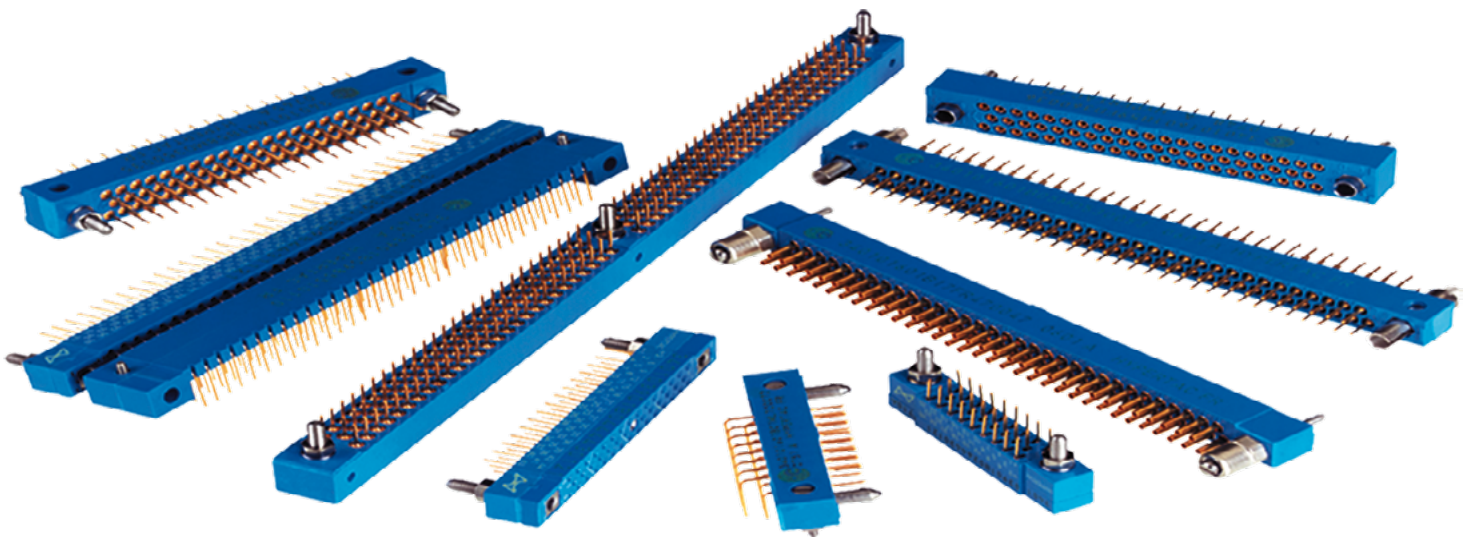


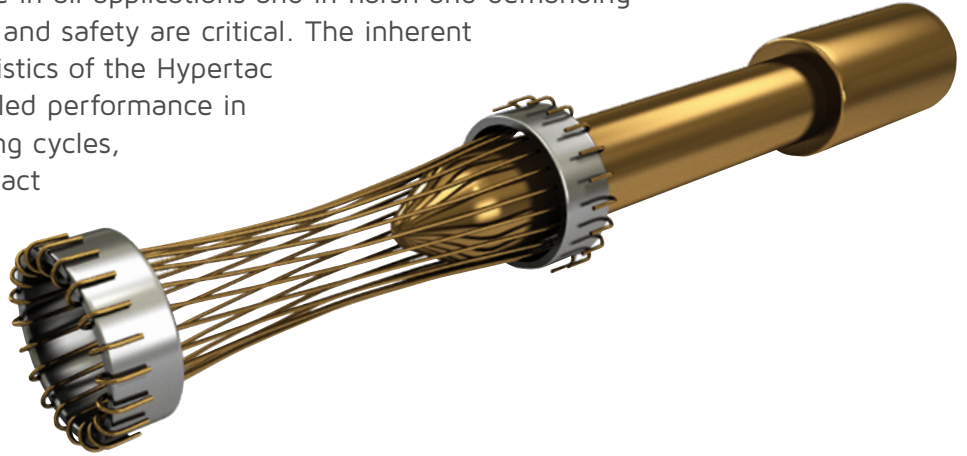
# KM Series

Medium & High Density PCB Connectors



# Hypertac® Hyperboloid Technology

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



## Features

### 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.

### 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.

### 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.

### 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.

### 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.

## Benefits

### 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.

### 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.

### 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.

### 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.

### 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.

# Technical Characteristics

Contact diameter	HYPERTAC® type Ø 0.50 mm rear removable
Number of contact	Up to 162
Pitch	1.905mm between rows - 1.27mm between quicuncial contacts
Rows	3

## Materials & Platings

Contact	Brass or bronze	
Moulding	Glass fiber filled diallyl - Phtalate	
Guides	Stainless steel or nickel plated brass	
	<b>Standard</b>	<b>ESA</b>
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 activ area 1.27 µm Ni on non 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)

## Electrical

Current rating (at 25°C)	3 A max
Dielectric withstanding voltage	800 Vrms
Contact resistance	≤ 8 mΩ
Insulation resistance	> 10 <sup>4</sup> 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 + 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

K M C

1

2

3

4

5

<b>1 Series</b>																																																						
<b>2 Number of contacts</b>	0 2 6	0 4 4	0 6 2	0 8 0	0 9 8	1 4 4 1 6 2																																																
<b>3 Moulding polarity</b>	<b>NF C-UTE C 93-424</b> Ⓒ ESA/ESCC 3401/03901B SPACE GRADE <table border="1"> <tr><td>12</td><td>-</td><td>54</td><td>Female plug</td></tr> <tr><td>13</td><td>55</td><td>55</td><td>Male plug</td></tr> <tr><td>16</td><td>-</td><td>56</td><td>Tinned female plug*</td></tr> <tr><td>17</td><td>-</td><td>57</td><td>Tinned male plug*</td></tr> </table>		12	-	54	Female plug	13	55	55	Male plug	16	-	56	Tinned female plug*	17	-	57	Tinned male plug*	<b>NF C-UTE C 93-424</b> Ⓒ ESA/ESCC 3401/03901B SPACE GRADE <table border="1"> <tr><td>1A</td><td>-</td><td>-</td><td>Tinned female plug**</td></tr> <tr><td>1B</td><td>-</td><td>-</td><td>Tinned male plug**</td></tr> <tr><td>22</td><td>44</td><td>44</td><td>Female receptacle</td></tr> <tr><td>23</td><td>-</td><td>45</td><td>Male receptacle</td></tr> </table>		1A	-	-	Tinned female plug**	1B	-	-	Tinned male plug**	22	44	44	Female receptacle	23	-	45	Male receptacle	<b>NF C-UTE C 93-424</b> Ⓒ ESA/ESCC 3401/03901B SPACE GRADE <table border="1"> <tr><td>26</td><td>-</td><td>46</td><td>Tinned female receptacle*</td></tr> <tr><td>27</td><td>-</td><td>47</td><td>Tinned male receptacle*</td></tr> <tr><td>2A</td><td>-</td><td>-</td><td>Tinned female receptacle**</td></tr> <tr><td>2B</td><td>-</td><td>-</td><td>Tinned male receptacle**</td></tr> </table>		26	-	46	Tinned female receptacle*	27	-	47	Tinned male receptacle*	2A	-	-	Tinned female receptacle**	2B	-	-	Tinned male receptacle**
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<b>5 Mounting hardware</b>	<b>Guide Styles (consult us for special guides)</b> <table border="1"> <tr> <td>Ⓒ 1 1 0 Male polarised, transverse mount<sup>(1)</sup></td> <td>1 2 7 Male unpolarised, vertical mount<sup>(2)</sup></td> <td>1 5 6 Male unpolarised, transverse mount<sup>(2)</sup></td> </tr> <tr> <td>1 1 1 Male polarised, vertical mount<sup>(2)</sup></td> <td>1 2 8 Male unpolarised, float mount<sup>(2)</sup></td> <td>1 7 3 Female unpolarised, transverse mount<sup>(1)</sup></td> </tr> <tr> <td>1 1 2 Male polarised, vertical mount<sup>(2)</sup></td> <td>1 3 0 Female unpolarised, vertical mount<sup>(2)</sup></td> <td>1 7 4 Female polarised, transverse mount<sup>(1)</sup></td> </tr> <tr> <td>1 1 3 Male polarised, float mount<sup>(2)</sup></td> <td>1 3 3 Female unpolarised, transverse mount<sup>(2)</sup></td> <td>1 9 0 Female power or mass contact, vertical mount<sup>(2)</sup></td> </tr> <tr> <td>Ⓒ 1 2 1 Female polarised, vertical mount<sup>(2)</sup></td> <td>Ⓒ 1 4 3 Female polarised, vertical mount<sup>(2)</sup></td> <td>1 9 1 Male power or mass contact, transverse mount<sup>(1)</sup></td> </tr> <tr> <td>1 2 3 Female polarised, float mount<sup>(2)</sup></td> <td>1 5 3 Female unpolarised, transverse mount<sup>(2)</sup></td> <td rowspan="3">Ⓒ 7 0 3 Female - male unpolarised guide <sup>(1)</sup></td> </tr> <tr> <td>1 2 4 Female polarised, transverse mount<sup>(2)</sup></td> <td>1 5 4 Female polarised, transverse mount<sup>(2)</sup></td> </tr> <tr> <td>1 2 5 Male unpolarised, transverse mount<sup>(1)</sup></td> <td>1 5 5 Male unpolarised, transverse mount<sup>(2)</sup></td> </tr> </table>						Ⓒ 1 1 0 Male polarised, transverse mount <sup>(1)</sup>	1 2 7 Male unpolarised, vertical mount <sup>(2)</sup>	1 5 6 Male unpolarised, transverse mount <sup>(2)</sup>	1 1 1 Male polarised, vertical mount <sup>(2)</sup>	1 2 8 Male unpolarised, float mount <sup>(2)</sup>	1 7 3 Female unpolarised, transverse mount <sup>(1)</sup>	1 1 2 Male polarised, vertical mount <sup>(2)</sup>	1 3 0 Female unpolarised, vertical mount <sup>(2)</sup>	1 7 4 Female polarised, transverse mount <sup>(1)</sup>	1 1 3 Male polarised, float mount <sup>(2)</sup>	1 3 3 Female unpolarised, transverse mount <sup>(2)</sup>	1 9 0 Female power or mass contact, vertical mount <sup>(2)</sup>	Ⓒ 1 2 1 Female polarised, vertical mount <sup>(2)</sup>	Ⓒ 1 4 3 Female polarised, vertical mount <sup>(2)</sup>	1 9 1 Male power or mass contact, transverse mount <sup>(1)</sup>	1 2 3 Female polarised, float mount <sup>(2)</sup>	1 5 3 Female unpolarised, transverse mount <sup>(2)</sup>	Ⓒ 7 0 3 Female - male unpolarised guide <sup>(1)</sup>	1 2 4 Female polarised, transverse mount <sup>(2)</sup>	1 5 4 Female polarised, transverse mount <sup>(2)</sup>	1 2 5 Male unpolarised, transverse mount <sup>(1)</sup>	1 5 5 Male unpolarised, transverse mount <sup>(2)</sup>																										
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	<b>Locking Styles</b> <table border="1"> <thead> <tr> <th>FEMALE</th> <th>MALE</th> </tr> </thead> <tbody> <tr> <td>Ⓒ 2 0 2 Jackscrew, vertical mount<sup>(2)</sup></td> <td>Ⓒ 2 0 1 Jackscrew, free connector<sup>(2)</sup></td> </tr> <tr> <td>2 0 3 Jackscrew, transverse mount</td> <td>2 0 5 Jackscrew, transverse mount<sup>(1)</sup></td> </tr> <tr> <td>Ⓒ 2 0 4 Jackscrew, transverse mount<sup>(2)</sup></td> <td>Ⓒ 2 0 6 Jackscrew, free connector<sup>(2)</sup></td> </tr> <tr> <td>2 0 7 Jackscrew, vertical mount<sup>(2)</sup></td> <td></td> </tr> </tbody> </table>						FEMALE	MALE	Ⓒ 2 0 2 Jackscrew, vertical mount <sup>(2)</sup>	Ⓒ 2 0 1 Jackscrew, free connector <sup>(2)</sup>	2 0 3 Jackscrew, transverse mount	2 0 5 Jackscrew, transverse mount <sup>(1)</sup>	Ⓒ 2 0 4 Jackscrew, transverse mount <sup>(2)</sup>	Ⓒ 2 0 6 Jackscrew, free connector <sup>(2)</sup>	2 0 7 Jackscrew, vertical mount <sup>(2)</sup>																																							
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(1) Moulding A - (2) Moulding B

