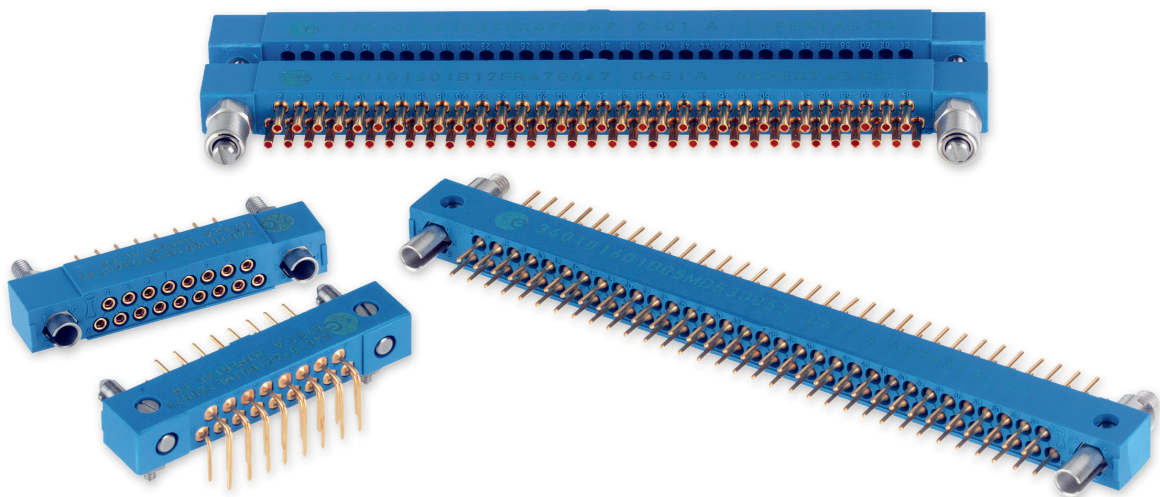


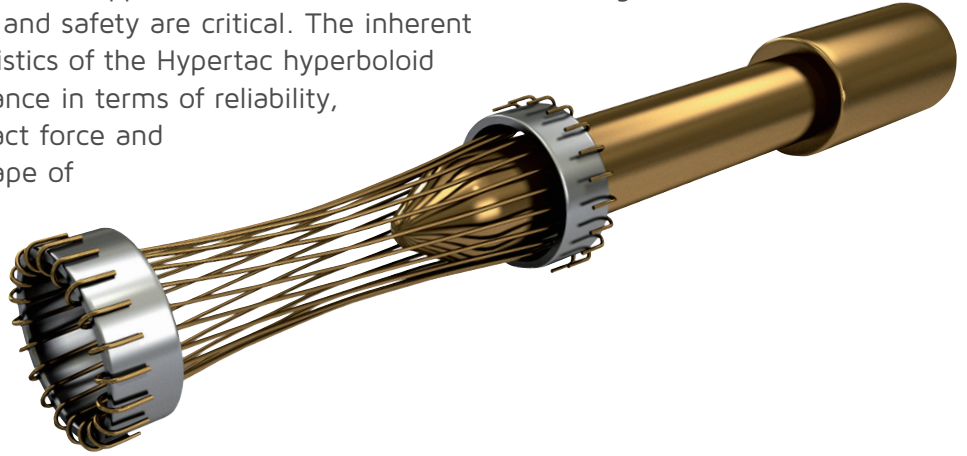
KNB/KNC/KNDSeries

Medium & High Density PCB Connectors



Hypertac® Hyperboloid Technology

Smiths Interconnect offers an extensive range of superior contact technologies suitable for standard and custom solutions. Hypertac® (HYPERboloid conTACT) is the original superior performing hyperboloid contact technology designed for use in all applications and in harsh and demanding environments where high reliability and safety are critical. The inherent electrical and mechanical characteristics of the Hypertac hyperboloid contact ensures unrivalled performance in terms of reliability, number of mating cycles, low contact force and minimal contact resistance. The shape of the contact sleeve is formed by hyperbolically arranged contact wires, which align themselves elastically as contact lines around the pin, providing a number of linear contact paths.



Features

Benefits

Low insertion/extraction forces

The angle of the socket wires allows tight control of the pin insertion and extraction forces. The spring wires are smoothly deflected to make line contact with the pin.

High density interconnect systems

Significant reductions in size and weight of sub-system designs. No additional hardware is required to overcome mating and unmating forces.

Long contact life

The smooth and light wiping action minimizes wear on the contact surfaces. Contacts perform up to 100,000 insertion/extraction cycles with minimal degradation in performance.

Low cost of ownership

The Hypertac contact technology will surpass most product requirements, thus eliminating the burden and cost of having to replace the connector or the entire subsystem.

Lower contact resistance

The design provides a far greater contact area and the wiping action of the wires insures a clean and polished contact surface. Our contact technology has about half the resistance of conventional contact designs.

Low power consumption

The lower contact resistance of our technology results in a lower voltage drop across the connector reducing the power consumption and heat generation within the system.

Higher current ratings

The design parameters of the contact (e.g., the number, diameter and angle of the wires) may be modified for any requirement. The number of wires can be increased so the contact area is distributed over a larger surface. Thus, the high current carried by each wire because of its intimate line contact, can be multiplied many times.

Maximum contact performance

The lower contact resistance of the Hypertac contact reduces heat build-up; therefore Hypertac contacts are able to handle far greater current in smaller contact assemblies without the detrimental effects of high temperature.

Immunity to shock & vibration

The low mass and resultant low inertia of the wires enable them to follow the most abrupt or extreme excursions of the pin without loss of contact. The contact area extends 360° around the pin and is uniform over its entire length. The 3 dimensional symmetry of the Hypertac contact design guarantees electrical continuity in all circumstances.

Reliability under harsh environments

Harsh environmental conditions require connectors that will sustain their electrical integrity even under the most demanding conditions such as shock and vibration. The Hypertac contact provides unmatched stability in demanding environments when failure is not an option.

Contents

KN Series - Medium Density PCB Connectors

KNB series (2 rows).....	2
KXB series (2 rows)	18
KNC/KND series (3 rows)	21
Contacts	36
Tools and accessories.....	37

Technical Characteristics

Contact diameter	HYPERTAC® type Ø 0.60 mm rear removable
Number of contact	Up to 120
Pitch	2.54 mm between rows - 1.27 mm between quicuncial contacts
Rows	2

Materials & Platings

Contact	Brass or bronze	
Moulding	Glass fiber filled diallyl - Phtalate	
Guides	Stainless steel or nickel plated brass	
	Standard	ESA
Pin body	0.25 µm gold / 1.27 µm Ni	1.27 µm gold / 1.27 µm Ni (min.)
Socket body	0.25 µm gold / 1.27 µm Ni on active area 1.27 µm Ni on non active area	0.25 µm gold / 1.27 µm Ni (min.)
Socket wires	1 µm gold / 0.20 µm Ni	1.27 µm gold / 0.20 µm Ni (min.)

Electrical

Current grade rating (at 25°C)	Standard grade: 3 A max. - ESA grade: 5 A max.
Dielectric withstanding voltage	1200 Vrms
Contact resistance	≤8 mΩ
Insulation resistance	>104 MΩ (500 Vcc)

Mechanical

Mating & unmating cycle	5000
Guiding	By two outside guides (2 guiding styles) and one central guide (3 guiding styles)
Keying	By rotating of outside polarised guides (up to 36 keying)

Environmental

Temperature range	-55°C to 125°C
Conformity	MIL C 55302, ESA/ESCC3401/016 - 3401/017, NF C-UTE C 93-424

How To Order



K N B

1 2 3



4



5



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7

1	Series																																																																								
2	Pitch or type	N 1.27 mm pitch, rear removable contacts																																																																							
3	Model	B 2 rows																																																																							
4	Number of contacts	0 1 7 0 2 9 0 4 1 0 5 3 0 6 5 0 7 2 0 8 4 0 9 6 1 2 0																																																																							
		For the right angle 053 layout, KNB must be replaced by KXB (non ESA qualified, details on page 20)																																																																							
5	Moulding polarity	NF C-UTE C 93-424 MIL-C-55302 ESA/ESCC 3401/01601B SPACE GRADE <table><tr><td>12</td><td>14</td><td>54</td><td>54</td><td>Female plug</td></tr><tr><td>13</td><td>15</td><td>55</td><td>55</td><td>Male plug</td></tr><tr><td>16</td><td>18</td><td>56</td><td>56</td><td>Tinned female plug[†]</td></tr><tr><td>17</td><td>19</td><td>57</td><td>57</td><td>Tinned male plug[†]</td></tr></table> NF C-UTE C 93-424 MIL-C-55302 ESA/ESCC 3401/01601B SPACE GRADE <table><tr><td>1A</td><td>1C</td><td>5A</td><td>5A</td><td>Tinned female plug^{††}</td></tr><tr><td>1B</td><td>1D</td><td>5B</td><td>5B</td><td>Tinned male plug^{††}</td></tr><tr><td>22</td><td>24</td><td>44</td><td>44</td><td>Female receptacle</td></tr><tr><td>23</td><td>25</td><td>45</td><td>45</td><td>Male receptacle</td></tr></table> NF C-UTE C 93-424 MIL-C-55302 ESA/ESCC 3401/01601B SPACE GRADE <table><tr><td>26</td><td>28</td><td>46</td><td>46</td><td>Tinned female receptacle[†]</td></tr><tr><td>27</td><td>29</td><td>47</td><td>47</td><td>Tinned male receptacle[†]</td></tr><tr><td>2A</td><td>2C</td><td>-</td><td>-</td><td>Tinned female receptacle^{††}</td></tr><tr><td>2B</td><td>2D</td><td>-</td><td>-</td><td>Tinned male receptacle^{††}</td></tr></table>												12	14	54	54	Female plug	13	15	55	55	Male plug	16	18	56	56	Tinned female plug [†]	17	19	57	57	Tinned male plug [†]	1A	1C	5A	5A	Tinned female plug ^{††}	1B	1D	5B	5B	Tinned male plug ^{††}	22	24	44	44	Female receptacle	23	25	45	45	Male receptacle	26	28	46	46	Tinned female receptacle [†]	27	29	47	47	Tinned male receptacle [†]	2A	2C	-	-	Tinned female receptacle ^{††}	2B	2D	-	-	Tinned male receptacle ^{††}
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6	Termination styles	⌚ 10 Through board solder - 90° - length 3 mm ⌚ 11 Through board solder - 90° - length 4 mm 12 Through board solder - 90° - length 4.50 to 5.70 mm ⌚ 20 Crimp 21 Double Crimp ⌚ 30 Through board solder - straight 31 Through board solder - straight ⌚ 40 Solder bucket ⌚ 51 Wire wrap (3 wrapping levels) 90 Male - male ⌚ 91 Female - male																																																																							
7	Mounting hardware	Guide Style (consult us for special guides) ⌚ 110 Male polarised, transverse mount, standard plug ⌚ 111 Male polarised, vertical mount ⌚ 113 Male polarised, float mount ⌚ 121 Female polarised, vertical mount ⌚ 123 Female polarised, float mount ⌚ 124 Female polarised, transverse mount ⌚ 145 Male polarised, transverse mount on receptacle only 190 Female power or mass contact, vertical mount ⌚ 125 Male unpolarised, transverse mount ⌚ 126 Female unpolarised, vertical mount ⌚ 127 Male unpolarised, vertical mount 130 Female unpolarised, vertical mount ⌚ 131 Male unpolarised, transverse mount ⌚ 132 Female unpolarised, transverse mount 133 Female all polarised, transverse mount 191 Male power or mass contact, vertical mount Locking Styles MALE PLUG 201 1/4 turn, free connector 203 1/4 turn, transverse mount ⌚ 207 Jackscrew, free connector ⌚ 211 Jackscrew, free connector ⌚ 290 Jackscrew, vertical mount FEMALE RECEPTACLE 202 1/4 turn, vertical mount 204 1/4 turn, transverse mount ⌚ 208 Jackscrew, transverse mount ⌚ 210 Jackscrew, free connector ⌚ 212 Jackscrew, transverse mount ⌚ 215 Jackscrew, vertical mount ⌚ 219 Jackscrew, vertical mount ⌚ 232 Jackscrew, with operation button																																																																							

- * For 90° & straight terminations (splicing on PCB)
- ** RoHS compliant for 90° & straight terminations (splicing on PCB)
- † Tinned contacts are not available as spares

