



# Product Catalog

[www.harwin.com](http://www.harwin.com)



See the full range  
from page 4



## The smallest, lightest, mixed-layout connector

Discover maximum space saving with signal and power, use the new Gecko-MT from Harwin.

When your application must not fail, the next generation high-rel connector is tested to extreme levels of G-force and temperature.

And yes, it really is lighter than a playing card.

- Mixed current capacity of 10A & 2A
- Operates at up to 150°C
- Vertical & right-angle versions
- 20G vibration – 100G shock
- Stainless Steel locking screws
- PCB & cable styles
- 1.25mm pitch between signal pins
- Low out-gassing properties
- Cable assemblies upon request

[harwin.com/gecko-mt](http://harwin.com/gecko-mt)

**HARWIN**  
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These Catalog pages are provided for reference only. Please consult the applicable Drawings and Specifications online for the latest technical data.



This catalog is printed on FSC paper

**SPECIFICATIONS** Harwin operates an ongoing development programme. This may result in changes to the product specifications shown in this catalog. All dimensions are in millimetres and are nominal unless otherwise stated. All preferred sizes are held in stock. Check [www.harwin.com](http://www.harwin.com) for availability.

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## Notes

This image shows a full page of blank graph paper. The grid consists of thin, light gray horizontal and vertical lines that intersect to form a uniform pattern of small squares across the entire surface. There are no margins, text, or other markings on the paper.

# Gecko

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# Gecko Connectors Introduction

**Gecko is a 1.25mm pitch High-Reliability connector range from Harwin. Improving on the popular 2mm pitch Datamate series, and harnessing the modern technology of micro-machining, this range brings the best of the high-reliability specifications to a smaller size.**

Gecko provides a low-profile, dual-row solution for all variations of cable-to-board, board-to-board and cable-to-cable interconnect requirements. With up to 50 contacts per connector, but still capable of 2A per contact, Gecko gives both significant weight and space-saving advantages over Micro-D connections. The Gecko range offers either latching connectors, for maximum weight and space-saving, or Screw-Lok connectors for maximum mating strain relief.

- ❖ 2A per contact (all electrically loaded; 2.8A per individual contact)
- ❖ 4-finger Patented\* contact design to maintain electrical contact through high vibration and shock
- ❖ Beryllium Copper Contact for improved temperature range: -65°C to +150°C
- ❖ 1,000 Mating cycles durability
- ❖ Weight and Space-saving over Micro-D connector products
- ❖ Future-proofed Materials - Halogen-free, PFOS-free, SVHC-free and RoHS compliant
- ❖ Low outgassing properties - 0.68% TML, 0.01% CVM, 0.26 WVR (Water Vapour Recovered)
- ❖ All PCB connectors available in Tape and Reel for automation

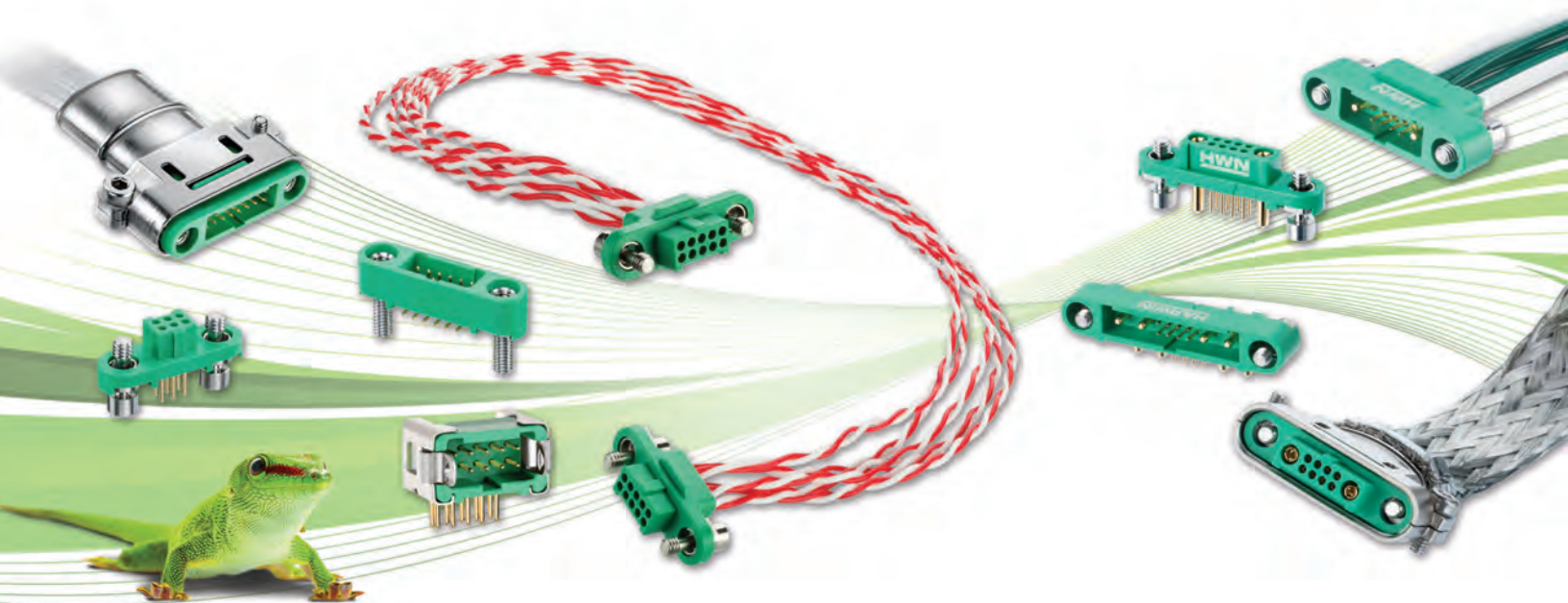
\*Granted US9017089, Pending GB2501063, Pending EP2642604

## Gecko-SL or Latches

- ❖ Strong stainless steel screw fixings for maximum strain relief, or lightweight space-saving robust latches
- ❖ Lightweight hoods for additional cable protection and shielding
- ❖ Choices of pre-wired contacts or full cable assemblies from stock, for prototyping and full production

## Gecko-MT

- ❖ Additional power contacts incorporated into the smallest, lightest mixed-layout connector
- ❖ Choice of 2 or 4 power contacts rated to 10A each
- ❖ Compatible with existing lightweight metal hoods



Patent Published

# Gecko Connectors Product Features

## Four Finger Beryllium Copper Contact

Unique patented pending high-reliability contact design ensures signal integrity under extremes of bump, vibration and shock. Durable to over 1,000 mating cycles.



## Keyway Polarization Points

3 polarizing points on each component prevent mis-mating.



## No. 1 Position identified, Potting Wall

Housings are clearly marked with identifier for fast visual inspection. Cable connectors feature a rear potting wall adding an extra level of strain relief.



## Packaged in Tape & Reel

All connectors for PCB assembly are available packaged in industry standard Tape and Reel format for automated assembly.



## Robust Metal Backshells

Lightweight aluminium hoods / backshells available for all connector sizes from stock. Supplied with tie-bands to attach external braiding for shielded cable assemblies.



## Pre-assembled Cable Configurations

Cable connectors supplied in ready-made cable assemblies. Single and double-ended configurations available in standard lengths off-the-shelf, or custom assemblies on request.



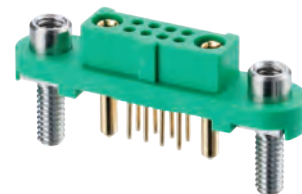
## Minimal Outgassing

Low outgassing properties from future-proofed plastic; within NASA and ESA recommendations.



## Operating Temperature Range

Performance is maintained across the full operating temperature range of -65°C to +150°C.



# Gecko-MT Connectors Specifications

## Materials

|                         |   |
|-------------------------|---|
| <b>Housings:</b>        | Glass-filled High Temperature Thermoplastic UL94V-0                   |
| <b>Female contacts:</b> | Beryllium Copper  |
| <b>Male contacts</b>    |   |
| Signal PCB Connector:   | Phosphor Bronze   |
| Signal Crimp:           | Brass   |
| Power (all):            | Beryllium Copper  |
| <b>Finish</b>           |   |
| Signal Contacts:        | 0.2 - 0.3µm (8 - 12µ") Gold,<br>over 1.5 - 2.0µm (60 - 80µ") Nickel   |
| Power Contacts:         | 0.8 - 1.0µm (30 - 40µ") Gold,<br>over 1.5 - 2.5µm (60 - 100µ") Nickel |
| <b>Screw-Loks:</b>      | Stainless Steel   |

## Electrical

|                               |                     |
|-------------------------------|---------------------|
| <b>Current</b>                |                     |
| Signal contacts in isolation: | 2.8A max (at 25°C)  |
| Signal contacts simultaneous: | 2.0A max (at 25°C)  |
| Power contacts simultaneous:  | 10A max             |
| <b>Working voltage</b>        |                     |
| At sea level 1006 mbar:       | 450V DC or AC peak  |
| At altitude 44 mbar:          | 250V DC or AC peak  |
| <b>Voltage proof</b>          |                     |
| At sea level 1013 mbar:       | 600V DC or AC peak  |
| At altitude 44 mbar:          | 350V DC or AC peak  |
| <b>Contact resistance</b>     |                     |
| Initial:                      | 20mΩ max            |
| After conditioning:           | 25mΩ max            |
| <b>Insulation resistance</b>  |                     |
| Initial:                      | 10GΩ min at 500V DC |
| After conditioning:           | >1GΩ min at 500V DC |

## Mechanical

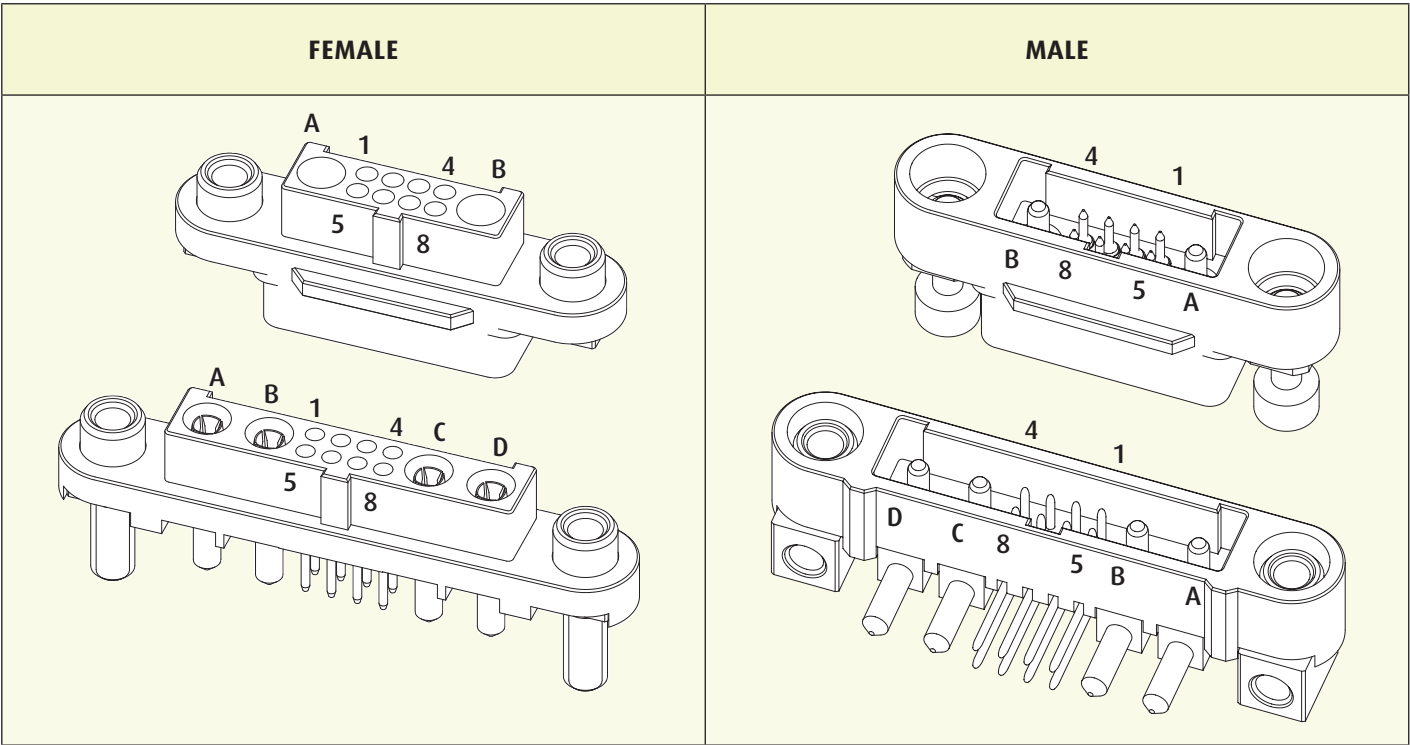
|   |                 |
|---|-----------------|
| <b>Contact durability:</b>              | 1000 operations |
| <b>Mating forces (per contact pair)</b> |                 |
| Insertion force (signal):               | 2.8N max        |
| Insertion force (power):                | 7.0N max        |
| Withdrawal force:                       | 0.2N min        |
| <b>Contact retention in housing:</b>    | 6.0N max        |

## Environmental

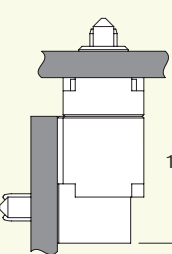
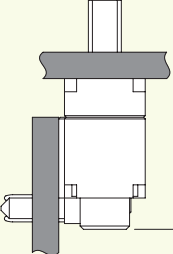
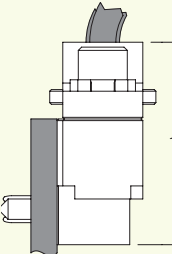
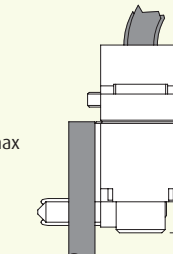
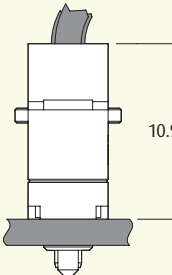
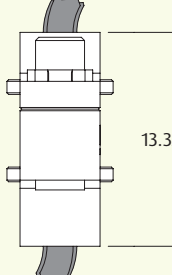
|                                      |  |
|--------------------------------------|--|
| <b>Environmental classification:</b> | 65/150/56 days at 93% RH   |
| <b>Operating temperature:</b>        | -65°C to +150°C  |
| <b>*Vibration sensitivity:</b>       | 10Hz to 2000Hz, 1.5mm,<br>198m/s <sup>2</sup> (20G) duration 6 hours                             |
| <b>*Bump severity:</b>               | 390m/s <sup>2</sup> (40G), 4000 ±10 bumps  |
| <b>*Shock severity:</b>              | 981m/s <sup>2</sup> (100G) for 6ms in Z axis<br>490m/s <sup>2</sup> (50G) for 11ms in X & Y axes |
| <b>*Acceleration severity:</b>       | 490m/s <sup>2</sup> (50G)  |

\* Tested with latched connectors.

# Gecko-MT Pin Numbering



# Gecko-MT Mating Profiles

|      |                          | FEMALE   |   |
|------|--------------------------|--|---|
|      |                          | VERTICAL THROUGHBOARD  | CABLE   |
| MALE | HORIZONTAL THROUGH-BOARD | <div><br/>Standard</div> <div><br/>Reverse Fix</div> | <div><br/>Standard</div> <div><br/>Reverse Fix</div> |
|      | CABLE                    | <div><br/>10.95 max</div>   | <div><br/>13.35 max</div>  |

All dimensions in mm.

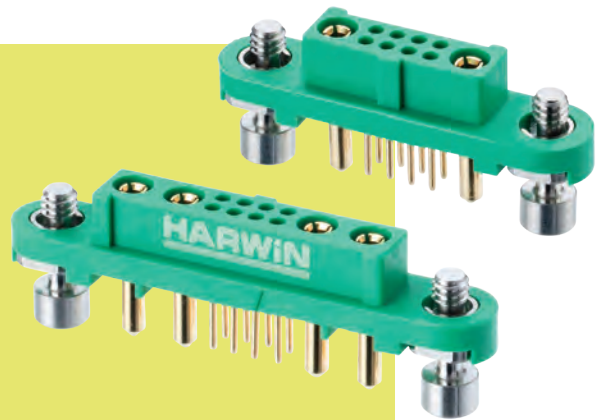
Patent Published



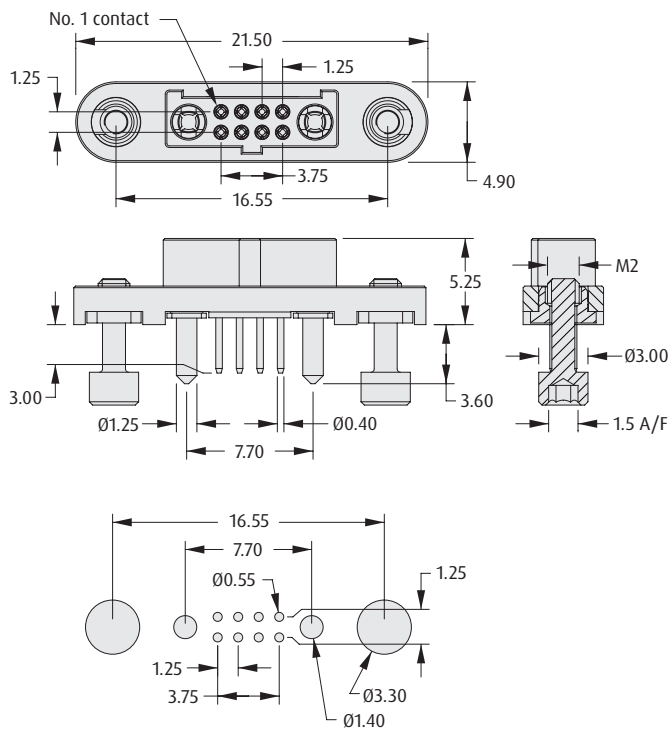
# Gecko-MT Connectors

## Female Vertical Throughboard

- ❖ 2A current rating for signal contacts, 10A for power contacts.
- ❖ Stainless steel floating screw fixing to mate with internal screw-loks on male connectors.
- ❖ 4-finger Beryllium Copper contact design on both signal and power contacts.
- ❖ Positive keyway polarization.



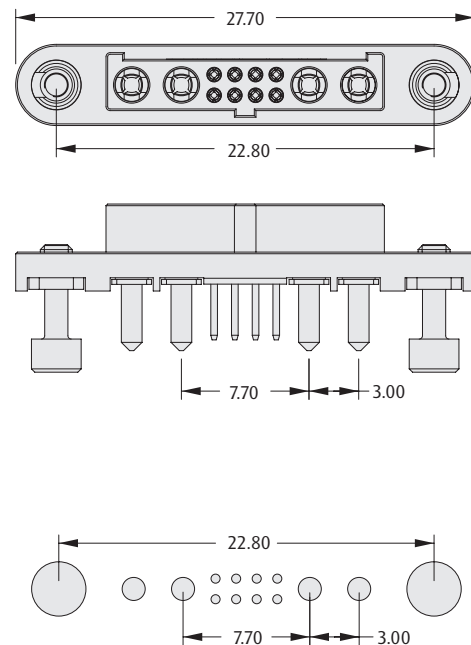
### 1+8+1



Recommended PC Board Pattern

### 2+8+2

All other dimensions as 1+8+1



Recommended PC Board Pattern

## HOW TO ORDER

**G125 - FV1 08 05 F1 - XABXAB P**

### SERIES CODE

### TOTAL NO. OF SIGNAL CONTACTS

08

### SCREW-LOK

F1 Floating Hex Socket

### PACKAGING

P Tape & Reel strips

### POWER CONTACTS

1AB1AB 1+8+1 Configuration

2AB2AB 2+8+2 Configuration

All dimensions in mm.

Patent Published

# GECKO-MT

[illegible]Patent Published

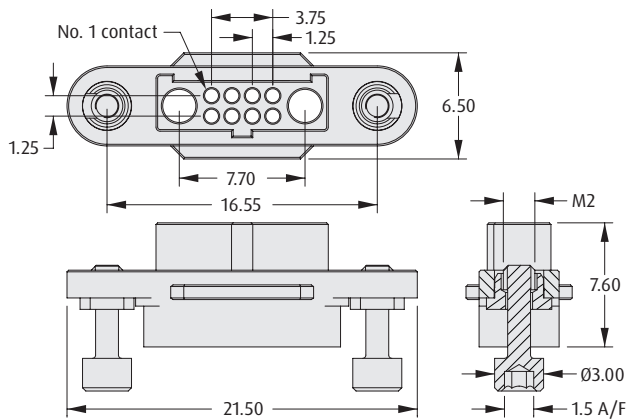
# Gecko-MT Connectors

## Female Cable Housings

- ❖ Features potting wall for backpotting to give extra security.
- ❖ No. 1 position identified on housing.
- ❖ Stainless steel floating screw fixing to mate with internal screw-loks on male connectors.
- ❖ Available without fixing screws, for use with metal backshells.

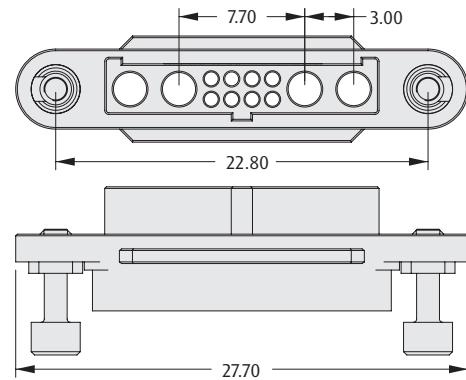


### 1+8+1



### 2+8+2

All other dimensions as 1+8+1



## TOOLS

**Recommended Crimp Tools** – Z125-900 (signal), Z125-903 (power)

**Positioner** – Z125-901 (signal), Z125-904 (power)

**Contact Insertion/Removal Tool** – Z125-902 (signal), Z125-905 (power)

❖ Female contacts shown on a following page.

❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

## HOW TO ORDER

**G125 - 22496 XX - 0X - 08 - 0X**

### SERIES CODE

### SCREW-LOK

|           |                                   |
|-----------|-----------------------------------|
| <b>F1</b> | Floating Hex Socket               |
| <b>00</b> | No Fixings (Use with Metal Hoods) |

### NO. OF CONTACTS

|                 |                     |
|-----------------|---------------------|
| <b>01-08-01</b> | 1+8+1 Configuration |
| <b>02-08-02</b> | 2+8+2 Configuration |

All dimensions in mm.

Patent Published

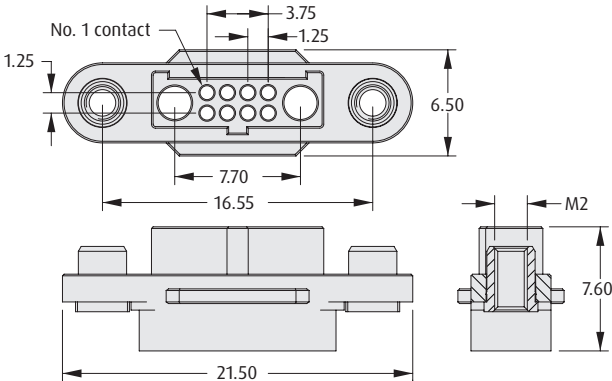
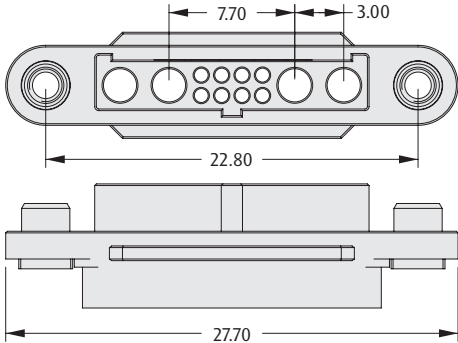
# Gecko-MT Connectors

## Female Cable Housings – Reverse Fix

- ❖ Reverse fix screw-lok, where the male connector has the floating screw.
- ❖ Features potting wall for backpotting to give extra security.
- ❖ No. 1 position identified on housing.



GECKO-MT

| 1+8+1   |  | 2+8+2 |  | All other dimensions as 1+8+1 |  |
|---|--|-------|--|-------------------------------|--|
|   |  |       |   |                               |  |
| TOOLS   |  |       |  |                               |  |
| <p><b>Recommended Crimp Tools</b> – Z125-900 (signal), Z125-903 (power)</p> <p><b>Positioner</b> – Z125-901 (signal), Z125-904 (power)</p> <p><b>Contact Insertion/Removal Tool</b> – Z125-902 (signal), Z125-905 (power)</p>   |  |       | <p>❖ Female contacts shown on a following page.</p> <p>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</p> |                               |  |
| HOW TO ORDER  |  |       |  |                               |  |
| <div><div><div><div><div><b>G125</b></div><div><b>-</b></div><div><b>22496</b></div></div><div><div><b>F2</b></div><div><b>-</b></div><div><b>0X</b></div><div><b>-</b></div><div><b>08</b></div><div><b>-</b></div><div><b>0X</b></div></div></div><div><div><div><div><b>SERIES CODE</b></div><div>G125 - 22496</div></div><div><div><b>SCREW-LOK</b></div><div>F2 Internal Thread</div></div><div><div><b>NO. OF CONTACTS</b></div><div><div><div>01-08-01</div><div>1+8+1 Configuration</div></div><div><div>02-08-02</div><div>2+8+2 Configuration</div></div></div></div></div></div></div></div> |  |       |  |                               |  |

All dimensions in mm.

Patent Published

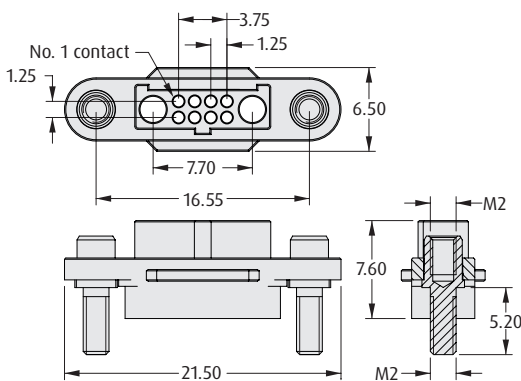
# Gecko-MT Connectors

## Female Cable Housings – Reverse Fix Panel Mount

- ❖ Reverse fix screw-lok, where the male connector has the floating screw.
- ❖ Features potting wall for backpotting to give extra security.
- ❖ No. 1 position identified on housing.
- ❖ Order nuts for panel mount separately - see bottom of page.

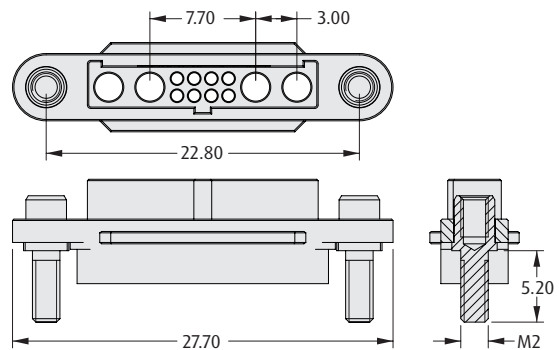


### 1+8+1



### 2+8+2

All other dimensions as 1+8+1



## TOOLS

**Recommended Crimp Tools** – Z125-900 (signal), Z125-903 (power)

**Positioner** – Z125-901 (signal), Z125-904 (power)

**Contact Insertion/Removal Tool** – Z125-902 (signal), Z125-905 (power)

❖ Female contacts shown on a following page.

❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

## HOW TO ORDER

**G125 - 22496 F3 - 0X - 08 - 0X**

### SERIES CODE

### SCREW-LOK

**F3** With 5.2mm Panel Mount stud

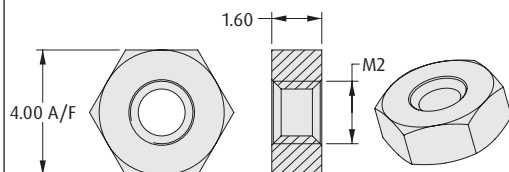
### NO. OF CONTACTS

|                 |                     |
|-----------------|---------------------|
| <b>01-08-01</b> | 1+8+1 Configuration |
| <b>02-08-02</b> | 2+8+2 Configuration |

## REQUIRED HARDWARE

Order separately from connector

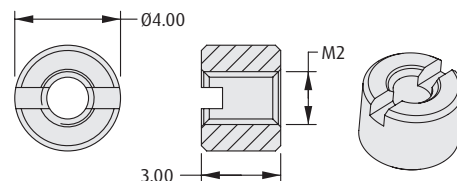
### Hexagonal Board Mount Nut



### ORDER CODE

**G125-45000008**

### Slotted Board Mount Nut



### ORDER CODE

**G125-45100008**

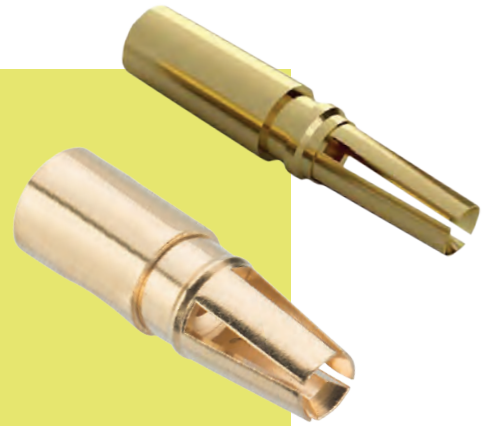
All dimensions in mm.

Patent Published

# Gecko-MT Connectors

## Female Crimp Contacts

- ❖ 4-finger Beryllium Copper contact design on both signal and power contacts.
- ❖ Crimp barrel meets all crimp guidelines and standards.
- ❖ Instruction video online at [www.harwin.com/harwintv](http://www.harwin.com/harwintv).



GECKO-MT

| CONTACTS  |                                | POWER CONTACT  |  |     |                             |     |                                |     |                            |   |  |    |      |
|---|--------------------------------|--|--|-----|-----------------------------|-----|--------------------------------|-----|----------------------------|---|--|----|------|
| <div>26 AWG</div> <div></div>   |                                | <div>18 AWG</div> <div></div>  |  |     |                             |     |                                |     |                            |   |  |    |      |
| <div>28 – 32 AWG</div> <div></div>  |                                | WIRE STRIPPING DETAILS   |  |     |                             |     |                                |     |                            |   |  |    |      |
|   |                                | <div><div>18 AWG - Ø1.80 max<br/>26 AWG - Ø0.80 max<br/>28 to 32 AWG - Ø0.72 max</div><div></div></div>  |  |     |                             |     |                                |     |                            |   |  |    |      |
| TOOLS   |                                |  |  |     |                             |     |                                |     |                            |   |  |    |      |
| <div>Recommended Crimp Tools – Z125-900 (signal), Z125-903 (power)</div> <div>Positioner – Z125-901 (signal), Z125-904 (power)</div> <div>Contact Insertion/Removal Tool – Z125-902 (signal), Z125-905 (power)</div>  |                                | <div>❖ Female crimp housings shown on previous pages.</div> <div>❖ Pre-cabled contacts shown on following page.</div> <div>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</div> |  |     |                             |     |                                |     |                            |   |  |    |      |
| HOW TO ORDER  |                                |  |  |     |                             |     |                                |     |                            |   |  |    |      |
| <div><div>G125</div><div>-</div><div>0XX</div><div>00</div><div>05</div></div>  |                                |  |  |     |                             |     |                                |     |                            |   |  |    |      |
| <div>SERIES CODE</div> <div><table><tr><th>TYPE</th><th></th></tr><tr><td>001</td><td>Female 26 AWG crimp contact</td></tr><tr><td>002</td><td>Female 28-32 AWG crimp contact</td></tr><tr><td>050</td><td>Female power crimp contact</td></tr></table></div> |                                | TYPE   |  | 001 | Female 26 AWG crimp contact | 002 | Female 28-32 AWG crimp contact | 050 | Female power crimp contact | <div>FINISH</div> <div><table><tr><td>05</td><td>Gold</td></tr></table></div> |  | 05 | Gold |
| TYPE  |                                |  |  |     |                             |     |                                |     |                            |   |  |    |      |
| 001   | Female 26 AWG crimp contact    |  |  |     |                             |     |                                |     |                            |   |  |    |      |
| 002   | Female 28-32 AWG crimp contact |  |  |     |                             |     |                                |     |                            |   |  |    |      |
| 050   | Female power crimp contact     |  |  |     |                             |     |                                |     |                            |   |  |    |      |
| 05  | Gold                           |  |  |     |                             |     |                                |     |                            |   |  |    |      |

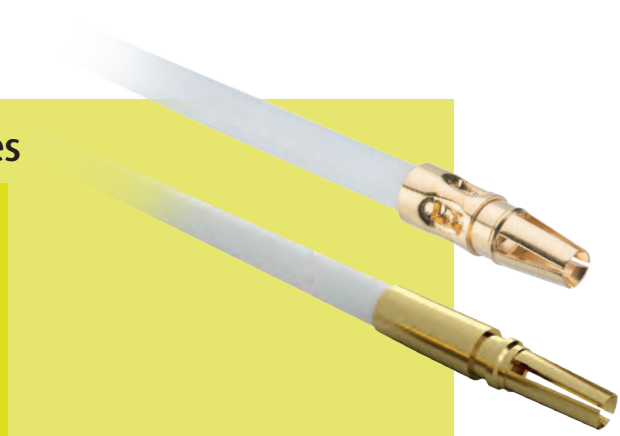
All dimensions in mm.