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

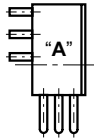
\*\* RoHS compliant for 90° & straight terminations (splicing on PCB)

# Moulding Styles

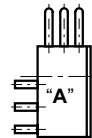
## Plug

## Receptacle

### One Part (moulding A)

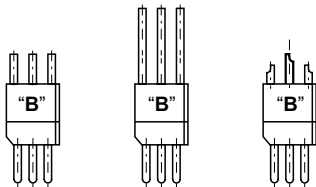


- Fitted with male contacts**
- 90° through board solder

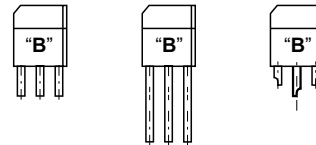


- Fitted with male contacts**
- 90° through board solder  
*(same design as the "A" plug type but printed as receptacle)*

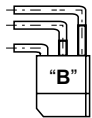
### Two Parts (moulding B)



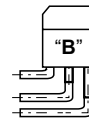
- Fitted with male contacts (pins)**
- Straight through board solder
  - Wire wrap type  
*(2 and 3 wrapping levels)*
  - Solder bucket



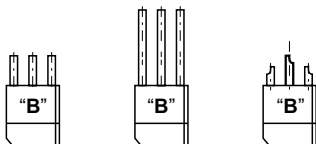
- Fitted with female contacts**
- Straight through board solder
  - Wire wrap type  
*(2 and 3 wrapping levels)*
  - Solder bucket  
*(same design as the "B" plug type but printed as receptacle)*



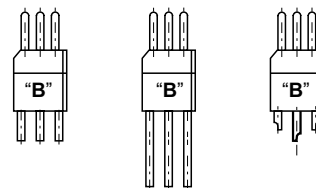
- Fitted with female contacts (sockets)**
- 90° through board solder  
*Note: the spacing of the rows for board preparation is different to the spacing of the plug fitted with the 90° termination*



- 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 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

## Receptacle

Male

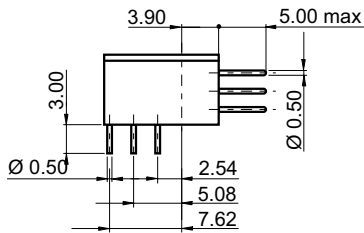
Female

Female

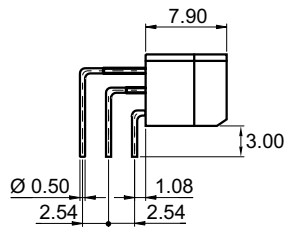
Male

### 90° Through board solder

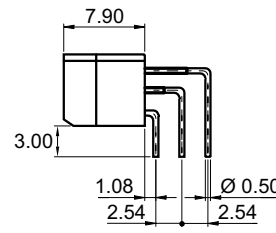
Ref: **10** Ref : **10** (only A Moulding)



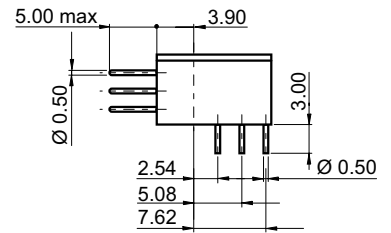
Moulding "A"



Moulding "B"



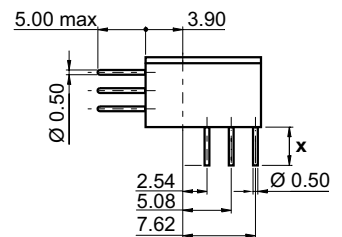
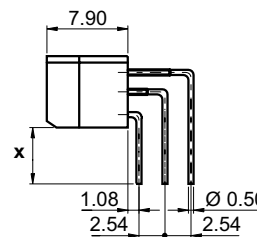
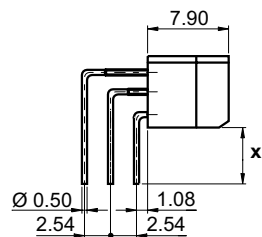
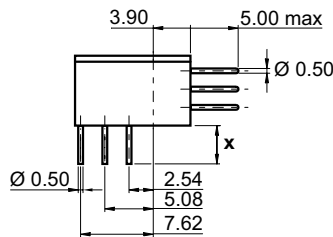
Moulding "B"



Moulding "A"

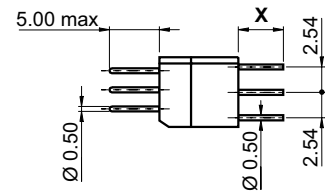
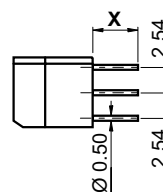
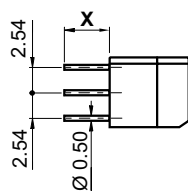
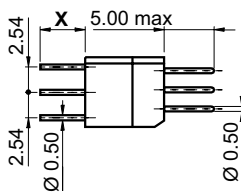
### 90° through board solder

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



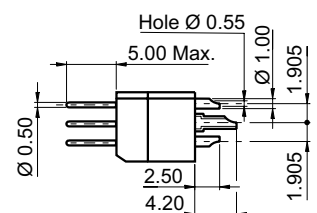
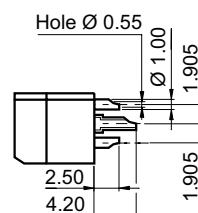
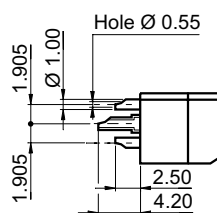
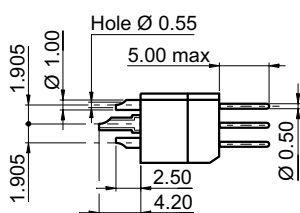
### Straight through board solder

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.

## Plug

## Receptacle

Male

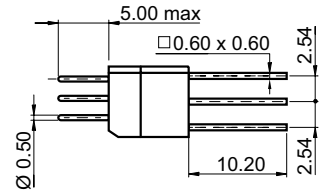
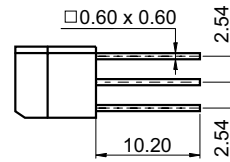
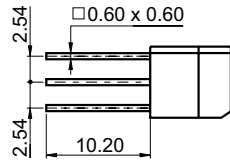
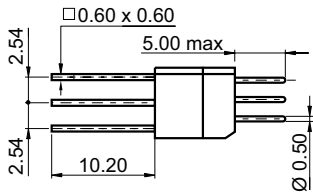
Female

Female

Male

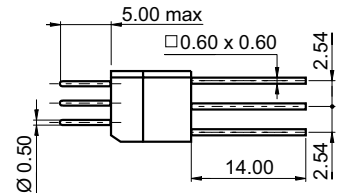
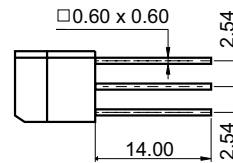
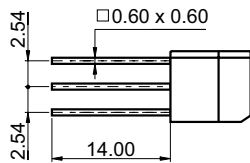
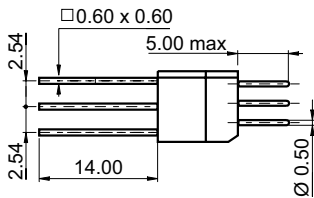
### Wire wrap (2 wrapping levels)

Ref: 50 Ref : 50



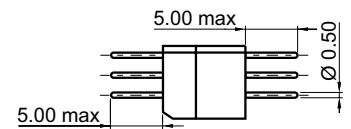
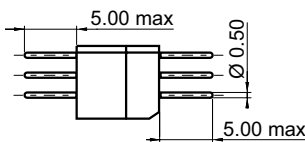
### Wire wrap (3 wrapping levels)