Hypertac & ESA Correspondance Table

HYPERTAC

KNB

34 01 016 01 B

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1 ESCC component number																																																																																																																																								
2 Mounting	HYPERTAC ESA <table><tr><td>Plug KNB 017</td><td>01</td><td>Plug KNB 096</td><td>08</td><td>Receptacle KNB 053</td><td>16</td><td>Plug KNB 072</td><td>56</td><td>Plug KNC 098</td><td>62</td></tr><tr><td>Plug KNB 029</td><td>02</td><td>Plug KNB 120</td><td>10</td><td>Receptacle KNB 065</td><td>17</td><td>Receptacle KNB 072</td><td>57</td><td>Receptacle KNC 098</td><td>63</td></tr><tr><td>Plug KNB 041</td><td>03</td><td>Plug KNC 160</td><td>12</td><td>Receptacle KNB 084</td><td>19</td><td>Plug KNC 062</td><td>58</td><td></td><td></td></tr><tr><td>Plug KNB 053</td><td>04</td><td>Receptacle KNB 017</td><td>13</td><td>Receptacle KNB 096</td><td>20</td><td>Receptacle KNC 062</td><td>59</td><td></td><td></td></tr><tr><td>Plug KNB 065</td><td>05</td><td>Receptacle KNB 029</td><td>14</td><td>Receptacle KNB 120</td><td>22</td><td>Plug KNC 080</td><td>60</td><td></td><td></td></tr><tr><td>Plug KNB 084</td><td>07</td><td>Receptacle KNB 041</td><td>15</td><td>Receptacle KNC 160</td><td>24</td><td>Receptacle KNC 080</td><td>61</td><td></td><td></td></tr></table> REMINDER SPATIAL P.P.P. (Party Polarity Protection) EXAMPLE <table><tr><td>Female receptacle</td><td>44</td><td>Plug female</td><td>54</td><td>KNB 029 44 40 113</td></tr><tr><td>Male receptacle</td><td>45</td><td>Plug male</td><td>55</td><td>P.P.P.</td></tr></table>																Plug KNB 017	01	Plug KNB 096	08	Receptacle KNB 053	16	Plug KNB 072	56	Plug KNC 098	62	Plug KNB 029	02	Plug KNB 120	10	Receptacle KNB 065	17	Receptacle KNB 072	57	Receptacle KNC 098	63	Plug KNB 041	03	Plug KNC 160	12	Receptacle KNB 084	19	Plug KNC 062	58			Plug KNB 053	04	Receptacle KNB 017	13	Receptacle KNB 096	20	Receptacle KNC 062	59			Plug KNB 065	05	Receptacle KNB 029	14	Receptacle KNB 120	22	Plug KNC 080	60			Plug KNB 084	07	Receptacle KNB 041	15	Receptacle KNC 160	24	Receptacle KNC 080	61			Female receptacle	44	Plug female	54	KNB 029 44 40 113	Male receptacle	45	Plug male	55	P.P.P.																																																		
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5 Locking type In center	00 For 2 guide connectors -- For 3 guide connectors (see table 4, Locking type - On left side) HYPERTAC ESA <table><tr><td>KNB</td><td>10</td><td>125</td><td>26</td><td>KNC</td><td>10</td><td>125</td><td>27</td><td>KN</td><td>127</td><td>28</td><td>KN</td><td>126</td><td>29</td></tr></table>																KNB	10	125	26	KNC	10	125	27	KN	127	28	KN	126	29																																																																																																										
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6 Locking type On right side	(see table 4, Locking type - On left side)																																																																																																																																							

* Please consult us

Contact Terminations

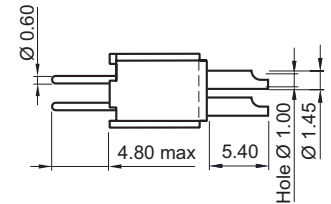
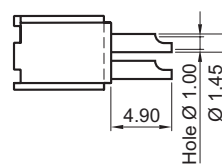
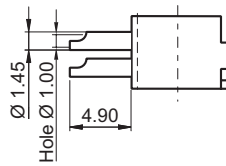
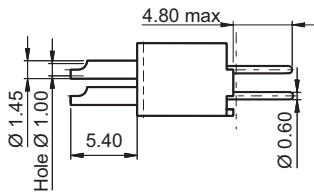
Plug

Male

Female

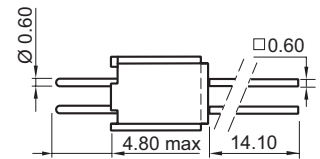
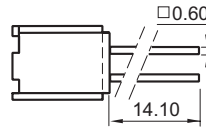
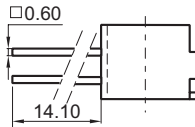
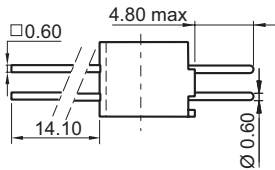
Solder bucket (AWG 22 max)

Ref: **40** Ref : **MS & FS**



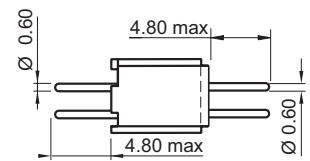
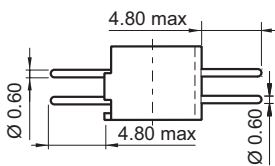
Wire wrap (3 wrapping levels)

Ref: **51** Ref : **MY & FY**



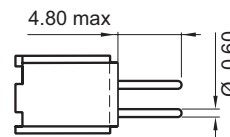
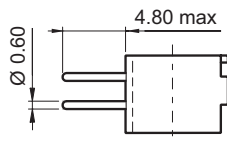
Saver (male-male)

Ref: **90**



Saver (female-male)

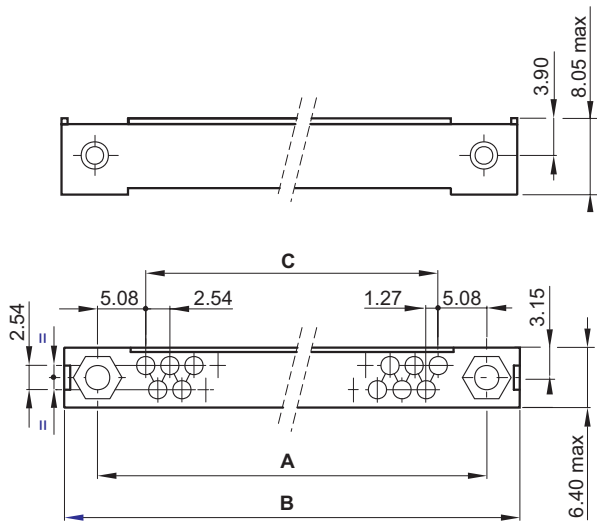
Ref: **91** Ref : **FM**



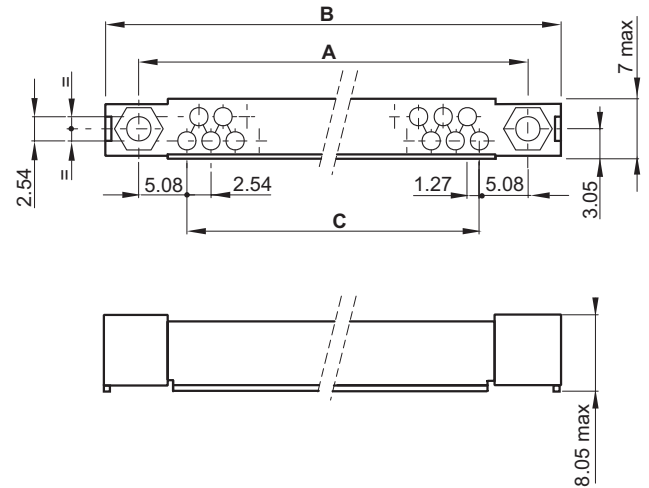
Connector Dimensions

Plug

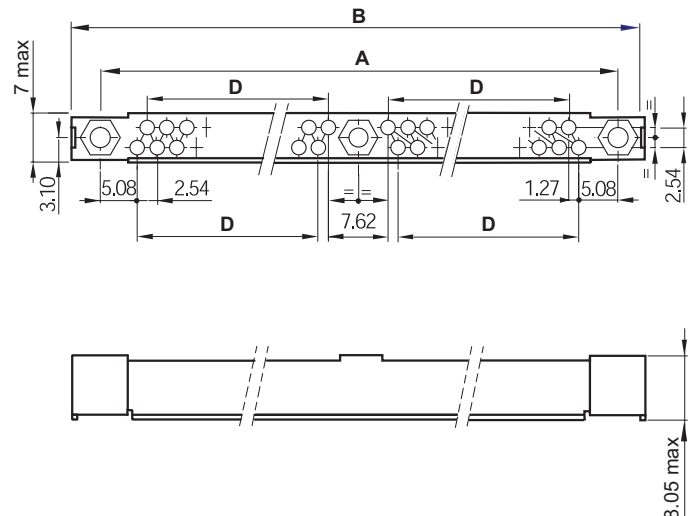
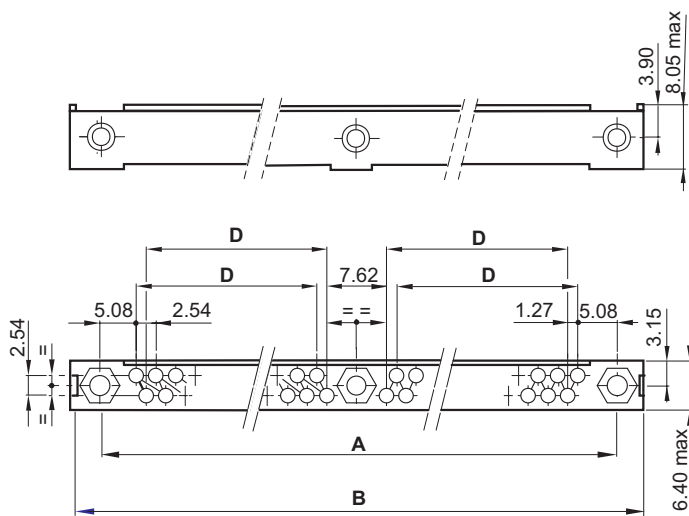
17 to 65 contacts



Receptacle



72 to 120 contacts



No. of contacts	17	29	41	53	65	72	84	96	120
A	30.48	45.72	60.96	76.20	91.44	106.68	121.92	137.16	167.64
B max	38.50	53.70	69.00	84.20	99.50	114.70	129.90	145.20	175.50
C	20.32	35.56	50.80	66.04	81.28	-	-	-	-
D	-	-	-	-	-	43.18	50.80	58.42	73.66

[illegible]