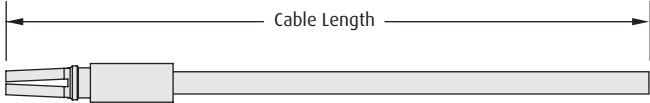
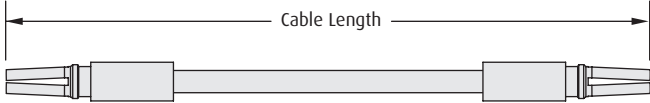
Patent Published

# Gecko-MT Connectors

## Female Crimp Contacts – Pre-Crimped Wires

- ❖ 4-finger Beryllium Copper contact.
- ❖ Ready for assembling to housing.
- ❖ Crimp barrel meets all crimp guidelines and standards.



| FEMALE SINGLE ENDED  |                      | FEMALE – FEMALE  |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
|--|----------------------|--|--|-------------|-----------------|--|----------------------|--------------------------|----------------------|-----------|----------------|---|--------|-------------|--|-----------|-------|
|   |                      |    |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
| TOOLS  |                      |  |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
| <b>Contact Insertion/Removal Tool</b> – Z125-902 (signal), Z125-905 (power)  |                      | <ul style="list-style-type: none"><li>❖ Female crimp housings and loose contacts shown on previous pages.</li><li>❖ Full cable assemblies shown on following page.</li><li>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</li></ul> |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
| HOW TO ORDER   |                      |  |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
| <div><div><div><b>SERIES CODE</b></div><div><b>G125</b></div></div><div><div><b>GENDER - FIRST END</b></div><div><b>F</b></div></div><div><div><b>CABLE SIZE</b></div><div><b>XX</b></div></div><div><div><b>CABLE COLOR</b></div><div><b>94</b></div></div><div><div><b>TERMINATION - SECOND END</b></div><div><b>XXXXX</b></div></div><div><div><b>CABLE LENGTH</b></div><div><b>X</b></div></div></div> |                      |  |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
| <table><tr><th colspan="2">CABLE SIZE</th></tr><tr><td><b>W1</b></td><td>26 AWG (signal)</td></tr><tr><td><b>W2</b></td><td>28 AWG (signal)</td></tr><tr><td><b>W3</b></td><td>30 AWG (signal)</td></tr><tr><td><b>P1</b></td><td>18 AWG (power)</td></tr></table>   |                      | CABLE SIZE   |  | <b>W1</b>   | 26 AWG (signal) | <b>W2</b>  | 28 AWG (signal)      | <b>W3</b>                | 30 AWG (signal)      | <b>P1</b> | 18 AWG (power) | <table><tr><th colspan="2">CABLE COLOR</th></tr><tr><td><b>94</b></td><td>White</td></tr></table> |        | CABLE COLOR |  | <b>94</b> | White |
| CABLE SIZE   |                      |  |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
| <b>W1</b>  | 26 AWG (signal)      |  |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
| <b>W2</b>  | 28 AWG (signal)      |  |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
| <b>W3</b>  | 30 AWG (signal)      |  |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
| <b>P1</b>  | 18 AWG (power)       |  |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
| CABLE COLOR  |                      |  |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
| <b>94</b>  | White                |  |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
| <table><tr><th colspan="2">GENDER - FIRST END</th></tr><tr><td><b>F</b></td><td>Female</td></tr></table>   |                      | GENDER - FIRST END   |  | <b>F</b>    | Female          | <table><tr><th colspan="2">TERMINATION - SECOND END</th></tr><tr><td><b>L</b></td><td>Loose cut end</td></tr><tr><td><b>F</b></td><td>Female</td></tr></table> |                      | TERMINATION - SECOND END |                      | <b>L</b>  | Loose cut end  | <b>F</b>  | Female |             |  |           |       |
| GENDER - FIRST END   |                      |  |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
| <b>F</b>   | Female               |  |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
| TERMINATION - SECOND END   |                      |  |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
| <b>L</b>   | Loose cut end        |  |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
| <b>F</b>   | Female               |  |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
| <table><tr><th colspan="2">CABLE LENGTH</th></tr><tr><td><b>0150</b></td><td>150mm</td></tr><tr><td><b>0300</b></td><td>300mm (double-ended)</td></tr><tr><td><b>0450</b></td><td>450mm (single-ended)</td></tr></table>   |                      | CABLE LENGTH   |  | <b>0150</b> | 150mm           | <b>0300</b>  | 300mm (double-ended) | <b>0450</b>              | 450mm (single-ended) |           |                |   |        |             |  |           |       |
| CABLE LENGTH   |                      |  |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
| <b>0150</b>  | 150mm                |  |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
| <b>0300</b>  | 300mm (double-ended) |  |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |
| <b>0450</b>  | 450mm (single-ended) |  |  |             |                 |  |                      |                          |                      |           |                |   |        |             |  |           |       |

All dimensions in mm.

Patent Published



# Gecko-MT Connectors

## Female Cable Assemblies

- Ready-made cable assemblies, backpotted for added strain relief.
- 4-finger Beryllium Copper contacts.
- No. 1 position identified on housing.
- Constructed with Contact 1 to Contact 1, Contact A to Contact A, etc.



FEMALE SINGLE ENDED

FEMALE - FEMALE

HOW TO ORDER

G125 - F CX 08 FX - XBXB - XXXX - XX

SERIES CODE

GENDER - FIRST END

CABLE SIZE (SIGNAL)

SCREW-LOK

TERMINATION - SECOND END

CABLE LENGTH

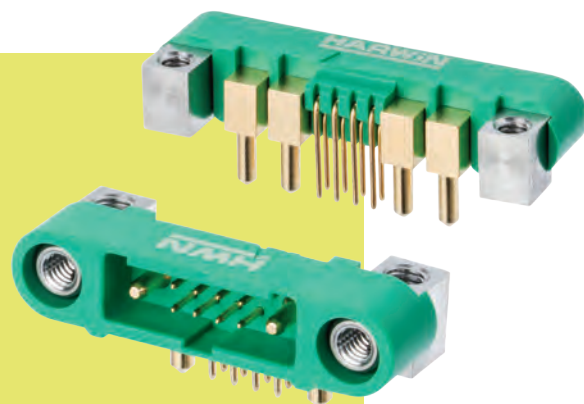
POWER CONTACTS

All dimensions in mm. Patent Published

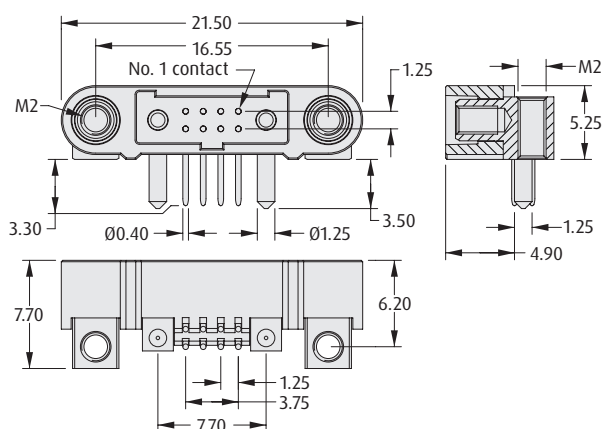
# Gecko-MT Connectors

## Male Horizontal Throughboard

- ❖ 2A current rating for signal contacts, 10A for power contacts.
- ❖ Polarized housing with 3 keyways.
- ❖ Stainless steel screw fixing to mate with floating screw-loks on female connectors, also with board mount thread.
- ❖ Order bolts for board-mount separately.
- ❖ If mating to a female cable connector, ensure the front face of this connector is level to the PCB edge, or over. Check Technical Drawing for details.

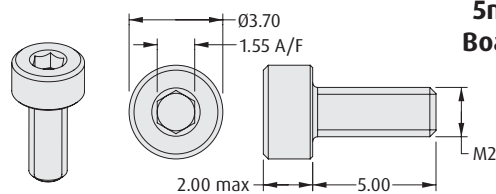


**1+8+1**



**REQUIRED HARDWARE**

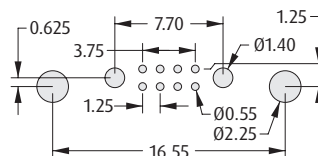
Order separately from connector



**5mm Hex Socket  
Board Mount Bolt**

**ORDER CODE**

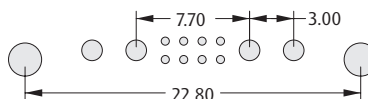
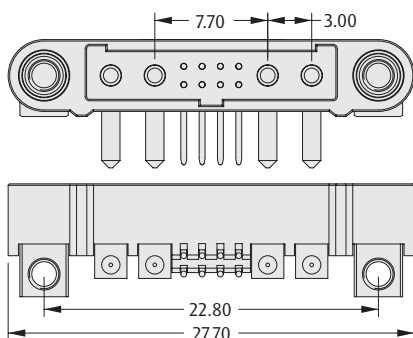
**G125-4520000B**



Recommended PC Board Pattern

**2+8+2**

All other dimensions as 1+8+1



Recommended PC Board Pattern

## HOW TO ORDER

**G125 - MH1 08 05 M4 - XAD XAD P**

**SERIES CODE**

**TOTAL NO. OF SIGNAL CONTACTS**

**08**

**SCREW-LOK**

**M4** With Board Mount

**PACKAGING**

**P**

Tape & Reel strips

**POWER CONTACTS**

**1AD1AD**

1+8+1 Configuration

**2AD2AD**

2+8+2 Configuration

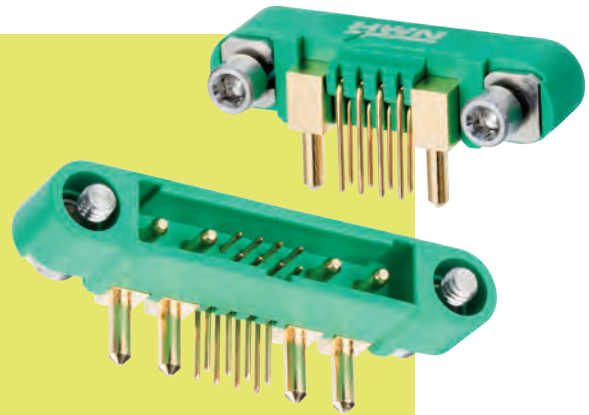
All dimensions in mm.

Patent Published

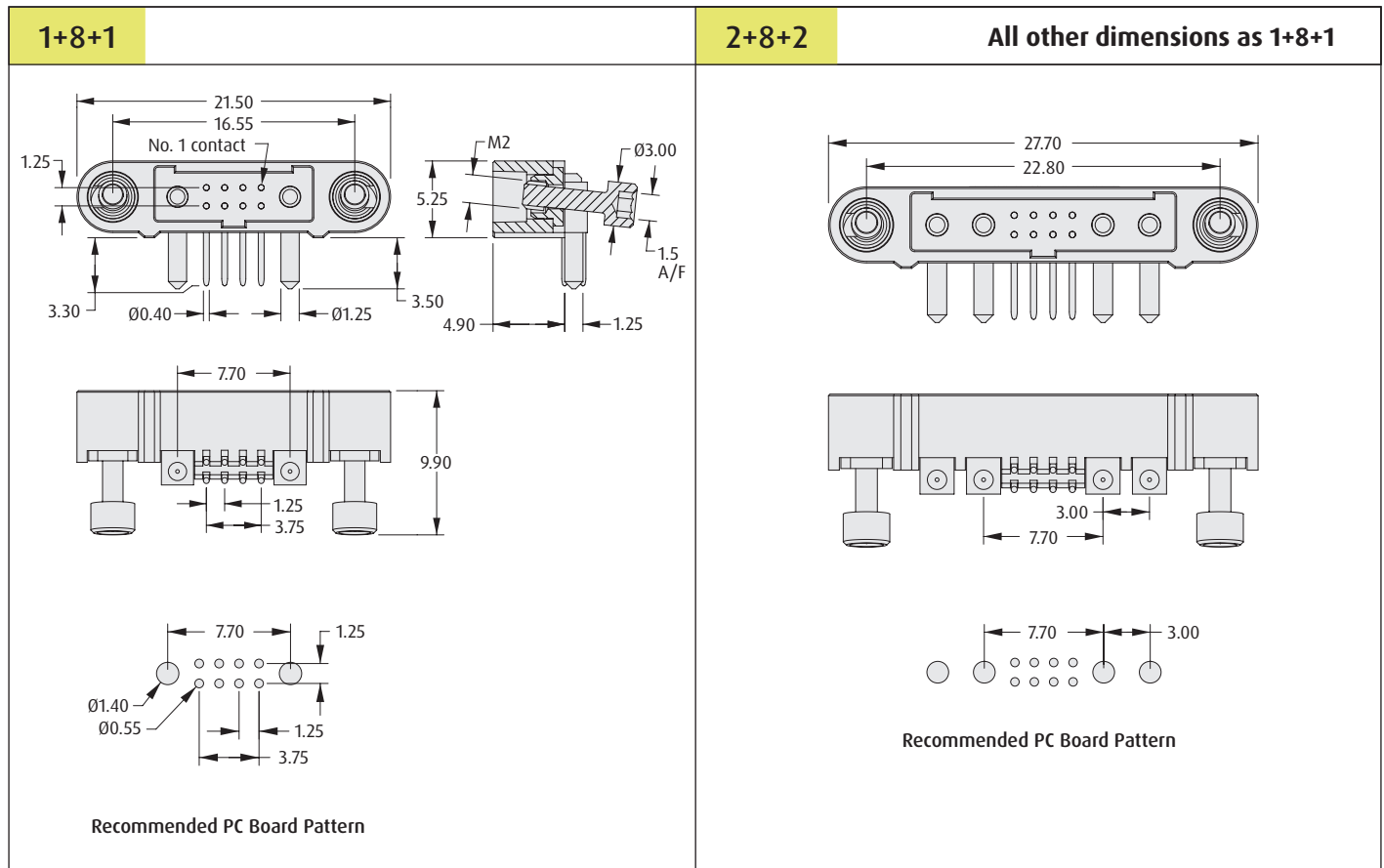
# Gecko-MT Connectors

## Male Horizontal Throughboard – Reverse Fix

- Reverse fix screw-lok, where the male connector has the floating screw.
- 2A current rating for signal contacts, 10A for power contacts.
- Polarized housing with 3 keyways.
- If mating to a female cable connector, ensure the front face of this connector is level to the PCB edge, or over. Check Technical Drawing for details.



GECKO-MT



### HOW TO ORDER

**G125 - MH1 08 05 M3 - XADXAD P**

**SERIES CODE**

**TOTAL NO. OF SIGNAL CONTACTS**

**08**

**SCREW-LOK**

**M3** Reverse Fix Floating Hex Socket

**PACKAGING**

**P** Tape & Reel strips

**POWER CONTACTS**

**1AD1AD** 1+8+1 Configuration

**2AD2AD** 2+8+2 Configuration

All dimensions in mm.

Patent Published

# Gecko-MT Connectors

## Male Cable Housings

- ❖ Features potting wall for backpotting to give extra security.
- ❖ No. 1 position identified on housing.
- ❖ Stainless steel screw fixing to mate with floating screw-loks on female connectors.
- ❖ Compatible with metal backshells.



| 1+8+1 | 2+8+2 | All other dimensions as 1+8+1 |
|-------|-------|-------------------------------|
|       |       |                               |

## TOOLS

**Recommended Crimp Tools** – Z125-900 (signal), Z125-903 (power)

**Positioner** – Z125-901 (signal), Z125-904 (power)

**Contact Insertion/Removal Tool** – Z125-902 (signal), Z125-905 (power)

- ❖ Male contacts shown on a following page.
- ❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

## HOW TO ORDER

**G125 - 32496 M1 - 0X - 08 - 0X**

**SERIES CODE**

**SCREW-LOK**

**M1** Internal Thread

**NO. OF CONTACTS**

|                 |                     |
|-----------------|---------------------|
| <b>01-08-01</b> | 1+8+1 Configuration |
| <b>02-08-02</b> | 2+8+2 Configuration |

# Gecko-MT Connectors

## Male Cable Housings – Panel Mount

- ❖ Features potting wall for backpotting to give extra security.
- ❖ No. 1 position identified on housing.
- ❖ Stainless steel screw fixing to mate with floating screw-loks on female connectors.
- ❖ Order nuts for panel mount separately - see bottom of page.



GECKO-MT

| 1+8+1 | 2+8+2 | All other dimensions as 1+8+1 |
|-------|-------|-------------------------------|
|       |       |                               |

### TOOLS

**Recommended Crimp Tools** – Z125-900 (signal), Z125-903 (power)  
**Positioner** – Z125-901 (signal), Z125-904 (power)  
**Contact Insertion/Removal Tool** – Z125-902 (signal), Z125-905 (power)

- ❖ Male contacts shown on a following page.
- ❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### HOW TO ORDER

**G125 - 32496 M2 - 0X - 08 - 0X**

#### SERIES CODE

#### SCREW-LOK

**M2** With 5.2mm Panel Mount stud

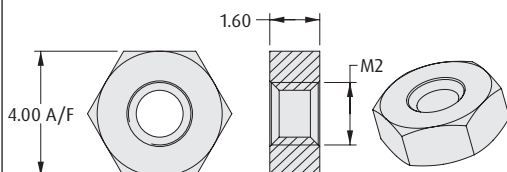
#### NO. OF CONTACTS

|                 |                     |
|-----------------|---------------------|
| <b>01-08-01</b> | 1+8+1 Configuration |
| <b>02-08-02</b> | 2+8+2 Configuration |

### REQUIRED HARDWARE

Order separately from connector

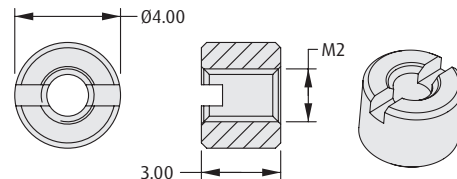
#### Hexagonal Board Mount Nut



#### ORDER CODE

**G125-45000008**

#### Slotted Board Mount Nut



#### ORDER CODE

**G125-45100008**

All dimensions in mm.

Patent Published

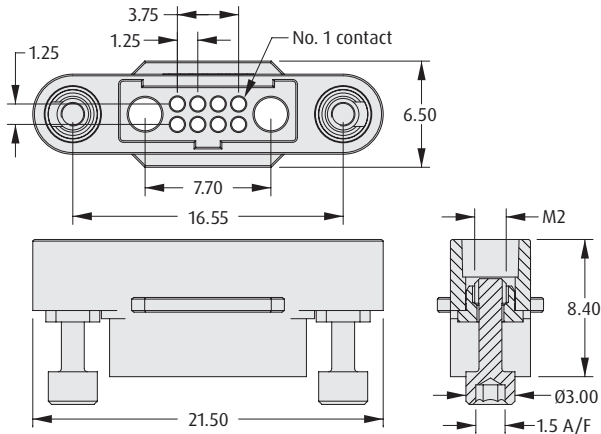
# Gecko-MT Connectors

## Male Cable Housings – Reverse Fix

- ❖ Reverse fix floating screw-lok suitable for board-to-cable applications, where the female connector is located on the PCB.
- ❖ Features potting wall for backpotting to give extra security.
- ❖ No. 1 position identified on housing.

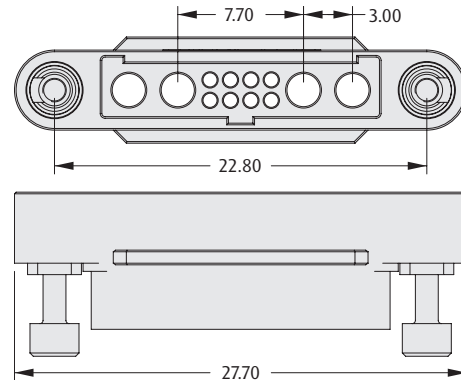


### 1+8+1



### 2+8+2

All other dimensions as 1+8+1



## TOOLS

**Recommended Crimp Tools** – Z125-900 (signal), Z125-903 (power)

**Positioner** – Z125-901 (signal), Z125-904 (power)

**Contact Insertion/Removal Tool** – Z125-902 (signal), Z125-905 (power)

- ❖ Male contacts shown on a following page.
- ❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

## HOW TO ORDER

**G125 - 32496 M3 - 0X - 08 - 0X**

**SERIES CODE**

**SCREW-LOK**

**M3** Reverse Fix Floating Hex Socket

**NO. OF CONTACTS**

|                 |                     |
|-----------------|---------------------|
| <b>01-08-01</b> | 1+8+1 Configuration |
| <b>02-08-02</b> | 2+8+2 Configuration |

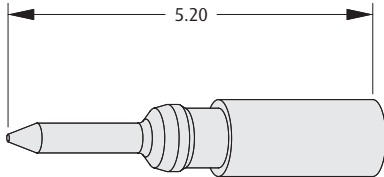
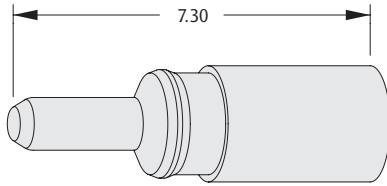
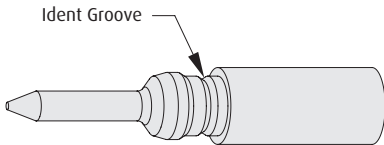
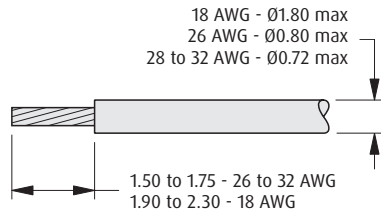
# Gecko-MT Connectors

## Male Crimp Contacts

- ❖ Crimp barrel meets all crimp guidelines and standards.
- ❖ Instruction video online at [www.harwin.com/harwintv](http://www.harwin.com/harwintv).



GECKO-MT

| CONTACTS  |                              | POWER CONTACT  |                           |     |                              |     |                          |  |  |
|---|------------------------------|--|---------------------------|-----|------------------------------|-----|--------------------------|--|--|
| <div>26 AWG</div>    |                              | <div>18 AWG</div>    |                           |     |                              |     |                          |  |  |
| <div>28 – 32 AWG</div>   |                              | <div>WIRE STRIPPING DETAILS</div>  <div>18 AWG - Ø1.80 max<br/>26 AWG - Ø0.80 max<br/>28 to 32 AWG - Ø0.72 max</div> <div>1.50 to 1.75 - 26 to 32 AWG<br/>1.90 to 2.30 - 18 AWG</div> |                           |     |                              |     |                          |  |  |
| TOOLS   |                              |  |                           |     |                              |     |                          |  |  |
| <div>Recommended Crimp Tools</div> <div>Z125-900 (signal), Z125-903 (power)</div> <div>Positioner</div> <div>Z125-901 (signal), Z125-904 (power)</div> <div>Contact Insertion/Removal Tool</div> <div>Z125-902 (signal), Z125-905 (power)</div> |                              | <div>❖ Male housings shown on previous pages.</div> <div>❖ Pre-cabled contacts shown on following page.</div> <div>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</div>                                 |                           |     |                              |     |                          |  |  |
| HOW TO ORDER  |                              |  |                           |     |                              |     |                          |  |  |
| <div>G125 - 1XX 00 05</div>   |                              |  |                           |     |                              |     |                          |  |  |
| <div>SERIES CODE</div>  |                              | <div>FINISH</div> <div>05Gold</div>  |                           |     |                              |     |                          |  |  |
| <div>TYPE</div> <table><tr><td>101</td><td>Male 26 AWG crimp contact</td></tr><tr><td>102</td><td>Male 28-32 AWG crimp contact</td></tr><tr><td>150</td><td>Male power crimp contact</td></tr></table>  |                              | 101  | Male 26 AWG crimp contact | 102 | Male 28-32 AWG crimp contact | 150 | Male power crimp contact |  |  |
| 101   | Male 26 AWG crimp contact    |  |                           |     |                              |     |                          |  |  |
| 102   | Male 28-32 AWG crimp contact |  |                           |     |                              |     |                          |  |  |
| 150   | Male power crimp contact     |  |                           |     |                              |     |                          |  |  |

All dimensions in mm.

Patent Published

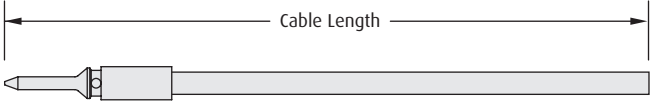
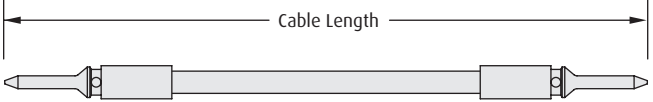
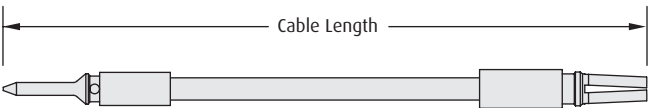


# Gecko-MT Connectors

## Male Crimp Contacts – Pre-Crimped Wires

- ❖ Ready for assembling to housing.
- ❖ Crimp barrel meets all crimp guidelines and standards.



|   |  |   |  |
|---|--|---|--|
| MALE SINGLE ENDED   |  | MALE – MALE   |  |
|    |  |   |  |
| MALE – FEMALE   |  | TOOLS   |  |
|    |  | <p><b>Contact Insertion/Removal Tool</b> – Z125-902 (signal), Z125-905 (power)</p> <ul style="list-style-type: none"><li>❖ Male crimp housings and loose contacts shown on previous pages.</li><li>❖ Full cable assemblies shown on following page.</li><li>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</li></ul> |  |
| HOW TO ORDER  |  |   |  |
| <div><div><div><div>SERIES CODE</div><div>G125 – M XX XXXX X 94</div></div><div><div>GENDER – FIRST END</div><div>M Male</div></div><div><div>CABLE SIZE</div><div><div>W126 AWG (signal)</div><div>W228 AWG (signal)</div><div>W330 AWG (signal)</div><div>P118 AWG (power)</div></div></div></div><div><div><div>CABLE COLOR</div><div>94White</div></div><div><div>TERMINATION – SECOND END</div><div><div>LLoose cut end</div><div>FFemale</div><div>MMale</div></div><div><div>CABLE LENGTH</div><div><div>0150150mm</div><div>0300300mm (double-ended)</div><div>0450450mm (single-ended)</div></div></div></div></div></div> |  |   |  |

All dimensions in mm.

Patent Published

# Gecko-MT Connectors

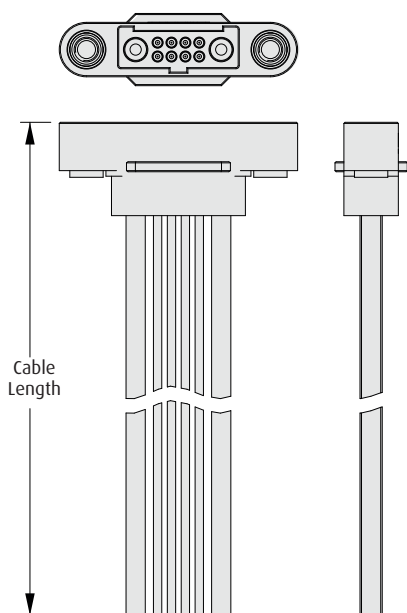
## Male Cable Assemblies

- Ready-made cable assemblies, backpotted for added strain relief.
- 4-finger Beryllium Copper contacts.
- No. 1 position identified on housing.
- Constructed with Contact 1 to Contact 1, Contact A to Contact A, etc.
- Male-to-male cable length (not shown) is measured in the same style as male-to-female.

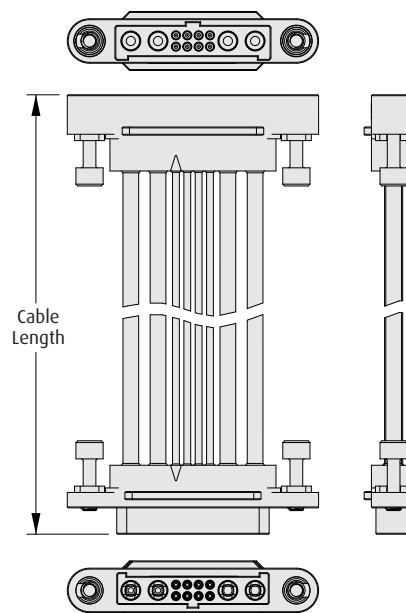


GECKO-MT

### MALE SINGLE ENDED



### MALE-FEMALE



### HOW TO ORDER

**G125 - M CX 08 MX - XDXD - XXXX - XX**

#### SERIES CODE

#### GENDER - FIRST END

**M** Male

#### CABLE SIZE (SIGNAL)

**C1** 26 AWG

**C2** 28 AWG

#### SCREW-LOK

**M1** Internal Thread

**M3** Floating Hex Socket (Reverse Fix)

#### TERMINATION - SECOND END

**L** Loose cut end

**F1** Female with Floating Hex Socket

**F2** Female with Internal Thread (Reverse Fix)

**M1 or M3** Male connector (same as First End)

#### CABLE LENGTH

**XXXX** XXXXmm

#### POWER CONTACTS

**1D1D** 1+8+1 configuration

**2D2D** 2+8+2 configuration

All dimensions in mm.

Patent Published

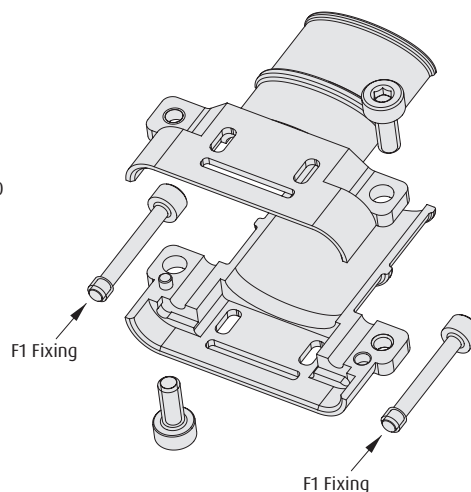
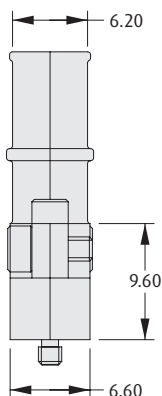
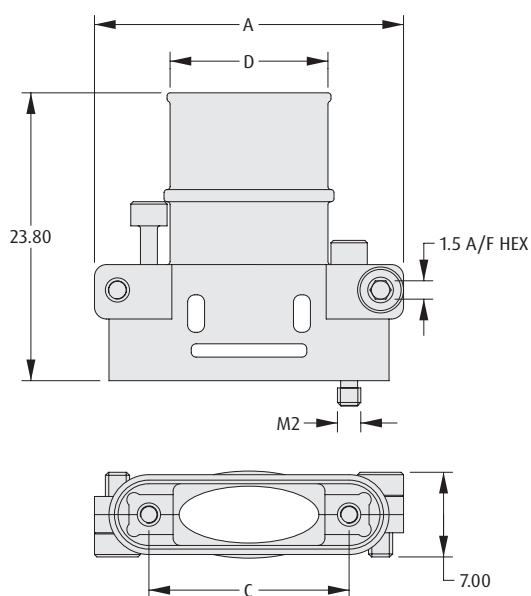
# Gecko-MT Connectors

## Metal Hood / Backshell - Cable

- ❖ Supplied as a kit - includes 2 metal hood halves, and short screws & nuts to join the two hood halves together (nuts not illustrated).
- ❖ Use 00 fixing kit on male housings G125-32496M1-xx-08-xx for standard gender fixings.
- ❖ F1 kit includes extended fixing screws - use with female housings G125-2249600-xx-08-xx.
- ❖ Tie-band can be used to attach external braid, to construct a shielded cable assembly.



### HOOD / BACKSHELL



### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 16.8$  |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 7.8$   |
| <b>D</b> | $B + 4.3$   |

### HOW TO ORDER

**G125 - 964 XX XX**

#### SERIES CODE

#### SCREW-LOK

|           |                                       |
|-----------|---------------------------------------|
| <b>00</b> | Use with G125-32496M1 male housings   |
| <b>F1</b> | Use with G125-2249600 female housings |

#### TOTAL NO. OF CONTACTS

|           |                              |
|-----------|------------------------------|
| <b>16</b> | Use with 1+8+1 configuration |
| <b>26</b> | Use with 2+8+2 configuration |

### BAND-IT TIE

- ❖ For fixing braid to rear collar (requires Tie Dex II A30199 Micro Band tool).



#### ORDER CODE

|                    |                  |
|--------------------|------------------|
| <b>M80-9470000</b> | Length = 206.8mm |
| <b>M80-9480000</b> | Length = 362.0mm |

All dimensions in mm.