Ref: 51 Ref : 51



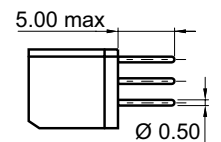
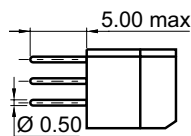
### Saver (Male-Male)

Ref: 90



### Saver (Female-Male)

Ref: 91 Ref : 91



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

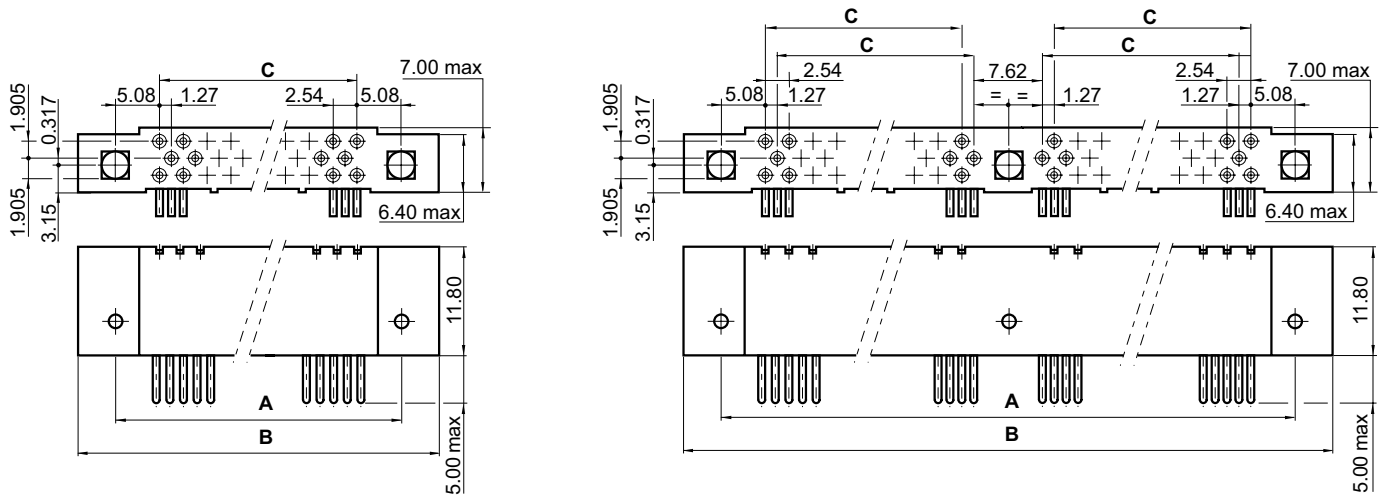
# Dimensions

## 26 to 98 Contacts

## 144 to 162 Contacts

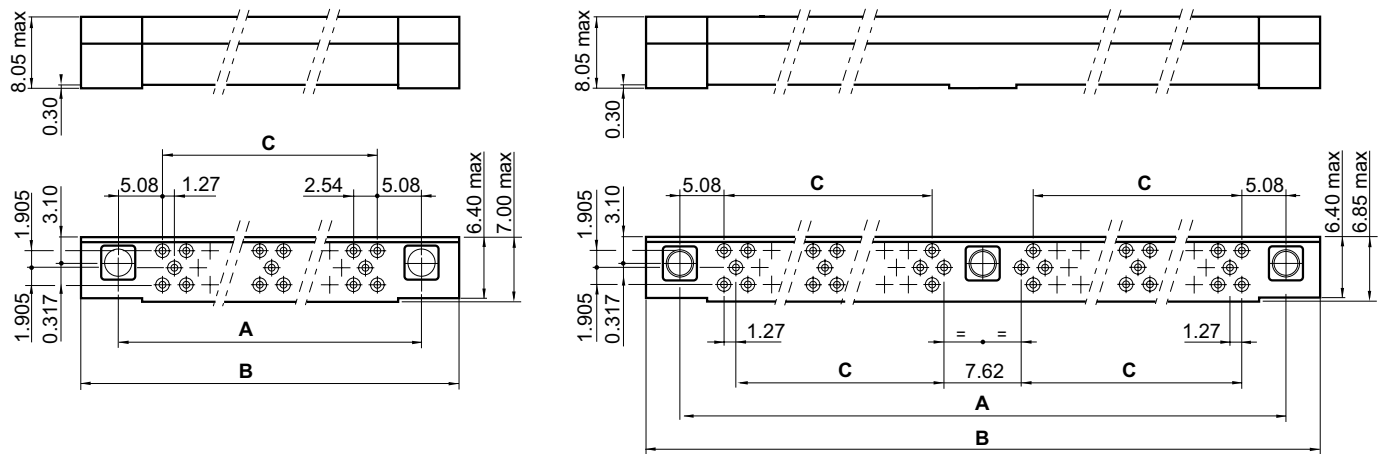
### One Part (moulding A)

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


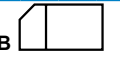
**FP** = Female Plug

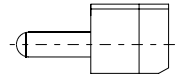
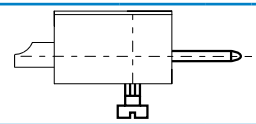
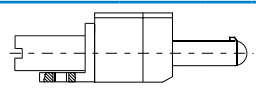
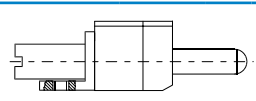
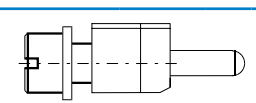
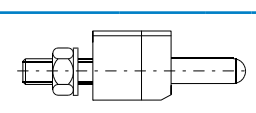
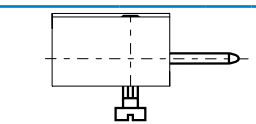
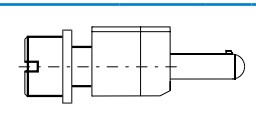
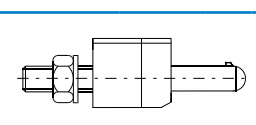
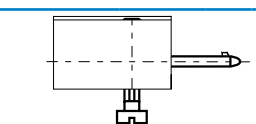
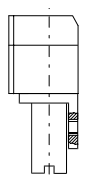
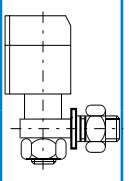
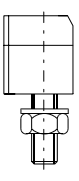
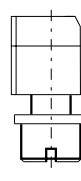
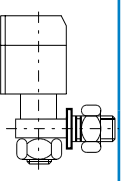
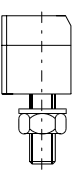
**MP** = Male Plug

**FR** = Female Receptacle

**MR** = Male Receptacle

		Guide device																
		703			190			174			173			154				
		FR 22	MP 12	MR 23	MP 13	MR 23	MP 13	MR 23	MP 13	FR 22	FP 12	FR 22	FP 12	FR 22	FP 12			
MP 13					Compatible													
MR 23				Compatible														
FP 12						Compatible												
FR 22							Compatible											
FP 12								Compatible										
FR 22									Compatible									
FP 12										Compatible								
MP 13														Compatible				
MR 23															Compatible			
FR 22																		
FP 12																		
MP 13																		
MR 23																		
FR 22																		
MP 13	Compatible																	
MR 23	Compatible																	
FP 12																		
MP 13																		
MR 23																		
FR 22																		
FP 12																		
MP 13																		
MR 23																		
FR 22																		
MP 13	Compatible																	
MR 23	Compatible																	
FP 12																		
MP 13																		
MR 23																		
FR 22																		
MP 13																		
MR 23																		
FP 12																		
MP 13																		
MR 23																		
FR 22																		
MP 13	Compatible																	
MR 23	Compatible																	
Polarity						90°	Straight	Solder bucket	Mini-wrap	Female-male								
All pinning		All pinning		13F														
				11m	31		51	91										
				10	30	40	50	90										
				Male or female														
Moulding		Contact																
				703			190			174			173			154		
		Guide devices																

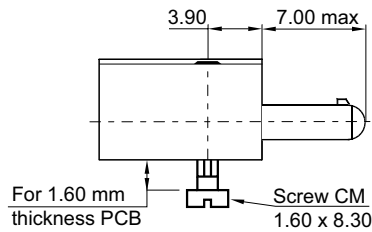
FR 22	FP 12	FR 22	FP 12	MR 23	FR 22	FP 12	MP 13	MR 23	FR 22	FP 12	MP 13	FR 22	FP 12	MR 23	FR 22	FP 12	MP 13	Polarity		Moulding				
																			All pinning		<b>A</b> 			
																			All pinning	<b>B</b> 				
																			90°	13F	11M	10	Male or female	Contact
																			Straight		31	30		
																			Solder bucket			40		
																			Wire wrap		51	50		
																			Female/male	Male/male	91	90		

																				703	Guide devices	
																				191		
																				156		
																				155		
																				128		
																				127		
																				125		
																				113		
																				112 111		
																				110		
																			Male guides			
																			Female guides			
																				153		Guide devices
																				133		
																				130		
																				123		
																				124		
																				143/121		