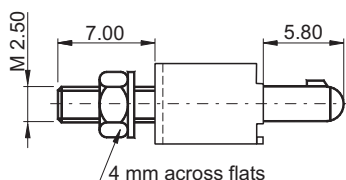
Guide Styles

Plug & Receptacle

Male

Polarised vertical mount

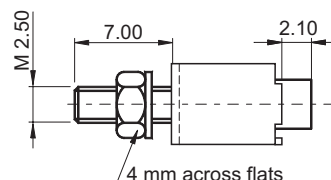
Ref: 111 Ref : 35



Female

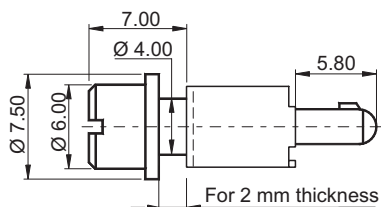
Polarised vertical mount

Ref: 121 Ref : 36



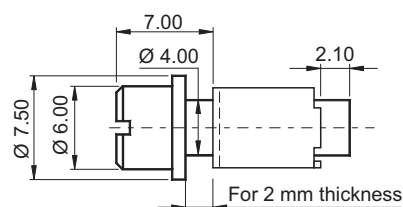
Polarised vertical float mount

Ref: 113 Ref : 55



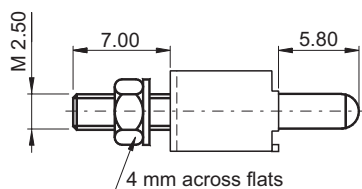
Polarised vertical float mount

Ref: 123 Ref : 54



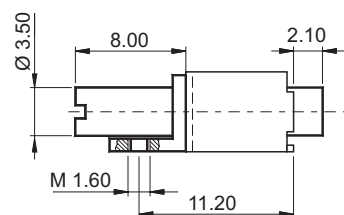
Unpolarised vertical mount

Ref: 127 Ref : 28



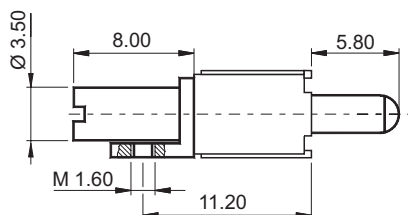
Polarised transverse mount

Ref: 124 Ref : 41



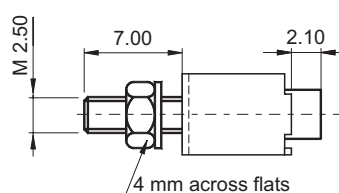
Unpolarised transverse mount

Ref: 131 Ref : 31



Unpolarised vertical mount

Ref: 126 Ref : 29



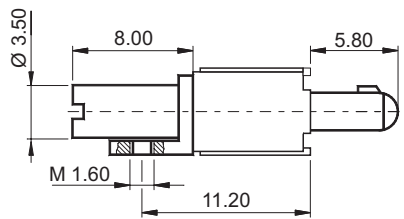
Guide Styles

Plug & Receptacle

Male

Polarised transverse mount

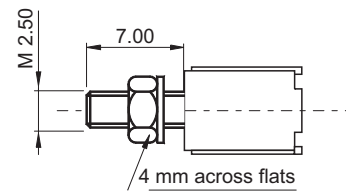
Ref: **145** Ref: : 40



Female

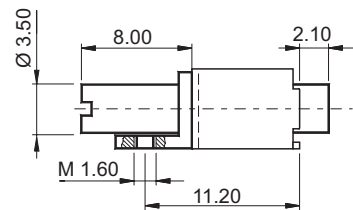
All polarised vertical mount

Ref: **130**



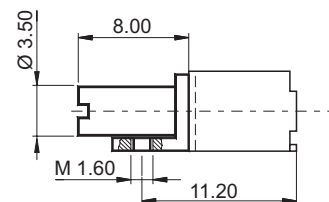
Unpolarised transverse mount

Ref: **132** Ref: : 32



All polarised transverse mount

Ref: **133**



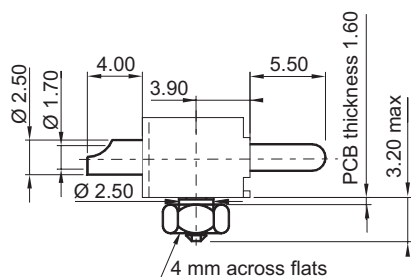
Guide Styles

Plug & Receptacle

Male

Power or mass transverse mount

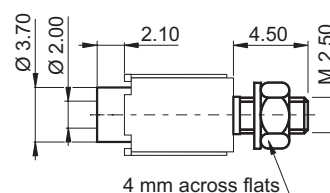
Ref: **191**



Female

Power or mass vertical mount

Ref: **190**



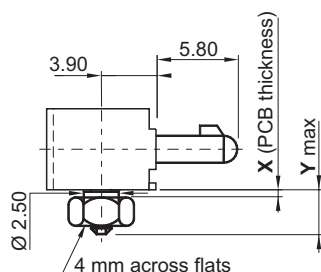
Plug Only

Polarised transverse mount

Ref: **10 110** Ref: **33** **X=1.60 Y=3.20**

Ref: **11 110** Ref: **72** **X=2.40 Y=4.90**

Ref: **12 110** **X=3.20 Y=6.90**

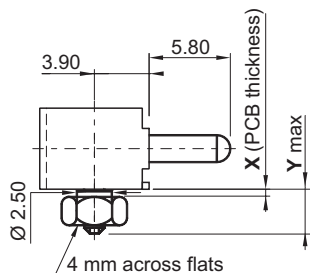


Unpolarised transverse mount

Ref: **10 125** Ref: **26** **X=1.60 Y=3.20**

Ref: **11 125** Ref: **71** **X=2.40 Y=4.90**

Ref: **12 125** **X=3.20 Y=6.90**



Locking Device Compatibility Chart

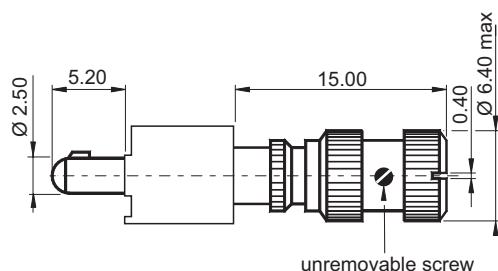
				R	P	R	P	R	P	R	P	R	P	R	P	R	P		
Compatible																		Receptacle	Moulding
																		Plug	
P																			290
R																			
P																			231
R																			
P																			211
R																			
P																			207
R																			
P																			205
R																			
P																			203
R																			
P																			201
R																			
																		Male locking devices	

Male Locking Styles

Plug & Receptacle

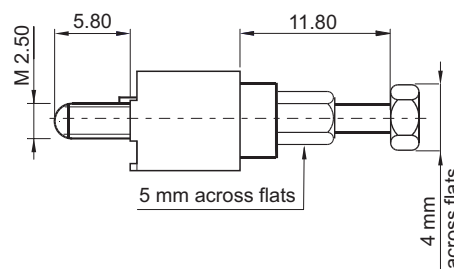
Jack 1/4 turn lock, free connector

Ref: **201**



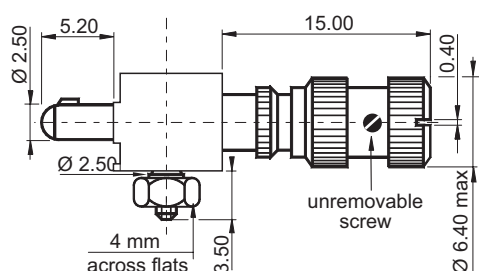
Jackscrew, free connector

Ref: **211** Ref: **51**



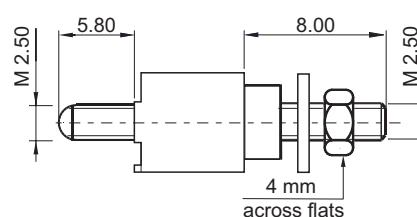
Jack 1/4 turn lock, transverse mount

Ref: **203** PCB thickness **1.60**



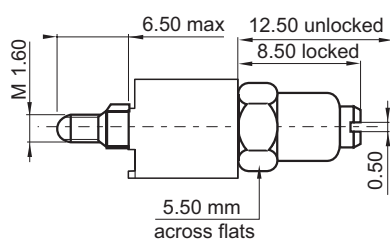
Jackscrew, vertical mount

Ref: **231** Ref: **46**



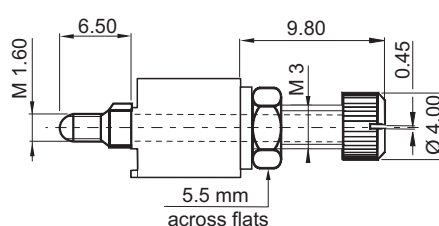
Jackscrew, free connector

Ref: **207** Ref: **47**



Jackscrew, vertical mount

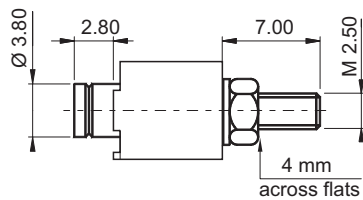
Ref: **290** Ref: **81**



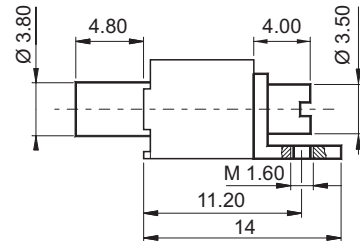
Female Locking Styles

Plug & Receptacle

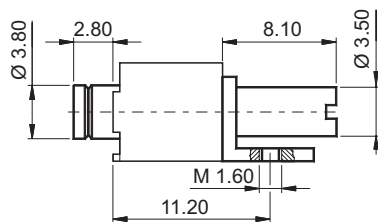
Jack 1/4 turn lock, vertical mount

Ref: **202**

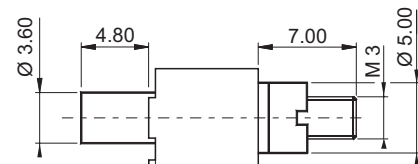
Jackscrew, transverse mount

Ref: **212** Ref: **52**

Jack 1/4 turn lock, transverse mount

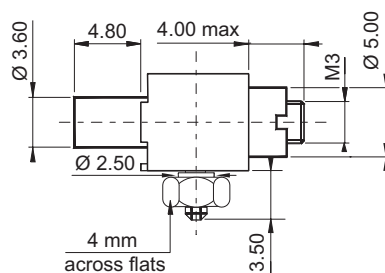
Ref: **204**

Jackscrew, vertical mount

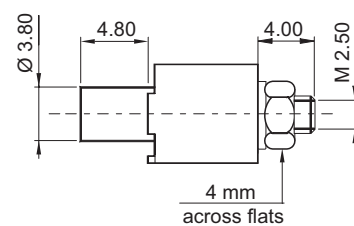
Ref: **215** Ref: **53**

Jackscrew, transverse mount

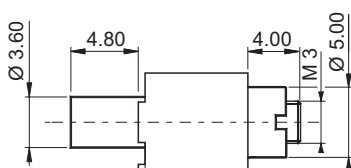
Ref: **10 208** Ref: **48** PCB thickness 1.60
 Ref: **11 208** Ref: **79** PCB thickness 2.40



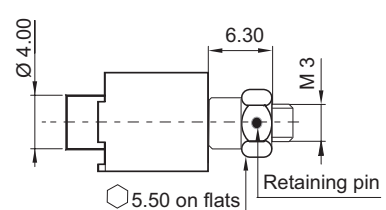
Jackscrew, vertical mount

Ref: **219** Ref: **80**

Jackscrew, free connector

Ref: **210** Ref: **50**

Rotating jackscrew, free connector

Ref: **232** Ref: **45**

Mating Side Layout View

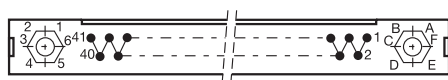
Plug



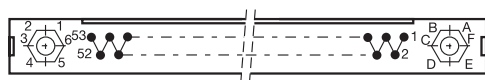
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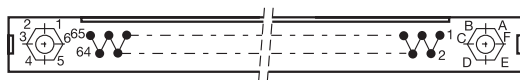
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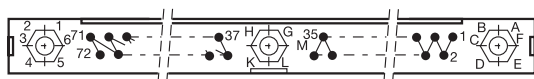
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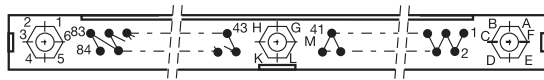
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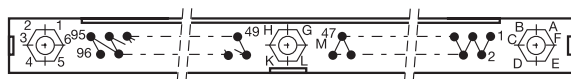
065



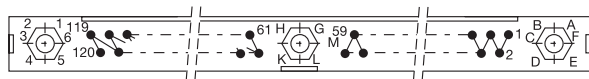
072



084

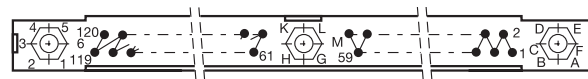
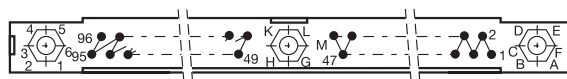
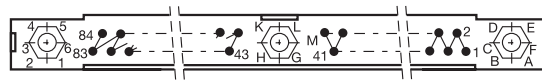
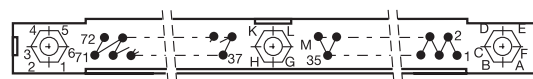
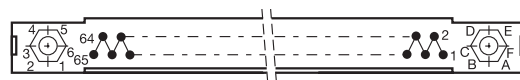
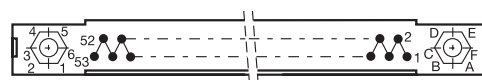
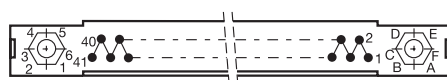
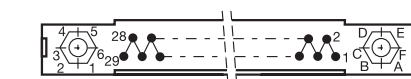
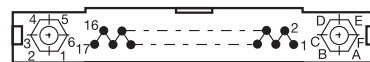


