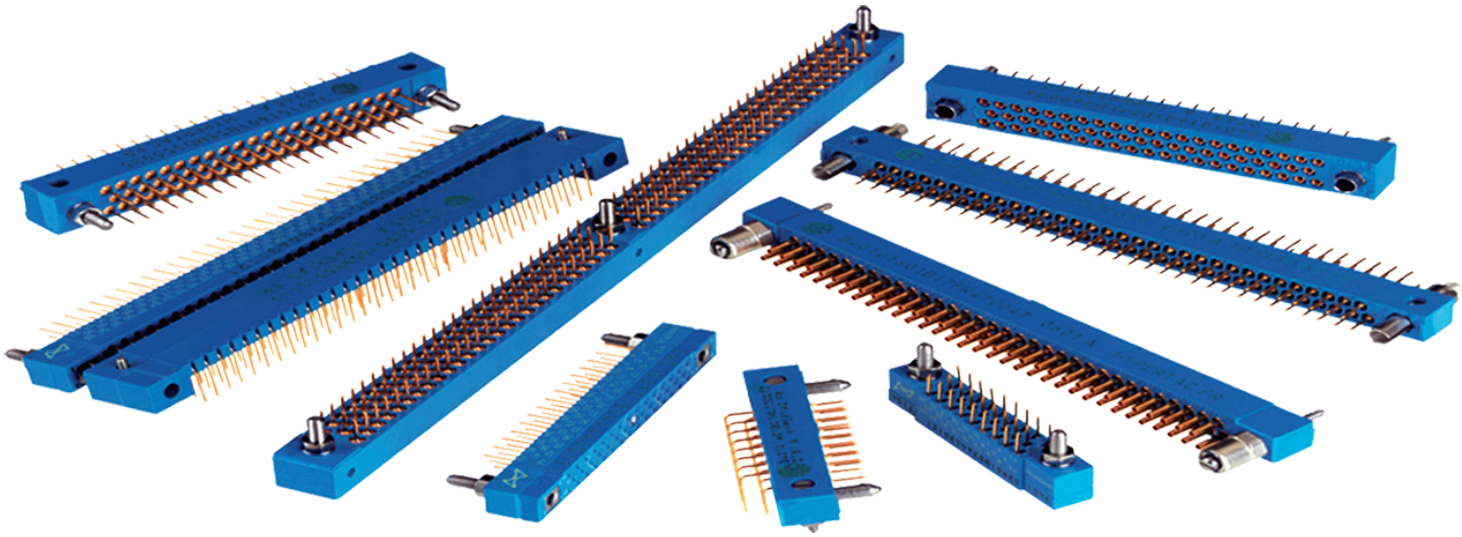
smiths interconnect
a molex company

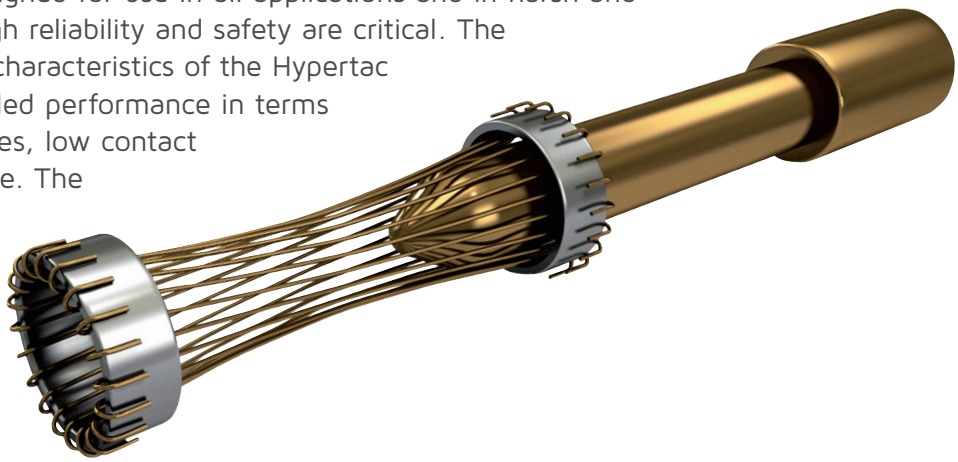
K Series

Medium & High Density PCB Connectors



Hypertac® Hyperboloid Technology

Smiths Interconnect, a Molex company, 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 un-mating 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

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KM Series - High Density PCB Connectors

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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	6	7

1 Series

2 Pitch or type

N 1.27 mm pitch, rear removable contacts

3 Model

B 2 rows

4 Number of contacts

017 029 041 053 065 072 084 096 120

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	
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*†

NF C-UTE C 93-424	MIL-C-55302	ESA/ESCC 3401/01601B	SPACE GRADE	
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

NF C-UTE C 93-424	MIL-C-55302	ESA/ESCC 3401/01601B	SPACE GRADE	
26	28	46	46	Tinned female receptacle*†
27	29	47	47	Tinned male receptacle*†
2A	2C	–	–	Tinned female receptacle**†
2B	2D	–	–	Tinned male receptacle**†

6 Termination styles

10 Through board solder - 90°- length 3 mm	21 Double Crimp	51 Wire wrap (3 wrapping levels)
11 Through board solder - 90°- length 4 mm	30 Through board solder - straight	90 Male - male
12 Through board solder - 90°- length 4.50 to 5.70 mm	31 Through board solder - straight	91 Female - male
20 Crimp	40 Solder bucket	

7 Mounting hardware

Guide Style *(consult us for special guides)*

110 Male polarised, transverse mount, standard plug	145 Male polarised, transverse mount on receptacle only	131 Male unpolarised, transverse mount
111 Male polarised, vertical mount	190 Female power or mass contact, vertical mount	132 Female unpolarised, transverse mount
113 Male polarised, float mount	125 Male unpolarised, transverse mount	133 Female all polarised, transverse mount
121 Female polarised, vertical mount	126 Female unpolarised, vertical mount	191 Male power or mass contact, vertical mount
123 Female polarised, float mount	127 Male unpolarised, vertical mount	
124 Female polarised, transverse mount	130 Female unpolarised, vertical mount	

Locking Styles

MALE PLUG	FEMALE RECEPTACLE	
201 1/4 turn, free connector	202 1/4 turn, vertical mount	212 Jackscrew, transverse mount
203 1/4 turn, transverse mount	204 1/4 turn, transverse mount	215 Jackscrew, vertical mount
207 Jackscrew, free connector	208 Jackscrew, transverse mount	219 Jackscrew, vertical mount
211 Jackscrew, free connector	210 Jackscrew, free connector	232 Jackscrew, with operation button
290 Jackscrew, vertical mount		

* 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					
1	2	3	4	5	6

1 ESCC component number

2 Mounting

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
KNB 029 **44** 40 113
P.P.P.

3 Termination style

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		

4 Locking type On left side

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		

5 Locking type In center

0 0 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

6 Locking type On right side

(*see table* **4**, Locking type - On left side)

* Please consult us

Contact Terminations

Plug

Male | Female

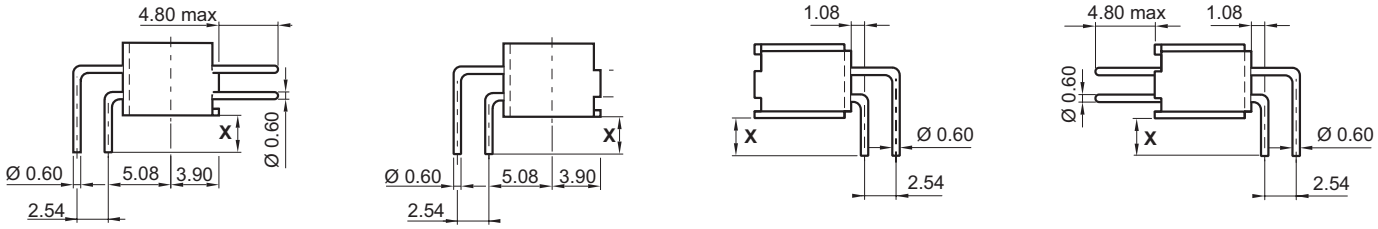
Receptacle

Female | Male

90° Through board solder

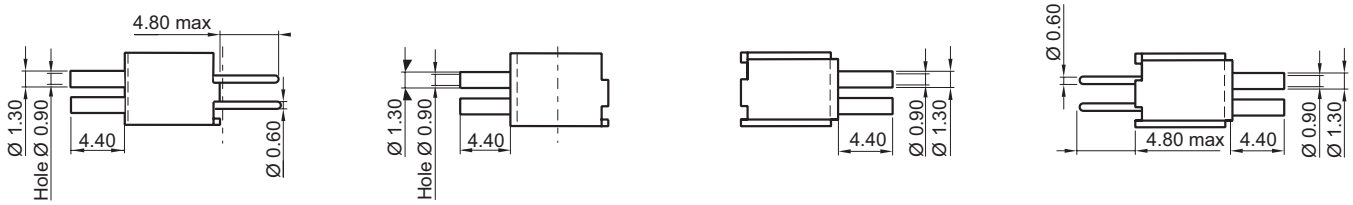
Ref: **10** (**X**=3) Ref : **MC** & **FC** / **MA** & **FA** - Ref: **11** (**X**=4) Ref : **ML** & **FL** / **MG** & **FG**

Ref: **12** (**X**= 4.50 mm min to 5.70 mm max)



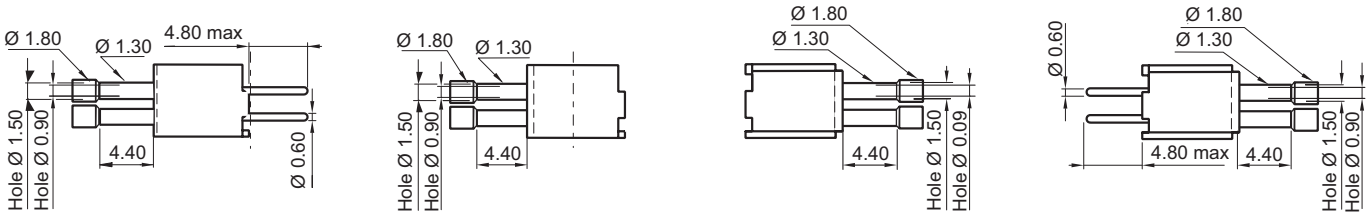
Crimp (AWG 28-26 & 24-22)

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



Crimp (AWG 28-26 & 24-22) & Crimp on sheath (Ø 1.45)

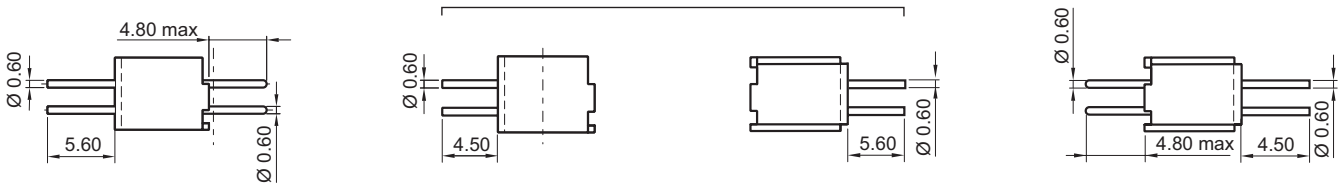
Ref: **21**



Straight through board solder

Ref: **30** Ref : **MD** & **FD** / **ME** & **FE** Ref **31**

See: 90° Through board solder



Contact Terminations

Plug

Male

Female

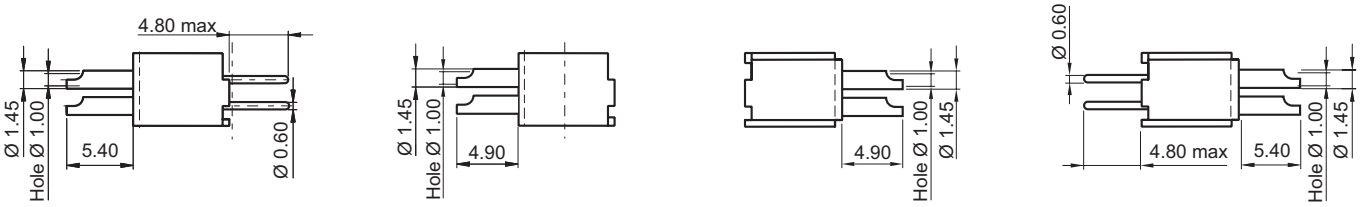
Receptacle

Female

Male

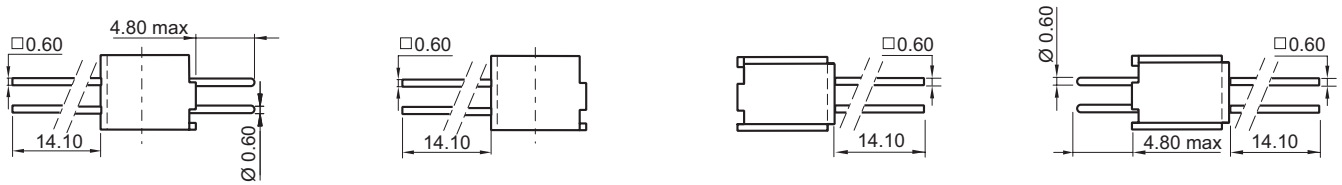
Solder bucket (AWG 22 max)

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



Wire wrap *(3 wrapping levels)*

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



Saver *(male-male)*

Ref: **90**

Saver *(female-male)*

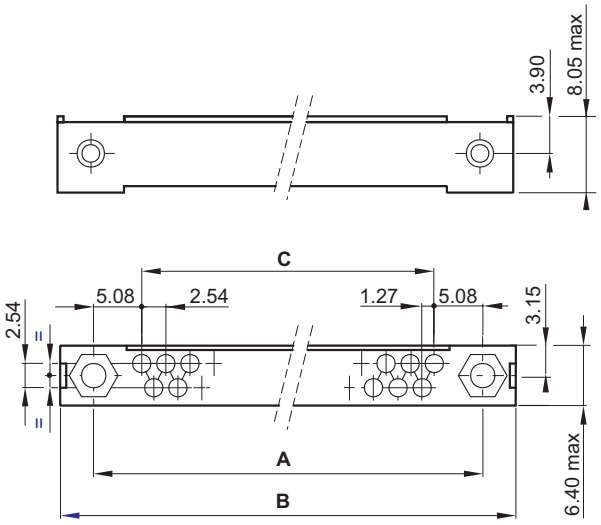
Ref: **91** Ref CE: **FM**

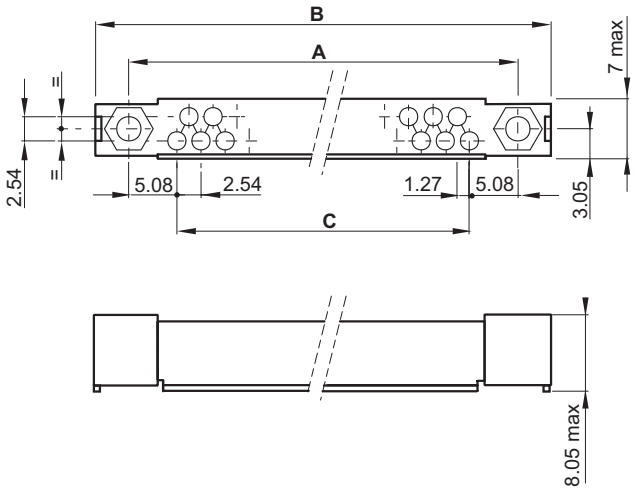
Connector Dimensions

Plug

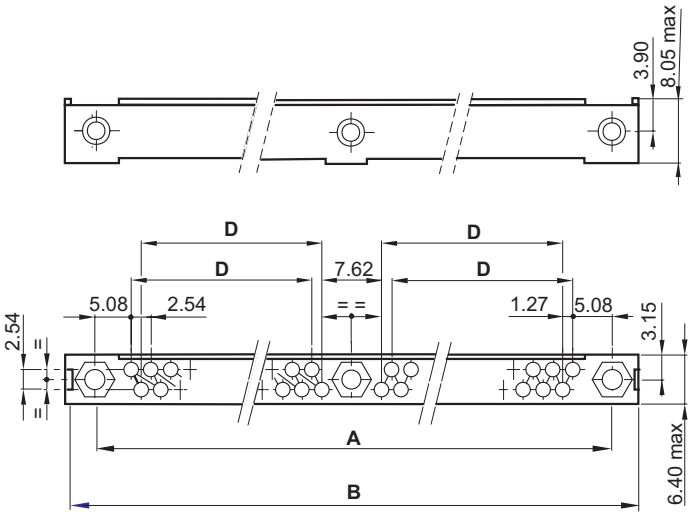
Receptacle

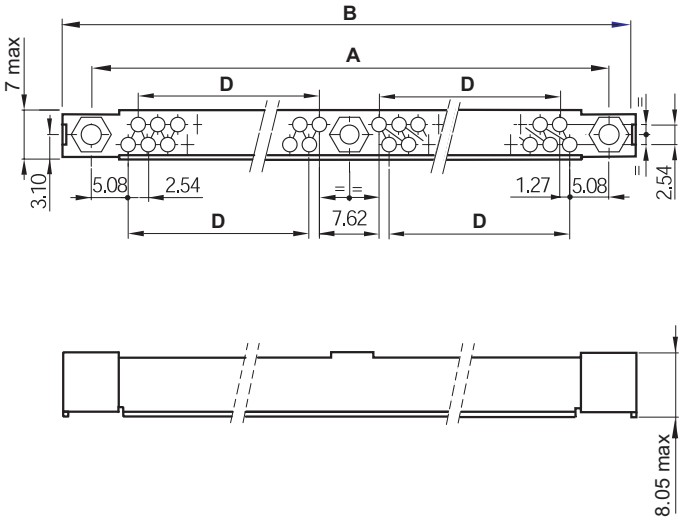
17 to 65 contacts





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

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Guide Device and Polarity Termination Compatibility Chart