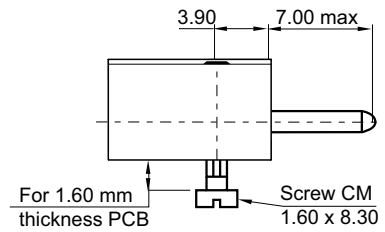
# Male Guide Styles

## Polarised transverse mount (moulding A)

Ref: 110 Ref:  110

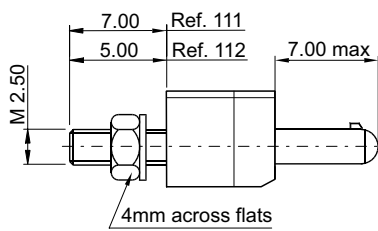


## Unpolarised transverse mount (moulding A) central guide (KMC 144-162)

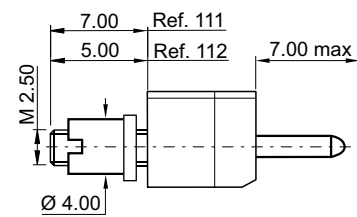


## Polarised vertical mount (moulding B)

Ref: 111 Ref: 112

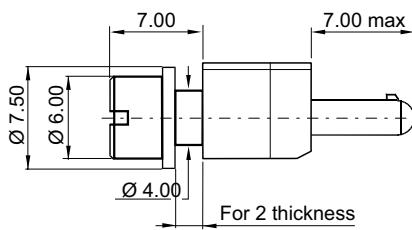


## Unpolarised vertical mount (moulding B) central guide (KMC 144-162)

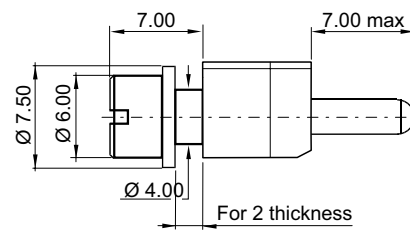


## Polarised vertical float mount (moulding B)

ref: 113

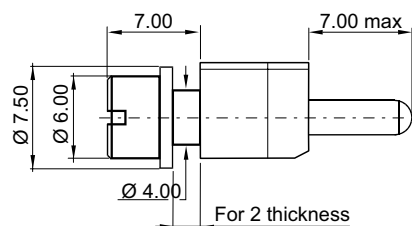


## Unpolarised vertical float mount (moulding B) central guide (KMC 144-162)



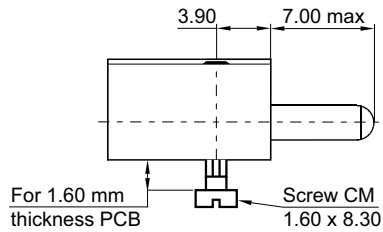
## Polarised vertical float mount (moulding B)

Ref: 128



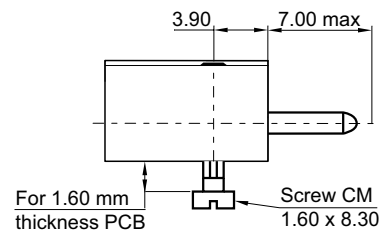
**Unpolarised transverse mount (moulding A)**

Ref: 125



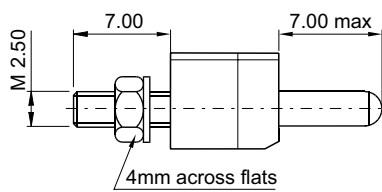
**Unpolarised transverse mount (moulding A) central guide (KMC 144-162)**

Ref: 125



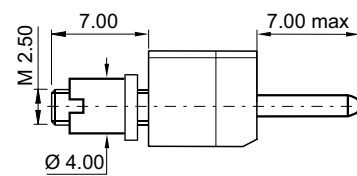
**Unpolarised vertical mount (moulding B)**

Ref: 127



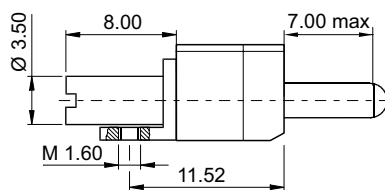
**Unpolarised vertical mount (moulding B) central guide (KMC 144-162)**

Ref: 127



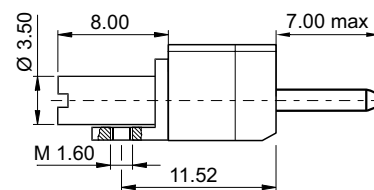
**Unpolarised transverse mount (moulding B)**

Ref: 155



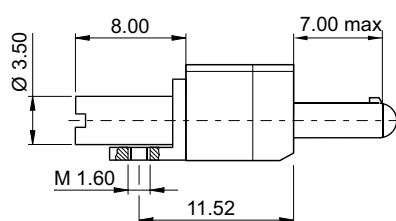
**Unpolarised transverse mount (moulding B) central guide (KMC 144-162)**

Ref: 155



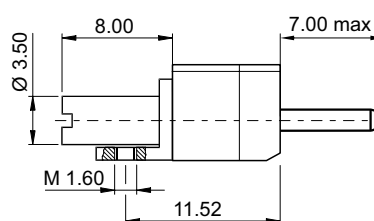
**Polarised transverse mount (moulding B)**

Ref: 156



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

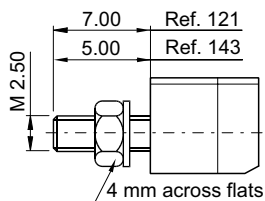
Ref: 156



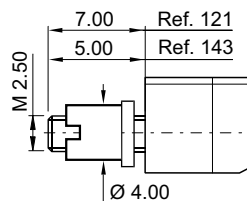
# Female Guide Styles

## Polarised vertical mount (moulding B)

Ref : 121 Ref: 143 Ref : 143

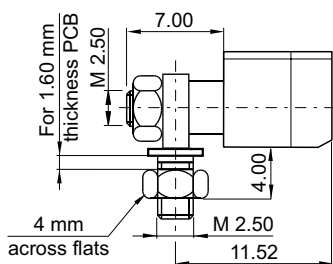


## Unpolarised vertical mount (moulding B) central guide (KMC 144-162)

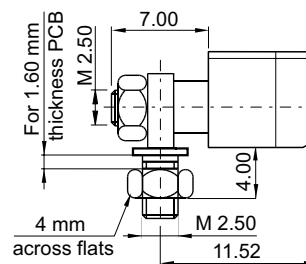


## Polarised transverse mount (moulding B)

Ref: 124

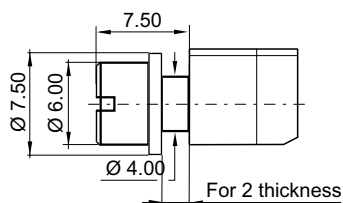


## Unpolarised transverse mount (moulding B) central guide (KMC 144-162)



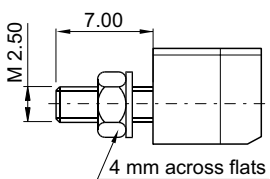
## Polarised vertical float mount (moulding B)

Ref: 123

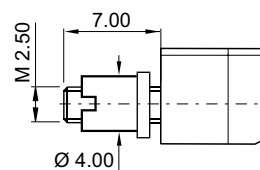


## All keying types (moulding B)

Ref: 130

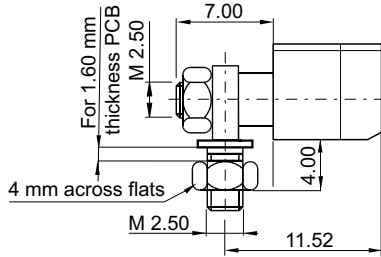


## All keying types (moulding B) central guide (KMC 144-162)

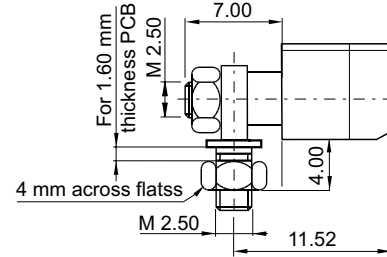


All keying types  
(moulding B)

Ref: 133

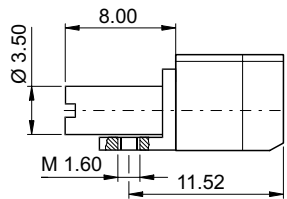


All keying types (moulding B)  
central guide (KMC 144-162)

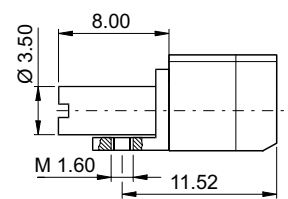


All keying types  
(moulding B)

Ref: 153

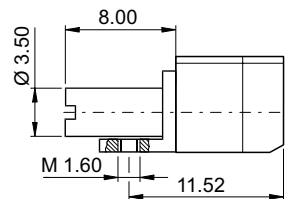


All keying types (moulding B)  
central guide (KMC 144-162)

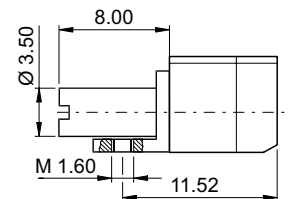


Polarised transverse mount  
(moulding B)

Ref: 154



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

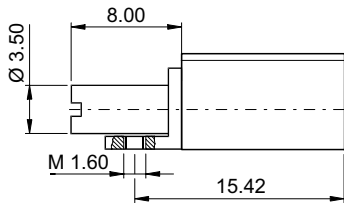


# Guide Styles

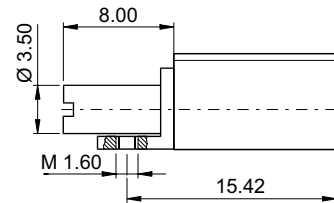
## Female

Unpolarised transverse mount (moulding A)

Ref: 173

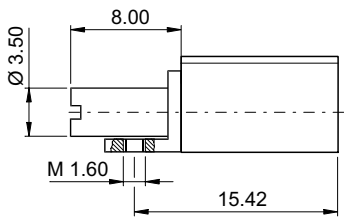


Unpolarised transverse mount (moulding A) central guide (KMC 144-162)

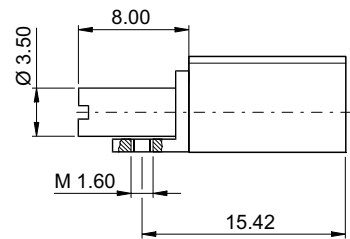


Polarised transverse mount (moulding A)

Ref: 174



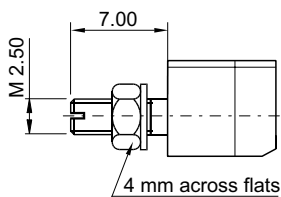
Unpolarised transverse mount (moulding A) central guide (KMC 144-162)



## Female

Mass and power contact (moulding B)

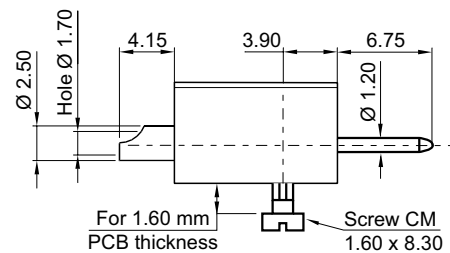
Ref: 190



## Male

Mass and power contact (moulding A)

