

MIL-DTL-55302 QPL'D 2 and 3 Row Printed Circuit Board Connectors

17, 29, 33, 41, 53, 62, 65, 72, 80.1, 84, 96, 98, 120, 126, 160 and 160.4 Contacts

- 2 and 3 row printed circuit board connectors
- Provide applications flexibility not available with other MIL-DTL-55302 connectors
- Over 2,500 models can be constructed with available components
- 0.100 [2.54] on center (adjacent rows offset by 0.050 [1.27] to allow straight printed circuit traces)
- 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/extraction force of 1 ounce per contact
- Contacts removable from wiring side (front release, rear removable)
- Front release, front removable option available on receptacle with 160 contacts
- Alignment and keying provided by the end guides – 36 combinations (user changeable)
- Male or female contacts and guides available in either plug or receptacle

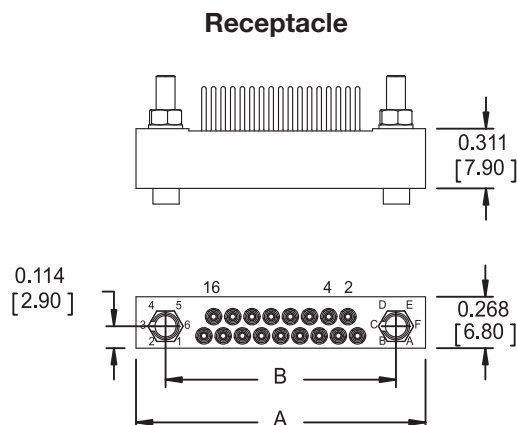
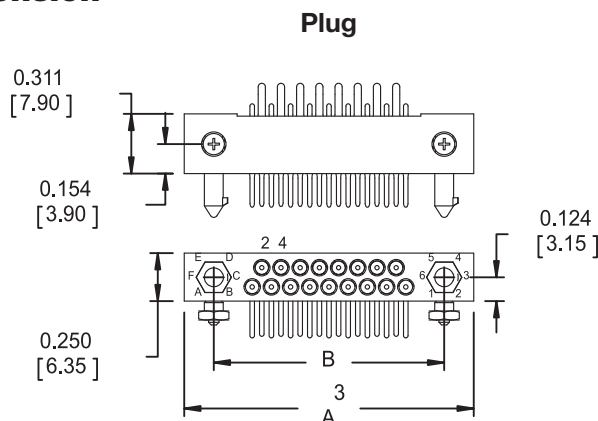
General Specifications

Number Contacts	17, 29, 33, 41, 53, 62, 65, 72, 80.1, 84, 96, 98, 120, 126, 160, 160.4
Contact Diameter	0.024 [0.60]
Current Rating	4 Amps at 30° C rise
Contact Resistance	< 5 milliohms
Extraction Force	0.30 – 2.00 oz. per contact
Contact Life Cycles	100,000
Breakdown Voltage Between Contacts	> 1600V RMS
Dielectric Withstanding Voltage	1200V RMS
Insulation Resistance	> 10 ⁶ Megohms at 500 VDC
Temperature Rating	-55° C to 125° C
Insulator	Diallyl-phthalate
Contact Material	Beryllium copper wires and brass body
Plating	Gold over nickel
Guide Hardware Material	Brass / Stainless steel
Plating	Nickel / Passivated
Plating Reference	
Male Pins	T = 10µin gold (min) over nickel TH = 50µin gold (min) over nickel
Female Socket	TAH = 50µin gold (min) over nickel on mating surface, 5µin gold over nickel on termination

Number of Contacts	17	29	33	41	53	65
A ± 0.020 [0.50]	1.508 [38.30]	2.106 [53.50]	2.307 [58.60]	2.709 [68.80]	3.307 [84.00]	3.909 [99.30]
B	1.200 [30.48]	1.801 [45.75]	2.000 [50.80]	2.401 [60.98]	3.000 [76.20]	3.600 [91.44]

Connector Dimension

17 to 65 Contacts



NOTES:

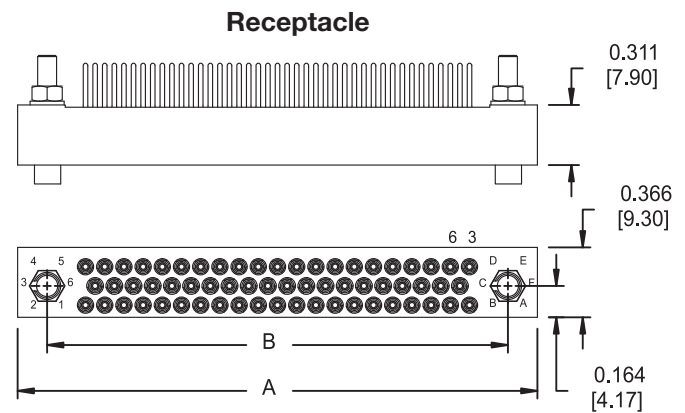
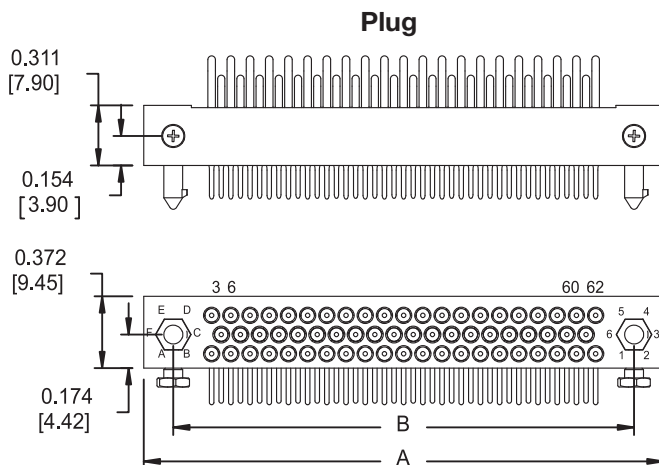
- 1) Mated length 0.622 [15.80] unless otherwise specified.
- 2) Tolerance ± 0.02 [0.50].
- 3) Wire Wrap is a trademark of Gardner Denver.

Dimensions are in inches [mm]

Connector Dimensions

62, 80.1 and 98 Contacts

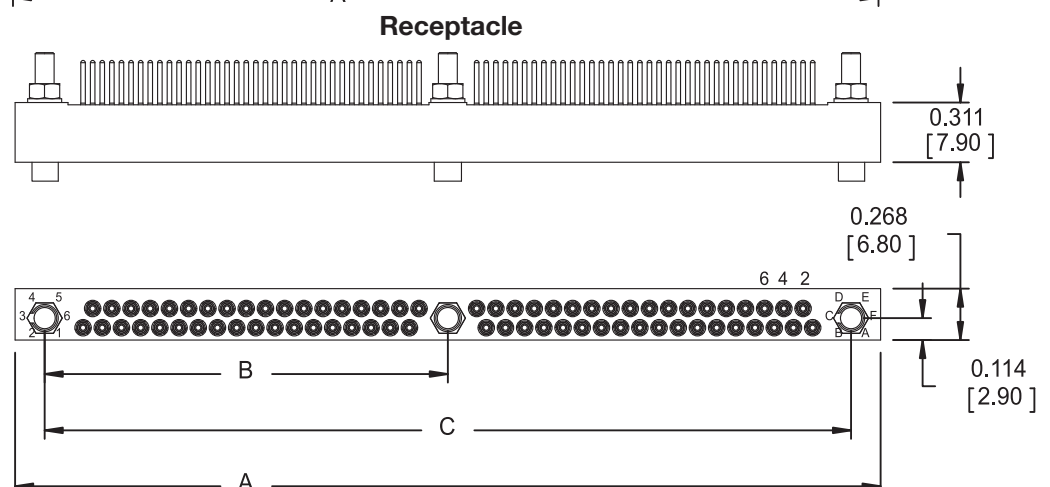
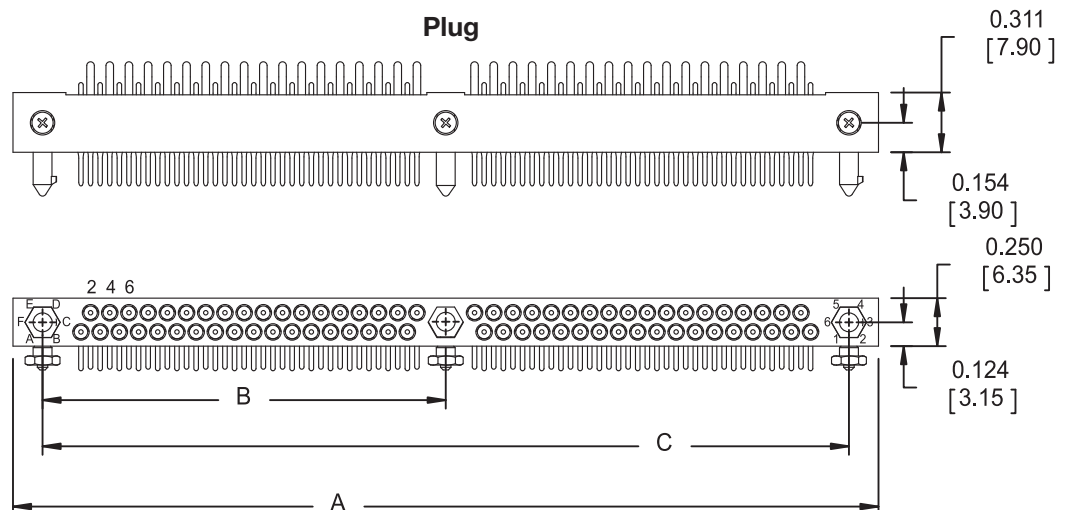
Number of Contacts	62	80.1	98
A ± 0.020 [0.50]	2.707 [68.75]	3.307 [84.00]	3.907 [99.24]
B	2.400 [60.96]	3.000 [76.20]	3.600 [91.44]