Legend

- Compatible
- Compatible special saver connector

FP = Female Plug

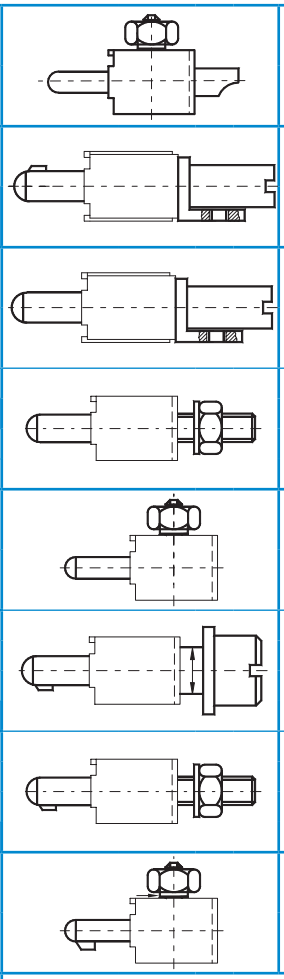
FR = Female Receptacle

MR = Male Receptacle

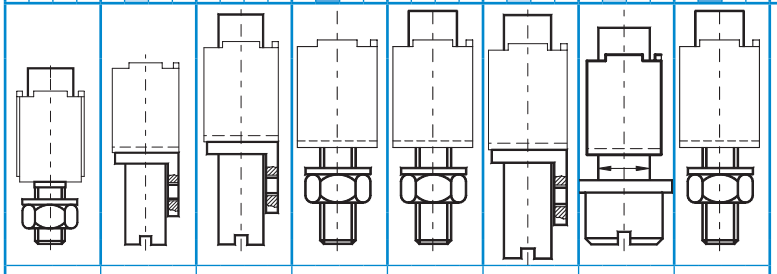
Polarity	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13
Receptacle	■	■			■	■			■	■			■	■			■	■			■	■							■	■		
Plug							■	■			■	■			■	■			■	■			■	■			■	■			■	■
90°					■	■	■	■	■	■	■	■									■	■	■	■								
Straight	■	■	■										■	■	■	■	■	■	■	■									■	■	■	■
Solder bucket	■	■	■										■	■	■	■	■	■	■	■					■	■	■	■	■	■	■	■
Cripm	■	■	■										■	■	■	■	■	■	■	■					■	■	■	■	■	■	■	■
Wire wrap	■	■	■										■	■	■	■	■	■	■	■					■	■	■	■	■	■	■	■

Polarity				Contact				Moulding
Receptacle								Moulding
Plug								Moulding
90°	10	11	12	Contact				Contact
Straight		30	31	Contact				Contact
Solder bucket			40	Contact				Contact
Cripm		20	21	Contact				Contact
Wire wrap			51	Contact				Contact

Polarity	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13
FP 12	■																															
MP 13		■																														
MR 23							■								■				■				■				■				■	
FR 22																■				■				■				■				■
MR 23							■				■						■				■				■				■			
FR 22																		■				■				■				■		
FP 12					■				■				■						■				■				■				■	
MP 13						■				■				■						■				■				■				■
MR 23							■				■					■					■				■				■			
FR 22								■				■						■				■				■				■		
FP 12					■								■								■				■				■			
MP 13						■								■								■				■				■		
MR 23							■								■								■				■				■	
FR 22								■								■								■				■				■
FP 12					■								■				■				■				■				■			
MP 13						■								■				■				■				■				■		
MR 23							■								■					■				■				■				■
FR 22								■								■								■				■				■
FP 12					■								■								■				■				■			
MP 13						■								■								■				■				■		
MR 23							■								■					■				■				■				■
FR 22								■								■								■				■				■
FP 12					■								■								■				■				■			
MP 13						■								■								■				■				■		



Polarity	Receptacle	Plug	90°	Straight	Solder bucket	Crimp	Wire wrap - PPC
			10				
			11	30		20	
			12	31	40	21	51
	Moulding		Contact				



190	133	132	130	126	124	123	121
Guiding devices							

Guiding devices	
191	Male guides
145	Male guides
131	Male guides
127	Male guides
125	Male guides
113	Male guides
111	Male guides
110	Male guides

Female guides

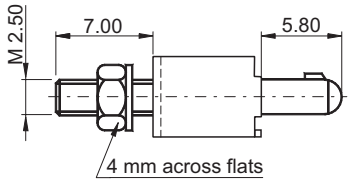
Guide Styles

Plug & Receptacle

Male

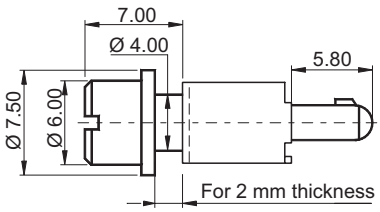
Polarised vertical mount

Ref: 111 Ref: 35



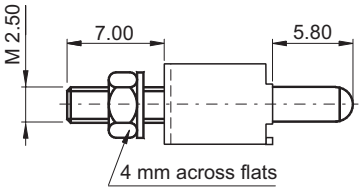
Polarised vertical float mount

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



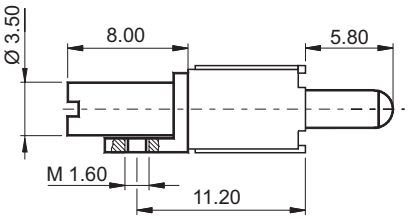
Unpolarised vertical mount

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



Unpolarised transverse mount

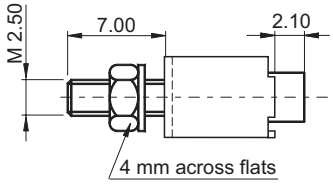
Ref: **131** Ref: **31**



Female

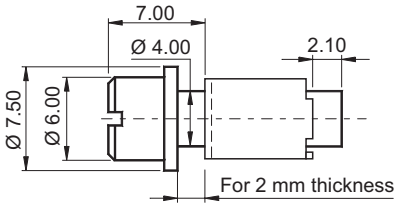
Polarised vertical mount

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



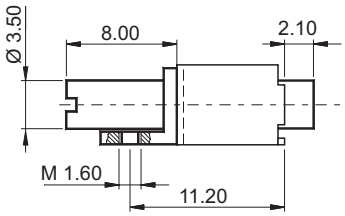
Polarised vertical float mount

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



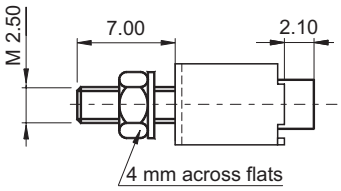
Polarised transverse mount

Ref: **124** Ref: **41**



Unpolarised vertical mount

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



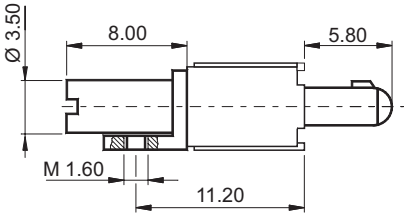
Guide Styles

Plug & Receptacle

Male

Polarised transverse mount

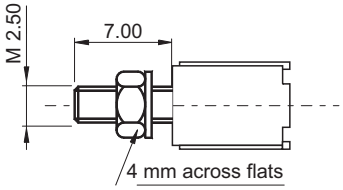
Ref: **145** Ref: 40



Female

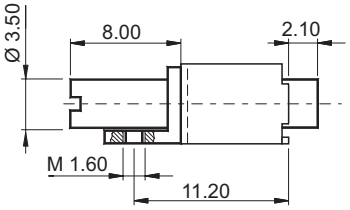
All polarised vertical mount

Ref: **130**



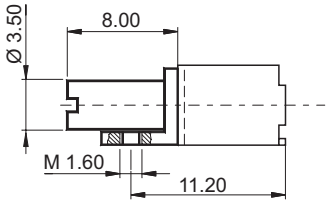
Unpolarised transverse mount

Ref: **132** Ref: **32**



All polarised transverse mount

Ref: **133**



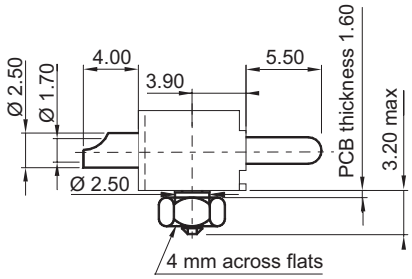
Guide Styles

Plug & Receptacle

Male

Power or mass transverse mount

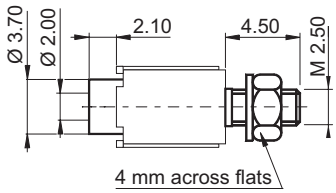
Ref: **191**



Female

Power or mass vertical mount

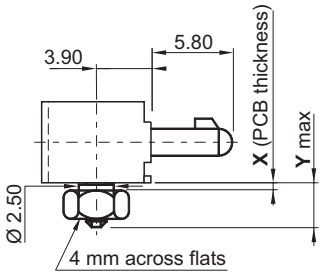
Ref: **190**



Plug Only

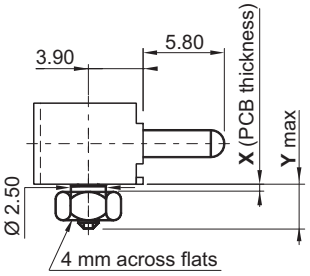
Polarised transverse mount

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

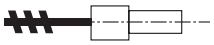
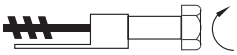
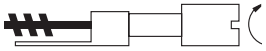
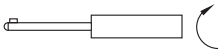
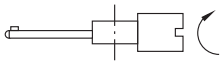
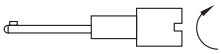
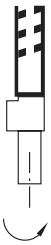
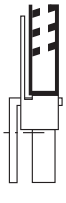
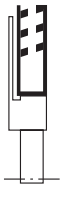
Ref: **10 125**	Ref: **26**	**X=1.60**	**Y=3.20**
Ref: **11 125**	Ref: **71**	**X=2.40**	**Y=4.90**
Ref: **12 125**		**X=3.20**	**Y=6.90**



smiths interconnect
a molex company

Locking Device Compatibility Chart

Compatible

			R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	Receptacle / Plug	Moulding
			■		■		■		■		■				■		■		Receptacle	
				■		■		■		■		■		■		■		■	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

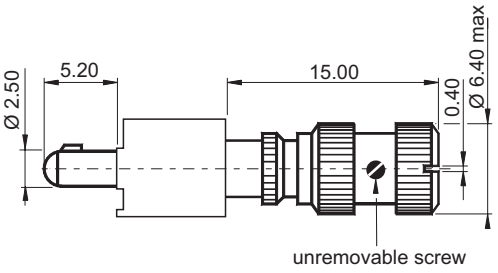
Female locking devices

Male Locking Styles

Plug & Receptacle

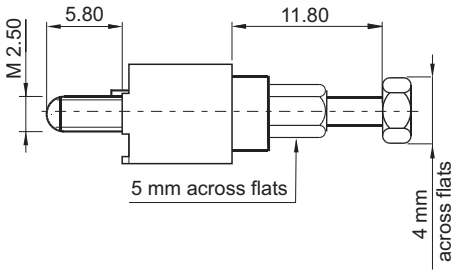
Jack 1/4 turn lock, free connector

Ref: **201**



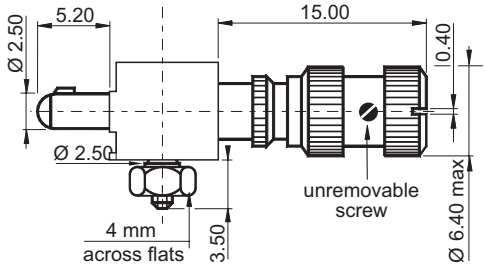
Jackscrew, free connector

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



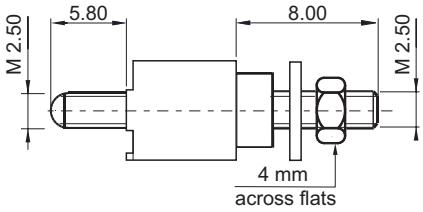
Jack 1/4 turn lock, transverse mount

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



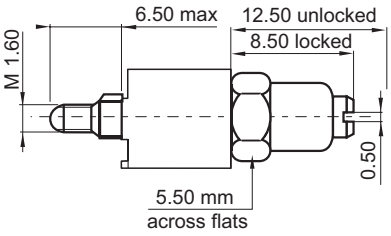
Jackscrew, vertical mount

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



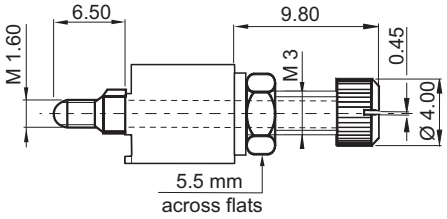
Jackscrew, free connector

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



Jackscrew, vertical mount

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

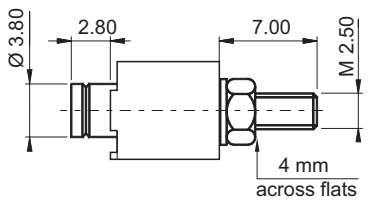


Female Locking Styles

Plug & Receptacle

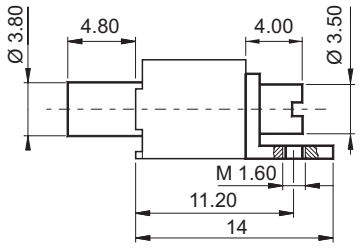
Jack 1/4 turn lock, vertical mount

Ref: **202**



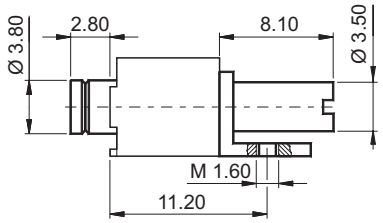
Jackscrew, transverse mount

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



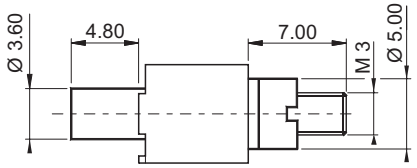
Jack 1/4 turn lock, transverse mount

Ref: **204**



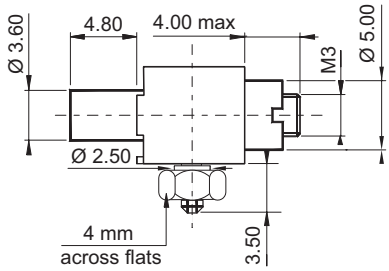
Jackscrew, vertical mount

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



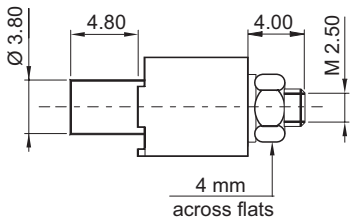
Jackscrew, transverse mount

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



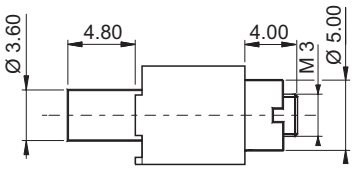
Jackscrew, vertical mount

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



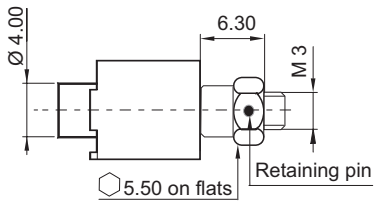
Jackscrew, free connector

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

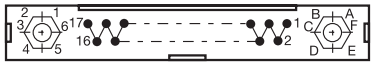
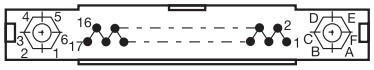
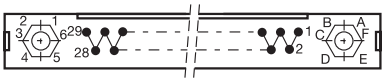
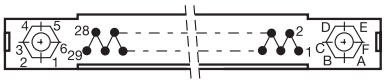
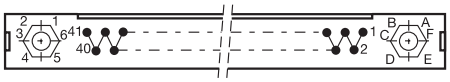
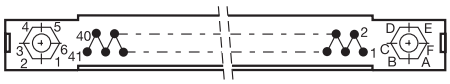
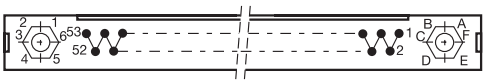
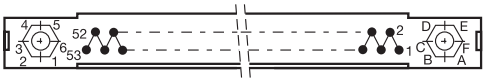
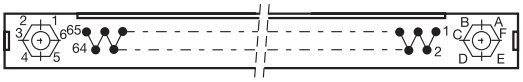
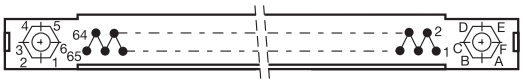
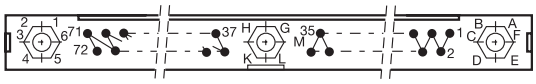
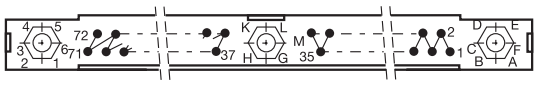
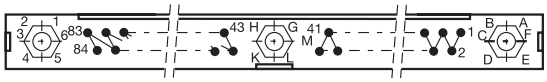
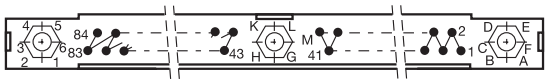
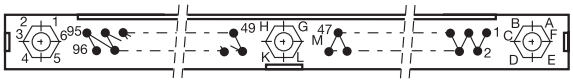
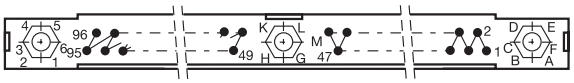
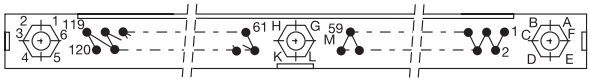
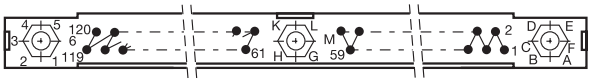


Rotating jackscrew, free connector

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

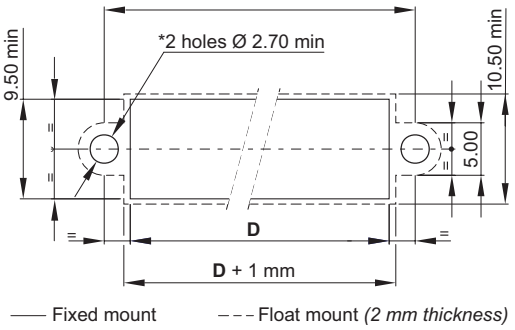


Mating Side Layout View

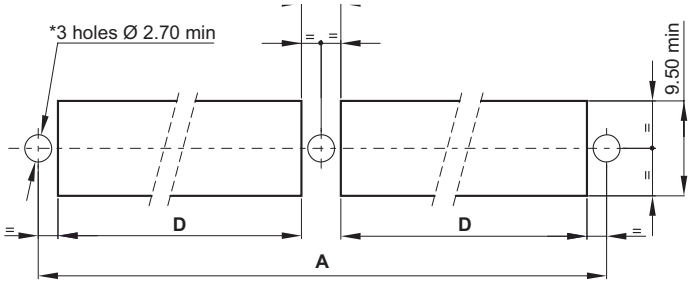
Plug		Receptacle
	017	
	029	
	041	
	053	
	065	
	072	
	084	
	096	
	120	