096



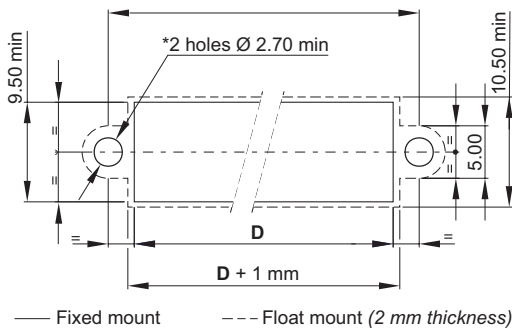
120

Receptacle

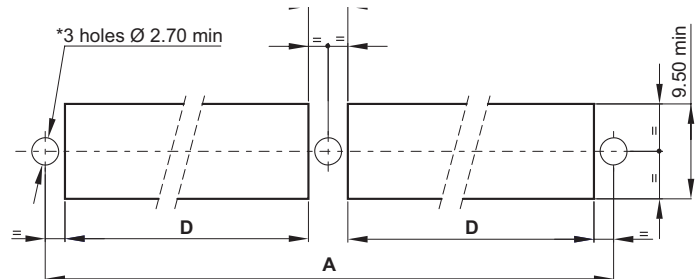


Panel Preparation Details

17 to 65 Contacts



72 to 120 Contacts



Panel: female or male, plug or receptacle, terminations 20 - 40 - 51

Guide styles: 111 - 121 - 126 - 127 - 130 - 190 (Fixed Mount) - 113 - 123 (Float Mount)

Locking styles: 202 - 215* - 219 - 231

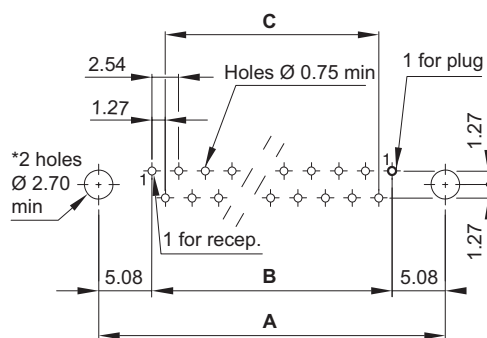
*: for ref: 215, holes $\varnothing$ 3.20 mm

No. of contacts	17	29	41	53	65	72	84	96	120
A	30.48	45.72	60.96	76.20	91.44	106.68	121.92	137.16	167.64
D	25.90	41.10	56.40	71.60	86.90	48.50	56.00	63.30	78.80

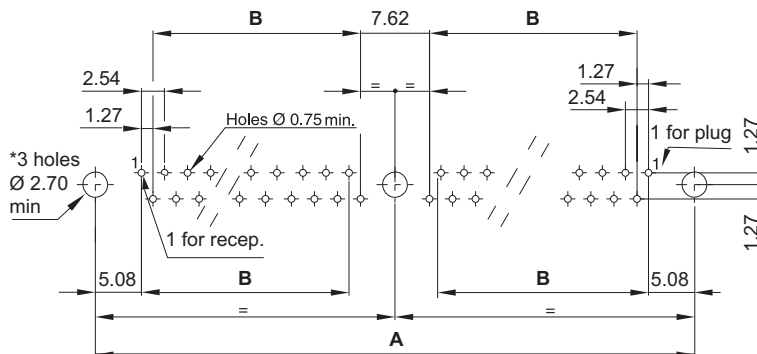
Board Preparation Details

Mother board

17 to 65 Contacts



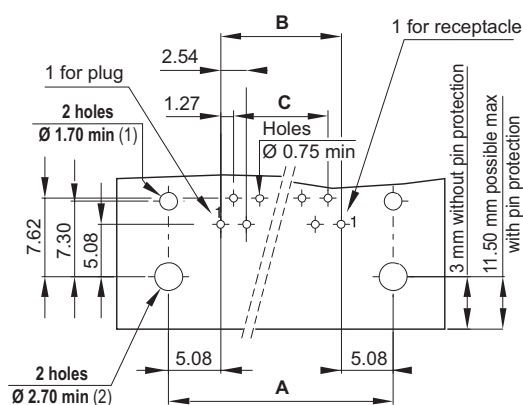
72 to 120 Contacts



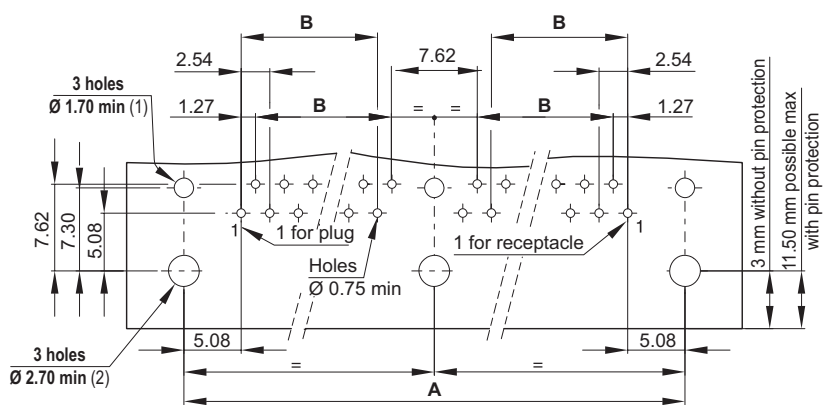
Mother Board: female or male, plug or receptacle, straight solder termination
Guide styles: 111 - 121 - 126 - 127 - 130 - 190 Locking styles: 202 - 215* - 219 - 231
 *: for ref: 215, holes $\varnothing$ 3.20 mm

Daughter board

17 to 65 Contacts



72 to 120 Contacts



Daughter Board: female or male, plug or receptacle, 90° termination
 (1) **Guide styles:** 124 - 131 - 132 - 133 - 145 Locking styles: 204 - 212
 (2) **Guide styles:** 110 - 125 - 191 Locking styles: 203 - 208

No. of contacts	17	29	41	53	65	72	84	96	120
A	30.48	45.72	60.96	76.20	91.44	106.68	121.92	137.16	167.64
B	20.32	35.56	50.80	66.04	81.28	43.18	50.80	58.42	73.66
D	17.78	33.02	48.26	63.50	78.74	-	-	-	-

Technical Characteristics

Contact diameter	HYPERTAC® type Ø 0.60 mm rear removable
Number of contact	53
Pitch	2.54 mm between rows - 1.27 mm between quicuncial contacts
Rows	2

Materials & Platings

Contact	Brass or bronze
Moulding	Glass fiber filled diallyl - Phtalate
Guides	Stainless steel or nickel plated brass
Pin body	0.25 µm gold / 1.27 µm Ni
Socket body	0.25 µm gold / 1.27 µm Ni on active area; 1.27 µm Ni on non active area
Socket wires	1 µm gold / 0.20 µm Ni

Electrical

Current rating (at 25°C)	3 A max.
Dielectric withstanding voltage	1200 Vrms
Contact resistance	≤8 mΩ
Insulation resistance	>104 MΩ (500 Vcc)

Mechanical

Mating & unmating cycle	5000
Guiding	By two outside guides (2 guiding styles) and one central guide (3 guiding styles)
Keying	By rotating of outside polarised guides (up to 36 keying)

Environmental

Temperature range	-55°C to 125°C
Conformity	NF C-UTE C 93-424

How To Order



K X B

0 5 3



1

2

3

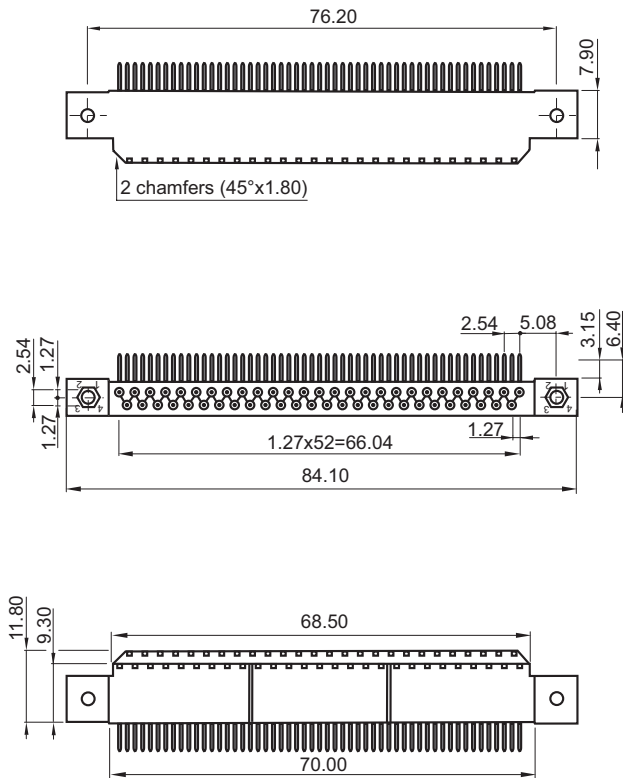
4

1	Thermoplastic material	X																																																												
2	Moulding polarity	<table><tr><td colspan="4">NF C-UTE C 93-424 MIL-C-55302 SPACE GRADE</td><td colspan="4">NF C-UTE C 93-424 MIL-C-55302 SPACE GRADE</td><td colspan="4">NF C-UTE C 93-424 MIL-C-55302 SPACE GRADE</td></tr><tr><td>12</td><td>14</td><td>54</td><td>Female plug</td><td>1A</td><td>1C</td><td>5A</td><td>Tinned female plug**</td><td>26</td><td>28</td><td>46</td><td>Tinned female receptacle*</td></tr><tr><td>13</td><td>15</td><td>55</td><td>Male plug</td><td>1B</td><td>1D</td><td>5B</td><td>Tinned male plug**</td><td>27</td><td>29</td><td>47</td><td>Tinned male receptacle*</td></tr><tr><td>16</td><td>18</td><td>56</td><td>Tinned female plug*</td><td>22</td><td>24</td><td>44</td><td>Female receptacle</td><td>2A</td><td>2C</td><td>-</td><td>Tinned female receptacle**</td></tr><tr><td>17</td><td>19</td><td>57</td><td>Tinned male plug*</td><td>23</td><td>25</td><td>45</td><td>Male receptacle</td><td>2B</td><td>2D</td><td>-</td><td>Tinned male receptacle**</td></tr></table>	NF C-UTE C 93-424 MIL-C-55302 SPACE GRADE				NF C-UTE C 93-424 MIL-C-55302 SPACE GRADE				NF C-UTE C 93-424 MIL-C-55302 SPACE GRADE				12	14	54	Female plug	1A	1C	5A	Tinned female plug**	26	28	46	Tinned female receptacle*	13	15	55	Male plug	1B	1D	5B	Tinned male plug**	27	29	47	Tinned male receptacle*	16	18	56	Tinned female plug*	22	24	44	Female receptacle	2A	2C	-	Tinned female receptacle**	17	19	57	Tinned male plug*	23	25	45	Male receptacle	2B	2D	-	Tinned male receptacle**
NF C-UTE C 93-424 MIL-C-55302 SPACE GRADE				NF C-UTE C 93-424 MIL-C-55302 SPACE GRADE				NF C-UTE C 93-424 MIL-C-55302 SPACE GRADE																																																						
12	14	54	Female plug	1A	1C	5A	Tinned female plug**	26	28	46	Tinned female receptacle*																																																			
13	15	55	Male plug	1B	1D	5B	Tinned male plug**	27	29	47	Tinned male receptacle*																																																			
16	18	56	Tinned female plug*	22	24	44	Female receptacle	2A	2C	-	Tinned female receptacle**																																																			
17	19	57	Tinned male plug*	23	25	45	Male receptacle	2B	2D	-	Tinned male receptacle**																																																			
3	Termination styles	<table><tr><td>1 0</td><td>Through board solder - 90° - length 3 mm</td><td>1 3</td><td>Through board solder - 90° - length 2.3 mm, plug only</td></tr><tr><td>1 1</td><td>Through board solder - 90° - length 4 mm</td><td>1 4</td><td>Through board solder - 90° - length 8 mm, receptacle only</td></tr><tr><td>1 2</td><td>Through board solder - 90° - length 5.1 mm, plug only</td><td></td><td></td></tr></table>	1 0	Through board solder - 90° - length 3 mm	1 3	Through board solder - 90° - length 2.3 mm, plug only	1 1	Through board solder - 90° - length 4 mm	1 4	Through board solder - 90° - length 8 mm, receptacle only	1 2	Through board solder - 90° - length 5.1 mm, plug only																																																		
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1 1	Through board solder - 90° - length 4 mm	1 4	Through board solder - 90° - length 8 mm, receptacle only																																																											
1 2	Through board solder - 90° - length 5.1 mm, plug only																																																													
4	Mounting hardware	<table><tr><td colspan="4">Guide Style***</td></tr><tr><td>1 1 0</td><td>Male polarised, transverse mount, standard plug</td><td>1 3 1</td><td>Male unpolarised, transverse mount</td></tr><tr><td>1 2 1</td><td>Female polarised, vertical mount</td><td>1 4 5</td><td>Male polarised, transverse mount on receptacle only</td></tr><tr><td>1 2 4</td><td>Female polarised, transverse mount</td><td>1 9 1</td><td>Male power or mass contact, vertical mount</td></tr><tr><td>1 2 5</td><td>Male unpolarised, transverse mount</td><td></td><td></td></tr><tr><td colspan="4">Locking Styles***</td></tr><tr><td colspan="2">FEMALE RECEPTACLE</td><td colspan="2">MALE PLUG</td></tr><tr><td>2 0 4</td><td>1/4 turn, transverse mount</td><td>2 1 8</td><td>Jackscrew, transverse mount</td></tr><tr><td></td><td></td><td>2 0 3</td><td>1/4 turn, transverse mount</td></tr></table>	Guide Style***				1 1 0	Male polarised, transverse mount, standard plug	1 3 1	Male unpolarised, transverse mount	1 2 1	Female polarised, vertical mount	1 4 5	Male polarised, transverse mount on receptacle only	1 2 4	Female polarised, transverse mount	1 9 1	Male power or mass contact, vertical mount	1 2 5	Male unpolarised, transverse mount			Locking Styles***				FEMALE RECEPTACLE		MALE PLUG		2 0 4	1/4 turn, transverse mount	2 1 8	Jackscrew, transverse mount			2 0 3	1/4 turn, transverse mount																								
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2 0 4	1/4 turn, transverse mount	2 1 8	Jackscrew, transverse mount																																																											
		2 0 3	1/4 turn, transverse mount																																																											