Connector Dimensions

72, 84, 96 and 120 Contacts

Number of Contacts	72	84	96	120
A	4.512 [114.60]	5.106 [129.70]	5.709 [145.00]	6.906 [175.40]
B	2.100 [53.34]	2.400 [60.96]	2.700 [68.58]	3.300 [83.82]
C	4.200 [106.68]	4.800 [121.92]	5.400 [137.16]	6.600 [167.64]

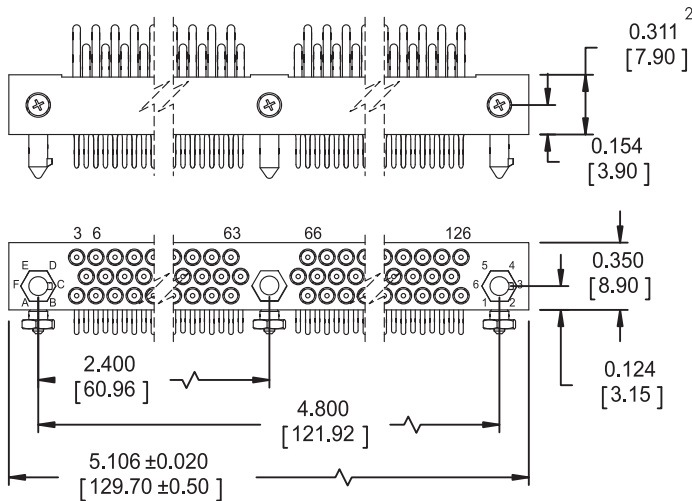


Dimensions are in inches [mm]

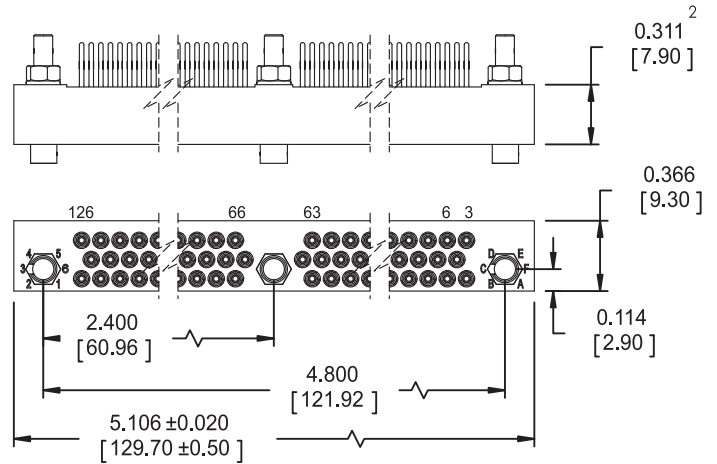
Connector Dimensions

126 Contacts

Plug



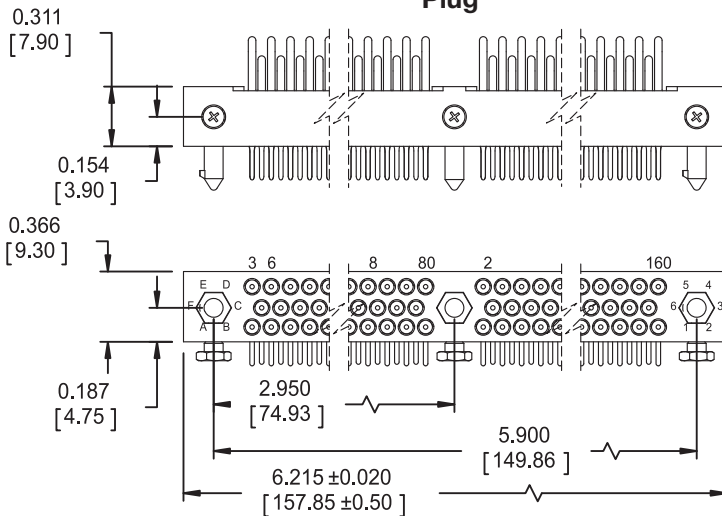
Receptacle



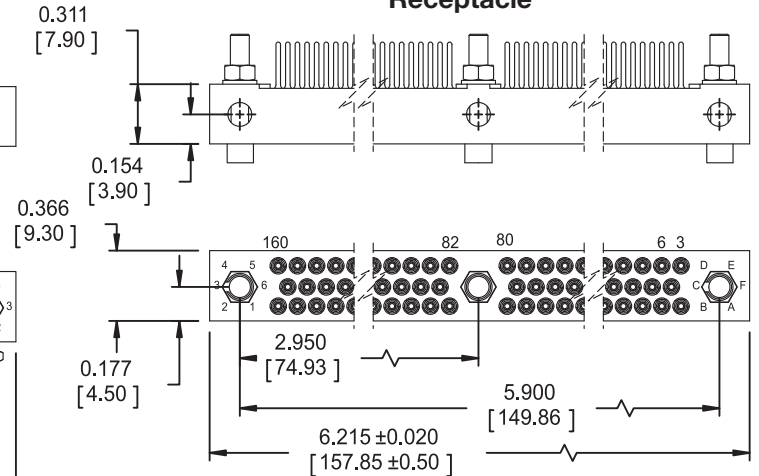
Connector Dimensions

160 Contacts

Plug



Receptacle

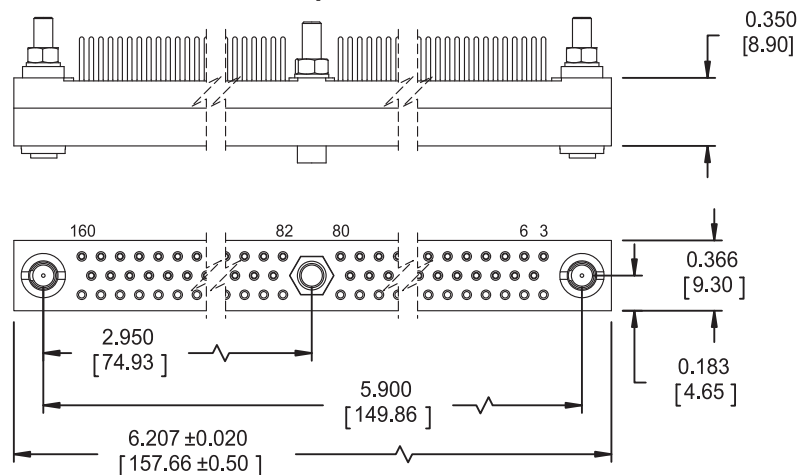


Connector Dimensions

160.4 Contacts^{1,2}

(Front Removable)

Receptacle



NOTES:

- 1) Only available with straight dip solder (style "D") and Wire Wrap (style "Y") tails.
- 2) Mates with standard plug.
Mated length 0.655" [16.90].

Dimensions are in inches [mm]

Terminal Styles

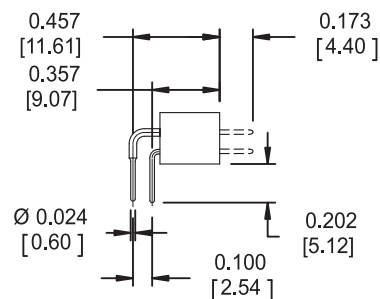
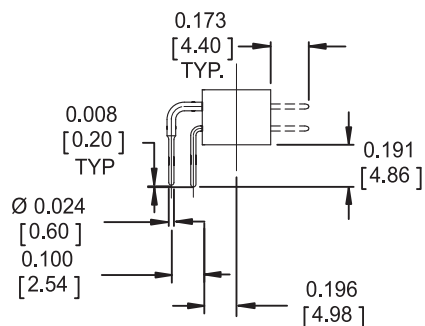
Ref.