Patent Published

# Gecko-MT Connectors

## Metal Hood / Backshell - Board Mount or Panel Mount

- ❖ Use with G125-FV10805F3-xABxAB connectors in a PCB mounted application.
- ❖ Use with G125-22496F3-xx-08-xx housings for a panel mount application.

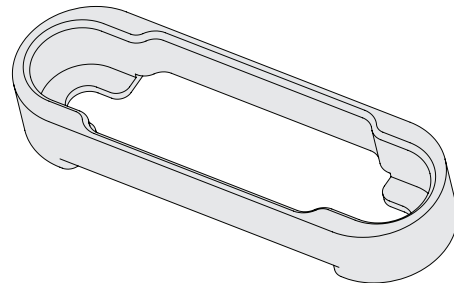
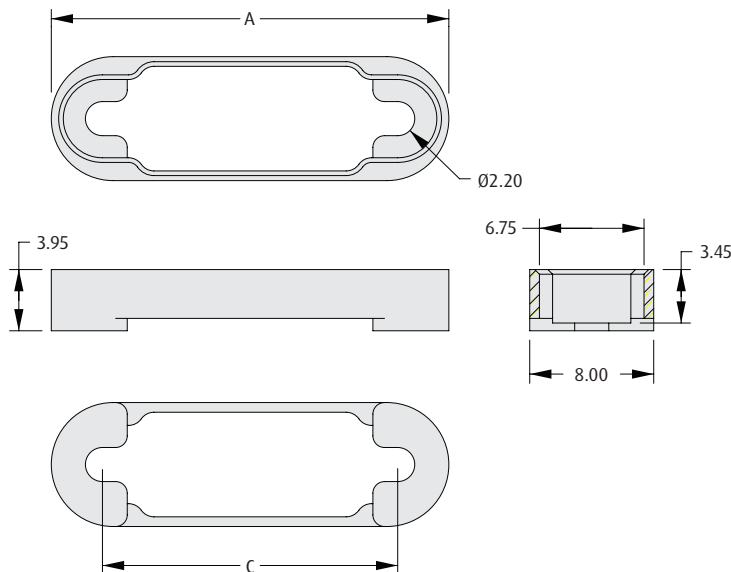


GECKO-MT

### HOOD / BACKSHELL

### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 14.4$  |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 7.8$   |



### HOW TO ORDER

**G125 - 960 XX 02**

**SERIES CODE**

**TOTAL NO. OF CONTACTS**

|           |                              |
|-----------|------------------------------|
| <b>16</b> | Use with 1+8+1 configuration |
| <b>26</b> | Use with 2+8+2 configuration |

All dimensions in mm.

Patent Published

# Gecko-SL Specifications

## Materials

|                  |   |
|------------------|---|
| Housings:        | Glass-filled High Temperature Thermoplastic UL94V-0                 |
| Female contacts: | Beryllium Copper  |
| Male contacts    |   |
| PCB Connector:   | Phosphor Bronze   |
| Crimp:           | Brass   |
| Finish:          | 0.2 – 0.3µm (8 – 12µ") Gold,<br>over 1.5 – 2.0µm (60 – 80µ") Nickel |
| Screw-Loks:      | Stainless Steel   |

## Electrical

|                                   |                     |
|-----------------------------------|---------------------|
| <b>Current</b>                    |                     |
| Individual contacts in isolation: | 2.8A max (At 25°C)  |
| All contacts simultaneously:      | 2.0A max (At 25°C)  |
| <b>Working voltage</b>            |                     |
| At sea level 1006 mbar:           | 450V DC or AC peak  |
| At altitude 44 mbar:              | 250V DC or AC peak  |
| <b>Voltage proof</b>              |                     |
| At sea level 1013 mbar:           | 600V DC or AC peak  |
| <b>Contact resistance</b>         |                     |
| Initial:                          | 20mΩ max            |
| After conditioning:               | 25mΩ max            |
| <b>Insulation resistance</b>      |                     |
| Initial:                          | 10GΩ min at 500V DC |
| After conditioning:               | >1GΩ min at 500V DC |

## Mechanical

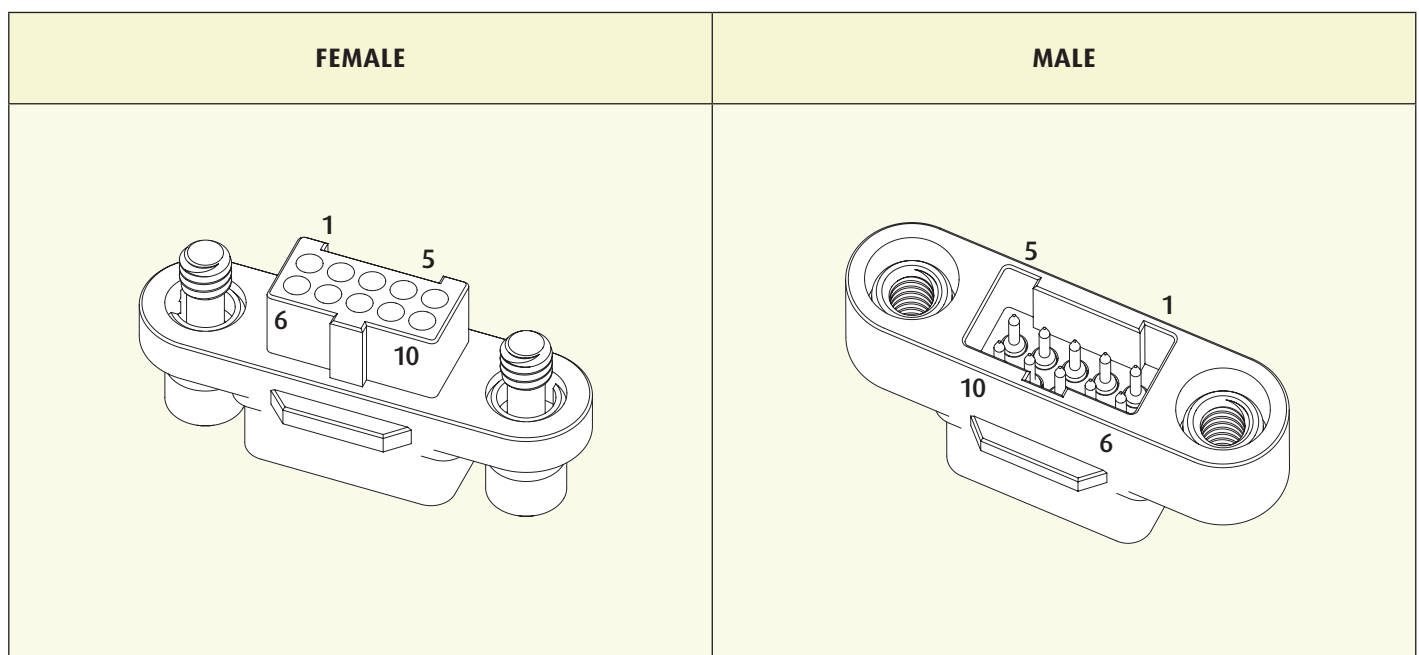
|   |                 |
|---|-----------------|
| Contact durability:                     | 1000 operations |
| <b>Mating forces (per contact pair)</b> |                 |
| Insertion force:                        | 2.8N max        |
| Withdrawal force:                       | 0.2N min        |
| Contact retention in housing:           | 6N min          |

## Environmental

|                               |  |
|-------------------------------|--|
| Environmental classification: | 65/150/56 days at 93% RH   |
| Operating temperature:        | -65°C to +150°C  |
| *Vibration sensitivity:       | 10Hz to 2000Hz, 1.5mm,<br>198m/s <sup>2</sup> (20G) duration 6 hours                             |
| *Bump severity:               | 390m/s <sup>2</sup> (40G), 4000 ±10 bumps  |
| *Shock severity:              | 981m/s <sup>2</sup> (100G) for 6ms in Z axis<br>490m/s <sup>2</sup> (50G) for 11ms in X & Y axes |
| *Acceleration severity:       | 490m/s <sup>2</sup> (50G)  |

\* Tested with latched connectors.

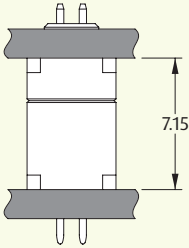
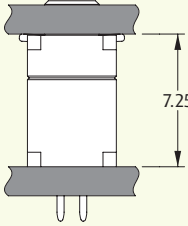
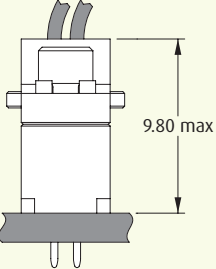
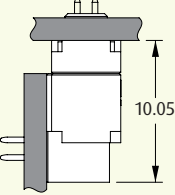
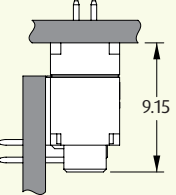
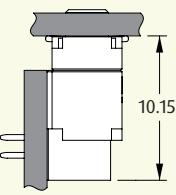
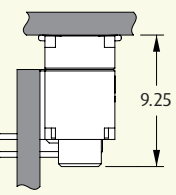
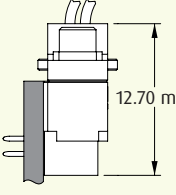
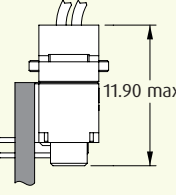
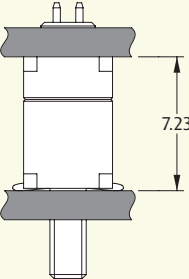
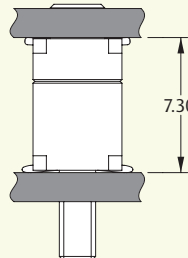
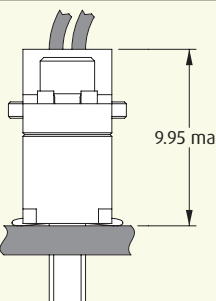
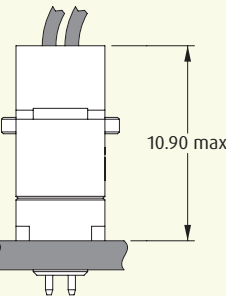
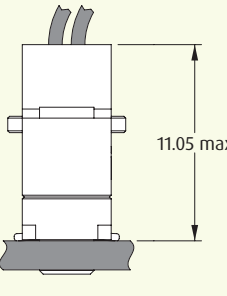
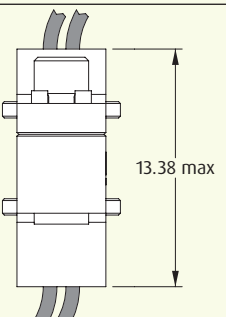
# Pin Numbering



All dimensions in mm.

Patent Published

# Gecko-SL Mating Profiles

|      |                         | FEMALE   |   |   |
|------|-------------------------|--|---|---|
|      |                         | VERTICAL THROUGHBOARD  | VERTICAL SMT  | CABLE   |
| MALE | VERTICAL THROUGHBOARD   |  7.15   |  7.25   |  9.80 max  |
|      | HORIZONTAL THROUGHBOARD |  10.05<br> 9.15<br>Standard      Reverse Fix |  10.15<br> 9.25<br>Standard      Reverse Fix |  12.70 max<br> 11.90 max<br>Standard      Reverse Fix |
|      | VERTICAL SMT            |  7.23   |  7.30   |  9.95 max  |
|      | CABLE                   |  10.90 max  |  11.05 max  |  13.38 max   |

GECKO-SL

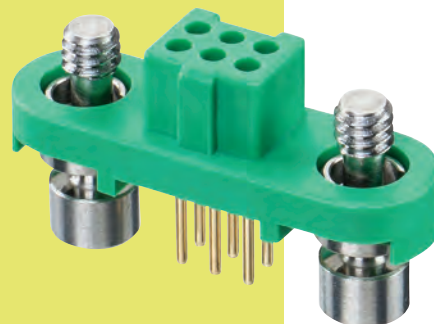
All dimensions in mm.

Patent Published

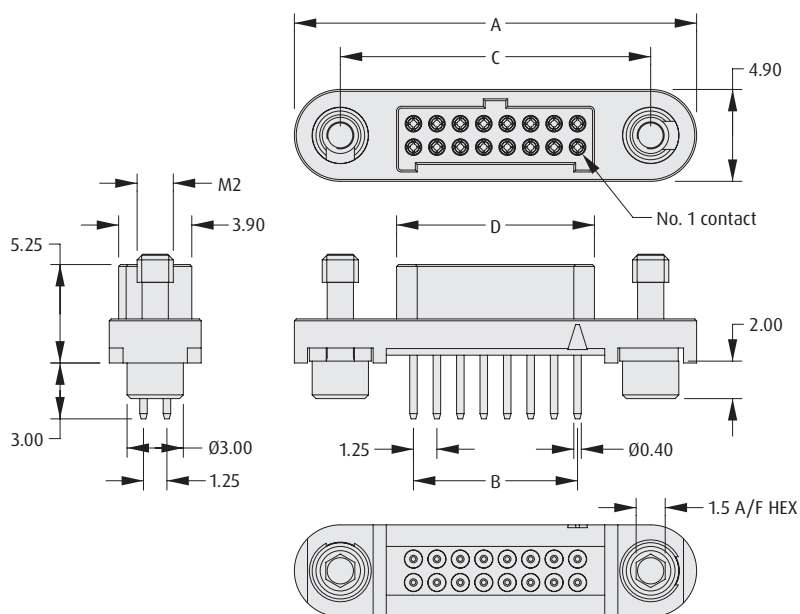
# Gecko-SL Connectors

## Female Throughboard

- ❖ 4-finger Beryllium Copper contact.
- ❖ Stainless steel screw fixing to mate with applicable male connector.
- ❖ Positive keyway polarization features.
- ❖ 2A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +150°C.

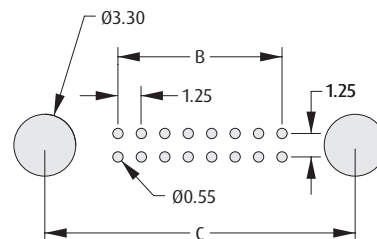


### 3mm THROUGHBOARD



### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 12.7$  |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 7.8$   |
| <b>D</b> | $B + 1.8$   |



Recommended PC Board Pattern

### HOW TO ORDER

**G125 - F V1 XX 05 F1 X**

#### SERIES CODE

#### TYPE

**V1** 3mm Throughboard

#### PACKAGING

|          |                    |
|----------|--------------------|
| <b>R</b> | Tape & Reeled      |
| <b>P</b> | Tape & Reel strips |

#### FINISH

**05** Gold

#### TOTAL NO. OF CONTACTS

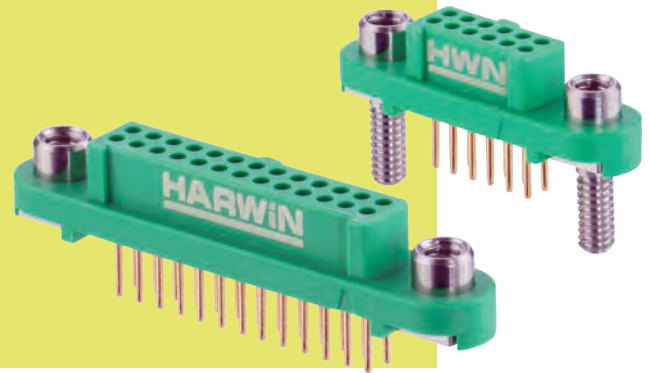
06, 10, 12, 16, 20, 26, 34, 50



# Gecko-SL Connectors

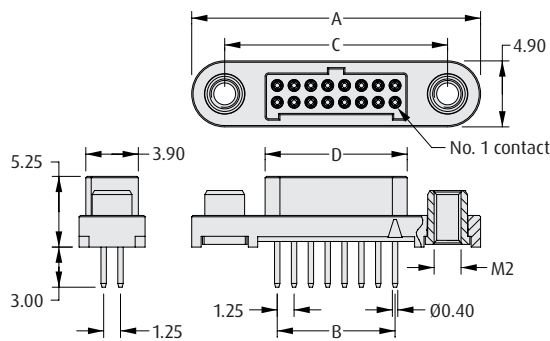
## Female Throughboard - Reverse Fix

- ❖ 4-finger Beryllium Copper contact.
- ❖ Stainless steel screw fixing to mate with applicable male connector.
- ❖ Reverse fix screw-lok suitable for board-to-cable applications, where the female connector is located on the PCB.
- ❖ Order nuts for board-mount separately - see bottom of page.
- ❖ F3 Screw-Lok is compatible with board mount metal backshell G125-960 range.



GECKO-SL

### WITHOUT BOARD MOUNT

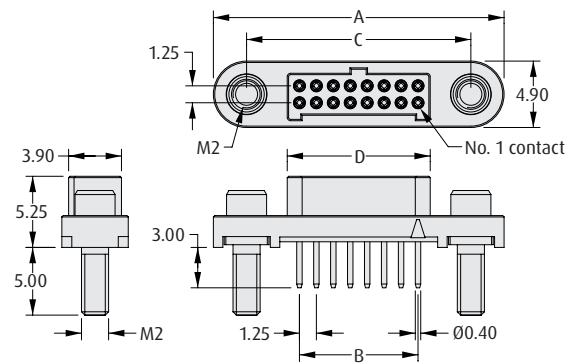


Recommended PC Board Pattern

#### CALCULATION

|   |                                     |
|---|-------------------------------------|
| A | B + 12.7                            |
| B | 0.625 x (Total No. of contacts - 2) |
| C | B + 7.8                             |
| D | B + 1.8                             |

### WITH BOARD MOUNT



Recommended PC Board Pattern

### HOW TO ORDER

**G125 - F V1 XX 05 FX X**

#### SERIES CODE

#### TYPE

**V1** 3mm Throughboard

#### TOTAL NO. OF CONTACTS

**06, 10, 12, 16, 20, 26, 34, 50**

#### PACKAGING

|          |                    |
|----------|--------------------|
| <b>R</b> | Tape & Reeled      |
| <b>P</b> | Tape & Reel strips |

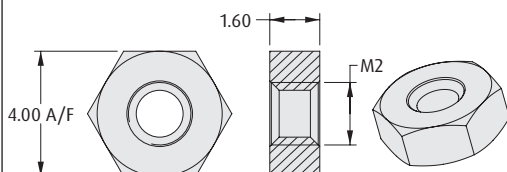
#### SCREW-LOK

|           |                           |
|-----------|---------------------------|
| <b>F2</b> | Internal Thread           |
| <b>F3</b> | With 5mm Board Mount stud |

### REQUIRED HARDWARE

Order separately from connector

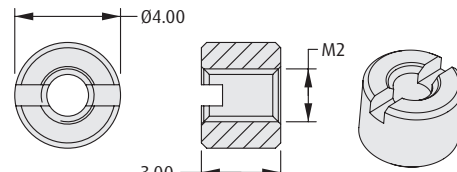
#### Hexagonal Board Mount Nut



#### ORDER CODE

**G125-4500000B**

#### Slotted Board Mount Nut



#### ORDER CODE

**G125-4510000B**

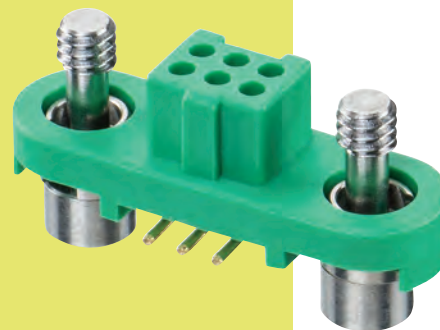
All dimensions in mm.

Patent Published

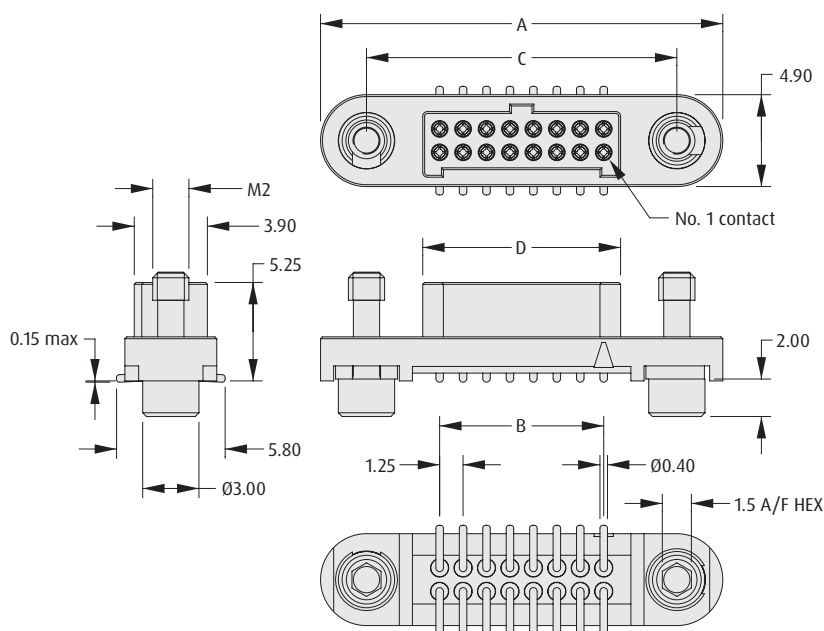
# Gecko-SL Connectors

## Female Surface Mount

- ❖ 4-finger Beryllium Copper contact.
- ❖ Stainless steel screw fixing to mate with applicable male connector.
- ❖ Positive keyway polarization features.
- ❖ 2A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +150°C.
- ❖ Available in Tape and Reel Packaging, with Pick and Place cap.

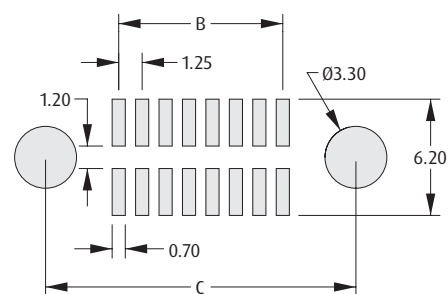


### SURFACE MOUNT



### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 12.7$  |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 7.8$   |
| <b>D</b> | $B + 1.8$   |



Recommended PC Board Pattern

### HOW TO ORDER

**G125 - F S1 XX 05 F1 X**

#### SERIES CODE

#### TYPE

**S1** Surface Mount

#### PACKAGING

|          |                    |
|----------|--------------------|
| <b>R</b> | Tape & Reeled      |
| <b>P</b> | Tape & Reel strips |

#### FINISH

**05** Gold

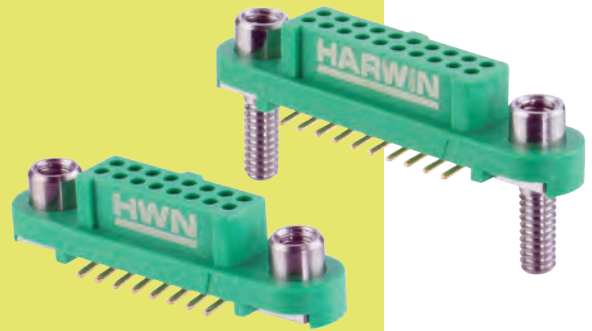
#### TOTAL NO. OF CONTACTS

**06, 10, 12, 16, 20, 26, 34, 50**

# Gecko-SL Connectors

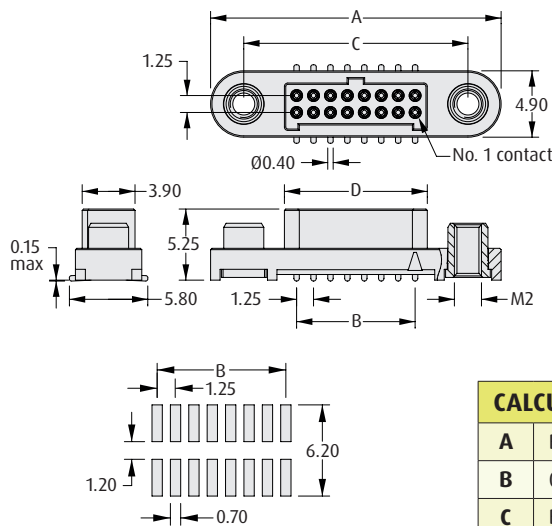
## Female Surface Mount - Reverse Fix

- ❖ Stainless steel screw fixing to mate with applicable male connector.
- ❖ Reverse fix screw-lok suitable for board-to-cable applications, where the female connector is located on the PCB.
- ❖ Order nuts for board-mount separately - see bottom of page.
- ❖ Available in Tape and Reel Packaging, with Pick and Place cap.



GECKO-SL

### WITHOUT BOARD MOUNT

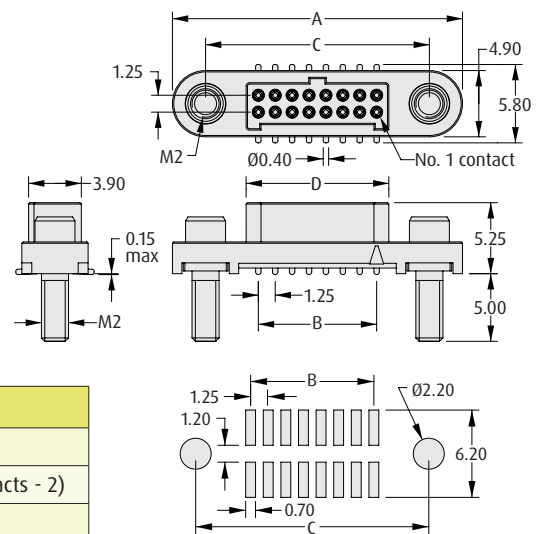


Recommended PC Board Pattern

#### CALCULATION

|   |                                     |
|---|-------------------------------------|
| A | B + 12.7                            |
| B | 0.625 x (Total No. of contacts - 2) |
| C | B + 7.8                             |
| D | B + 1.8                             |

### WITH BOARD MOUNT



Recommended PC Board Pattern

### HOW TO ORDER

**G125 - F S1 XX 05 FX X**

#### SERIES CODE

#### TYPE

**S1** Surface Mount

#### TOTAL NO. OF CONTACTS

**06, 10, 12, 16, 20, 26, 34, 50**

#### PACKAGING

|          |                    |
|----------|--------------------|
| <b>R</b> | Tape & Reeled      |
| <b>P</b> | Tape & Reel strips |

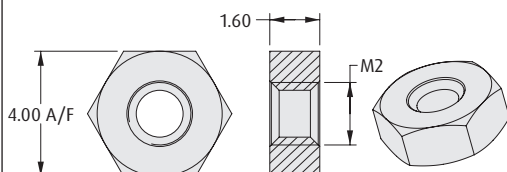
#### SCREW-LOK

|           |                           |
|-----------|---------------------------|
| <b>F2</b> | Internal Thread           |
| <b>F3</b> | With 5mm Board Mount stud |

### REQUIRED HARDWARE

Order separately from connector

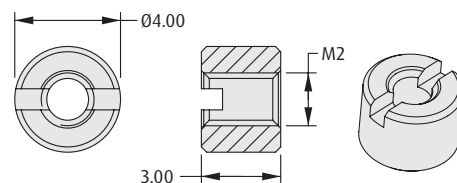
#### Hexagonal Board Mount Nut



#### ORDER CODE

**G125-4500000B**

#### Slotted Board Mount Nut



#### ORDER CODE

**G125-4510000B**

All dimensions in mm.

Patent Published

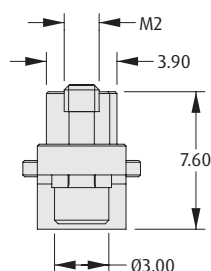
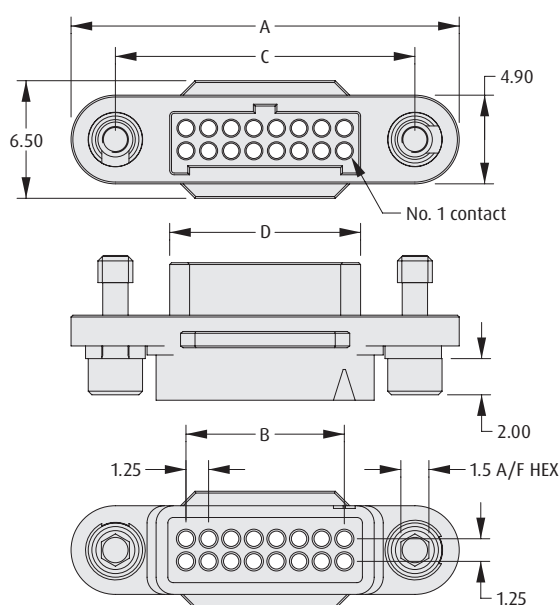
# Gecko-SL Connectors

## Female Crimp Housings

- Features 2.5mm potting wall for extra security.
- No. 1 position identified on housing.
- 3 polarizing points on each housing prevent mis-mating.
- Use 00 Screw-Lok version (without fixings) with G125-964xxF1 metal hood / backshell, shown on a following page.



### FEMALE



### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 12.7$  |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 7.8$   |
| <b>D</b> | $B + 1.8$   |

### TOOLS

**Recommended Crimp Tool** - Z125-900

**Positioner** - Z125-901

**Contact Insertion/Removal Tool** - Z125-902

Female contacts shown on a following page.

Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### HOW TO ORDER

|                                       |                                   | <b>G125</b> | <b>-</b> | <b>224</b> | <b>XX</b> | <b>96</b> | <b>XX</b> |   |   |           |           |           |                             |           |                                   |
|---------------------------------------|-----------------------------------|-------------|----------|------------|-----------|-----------|-----------|---|---|-----------|-----------|-----------|-----------------------------|-----------|-----------------------------------|
| <b>SERIES CODE</b>                    |                                   |             |          |            |           |           |           |   |   |           |           |           |                             |           |                                   |
| <b>TYPE</b>                           |                                   |             |          |            |           |           |           |   |   |           |           |           |                             |           |                                   |
| <b>224</b>                            | Female Housing                    |             |          |            |           |           |           |   |   |           |           |           |                             |           |                                   |
| <b>TOTAL NO. OF CONTACTS</b>          |                                   |             |          |            |           |           |           |   |   |           |           |           |                             |           |                                   |
| <b>06, 10, 12, 16, 20, 26, 34, 50</b> |                                   |             |          |            |           |           |           |   | <table border="1"> <thead> <tr> <th colspan="2">SCREW-LOK</th> </tr> </thead> <tbody> <tr> <td><b>F1</b></td> <td>Floating Hex Socket fixings</td> </tr> <tr> <td><b>00</b></td> <td>No fixings (use with Metal Hoods)</td> </tr> </tbody> </table> | SCREW-LOK |           | <b>F1</b> | Floating Hex Socket fixings | <b>00</b> | No fixings (use with Metal Hoods) |
| SCREW-LOK                             |                                   |             |          |            |           |           |           |   |   |           |           |           |                             |           |                                   |
| <b>F1</b>                             | Floating Hex Socket fixings       |             |          |            |           |           |           |   |   |           |           |           |                             |           |                                   |
| <b>00</b>                             | No fixings (use with Metal Hoods) |             |          |            |           |           |           |   |   |           |           |           |                             |           |                                   |
|                                       |                                   |             |          |            |           |           |           | <table border="1"> <thead> <tr> <th colspan="2">FINISH</th> </tr> </thead> <tbody> <tr> <td><b>96</b></td> <td>Housing</td> </tr> </tbody> </table> | FINISH  |           | <b>96</b> | Housing   |                             |           |                                   |
| FINISH                                |                                   |             |          |            |           |           |           |   |   |           |           |           |                             |           |                                   |
| <b>96</b>                             | Housing                           |             |          |            |           |           |           |   |   |           |           |           |                             |           |                                   |

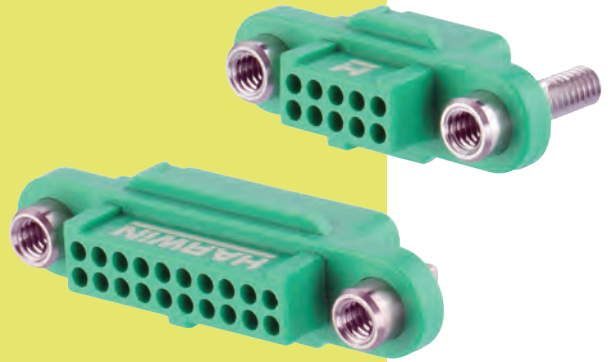
All dimensions in mm.