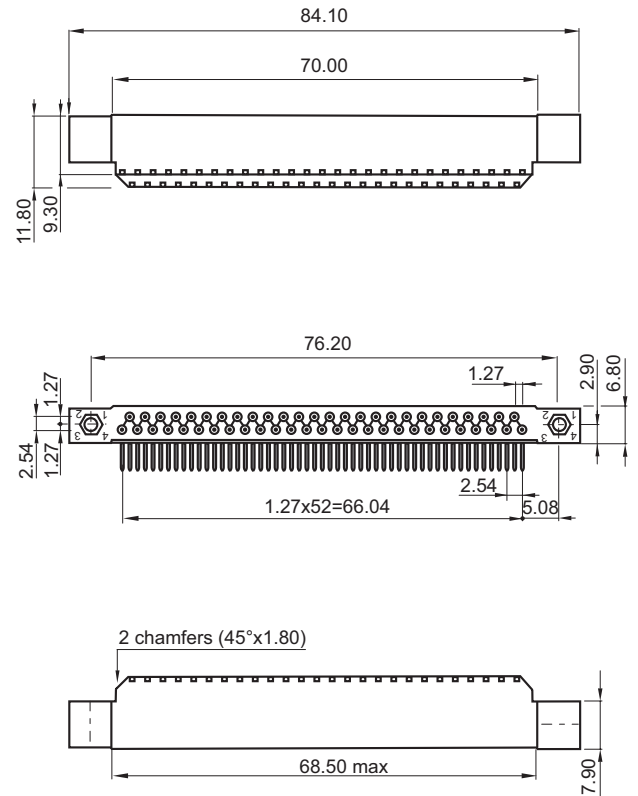
- * No RoHS compliant = 16 et 17
- ** RoHS Compliant = 1A et 1B

Connector Dimensions

Plug



Receptacle



Technical Characteristics

Contact diameter	HYPERTAC® type Ø 0.60 mm rear removable
Number of contact	Up to 160
Pitch	2.54 mm between rows - 1.27 mm between quicuncial contacts
Rows	3

Materials & Platings

Contact	Brass or bronze	
Moulding	Glass fiber filled diallyl - Phtalate	
Guides	Stainless steel or nickel plated brass	
	Standard	ESA
Pin body	0.25 µm gold / 1.27 µm Ni	1.27 µm gold / 1.27 µm Ni (min)
Socket body	0.25 µm gold / 1.27 µm Ni on active area 1.27 µm Ni on non active area	0.25 µm gold / 1.27 µm Ni (min)
Socket wires	1 µm gold / 0.20 µm Ni	1.27 µm gold / 0.20 µm Ni (min)

Electrical

Current grade rating (at 25°C)	Standard grade: 3 A max. - ESA grade: 5 A max.
Dielectric withstanding voltage	1200 Vrms
Contact resistance	≤8 mΩ
Insulation resistance	>104 MΩ (500 Vcc)

Mechanical

Mating & unmating cycle	5000
Guiding	By two outside guides (2 guiding styles) and one central guide (3 guiding styles)
Keying	By rotating of outside polarised guides (up to 36 keying)

Environmental

Temperature range	-55°C to 125° C
Conformity	MIL C 55302, ESA/ESCC3401/016 - 3401/017, NF C-UTE C 93-424

How To Order



1	Series	
2	Pitch or type	N 1.27 mm pitch, rear removable contacts
3	Model	C 3 rows centered fixing D 3 rows uncentered fixing
4	Number of contacts	KNC 062080098160 KND 026044062080098108126144
5	Moulding polarity	NF C-UTE C 93-424 MIL-C-55302 ESA/ESCC 3401/01601B SPACE GRADE 12145454 Female plug 13155555 Male plug 16185656 Tinned female plug[†] 17195757 Tinned male plug[†] NF C-UTE C 93-424 MIL-C-55302 ESA/ESCC 3401/01601B SPACE GRADE 1A1C5A5A Tinned female plug^{**†} 1B1D5B5B Tinned male plug^{**†} 22244444 Female receptacle 23254545 Male receptacle NF C-UTE C 93-424 MIL-C-55302 ESA/ESCC 3401/01601B SPACE GRADE 26284646 Tinned female receptacle[†] 27294747 Tinned male receptacle[†] 2A2C- - Tinned female receptacle^{**†} 2B2D- - Tinned male receptacle^{**†}
6	Termination styles	10 Through board solder - 90° - length 3 mm 11 Through board solder - 90° - length 4 mm 12 Through board solder - 90° - length 4.50 to 5.2 mm 20 Crimp 21 Double Crimp 30 Through board solder - straight 40 Solder bucket 40 Solder bucket 51 Wire wrap (3 wrapping levels) 90 Male - male 91 Female - male
7	Mounting hardware	Guide Style (consult us for special guides) 110 Male polarised, transverse mount, standard plug 111 Male polarised, vertical mount 113 Male polarised, float mount 121 Female polarised, vertical mount 123 Female polarised, float mount 124 Female polarised, transverse mount 145 Male polarised, transverse mount on receptacle only 190 Female power or mass contact, vertical mount 125 Male unpolarised, transverse mount 126 Female unpolarised, vertical mount 127 Male unpolarised, vertical mount 130 Female unpolarised, vertical mount 131 Male unpolarised, transverse mount 132 Female unpolarised, transverse mount 133 Female all polarised, transverse mount 191 Male power or mass contact, vertical mount Locking Styles MALE PLUG 201 1/4 turn, free connector 203 1/4 turn, transverse mount 207 Jackscrew, free connector 211 Jackscrew, free connector 290 Jackscrew, vertical mount FEMALE RECEPTACLE 202 1/4 turn, vertical mount 204 1/4 turn, transverse mount 208 Jackscrew, transverse mount 210 Jackscrew, free connector 212 Jackscrew, transverse mount 215 Jackscrew, vertical mount 219 Jackscrew, vertical mount 232 Jackscrew, with operation button

- * For 90° & straight terminations (splicing on PCB)
- ** RoHS compliant for 90° & straight terminations (splicing on PCB)
- † Tinned contacts are not available as spares

Hypertac & ESA Correspondance Table

HYPERTAC **KNC**

34 01 016 01 B

1

2

3

4

5

6

1 ESCC component number

2 Mounting

3 Termination style

4 Locking type
On left side

5 Locking type
In center

6 Locking type
On right side

HYPERTAC

ESA

Plug KNB 017	01	Plug KNB 096	08	Receptacle KNB 053	16	Plug KNB 072	56	Plug KNC 098	62
Plug KNB 029	02	Plug KNB 120	10	Receptacle KNB 065	17	Receptacle KNB 072	57	Receptacle KNC 098	63
Plug KNB 041	03	Plug KNC 160	12	Receptacle KNB 084	19	Plug KNC 062	58		
Plug KNB 053	04	Receptacle KNB 017	13	Receptacle KNB 096	20	Receptacle KNC 062	59		
Plug KNB 065	05	Receptacle KNB 029	14	Receptacle KNB 120	22	Plug KNC 080	60		
Plug KNB 084	07	Receptacle KNB 041	15	Receptacle KNC 160	24	Receptacle KNC 080	61		

REMINDER SPATIAL P.P.P. (Party Polarity Protection)

Female receptacle	44	Plug female	54
Male receptacle	45	Plug male	55

EXAMPLE

KNC 062 44 30 113
P.P.P.

HYPERTAC

ESA

Bent male 10	MC	Solder bucket male 40	MS	Bent female tinned 10	FA	Mini-wrapping female 51	FY
Bent male tinned 10	MA	Mini-wrapping male 51	MY	Crimp female 20	FR	Bent long female 11	FL
Crimp male 20	MR	Bent long male 11	ML	Straight female 30	FD	Bent long female tinned 11	FG
Straight male 30	MD	Bent long male tinned 11	MG	Straight female tinned 30	FE	Female-male 91	FM
Straight male tinned 30	ME	Bent female 10	FC	Solder bucket female 40	FS		

HYPERTAC

ESA

Guideless connector	00	KNB	145	40	KNC	10 209	49	KNB	11 125	71	KNB	11 208	79	
KNB	131	31	KNB	124	41	KN	210	50	KNB	11 110	72	KN	219	80
KNB	132	32	KNC	10 230	43	KN	211	51	KNB	10 230	73	KN	290*	81
KNB	10 110	33	KN	232	45	KNB	212	52	KNC	124	74			
KNC	10 110	34	KN	231	46	KN	215	53	KNC	132	75			
KN	111	35	KN	207	47	KN	123	54	KNC	11 110	76			
KN	121	36	KNB	10 208	48	KN	113	55	KNC	11 125	77			

00 For 2 guide connectors

- - For 3 guide connectors (see table 4, Locking type - On left side)

HYPERTAC

ESA

KNB	10 125	26	KNC	10 125	27	KN	127	28	KN	126	29
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(see table 4, Locking type - On left side)

* Please consult us

Contact Terminations

Plug

Male

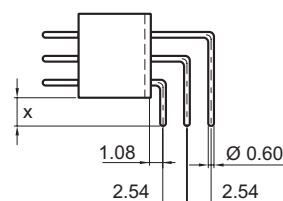
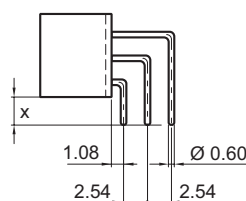
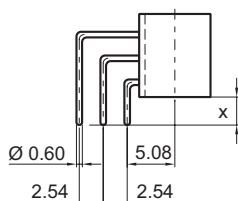
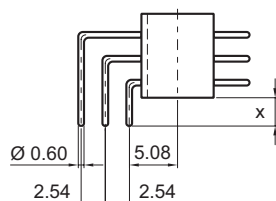
Female

Receptacle

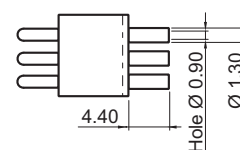
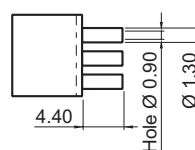
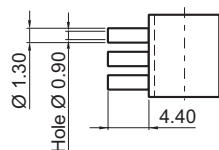
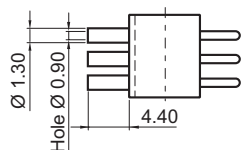
Male

Female

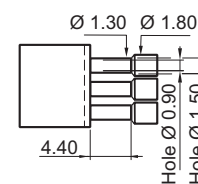
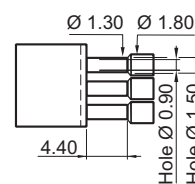
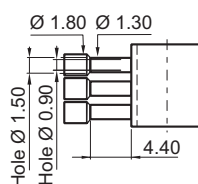
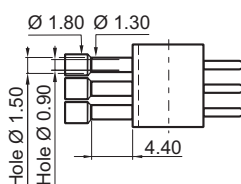
90° Through board solder

Ref: **10** (X=3)Ref: **11** (X=4)Ref: **12** (X= 4.50 mm min to 5.70 mm max)Ref: **MC & FC / MA & FA** - Ref: **ML & FL / MG & FG**