Plugs Female/Male

Receptacles Female/Male

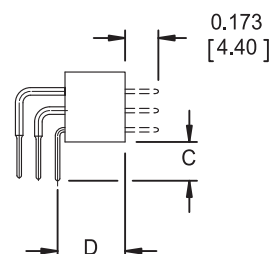
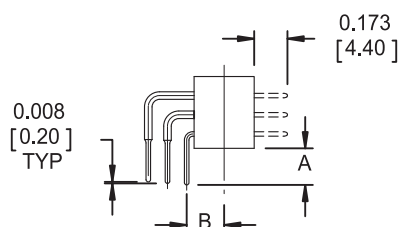
B

For 1/8"
PC Board
2 Row and
KA126
3 Row



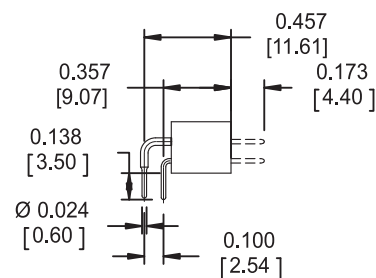
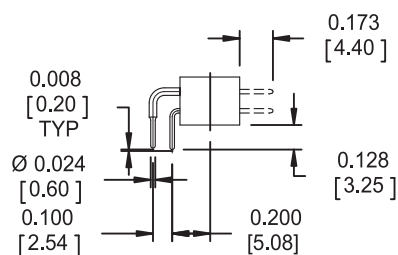
B

For 1/8"
PC Board
3 Row



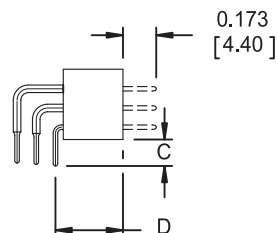
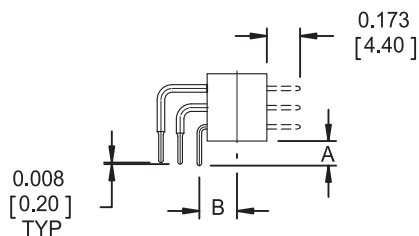
C

For 1/16"
PC Board
2 Row and
KA126 3 Row



C

For 1/16"
PC Board
3 Row



NOTE:

1) All tail lengths are ± 0.015 [0.40] long.

Dimensions are in inches [mm]

3 Row Connectors

Number of Contacts	62, 80.1 and 98		160	
	Style B	Style C	Style B	Style C
A	0.191 [4.86]	0.128 [3.25]	0.178 [4.53]	0.115 [2.92]
B	0.200 [5.08]	0.200 [5.08]	0.188 [4.78]	0.188 [4.78]
C	0.201 [5.11]	0.138 [3.50]	0.188 [4.78]	0.125 [3.17]
D	0.354 [8.98]	0.354 [8.98]	0.342 [8.68]	0.342 [8.68]

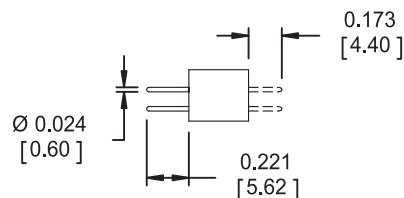
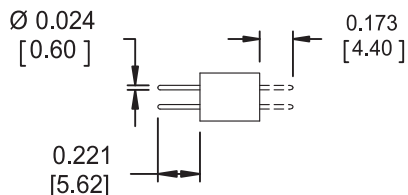
Terminal Styles

Ref.

Plugs
Female/Male

Receptacles
Female/Male

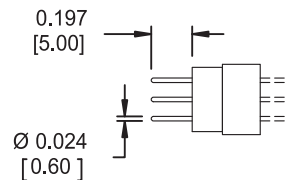
D



D

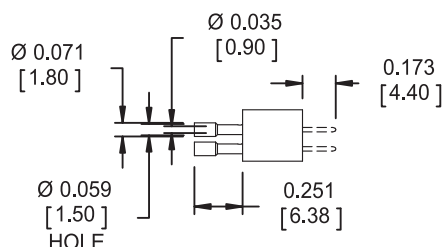
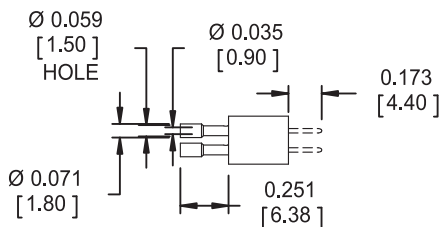
For 0.4 front removable version

Not available in Plug



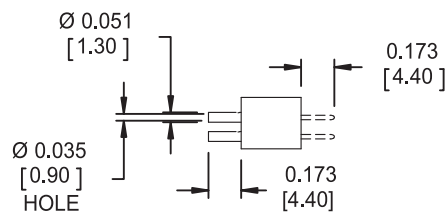
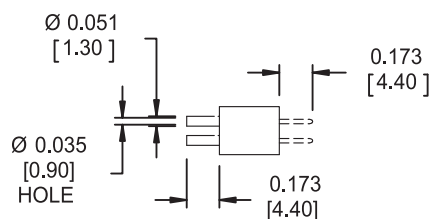
H2

Accepts 22, 24 and 26 AWG Wire Stripped Back 0.146 [3.70]



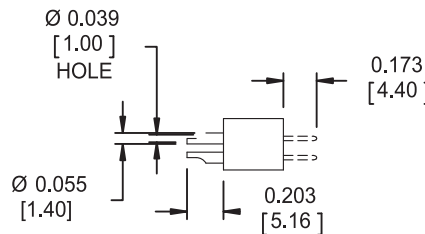
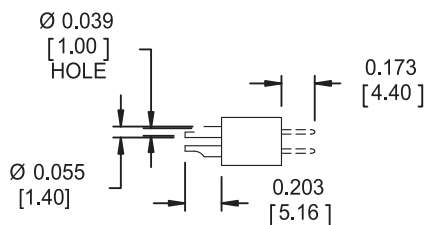
R

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



S

Accepts 22 AWG Wire Stripped Back 0.126 [3.20]



Solder cup orientation staggered for commercial parts. All the same direction for MIL-DTL-55302 parts.

NOTES:

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

Dimensions are in inches [mm]

Terminal Styles

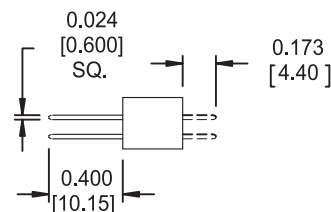
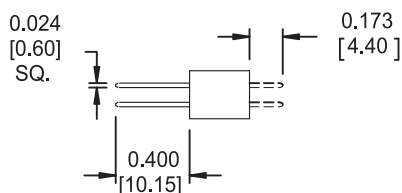
Ref.

Plugs Female/Male

Receptacles Female/Male

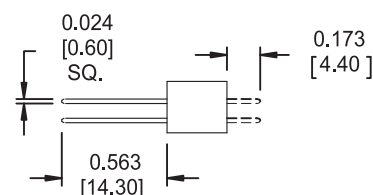
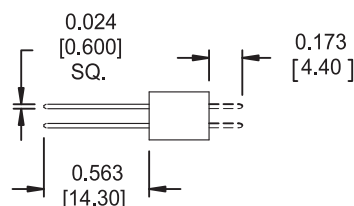
W**

2 Wraps 28 and
30 AWG



Y

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



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 tail lengths are ± 0.015 [0.40] long.
- 2) Contact for front removable version [0.40].
- 3) Front removable contact for standard housing.