Panel Preparation Details

17 to 65 Contacts



72 to 120 Contacts



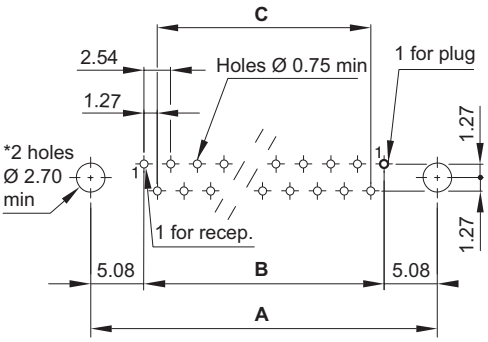
Panel: female or male, plug or receptacle, terminations 20 - 40 - 51
Guide styles: 111 - 121 - 126 - 127 - 130 - 190 (Fixed Mount) - 113 - 123 (Float Mount)
Locking styles: 202 - 215* - 219 - 231
*: for ref: 215, holes Ø 3.20 mm

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

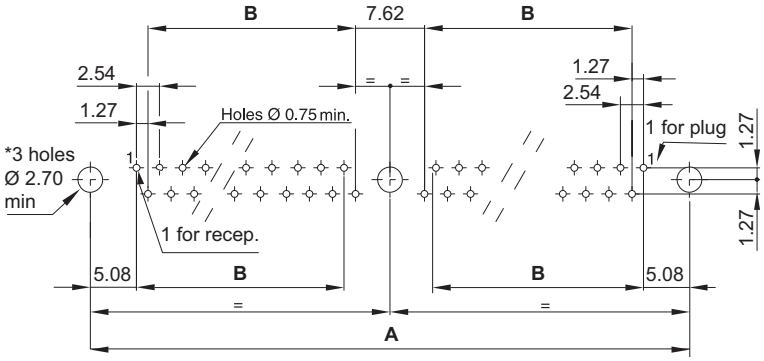
Board Preparation Details

Mother board

17 to 65 Contacts



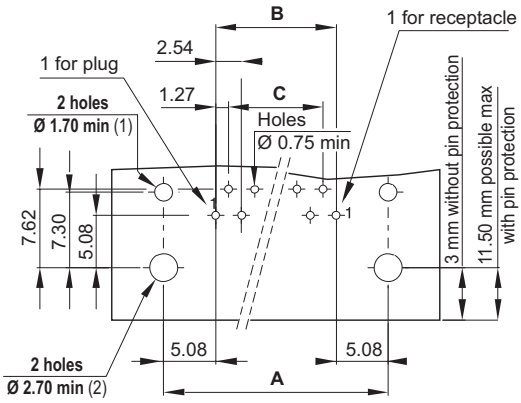
72 to 120 Contacts



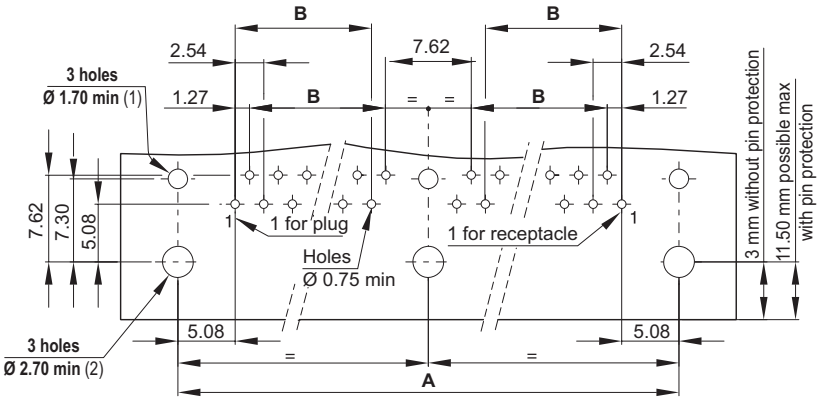
Mother Board: female or male, plug or receptacle, straight solder termination
Guide styles: 111 - 121 - 126 - 127 - 130 - 190 Locking styles: 202 - 215* - 219 - 231
*: for ref: 215, holes Ø 3.20 mm

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

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

10	Through board solder - 90°- length 3 mm	13	Through board solder - 90° - length 2.3 mm, plug only
11	Through board solder - 90°- length 4 mm	14	Through board solder - 90° - length 8 mm, receptacle only
12	Through board solder - 90° - length 5.1 mm, plug only		

4 Mounting hardware

Guide Style***

110	Male polarised, transverse mount, standard plug	131	Male unpolarised, transverse mount
121	Female polarised, vertical mount	145	Male polarised, transverse mount on receptacle only
124	Female polarised, transverse mount	191	Male power or mass contact, vertical mount
125	Male unpolarised, transverse mount		

Locking Styles***

FEMALE RECEPTACLE

204	1/4 turn, transverse mount	218	Jackscrew, transverse mount

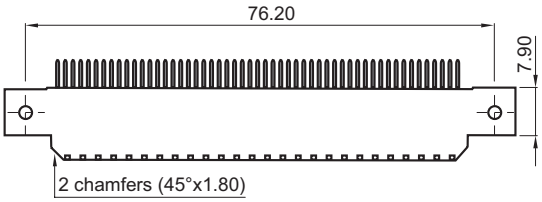
MALE PLUG

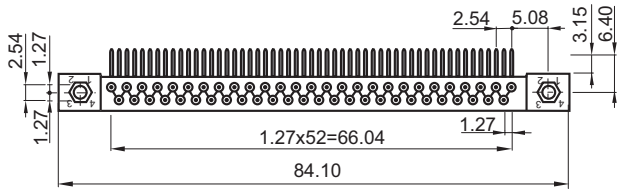
203	1/4 turn, transverse mount

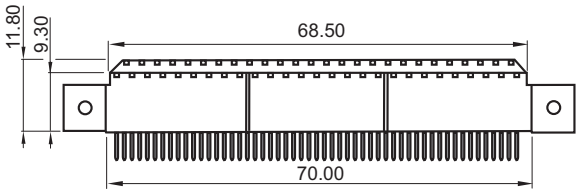
* No RoHS compliant = 16 et 17
** RoHS Compliant = 1A et 1B

Connector Dimensions

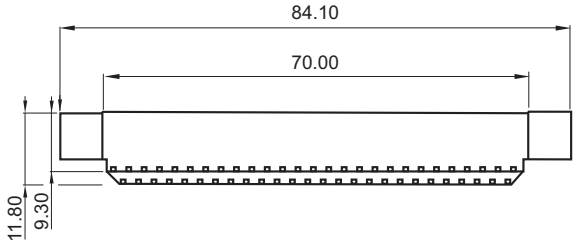
Plug

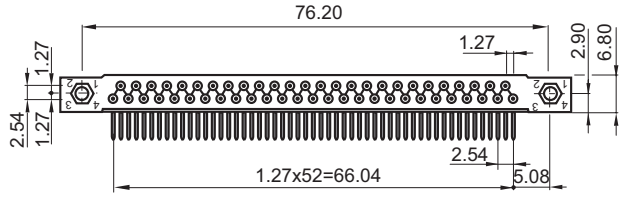


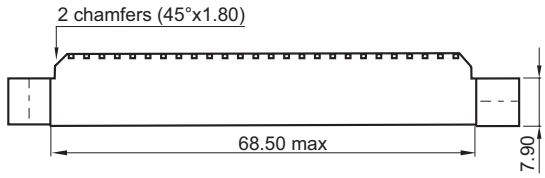




Receptacle







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

K	N					
1	2	3	4	5	6	7

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 062 080 098 160 KND 026 044 062 080 098 108 126 144

5 Moulding polarity

NF C-UTE C 93-424	MIL-C-55302	ESA/ESCC 3401/01601B	SPACE GRADE	
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*†

NF C-UTE C 93-424	MIL-C-55302	ESA/ESCC 3401/01601B	SPACE GRADE	
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

NF C-UTE C 93-424	MIL-C-55302	ESA/ESCC 3401/01601B	SPACE GRADE	
26	28	46	46	Tinned female receptacle*†
27	29	47	47	Tinned male receptacle*†
2A	2C	–	–	Tinned female receptacle**†
2B	2D	–	–	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

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)*				EXAMPLE
Female receptacle	44	Plug female	54	KNC 062 **44** 30 113
Male receptacle	45	Plug male	55	P.P.P.

3 Termination style

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		

4 Locking type On left side

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		

5 Locking type In center

0 0 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

6 Locking type On right side

(*see table* **4**, Locking type - On left side)

* Please consult us

Contact Terminations

Plug

Male

Female

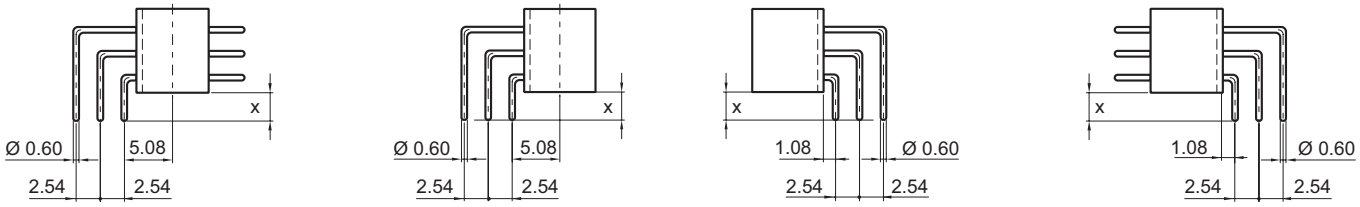
Receptacle

Male

Female

90° Through board solder

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

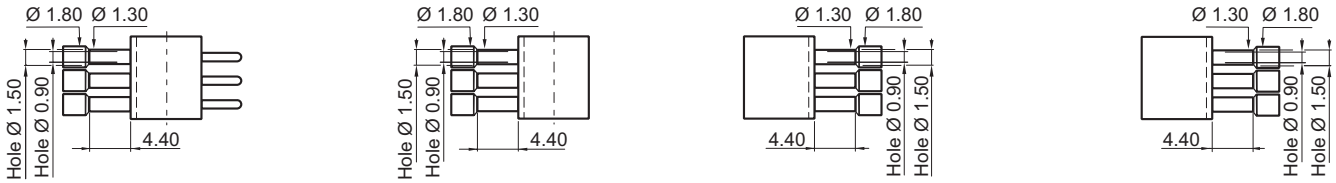


Crimp (AWG 28-22)

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

Receptacle

Male

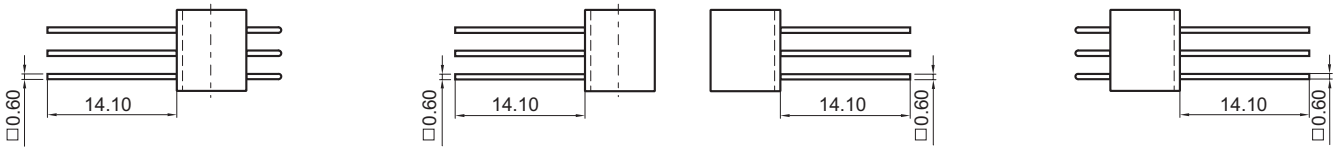
Female

Solder bucket (AWG 22 max)

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

Wire wrap (3 wrapping levels)

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



Saver (male-male)

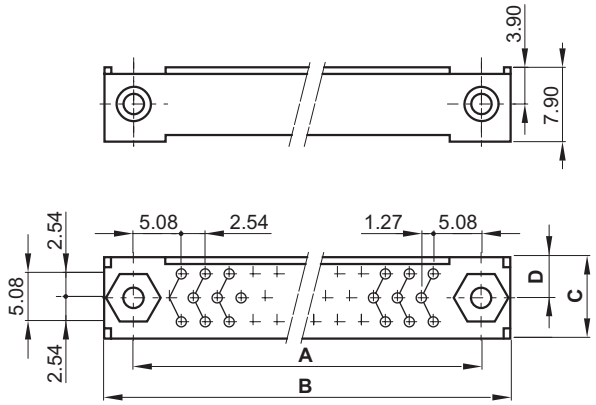
Ref: **90**

Saver (female-male)

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

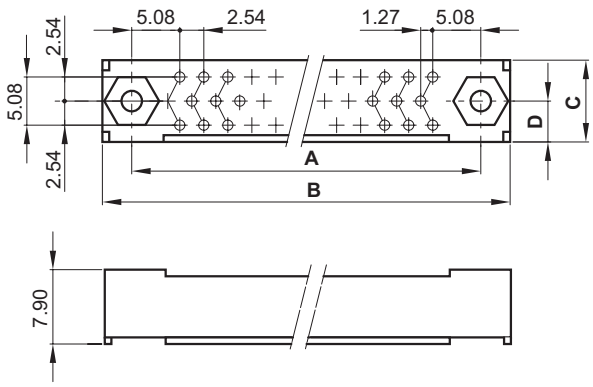
Dimensions

Plug

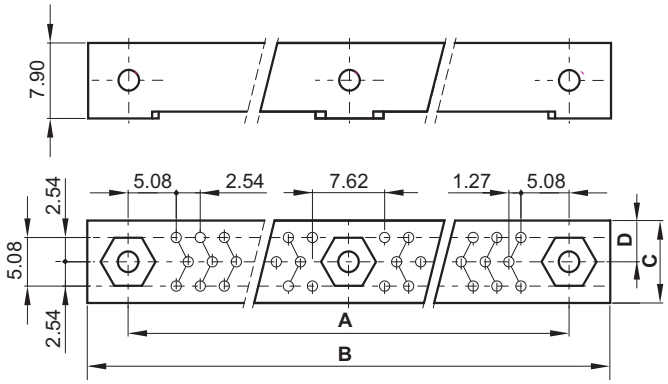


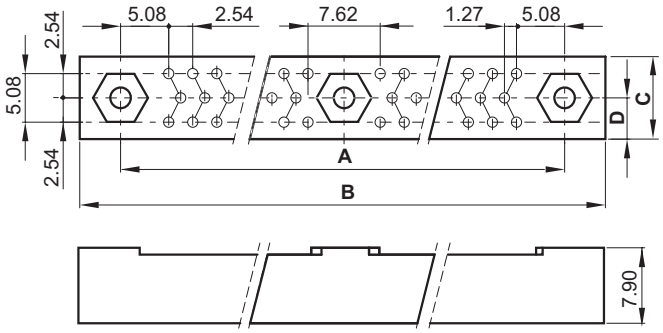
Receptacle

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

Legend

- Compatible
- Compatible special saver connector

FP = Female Plug

FR = Female Receptacle

MR = Male Receptacle

Polarity	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13				
Receptacle	■	■			■	■			■	■			■	■			■	■			■	■							■	■			Moulding			
Plug							■	■			■	■			■	■			■	■			■	■			■	■			■	■				
90°					■	■	■	■	■	■	■	■									■	■	■	■									Contact	10	11	12
Straight	■	■	■										■	■	■	■	■	■	■	■									■	■	■	■			30	31
Solder bucket	■	■	■										■	■	■	■	■	■	■	■					■	■	■	■	■	■	■	■				40
Cripm	■	■	■										■	■	■	■	■	■	■	■					■	■	■	■	■	■	■	■			20	21
Wire wrap	■	■	■										■	■	■	■	■	■	■	■					■	■	■	■	■	■	■	■				51

FP 12		■	■					■																											191
MP 13		■	■						■																										
MR 23	■		■								■								■				■				■					■			145
FR 22	■		■																	■				■				■					■		
MR 23	■		■								■				■						■				■				■						131
FR 22	■		■									■				■						■				■				■				■	
FP 12		■		■	■	■	■				■				■				■				■				■				■				127
MP 13		■		■	■	■	■					■				■				■				■				■				■			
MR 23	■			■	■	■	■				■				■				■		■				■				■				■		
FR 22	■			■	■	■	■					■				■				■		■				■				■				■	
FP 12		■	■								■				■				■								■				■				125
MP 13		■	■									■				■												■				■			
FP 12		■			■	■	■				■				■				■				■				■				■				113
MP 13		■			■	■	■					■				■				■				■				■				■			
MR 23	■				■	■	■				■				■				■				■				■				■				
FR 22	■				■	■	■					■				■				■				■				■				■			
FP 12		■		■	■	■	■				■				■				■				■				■				■				111
MP 13		■		■	■	■	■					■				■				■				■				■				■			
MR 23	■			■	■	■	■				■				■				■				■				■				■				
FR 22	■			■	■	■	■					■				■				■				■				■				■			
FP 12		■	■								■				■				■				■				■				■				110
MP 13		■	■									■				■				■				■				■				■			

Male guides

Polarity	Receptacle	Plug	90°	Straight	Solder bucket	Crimp	Wire wrap - PPC
			12				
			11	30		20	
			10	31	40	21	51
	Moulding		Contact				

190																																			
133																																			
132																																			
130																																			
126																																			
124																																			
123																																			
121																																			
Guiding devices																																			

Female guides

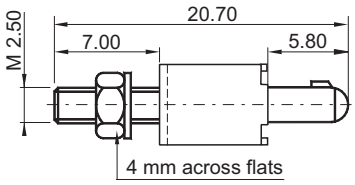
Guide Styles

Plug & Receptacle

Male

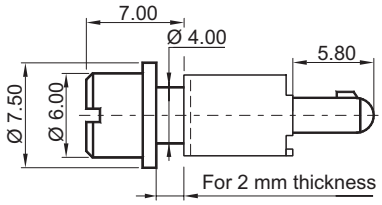
Polarised vertical mount

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



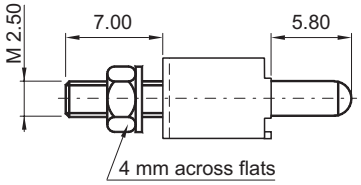
Polarised vertical float mount

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



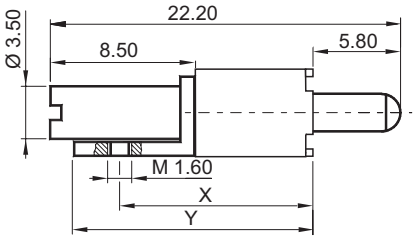
Unpolarised vertical mount

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



Unpolarised transverse mount

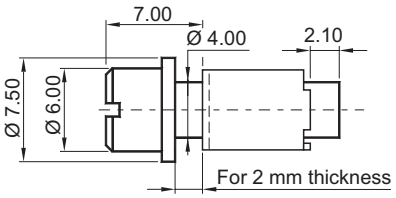
Ref: **131**
KNC X=11.20 Y=14.00 **KND** X=12.80 Y=15.90