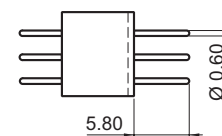
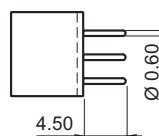
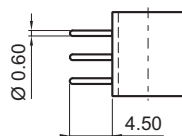
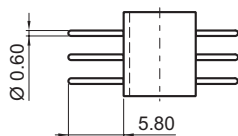
Crimp (AWG 28-22)

Ref: **20**Ref: **MR & FR**

Crimp (AWG 28-22)

Ref: **21**

Straight through board solder

Ref: **30**Ref: **MD & FD / ME & FE**

Contact Terminations

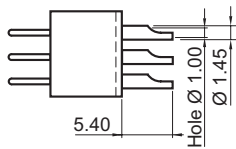
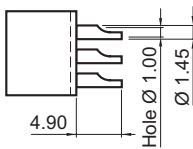
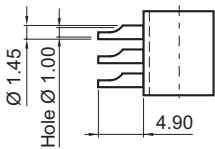
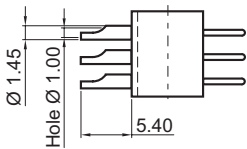
Plug

Male

Female

Solder bucket (AWG 22 max)

Ref: **40** Ref : **MS & FS**



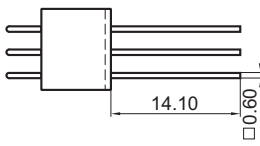
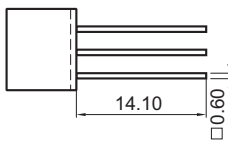
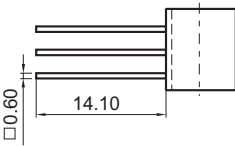
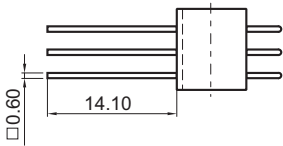
Receptacle

Male

Female

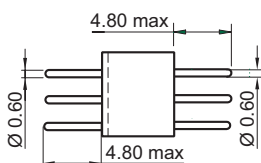
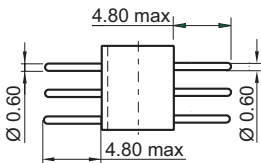
Wire wrap (3 wrapping levels)

Ref: **51** Ref : **MY & FY**



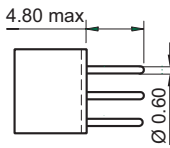
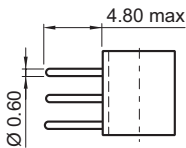
Saver (male-male)

Ref: **90**



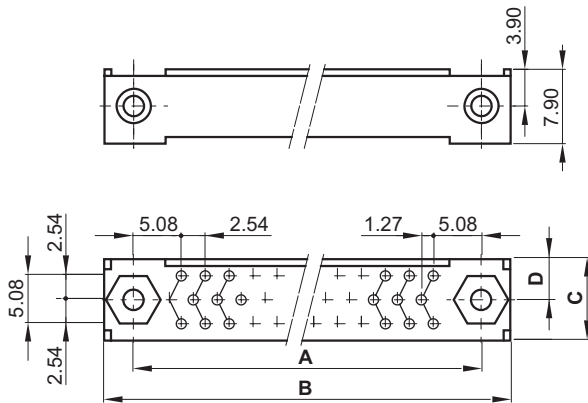
Saver (female-male)

Ref: **91** Ref : **FM**



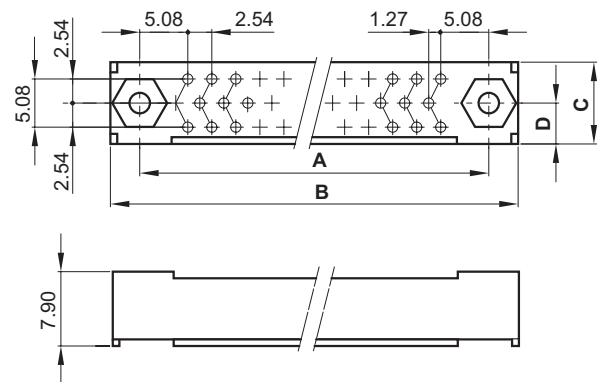
Dimensions

Plug

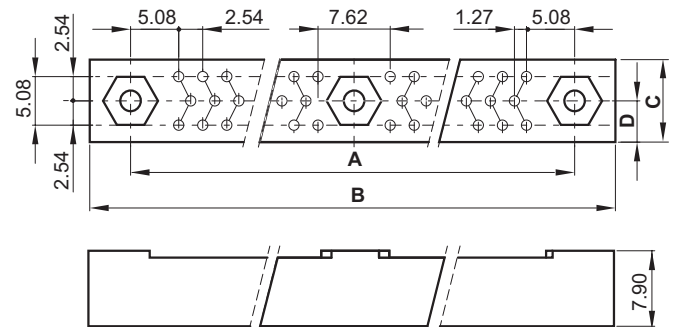
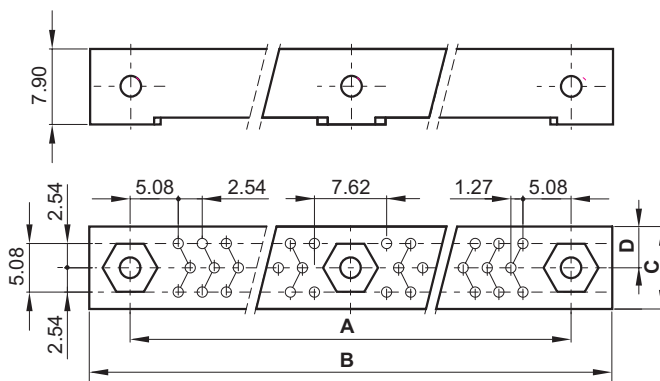


Receptacle

26 to 98 contacts



108 to 160 contacts



		No. of contacts	26	44	62	80	98	108	126	144	160
KNC	Plug & Receptacle	A	–	–	60.96	76.20	91.44	–	–	–	149.86
		B max	–	–	69.00	84.20	99.50	–	–	–	158.00
	Plug	C max	–	–	9.45	9.45	9.45	–	–	–	9.30
		D	–	–	4.42	4.42	4.42	–	–	–	4.70
	Receptacle	C max	–	–	9.30	9.30	9.30	–	–	–	9.30
		D	–	–	4.17	4.17	4.17	–	–	–	4.70
KND	Plug & Receptacle	A	30.48	45.72	60.96	76.20	91.44	106.68	121.92	137.16	–
		B max	38.50	53.70	69.00	84.20	99.50	114.70	129.90	145.20	–
	Plug	C min	8.95	8.95	8.95	8.95	8.95	8.95	8.95	8.95	–
		C max	9.55	9.55	9.55	9.55	9.55	9.55	9.55	9.55	–
		D	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	–
	Receptacle	C max	9.35	9.35	9.35	9.35	9.35	9.35	9.35	9.35	–
		D	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	–

Guide Device and Polarity Termination Compatibility Chart

Compatible
Compatible special saver connector

FP = Female Plug

FR = Female Receptacle

MR = Male Receptacle

[illegible]

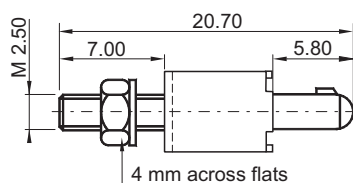
Guide Styles

Plug & Receptacle

Male

Polarised vertical mount

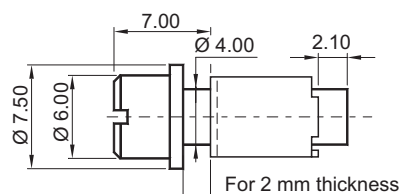
Ref: **111** Ref : **35**



Female

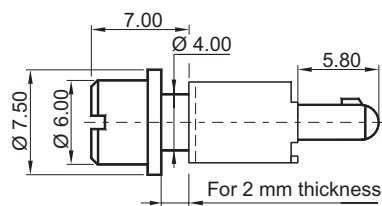
Polarised vertical float mount

Ref: **123** Ref : **54**



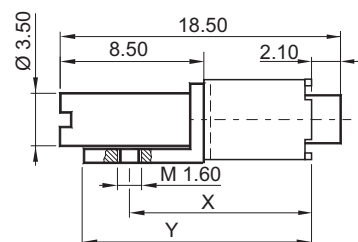
Polarised vertical float mount

Ref: **113** Ref : **55**



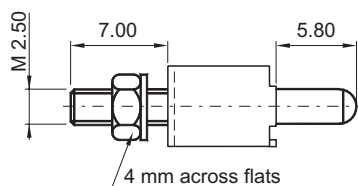
Polarised transverse mount

Ref: **124** Ref : **74**
KNC X=11.20 Y=14.00 KND X=12.80 Y=15.90



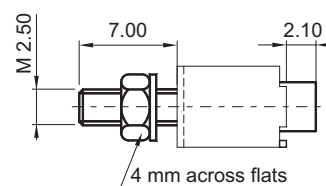
Unpolarised vertical mount

Ref: **127** Ref : **28**



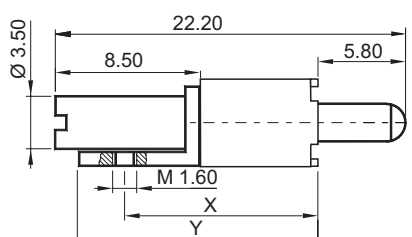
Unpolarised vertical mount

Ref: **126** Ref : **29**



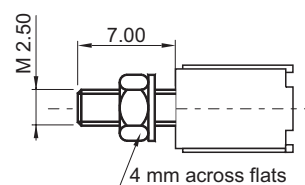
Unpolarised transverse mount

Ref: **131**
KNC X=11.20 Y=14.00 KND X=12.80 Y=15.90



All polarised vertical mount

Ref: **130**



 Ref. applies only to the KNC Series

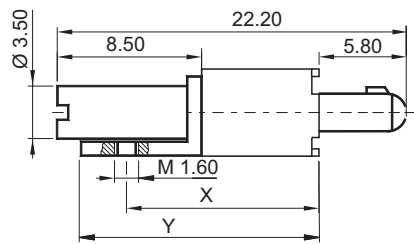
Guide Styles

Plug & Receptacle

Male

Polarised transverse mount

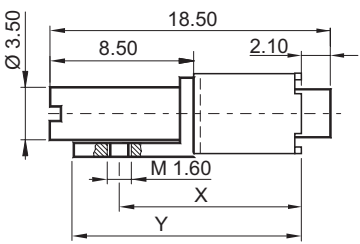
Ref: **145**
KNC X=11.20 Y=14.00 KND X=12.80 Y=15.90



Female

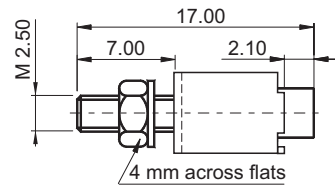
Unpolarised transverse mount

Ref: **132** Ref: **75**
KNC X=11.20 Y=14.00 KND X=12.80 Y=15.90



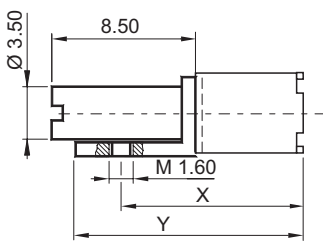
Polarised vertical mount

Ref: **121** Ref: **36**



All polarised transverse mount

Ref: **133**
KNC X=11.20 Y=14.00 KND X=12.80 Y=15.90



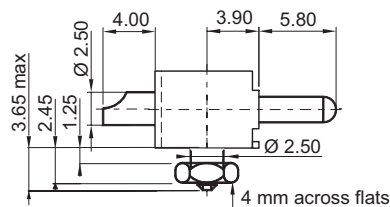
Guide Styles

Plug & Receptacle

Male

Power or mass vertical mount

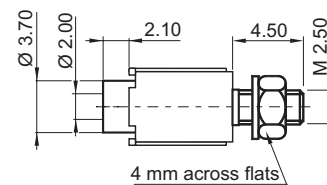
Ref: **191** PCB thickness **1.60**



Female

Power or mass vertical mount

Ref: **190**

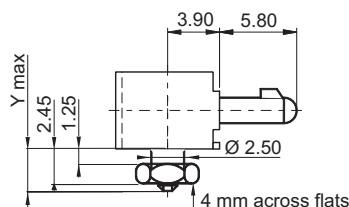


Male plug only

KNC only

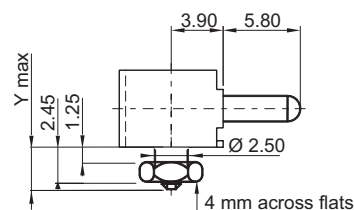
Polarised transverse mount

Ref: **10 110** Ref: **34** PCB thickness **1.60** Y=3.65
 Ref: **11 110** Ref: **34** PCB thickness **2.40** Y=5.65
 Ref: **12 110** PCB thickness **3.20** Y=5.65