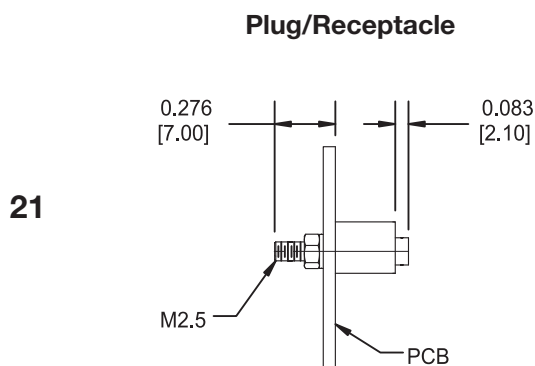
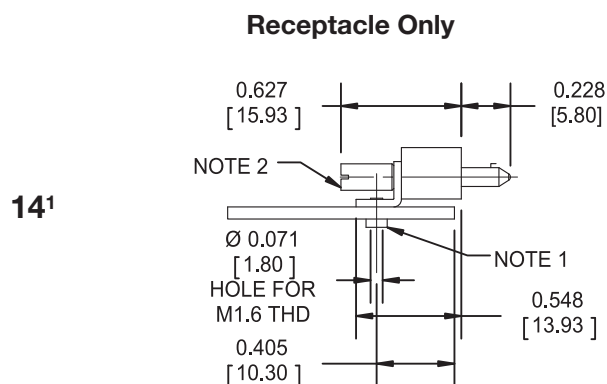
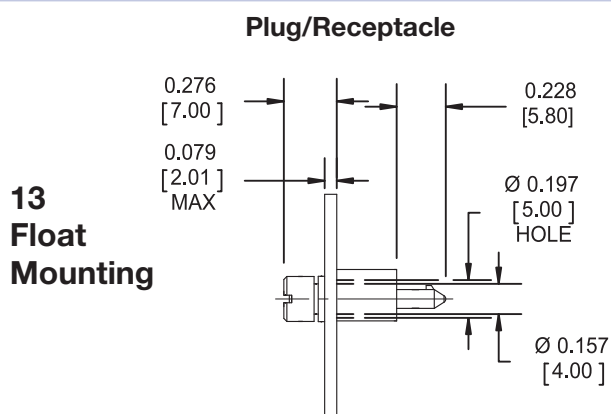
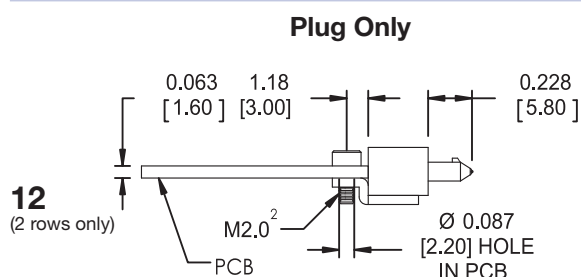
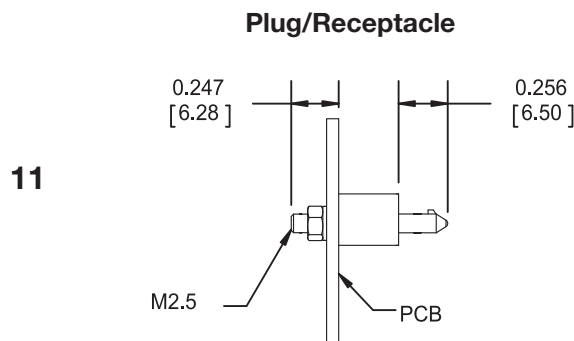
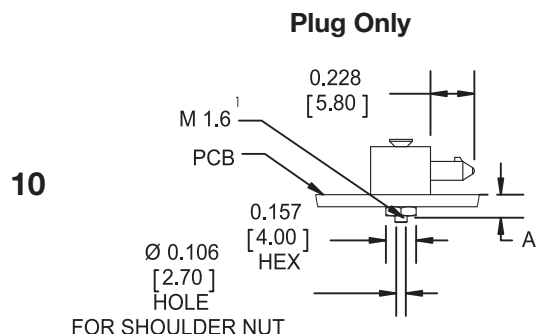
Dimensions are in inches [mm]

KA Series Replacement Contacts

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
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
D	YSK006-005ANH	YPN006-015	YPN006-107H
D ³	YSK006-027AH	—	—
FD ⁴	YSK006-274AH	YPN006-470	YPN006-487H
H ²	YSK006-009AH	YPN006-019	—
R	YSK006-011ANH	YPN006-021	—
S	YSK006-010ANH	YPN006-020	—
W	YSK006-020AH	YPN006-039	—
Y	YSK006-012AH	YPN006-022	—

** Consult factory for availability

Standard Mounting Styles



Terminal (Right Angle)	Dimension A			Dimension B			Dimension C		Dimension D	
	2 row	3 row (KA160)	3 row (Others)	2 row	3 row (KA160)	3 row (Others)	2 row	3 row	2 row	3 row
B	0.191 [4.85]	0.207 [5.25]	0.220 [5.59]	0.204 [5.18]	0.205 [5.20]	0.218 [5.53]	0.343 [8.71]	0.447 [11.36]	0.507 [12.89]	0.626 [15.89]
C	0.124 [3.15]	0.128 [3.25]	0.141 [3.58]	0.165 [4.18]	0.126 [3.20]	0.139 [3.53]	0.343 [8.71]	0.447 [11.36]	0.468 [11.89]	0.586 [14.89]

NOTES:

- 1) 15.00 oz. in torque.
2) 35.20 oz. in torque.
3) 52.30 oz. in torque.

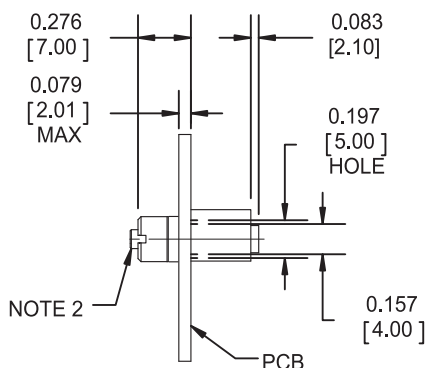
Dimensions are in inches [mm]

Standard Mounting Styles

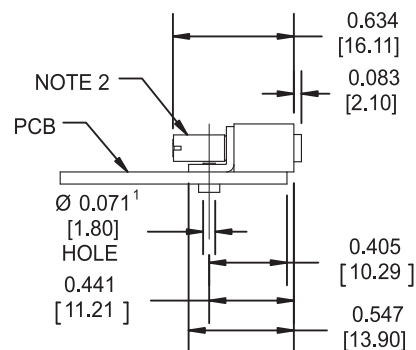
Plug/Receptacle

Plug/Receptacle

23 Float Mounting



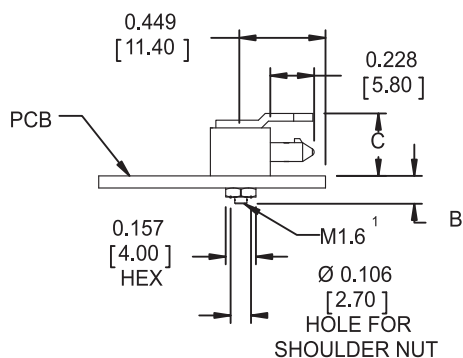
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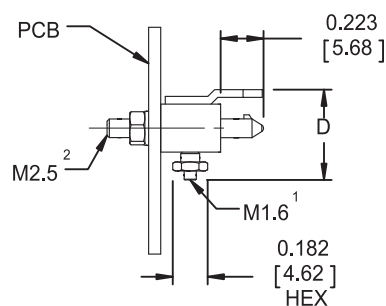
Plug Only

Plug Only

101



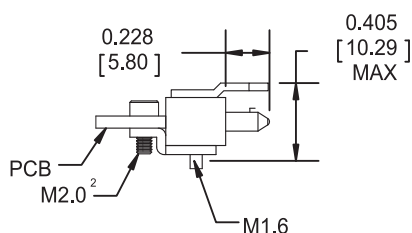
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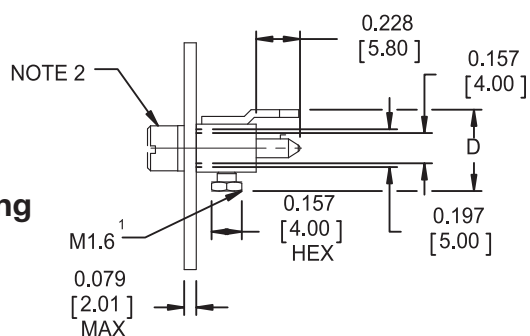
Plug Only

Plug Only

121 (2 rows only)



131 Float Mounting



	Dimension A			Dimension B			Dimension C		Dimension D	
Terminal (Right Angle)	2 row	3 row (KA160)	3 row (Others)	2 row	3 row (KA160)	3 row (Others)	2 row	3 row	2 row	3 row
B	0.191 [4.85]	0.207 [5.25]	0.220 [5.59]	0.204 [5.18]	0.205 [5.20]	0.218 [5.53]	0.343 [8.71]	0.447 [11.36]	0.507 [12.89]	0.626 [15.89]
C	0.124 [3.15]	0.128 [3.25]	0.141 [3.58]	0.165 [4.18]	0.126 [3.20]	0.139 [3.53]	0.343 [8.71]	0.447 [11.36]	0.468 [11.89]	0.586 [14.89]

NOTES:

1) 15.00 oz. in torque.

2) 35.20 oz. in torque.