Patent Published

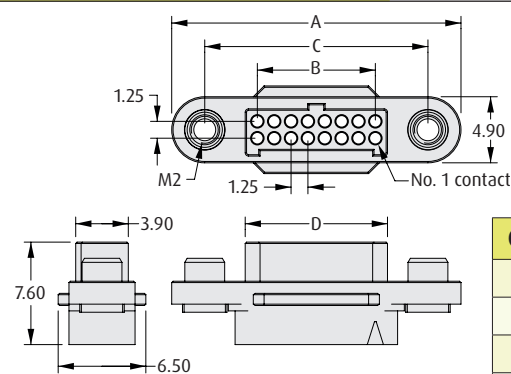
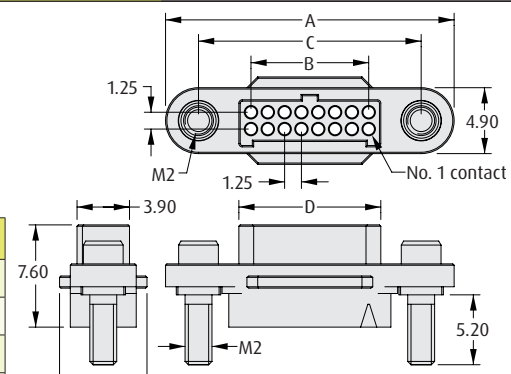
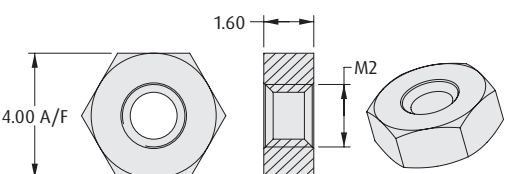
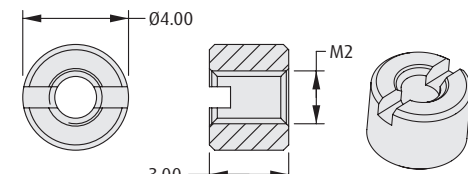
# Gecko-SL Connectors

## Female Crimp Housings - Reverse Fix

- Features 2.5mm potting wall for extra security.
- F3 Screw-Lok is compatible with panel mount metal backshell G125-960 range.
- Stainless steel screw fixing mates to applicable male connector fitted with floating screw-loks.
- Order nuts for panel mount separately - see bottom of page.



GECKO-SL

| WITHOUT PANEL MOUNT   |                                     | WITH PANEL MOUNT   |                                |   |   |            |               |                 |                                     |                             |         |   |         |
|---|-------------------------------------|--|--------------------------------|---|---|------------|---------------|-----------------|-------------------------------------|-----------------------------|---------|---|---------|
|   |                                     |   |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| <table><tr><th colspan="2">CALCULATION</th></tr><tr><td>A</td><td>B + 12.7</td></tr><tr><td>B</td><td>0.625 x (Total No. of contacts - 2)</td></tr><tr><td>C</td><td>B + 7.8</td></tr><tr><td>D</td><td>B + 1.8</td></tr></table> |                                     |  |                                | CALCULATION   |   | A          | B + 12.7      | B               | 0.625 x (Total No. of contacts - 2) | C                           | B + 7.8 | D | B + 1.8 |
| CALCULATION   |                                     |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| A   | B + 12.7                            |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| B   | 0.625 x (Total No. of contacts - 2) |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| C   | B + 7.8                             |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| D   | B + 1.8                             |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| HOW TO ORDER  |                                     |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| <table><tr><th>SERIES CODE</th></tr><tr><td>G125 - 224 XX 96 FX</td></tr></table>   |                                     | SERIES CODE  | G125 - 224 XX 96 FX            | <table><tr><th>SCREW-LOK</th></tr><tr><td>F2</td><td>Internal Thread</td></tr><tr><td>F3</td><td>With 5.2mm Panel Mount stud</td></tr></table>  |   | SCREW-LOK  | F2            | Internal Thread | F3                                  | With 5.2mm Panel Mount stud |         |   |         |
| SERIES CODE   |                                     |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| G125 - 224 XX 96 FX   |                                     |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| SCREW-LOK   |                                     |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| F2  | Internal Thread                     |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| F3  | With 5.2mm Panel Mount stud         |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| <table><tr><th>TYPE</th></tr><tr><td>224</td><td>Female Housing</td></tr></table>   |                                     | TYPE   | 224                            | Female Housing  | <table><tr><th>FINISH</th></tr><tr><td>96</td><td>Housing</td></tr></table> |            | FINISH        | 96              | Housing                             |                             |         |   |         |
| TYPE  |                                     |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| 224   | Female Housing                      |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| FINISH  |                                     |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| 96  | Housing                             |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| <table><tr><th>TOTAL NO. OF CONTACTS</th></tr><tr><td>06, 10, 12, 16, 20, 26, 34, 50</td></tr></table>  |                                     | TOTAL NO. OF CONTACTS  | 06, 10, 12, 16, 20, 26, 34, 50 |   |   |            |               |                 |                                     |                             |         |   |         |
| TOTAL NO. OF CONTACTS   |                                     |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| 06, 10, 12, 16, 20, 26, 34, 50  |                                     |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| TOOLS   |                                     |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| <p><b>Recommended Crimp Tool</b> - Z125-900</p> <p><b>Positioner</b> - Z125-901</p> <p><b>Contact Insertion/Removal Tool</b> - Z125-902</p>   |                                     | <p>Female contacts shown on a following page.</p> <p>Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</p> |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| REQUIRED HARDWARE   |                                     | Order separately from connector  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| <p><b>Hexagonal Board Mount Nut</b></p>  <table><tr><th>ORDER CODE</th></tr><tr><td>G125-4500000B</td></tr></table>                            |                                     | ORDER CODE   | G125-4500000B                  | <p><b>Slotted Board Mount Nut</b></p>  <table><tr><th>ORDER CODE</th></tr><tr><td>G125-4510000B</td></tr></table> |   | ORDER CODE | G125-4510000B |                 |                                     |                             |         |   |         |
| ORDER CODE  |                                     |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| G125-4500000B   |                                     |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| ORDER CODE  |                                     |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |
| G125-4510000B   |                                     |  |                                |   |   |            |               |                 |                                     |                             |         |   |         |

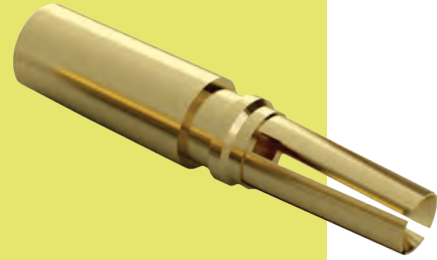
All dimensions in mm.

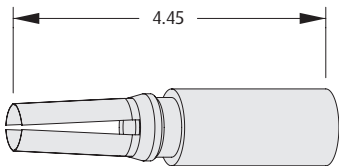
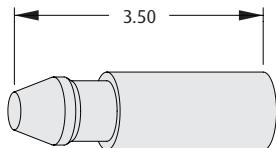
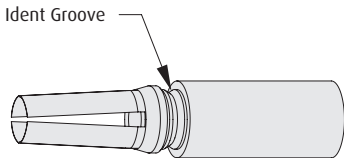
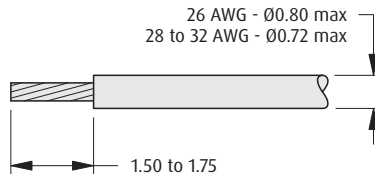
Patent Published

# Gecko-SL Connectors

## Female Crimp Contacts, Dummy Contact

- ❖ 4-finger Beryllium Copper contact on a female connector.
- ❖ Crimp barrel meets all crimp guidelines and standards.
- ❖ 2A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +150°C.
- ❖ Instruction video online at [www.harwin.com/harwintv](http://www.harwin.com/harwintv).
- ❖ Dummy Contact can be used for additional polarization of keying of multiple connectors. Also called Blanking Plug.



| CONTACTS   |                                | DUMMY CONTACT  |  |      |  |     |                             |     |                                |     |                               |    |      |
|--|--------------------------------|--|--|------|--|-----|-----------------------------|-----|--------------------------------|-----|-------------------------------|----|------|
| <div>26 AWG</div> <div></div>   |                                | <div></div>   |  |      |  |     |                             |     |                                |     |                               |    |      |
| <div>28 – 32 AWG</div> <div></div>  |                                | <div>WIRE STRIPPING DETAILS</div> <div></div>  |  |      |  |     |                             |     |                                |     |                               |    |      |
| TOOLS  |                                |  |  |      |  |     |                             |     |                                |     |                               |    |      |
| <div>Recommended Crimp Tool – Z125-900</div> <div>Positioner – Z125-901</div> <div>Contact Insertion/Removal Tool – Z125-902</div>   |                                | <div>❖ Female crimp housings shown on previous pages.</div> <div>❖ Pre-cabled contacts shown on following page.</div> <div>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</div> |  |      |  |     |                             |     |                                |     |                               |    |      |
| HOW TO ORDER   |                                |  |  |      |  |     |                             |     |                                |     |                               |    |      |
| <div><div><div>SERIES CODE</div><div><table><tr><th>TYPE</th><td></td></tr><tr><td>001</td><td>Female 26 AWG crimp contact</td></tr><tr><td>002</td><td>Female 28-32 AWG crimp contact</td></tr><tr><td>020</td><td>Dummy Contact (blanking plug)</td></tr></table></div></div><div><div>G125 – 0XX 00 05</div><div><div>FINISH</div><div><table><tr><td>05</td><td>Gold</td></tr></table></div></div></div></div> |                                |  |  | TYPE |  | 001 | Female 26 AWG crimp contact | 002 | Female 28-32 AWG crimp contact | 020 | Dummy Contact (blanking plug) | 05 | Gold |
| TYPE   |                                |  |  |      |  |     |                             |     |                                |     |                               |    |      |
| 001  | Female 26 AWG crimp contact    |  |  |      |  |     |                             |     |                                |     |                               |    |      |
| 002  | Female 28-32 AWG crimp contact |  |  |      |  |     |                             |     |                                |     |                               |    |      |
| 020  | Dummy Contact (blanking plug)  |  |  |      |  |     |                             |     |                                |     |                               |    |      |
| 05   | Gold                           |  |  |      |  |     |                             |     |                                |     |                               |    |      |

All dimensions in mm.

Patent Published

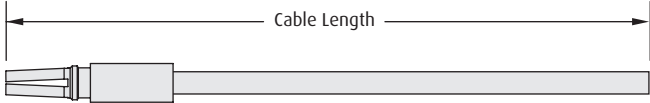
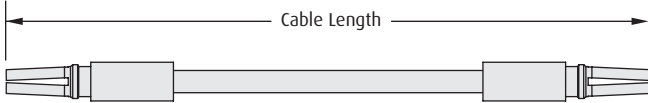
# Gecko-SL Connectors

## Female Crimp Contacts – Pre-Crimped Wires

- ❖ 4-finger Beryllium Copper contact.
- ❖ Ready for assembling to housing.
- ❖ Crimp barrel meets all crimp guidelines and standards.
- ❖ 2A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +150°C.



GECKO-SL

| FEMALE SINGLE ENDED  |  | FEMALE – FEMALE   |  |
|--|--|---|--|
|   |  |   |  |
| TOOLS  |  |   |  |
| <b>Contact Insertion/Removal Tool</b> – Z125-902   |  | <div><div></div>Female crimp housings and loose contacts shown on previous pages.</div> <div><div></div>Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</div> |  |
| HOW TO ORDER   |  |   |  |
| <div><div><div><div>SERIES CODE</div><div>G125</div></div><div><div>GENDER - FIRST END</div><div>F</div><div>Female</div></div><div><div>CABLE SIZE</div><div>W126 AWG</div><div>W228 AWG</div><div>W330 AWG</div></div></div><div><div><div>CABLE COLOR</div><div>94</div><div>White</div></div><div><div>TERMINATION - SECOND END</div><div>L</div><div>Loose cut end</div><div>F</div><div>Female</div></div><div><div>CABLE LENGTH</div><div>0150</div><div>150mm</div><div>0300</div><div>300mm (double-ended)</div><div>0450</div><div>450mm (single-ended)</div></div></div><div><div>G125</div><div>-</div><div>F</div><div>WX</div><div>XXXX</div><div>X</div><div>94</div></div></div> |  |   |  |

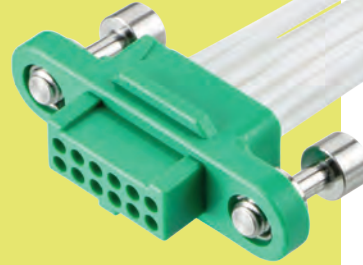
All dimensions in mm.

Patent Published

# Gecko-SL Connectors

## Female Cable Assemblies

- ❑ 4-finger Beryllium Copper contact.
- ❑ No.1 position identified on housing.
- ❑ Stainless steel screw fixing to mate with applicable male connector.
- ❑ Back potted for added strain relief.
- ❑ Check website or Ask an Expert for available combinations.



### PART NUMBERING SYSTEM

**G125 - F X X XX XX FX - XXXX XX**

#### SERIES CODE

#### GENDER - FIRST END

|   |        |
|---|--------|
| F | Female |
|---|--------|

#### CABLE STYLE

|   |                 |
|---|-----------------|
| C | Standard Cables |
| D | Twisted Pairs   |

#### CABLE SIZE

|   |        |
|---|--------|
| 1 | 26 AWG |
| 2 | 28 AWG |

#### TOTAL NO. OF CONTACTS

|                                |
|--------------------------------|
| 06, 10, 12, 16, 20, 26, 34, 50 |
|--------------------------------|

#### TERMINATION - SECOND END

|                  |                                      |
|------------------|--------------------------------------|
| L                | Loose cut end                        |
| F0, F1, F2 or F3 | Female connector (same as First End) |

#### CABLE LENGTH

|      |                      |
|------|----------------------|
| 0150 | 150mm                |
| 0300 | 300mm (double-ended) |
| 0450 | 450mm (single-ended) |
| XXXX | XXXXmm               |

#### SCREW-LOK

|    |   |
|----|---|
| F0 | No fixings (use with Metal Hoods)         |
| F1 | Floating Hex Socket fixings               |
| F2 | Internal Thread (reverse fix)             |
| F3 | With 5.2mm panel mount stud (reverse fix) |

#### CABLE COLOR / BRAID

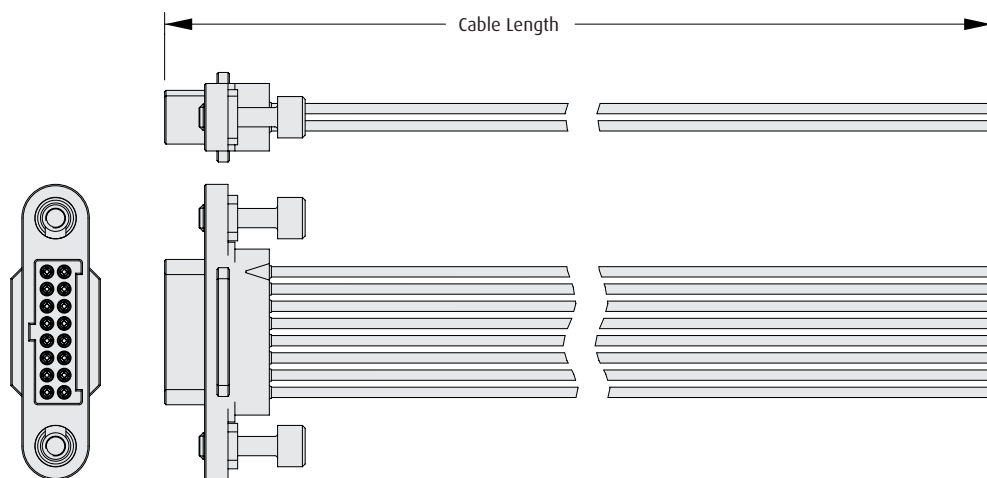
|    |   |
|----|---|
| 05 | White cable                                       |
| 68 | Multicolor cable (single-ended)                   |
| 69 | Shielded assembly (with metal backshells & braid) |



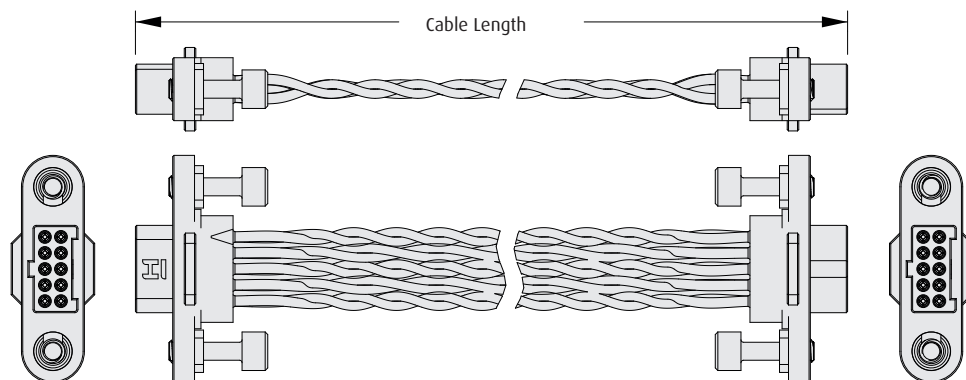
# Gecko-SL Connectors

- ❖ Examples of available cable assembly options - see previous page for part numbering.
- ❖ Cable assemblies are constructed with Contact 1 attached to Contact 1, Contact 2 to Contact 2, etc.
- ❖ Twisted Pairs are 2 twists per inch and 3 twists per inch, alternated along the connector.

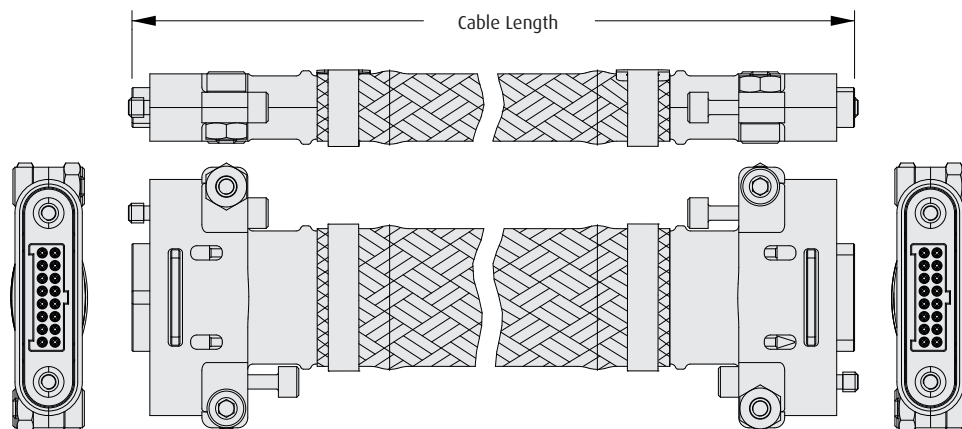
## FEMALE SINGLE ENDED



## FEMALE - FEMALE WITH TWISTED PAIRS



## FEMALE - FEMALE WITH SHIELDING



All dimensions in mm.

Patent Published

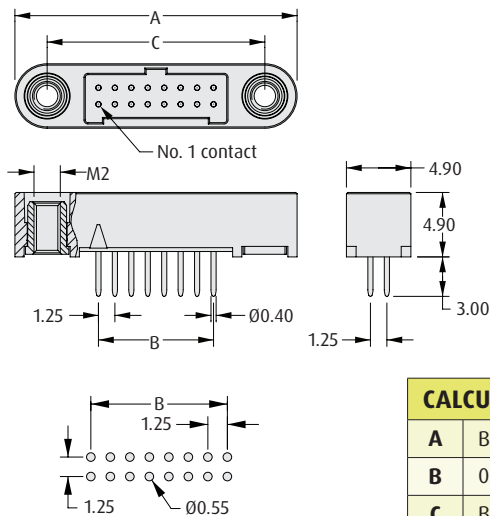
# Gecko-SL Connectors

## Male Vertical Throughboard

- Stainless steel screw fixing to mate with applicable female connector.
- Order nuts for board-mount separately - see bottom of page.
- 2A current capacity, resists high vibration and shock.
- Withstands extremes of temperature: -65°C to +150°C.



### WITHOUT BOARD MOUNT

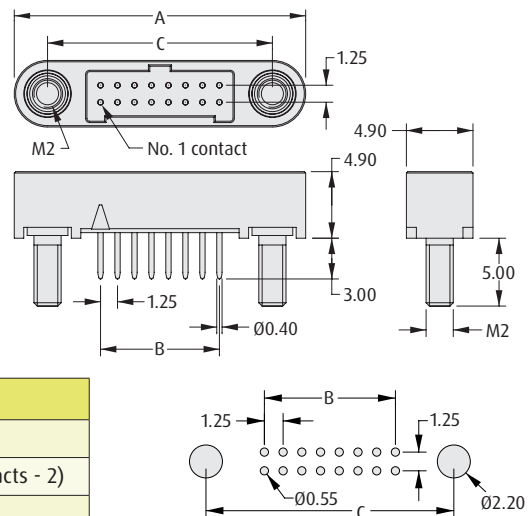


Recommended PC Board Pattern

#### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 12.7$  |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 7.8$   |
| <b>D</b> | $B + 1.8$   |

### WITH BOARD MOUNT



Recommended PC Board Pattern

### HOW TO ORDER

**G125 - M V1 XX 05 MX X**

#### SERIES CODE

#### TYPE

**V1** 3mm Throughboard

#### TOTAL NO. OF CONTACTS

**06, 10, 12, 16, 20, 26, 34, 50**

#### PACKAGING

|          |                    |
|----------|--------------------|
| <b>R</b> | Tape & Reeled      |
| <b>P</b> | Tape & Reel strips |

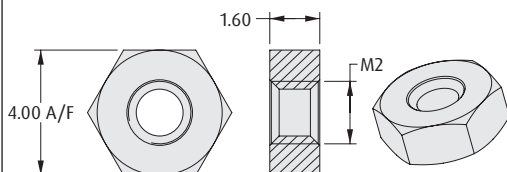
#### SCREW-LOK

|           |                           |
|-----------|---------------------------|
| <b>M1</b> | Internal Thread           |
| <b>M2</b> | With 5mm Board Mount Stud |

### REQUIRED HARDWARE

Order separately from connector

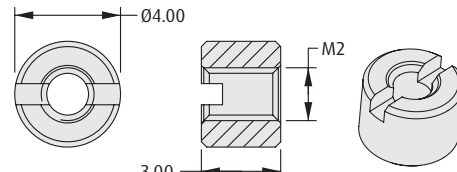
#### Hexagonal Board Mount Nut



#### ORDER CODE

**G125-4500000B**

#### Slotted Board Mount Nut



#### ORDER CODE

**G125-4510000B**

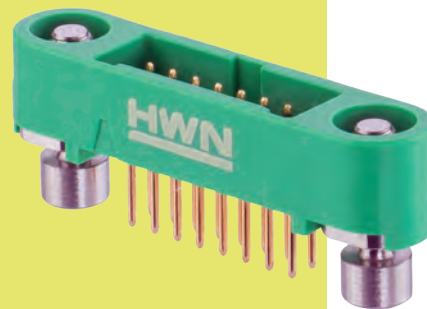
All dimensions in mm.

Patent Published

# Gecko-SL Connectors

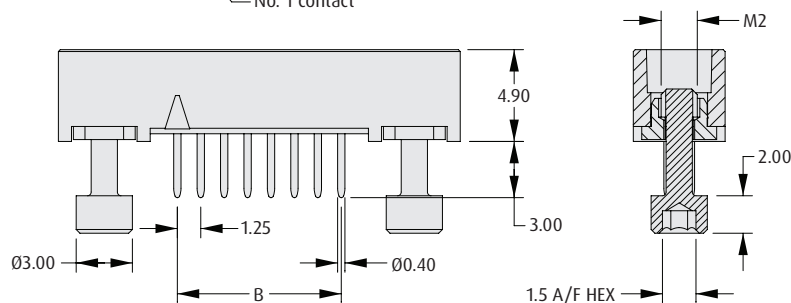
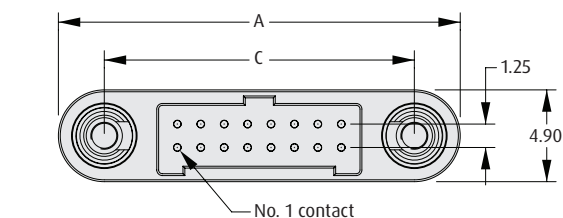
## Male Vertical Throughboard - Reverse Fix

- ❖ Stainless steel screw fixing to mate with applicable female connector.
- ❖ No. 1 position identified on housing.



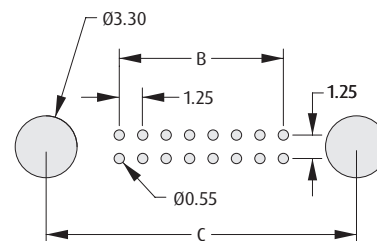
GECKO-SL

### THROUGHBOARD



### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 12.7$  |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 7.8$   |



Recommended PC Board Pattern

### HOW TO ORDER

**G125 - M V1 XX 05 M3 X**

#### SERIES CODE

#### TYPE

**V1** 3mm Throughboard

#### TOTAL NO. OF CONTACTS

**06, 10, 12, 16, 20, 26, 34, 50**

#### PACKAGING

|          |                    |
|----------|--------------------|
| <b>R</b> | Tape & Reeled      |
| <b>P</b> | Tape & Reel strips |

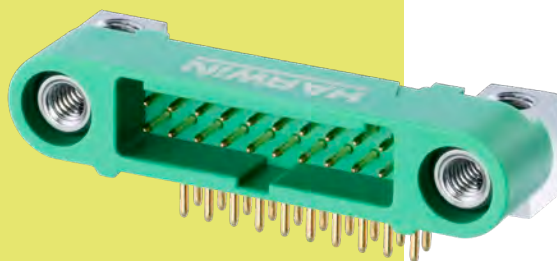
#### FINISH

**05** Gold

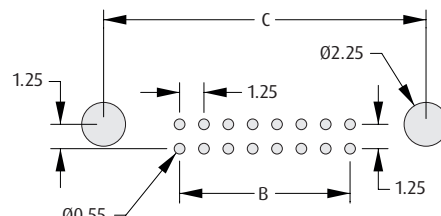
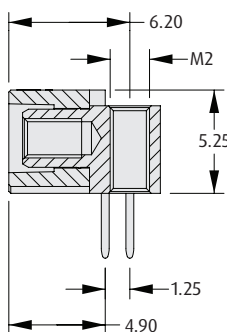
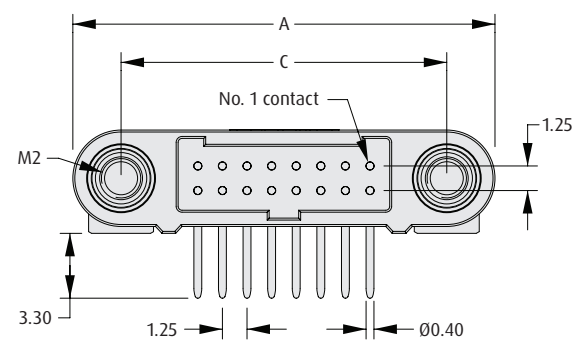
# Gecko-SL Connectors

## Male Horizontal Throughboard

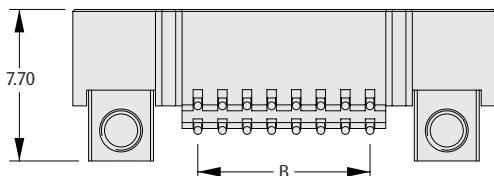
- ❖ Stainless steel screw fixing to mate with floating screw-loks on female connectors, also with board mount thread.
- ❖ Order bolts for board-mount separately.
- ❖ If mating to a female cable connector, ensure the front face of this connector is level to the PCB edge, or over. Check Technical Drawing for details.



### THROUGHBOARD



Recommended PC Board Pattern

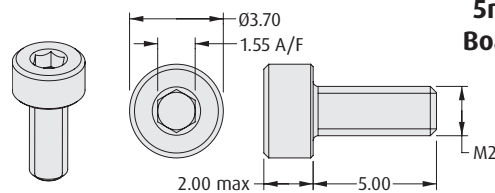


### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 12.7$  |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 7.8$   |

### REQUIRED HARDWARE

Order separately from connector



**5mm Hex Socket  
Board Mount Bolt**

### ORDER CODE

**G125-4520000B**

### HOW TO ORDER

**G125 - M H1 XX 05 M4 X**

#### SERIES CODE

#### TYPE

**H1** 3mm Throughboard

#### TOTAL NO. OF CONTACTS

**06, 10, 12, 16, 20, 26, 34, 50**

#### PACKAGING

|          |                    |
|----------|--------------------|
| <b>R</b> | Tape & Reeled      |
| <b>P</b> | Tape & Reel strips |

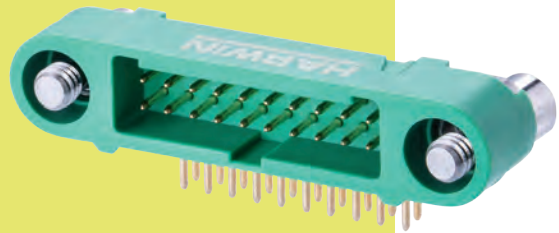
#### FINISH

**05** Gold

# Gecko-SL Connectors

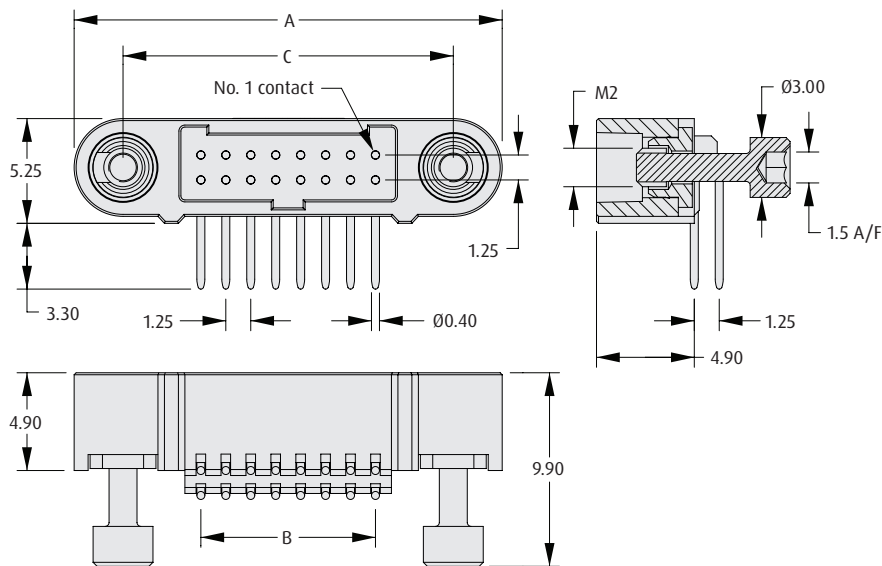
## Male Horizontal Throughboard - Reverse Fix

- ❖ Stainless steel screw fixing to mate with applicable female connector.
- ❖ No. 1 position identified on housing.
- ❖ If mating to a female cable connector, ensure the front face of this connector is level to the PCB edge, or over. Check Technical Drawing for details.



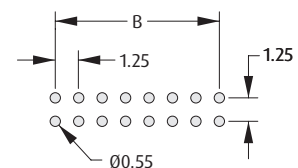
GECKO-SL

### THROUGHBOARD



### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 12.7$  |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 7.8$   |



Recommended PC Board Pattern

### HOW TO ORDER

**G125 - M H1 XX 05 M3 X**

#### SERIES CODE

#### TYPE

**H1** 3mm Throughboard

#### TOTAL NO. OF CONTACTS

**06, 10, 12, 16, 20, 26, 34, 50**

#### PACKAGING

|          |                    |
|----------|--------------------|
| <b>R</b> | Tape & Reeled      |
| <b>P</b> | Tape & Reel strips |

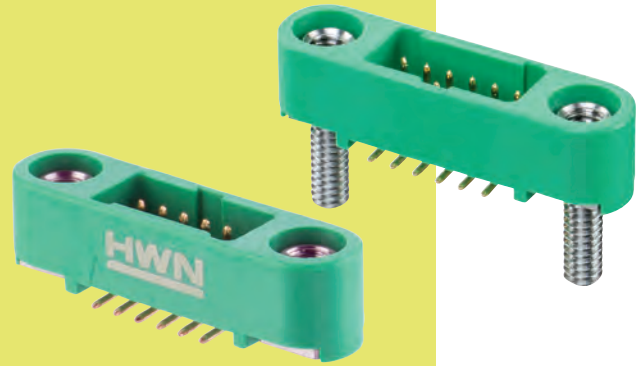
#### FINISH

**05** Gold

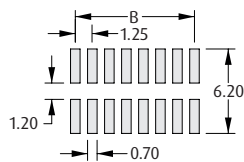
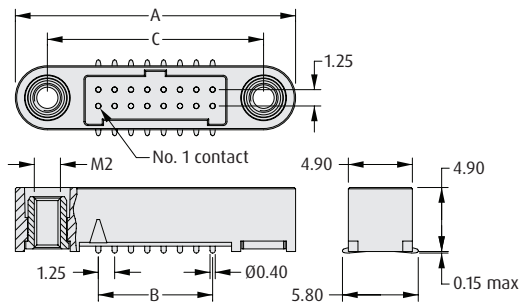
# Gecko-SL Connectors

## Male Vertical Surface Mount

- ❖ Stainless steel screw fixing to mate with applicable female connector.
- ❖ Order nuts for board-mount separately - see bottom of page.
- ❖ 2A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +150°C.