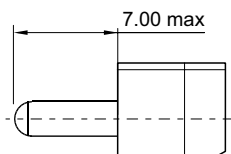
Ref: 191



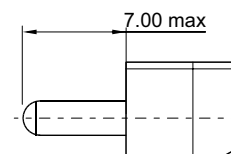
## Female - Male

Unpolarised transverse mount (moulding B)



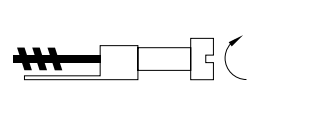
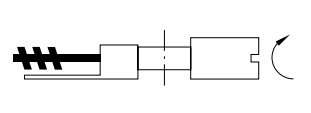
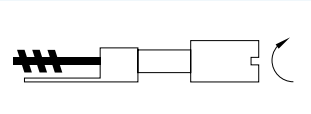
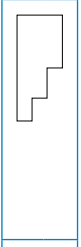
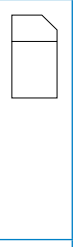
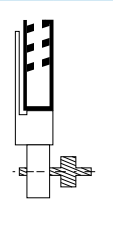
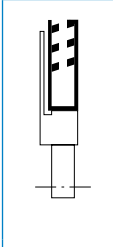
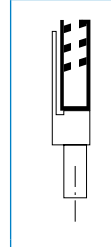
Ref: 703 Ref: 703



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



# Locking Device Compatibility chart

						A	Moulding
						B	
							206
							205
							201
					Male locking devices		
A	B				Female locking devices		
Moulding		204	203	202/207			

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  $\varnothing 3.70$ , fixing devices
    - use 054826.000R shouldered washer
- } (for 202 and 207)



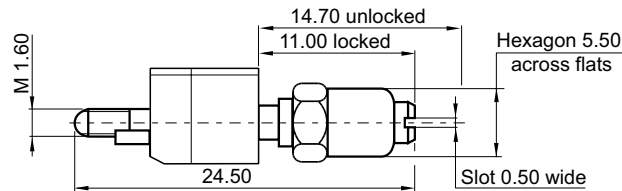
# Locking Styles

## Male

### Jackscrew, free connector (moulding B)

Ref: **201** Ref : **201**

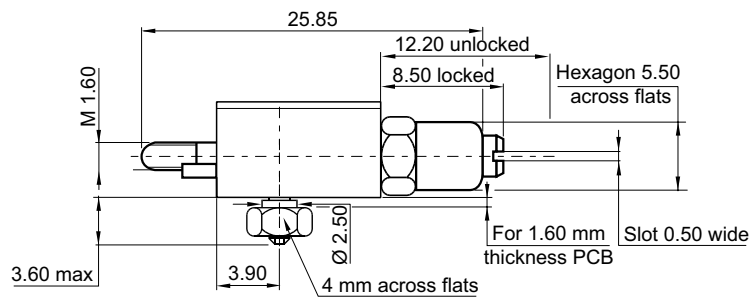
For **KMC 144-162** the supplied central guide is Ref: **111**



### Jackscrew, transverse mount (moulding A)

Ref: **205**

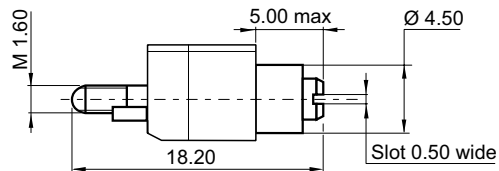
For **KMC 144-162** the supplied central guide is Ref: **110**



### Jackscrew, free connector (moulding B)

Ref: **206** Ref : **206**

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



## Female

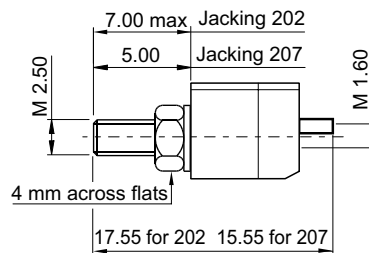
### Non rotating jackscrew, vertical mount (moulding B)

Ref: **202** Ref: **202**

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

Ref: **207**

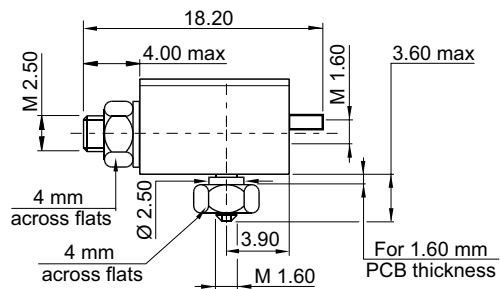
jackscrew 207 the supplied central guide is Ref: **143**



### Non rotating jackscrew, transverse mount (moulding A)

Ref: **203**

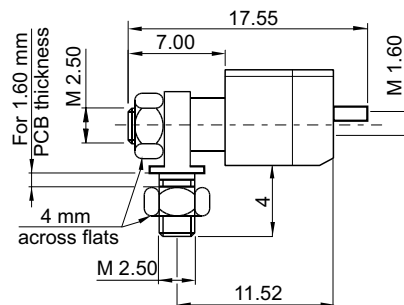
For **KMC 144-162** jackscrew 202 the supplied central guide is Ref: **173**



### Non rotating jackscrew, transverse mount (moulding B)

Ref: **204** Ref: **204**

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

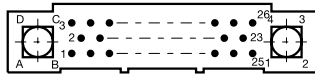


# Mating Side Layout View

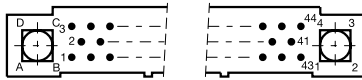
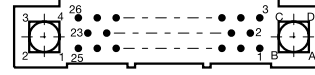
## Moulding A

### Plug

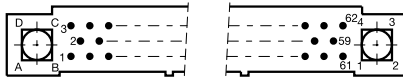
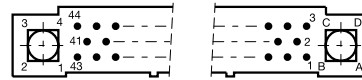
### Receptacle



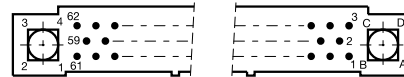
026



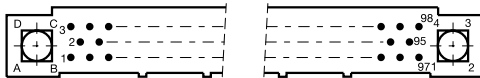
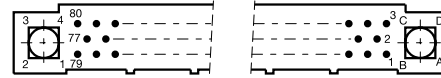
044



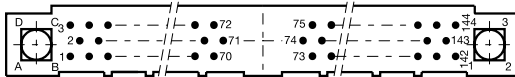
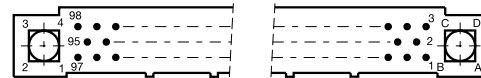
062



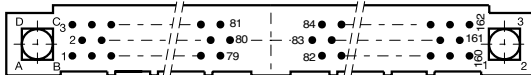
080



098



144



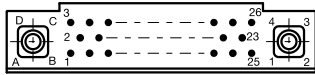
162



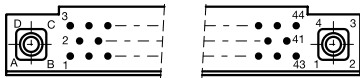
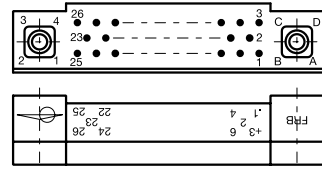
# Moulding B

## Plug

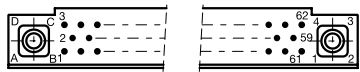
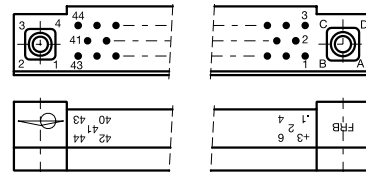
## Receptacle



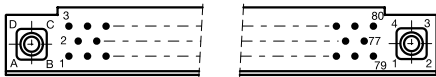
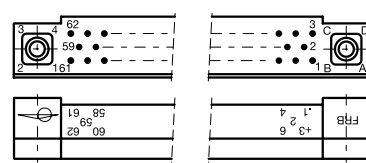
026



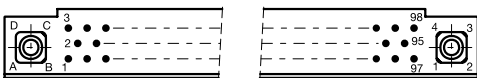
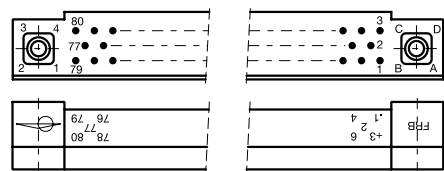
044



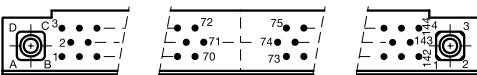
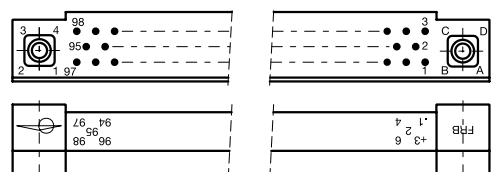
062



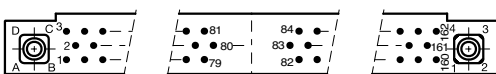
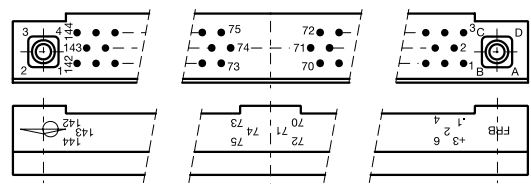
080