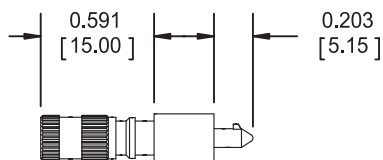
3) 52.30 oz. in torque.

Dimensions are in inches [mm]

Locking Mounting Styles

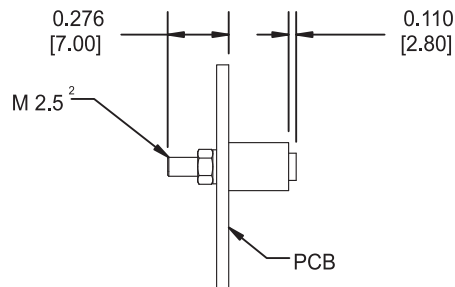
Plug/Receptacle

V1



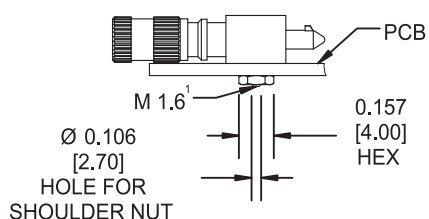
Plug/Receptacle

V2



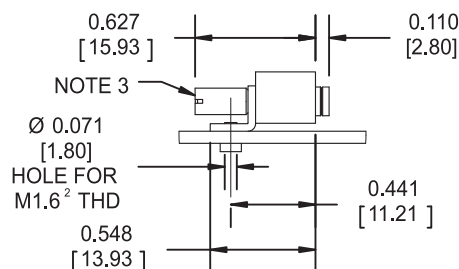
Plug Only

V3



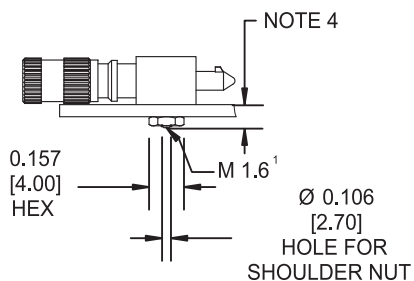
Receptacle Only

V4¹



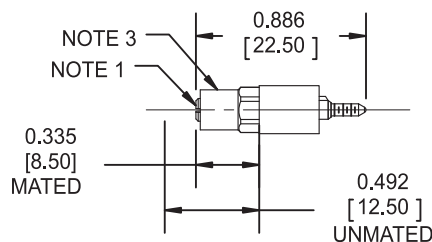
Plug Only

V6*



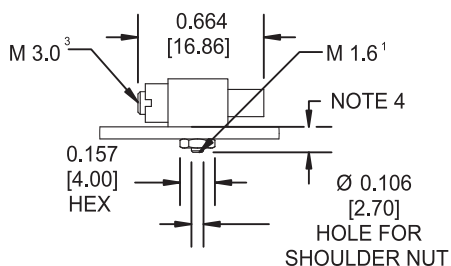
Plug/Receptacle

V7



Plug Only

V8



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.

* For contact counts: 62, 80.1, 98 and 160 plugs

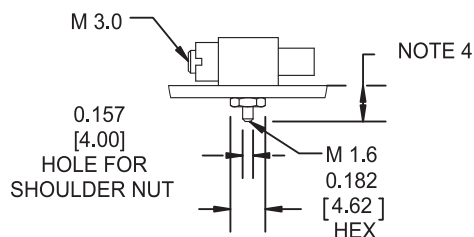
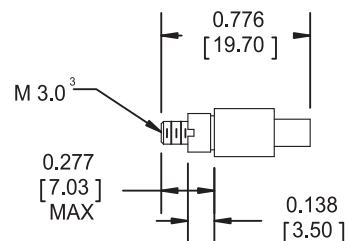
Style	Will Only Mate With	Locking Method
V1	V2, V4	Push, 1/4 Turn
V2	V1, V3, V6	Push, 1/4 Turn
V3 & V6*	V2, V4	Push, 1/4 Turn
V4	V1, V3, V6	Push, 1/4 Turn
V7	V8, V15	Screw
V8 & V9*	V7	Screw
V15	V7	Screw
V30	V33	Screw
V31	V32	Screw
V32	V31, V33	Screw
V33	V30, V32	Screw

Dimensions are in inches [mm]

Locking Mounting Styles

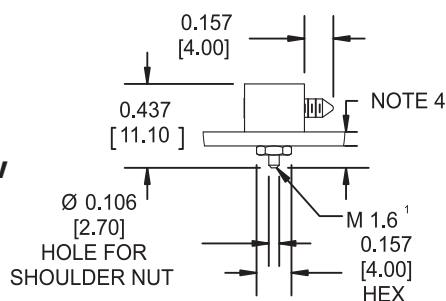
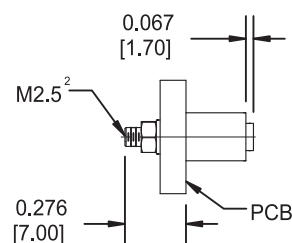
Plug Only

Plug/Receptacle

V9***V15**

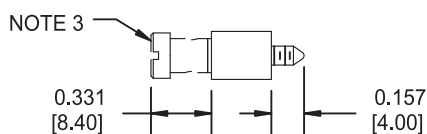
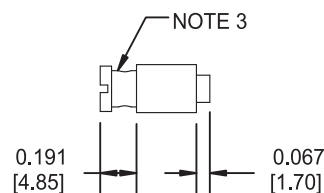
Plug Only

Plug/Receptacle

**V30
Stationary
Jackscrew****V31
Stationary
Jack Socket**

Plug/Receptacle

Plug/Receptacle

**V32
Rotating
Jackscrew****V33
Rotating
Jack Socket****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.

* For contact counts: 62, 80.1, 98 and 160 plugs

Style	Will Only Mate With	Locking Method
V1	V2, V4	Push, 1/4 Turn
V2	V1, V3, V6	Push, 1/4 Turn
V3 & V6*	V2, V4	Push, 1/4 Turn
V4	V1, V3, V6	Push, 1/4 Turn
V7	V8, V15	Screw
V8 & V9*	V7	Screw
V15	V7	Screw
V30	V33	Screw
V31	V32	Screw
V32	V31, V33	Screw
V33	V30, V32	Screw

Dimensions are in inches [mm]

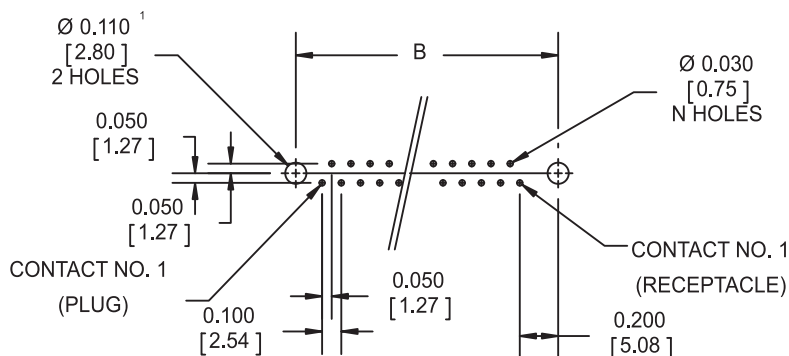
Mounting Dimensions

17, 29, 33, 41, 53 and 65 Contacts

PC Board Shown From Component Side of Board

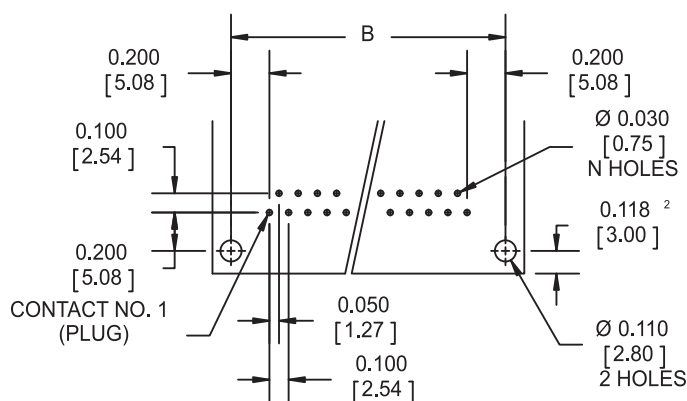
Mother Board Application

Style 11, 21, V2, V15 and V31



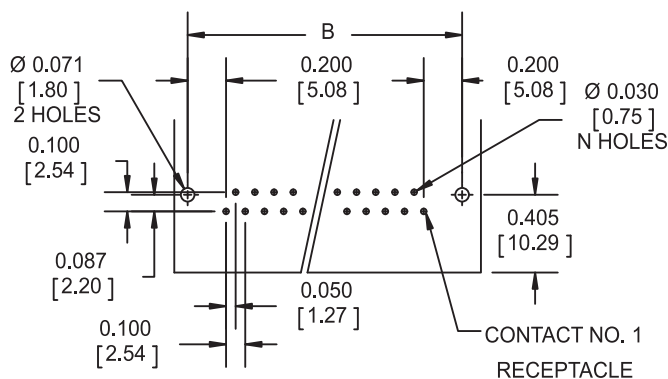
Daughter Board Application

Style 10, 30, V3, V8 and V30



Daughter Board Application

Style 24 and V4



Number of Contacts	Dimension B
17	1.200 [30.48]
29	1.800 [45.72]
33	2.000 [50.8]
41	2.400 [60.96]
53	3.000 [76.20]
65	3.600 [91.44]

NOTES:

- 1) For V15 locking mounting style, dimension is 0.130 ± 0.004 [3.20 ± 0.10] diameter.
- 2) PC board may be extended to 0.453 [11.50] max for use as a pin protector.