### WITHOUT BOARD MOUNT

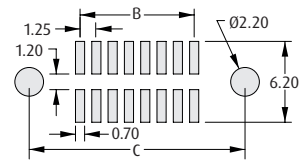
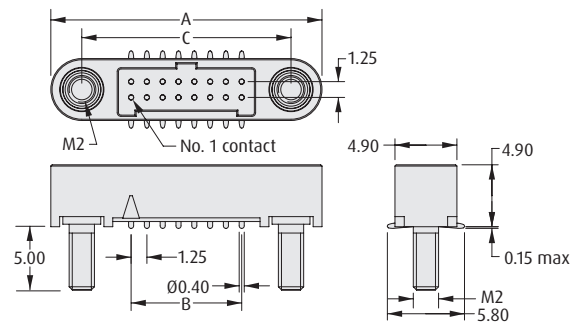


Recommended PC Board Pattern

#### CALCULATION

|   |   |
|---|---|
| A | $B + 12.7$  |
| B | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| C | $B + 7.8$   |
| D | $B + 1.8$   |

### WITH BOARD MOUNT



Recommended PC Board Pattern

### HOW TO ORDER

**G125 - M S1 XX 05 MX X**

#### SERIES CODE

#### TYPE

**S1** Surface Mount

#### TOTAL NO. OF CONTACTS

**06, 10, 12, 16, 20, 26, 34, 50**

#### PACKAGING

**R** Tape & Reeled

**P** Tape & Reel strips

#### SCREW-LOK

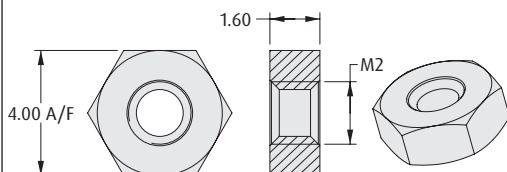
**M1** Internal Thread

**M2** With 5mm Board Mount Stud

### REQUIRED HARDWARE

Order separately from connector

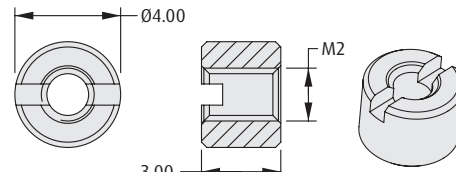
#### Hexagonal Board Mount Nut



#### ORDER CODE

**G125-4500000B**

#### Slotted Board Mount Nut



#### ORDER CODE

**G125-4510000B**

All dimensions in mm.

Patent Published

# Gecko-SL Connectors

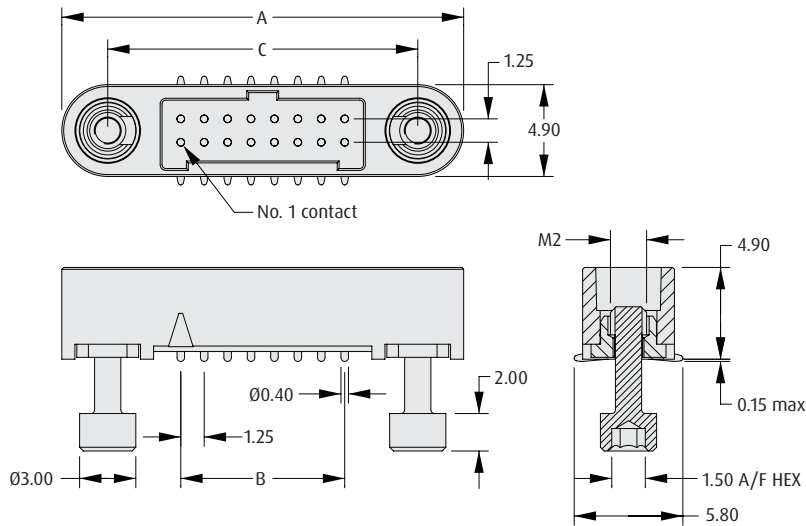
## Male Vertical Surface Mount - Reverse Fix

- ❖ Stainless steel screw fixing to mate with applicable female connector.
- ❖ Reverse fix screw-lok suitable for board-to-cable applications, where the female connector is located on the PCB.



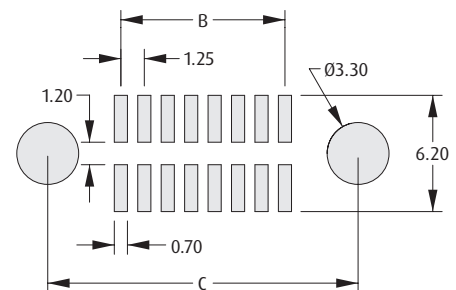
GECKO-SL

### SURFACE MOUNT



### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 12.7$  |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 7.8$   |



Recommended PC Board Pattern

### HOW TO ORDER

**G125 - M S1 XX 05 M3 X**

#### SERIES CODE

#### TYPE

**S1** Surface Mount

#### TOTAL NO. OF CONTACTS

**06, 10, 12, 16, 20, 26, 34, 50**

#### PACKAGING

|          |                    |
|----------|--------------------|
| <b>R</b> | Tape & Reeled      |
| <b>P</b> | Tape & Reel strips |

#### FINISH

**05** Gold

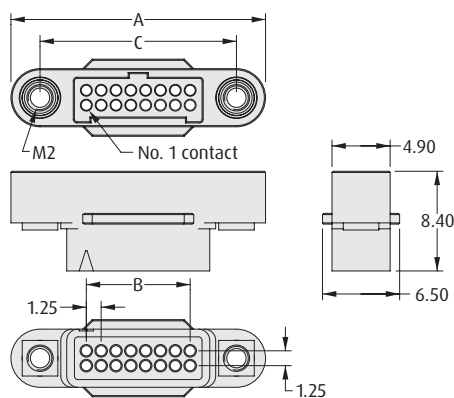
# Gecko-SL Connectors

## Male Crimp Housing

- Features 2.5mm potting wall for extra security.
- No. 1 position identified on housing.
- 3 polarizing points on each housing prevent mis-mating.
- Housing without fixings can be used with G125-964xxF1 metal hoods / backshells for reverse fix screw-lok.
- Order nuts for panel mount separately - see bottom of page.



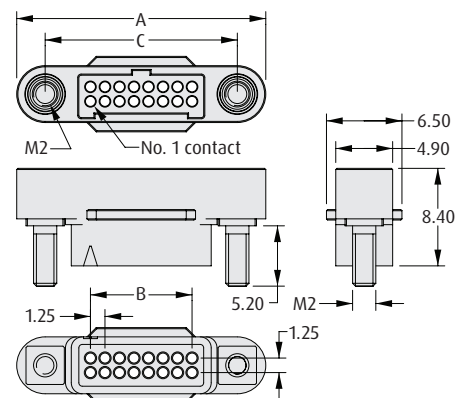
### WITHOUT PANEL MOUNT



#### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 12.7$  |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 7.8$   |

### WITH PANEL MOUNT



### HOW TO ORDER

**G125 - 324 XX 96 XX**

#### SERIES CODE

#### TYPE

**324** Male Housing

#### TOTAL NO. OF CONTACTS

**06, 10, 12, 16, 20, 26, 34, 50**

#### SCREW-LOK

|           |                                   |
|-----------|-----------------------------------|
| <b>M1</b> | Internal Thread                   |
| <b>M2</b> | With 5.2mm Panel Mount stud       |
| <b>00</b> | No fixings (use with metal hoods) |

#### FINISH

**96** Housing

### TOOLS

**Recommended Crimp Tool** - Z125-900

**Positioner** - Z125-901

**Contact Insertion/Removal Tool** - Z125-902

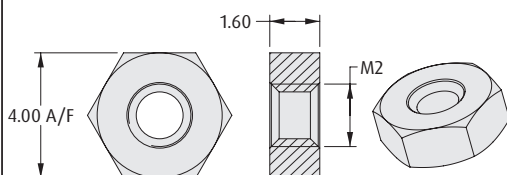
Male contacts shown on a following page.

Instruction sheets available at  
[www.harwin.com/instructions](http://www.harwin.com/instructions).

### REQUIRED HARDWARE

Order separately from connector

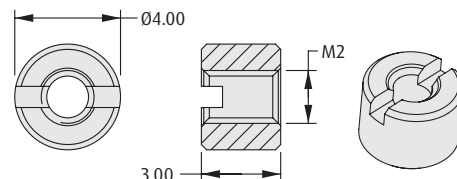
#### Hexagonal Board Mount Nut



#### ORDER CODE

**G125-4500000B**

#### Slotted Board Mount Nut



#### ORDER CODE

**G125-4510000B**

All dimensions in mm.

Patent Published



# Gecko-SL Connectors

## Male Crimp Housing - Reverse Fix

- ❖ Features 2.5mm potting wall for extra security.
- ❖ Stainless steel screw fixing to mate with applicable female connector.
- ❖ Reverse fix screw-lok suitable for board-to-cable applications, where the female connector is located on the PCB.

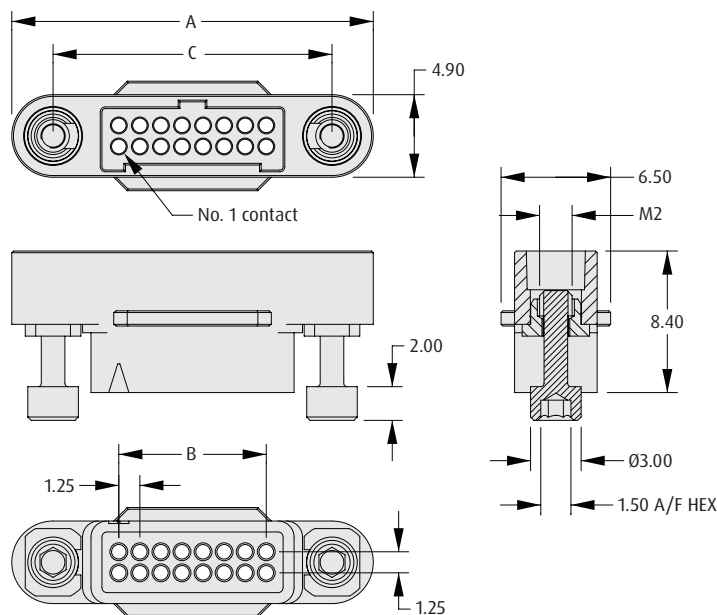


GECKO-SL

### MALE

### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 12.7$  |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 7.8$   |



### TOOLS

**Recommended Crimp Tool** - Z125-900

**Positioner** - Z125-901

**Contact Insertion/Removal Tool** - Z125-902

❖ Male contacts shown on following page.

❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### HOW TO ORDER

|                    |  |             |          |                     |           |           |           |                |  |                                       |  |
|--------------------|--|-------------|----------|---------------------|-----------|-----------|-----------|----------------|--|---------------------------------------|--|
| <b>SERIES CODE</b> |  | <b>G125</b> | <b>-</b> | <b>324</b>          | <b>XX</b> | <b>96</b> | <b>M3</b> | <b>FINISH</b>  |  | <b>TOTAL NO. OF CONTACTS</b>          |  |
| <b>TYPE</b>        |  | <b>324</b>  |          | <b>Male Housing</b> |           | <b>96</b> |           | <b>Housing</b> |  | <b>06, 10, 12, 16, 20, 26, 34, 50</b> |  |

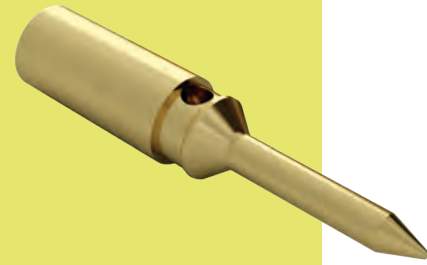
All dimensions in mm.

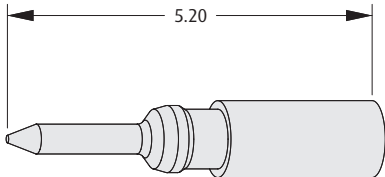
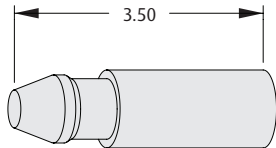
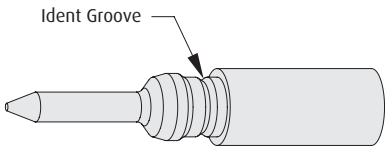
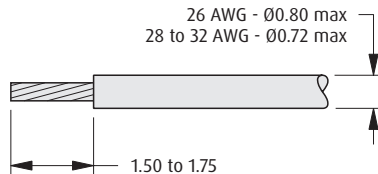
Patent Published

# Gecko-SL Connectors

## Male Crimp Contacts, Dummy Contact

- ❖ Crimp barrel meets all crimp guidelines and standards.
- ❖ 2A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +150°C.
- ❖ Instruction video online at [www.harwin.com/harwintv](http://www.harwin.com/harwintv).
- ❖ Dummy Contact can be used for additional polarization of keying of multiple connectors. Also called Blanking Plug.



| CONTACTS   |                               | DUMMY CONTACT  |  |     |                           |     |                              |     |                               |  |  |    |      |
|--|-------------------------------|--|--|-----|---------------------------|-----|------------------------------|-----|-------------------------------|--|--|----|------|
| <div>26 AWG</div>   |                               |   |  |     |                           |     |                              |     |                               |  |  |    |      |
| <div>28 - 32 AWG</div>    |                               | WIRE STRIPPING DETAILS   |  |     |                           |     |                              |     |                               |  |  |    |      |
|  |                               |    |  |     |                           |     |                              |     |                               |  |  |    |      |
| TOOLS  |                               |  |  |     |                           |     |                              |     |                               |  |  |    |      |
| <div>Recommended Crimp Tool - Z125-900</div> <div>Positioner - Z125-901</div> <div>Contact Insertion/Removal Tool - Z125-902</div>   |                               | <div>❖ Male crimp housings shown on previous pages.</div> <div>❖ Pre-cabled contacts shown on following page.</div> <div>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</div> |  |     |                           |     |                              |     |                               |  |  |    |      |
| HOW TO ORDER   |                               |  |  |     |                           |     |                              |     |                               |  |  |    |      |
| <div>G125 - XXX 00 05</div>  |                               |  |  |     |                           |     |                              |     |                               |  |  |    |      |
| <div>SERIES CODE</div>   |                               |  |  |     |                           |     |                              |     |                               |  |  |    |      |
| <table><tr><th>TYPE</th><td></td></tr><tr><td>101</td><td>Male 26 AWG crimp contact</td></tr><tr><td>102</td><td>Male 28-32 AWG crimp contact</td></tr><tr><td>020</td><td>Dummy Contact (blanking plug)</td></tr></table> |                               | TYPE   |  | 101 | Male 26 AWG crimp contact | 102 | Male 28-32 AWG crimp contact | 020 | Dummy Contact (blanking plug) | <div>FINISH</div> <table><tr><td>05</td><td>Gold</td></tr></table> |  | 05 | Gold |
| TYPE   |                               |  |  |     |                           |     |                              |     |                               |  |  |    |      |
| 101  | Male 26 AWG crimp contact     |  |  |     |                           |     |                              |     |                               |  |  |    |      |
| 102  | Male 28-32 AWG crimp contact  |  |  |     |                           |     |                              |     |                               |  |  |    |      |
| 020  | Dummy Contact (blanking plug) |  |  |     |                           |     |                              |     |                               |  |  |    |      |
| 05   | Gold                          |  |  |     |                           |     |                              |     |                               |  |  |    |      |

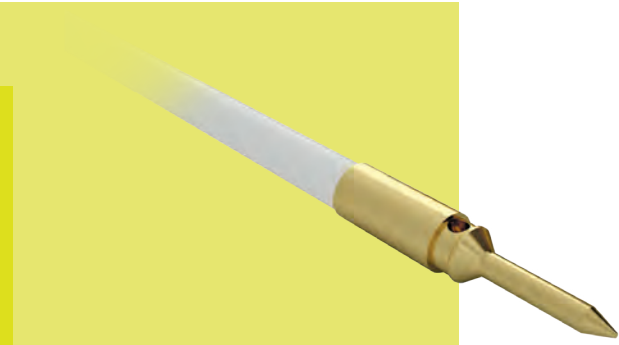
All dimensions in mm.

Patent Published

# Gecko-SL Connectors

## Male Crimp Contacts – Pre-Crimped Wires

- ❖ Ready for assembling to housing.
- ❖ Crimp barrel meets all crimp guidelines and standards.
- ❖ 2A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +150°C.



GECKO-SL

| MALE SINGLE ENDED | MALE – MALE   |
|-------------------|---|
|                   |   |
| MALE – FEMALE     | TOOLS   |
|                   | <p><b>Contact Insertion/Removal Tool</b> – Z125-902</p> <ul style="list-style-type: none"> <li>❖ Male crimp housings and loose contacts shown on previous pages.</li> <li>❖ &gt; Full cable assemblies shown on following page.</li> <li>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</li> </ul> |

### HOW TO ORDER

**G125 – M WX XXXX X 94**

#### SERIES CODE

#### GENDER – FIRST END

**M** Male

#### CABLE SIZE

|           |                 |
|-----------|-----------------|
| <b>W1</b> | 26 AWG (signal) |
| <b>W2</b> | 28 AWG (signal) |
| <b>W3</b> | 30 AWG (signal) |

#### CABLE COLOR

**94** White

#### TERMINATION – SECOND END

|          |               |
|----------|---------------|
| <b>L</b> | Loose cut end |
| <b>F</b> | Female        |
| <b>M</b> | Male          |

#### CABLE LENGTH

|             |                      |
|-------------|----------------------|
| <b>0150</b> | 150mm                |
| <b>0300</b> | 300mm (double-ended) |
| <b>0450</b> | 450mm (single-ended) |

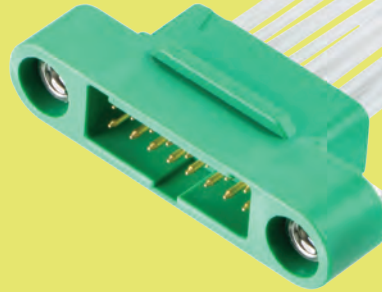
All dimensions in mm.

Patent Published

# Gecko-SL Connectors

## Male Cable Assemblies

- ❑ No. 1 position identified on housing.
- ❑ Stainless steel screw fixing to mate with applicable male connector.
- ❑ Back potted for added strain relief.
- ❑ Check website or Ask an Expert for available combinations.



### PART NUMBERING SYSTEM

**G125 - M X X XX XX MX - XXXX XX**

#### SERIES CODE

#### GENDER - FIRST END

**M** Male

#### CABLE STYLE

**C** Standard Cables

**D** Twisted Pairs

#### CABLE SIZE

**1** 26 AWG

**2** 28 AWG

#### TOTAL NO. OF CONTACTS

**06, 10, 12, 16, 20, 26, 34, 50**

#### TERMINATION - SECOND END

**L** Loose cut end

**F0** Female connector  
No fixings (use with Metal Hoods)

**F1** Female connector  
Floating Hex Socket fixings

**M1 or M3** Male connector (same as First end)

#### CABLE LENGTH

**0150** 150mm

**0300** 300mm (double-ended)

**0450** 450mm (single-ended)

**XXXX** XXXXmm

#### SCREW-LOK

**M1** Internal thread

**M3** Floating Hex Socket  
(reverse fix)

#### CABLE COLOR / BRAID

**05** White cable

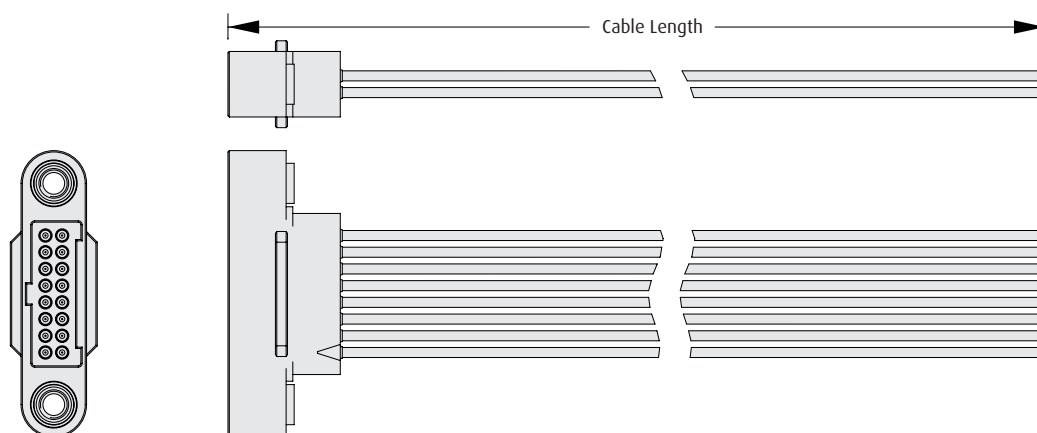
**68** Multicolor cable (single-ended)

**69** Shielded assembly (with metal  
backshells & braid)

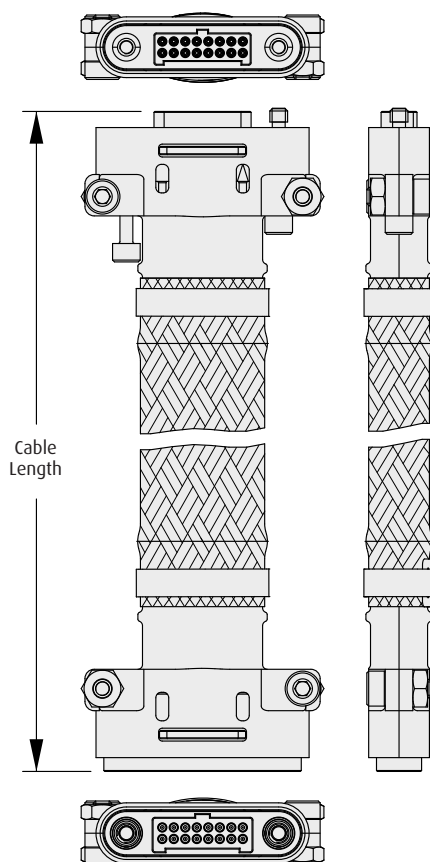
# Gecko-SL Connectors

- ❖ Examples of available cable assembly options - see previous page for part numbering.
- ❖ Cable assemblies are constructed with Contact 1 attached to Contact 1, Contact 2 to Contact 2, etc.
- ❖ Twisted Pairs are 2 twists per inch and 3 twists per inch, alternated along the connector.

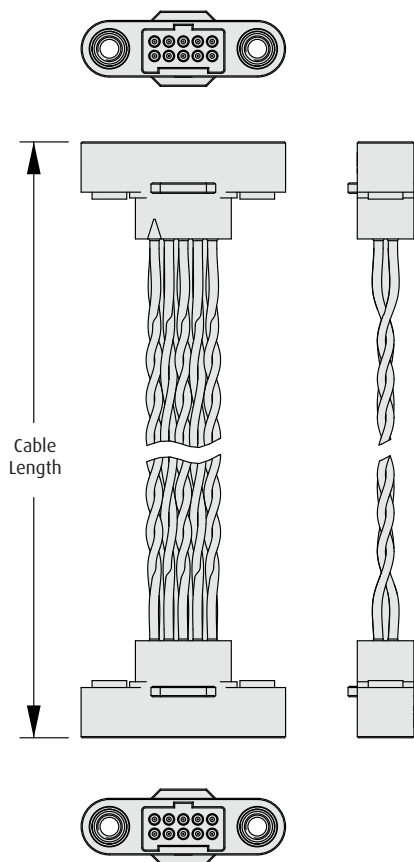
## MALE SINGLE ENDED



## MALE - FEMALE WITH SHIELDING



## MALE - MALE WITH TWISTED PAIRS



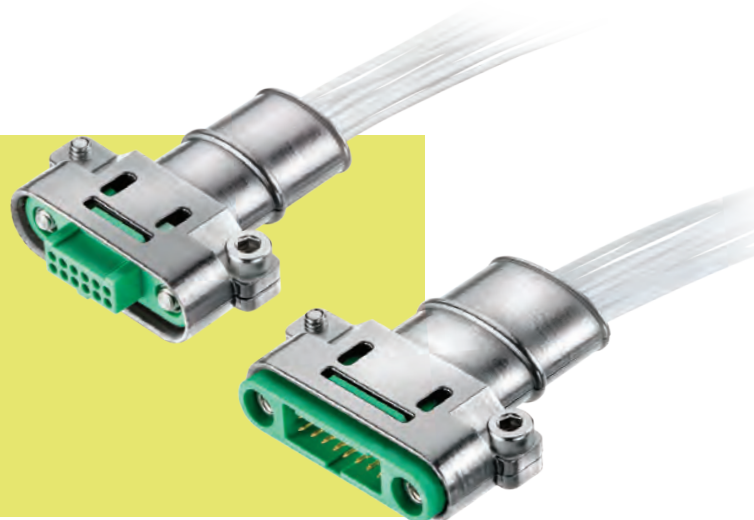
All dimensions in mm.

Patent Published

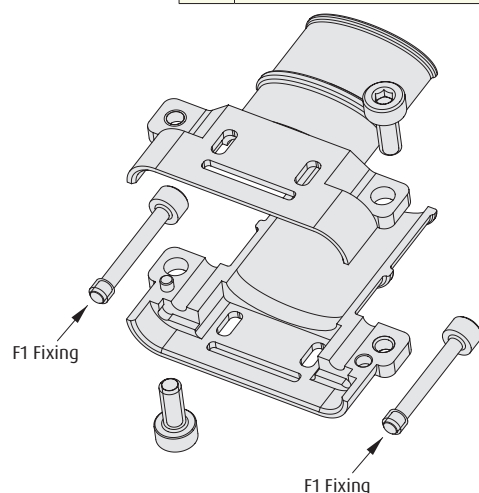
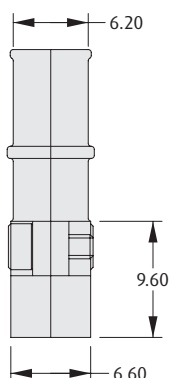
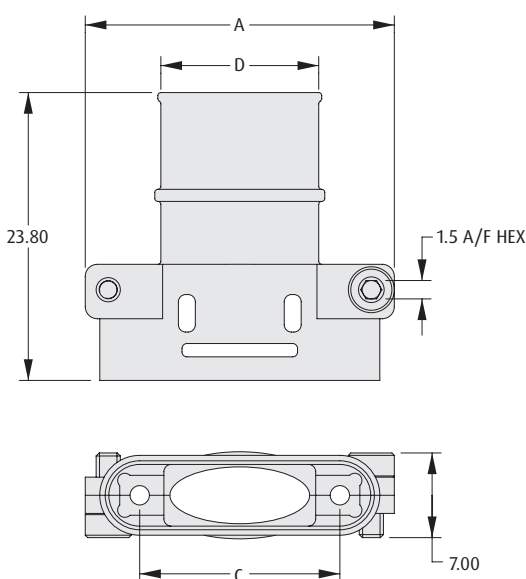
# Gecko-SL Connectors

## Metal Hood / Backshell - Cable

- ❖ Supplied as a kit - includes 2 metal hood halves, and short screws & nuts to join the two hood halves together (nuts not illustrated).
- ❖ Use 00 fixing kit on male housings G125-324xx96M1 for standard gender fixings.
- ❖ F1 kit includes extended fixing screws - use with female housings G125-224xx9600 for standard gender fixings, or G125-324xx9600 for reverse fix.



### HOOD / BACKSHELL



### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 16.8$  |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 7.8$   |
| <b>D</b> | $B + 4.3$   |

### HOW TO ORDER

**G125 - 964 XX XX**

#### SERIES CODE

#### SCREW-LOK

|           |   |
|-----------|---|
| <b>00</b> | Use with G125-324xx96M1 male housings                                   |
| <b>F1</b> | Use with G125-224xx9600 female housings or G125-324xx9600 male housings |

#### TOTAL NO. OF CONTACTS

**06, 10, 12, 16, 20, 26, 34, 50**

### BAND-IT TIE

- ❖ For fixing braid to rear collar (requires Tie Dex II A30199 Micro Band tool).



#### ORDER CODE

|                    |                  |
|--------------------|------------------|
| <b>M80-9470000</b> | Length = 206.8mm |
| <b>M80-9480000</b> | Length = 362.0mm |

All dimensions in mm.

Patent Published

# Gecko-SL Connectors

## Metal Hood / Backshell - Board Mount or Panel Mount

- ❖ Use with G125-MV1xx05M2x male connectors or G125-FV1xx05F3x female connectors in a PCB mounted application.
- ❖ Use with G125-324xx96M2 male housings or G125-224xx96F3 female housings in a panel mount application.
- ❖ Mating connector to be fitted with metal backshell G125-964xxF1 (shown on previous page) for complete EMC shielded connection.

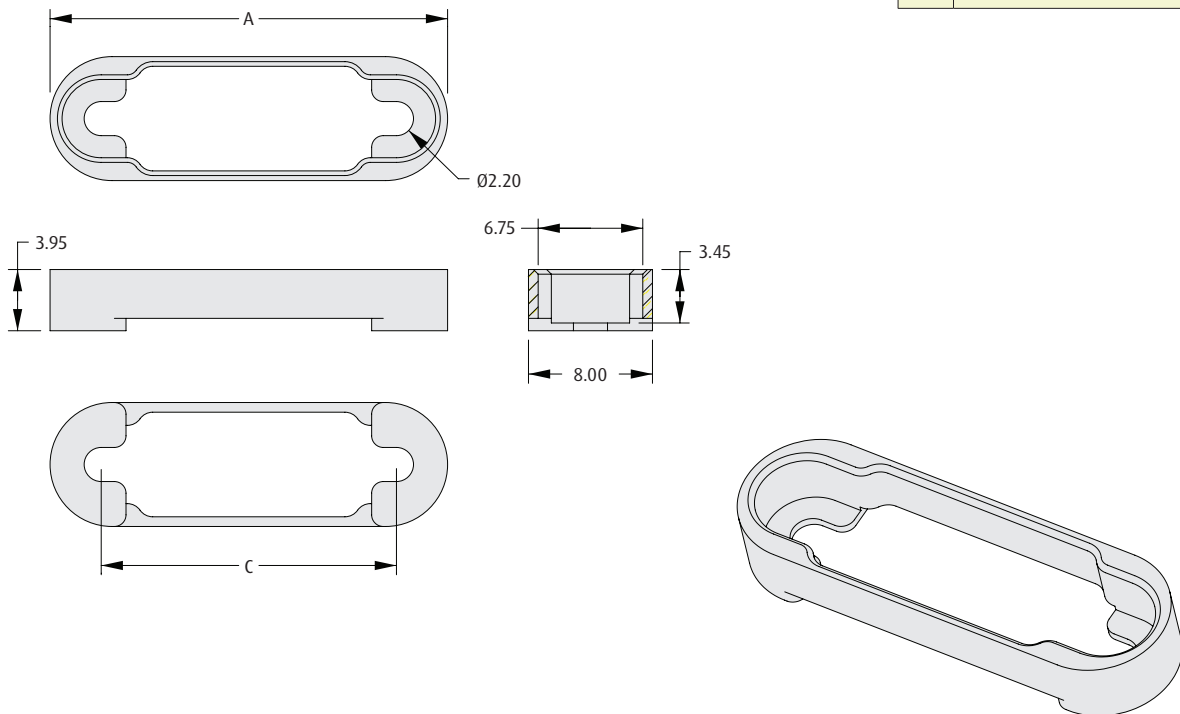


GECKO-SL

### HOOD / BACKSHELL

### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 14.4$  |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 7.8$   |



### HOW TO ORDER

**G125 - 960 XX 02**

**SERIES CODE**

**TOTAL NO. OF CONTACTS**

06, 10, 12, 16, 20, 26, 34, 50

All dimensions in mm.

