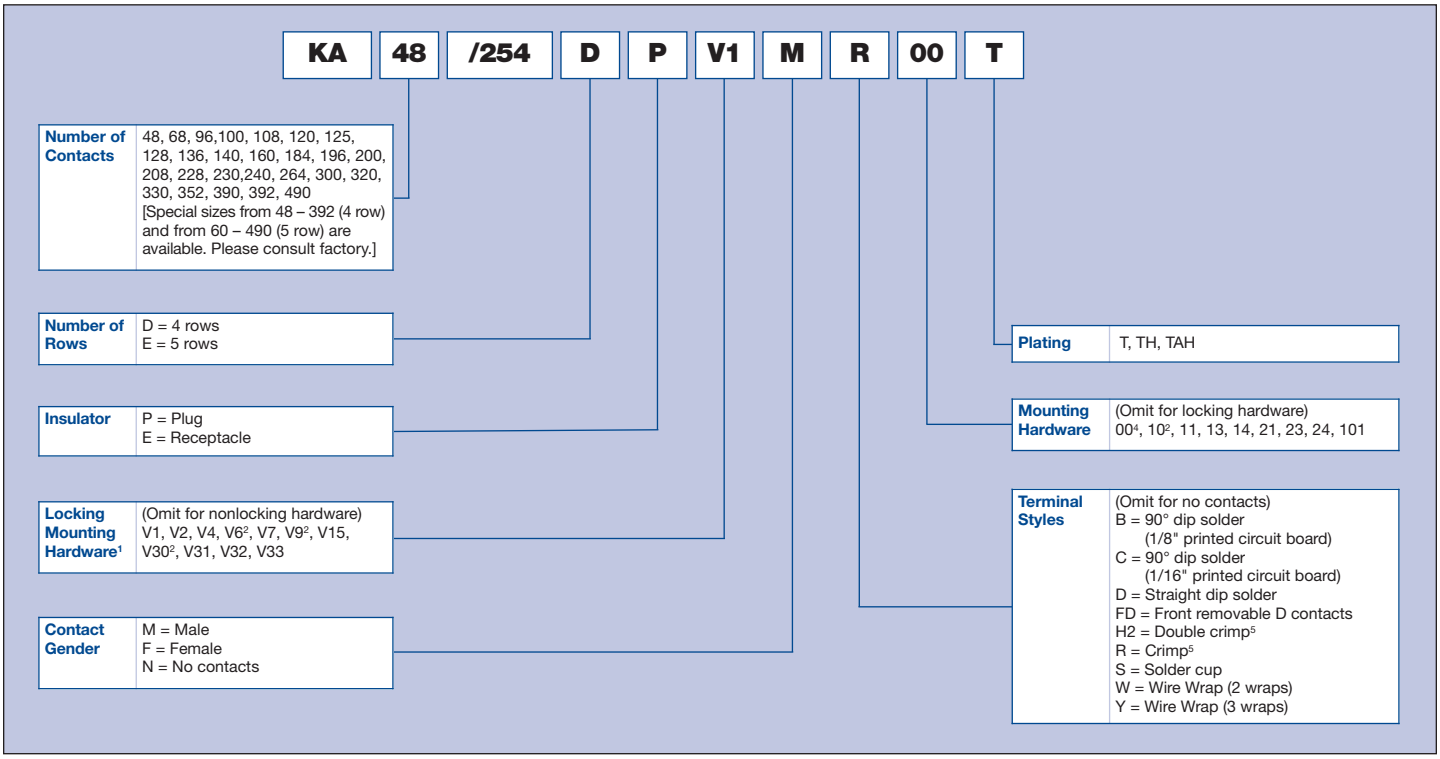



***NOTE:***
For connectors with center guide float mounts, rows adjacent to center guide will not be loaded. Example: a KA490 will actually have 480 contacts; a KA392 will actually have 384 contacts.

Dimensions are in inches [mm]

# Ordering Information

## For 4 and 5 Row Connectors




# Accessories

### Extraction Tool:

For standard contacts.....S/DEM 1.0060

### Crimp Tools:

*Ref. R and H2 contacts – 1 crimp*

Manual crimp tool.....MS3198.1 or M22520/2-01 or AFM8
Positioner for contacts.....K547

*Ref. H2 contacts*
*2 crimps in two operations*

Manual crimp tool.....MS3198.1 or M22520/2-01 or AFM8
Positioner for contacts (wire).....K547
Positioner for contacts (insulation).....K640

*2 crimps in operation*

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]