Female

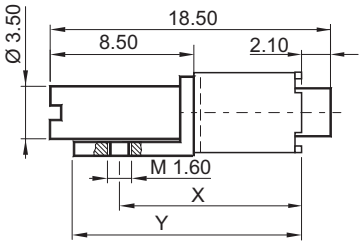
Polarised vertical float mount

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



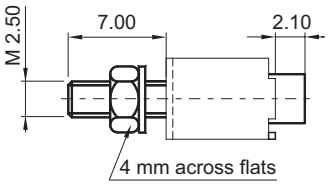
Polarised transverse mount

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



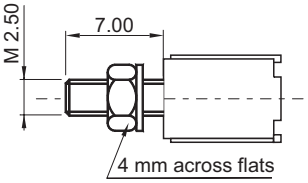
Unpolarised vertical mount

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



All polarised vertical mount

Ref: **130**



ce Ref. applies only to the KNC Series

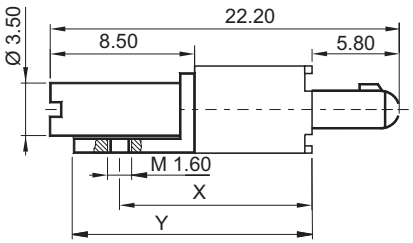
Guide Styles

Plug & Receptacle

Male

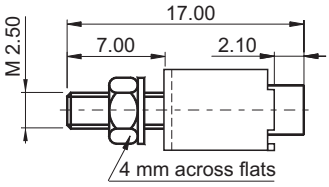
Polarised transverse mount

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



Polarised vertical mount

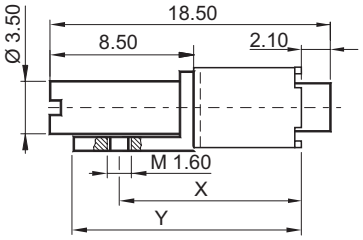
Ref: **121** Ref: **36**



Female

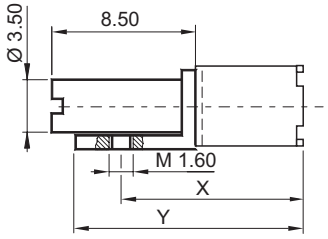
Unpolarised transverse mount

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



All polarised transverse mount

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



Ref. applies only to the KNC Series

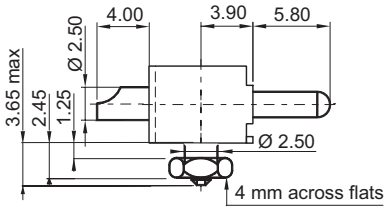
Guide Styles

Plug & Receptacle

Male

Power or mass vertical mount

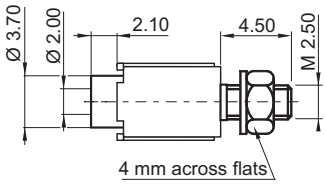
Ref: **191** PCB thickness **1.60**



Female

Power or mass vertical mount

Ref: **190**

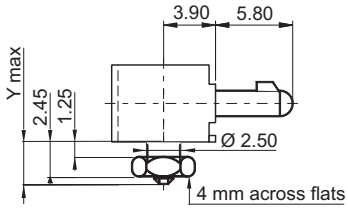


Male plug only

KNC only

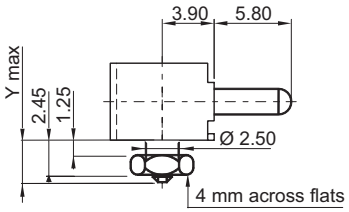
Polarised transverse mount

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

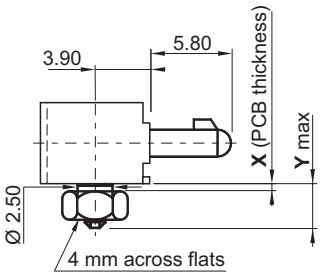
Ref: **10 125**	Ref ♻: **27**	PCB thickness **1.60**	**Y=3.65**
Ref: **11 125**	Ref ♻: **27**	PCB thickness **1.60**	**Y=5.65**
Ref: **12 125**		PCB thickness **1.60**	**Y=5.65**



KND only

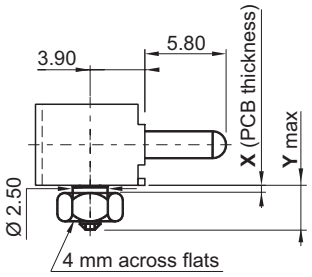
Polarised transverse mount

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

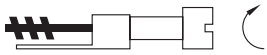
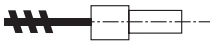
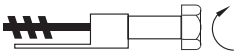
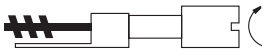
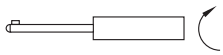
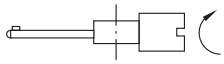
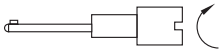
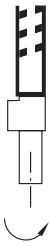
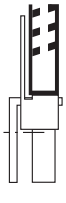
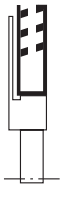
Ref: **10 125**	**X=1.60 Y=3.20**
Ref: **11 125**	**X=2.40 Y=4.90**
Ref: **12 110**	**X=3.20 Y=6.90**



♻ Ref. applies only to the KNC Series

Locking Devices Compatibility Chart

Compatible

			R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	Receptacle / Plug	Moulding
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

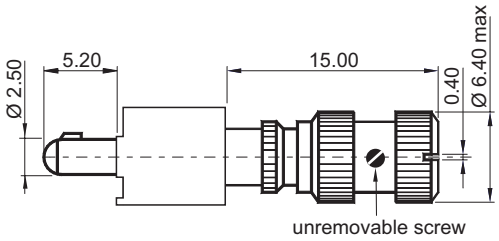
Female locking devices

Male Locking Styles

Plug & Receptacle

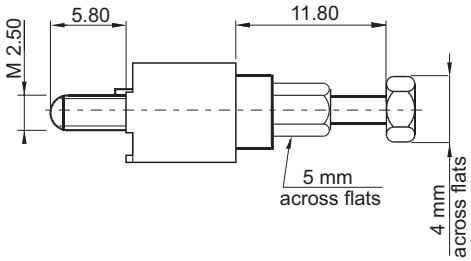
Jack 1/4 turn lock, free connector

Ref: **201**



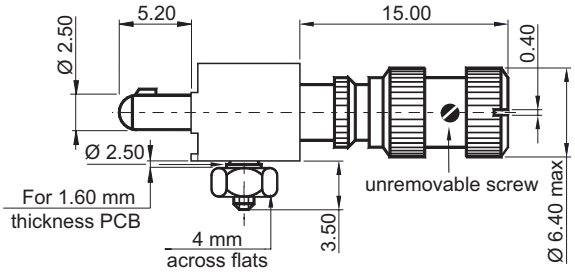
Jackscrew, free connector

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



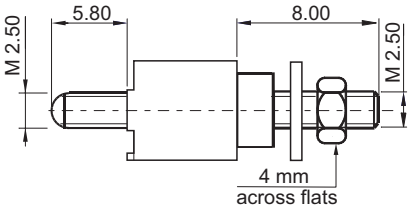
Jack 1/4 turn lock, transverse mount

Ref: **206**



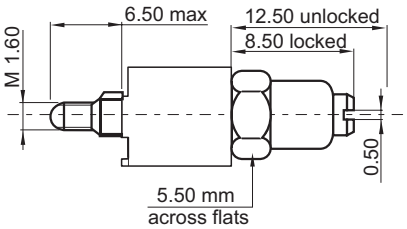
Jackscrew, vertical mount

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



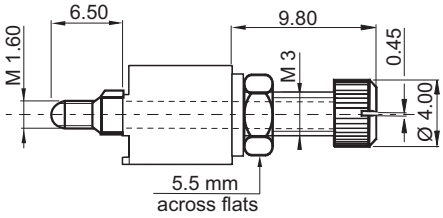
Jackscrew, free connector

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



Jackscrew, vertical mount

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



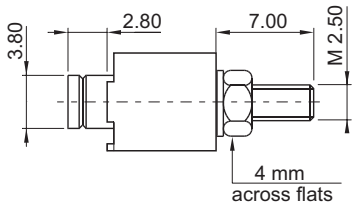
CC Ref. applies only to the KNC Series

Female Locking Styles

Plug & Receptacle

Jack 1/4 turn lock, vertical mount

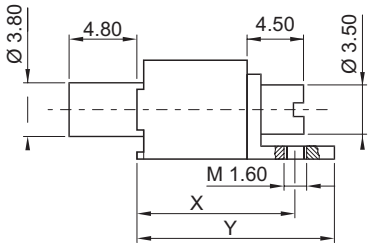
Ref: **202**



Jackscrew, transverse mount

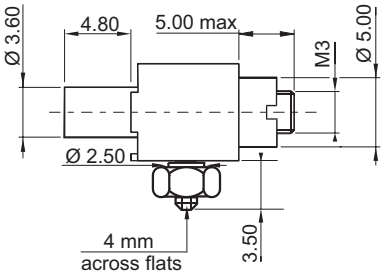
Ref: **212**

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



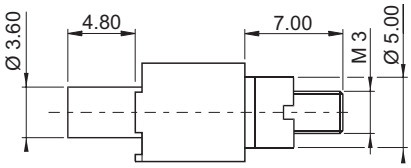
Jackscrew, transverse mount

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



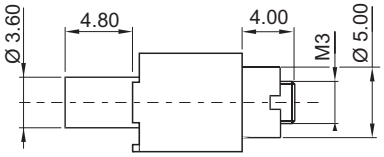
Jackscrew, vertical mount

Ref: **215** Ref ♻: **53**



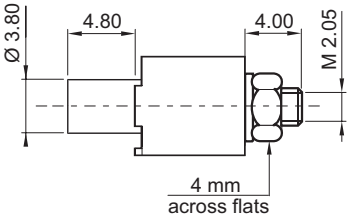
Jackscrew, free connector

Ref: **210** Ref ♻: **50**



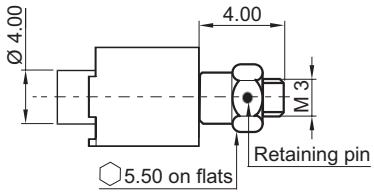
Jackscrew, vertical mount

Ref: **219** Ref ♻: **80**



Rotating jackscrew

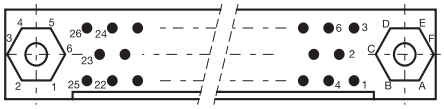
Ref: **232**



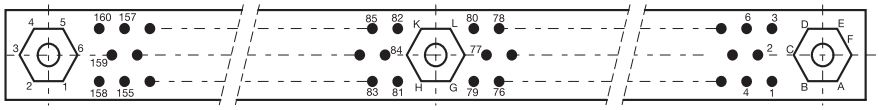
♻ Ref. applies only to the KNC Series

Receptacle Mating Side Layout View

26 to 98 contacts

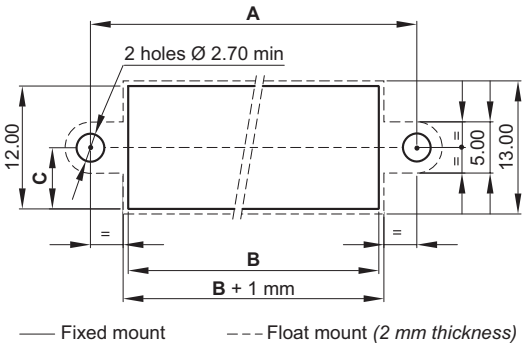


108 to 160 contacts

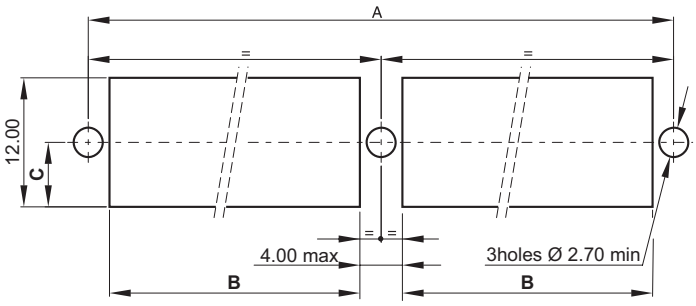


Panel Preparation Details

26 to 98 contacts



108 to 160 contacts



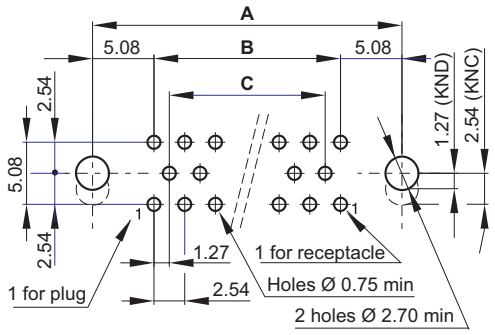
Panel: female or male, plug or receptacle
Terminations: 40 - 51
Guide styles: 111 - 121 *(Fixed Mount)*
Guide styles: 113 - 123 - 202 *(Float Mount)*

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	–

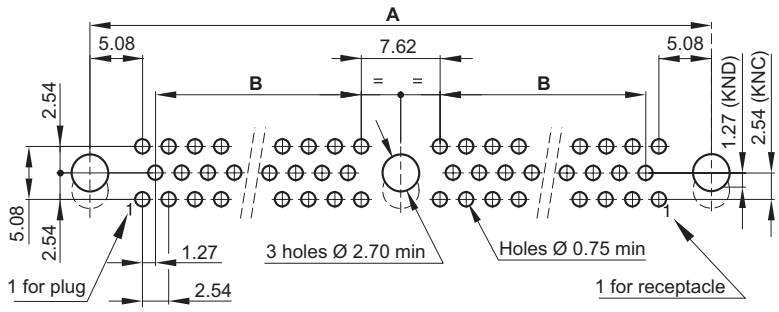
Board Preparation Details

Mother board

26 to 98 Contacts



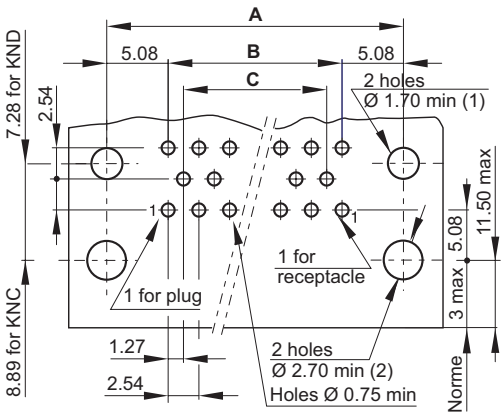
108 to 160 Contacts



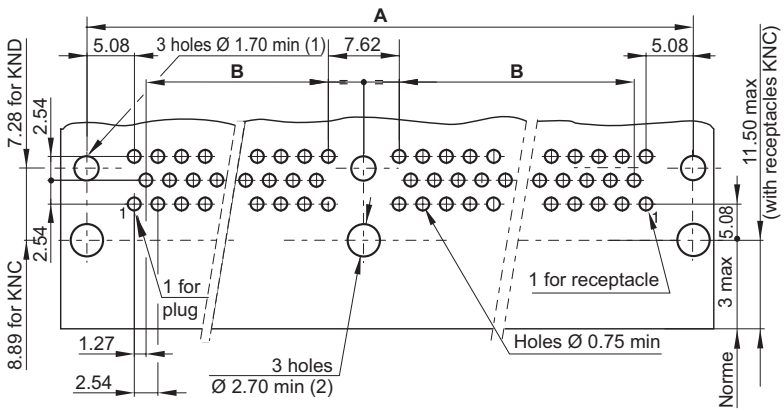
Mother Board: female or male, plug or receptacle, straight solder termination
Guide styles: 111 - 121- 202

Daughter board

26 to 98 Contacts



108 to 160 Contacts



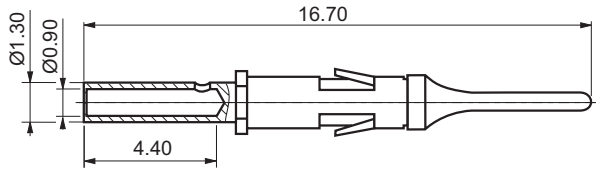
Daughter Board: female or male, plug or receptacle, 90° termination
(1) **Guide styles**: 124 (2) **Guide styles**: 110 - 206

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

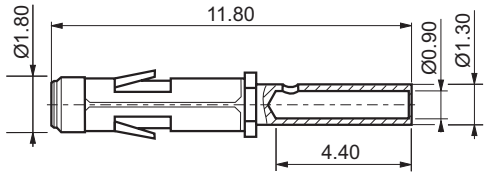
Crimp terminations awg 22-28 (0.079 - 0.34 mm²)



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

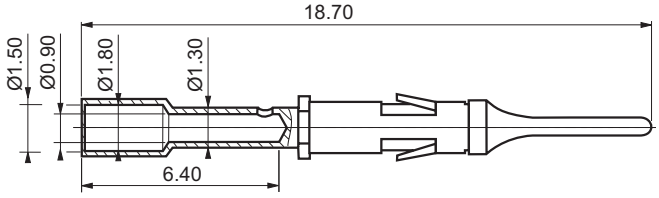
Female

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

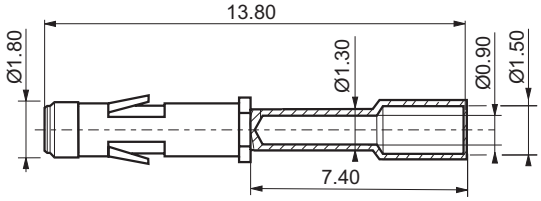


Reference	Part number
KN- ---22 **20** ---	006 042 2- 20R G0
KN- ---44 **20** --- **FR**	006 042 2- 20P J9 3401 017 015B