Unpolarised transverse mount

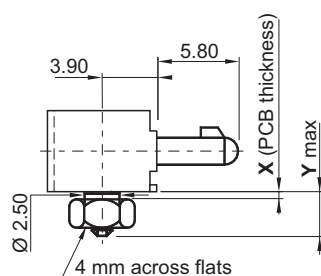
Ref: **10 125** Ref: **27** PCB thickness **1.60** Y=3.65
 Ref: **11 125** Ref: **27** PCB thickness **1.60** Y=5.65
 Ref: **12 125** PCB thickness **1.60** Y=5.65



KND only

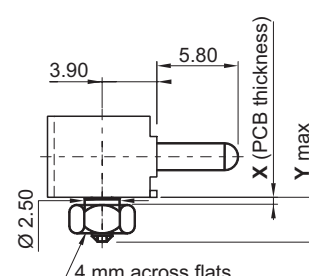
Polarised transverse mount

Ref: **10 110** X=1.60 Y=3.20
 Ref: **11 110** X=2.40 Y=4.90
 Ref: **12 110** X=3.20 Y=6.90



Unpolarised transverse mount

Ref: **10 125** X=1.60 Y=3.20
 Ref: **11 125** X=2.40 Y=4.90
 Ref: **12 110** X=3.20 Y=6.90



© Ref. applies only to the KNC Series

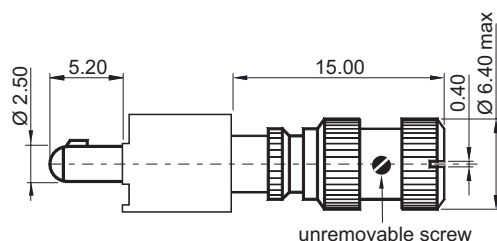
Locking Devices Compatibility Chart

		R	P	R	P	R	P	R	P	R	P	R	P	R	P		
Compatible																Receptacle	Moulding
																Plug	
P																	290
R																	
P																	231
R																	
P																	211
R																	
P																	207
R																	
P																	205
R																	
P																	203
R																	
P																	201
R																	
	Receptacle																
	Plug																
	Moulding	232		219		215		212		210		208		204		202	
Male locking devices																	
Female locking devices																	

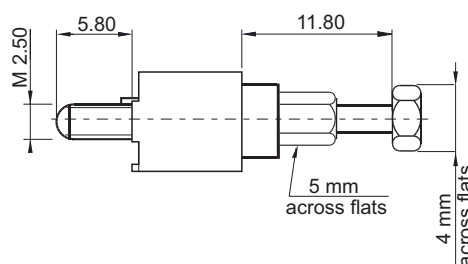
Male Locking Styles

Plug & Receptacle

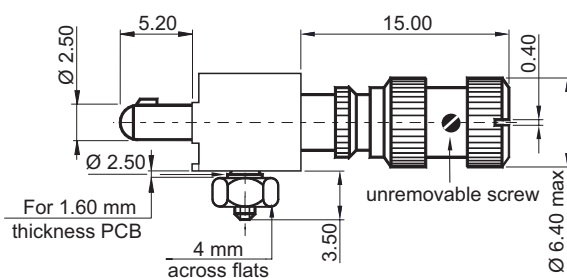
Jack 1/4 turn lock, free connector

Ref: **201**

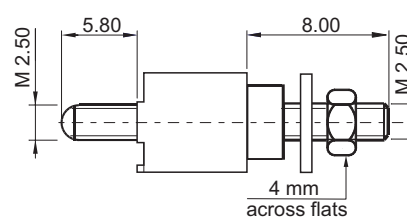
Jackscrew, free connector

Ref: **211** Ref: **51**

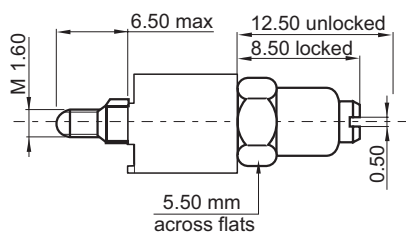
Jack 1/4 turn lock, transverse mount

Ref: **206**

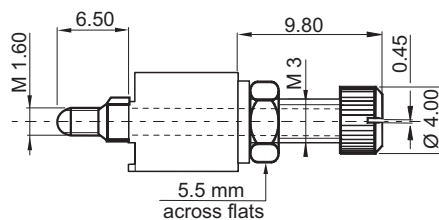
Jackscrew, vertical mount

Ref: **231** Ref: **46**

Jackscrew, free connector

Ref: **207** Ref: **47**

Jackscrew, vertical mount

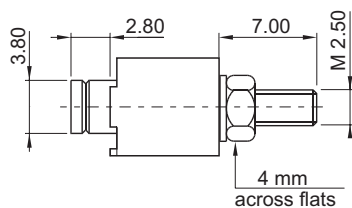
Ref: **290** Ref: **81**

Female Locking Styles

Plug & Receptacle

Jack 1/4 turn lock, vertical mount

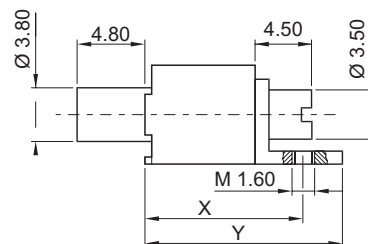
Ref: **202**



Jackscrew, transverse mount

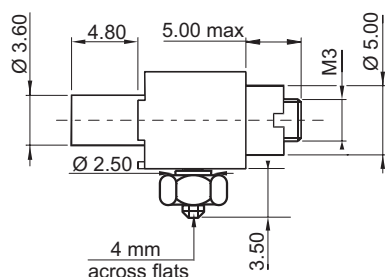
Ref: **212**

KNC X=11.20 Y=14.00 **KND** X=12.80 Y=15.90



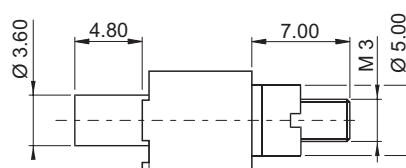
Jackscrew, transverse mount

Ref: **10 209** Ref: **49** PCB thickness 1.60



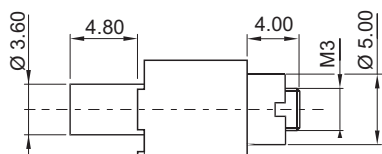
Jackscrew, vertical mount

Ref: **215** Ref: **53**



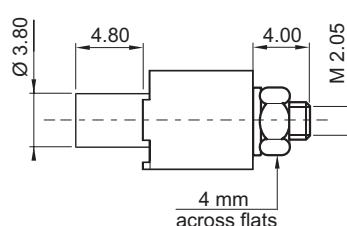
Jackscrew, free connector

Ref: **210** Ref: **50**



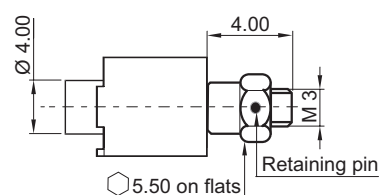
Jackscrew, vertical mount

Ref: **219** Ref: **80**



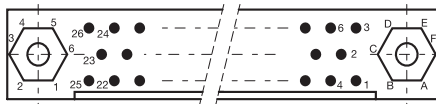
Rotating jackscrew

Ref: **232**

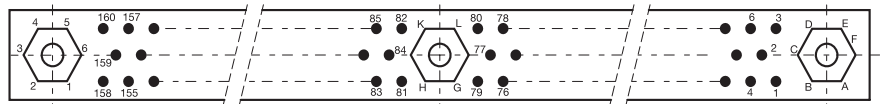


Receptacle Mating Side Layout View

26 to 98 contacts

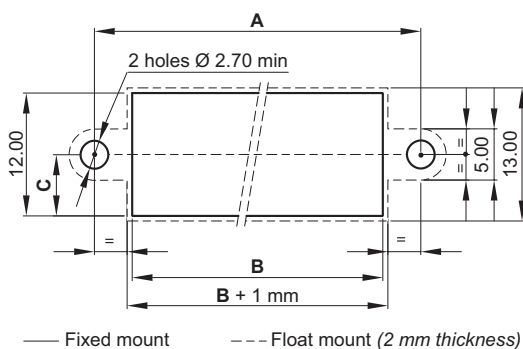


108 to 160 contacts

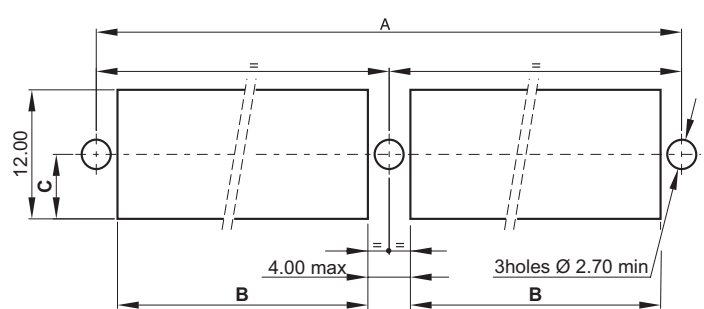


Panel Preparation Details

26 to 98 contacts



108 to 160 contacts



Panel: female or male, plug or receptacle

Terminations: 40 - 51

Guide styles: 111 - 121 (Fixed Mount)

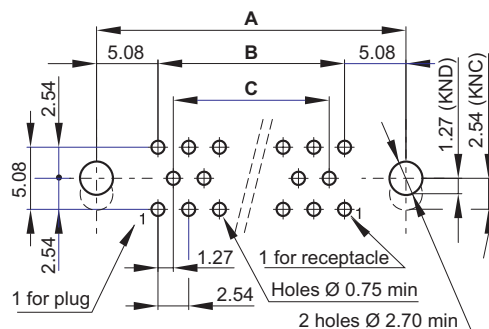
Guide styles: 113 - 123 - 202 (Float Mount)

No. of contacts	26	44	62	80	98	108	126	144	160
A	30.48	45.72	60.96	76.20	91.44	106.68	121.92	137.16	149.86
B min	25.90	41.10	56.40	71.60	86.90	48.50	56.00	63.60	69.95
C (KNC)	—	—	6.00	6.00	6.00	—	—	—	6.00
C (KND)	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	—

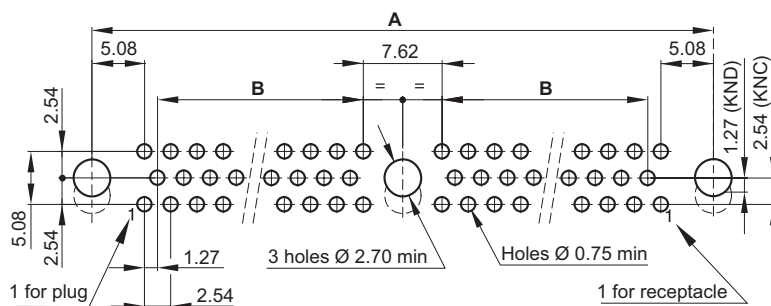
Board Preparation Details

Mother board

26 to 98 Contacts



108 to 160 Contacts

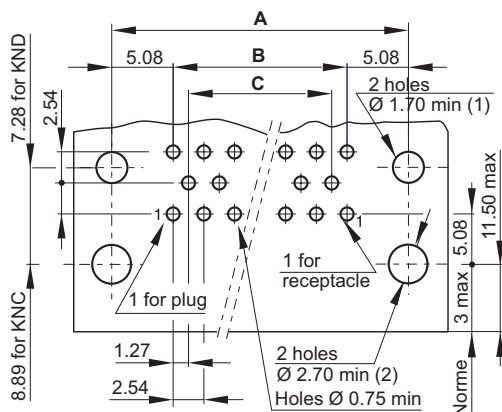


Mother Board: female or male, plug or receptacle, straight solder termination

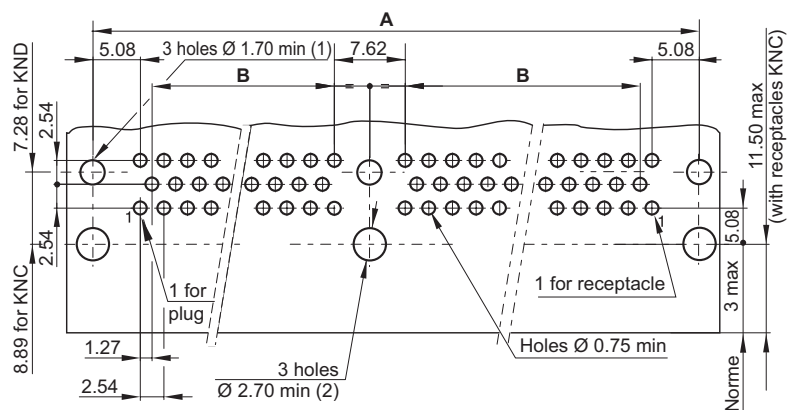
Guide styles: 111 - 121- 202

Daughter board

26 to 98 Contacts



108 to 160 Contacts



Daughter Board: female or male, plug or receptacle, 90° termination

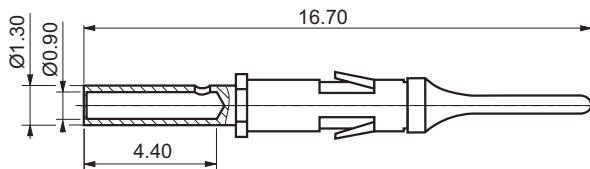
(1) **Guide styles:** 124 (2) **Guide styles:** 110 - 206