Patent Published

# Gecko with Latches Specifications

## Materials

|                  |   |
|------------------|---|
| Housings:        | Glass-filled High Temperature Thermoplastic UL94V-0                 |
| Female contacts: | Beryllium Copper  |
| Male contacts    |   |
| PCB Connector:   | Phosphor Bronze   |
| Crimp:           | Brass   |
| Finish:          | 0.2 – 0.3µm (8 – 12µ") Gold,<br>over 1.5 – 2.0µm (60 – 80µ") Nickel |
| Latches:         | Copper Alloy  |

## Electrical

|                                   |                              |
|-----------------------------------|------------------------------|
| <b>Current</b>                    |                              |
| Individual contacts in isolation: | 2.8A max (At 25°C)           |
| All contacts simultaneously:      | 2.0A max (At 25°C)           |
| Flex Circuit Assembly:            | 0.4A max per track (At 25°C) |
| <b>Working voltage</b>            |                              |
| At sea level 1006 mbar:           | 450V DC or AC peak           |
| At altitude 44 mbar:              | 250V DC or AC peak           |
| <b>Voltage proof</b>              |                              |
| At sea level 1013 mbar:           | 600V DC or AC peak           |
| <b>Contact resistance</b>         |                              |
| Initial:                          | 20mΩ max                     |
| After conditioning:               | 25mΩ max                     |
| <b>Insulation resistance</b>      |                              |
| Initial:                          | 10GΩ min at 500V DC          |
| After conditioning:               | >1GΩ min at 500V DC          |

## Mechanical

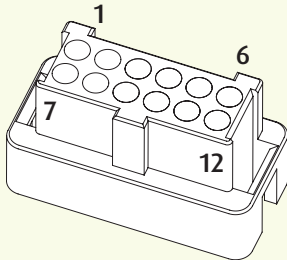
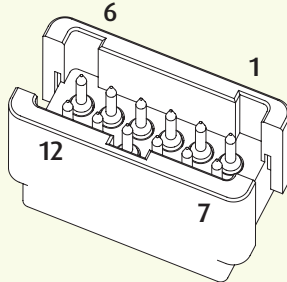
|   |                 |
|---|-----------------|
| Contact durability:                     | 1000 operations |
| <b>Mating forces (per contact pair)</b> |                 |
| Insertion force:                        | 2.8N max        |
| Withdrawal force:                       | 0.2N min        |
| Contact retention in housing:           | 6N min          |

## Environmental

|                               |  |
|-------------------------------|--|
| Environmental classification: | 65/150/56 days at 93% RH   |
| Operating temperature:        | -65°C to +150°C  |
| *Vibration sensitivity:       | 10Hz to 2000Hz, 1.5mm,<br>198mm/s <sup>2</sup> (20G) duration 6 hours                            |
| *Bump severity:               | 390m/s <sup>2</sup> (40G), 4000 ±10 bumps  |
| *Shock severity:              | 981m/s <sup>2</sup> (100G) for 6ms in Z axis<br>490m/s <sup>2</sup> (50G) for 11ms in X & Y axes |
| *Acceleration severity:       | 490m/s <sup>2</sup> (50G)  |

\* Tested with latched connectors.

# Pin Numbering

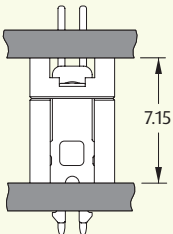
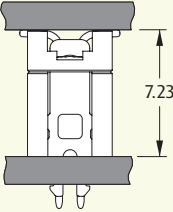
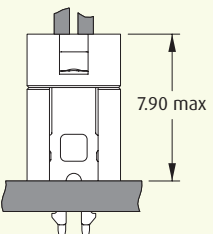
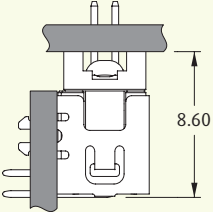
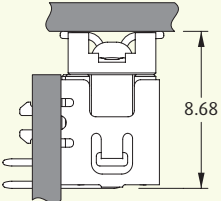
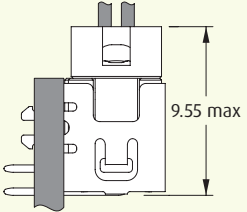
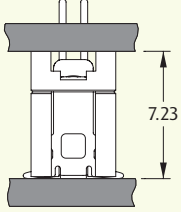
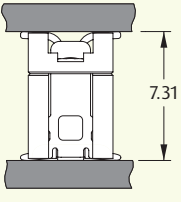
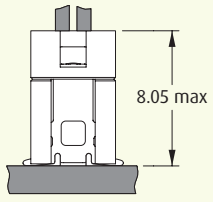
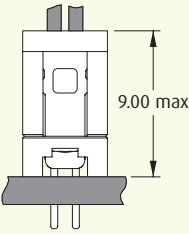
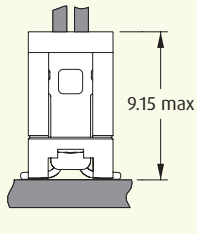
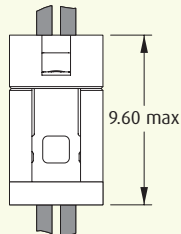
| FEMALE  | MALE  |
|---|---|
|  |  |

All dimensions in mm.

Patent Published



# Gecko with Latches Mating Profiles

|      |                          | FEMALE  |  |   |
|------|--------------------------|---|--|---|
|      |                          | VERTICAL THROUGHBOARD   | VERTICAL SMT   | CABLE   |
| MALE | VERTICAL THROUGH-BOARD   |    |    |    |
|      | HORIZONTAL THROUGH-BOARD |    |    |    |
|      | VERTICAL SMT             |   |   |   |
|      | CABLE                    |  |  |  |

GECKO WITH LATCHES

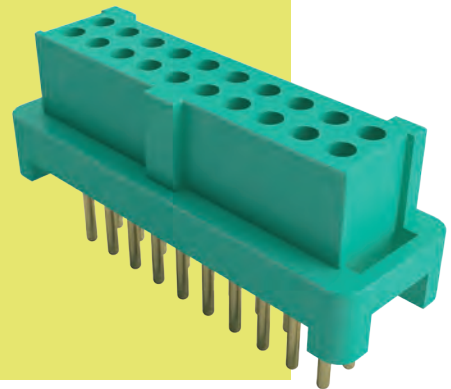
All dimensions in mm.

Patent Published

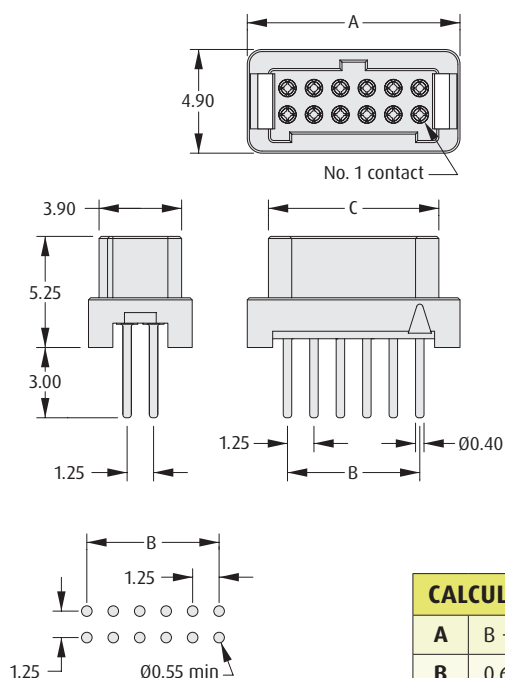
# Gecko with Latches Connectors

## Female Throughboard

- ❖ 4-finger Beryllium Copper contact.
- ❖ Positive keyway polarization features.
- ❖ 2A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +150°C.



### 3mm THROUGHBOARD

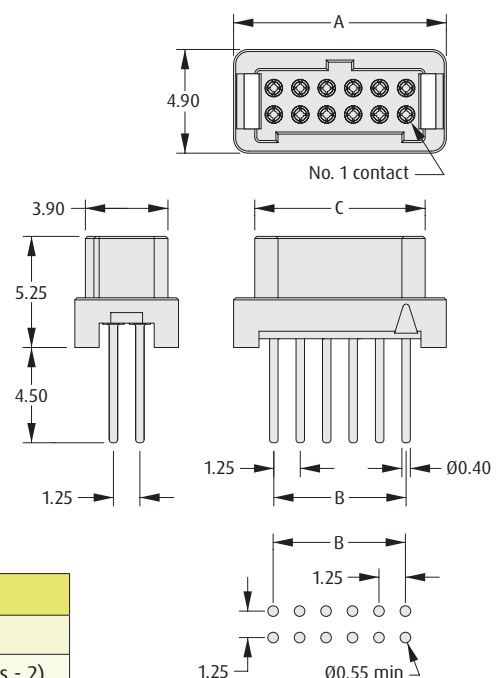


Recommended PC Board Pattern

#### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 3.8$   |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 1.8$   |

### 4.5mm THROUGHBOARD



Recommended PC Board Pattern

## HOW TO ORDER

**G125 - F VX XX 05 L0 X**

#### SERIES CODE

#### TYPE

|           |                    |
|-----------|--------------------|
| <b>V1</b> | 3mm Throughboard   |
| <b>V2</b> | 4.5mm Throughboard |

#### PACKAGING

|          |                    |
|----------|--------------------|
| <b>R</b> | Tape & Reeled      |
| <b>P</b> | Tape & Reel strips |

#### FINISH

|           |      |
|-----------|------|
| <b>05</b> | Gold |
|-----------|------|

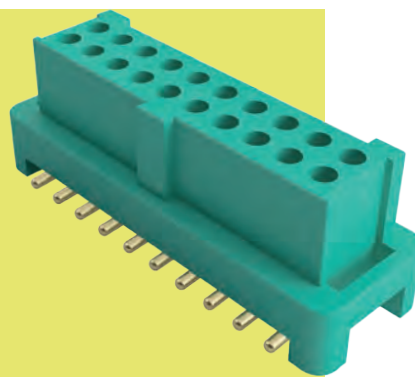
#### TOTAL NO. OF CONTACTS

06, 10, 12, 16, 20, 26, 34, 50

# Gecko with Latches Connectors

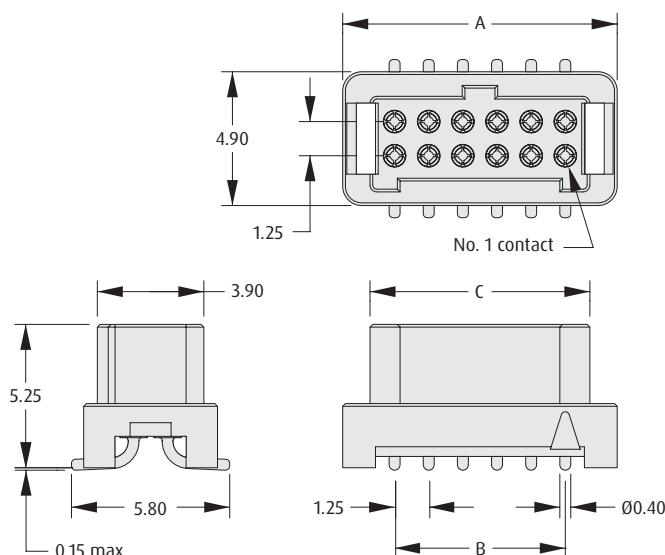
## Female Surface Mount

- ❖ 4-finger Beryllium Copper contact.
- ❖ Positive keyway polarization features.
- ❖ 2A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +150°C.
- ❖ Available in Tape and Reel Packaging, with Pick and Place cap.



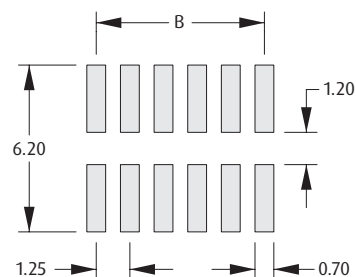
GECKO WITH LATCHES

### SURFACE MOUNT



### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 3.8$   |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 1.8$   |



Recommended PC Board Pattern

### HOW TO ORDER

**G125 - F S1 XX 05 L0 X**

#### SERIES CODE

#### TYPE

**S1** Surface Mount

#### PACKAGING

|          |                    |
|----------|--------------------|
| <b>R</b> | Tape & Reeled      |
| <b>P</b> | Tape & Reel strips |

#### FINISH

**05** Gold

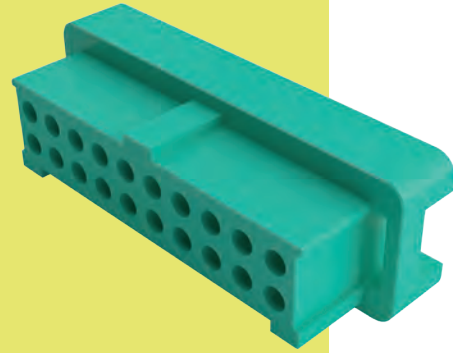
#### TOTAL NO. OF CONTACTS

06, 10, 12, 16, 20, 26, 34, 50

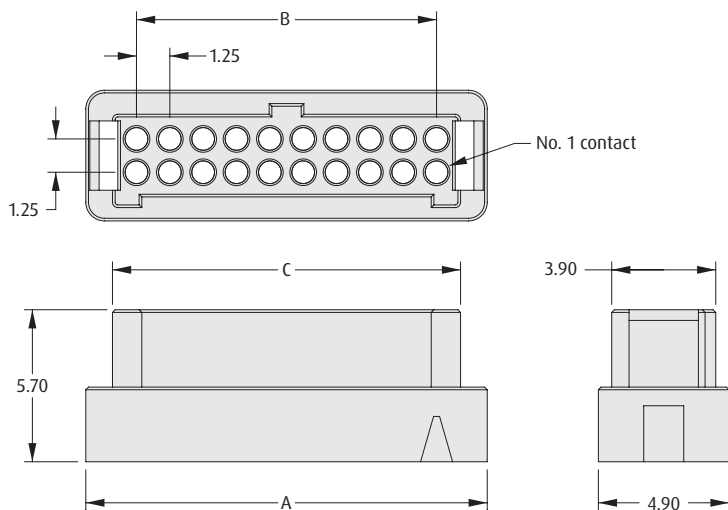
# Gecko with Latches Connectors

## Female Crimp Housings

- ❖ Features potting wall for extra security.
- ❖ No. 1 position identified on housing.
- ❖ Withstands extremes of temperature: -65°C to +150°C.
- ❖ 3 polarizing points on each housing prevent mis-mating.



### FEMALE



### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 3.8$   |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 1.8$   |

### TOOLS

**Recommended Crimp Tool** - Z125-900

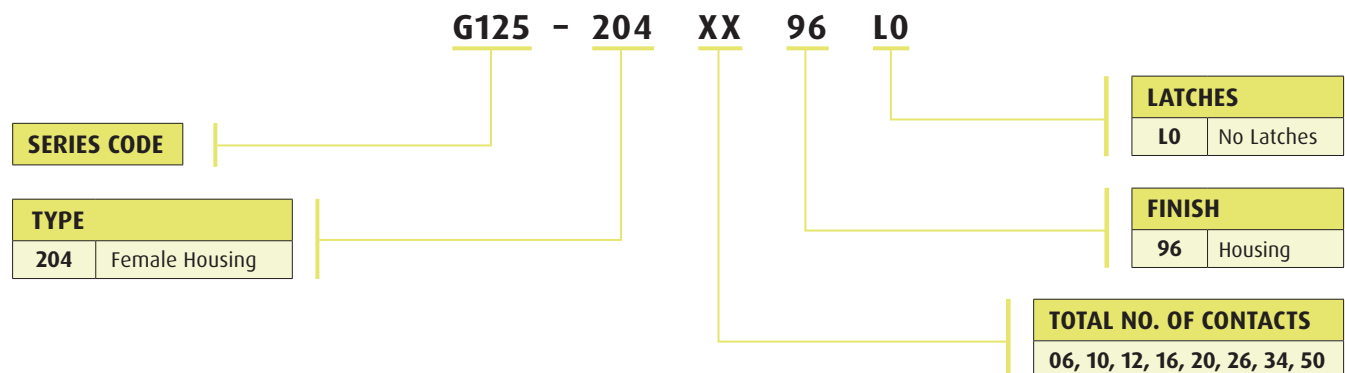
**Positioner** - Z125-901

**Contact Insertion/Removal Tool** - Z125-902

❖ Female contacts shown on following pages.

❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### HOW TO ORDER



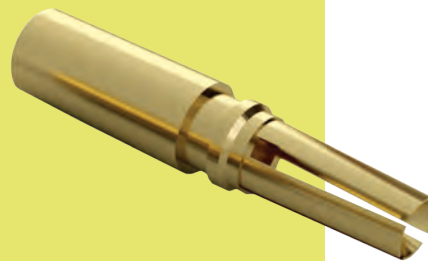
All dimensions in mm.

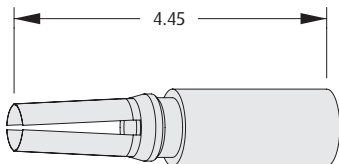
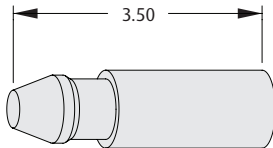
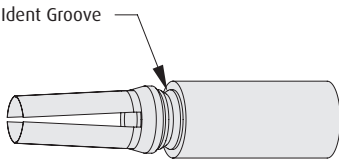
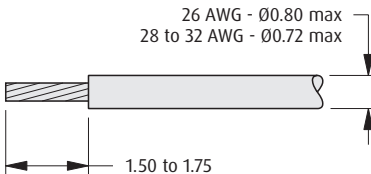
Patent Published

# Gecko with Latches Connectors

## Female Crimp Contacts, Dummy Contact

- ❖ 4-finger Beryllium Copper contact on a female connector.
- ❖ Crimp barrel meets all crimp guidelines and standards.
- ❖ 2A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +150°C.
- ❖ Instruction video online at [www.harwin.com/harwintv](http://www.harwin.com/harwintv).
- ❖ Dummy Contact can be used for additional polarization of keying of multiple connectors. Also called Blanking Plug.



| CONTACTS  |                                | DUMMY CONTACT  |  |      |     |                             |     |                                |     |                               |    |      |
|---|--------------------------------|--|--|------|-----|-----------------------------|-----|--------------------------------|-----|-------------------------------|----|------|
| <div>26 AWG</div>    |                                |   |  |      |     |                             |     |                                |     |                               |    |      |
| <div>28 – 32 AWG</div> <div>Ident Groove</div>   |                                | WIRE STRIPPING DETAILS   |  |      |     |                             |     |                                |     |                               |    |      |
|   |                                |    |  |      |     |                             |     |                                |     |                               |    |      |
| TOOLS   |                                |  |  |      |     |                             |     |                                |     |                               |    |      |
| <div>Recommended Crimp Tool – Z125-900</div> <div>Positioner – Z125-901</div> <div>Contact Insertion/Removal Tool – Z125-902</div>  |                                | <div>❖ Female crimp housing shown on previous page.</div> <div>❖ Pre-cabled contacts shown on following page.</div> <div>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</div> |  |      |     |                             |     |                                |     |                               |    |      |
| HOW TO ORDER  |                                |  |  |      |     |                             |     |                                |     |                               |    |      |
| <div>G125 – 0XX 00 05</div> <div><div>SERIES CODE</div><div><table><tr><th>TYPE</th></tr><tr><td>001</td><td>Female 26 AWG crimp contact</td></tr><tr><td>002</td><td>Female 28-32 AWG crimp contact</td></tr><tr><td>020</td><td>Dummy Contact (blanking plug)</td></tr></table></div><div><div>FINISH</div><table><tr><td>05</td><td>Gold</td></tr></table></div></div> |                                |  |  | TYPE | 001 | Female 26 AWG crimp contact | 002 | Female 28-32 AWG crimp contact | 020 | Dummy Contact (blanking plug) | 05 | Gold |
| TYPE  |                                |  |  |      |     |                             |     |                                |     |                               |    |      |
| 001   | Female 26 AWG crimp contact    |  |  |      |     |                             |     |                                |     |                               |    |      |
| 002   | Female 28-32 AWG crimp contact |  |  |      |     |                             |     |                                |     |                               |    |      |
| 020   | Dummy Contact (blanking plug)  |  |  |      |     |                             |     |                                |     |                               |    |      |
| 05  | Gold                           |  |  |      |     |                             |     |                                |     |                               |    |      |

All dimensions in mm.

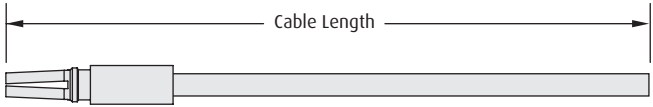
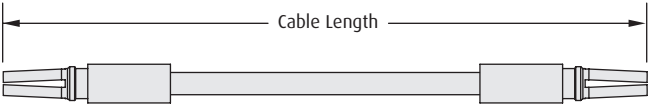
Patent Published

# Gecko with Latches Connectors

## Female Crimp Contacts – Pre-Crimped Wires

- ❖ 4-finger Beryllium Copper contact.
- ❖ Ready for assembling to housing.
- ❖ Crimp barrel meets all crimp guidelines and standards.
- ❖ 2A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +150°C.



| FEMALE SINGLE ENDED  |  | FEMALE – FEMALE   |  |
|--|--|---|--|
|   |  |   |  |
| TOOLS  |  |   |  |
| <b>Contact Insertion/Removal Tool</b> – Z125-902   |  | <ul style="list-style-type: none"><li>❖ Female crimp housing and loose contacts shown on previous pages.</li><li>❖ Full Cable assemblies shown on following page.</li><li>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</li></ul> |  |
| HOW TO ORDER   |  |   |  |
| <div><div><div><b>SERIES CODE</b></div><div><b>G125</b></div></div><div><div><b>GENDER - FIRST END</b></div><div><b>F</b></div></div><div><div><b>CABLE SIZE</b></div><div><b>W1</b> 26 AWG<br/><b>W2</b> 28 AWG<br/><b>W3</b> 30 AWG</div></div><div><div><b>CABLE COLOR</b></div><div><b>94</b> White</div></div><div><div><b>TERMINATION - SECOND END</b></div><div><b>L</b> Loose cut end<br/><b>F</b> Female</div></div><div><div><b>CABLE LENGTH</b></div><div><b>0150</b> 150mm<br/><b>0300</b> 300mm (double-ended)<br/><b>0450</b> 450mm (single-ended)</div></div></div> <div><b>G125 – F WX XXXX X 94</b></div> |  |   |  |

All dimensions in mm.

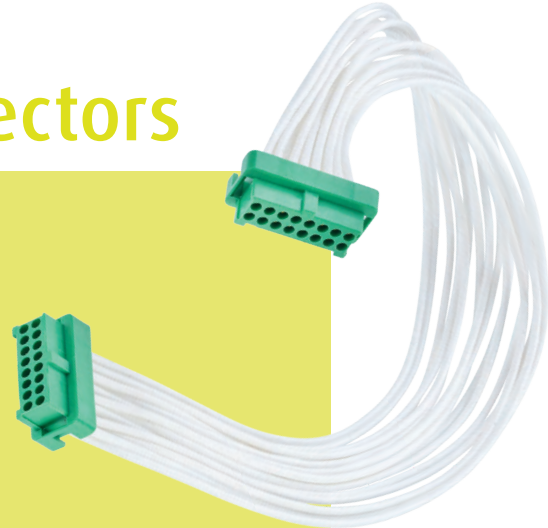
Patent Published

# Gecko with Latches Connectors

GECKO WITH LATCHES

## Female Cable Assemblies

- ❖ 4-finger Beryllium Copper contact.
- ❖ No. 1 position identified on housing.
- ❖ 2A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +150°C.
- ❖ Back potted for added strain relief.
- ❖ Check website or Ask an Expert for available combinations.



### PART NUMBERING SYSTEM

**G125 - F X X XX XX L0 - XXXX X**

#### SERIES CODE

#### GENDER - FIRST END

**F** Female

#### CABLE STYLE

**C** Standard Cables  
**D** Twisted Pairs

#### CABLE SIZE

**1** 26 AWG  
**2** 28 AWG  
**3** 30 AWG

#### TOTAL NO. OF CONTACTS

**06, 10, 12, 16, 20, 26, 34, 50**

#### TERMINATION - SECOND END

**L** Loose cut end  
**F** Female connector

#### CABLE LENGTH

**0150** 150mm  
**0300** 300mm (double-ended)  
**0450** 450mm (single-ended)  
**XXXX** XXXXmm

#### LATCHES

**L0** No Latches

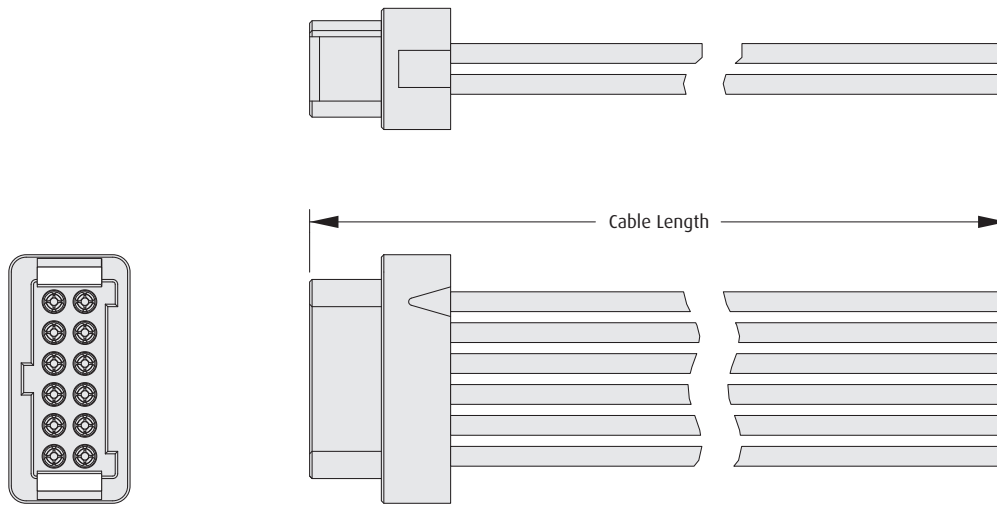
#### CABLE COLOR

**05** White cable  
**68** Multicolor cable (single-ended)

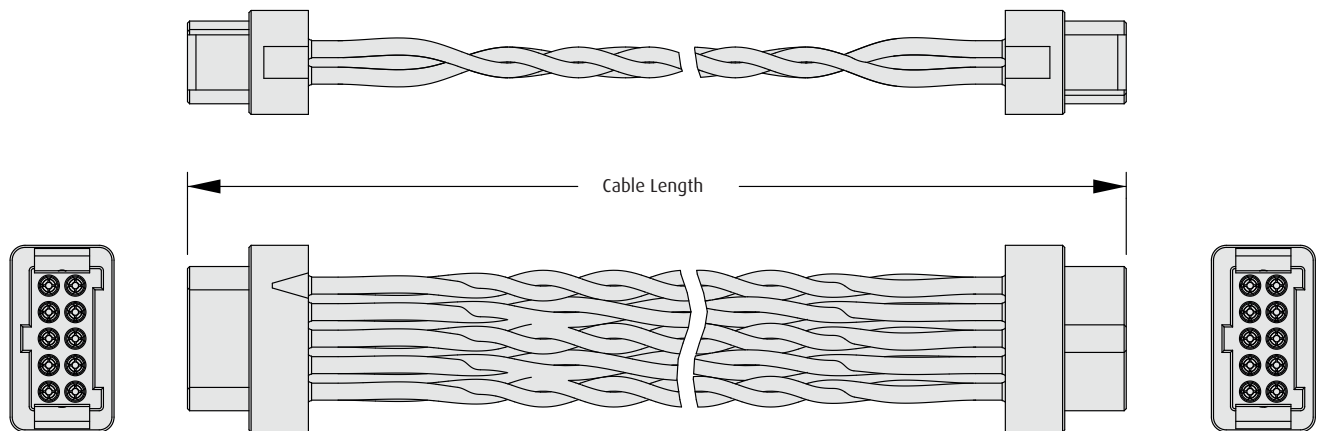
# Gecko with Latches Connectors

- ❖ Examples of available cable assembly options - see previous page for part numbering.
- ❖ Cable assemblies are constructed with Contact 1 attached to Contact 1, Contact 2 to Contact 2, etc.
- ❖ Twisted Pairs are 2 twists per inch and 3 twists per inch, alternated along the connector.

## FEMALE SINGLE ENDED



## FEMALE - FEMALE WITH TWISTED PAIRS



All dimensions in mm.

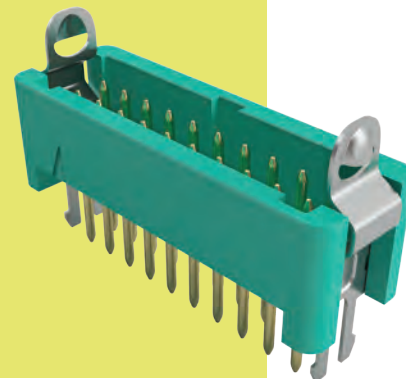
Patent Published



# Gecko with Latches Connectors

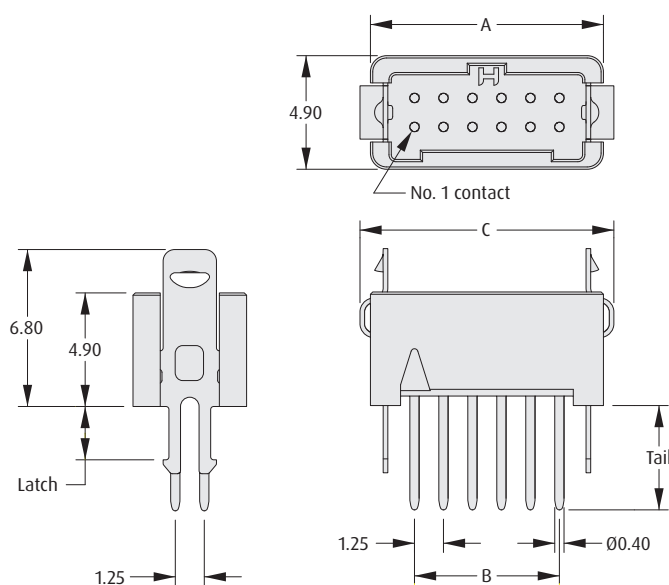
## Male Vertical Throughboard

- Secure fixing to the PCB via retention bars for through hole.
- Easy-to-release latches require no tooling.
- 2A current capacity, resists high vibration and shock.
- Withstands extremes of temperature: -65°C to +150°C.



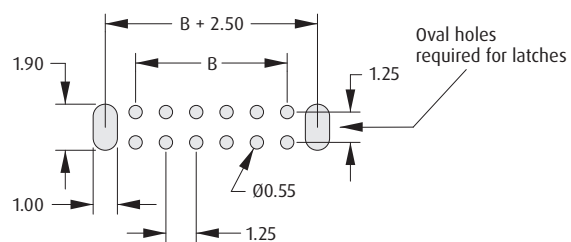
GECKO WITH LATCHES

### THROUGHBOARD



### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 3.8$   |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 5.2$   |



Recommended PC Board Pattern

### HOW TO ORDER

**G125 - M VX XX 05 LX X**

#### SERIES CODE

#### TYPE

|           |                         |
|-----------|-------------------------|
| <b>V1</b> | 3mm Throughboard Tail   |
| <b>V2</b> | 4.5mm Throughboard Tail |

#### TOTAL NO. OF CONTACTS

06, 10, 12, 16, 20, 26, 34, 50

#### PACKAGING

|          |                    |
|----------|--------------------|
| <b>R</b> | Tape & Reeled      |
| <b>P</b> | Tape & Reel strips |

#### LATCH

|           |                                   |
|-----------|-----------------------------------|
| <b>L0</b> | No Latch                          |
| <b>L1</b> | Latch for 1.6mm PCB (use with V1) |
| <b>L2</b> | Latch for 2.4mm PCB (use with V2) |

#### FINISH

**05** Gold

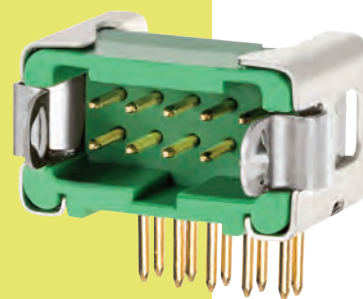
All dimensions in mm.

Patent Published

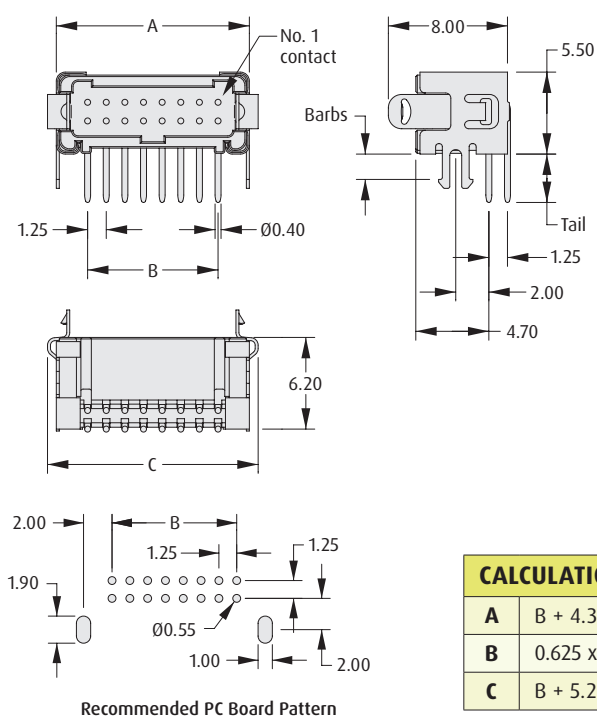
# Gecko with Latches Connectors

## Male Horizontal Throughboard - Latched

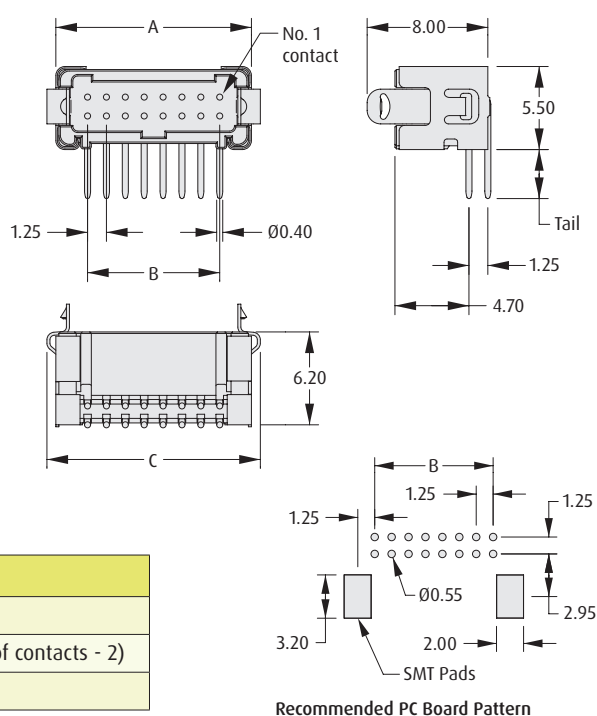
- ❖ Secure fixing to the PCB via retention bars for through hole.
- ❖ Surface mount option for automated assembly.
- ❖ Easy-to-release latches – tooling available for additional assistance with releasing latches – see part numbers **Z125-926xx00**.
- ❖ 2A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +150°C.