Dimensions are in inches [mm]

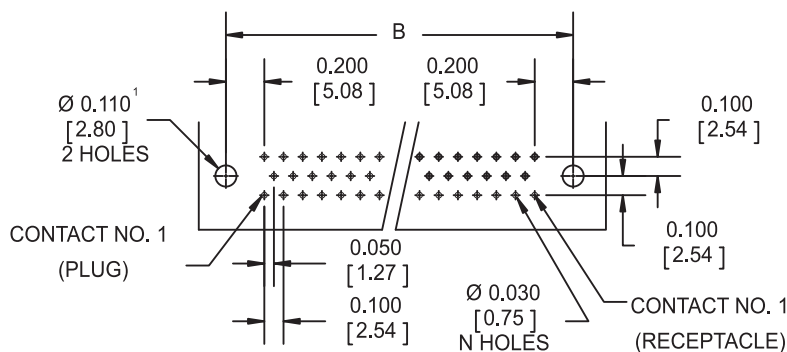
Mounting Dimensions

62, 80.1 and 98 Contacts

PC Board Shown From Component Side of Board

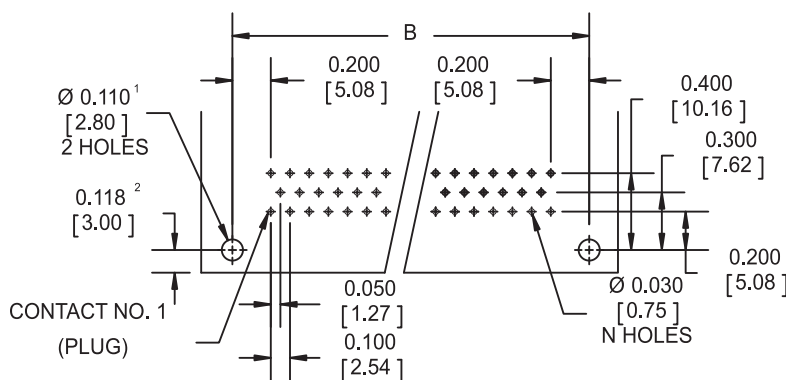
Mother Board Application

Style 11, 21, V2, V15 and V31



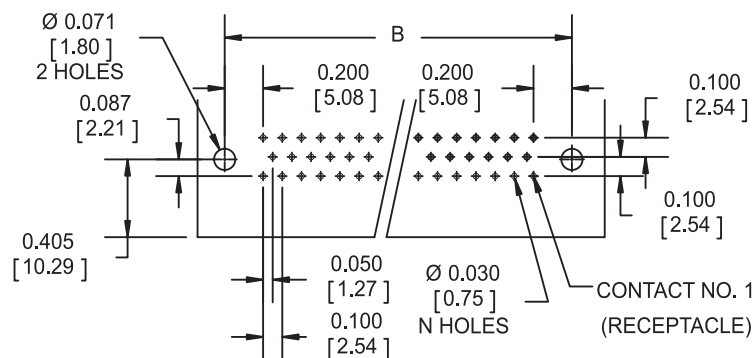
Daughter Board Application

Style 10, 30, V3, V8 and V30



Daughter Board Application

Style 24 and V4



Number of Contacts	Dimension B
62	2.400 [60.96]
80.1	3.000 [76.20]
98	3.600 [91.44]

NOTES:

1) For V15 locking mounting style, dimension is 0.130 ± 0.004 [3.20 ± 0.10] diameter.

2) PC board may be extended to 0.453 [11.50] max for use as a pin protector.

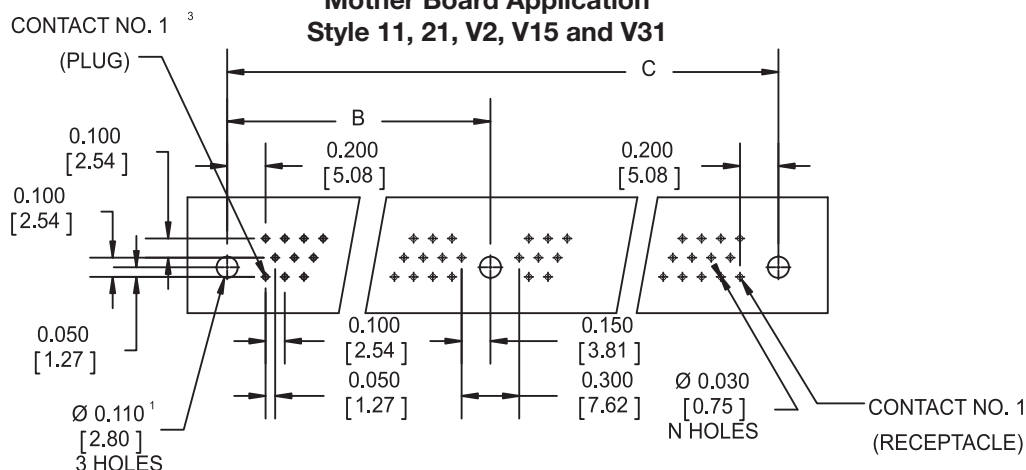
Dimensions are in inches [mm]

Mounting Dimensions

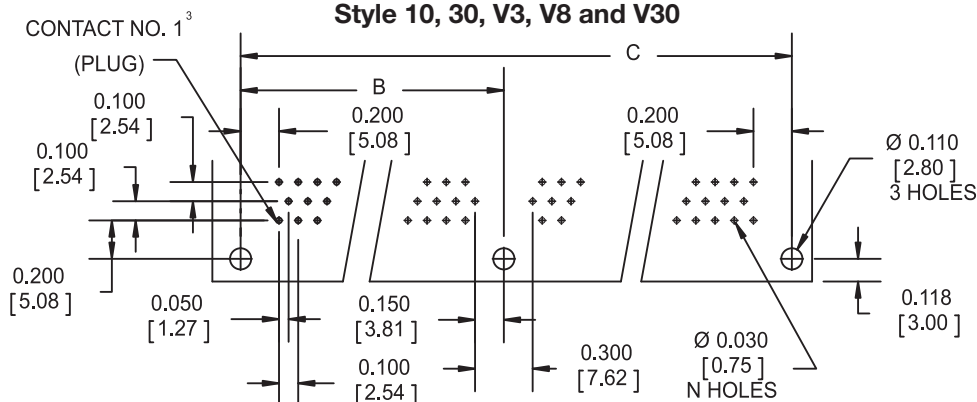
72, 84, 120 and 126 Contacts

PC Board Shown From Component Side of Board

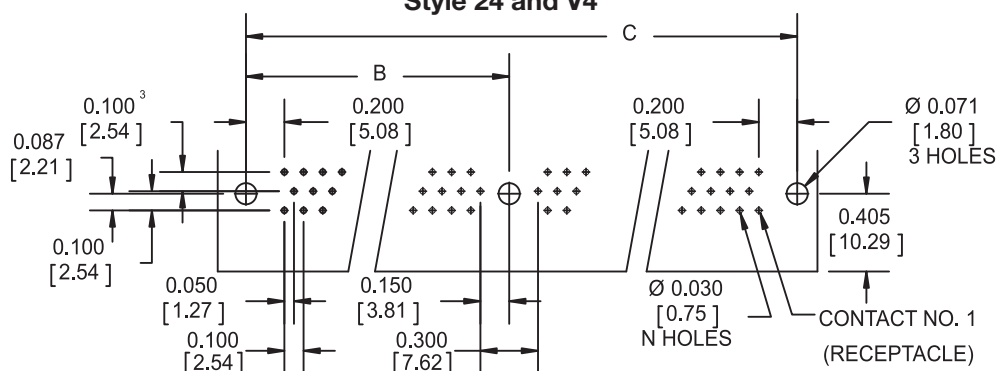
Mother Board Application Style 11, 21, V2, V15 and V31



Daughter Board Application Style 10, 30, V3, V8 and V30



Daughter Board Application Style 24 and V4



Number of Contacts	B	C
72	2.100 [53.34]	4.200 [106.68]
84	2.400 [60.96]	4.800 [121.92]
96	2.700 [68.58]	5.400 [137.16]
120	3.300 [83.82]	6.600 [167.64]
126	2.400 [60.96]	4.800 [121.92]

NOTES:

- 1) For V15 locking mounting style, dimension is 0.130 ± 0.004 [3.20 ± 0.10] diameter.
- 2) PC board may be extended to 0.453 [11.50] max for use as a pin protector.
- 3) Third row is for 126 pin version only.