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

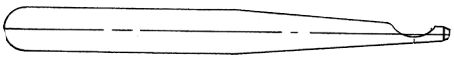
Tools

Crimp tool & Positioner

Ref: **S_102**
(M22520/2.01)

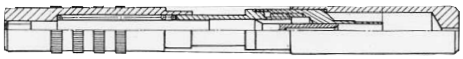
Contact part number		Crimp tool	AWG	Wire cross section	Positioner	Tool turret	Selector position
006 042 1- 20R OG 006 042 2- 20R GO		ASTRO TOOL M22520/2.01	28	0.079	SS-0060000001		3
			26	0.14			4
			24	0.20			4
			22	0.34			5
		DANIELS M22520/2.01	28	0.079	SS-0060000001		3
			26	0.14			4
			24	0.20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

Insertion



SM-0060000001

Extraction



SD-0060000006

Alignment Combs

for 90° through board termination

2 fixing points **HPF107/B**
3 fixing points **SP. 006 00 00 004**

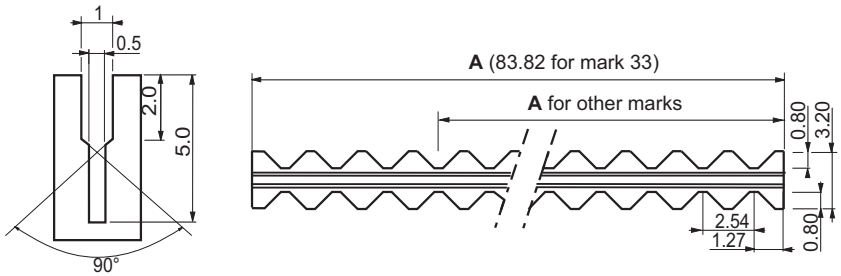
Screwdriver for m3 nut

208 locking devices
215 locking devices

S_075

Accessories

Antistatic Pin Protector



Ordering information

K N B - - - _ 314

Ref

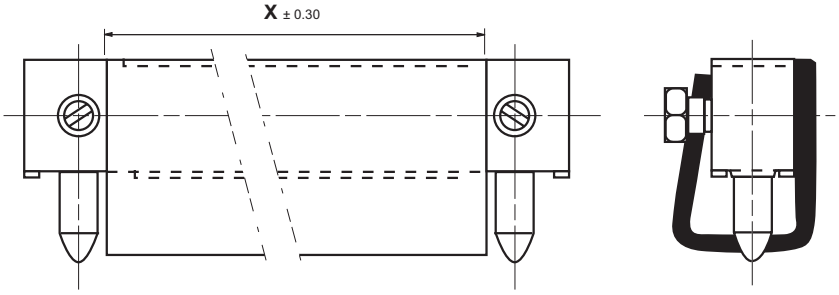
Use	A	Ref
KNB 017 KND 026	24.13	**009**
KNB 029 KND 044	39.37	**015**
KNB 072 KND 108	46.99	**018**
KNB 041 & 084 KNC 062 KND 062 & 126	54.61	**021**

Use	A	Ref
KNB 096 KND 144	62.23	**024**
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

Technical Characteristics

Contact diameter	HYPERTAC® type Ø 0.50 mm	
Number of contact	Up to 162	
Pitch	1.905 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 rating (at 25°C)	3 A max.
Dielectric withstanding voltage	800 Vrms
Contact resistance	≤8 mΩ
Insulation resistance	>10^4 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 16 keying)

Environmental

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

How To Order

Hypertac & ESA Correspondance Table

ESA 3401/039 01B

KMC				
1	2	3	4	5

1 Series

2 Number of contacts

026 044 062 080 098 144 162

3 Moulding polarity

NF C-UTE C 93-424	ESA/ESCC 3401/03901B	SPACE GRADE		NF C-UTE C 93-424	ESA/ESCC 3401/03901B	SPACE GRADE		NF C-UTE C 93-424	ESA/ESCC 3401/03901B	SPACE GRADE	
12	–	54	Female plug	1A	–	–	Tinned female plug**	26	–	46	Tinned female receptacle*
13	55	55	Male plug	1B	–	–	Tinned male plug**	27	–	47	Tinned male receptacle*
16	–	56	Tinned female plug*	22	44	44	Female receptacle	2A	–	–	Tinned female receptacle**
17	–	57	Tinned male plug*	23	–	45	Male receptacle	2B	–	–	Tinned male receptacle**

4 Termination styles

ce	10	90° lenght 3 mm *("A" moulding)*	ce	30	Through board solder - straight - lenght 4.5 mm	ce	51	Wire wrap *(3 wrapping levels)*
	10	90° lenght 3 mm *("B" moulding)*	ce	31	Through board solder - straight - lenght 5.6 mm		90	Male - Female
	11	90° lenght 4 mm *("A" moulding)*	ce	40	Solder bucket	ce	91	Female - male
	13	90° lenght 5.5 mm *("B" moulding)*		50	Wire wrap *(2 wrapping levels)*			

5 Mounting hardware

Guide Styles *(consult us for special guides)*

ce	110	Male polarised, transverse mount(1)		127	Male unpolarised, vertical mount(2)		156	Male unpolarised, transverse mount(2)
	111	Male polarised, vertical mount(2)		128	Male unpolarised, float mount(2)		173	Female unpolarised, transverse mount(1)
	112	Male polarised, vertical mount(2)		130	Female unpolarised, vertical mount(2)		174	Female polarised, transverse mount(1)
	113	Male polarised, float mount(2)		133	Female unpolarised, transverse mount(2)		190	Female power or mass contact, vertical mount(2)
ce	121	Female polarised, vertical mount(2)	ce	143	Female polarised, vertical mount(2)		191	Male power or mass contact, transverse mount(1)
	123	Female polarised, float mount(2)		153	Female unpolarised, transverse mount(2)	ce	703	Female - male unpoalrised guide (1)
	124	Female polarised, transverse mount(2)		154	Female polarised, transverse mount(2)			
	125	Male unpolarised, transverse mount(1)		155	Male unpolarised, transverse mount(2)			

Locking Styles

FEMALE			MALE		
ce	202	Jackscrew, vertical mount(2)	ce	201	Jackscrew, free connector(2)
	203	Jackscrew, transverse mount		205	Jackscrew, transverse mount(1)
ce	204	Jackscrew, transverse mount(2)	ce	206	Jackscrew, free connector(2)
	207	Jackscrew, vertical mount(2)			

(1) Moulding A - (2) Moulding B

* For 90° & straight terminations (splicing on PCB)

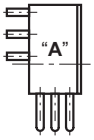
** RoHS compliant for 90° & straight terminations (splicing on PCB)

Moulding Styles

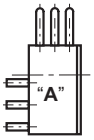
Plug

Receptacle

One Part (moulding A)

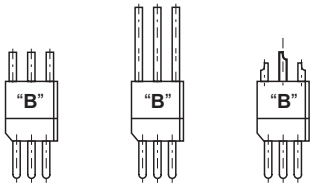


Fitted with male contacts
- 90° through board solder

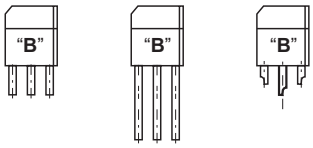


Fitted with male contacts
- 90° through board solder
  (same design as the "A" plug type but printed as receptacle)

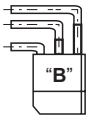
Two Parts (moulding B)

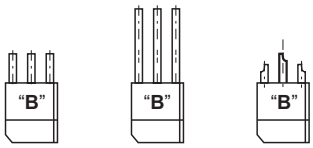


Fitted with male contacts (pins)
- Straight through board solder
- Wire wrap type
  (2 and 3 wrapping levels)
- Solder bucket

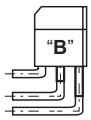


Fitted with female contacts
- Straight through board solder
- Wire wrap type
  (2 and 3 wrapping levels)
- Solder bucket
  (same design as the "B" plug type but printed as receptacle)

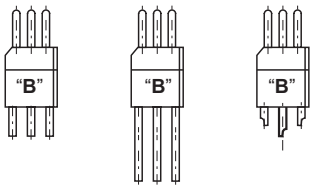




Fitted with female contacts (sockets)
- 90° through board solder
  Note: the spacing of the rows for board preparation is different to the spacing of the plug fitted with the 90° termination
- Straight through board solder
- Wire wrap type
  (2 and 3 wrapping levels)
- Solder bucket



Fitted with female contacts (sockets)
- 90° through board solder
  Note: the spacing of the rows for board preparation is different to the spacing of the plug fitted with the 90° termination

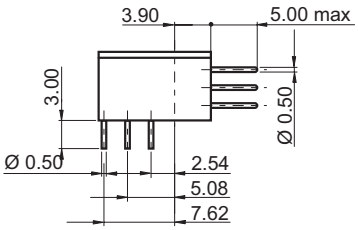


Fitted with male contacts (pins)
- Straight through board solder
- Wire wrap type
  (2 and 3 wrapping levels)
- Solder bucket
  (same design as the "B" plug type but printed as receptacle)

Contact Terminations

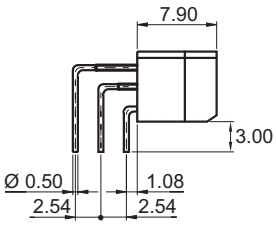
Plug

Male



Moulding "**A**"

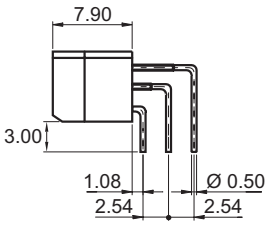
Female



Moulding "**B**"

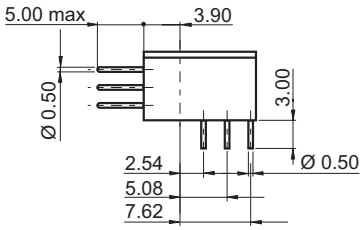
Receptacle

Male



Moulding "**B**"

Female



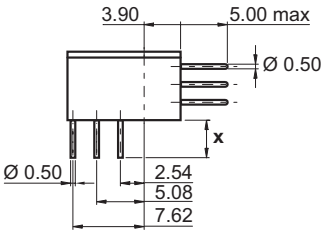
Moulding "A"

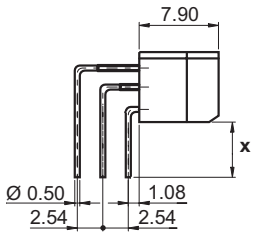
90° Through board solder

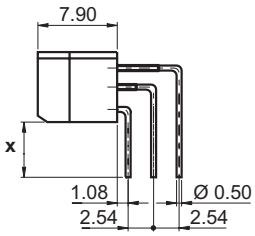
Ref: **10** Ref: **10** *(only A Moulding)*

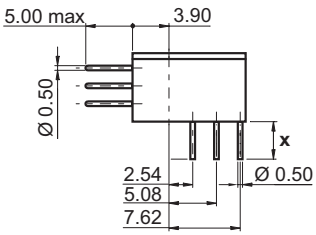
90° through board solder

Moulding A Ref: **11** (**X**=4.00) **Moulding B** Ref: **13** (**X**=5.50)



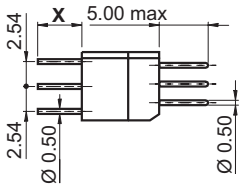


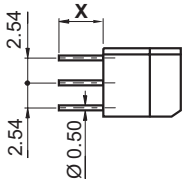


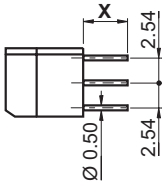


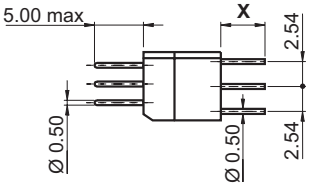
Straight through board solder

Ref: **30** (**X**=4.50) Ref: **30** Ref: **31** (**X**=5.60) Ref: **31**



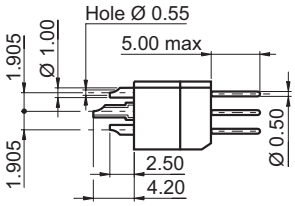


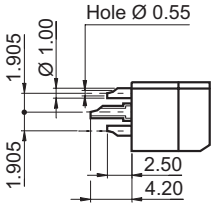


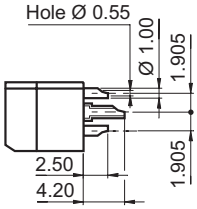


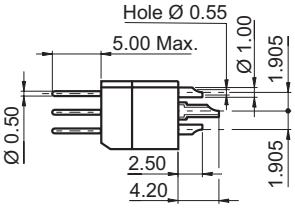
Solder bucket (AWG 26 max)

Ref: **40** Ref: **40**









Note: moulding A and B need different preparation board details for 90° tail termination.

Contact Terminations

Plug

Male

Female

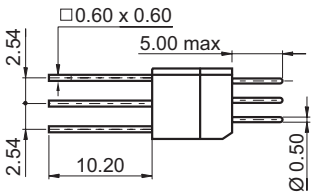
Receptacle

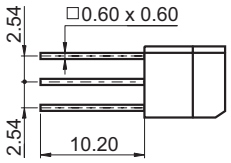
Male

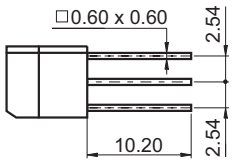
Female

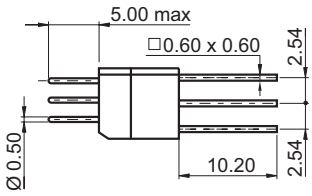
Wire wrap (2 wrapping levels)

Ref: **50** Ref CC: **50**



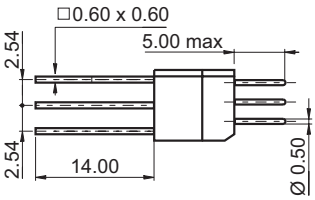


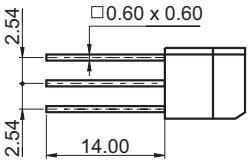


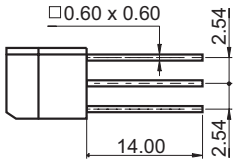


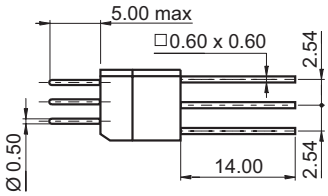
Wire wrap (3 wrapping levels)

Ref: **51** Ref CC: **51**



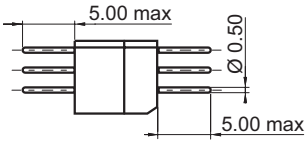


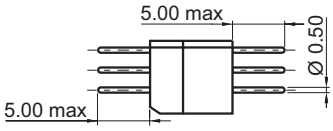




Saver (Male-Male)

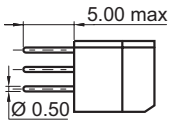
Ref: **90**

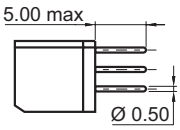




Saver (Female-Male)

Ref: **91** Ref CC: **91**





Note: moulding A and B need different preparation board details for 90° tail termination.

Dimensions

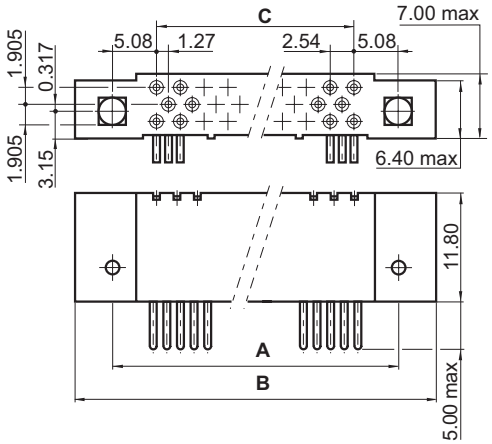
26 to 98 Contacts

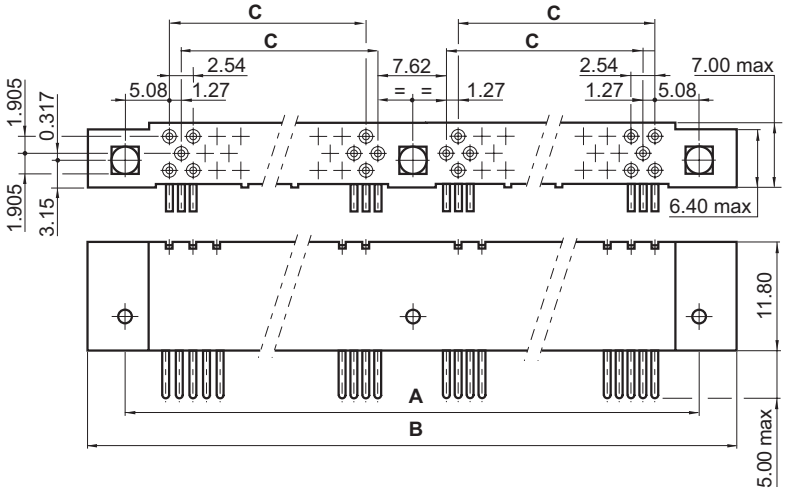
144 to 162 Contacts

One Part (moulding A)

90° male plug KMC ... 13 10 ...

90° male receptacle KMC ... 23 10 ...