No. of contacts	26	44	62	80	98	108	126	144	160
A	30.48	45.72	60.96	76.20	91.44	106.68	121.92	137.16	149.86
B	20.32	35.56	50.80	66.04	81.28	43.18	50.80	58.42	64.77
C	17.78	33.02	48.26	63.50	78.74	-	-	-	-

Contacts

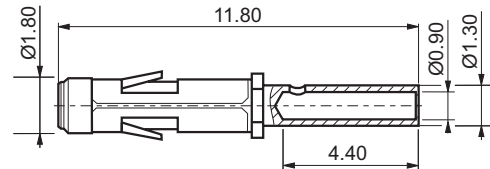
Male

Crimp terminations awg 22-28 (0.079 - 0.34 mm²)



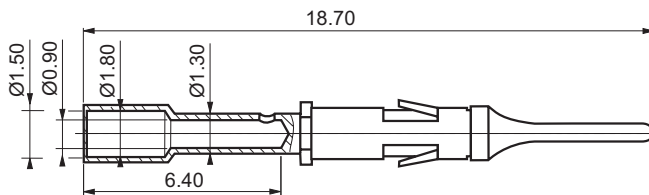
Reference	Part number
KN- ---13 20 ---	006 042 1- 20R OG
KN- ---55 20 --- MR	006 042 1- 20P OF 3401 017 004B

Female

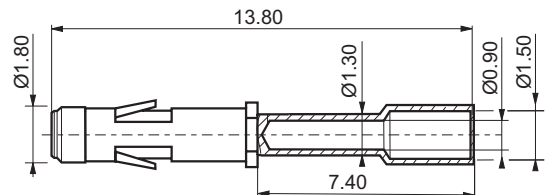


Reference	Part number
KN- ---22 20 ---	006 042 2- 20R G0
KN- ---44 20 --- FR	006 042 2- 20P J9 3401 017 015B

Crimp terminations awg 22-28 (0.079 - 0.34 mm²) & Sheath Ø1.45



Reference	Part number
KN- ---13 20 ---	006 063 1- 21R OG
KN- ---55 20 ---	006 063 1- 20R OF



Reference	Part number
KN- ---22 20 ---	006 063 2- 21R G0
KN- ---44 20 ---	006 063 2- 21R J3

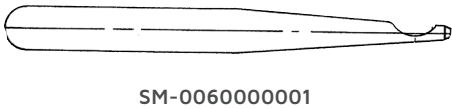
Tools

Crimp tool & Positioner

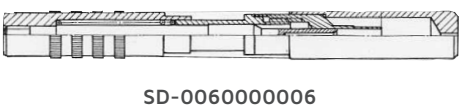


Contact part number		Crimp tool	AWG	Wire cross section	Positioner	Tool turret	Selector position
006 042 1- 20R OG 006 042 2- 20R GO		ASTRO TOOL M22520/2.01	28	0.079	SS-0060000001		3
			26	0.14			4
			24	0.20			4
			22	0.34			5
		DANIELS M22520/2.01	28	0.079	SS-0060000001		3
			26	0.14			4
			24	0.20			4
			22	0.34			5
006 063 1- 21R OG 006 063 2- 21R GO	2 operations	ASTRO TOOL M22520/2.01	28	0.079	SS-0060000001		3
			26	0.14			4
			24	0.20			4
			22	0.34			5
		DANIELS M22520/2.01	28	0.079	SS-0060000001		3
			26	0.14			4
			24	0.20			4
			22	0.34			5
	1 st crimp (lead)	ASTRO TOOL M22520/2.01	28	0.079	SS-0060000002		*
			26	0.14			6
			24	0.20			7
			22	0.34			7
		DANIELS M22520/2.01	28	0.079	SS-0060000002		*
			26	0.14			6
			24	0.20			7
			22	0.34			7
	2 nd crimp (sheath)	ASTRO TOOL M22520/2.01	28	0.079	SS-0060000002		*
			26	0.14			6
			24	0.20			7
			22	0.34			7
	1 operation	52007	28	0.079		SP717	2
			26	0.14			3
			24	0.20			4
			22	0.34			4

Insertion



Extraction



Alignment Combs

for 90° through board termination

2 fixing points **HPF107/B**

3 fixing points **SP. 006 00 00 004**

Screwdriver for m3 nut

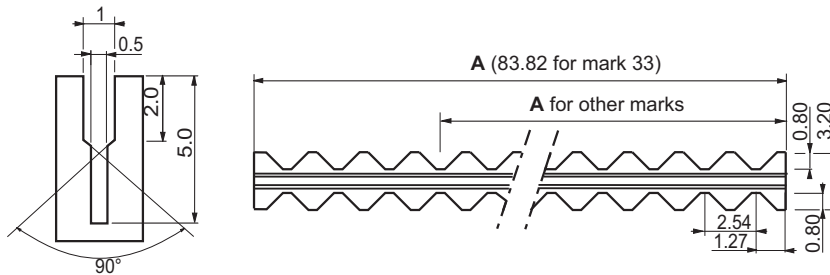
208 locking devices

215 locking devices

S_075

Accessories

Antistatic Pin Protector



Ordering information

K N B - - - _ 314

Ref

Use	A	Ref
KNB 017	24.13	009
KND 026		
KNB 029 KND 044	39.37	015
KNB 072 KND 108	46.99	018
KNB 041 & 084 KNC 062 KND 062 & 126	54.61	021

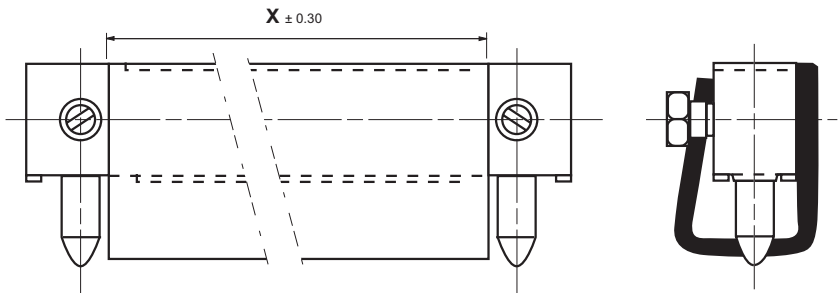
Use	A	Ref
KNB 096	62.23	024
KND 144		
KNB 053 KNC 080 & 160 KND 080	69.85	027
KNB 120	77.47	030
KNB 065 KNC 098 KND 098	83.82	033

Note: Each part number contains only one header.

To equip fully the connector, you have to order 2, 3, 4 or 6 identical headers.
Header can fit on contacts or be positionned between rows.

Accessories

Pin Protector (extruded polypropylene)

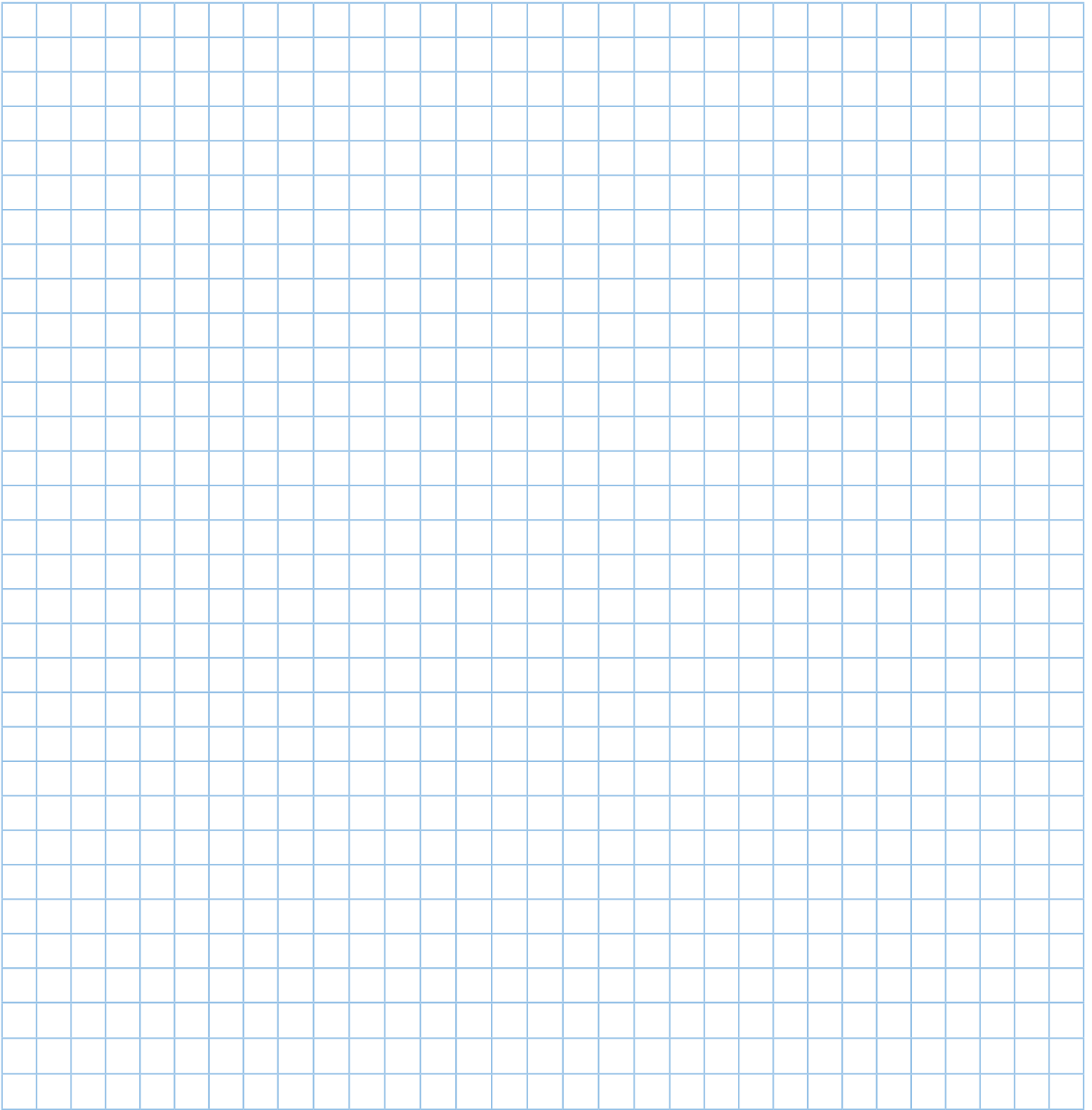


Ordering information
K N - - - - 308
B, C or D Number of positions

KNB	017	029	041	053	065	072	084	096	120
X ± 0.30	25.50	40.70	56	71.20	86.50	48.40	56	63.60	78.80
Qty	1	1	1	1	1	2	2	2	2

KNC	062	080	098	119	160
X ± 0.30	66	81.20	96.40	114.20	155.00
Qty	1	1	1	1	1

KND	026	044	108	126	144
X ± 0.30	35.50	50.70	111.70	127.00	142.20
Qty	1	1	1	1	1



Notes:

Disclaimer

All of the information included in this catalogue is believed to be accurate at the time of printing. It is recommended, however, that users should independently evaluate the suitability of each product for their intended application and be sure that each product is properly installed, used and maintained to achieve desired results.

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