### THROUGHBOARD LATCH



### SURFACE MOUNT LATCH



#### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 4.3$   |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 5.2$   |

### HOW TO ORDER

**G125 - M HX XX 05 LX X**

#### SERIES CODE

#### TYPE

|           |                         |
|-----------|-------------------------|
| <b>H1</b> | 3.2mm Throughboard Tail |
| <b>H2</b> | 4.7mm Throughboard Tail |

#### TOTAL NO. OF CONTACTS

06, 10, 12, 16, 20, 26, 34, 50

#### PACKAGING

|          |                    |
|----------|--------------------|
| <b>R</b> | Tape & Reeled      |
| <b>P</b> | Tape & Reel strips |

#### LATCH

|           |                                   |
|-----------|-----------------------------------|
| <b>L1</b> | Latch for 1.6mm PCB (use with H1) |
| <b>L2</b> | Latch for 2.4mm PCB (use with H2) |
| <b>L3</b> | Surface Mount Latch               |

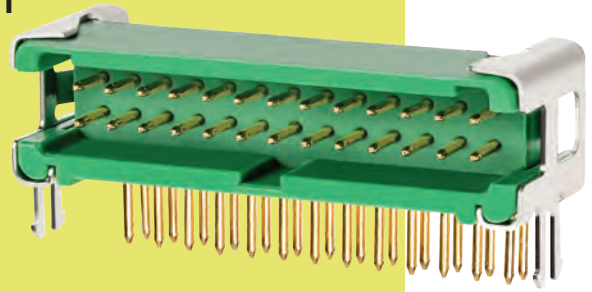
#### FINISH

|           |      |
|-----------|------|
| <b>05</b> | Gold |
|-----------|------|

# Gecko with Latches Connectors

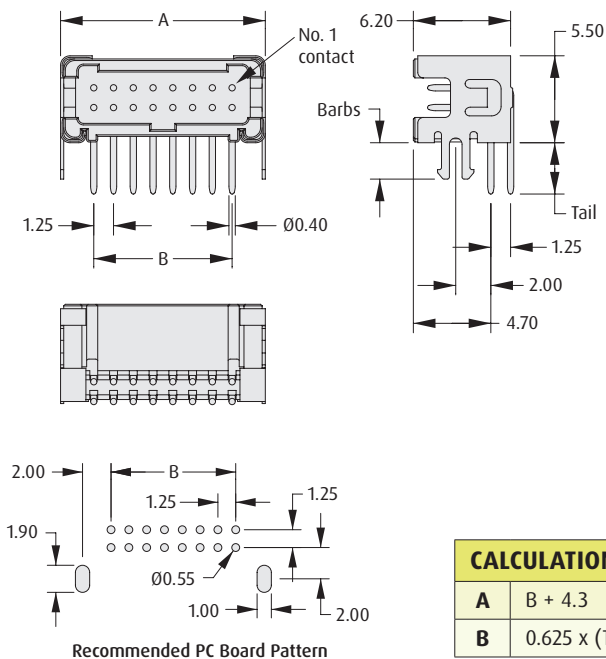
## Male Horizontal Throughboard - Without Latch

- ❖ Secure fixing to the PCB via retention barbs for through hole.
- ❖ Surface mount option for automated assembly.
- ❖ 2A current capacity.
- ❖ Withstands extremes of temperature: -65°C to +150°C.

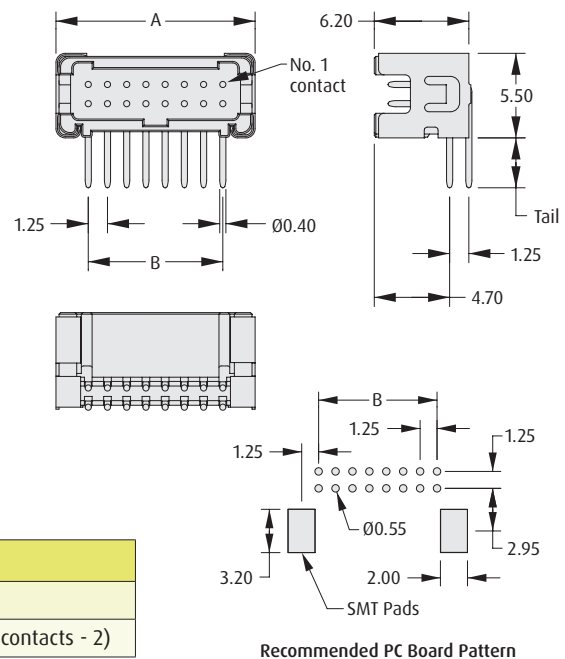


GECKO WITH LATCHES

### THROUGHBOARD FIXING



### SURFACE MOUNT FIXING



#### CALCULATION

|   |   |
|---|---|
| A | $B + 4.3$   |
| B | $0.625 \times (\text{Total No. of contacts} - 2)$ |

### HOW TO ORDER

**G125 - M HX XX 05 LX X**

#### SERIES CODE

#### TYPE

|    |                         |
|----|-------------------------|
| H1 | 3.2mm Throughboard Tail |
| H2 | 4.7mm Throughboard Tail |

#### TOTAL NO. OF CONTACTS

06, 10, 12, 16, 20, 26, 34, 50

#### PACKAGING

|   |                    |
|---|--------------------|
| R | Tape & Reeled      |
| P | Tape & Reel strips |

#### FIXING

|    |                                   |
|----|-----------------------------------|
| L5 | Barbs for 1.6mm PCB (use with H1) |
| L6 | Barbs for 2.4mm PCB (use with H2) |
| L7 | Surface Mount Fixing              |

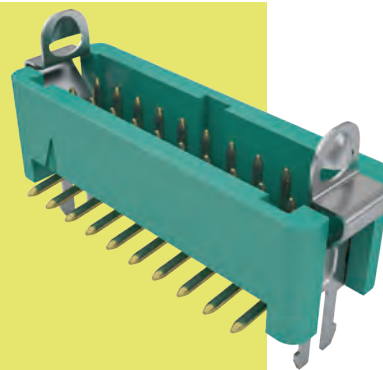
#### FINISH

|    |      |
|----|------|
| 05 | Gold |
|----|------|

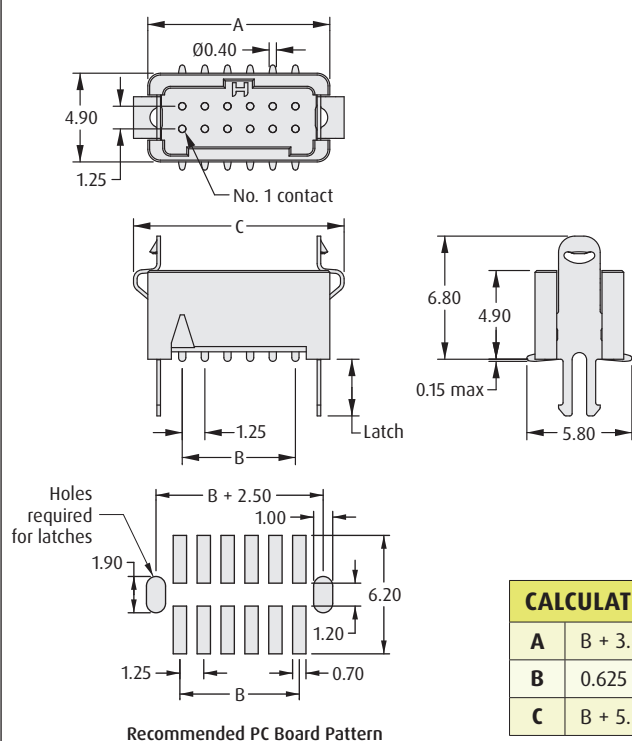
# Gecko with Latches Connectors

## Male Vertical Surface Mount

- ❖ Secure fixing to the PCB via hold-down tabs (SMT).
- ❖ Easy-to-release latches require no tooling.
- ❖ 2A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +150°C.



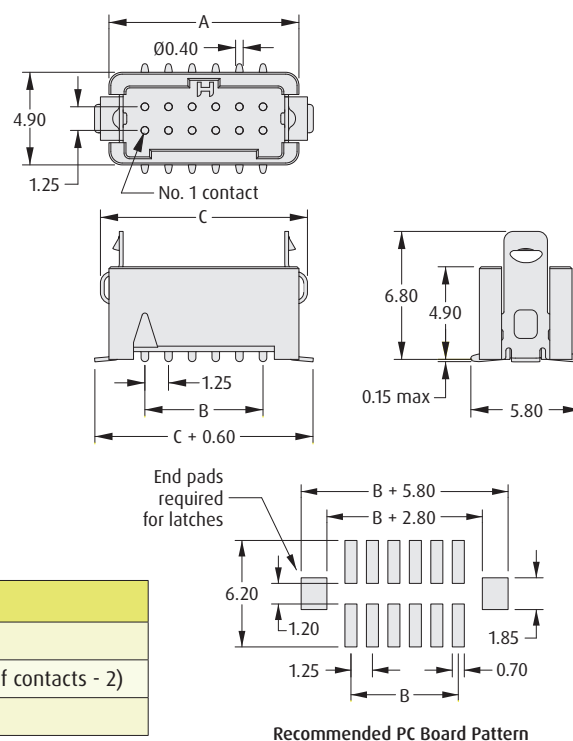
### THROUGHBOARD LATCH



#### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 3.8$   |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 5.2$   |

### SURFACE MOUNT LATCH



### HOW TO ORDER

**G125 - M S1 XX 05 LX X**

#### SERIES CODE

#### TYPE

**S1** Surface Mount

#### TOTAL NO. OF CONTACTS

**06, 10, 12, 16, 20, 26, 34, 50**

#### FINISH

**05** Gold

#### PACKAGING

|          |                    |
|----------|--------------------|
| <b>R</b> | Tape & Reeled      |
| <b>P</b> | Tape & Reel strips |

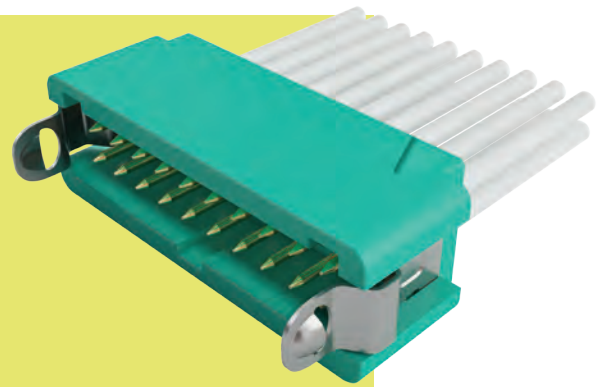
#### LATCH

|           |                     |
|-----------|---------------------|
| <b>L0</b> | No Latch            |
| <b>L1</b> | Latch for 1.6mm PCB |
| <b>L2</b> | Latch for 2.4mm PCB |
| <b>L3</b> | Surface Mount Latch |

# Gecko with Latches Connectors

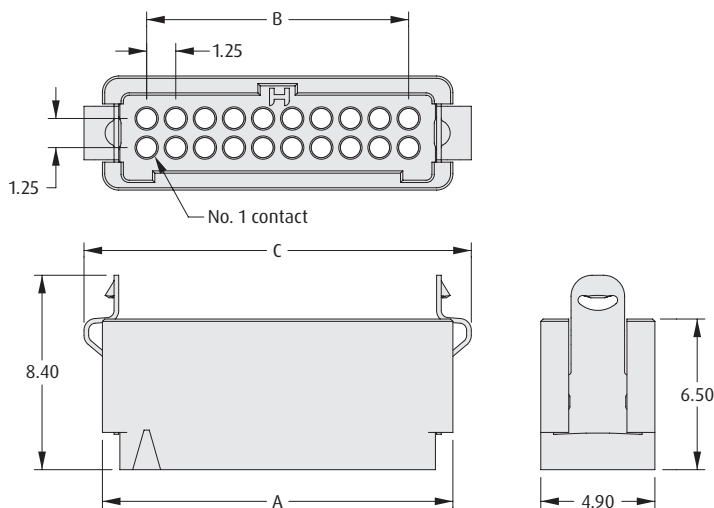
## Male Crimp Housing

- ❖ Features potting wall for extra security.
- ❖ No. 1 position identified on housing.
- ❖ Withstands extremes of temperature: -65°C to +150°C.
- ❖ 3 polarizing points on each housing prevent mis-mating.
- ❖ Easy to release latches require no tooling.



GECKO WITH LATCHES

### MALE



### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 3.8$   |
| <b>B</b> | $0.625 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 5.2$   |

### TOOLS

**Recommended Crimp Tool** - Z125-900  
**Positioner** - Z125-901  
**Contact Insertion/Removal Tool** - Z125-902

- ❖ Male contacts shown on following pages.
- ❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### HOW TO ORDER

**G125 - 304 XX 96 LX**

#### SERIES CODE

#### TYPE

**304** Male Housing

#### LATCH

|           |                     |
|-----------|---------------------|
| <b>L0</b> | No Latches          |
| <b>L4</b> | Latches (Male Only) |

#### FINISH

**96** Housing

#### TOTAL NO. OF CONTACTS

**06, 10, 12, 16, 20, 26, 34, 50**

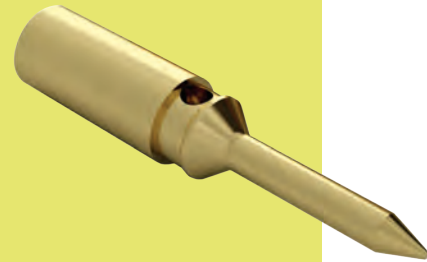
All dimensions in mm.

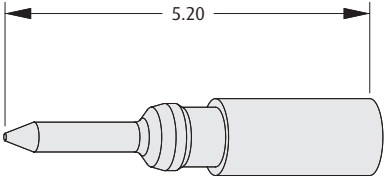
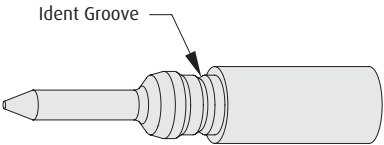
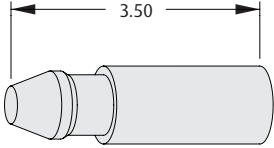
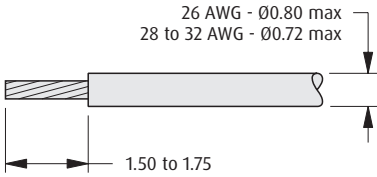
Patent Published

# Gecko with Latches Connectors

## Male Crimp Contacts

- ❖ Crimp barrel meets all crimp guidelines and standards.
- ❖ 2A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +150°C.
- ❖ Instruction video online at [www.harwin.com/harwintv](http://www.harwin.com/harwintv).
- ❖ Dummy Contact can be used for additional polarization of keying of multiple connectors. Also called Blanking Plug.



| CONTACTS   | DUMMY CONTACT   |      |  |     |                           |     |                              |     |                               |    |      |
|--|---|------|--|-----|---------------------------|-----|------------------------------|-----|-------------------------------|----|------|
| <p><b>26 AWG</b></p>  <p><b>28 – 32 AWG</b></p>    |  <p><b>WIRE STRIPPING DETAILS</b></p>  |      |  |     |                           |     |                              |     |                               |    |      |
| TOOLS  |   |      |  |     |                           |     |                              |     |                               |    |      |
| <p><b>Recommended Crimp Tool</b> – Z125-900</p> <p><b>Positioner</b> – Z125-901</p> <p><b>Contact Insertion/Removal Tool</b> – Z125-902</p>  |   |      |  |     |                           |     |                              |     |                               |    |      |
| <ul style="list-style-type: none"> <li>❖ Male crimp housing shown on previous page.</li> <li>❖ Pre-cable contacts shown on following page.</li> <li>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</li> </ul>   |   |      |  |     |                           |     |                              |     |                               |    |      |
| HOW TO ORDER   |   |      |  |     |                           |     |                              |     |                               |    |      |
| <p style="text-align: center;"><b>G125 - XXX 00 05</b></p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 30%;"> <p><b>SERIES CODE</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #f2f2f2;">TYPE</th> <th></th> </tr> </thead> <tbody> <tr> <td style="background-color: #f2f2f2;">101</td> <td>Male 26 AWG crimp contact</td> </tr> <tr> <td style="background-color: #f2f2f2;">102</td> <td>Male 28-32 AWG crimp contact</td> </tr> <tr> <td style="background-color: #f2f2f2;">020</td> <td>Dummy Contact (blanking plug)</td> </tr> </tbody> </table> </div> <div style="width: 30%; text-align: center;"> <p><b>FINISH</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="background-color: #f2f2f2;">05</td> <td>Gold</td> </tr> </tbody> </table> </div> </div> |   | TYPE |  | 101 | Male 26 AWG crimp contact | 102 | Male 28-32 AWG crimp contact | 020 | Dummy Contact (blanking plug) | 05 | Gold |
| TYPE   |   |      |  |     |                           |     |                              |     |                               |    |      |
| 101  | Male 26 AWG crimp contact   |      |  |     |                           |     |                              |     |                               |    |      |
| 102  | Male 28-32 AWG crimp contact  |      |  |     |                           |     |                              |     |                               |    |      |
| 020  | Dummy Contact (blanking plug)   |      |  |     |                           |     |                              |     |                               |    |      |
| 05   | Gold  |      |  |     |                           |     |                              |     |                               |    |      |

All dimensions in mm.

Patent Published

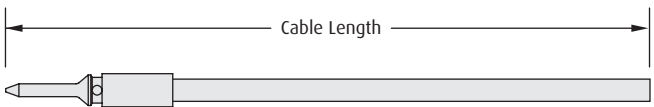
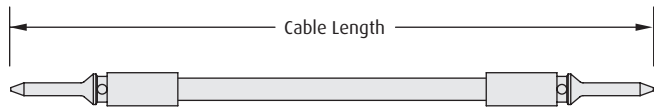
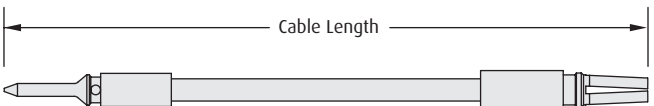
# Gecko with Latches Connectors

## Male Crimp Contacts – Pre-Crimped Wires

- ❖ Ready for assembling to housing.
- ❖ Crimp barrel meets all crimp guidelines and standards.
- ❖ 2A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +150°C.



GECKO WITH LATCHES

| MALE SINGLE ENDED   | MALE – MALE   |
|---|---|
|    |   |
| MALE – FEMALE   | TOOLS   |
|  | <p><b>Contact Insertion/Removal Tool</b> – Z125-902</p> <ul style="list-style-type: none"> <li>❖ Male crimp housing and loose contacts shown on previous pages.</li> <li>❖ Full Cable assemblies shown on following page.</li> <li>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</li> </ul> |

### HOW TO ORDER

**G125 – M WX XXXX X 94**

#### SERIES CODE

#### GENDER – FIRST END

**M** Male

#### CABLE SIZE

|           |        |
|-----------|--------|
| <b>W1</b> | 26 AWG |
| <b>W2</b> | 28 AWG |
| <b>W3</b> | 30 AWG |

#### CABLE COLOR

**94** White

#### TERMINATION – SECOND END

|          |               |
|----------|---------------|
| <b>L</b> | Loose cut end |
| <b>F</b> | Female        |
| <b>M</b> | Male          |

#### CABLE LENGTH

|             |                      |
|-------------|----------------------|
| <b>0150</b> | 150mm                |
| <b>0300</b> | 300mm (double-ended) |
| <b>0450</b> | 450mm (single-ended) |

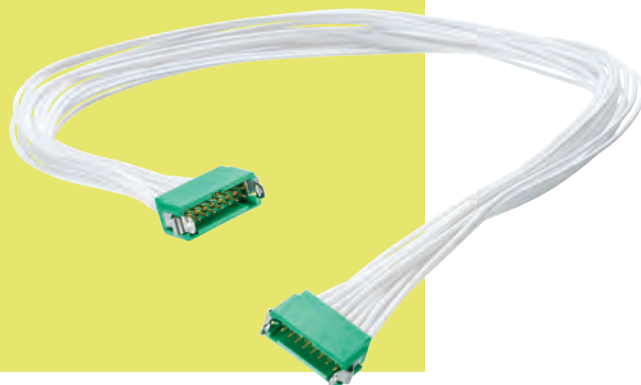
All dimensions in mm.

Patent Published

# Gecko with Latches Connectors

## Male Cable Assemblies

- ❖ No. 1 position identified on housing.
- ❖ 2A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +150°C.
- ❖ Back potted for added strain relief.
- ❖ 4-finger Beryllium Copper contact on the female connector.
- ❖ Check website or Ask an Expert for available combinations.



### PART NUMBERING SYSTEM

**G125 - M X X XX XX LX - XXXX X**

#### SERIES CODE

#### GENDER - FIRST END

**M** Male

#### CABLE STYLE

**C** Standard Cables  
**D** Twisted Pairs

#### CABLE SIZE

**1** 26 AWG  
**2** 28 AWG  
**3** 30 AWG

#### TOTAL NO. OF CONTACTS

**06, 10, 12, 16, 20, 26, 34, 50**

#### TERMINATION - SECOND END

**L** Loose cut end  
**F** Female connector  
**M** Male connector

#### CABLE LENGTH

**0150** 150mm  
**0300** 300mm (double-ended)  
**0450** 450mm (single-ended)  
**XXXX** XXXXmm

#### LATCHES

**L0** No Latches  
**L4** Latches (male connectors only)

#### CABLE COLOR

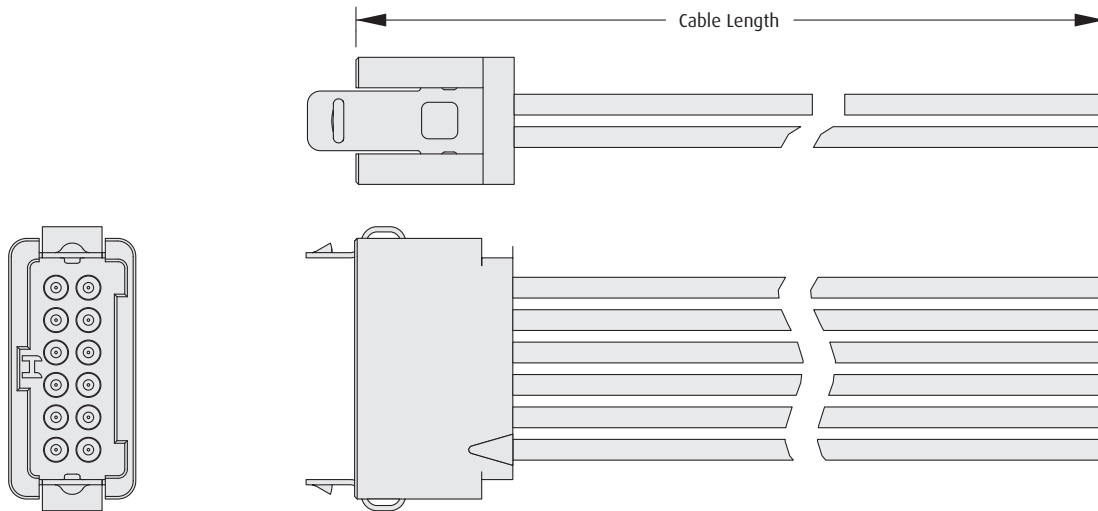
**05** White cable  
**68** Multicolor cable (single-ended)



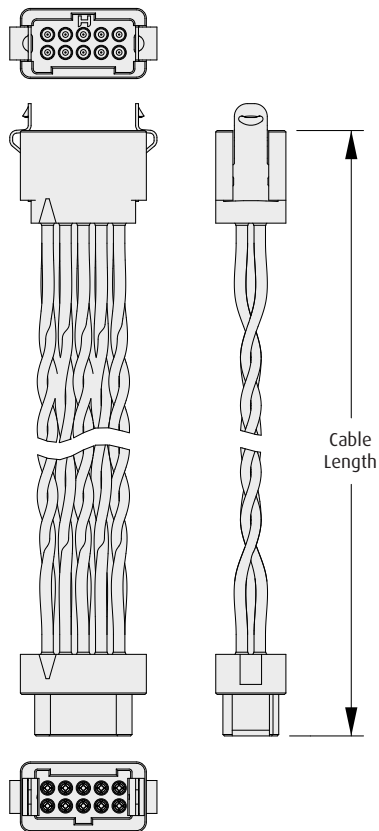
# Gecko with Latches Connectors

- ❖ Examples of available cable assembly options - see previous page for part numbering.
- ❖ Cable assemblies are constructed with Contact 1 attached to Contact 1, Contact 2 to Contact 2, etc.
- ❖ Twisted Pairs are 2 twists per inch and 3 twists per inch, alternated along the connector.

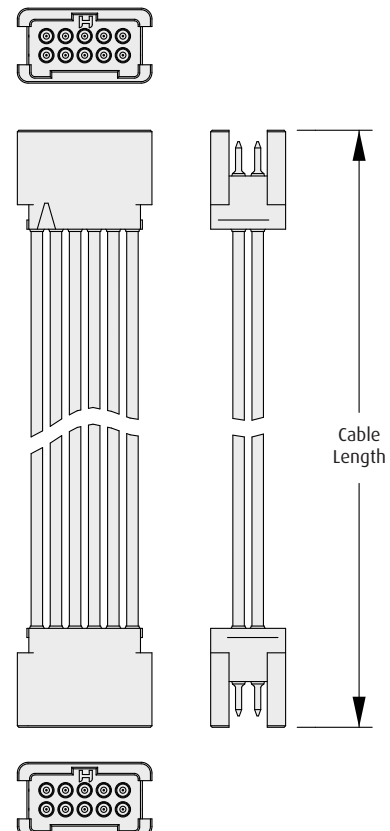
## MALE SINGLE ENDED



## MALE - FEMALE WITH TWISTED PAIRS



## MALE - MALE



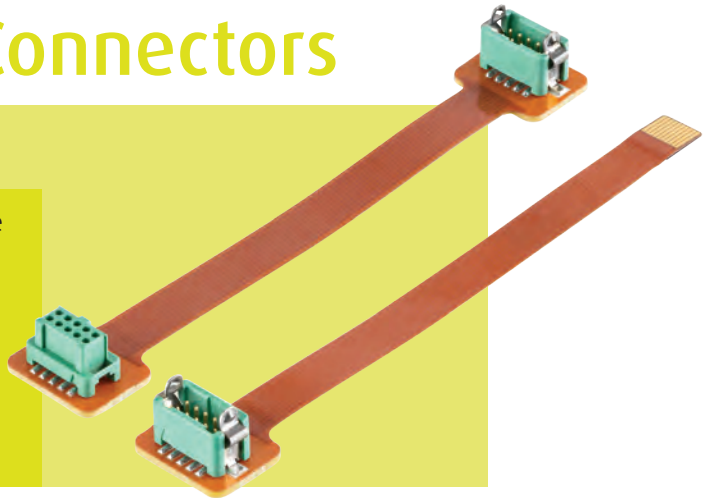
All dimensions in mm.

Patent Published

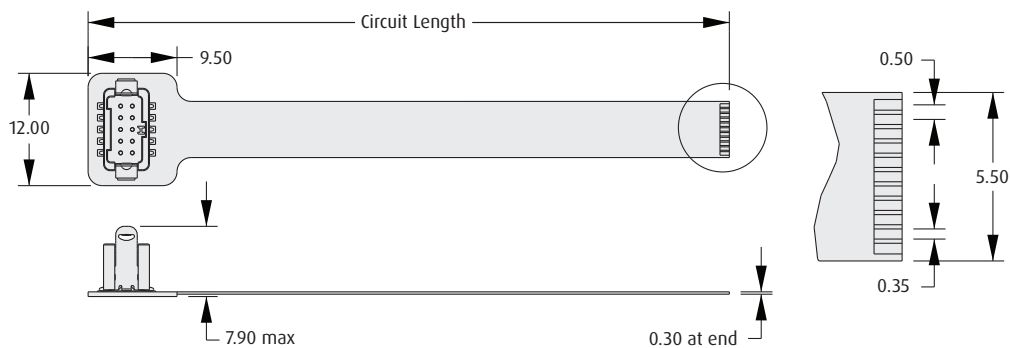
# Gecko with Latches Connectors

## Flexible Circuit Assemblies

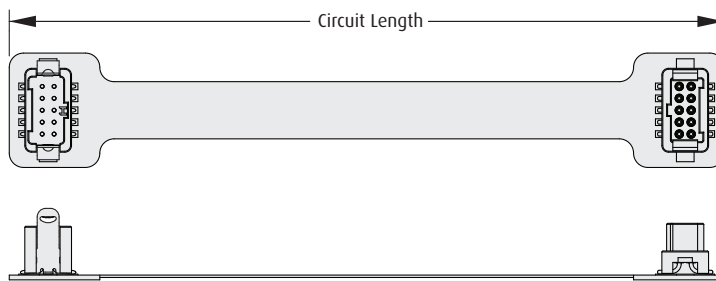
- ❖ Surface mount connectors with latches assembled to flexible printed circuit for an alternative to cable connection.
- ❖ Improved bend radius and lower mated height than equivalent cable assemblies.
- ❖ The free end of the single-ended assembly is compatible with 0.5mm pitch FPC connectors.
- ❖ Contact Harwin for alternative connector sizes and cable lengths.



### MALE SINGLE ENDED



### MALE - FEMALE DOUBLE ENDED



### HOW TO ORDER

**G125 - F1 MS1 10 - 075 - XXX**

#### SERIES CODE

#### CONNECTOR - FIRST END

**MS1** Male with Latches

#### TOTAL NO. OF CONTACTS

**10**

#### CONNECTOR - SECOND END

|            |                                |
|------------|--------------------------------|
| <b>L</b>   | Free End (Single Ended)        |
| <b>FS1</b> | Female compatible with Latches |

#### CIRCUIT LENGTH

**075** 75mm

All dimensions in mm.