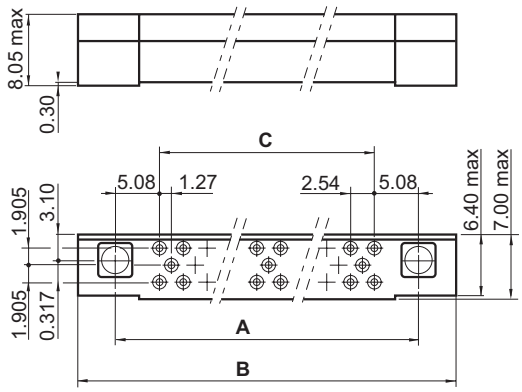


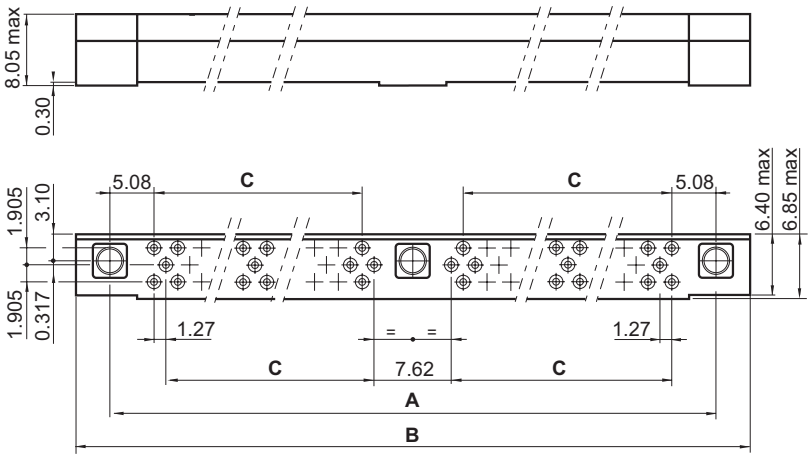


Two parts (moulding B)

Female or male receptacle KMC ... 2. ...

Female or male plug KMC ... 1. ...





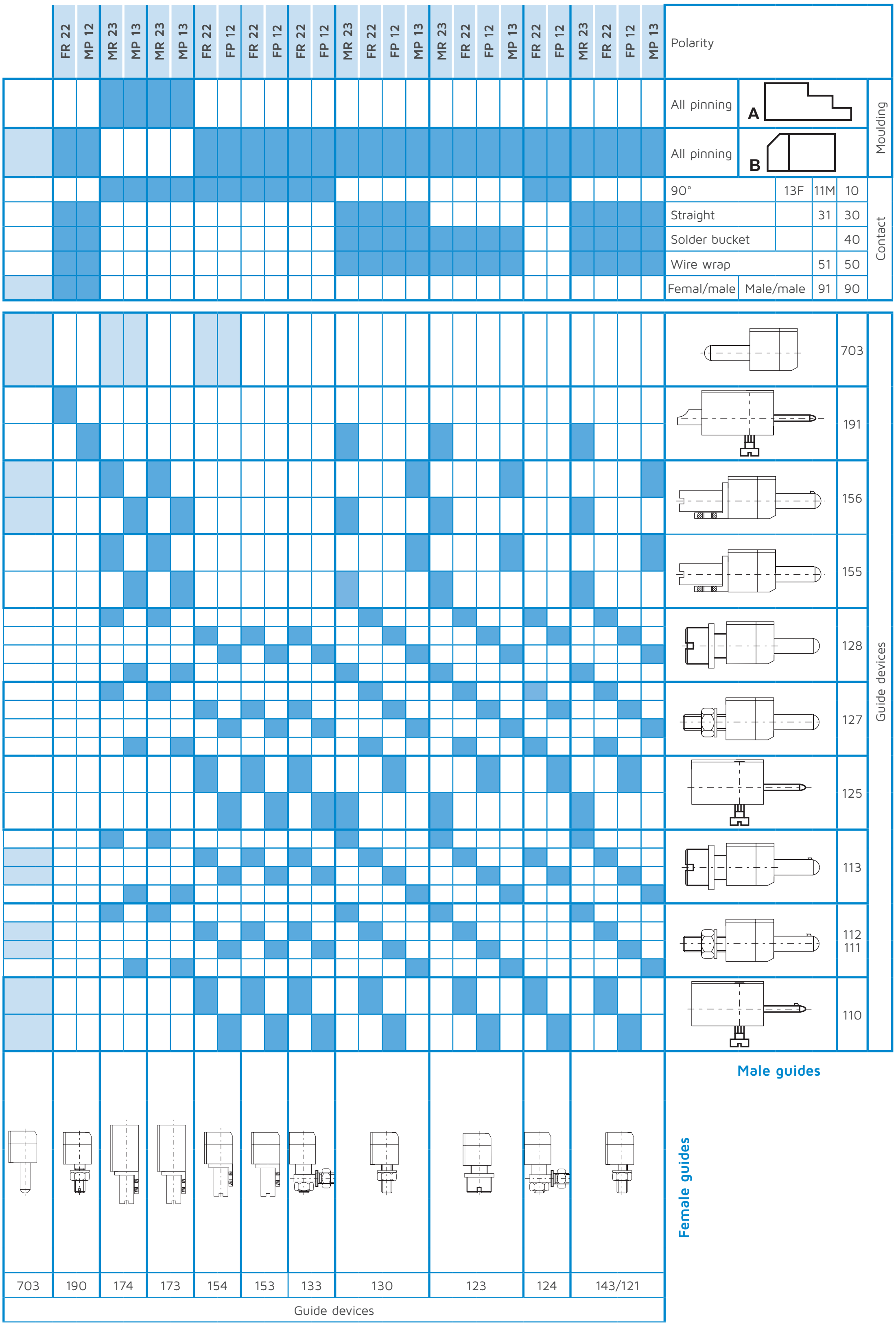
No. of contacts	26	44	62	80	98	144	162
A	30.48	45.72	60.96	76.20	91.44	137.16	152.40
B max	38.50	53.70	69.00	84.20	99.50	145.20	160.40
C	20.32	35.56	50.80	66.04	81.28	58.42	66.04

Guide Device and Polarity Termination Compatibility Chart

Legend

- Compatible
- Compatible special saver connector

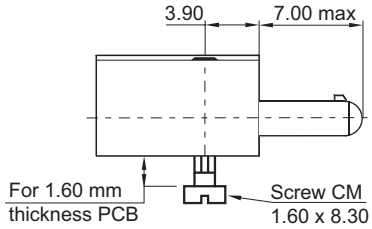
FP = Female Plug
MP = Male Plug
FR = Female Receptacle
MR = Male Receptacle



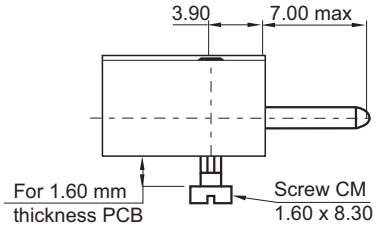
Male Guide Styles

Polarised transverse mount (moulding A)

Ref: **110** Ref: **110**

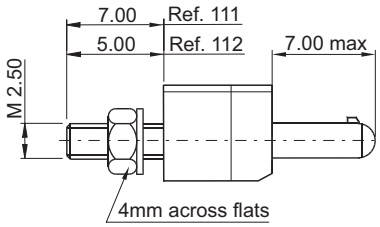


Unpolarised transverse mount (moulding A) central guide (KMC 144-162)

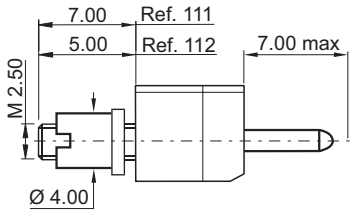


Polarised vertical mount (moulding B)

Ref: **111** Ref: **112**

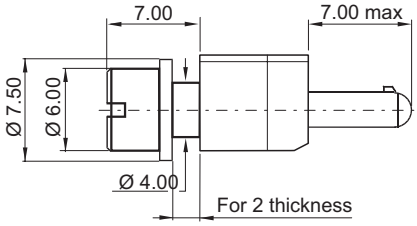


Unpolarised vertical mount (moulding B) central guide (KMC 144-162)

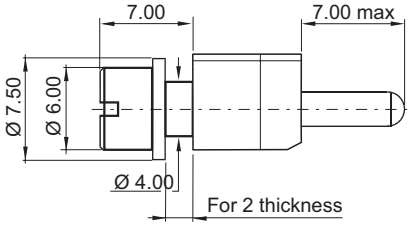


Polarised vertical float mount (moulding B)

ref: **113**

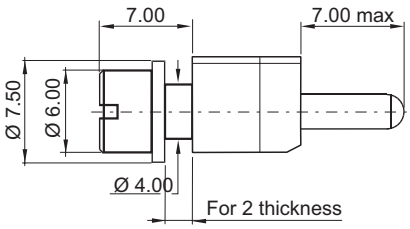


Unpolarised vertical float mount (moulding B) central guide (KMC 144-162)



Polarised vertical float mount (moulding B)

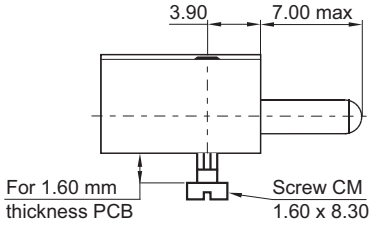
Ref: **128**



Male Guide Styles

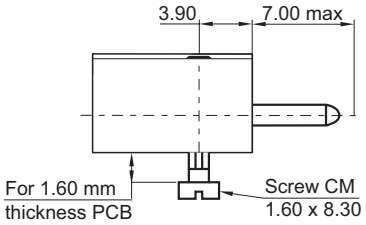
Unpolarised transverse mount (moulding A)

Ref: **125**



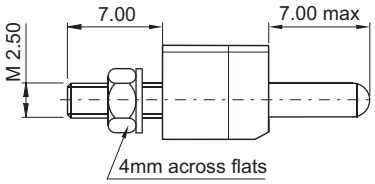
Unpolarised transverse mount (moulding A) central guide (KMC 144-162)

Ref: **125**



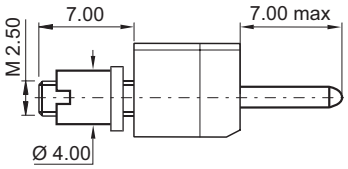
Unpolarised vertical mount (moulding B)

Ref: **127**



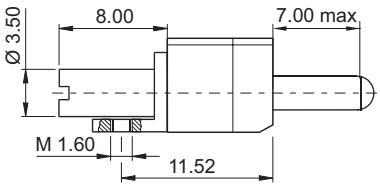
Unpolarised vertical mount (moulding B) central guide (KMC 144-162)

Ref: **127**



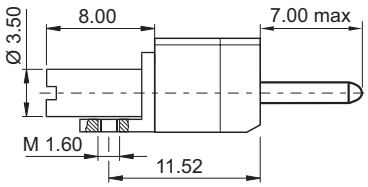
Unpolarised transverse mount (moulding B)

Ref: **155**



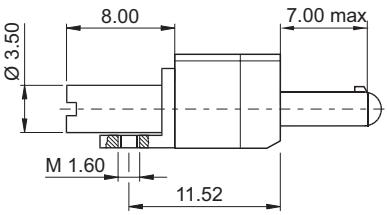
Unpolarised transverse mount (moulding B) central guide (KMC 144-162)

Ref: **155**



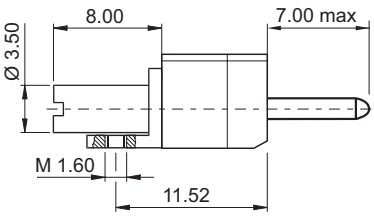
Polarised transverse mount (moulding B)

Ref: **156**



Unpolarised transverse mount (Moulding B) central guide (KMC 144-162)

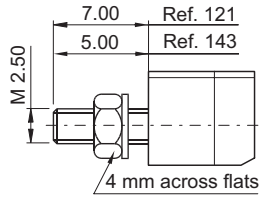
Ref: **156**



Female Guide Styles

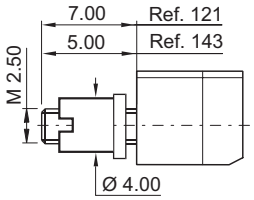
Polarised vertical mount (moulding B)

Ref: **121** Ref: **143** Ref: **143**



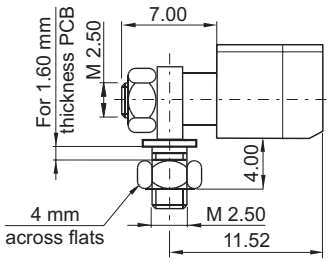
Unpolarised vertical mount (moulding B)

entral guide (KMC 144-162)

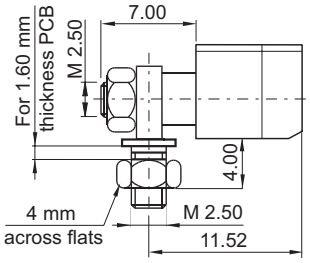


Polarised transverse mount (moulding B)

Ref: **124**

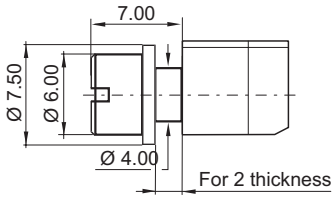


Unpolarised transverse mount (moulding B) central guide (KMC 144-162)



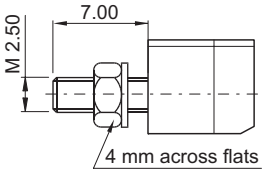
Polarised vertical float mount (moulding B)

Ref: **123**

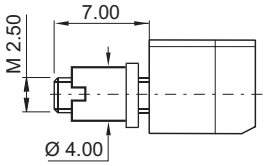


All keying types (moulding B)

Ref: **130**



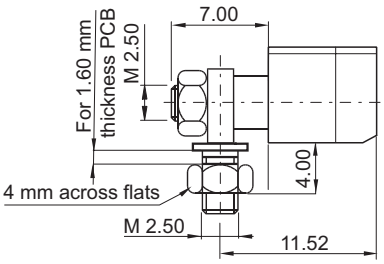
All keying types (moulding B) central guide (KMC 144-162)



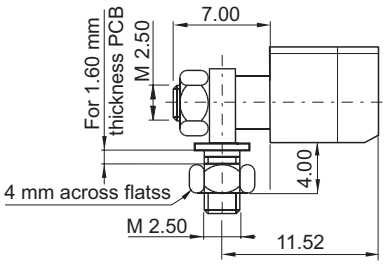
Female Guide Styles

All keying types (moulding B)

Ref: **133**

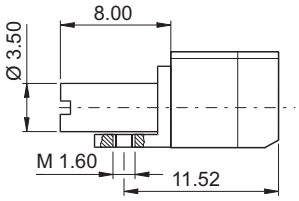


All keying types (moulding B) central guide (KMC 144-162)

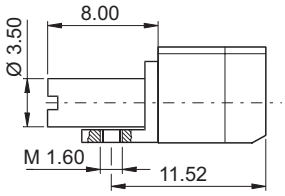


All keying types (moulding B)

Ref: **153**

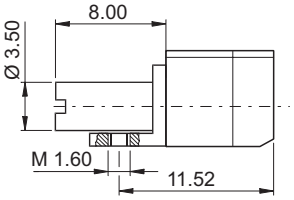


All keying types (moulding B) central guide (KMC 144-162)

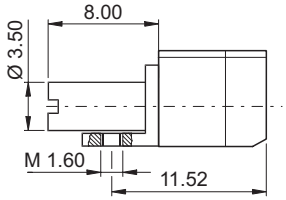


Polarised transverse mount (moulding B)

Ref: **154**



Unpolarised transverse mount (moulding B) central guide (KMC 144-162)

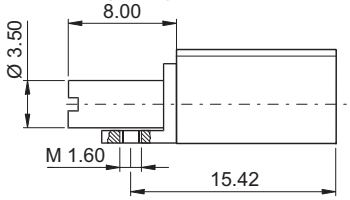


Guide Styles

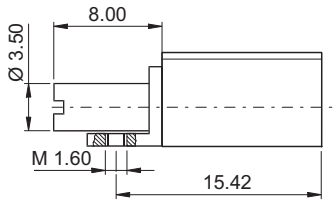
Female

Unpolarised transverse mount (moulding A)

Ref: **173**

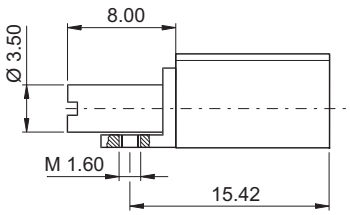


Unpolarised transverse mount (moulding A) central guide (KMC 144-162)

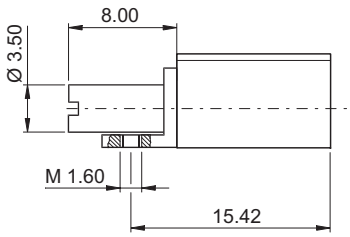


Polarised transverse mount (moulding A)

Ref: **174**



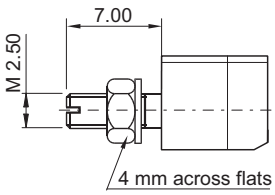
Unpolarised transverse mount (moulding A) central guide (KMC 144-162)



Female

Mass and power contact (moulding B)

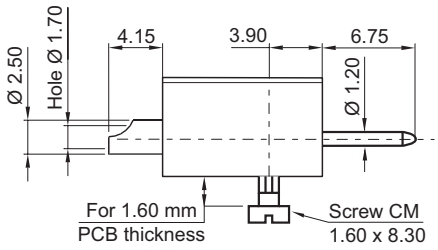
Ref: **190**



Male

Mass and power contact (moulding A)

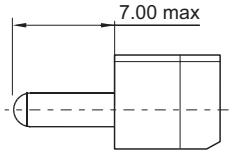
Ref: **191**



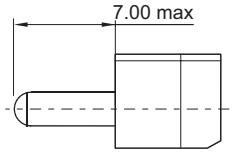
Female - Male

Unpolarised transverse mount (moulding B)

Ref: **703** Ref : **703**



Unpolarised transverse mount (moulding B) central guide (KMC 144-162)