Dimensions are in inches [mm]

PC Board Shown From Component Side of Board

Number of Contacts	Dimension B	Dimension C
160	2.950 [74.93]	5.900 [149.86]
160.4	2.950 [74.93]	5.900 [149.86]

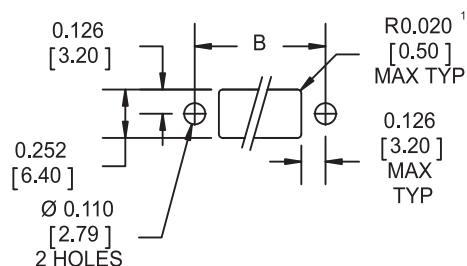
1) For V15 locking mounting style, dimension is 0.130 ± 0.004 [3.20 \pm 0.10] diameter.
2) PC board may be extended to 0.453 [11.50] max for use as a pin protector.

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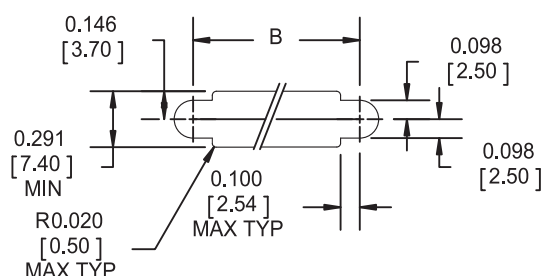
Cutout for Panel Application

17, 29, 33, 41, 53 and 65 Contacts

Fixed Mounting Styles 11, 21, V2, V15 and V31



Float Mounting Styles 13 and 23

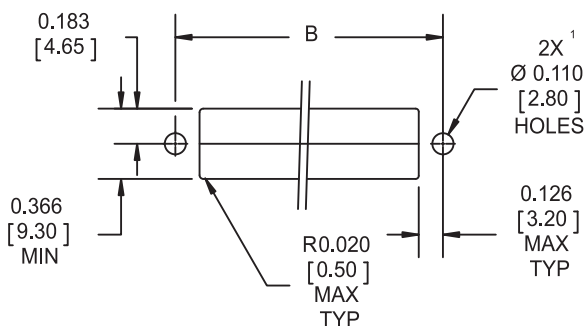


Number of Contacts	Dimension B
17	1.200 [30.48]
29	1.800 [45.72]
33	2.000 [50.8]
41	2.400 [60.96]
53	3.000 [76.20]
65	3.600 [91.44]

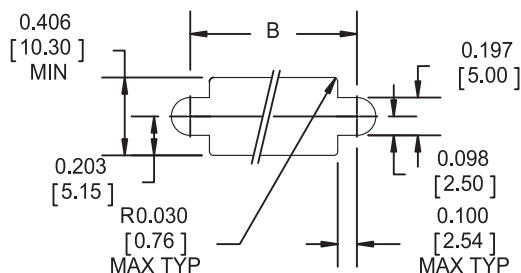
Cutout for Panel Application

62, 80.1 and 98 Contacts

Fixed Mounting Styles 11, 21, V2, V15 and V31



Float Mounting Styles 13 and 23



Number of Contacts	Dimension B
62	2.40 [60.96]
80.1	3.00 [76.20]
98	3.60 [91.44]

NOTE:

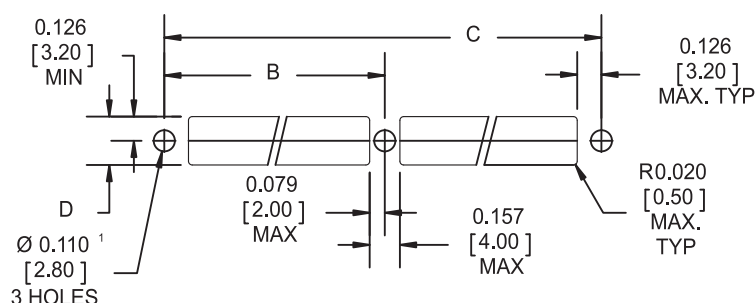
1) For V15 locking mounting style, dimension is 0.130 ± 0.004 [3.20 ± 0.10] dia.

Dimensions are in inches [mm]

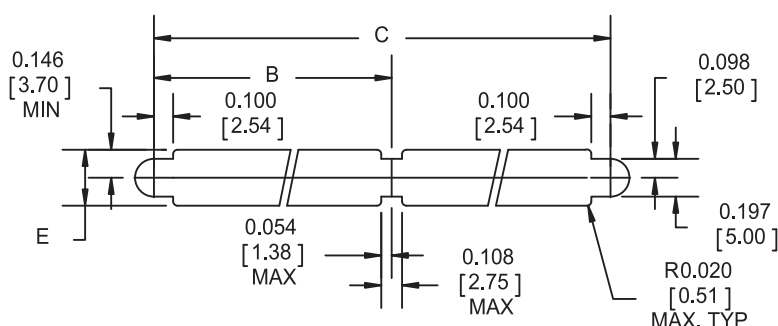
Cutout for Panel Application

72, 84, 120 and 126 Contacts

Fixed Mounting Styles 11, 21, V2, V15 and V31



Float Mounting Styles 13 and 23

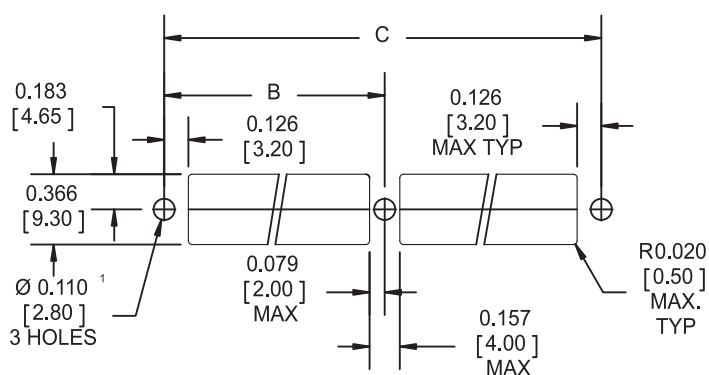


Number of Contacts	B	C	D _{Min}	E _{Min}
72	2.100 [53.34]	4.200 [106.68]	0.252 [6.40]	0.291 [7.50]
84	2.400 [60.96]	4.800 [121.92]	0.252 [6.40]	0.291 [7.50]
96	2.700 [68.58]	5.400 [137.16]	0.252 [6.40]	0.291 [7.50]
120	3.300 [83.82]	6.600 [167.64]	0.252 [6.40]	0.291 [7.50]
126	2.400 [60.96]	4.800 [121.92]	0.366 [9.30]	0.406 [10.30]

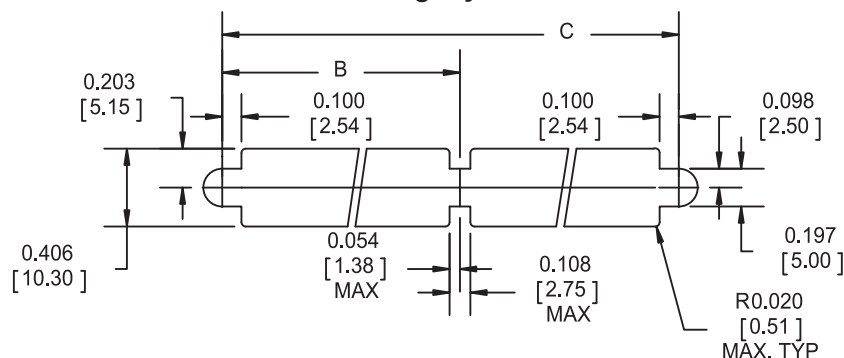
Cutout for Panel Application

160 and 160.4 Contacts

Fixed Mounting Styles 11, 21, V2, V15 and V31



Float Mounting Styles 13 and 23



Number of Contacts	Dimension B	Dimension C
160	2.950 [74.93]	5.900 [149.86]
160.4	2.950 [74.93]	5.900 [149.86]