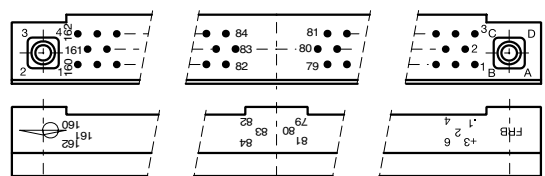
098



144



162



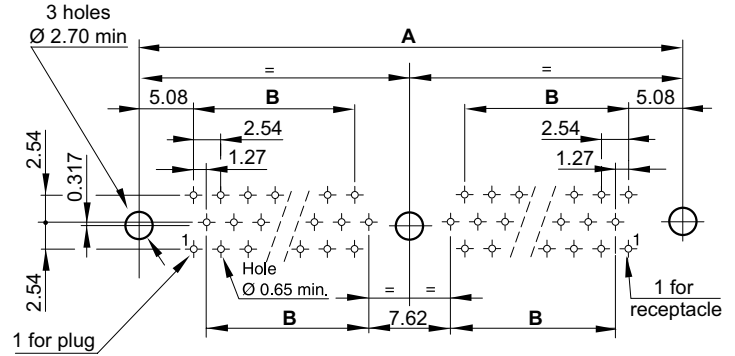
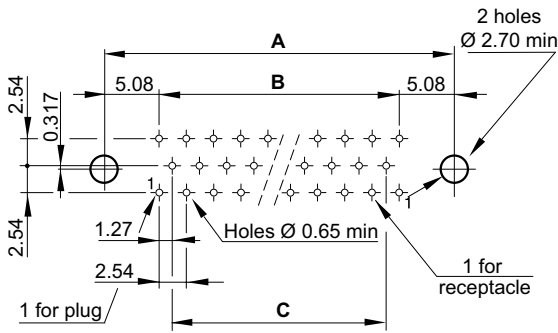
# Board Preparation Details

## Two Parts (moulding B)

26 to 98 contacts

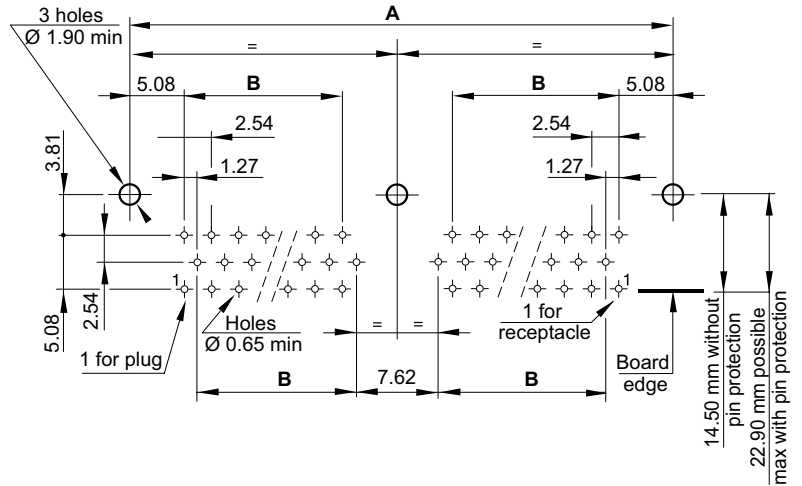
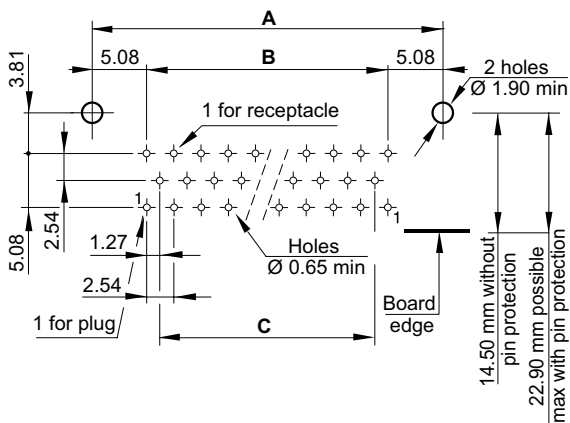
144 to 162 contacts

### 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

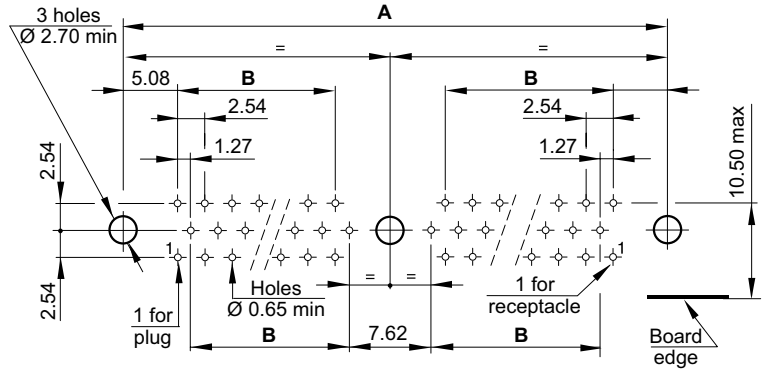
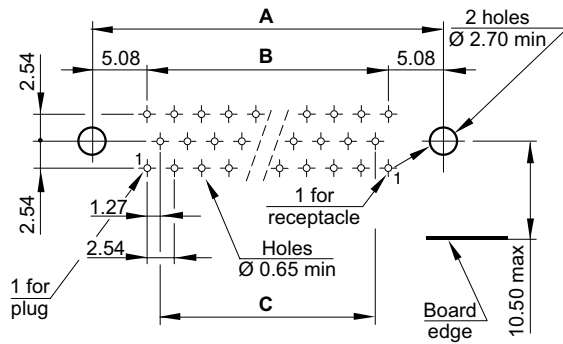
No. of contacts	26	44	62	80	98	144	162
A	30.48	45.72	60.96	76.20	91.44	137.16	152.40
B	20.32	35.56	50.80	66.04	81.28	58.42	66.04
C	17.78	33.02	48.26	63.50	78.74	-	-

## Two Parts (moulding B)

26 to 98 Contacts

144 to 162 Contacts

### Daughter board



Female or male, plug or receptacle, 90° termination

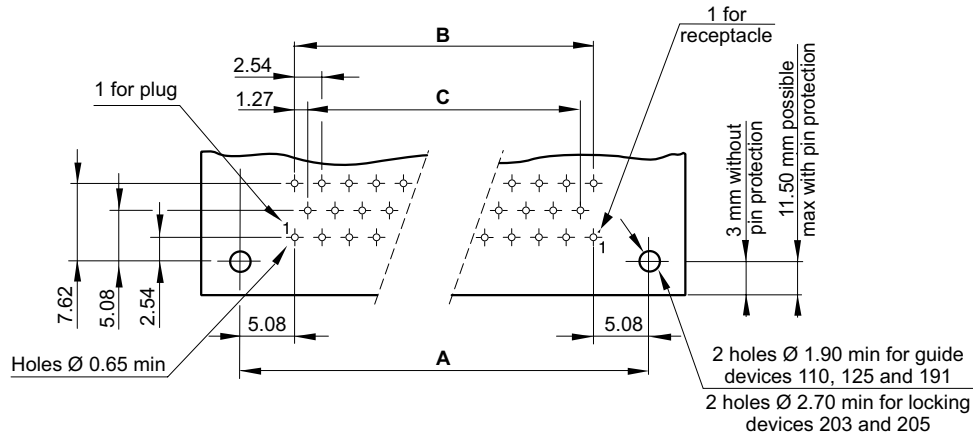
**Guide styles:** 124 - 133

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	-	-

## One Part (moulding A)

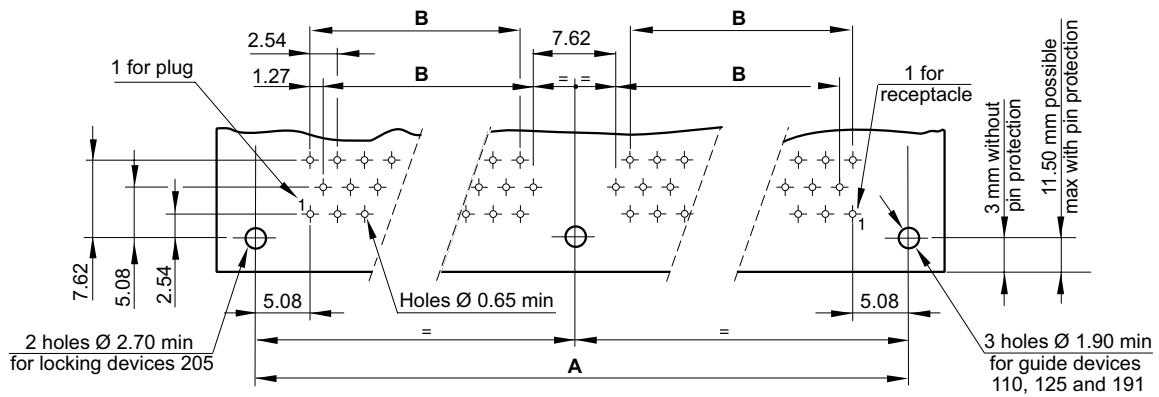
### Daughter board

#### 26 to 98 Contacts



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

#### 144 to 162 Contacts



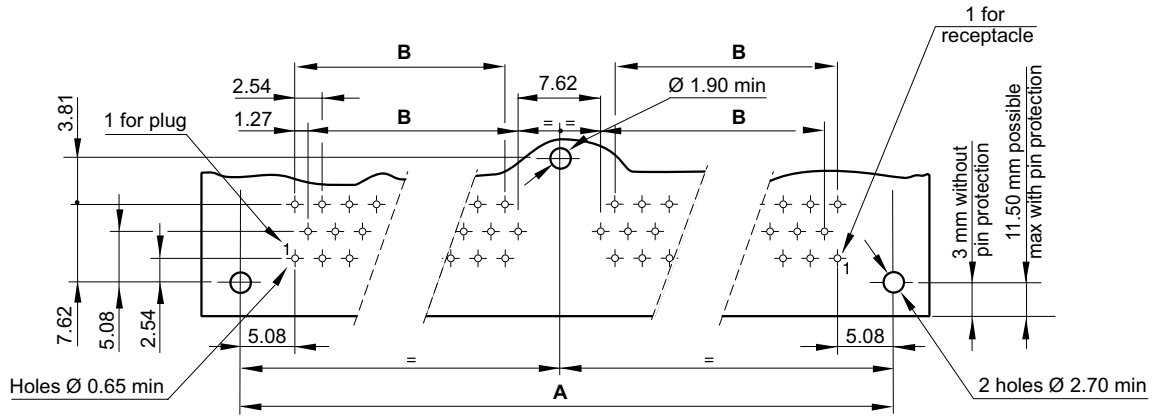
Male, plug or receptacle, 90° termination  
**Guide styles:** 110 - 125 - 191 - 205