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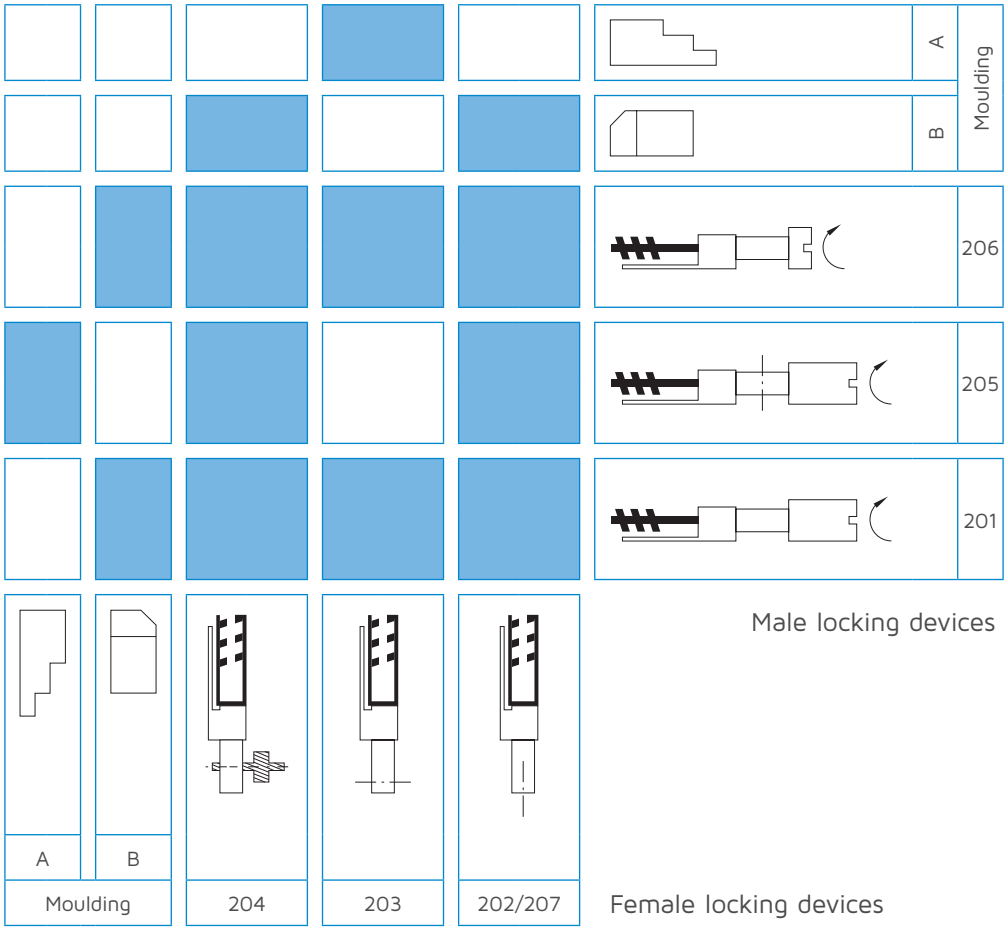
Locking Device Compatibility chart



Compatible

Note: the connector must be fitted with its locking devices before soldering on the PCB (straight through board solder):

- Connector on PCB: impossibility to change the keying.
- If you need to change the keying:
  - pierce PCB through Ø 3.70, fixing devices
  - use 054826.000R shouldered washer

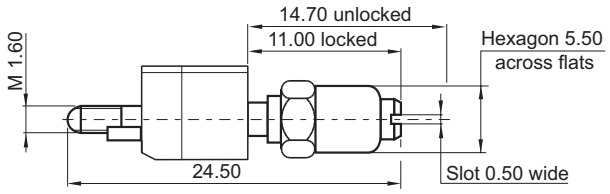
  } (for 202 and 207)

Locking Styles

Male

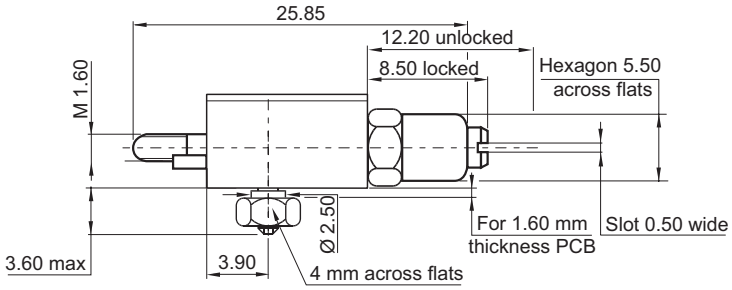
Jackscrew, free connector (moulding B)

Ref: **201** Ref : **201**
For **KMC 144-162** the supplied central guide is Ref: **111**



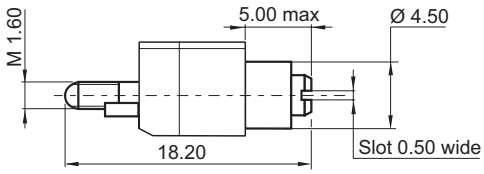
Jackscrew, transverse mount (moulding A)

Ref: **205**
For **KMC 144-162** the supplied central guide is Ref: **110**



Jackscrew, free connector (moulding B)

Ref: **206** Ref : **206**
For **KMC 144-162** the supplied central guide is Ref: **112**



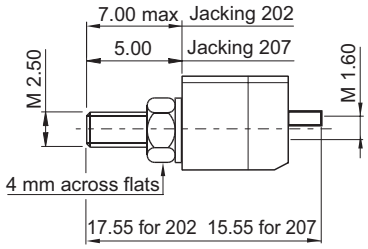
Locking Styles

Female

Non rotating jackscrew, vertical mount (moulding B)

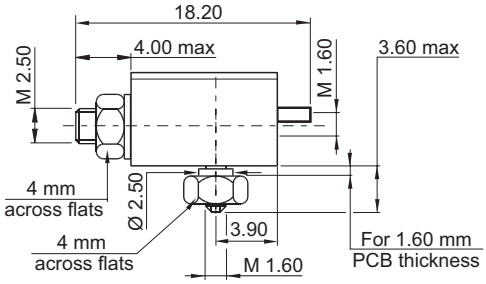
Ref: **202** Ref : **202**
For **KMC 144-162** jackscrew 202 the supplied central guide is Ref: **121**

Ref: **207**
jackscrew 207 the supplied central guide is Ref: **143**



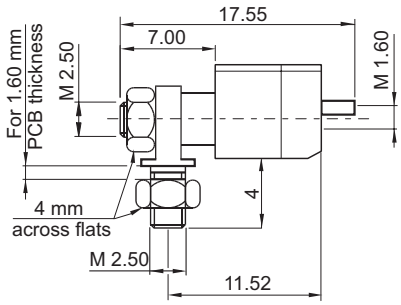
Non rotating jackscrew, transverse mount (moulding A)

Ref: **203**
For **KMC 144-162** jackscrew 202 the supplied central guide is Ref: **173**



Non rotating jackscrew, transverse mount (moulding B)

Ref: **204** Ref : **204**
For **KMC 144-162** the supplied central guide is Ref: **111**



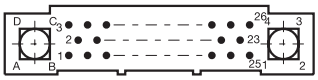
Mating Side Layout View

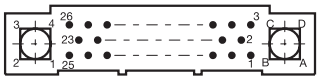
Moulding A

Plug

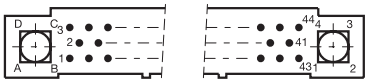
Receptacle

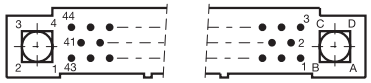
026



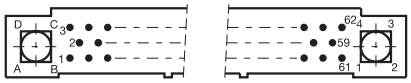


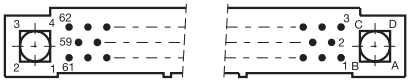
044



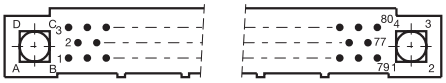


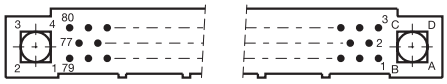
062



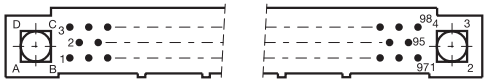


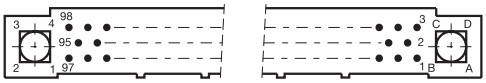
080



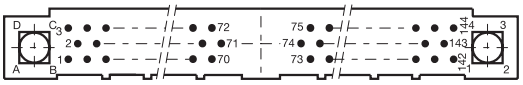


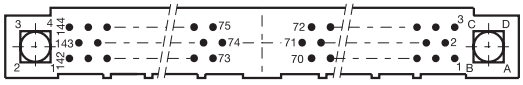
098



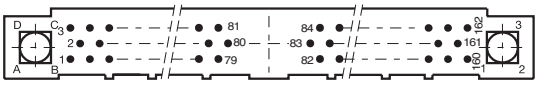


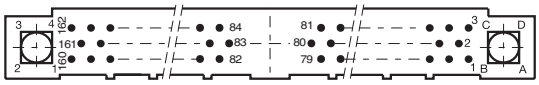
144





162





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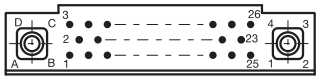
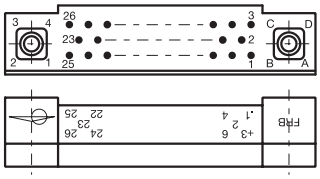
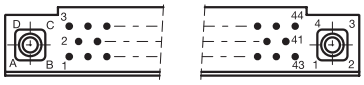
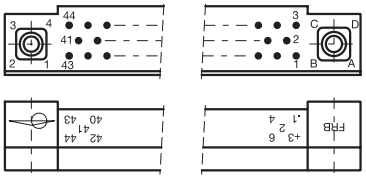
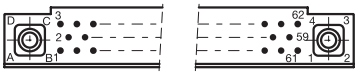
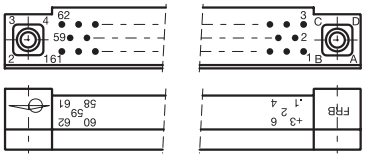
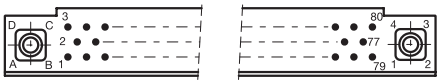
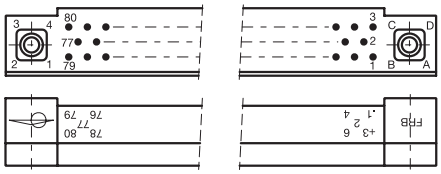
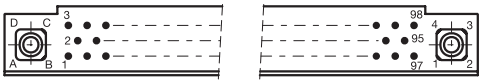
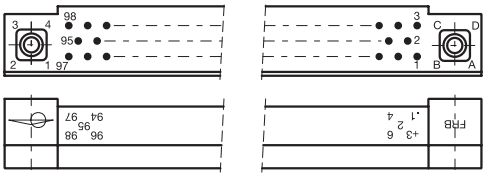
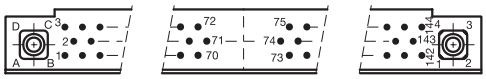
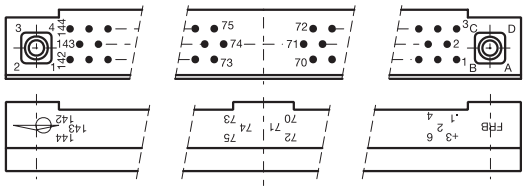
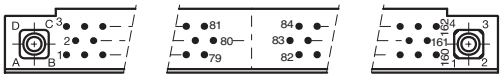
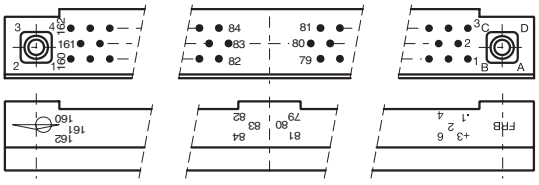
Mating Side Layout View

Moulding B

Plug		Receptacle
	026	
	044	
	062	
	080	
	098	
	144	
	162	

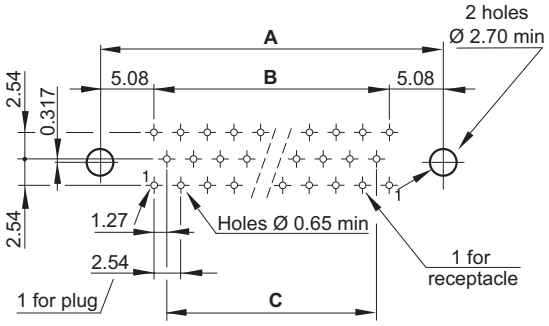
Board Preparation Details

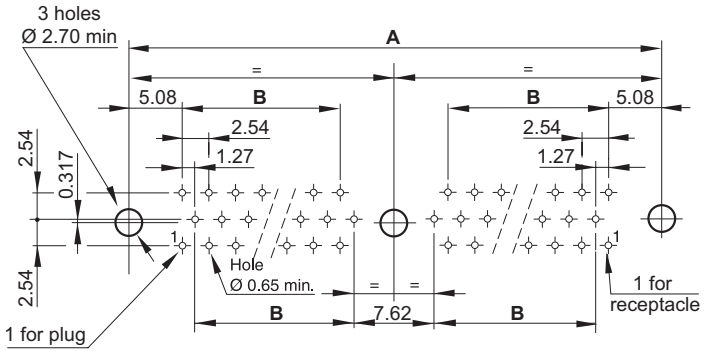
Two Parts *(moulding B)*

26 to 98 contacts

144 to 162 contacts

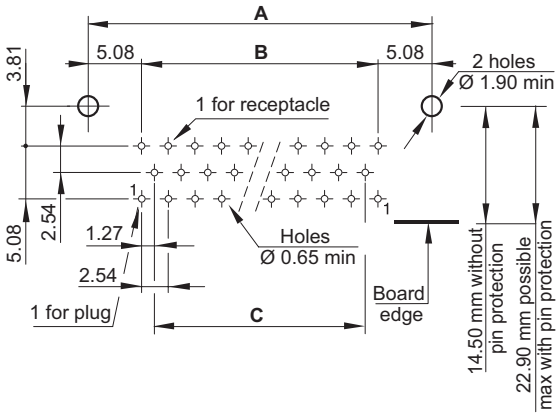
Mother board

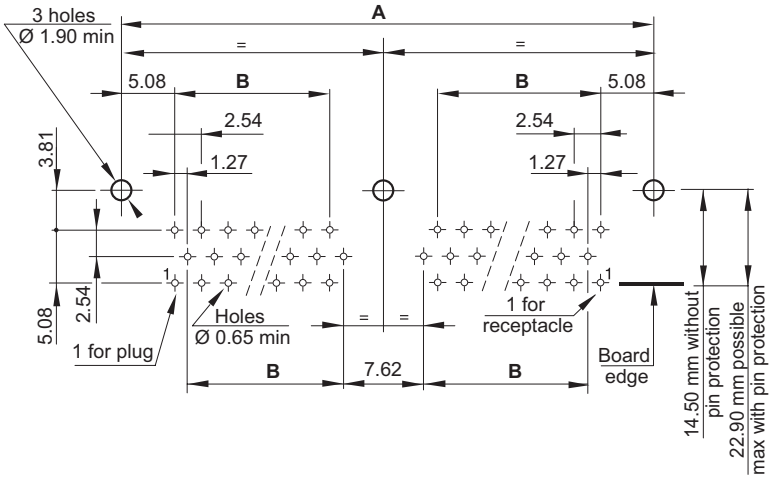




Female or male, plug or receptacle, straight solder terminations 30 or 31
Guide styles: 111 - 112 - 121 - 127 - 130 - 143 - 190

Daughter board





Female or male, plug or receptacle, 90° termination
Guide styles: 153 - 154 - 155 - 156

No. of contacts	26	44	62	80	98	144	162
A	30.48	45.72	60.96	76.20	91.44	137.16	152.40
B	20.32	35.56	50.80	66.04	81.28	58.42	66.04
C	17.78	33.02	48.26	63.50	78.74	–	–

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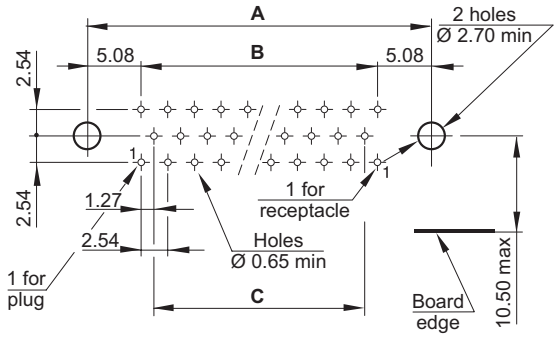
Board Preparation Details

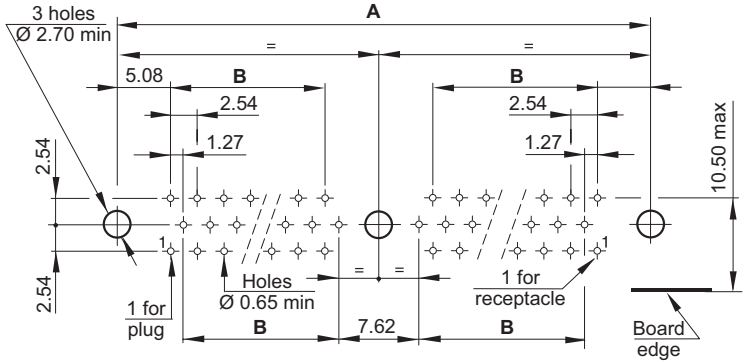
Two Parts *(moulding B)*

26 to 98 contacts

144 to 162 contacts

Daughter board





Female or male, plug or receptacle, 90° termination
Guide styles: 124 - 133

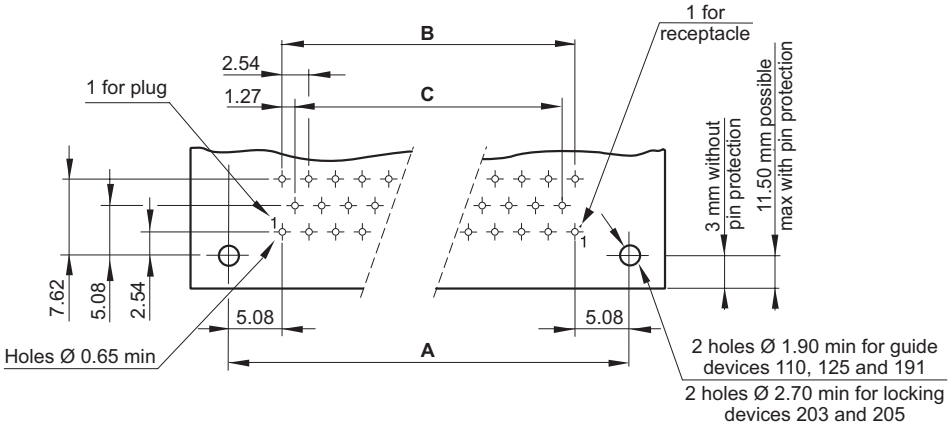
No. of contacts	26	44	62	80	98	144	162
A	30.48	45.72	60.96	76.20	91.44	137.16	152.40
B	20.32	35.56	50.80	66.04	81.28	58.42	66.04
C	17.78	33.02	48.26	63.50	78.74	–	–