Dimensions are in inches [mm]

Ordering Information

For 2 and 3 Row Connectors

KA	17	.4	/127	B	E	V1	F	D	00	T
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Number of Contacts 17, 29, 33, 41, 53, 62, 72, 80, 84, 96, 98, 120, 126, 160

.1 = Must be used for 80.1 contact version only
.4 = Front removable receptacles^{2,8}
(Omit for standard receptacles)

Number of Rows B = 2 rows
C = 3 rows

Insulator P = Plug
E = Receptacle

Locking Mounting Hardware¹ (Omit for nonlocking hardware)
Receptacles : V1, V2, V4, V7, V15
Plugs : V1, V2, V3³, V4, V7, V8³, V15, V6, V30, V31, V32 and V33 ; also V9 (for 62, 80.1, 98, 160 contacts only)

Contact Gender M = Male
F = Female
N = No contacts

Plating T, TH, TAH

Mounting Hardware 00⁵, 10⁴, 11, 12, 13, 14⁷, 21, 23, 24, 101, 111, 131
(Omit for locking hardware)

Terminal Styles (Omit for no contacts)
B = 90° dip solder (1/8" printed circuit board)
C = 90° dip solder (1/16" printed circuit board)
D = Straight dip solder
FD = Front removable D contacts
H2 = Double crimp
R = Crimp⁶
S = Solder cup
W = Wire Wrap (2 wraps)
Y = Wire Wrap (3 wraps)

Accessories

Extraction Tools:

For standard contactsS/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 contactsK547

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 toolS/MONT 1.0060

Spanner wrench for receptacle with front removable contacts.....T136

Spanner wrench for V8, V9, V10, and V15T249

Replacement Contacts: see page 3/54

Comb:

For positioning right angle dip solder contact tails.

YCM017-001

Number of
contacts

NOTES:

- 1) Important! See Mating Combination Chart for Interchangeability.
- 2) Available with Ref. D (Straight Dip Solder) and Ref. Y (Wire Wrap) terminal styles only.
- 3) Not available in three row versions.
- 4) Available with plugs only.
- 5) In order to keep mating forces as low as possible, it is recommended that the connectors are fixtured during soldering, contact engineering for details.

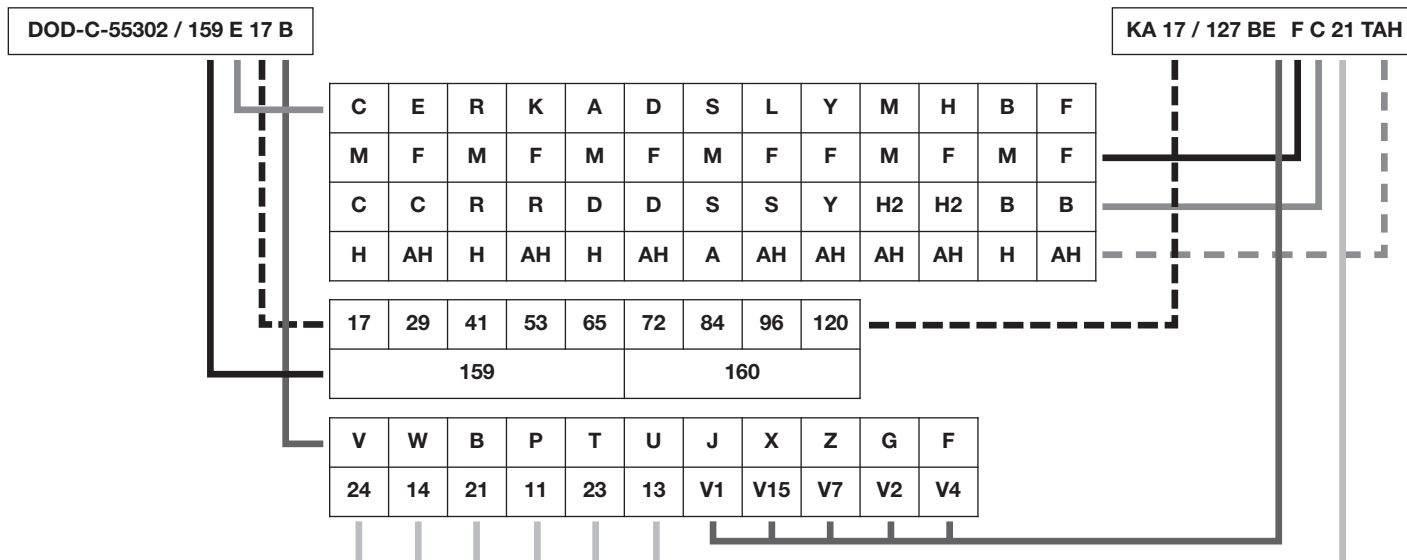
- 6) Connectors with no hardware.
- 7) Crimp contacts will be shipped unmounted. When inserting contacts into the blocks/insulators be sure that the two flats at the rear of the contact body are aligned with the flats in the insulator.
- 8) Receptacles only.
- 9) Available in 160 contact version only.

Dimensions are in inches [mm]

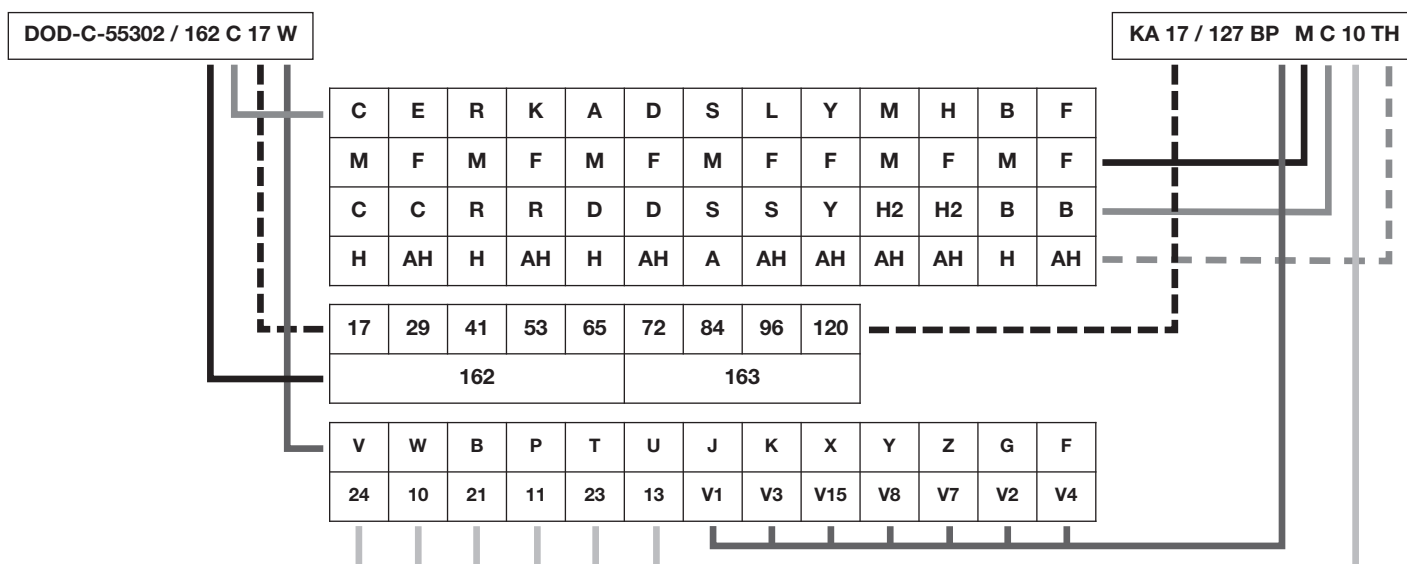
Military Part Number – Hypertronics Part Number Cross Reference

Numbers Are DOD Instead of MIL Due to Metric Design

Slash Sheets 159 and 160
 Receptacle 2 Row Insulator Styles
 For 17 – 120 Contact Positions



Slash Sheets 162 and 163
 Receptacle 2 Row Insulator Styles
 For 17 – 120 Contact Positions



Military Part Number – Hypertronics Part Number Cross Reference

Numbers Are DOD Instead of MIL Due to Metric Design

Slash Sheet 161

160 Position Split Shell Receptacles

The Following Models Are Approved

D55302/161 J 160 G KA 160.4/127CEFD21TAH
D55302/161 G 160 G KA 160.4/127CEFY21TAH
D55302/161 P 160 G KA 160.4/127CEMD21TAH
D55302/161 Q 160 G KA 160.4/127CEMY21TAH

Slash Sheet 164

160 Contact Position Plugs and Receptacles