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	-	-

# 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	-	-



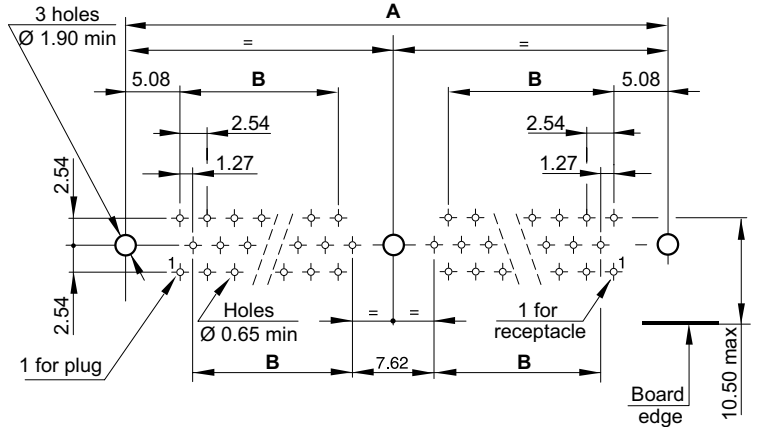
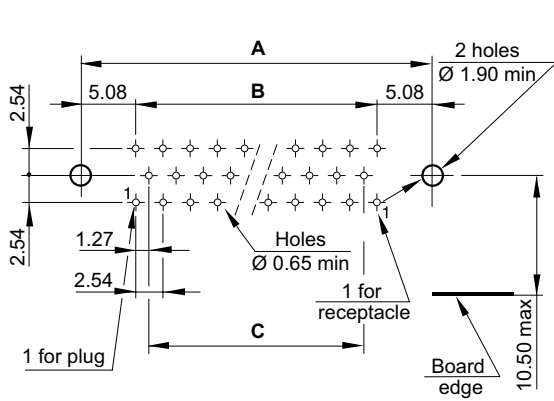
# Panel Preparation Details

## Two Parts (moulding B)

26 to 98 contacts

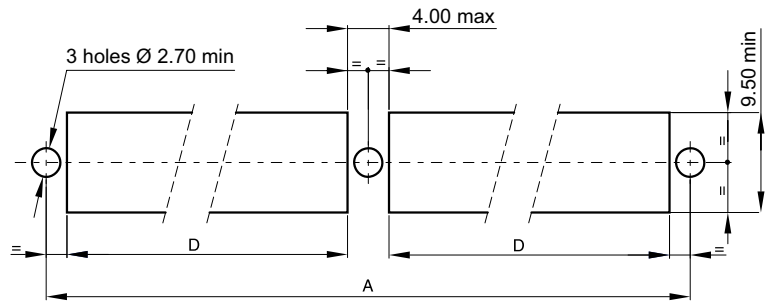
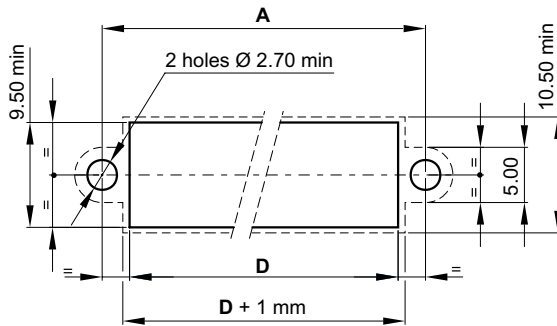
144 to 162 contacts

### 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	10 <sup>4</sup> MΩ (500 Vcc)		≥ 10 <sup>7</sup> MΩ

## Environmental

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

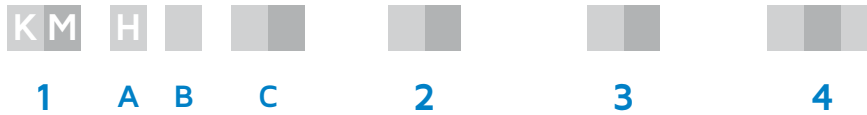
## Materials & Platings

Contact	Brass or bronze
Moulding	Glass fiber filled diallyl - Phtalate
Guides	Stainless steel or nickel plated brass
Pin body	<b>Standard:</b> 0.25 µm Gold / 1.27 µm Ni <b>Space:</b> 1.27 µm Gold / 1.27 µm Ni (min)
Socket body	<b>Standard:</b> 0.25 µm Gold / 1.27 µm Ni on activ area - 1.27 µm Ni on activ area <b>Space:</b> 0.25 µm Gold / 1.27 µm Ni (min)
Socket wires	<b>Standard:</b> 1 µm Gold / 0.20 µm Ni <b>Space:</b> 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)

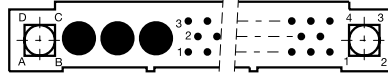
# How To Order



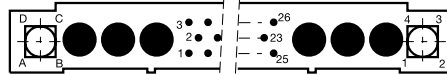
<p><b>1 Type</b></p>	<p><b>A</b> <b>H</b> Moulding with cavities for special contacts</p> <p><b>B</b> <b>3</b> <b>6</b> Number of cavities for special contacts</p> <p><b>C</b> <b>2 6</b> <b>4 4</b> <b>8 0</b> <b>9 0</b> Number of signal contacts 0.50 mm</p>																														
<p><b>2 Moulding polarity</b></p>	<table border="1"> <thead> <tr> <th colspan="2">NF C-UTE C 93-424 SPACE GRADE</th> <th colspan="2">NF C-UTE C 93-424 SPACE GRADE</th> <th colspan="2">NF C-UTE C 93-424 SPACE GRADE</th> </tr> </thead> <tbody> <tr> <td>12</td> <td>54</td> <td>1A</td> <td>-</td> <td>26</td> <td>46</td> </tr> <tr> <td>13</td> <td>55</td> <td>1B</td> <td>-</td> <td>27</td> <td>47</td> </tr> <tr> <td>16</td> <td>56</td> <td>22</td> <td>44</td> <td>2A</td> <td>-</td> </tr> <tr> <td>17</td> <td>57</td> <td>23</td> <td>45</td> <td>2B</td> <td>-</td> </tr> </tbody> </table>	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	1A	-	26	46	13	55	1B	-	27	47	16	56	22	44	2A	-	17	57	23	45	2B	-
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	1A	-	26	46																										
13	55	1B	-	27	47																										
16	56	22	44	2A	-																										
17	57	23	45	2B	-																										
<p><b>3 Termination styles</b></p>	<p>(see KMC ordering information p. 43)</p>																														
<p><b>4 Mounting hardware</b></p>	<p><b>Guide Styles</b> (see p. 50 to 54) - (Consult us for special guides) - See KMC ordering information p. 43</p> <p><b>Locking Styles</b> (see p. 56-57) - See KMC ordering information p. 43</p>																														

\* 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



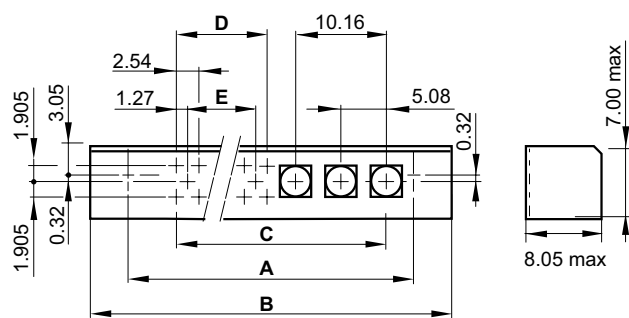
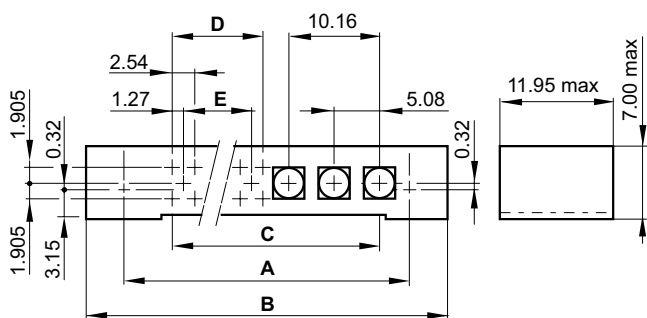
KMH layout	No. of special contact cavities	No. of signal contacts	KMH layout equivalent dimensions
			044
626	6	26	062
			098
			108

# Dimensions

## 26 to 80 Signal Contacts & 3 Special contact cavities

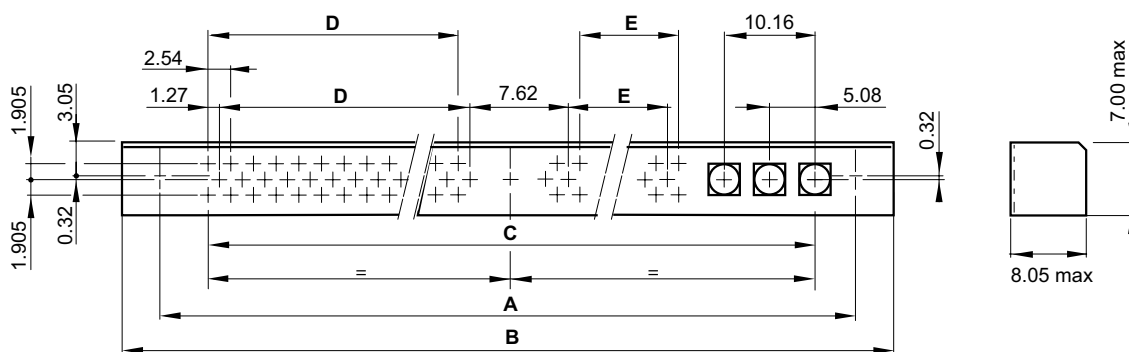
One part plug (moulding A)  
only KMH 380

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



## 90 Signal Contacts & 3 Special contact cavities

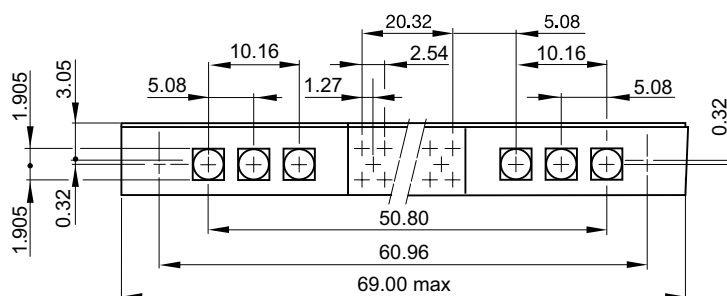
Two parts plug & receptacle (moulding B) KMH 390