Board Preparation Details

One Part *(moulding A)*

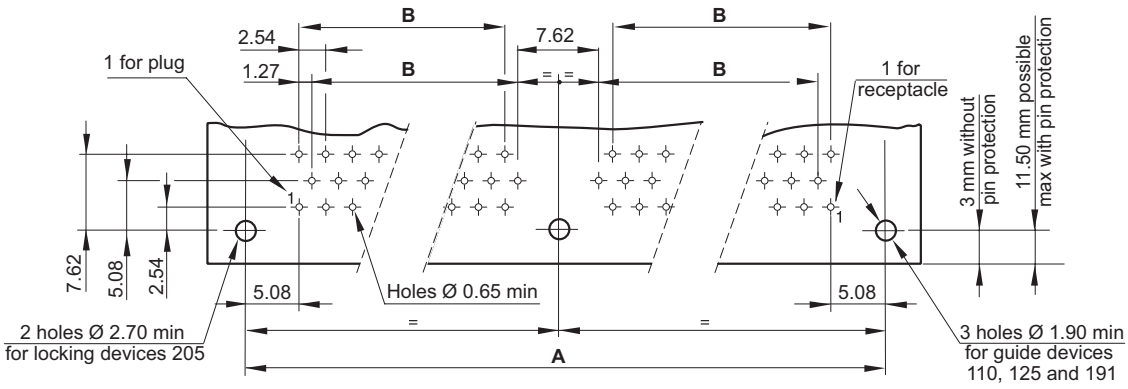
Daughter board

26 to 98 Contacts



Male, plug or receptacle, 90° termination
Guide styles: 110 - 125 - 191 - 203 - 205

144 to 162 Contacts



Male, plug or receptacle, 90° termination
Guide styles: 110 - 125 - 191 - 205

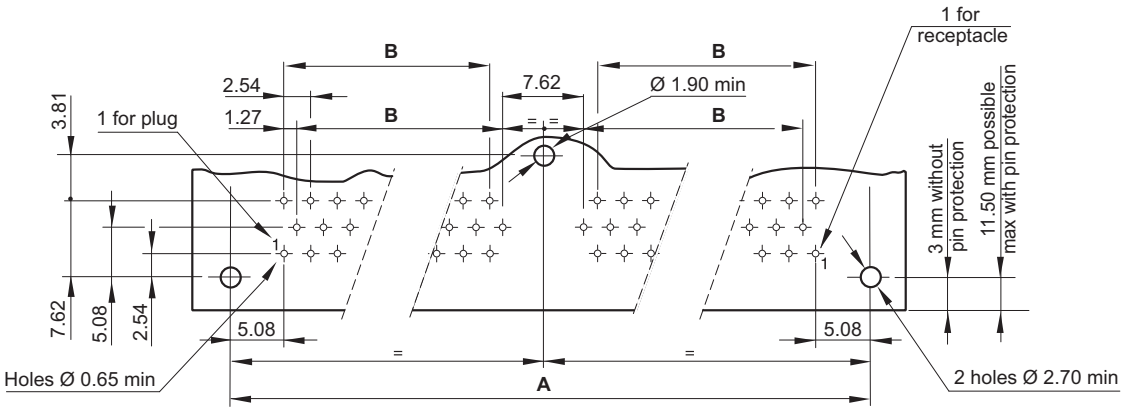
No. of contacts	26	44	62	80	98	144	162
A	30.48	45.72	60.96	76.20	91.44	137.16	152.40
B	20.32	35.56	50.80	66.04	81.28	58.42	66.04
C	17.78	33.02	48.26	63.50	78.74	–	–

Board Preparation Details

One Part *(moulding A)*

Daughter board

144 to 162 Contacts



Male, plug or receptacle, 90° termination
Locking styles: 203

No. of contacts	26	44	62	80	98	144	162
A	30.48	45.72	60.96	76.20	91.44	137.16	152.40
B	20.32	35.56	50.80	66.04	81.28	58.42	66.04
C	17.78	33.02	48.26	63.50	78.74	–	–

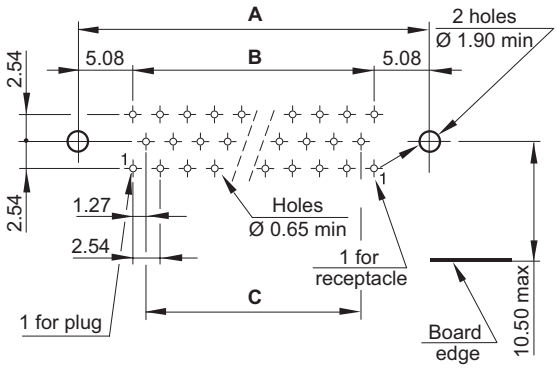
Panel Preparation Details

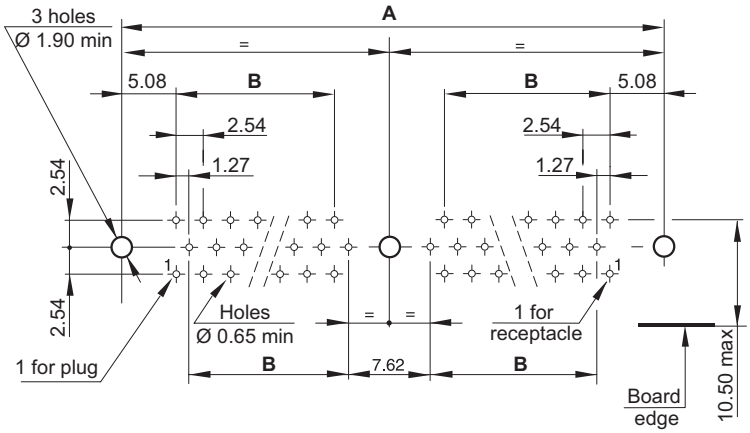
Two Parts *(moulding B)*

26 to 98 contacts

144 to 162 contacts

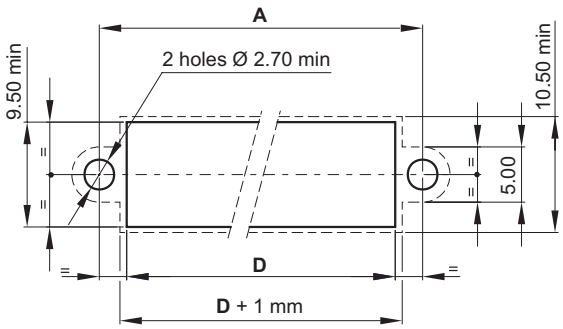
Mother board

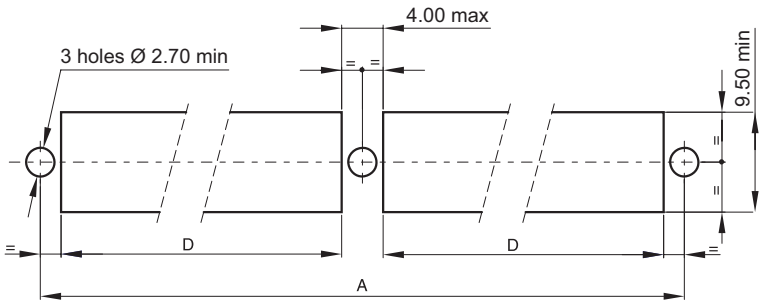




Plug or receptacle, 90° termination
Guide styles: 153 - 154 - 155 - 156

Daughter board





—— Fixed mount - - - Float mount (2 mm thickness)

Female or male, plug or receptacle, 90° termination 40 - 50 - 51
Guide styles: 111 - 112 - 121 - 127 -130 - 143 - 190 - (Fixed Mount)
Guide styles: 113 - 123 - 128 - (Float Mount)
Locking Styles: 202 - 207

No. of contacts	26	44	62	80	98	144	162
A	30.48	45.72	60.96	76.20	91.44	137.16	152.40
B	20.32	35.56	50.80	66.04	81.28	58.42	66.04
C	17.78	33.02	48.26	63.50	78.74	–	–
D	25.90	41.20	56.40	71.60	86.90	63.60	71.60

Technical Characteristics

	Signal contact	Power contact	High frequency contact
Contact diameter	HC® Ø 0.50 mm	HC® Ø 2.00 mm	HE 807 type
Number of contact	Up to 162		
Pitch	1.905 mm between rows 1.27 mm between quicuncial contacts	5.08 on 1 row	
Rows	3		

Electrical

Current rating (at 25°C)	3 A max.	15 A	0.5 A
Dielectric withstanding voltage	800 Vrms		
Nominal voltage			180 Vrms 50 Hz
Impedance			50 Ω
Contact resistance	≤8 mΩ	≤2 mΩ	≤10 mΩ
Insulation resistance	104 MΩ (500 Vcc)		≥107 MΩ

Environmental

Temperature range		−55° C to 125° C	
Mating forces		FI ≤8N - FS ≤3N	1N ≤FI/FS ≤5N
Conformity		NF C-UTE C 93-424	

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 activ 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)

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 16 keying)

How To Order

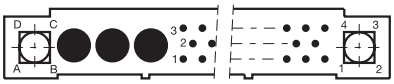
KM	H					
1	A	B	C	2	3	4

1	Type	A H Moulding with cavities for special contacts B 3 6 Number of cavities for special contacts C 2 6 4 4 8 0 9 0 Number of signal contacts 0.50 mm
2	Moulding polarity	
3	Termination styles	*(see KMC ordering information p. 43)*
4	Mounting hardware	Guide Styles *(see p. 50 to 54) - (Consult us for special guides)* - See KMC ordering information p. 43 Locking Styles *(see p. 56-57)* - See KMC ordering information p. 43

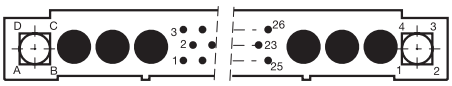
NF C-UTE C 93-424	SPACE GRADE		NF C-UTE C 93-424	SPACE GRADE		NF C-UTE C 93-424	SPACE GRADE	
12	54	Female plug	1A	–	Tinned female plug**	26	46	Tinned female receptacle*
13	55	Male plug	1B	–	Tinned male plug**	27	47	Tinned male receptacle*
16	56	Tinned female plug*	22	44	Female receptacle	2A	–	Tinned female receptacle**
17	57	Tinned male plug*	23	45	Male receptacle	2B	–	Tinned male receptacle**

* For 90° & straight terminations (splicing on PCB)
** RoHS conform for 90° & straight terminations (splicing on PCB)

Layout



No. of fixings	KMH layout	No. of special contact cavities	No. of signal contacts
2	326	3	26
2	344	3	44
2	380	3	80
3	390	3	90

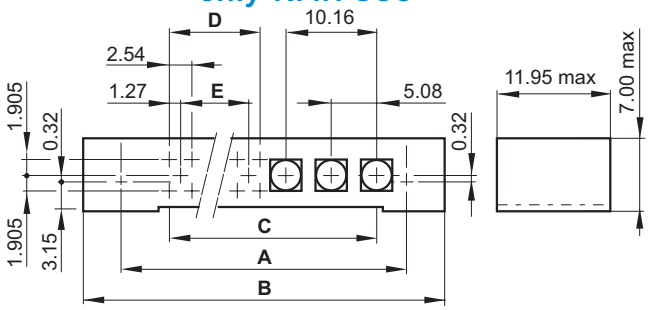


KMH layout	No. of special contact cavities	No. of signal contacts	KMH layout equivalent dimensions
			044
626	6	26	062
			098
			108

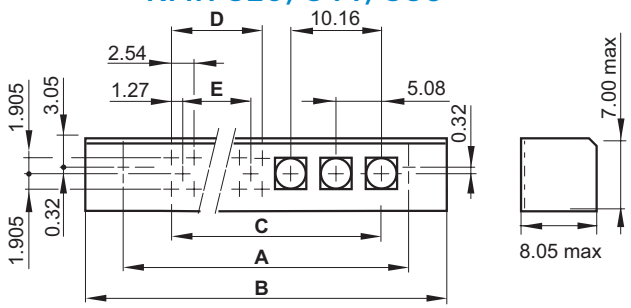
Dimensions

26 to 80 Signal Contacts & 3 Special contact cavities

One part plug (moulding A) only KMH 380

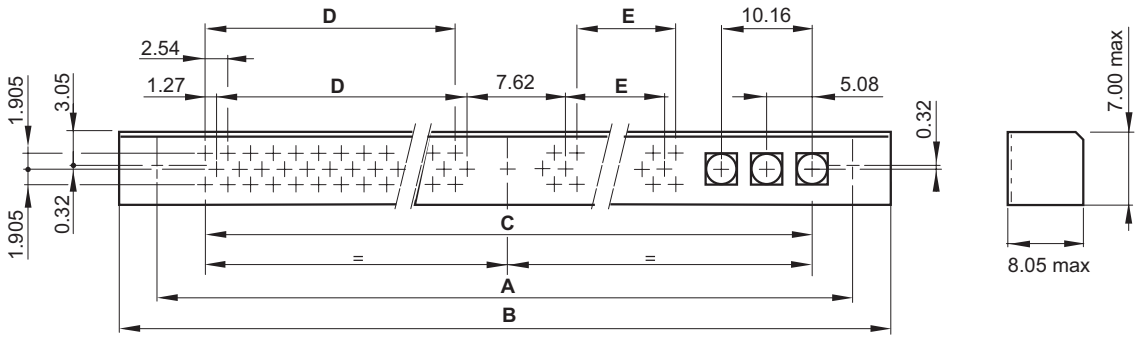


Two parts plug & receptacle (moulding B) KMH 326, 344, 380



90 Signal Contacts & 3 Special contact cavities

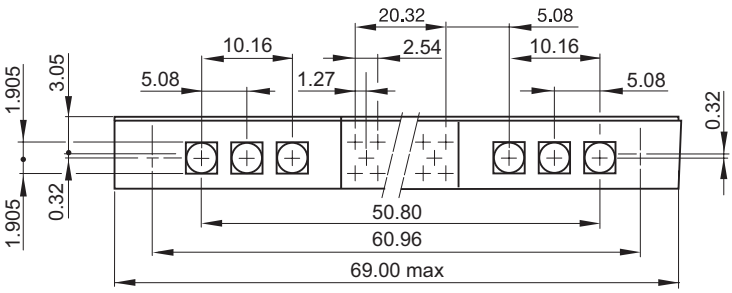
Two parts plug & receptacle (moulding B) KMH 390



KMH layout	A	B max	C	D	E	KMH layout equivalent dimensions
326	45.72	53.70	35.56	20.32	17.78	044
344	60.96	69.00	50.80	35.56	33.02	062
380	91.44	99.50	81.28	66.04	63.50	098
390	106.68	114.70	96.52	43.18	27.94	108

26 Signal Contacts & 6 Special contact cavities

Two parts plug & receptacle (moulding B) with special contact cavities on both extremities KMH 626



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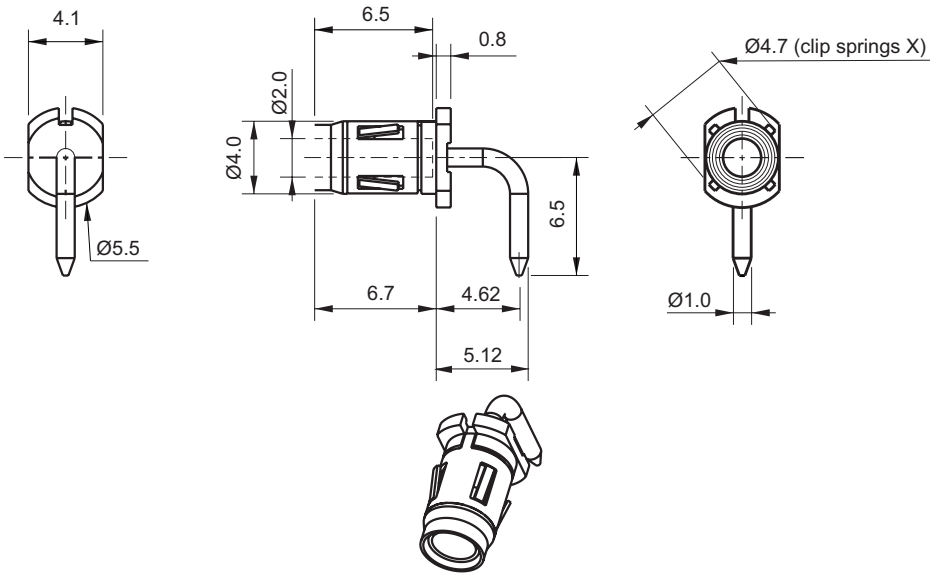
Power & High Frequency Contacts

(NF C-UTE C 93-569)

Example of contact overview (020 084 2- 10 RN1)



Male	P/N
90° termination	020 085 1- 10R OG
Straight termination	020 087 1- 30R OG
Solder bucket termination	020 091 1- 40R OG

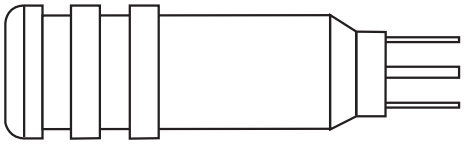
Female	P/N
90° termination	020 084 2- 10R G1
Straight termination	020 056 2- 30R G1
Solder bucket termination	020 060 2- 40R G1

Tools and Accessories

Screwdrivers

Reference	Use	Pinning			Remark
S_____028	- Connector fitted with female guides - "B" moulding - Cover's fixing screw for female guide	144	to	162	These three screwdrivers can be delivered in a same packing under the reference S_____036
S_____029	- Connector fitted with male guides - "B" moulding - Cover's fixing screw for female guide and screw central fixing on wiring side	144	to	162	
S_____033	- "B" moulding - Cover's fixing screws	026	to	162	

Special contact extraction tool



SD.030 00 CX 003

Pin protector

Reference	Use	Guide style
KMC...↑_____302* Pinning	KMC... 13..110-KMC...23..111 KMC ... 13..111	Polarised male guide
KMC...↑_____303* Pinning	KMC... 13..125	Unpolarised male guide
KMC...↑_____304* Pinning	KMC... 23..153	Unpolarised female guide
KMC...↑_____305* Pinning	KMC... 23..121 KMC... 23..154	Polarised female guide

Note: these 4 references are not available for the 162 contacts version
* Antistatic material

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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