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

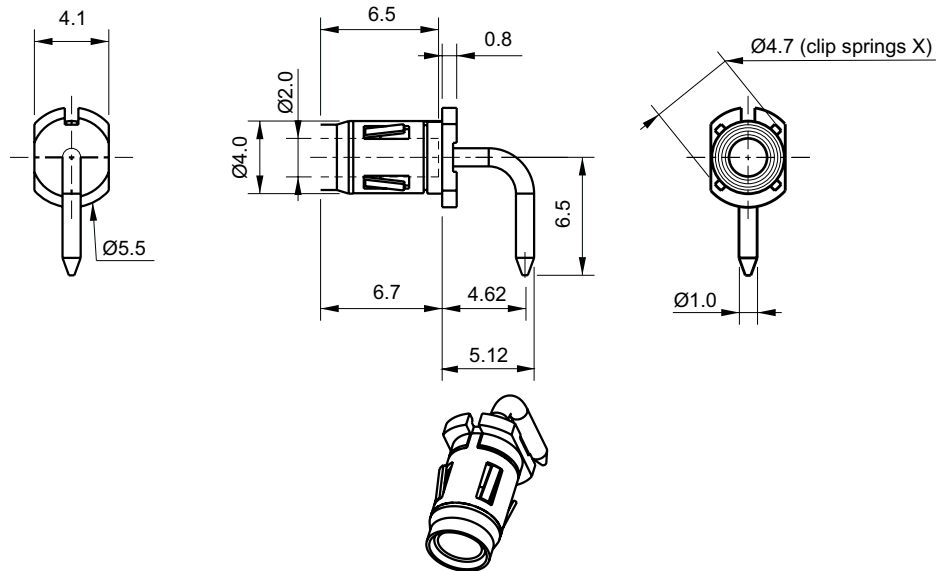
Two parts plug & receptacle (moulding B) with special contact cavities on both extremities KMH 626



# Power & High Frequency Contacts

(NF C-UTE C 93-569)

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



Male	P/N	Female	P/N
90° termination	020 085 1- 10R OG	90° termination	020 084 2- 10R G1
Straight termination	020 087 1- 30R OG	Straight termination	020 056 2- 30R G1
Solder bucket termination	020 091 1- 40R OG	Solder bucket termination	020 060 2- 40R G1

# Coaxial Contacts

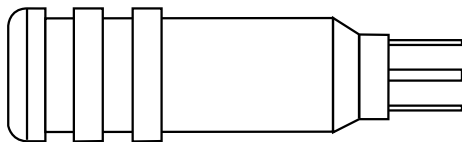
	Male P/N	Female P/N
Vertical mount, suitable for flexible cable Ø 1.9 max ref. KX 21 A (RG 178 B/U or RG 196)	KMX 3-M 081	KMX 3-F 081
Transverse mount, suitable for flexible cable Ø 1.9 max ref. KX 21 A (RG 178 B/U or RG 196) Usable with mother board, thickness 3.2 mm max	KMX 3-M 092	KMX 3-F 092
Vertical mount, suitable for flexible cable Ø 2.5 max ref. KX 22 A (RG 316)	KMX 3-M 101	KMX 3-F 101
Transverse mount, suitable for flexible cable Ø 2.5 max ref. KX 22 A (RG 316) Usable with mother board, thickness 3.2 mm max	KMX 3-M 112	KMX 3-F 112
Vertical mount, suitable to semi-rigid cable Ø 2.2 max ref. KS 1 A (RG 405 - UT 85)	KMX 3-M 131	KMX 3-F 131
Transverse mount, suitable to semi-rigid cable Ø 2.2 max ref. KS 1 A (RG 405 - UT 85) Usable with mother board, thickness 3.2 mm max	KMX 3-M 142	KMX 3-F 142
Straight tail termination for direct mount on to PCB	KMX 3-M 041	KMX 3-F 041
90° tail termination for direct mount on to PCB	KMX 3-M 032	KMX 3-F 032
SMT termination	KMX 3-M 172	KMX 3-F 172

# Accessories & Tools

## 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

\* Antistatic material

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



## Disclaimer 2021

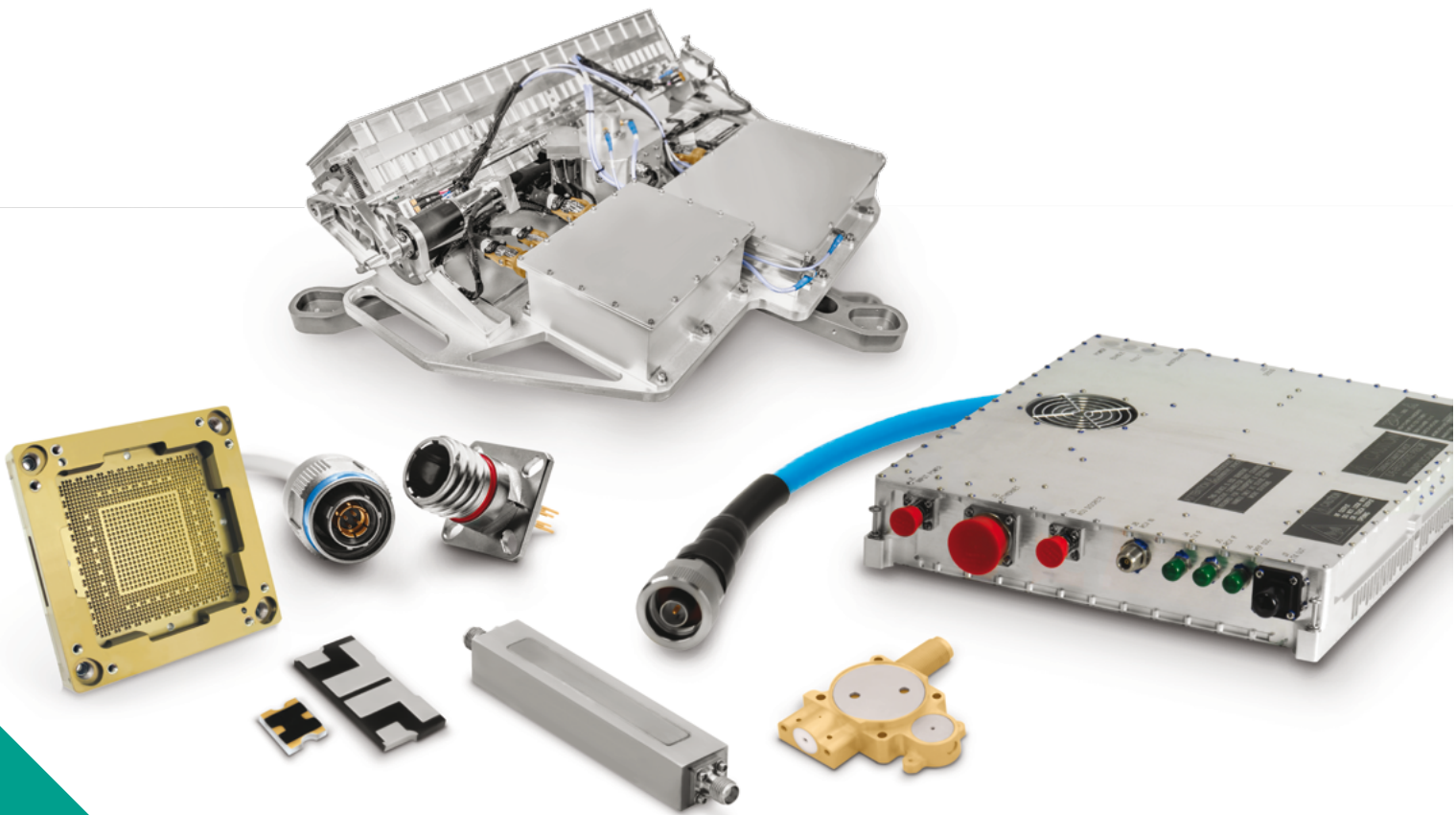
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# Product Portfolio



Antenna Systems

Cable Assemblies

Connector Solutions

Ferrite Components & Assemblies

RF Filter Components & Assemblies

Integrated Microwave Assemblies

Millimeter-Wave Solutions

RF Components

Test Sockets and WLCSP Probe Heads

Time & Frequency Systems

# Worldwide Support

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## Connectors

### Americas

#### Sales

connectors.uscsr@smithsinterconnect.com

#### Technical Support

connectors.ustechsupport@smithsinterconnect.com

### Europe

#### Sales

connectors.emeacsr@smithsinterconnect.com

#### Technical Support

connectors.emeatechsupport@smithsinterconnect.com

### Asia

#### Sales

asiacsr@smithsinterconnect.com

#### Technical Support

asiatechsupport@smithsinterconnect.com

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## Fibre Optics & RF Components

### Americas

#### Sales

focom.uscsr@smithsinterconnect.com

#### Technical Support

focom.techsupport@smithsinterconnect.com

### Europe

#### Sales

focom.emeacsr@smithsinterconnect.com

#### Technical Support

focom.techsupport@smithsinterconnect.com

### Asia

#### Sales

focom.asiacsr@smithsinterconnect.com

#### Technical Support

focom.techsupport@smithsinterconnect.com

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## Semiconductor Test

### Americas

#### Sales

semi.uscsr@smithsinterconnect.com

#### Technical Support

semi.techsupport@smithsinterconnect.com

### Europe

#### Sales

semi.emeacsr@smithsinterconnect.com

#### Technical Support

semi.techsupport@smithsinterconnect.com

### Asia

#### Sales

semi.asiacsr@smithsinterconnect.com

#### Technical Support

semi.techsupport@smithsinterconnect.com

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## RF/MW Subsystems

### Americas, Europe & Asia

#### Sales

subsystems.csr@smithsinterconnect.com

#### Technical Support

subsystems.techsupport@smithsinterconnect.com

# Connecting Global Markets

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