Patent Published

# Gecko Connectors Tooling

- ❖ Instruction sheets can be accessed at [www.harwin.com/instructions](http://www.harwin.com/instructions).
- ❖ A Gecko Crimping Instruction video is available at [www.harwin.com/harwintv](http://www.harwin.com/harwintv).

| HAND CRIMP TOOL   | POSITIONER             |  |                 |                 |  |                 |   |                 |  |               |                 |              |                 |
|---|------------------------|--|-----------------|-----------------|--|-----------------|---|-----------------|--|---------------|-----------------|--------------|-----------------|
| <ul style="list-style-type: none"> <li>❖ Precision tool with ratchet mechanism and 8-indent form.</li> <li>❖ Must be used with positioner.</li> <li>❖ Instruction sheet available.</li> </ul>  <table border="1" data-bbox="485 1138 810 1253"> <thead> <tr> <th colspan="2">ORDER CODE</th></tr> </thead> <tbody> <tr> <td>Signal crimps</td><td><b>Z125-900</b></td></tr> <tr> <td>Power crimps</td><td><b>Z125-903</b></td></tr> </tbody> </table> | ORDER CODE             |  | Signal crimps   | <b>Z125-900</b> | Power crimps   | <b>Z125-903</b> | <ul style="list-style-type: none"> <li>❖ Must be used with hand crimp tool.</li> </ul>  <table border="1" data-bbox="1183 1138 1508 1253"> <thead> <tr> <th colspan="2">ORDER CODE</th></tr> </thead> <tbody> <tr> <td>Signal crimps</td><td><b>Z125-901</b></td></tr> <tr> <td>Power crimps</td><td><b>Z125-904</b></td></tr> </tbody> </table> | ORDER CODE      |  | Signal crimps | <b>Z125-901</b> | Power crimps | <b>Z125-904</b> |
| ORDER CODE  |                        |  |                 |                 |  |                 |   |                 |  |               |                 |              |                 |
| Signal crimps   | <b>Z125-900</b>        |  |                 |                 |  |                 |   |                 |  |               |                 |              |                 |
| Power crimps  | <b>Z125-903</b>        |  |                 |                 |  |                 |   |                 |  |               |                 |              |                 |
| ORDER CODE  |                        |  |                 |                 |  |                 |   |                 |  |               |                 |              |                 |
| Signal crimps   | <b>Z125-901</b>        |  |                 |                 |  |                 |   |                 |  |               |                 |              |                 |
| Power crimps  | <b>Z125-904</b>        |  |                 |                 |  |                 |   |                 |  |               |                 |              |                 |
| INSERTION/REMOVAL TOOL  | INSERTION/REMOVAL TOOL |  |                 |                 |  |                 |   |                 |  |               |                 |              |                 |
| <ul style="list-style-type: none"> <li>❖ For inserting and removing crimped signal contacts into the rear of housings.</li> <li>❖ Instruction sheet available.</li> </ul>  <table border="1" data-bbox="631 1810 810 1887"> <thead> <tr> <th colspan="2">ORDER CODE</th></tr> </thead> <tbody> <tr> <td colspan="2"><b>Z125-902</b></td></tr> </tbody> </table>  | ORDER CODE             |  | <b>Z125-902</b> |                 | <ul style="list-style-type: none"> <li>❖ For inserting and removing crimped power contacts into the rear of housings.</li> <li>❖ Instruction sheet available.</li> </ul>  <table border="1" data-bbox="1330 1810 1508 1887"> <thead> <tr> <th colspan="2">ORDER CODE</th></tr> </thead> <tbody> <tr> <td colspan="2"><b>Z125-905</b></td></tr> </tbody> </table> | ORDER CODE      |   | <b>Z125-905</b> |  |               |                 |              |                 |
| ORDER CODE  |                        |  |                 |                 |  |                 |   |                 |  |               |                 |              |                 |
| <b>Z125-902</b>   |                        |  |                 |                 |  |                 |   |                 |  |               |                 |              |                 |
| ORDER CODE  |                        |  |                 |                 |  |                 |   |                 |  |               |                 |              |                 |
| <b>Z125-905</b>   |                        |  |                 |                 |  |                 |   |                 |  |               |                 |              |                 |

All dimensions in mm.

Patent Published

# Gecko Connectors Tooling

❖ Instruction sheets can be accessed at [www.harwin.com/instructions](http://www.harwin.com/instructions).

GECKO

|   |   |
|---|---|
| <p><b>HEX DRIVE BIT</b></p> <ul style="list-style-type: none"> <li>❖ 1.5mm A/F Hex end for Gecko Screw-Lok Hex Socket fixings.</li> <li>❖ For use with torque tooling or similar equipment.</li> </ul>  <p><b>ORDER CODE</b><br/>Z9950-00</p>                   | <p><b>BALL HEX DRIVER</b></p> <ul style="list-style-type: none"> <li>❖ 1.5mm A/F Hex end for Gecko Screw-Lok Hex Socket fixings.</li> <li>❖ Ball-shaped end can be used at a wide range of angles.</li> </ul>  <p><b>ORDER CODE</b><br/>Z9952-00</p> |
| <p><b>SCREWDRIVER</b></p> <ul style="list-style-type: none"> <li>❖ For use with Gecko Screw-Lok board mount nuts.</li> <li>❖ Board mount nuts to be tightened to a torque of <math>21 \pm 2\text{cmN}</math>.</li> </ul>  <p><b>ORDER CODE</b><br/>Z80-298</p> | <p><b>DELATCH TOOL</b></p> <ul style="list-style-type: none"> <li>❖ For assisting with unmating latched connectors.</li> </ul>  <p><b>ORDER CODE</b><br/>Z125-926xx00</p> <p>Replace xx with No. of Contacts: 06, 10, 12, 16, 20, 26, 34 or 50</p>  |

All dimensions in mm.

Patent Published

# Datamate

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# Datamate Connectors Introduction

**Datamate is a 2mm pitch High-Reliability, high performance connector range from Harwin. The range has a proven track record for performance under extreme conditions, and complies with British Standard 9525-F0033.**

Datamate provides a low-profile solution for all variations of cable-to-board, board-to-board and cable-to-cable interconnect requirements. The range has seen many developments to match customer and market demands, and now includes 1-, 2- and 3-row configurations, vertical and horizontal in both Throughboard and Surface Mount designs for PCB flexibility. To meet the demanding requirements of vibration, shock and acceleration, added security is available with the options of latches (for space-saving) or jackscrews (for maximum strain-relief).

With the addition of Datamate Mix-Tek, the 3A signal contacts can be supplied in the same connector as 20A power, 40A high power, or 6GHz coax connections, giving complete flexibility of design. Other range additions include the 101Lok fixing – designed for fast mating with a quarter-turn bayonet-style jackscrew.

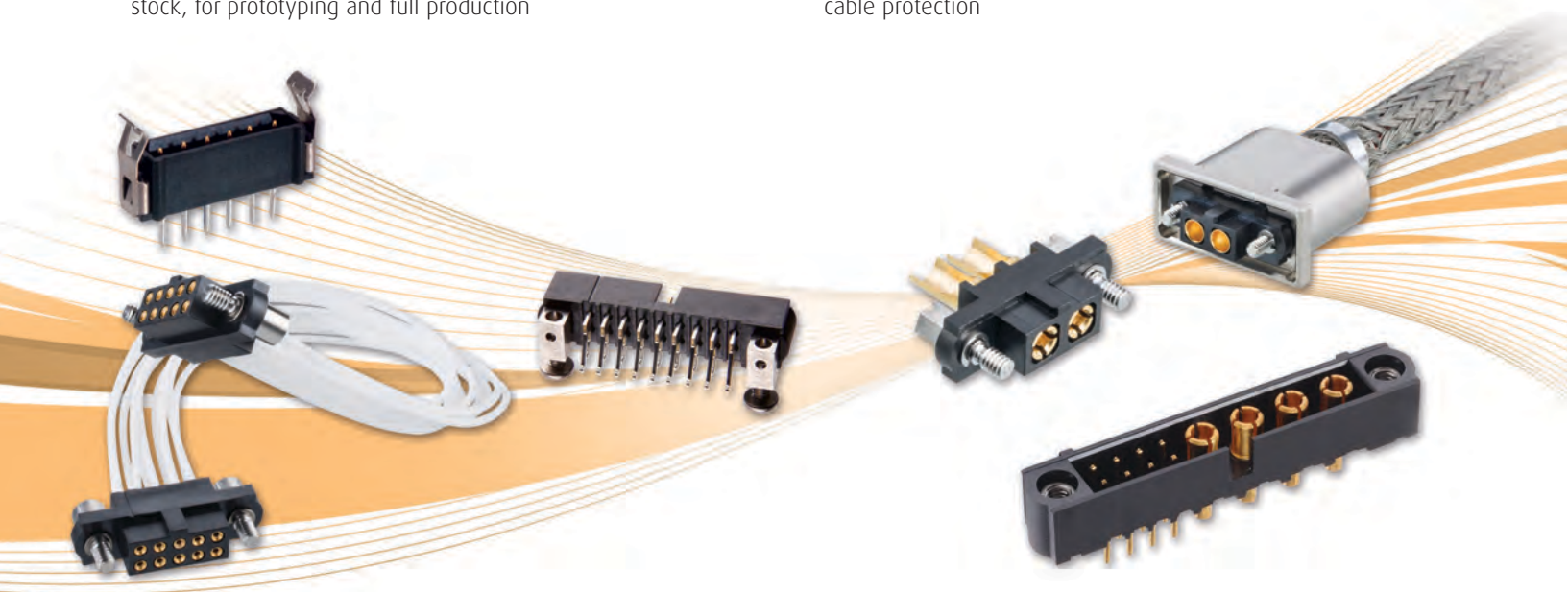
- ❖ 3A per contact (all electrically loaded; 3.3A per individual contact)
- ❖ 4-finger contact design to maintain electrical contact through high vibration and shock
- ❖ Beryllium Copper Contact for improved temperature range: -55°C to +125°C
- ❖ 500 Mating cycles durability
- ❖ Professional connector system at commercial prices
- ❖ Ongoing development program for High-Reliability connectors from Harwin
- ❖ Online videos and Cable assembly facility for assistance with cabling requirements

## Datamate Signal

- ❖ Strong stainless steel jackscrew fixings for maximum strain relief, or lightweight space-saving locking latches
- ❖ Lightweight metal and plastic hood options for shielding and additional cable protection
- ❖ Choices of pre-wired contacts or full cable assemblies from stock, for prototyping and full production

## Datamate Mix-Tek

- ❖ Multiple variations of power-only, power-and-signal, or coax only variations of connectors, available from stock
- ❖ Full cable assembly options for coax and power, in 2/4/6/8 contact connectors on 4mm pitch
- ❖ Compatible with lightweight metal hoods for shielding and cable protection





# Datamate Connectors Product Features

## Four Finger Beryllium Copper Contact

Proven high-reliability contact design ensures signal integrity under extremes of bump, vibration and shock. Durable to over 500 mating cycles.



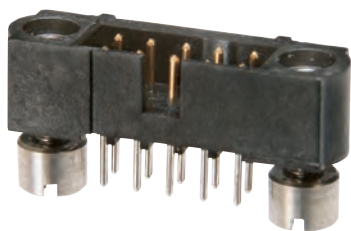
## Polarization

All Datamate designs feature polarization to prevent mis-mating in everyday use.



## Rugged construction

For use in harsh environments where high vibration, shock and temperature are a consideration.



## Innovative fast-acting bayonet fixing

101Lok utilises a 101-degree turn to quickly and simply lock mating connectors together.



## Ready-made Cable Assemblies

Wide selection of stocked single and double-ended cable assemblies, with jackscrews or latching connectors, signal or power contacts.



## Single piece metal Backshells for EMC Shielding

Compatible with the J-Tek and Mix-Tek connector ranges, these robust hoods provide full 360° shielding, complete with retention feature on cable exit for fixing additional braiding.



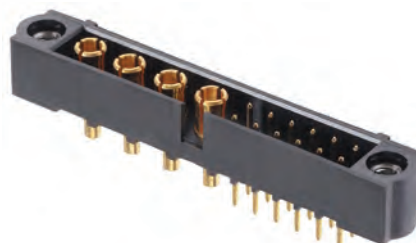
## Low outgassing emissions

Plastic housings with outgassing emissions within NASA & ESA recommendations, ready for space and low-pressure research.



## Comprehensive Operating Temperature

All connectors suitable for operational temperatures from -55°C to +125°C, due to high quality material choice.



All dimensions in mm.

# Datamate Mix-Tek Specification

## Materials

|                  |  |
|------------------|--|
| Housings:        | Glass-filled thermoplastic UL94V-0               |
| Female contacts: | Brass shell, with Beryllium Copper inner contact |
| Male contacts:   | Copper alloy                                     |
| Finish:          | See individual pages                             |

## Electrical

|                                   |  |
|-----------------------------------|--|
| <b>Current</b>                    |  |
| Individual contacts in isolation: | 3.3A max (at 25°C)<br>2.6A max (at 85°C) |
| All contacts simultaneously:      | 3.0A max (at 25°C)<br>2.2A max (at 85°C) |
| <b>Working voltage</b>            |  |
| At sea level 1013 mbar:           | 800V DC or AC <sub>rms</sub>             |
| <b>Voltage proof</b>              |  |
| At sea level 1013 mbar:           | 1,200V DC or AC <sub>rms</sub>           |
| <b>Contact resistance</b>         |  |
| Initial:                          | 20mΩ max                                 |
| After conditioning:               | 25mΩ max                                 |
| <b>Insulation resistance</b>      |  |
| Initial:                          | 1,000MΩ min                              |
| After conditioning:               | 100MΩ min                                |

## Mechanical

|                             |                                      |
|-----------------------------|--------------------------------------|
| Durability:                 | 500 operations                       |
| Insertion force (max):      | 2.8N                                 |
| Withdrawal force (min):     | 0.2N                                 |
| Signal crimp accommodation: | 22 AWG to 28 AWG<br>BS 3G 210 Type A |

## Environmental

|                               |   |
|-------------------------------|---|
| Environmental classification: | 55/125/56 days at 95% RH                                      |
| Operational temperature:      | -55°C to +125°C   |
| *Vibration sensitivity:       | 10Hz to 2000Hz, 0.75mm, 98m/s <sup>2</sup> (10G), duration 6h |
| *Bump severity:               | 390m/s <sup>2</sup> (40G), 4000 ±10 bumps                     |
| *Shock severity:              | 981m/s <sup>2</sup> (100G) for 6ms                            |
| *Acceleration severity:       | 490m/s <sup>2</sup> (50G)                                     |

\* Tested with connectors with Jackscrews.

## Power Contacts

### Materials

|                       |                                 |
|-----------------------|---------------------------------|
| Latching collar:      | Beryllium Copper, Nickel plated |
| Other metallic parts: | Copper alloy, Gold plated       |

### Electrical

|                               |                            |
|-------------------------------|----------------------------|
| <b>Current (in isolation)</b> |                            |
| 32x, 33x:                     | 20A max                    |
| PFx, PMx:                     | 40A nominal, up to 80A max |
| Contact resistance:           | 6mΩ max                    |

### Mechanical

|  |              |
|--|--------------|
| <b>Insertion force (max)</b>             |              |
| 32x, 33x:                                | 8N           |
| PFx, PMx:                                | 15N          |
| <b>Withdrawal force (min):</b>           | 0.5N         |
| <b>Contact replacement in connector:</b> |              |
|  | 5 times      |
| <b>Power contact accommodation</b>       |              |
| 32x, 33x:                                | 12 to 20 AWG |
| PFx, PMx:                                | 10 AWG       |

## Coax Contacts

### Materials

|                       |                                 |
|-----------------------|---------------------------------|
| Latching collar:      | Beryllium Copper, Nickel plated |
| Other metallic parts: | Copper alloy, Gold plated       |
| Insulator:            | PTFE                            |

### Electrical

|                                |  |
|--------------------------------|--|
| Frequency range:               | 6GHz (depending on cable)                    |
| Impedance:                     | 50Ω  |
| VSWR:                          | 1.05 + (0.04 x Frequency) GHz max            |
| Operating voltage (sea level): | 180V AC at 500mA                             |
| Maximum voltage (sea level):   | 1000V AC <sub>rms</sub>                      |
| Contact resistance:            | 6mΩ max                                      |
| Insulation resistance:         | 10 <sup>6</sup> MΩ at 250V AC <sub>rms</sub> |

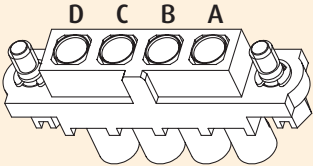
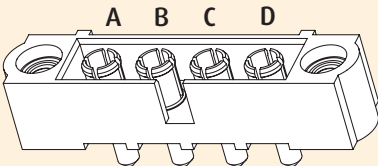
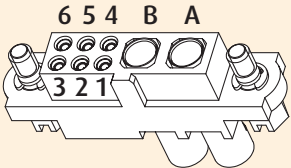
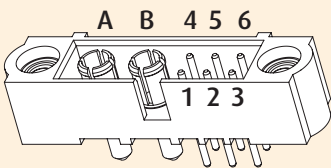
### Mechanical

|                                   |         |
|-----------------------------------|---------|
| Insertion force (max):            | 20N     |
| Withdrawal force (min):           | 0.5N    |
| Contact replacement in connector: | 5 times |

All dimensions in mm.

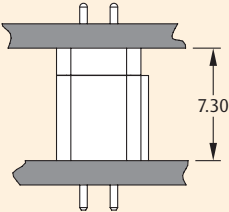
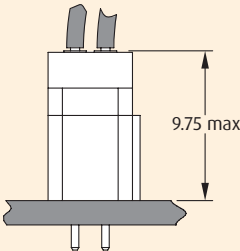
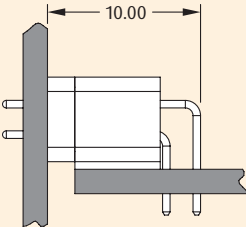
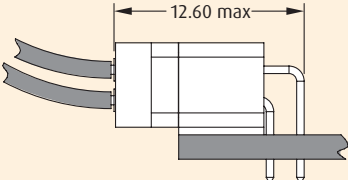
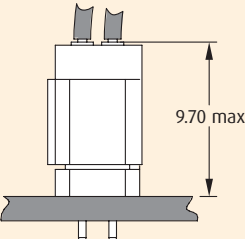
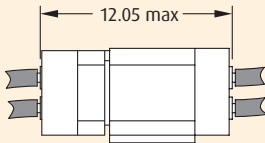


# Datamate Mix-Tek Pin Numbering

|                    | FEMALE  | MALE  |
|--------------------|---|---|
| POWER OR COAX ONLY |  |  |
| SIGNAL AND POWER   |  |  |

DATAMATE MIX-TEK

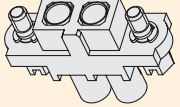
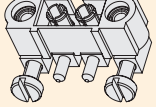
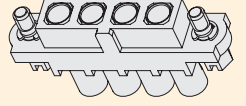
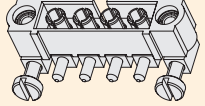
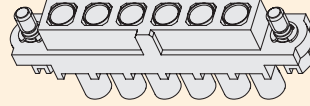
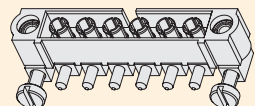
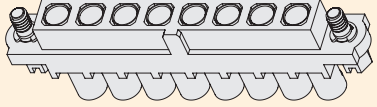
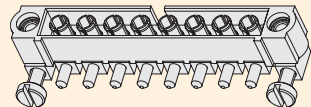
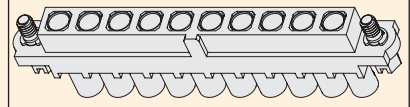
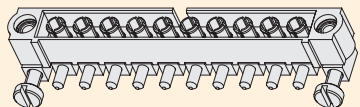
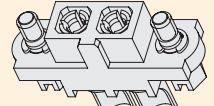
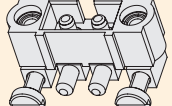
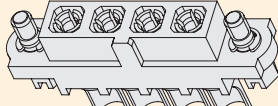
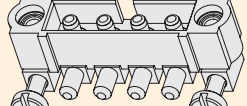
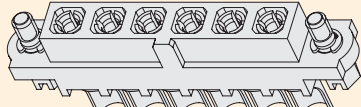
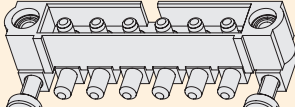
## Mating Profiles

|      |                         | FEMALE  |   |
|------|-------------------------|---|---|
|      |                         | VERTICAL THROUGHBOARD   | CRIMP   |
| MALE | VERTICAL THROUGHBOARD   |  |  |
|      | HORIZONTAL THROUGHBOARD |  |  |
|      | CRIMP                   |  |  |

All dimensions in mm.

# Datamate Power Connectors

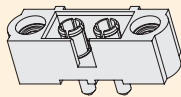
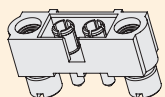
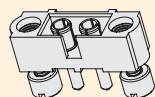
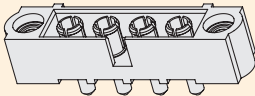
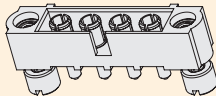
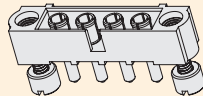
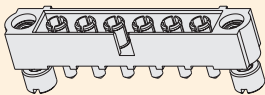
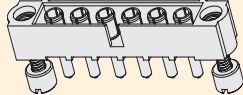
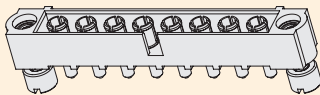
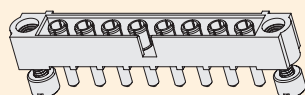
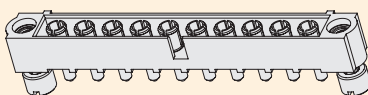
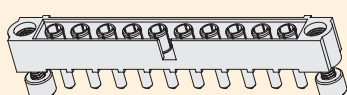
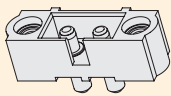
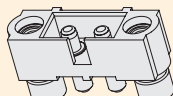
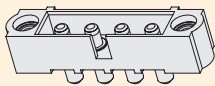
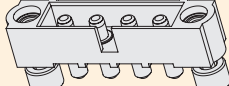
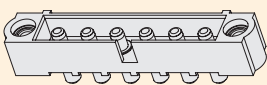
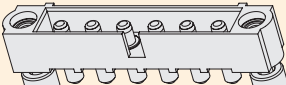
- Standard high-reliability connectors fitted with power contacts on 4mm pitch.

|                       |              | TYPE  |   |  |
|-----------------------|--------------|---|---|--|
|                       |              | Cable Assemblies  | Female Cable - Hex Slotted Jackscrews   | Male Horizontal 3.5mm PC Tail - 5mm Board Mount Jackcrew   |
| TOTAL NO. OF CONTACTS | 2 Power      | Female Single Ended (Female to Cut End)<br>Hex Socket Jackscrews<br>M80-FC325F1-02-0150L<br>Male Single Ended (Male to Cut End)<br>Jackscrew Fixing<br>M80-MC335M1-02-0150L | <br>M80-4000000F1-02-325-00-000    | <br>M80-5000000M5-02-333-00-000   |
|                       | 4 Power      | Female Single Ended (Female to Cut End)<br>Hex Socket Jackscrews<br>M80-FC325F1-04-0150L<br>Male Single Ended (Male to Cut End)<br>Jackscrew Fixing<br>M80-MC335M1-04-0150L | <br>M80-4000000F1-04-325-00-000   | <br>M80-5000000M5-04-333-00-000   |
|                       | 6 Power      | Female Single Ended (Female to Cut End)<br>Hex Socket Jackscrews<br>M80-FC325F1-06-0150L<br>Male Single Ended (Male to Cut End)<br>Jackscrew Fixing<br>M80-MC335M1-06-0150L | <br>M80-4000000F1-06-325-00-000   | <br>M80-5000000M5-06-333-00-000   |
|                       | 8 Power      | Female Single Ended (Female to Cut End)<br>Hex Socket Jackscrews<br>M80-FC325F1-08-0150L<br>Male Single Ended (Male to Cut End)<br>Jackscrew Fixing<br>M80-MC335M1-08-0150L | <br>M80-4000000F1-08-325-00-000  | <br>M80-5000000M5-08-333-00-000  |
|                       | 10 Power     |   | <br>M80-4000000F1-10-325-00-000 | <br>M80-5000000M5-10-333-00-000 |
|                       | 2 High Power | Female Single Ended (Female to Cut End)<br>Hex Socket Jackscrews<br>M80-FCPF5F1-02-0150L<br>Male Single Ended (Male to Cut End)<br>Jackscrew Fixing<br>M80-MCPM5M1-02-0150L | <br>M80-4000000F1-02-PF5-00-000 | <br>M80-5000000M5-02-PM3-00-000 |
|                       | 4 High Power | Female Single Ended (Female to Cut End)<br>Hex Socket Jackscrews<br>M80-FCPF5F1-04-0150L<br>Male Single Ended (Male to Cut End)<br>Jackscrew Fixing<br>M80-MCPM5M1-04-0150L | <br>M80-4000000F1-04-PF5-00-000 | <br>M80-5000000M5-04-PM3-00-000 |
|                       | 6 High Power | Female Single Ended (Female to Cut End)<br>Hex Socket Jackscrews<br>M80-FCPF5F1-06-0150L<br>Male Single Ended (Male to Cut End)<br>Jackscrew Fixing<br>M80-MCPM5M1-06-0150L | <br>M80-4000000F1-06-PF5-00-000 | <br>M80-5000000M5-06-PM3-00-000 |
|                       | 8 High Power | Female Single Ended (Female to Cut End)<br>Hex Socket Jackscrews<br>M80-FCPF5F1-08-0150L<br>Male Single Ended (Male to Cut End)<br>Jackscrew Fixing<br>M80-MCPM5M1-08-0150L |   |  |

All dimensions in mm.

# Datamate Power Connectors

- Standard high-reliability connectors fitted with power contacts on 4mm pitch.

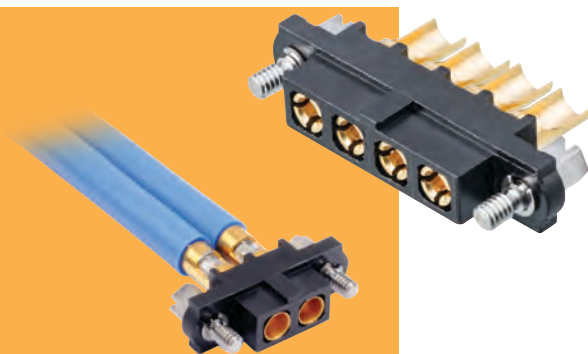
|                       |              | TYPE   |   |  |
|-----------------------|--------------|--|---|--|
|                       |              | Male Vertical 3.5mm Tail - Jackscrew Fixing  | Male Vertical 3.5mm Tail - 3.5mm Board Mount Jackcrew   | Male Vertical 5mm Tail - 5mm Board Mount Jackcrew  |
| TOTAL NO. OF CONTACTS | 2 Power      | <br>M80-5000000M1-02-331-00-000   | <br>M80-5000000M2-02-331-00-000    | <br>M80-5000000M3-02-332-00-000   |
|                       | 4 Power      | <br>M80-5000000M1-04-331-00-000   | <br>M80-5000000M2-04-331-00-000   | <br>M80-5000000M3-04-332-00-000   |
|                       | 6 Power      |  | <br>M80-5000000M2-06-331-00-000   | <br>M80-5000000M3-06-332-00-000   |
|                       | 8 Power      |  | <br>M80-5000000M2-08-331-00-000 | <br>M80-5000000M3-08-332-00-000 |
|                       | 10 Power     |  | <br>M80-5000000M2-10-331-00-000 | <br>M80-5000000M3-10-332-00-000 |
|                       | 2 High Power | <br>M80-5000000M1-02-PM1-00-000 | <br>M80-5000000M2-02-PM1-00-000 |  |
|                       | 4 High Power | <br>M80-5000000M1-04-PM1-00-000 | <br>M80-5000000M2-04-PM1-00-000 |  |
|                       | 6 High Power | <br>M80-5000000M1-06-PM1-00-000 | <br>M80-5000000M2-06-PM1-00-000 |  |

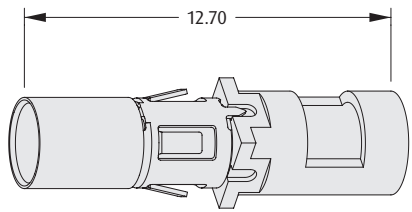
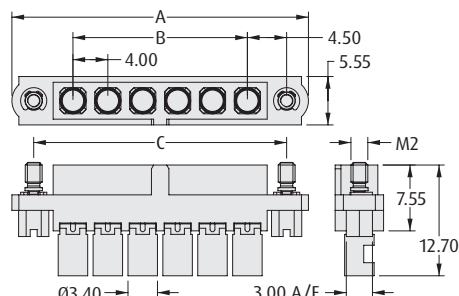
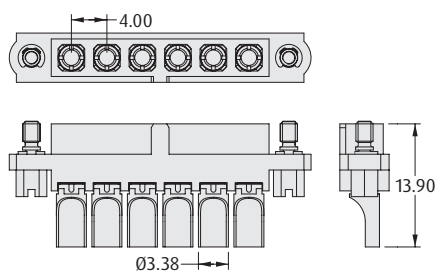
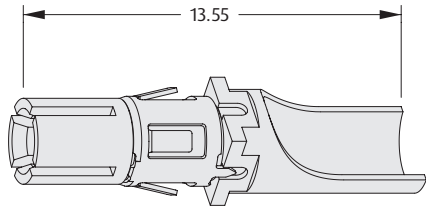
All dimensions in mm.

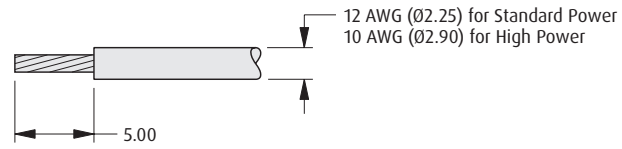
# Datamate Power Connectors

## Female Power Cable Connector Kit

- ❖ Part numbers are for a complete kit of a housing and the applicable number of contacts.
- ❖ Hexagonal slotted jackscrews are assembled where specified.
- ❖ Polarized housings.
- ❖ Standard Power contacts rated to 20A, High Power to 40A.



| POWER CONTACTS ONLY  |  | CALCULATION   |                                 | SPARE SOLDER CONTACTS  |   |
|--|--|---|---------------------------------|--|---|
| Standard Power (12 AWG)  |  | A   | B + 14                          |  |  |
|  |  | B   | (No. of Power contacts - 1) x 4 |  |   |
|  |  | C   | B + 9                           |  |   |
|  |  |   |                                 | ORDER CODE<br>M80-325  |   |
| High Power (10 AWG)  |  |  |                                 |  |   |
|  |  |   |                                 | ORDER CODE<br>M80-PF5  |   |

| TOOLS   |  | WIRE STRIPPING DETAILS   |  |
|---|--|--|--|
| Contact Removal Tool - Z80-290<br>❖ No special tooling required for connecting wire, other than standard soldering equipment. |  |  |  |

| HOW TO ORDER                          |                |                         |                |
|---------------------------------------|----------------|-------------------------|----------------|
| M80 - 4000000F1 - XX - XXX - 00 - 000 |                |                         |                |
| NO. OF POWER CONTACTS                 |                | POWER CONTACTS PART NO. |                |
| 02, 04, 06, 08, 10                    | Standard Power | 325                     | Standard Power |
| 02, 04, 06                            | High Power     | PF5                     | High Power     |

All dimensions in mm.

# Datamate Power Connectors

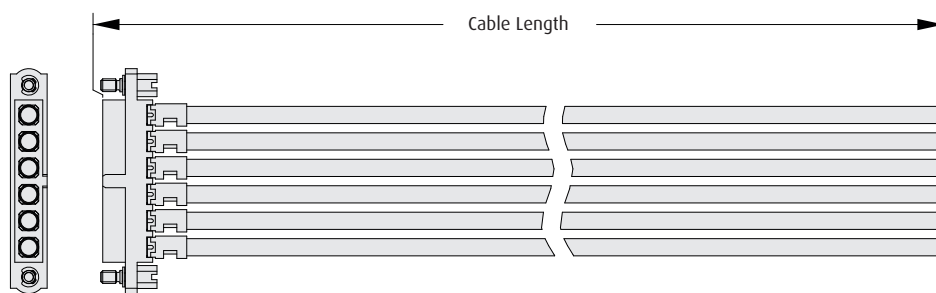
## Female Cable Assemblies

- Ready-made cable assemblies, fully tested and inspected.
- Standard Power contacts are rated to 20A, and are fitted with 12AWG, white PTFE-insulated cables.
- High Power are rated to 40A nominal, up to 80A max. Fitted with 10AWG, white PTFE-insulated cables.
- Cable assemblies are constructed with Contact A to Contact A, Contact B to Contact B, etc.

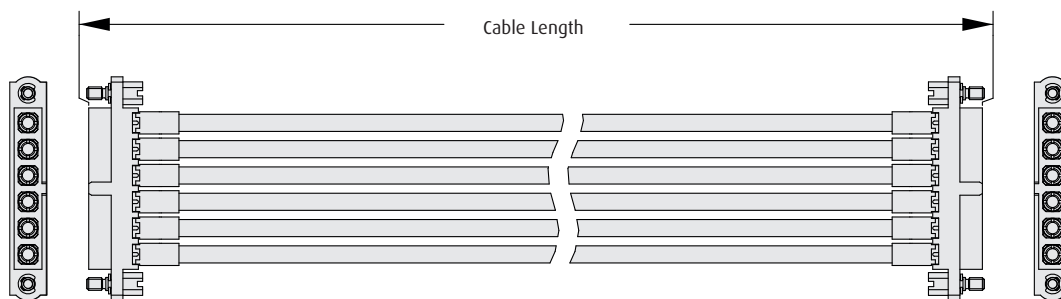


DATAMATE POWER

### STANDARD POWER



### HIGH POWER



### HOW TO ORDER

**M80 - FC XXX F1 - XX - XXXX XX**

#### SERIES CODE

#### POWER CONTACTS PART NO.

|            |                |
|------------|----------------|
| <b>325</b> | Standard Power |
| <b>PF5</b> | High Power     |

#### JACKSCREW

|           |                        |
|-----------|------------------------|
| <b>F1</b> | Hex Slotted Jackscrews |
|-----------|------------------------|

#### TERMINATION - SECOND END

|           |                  |
|-----------|------------------|
| <b>L</b>  | Loose cut end    |
| <b>F1</b> | Female connector |

#### CABLE LENGTH

|             |        |
|-------------|--------|
| <b>0150</b> | 150mm  |
| <b>XXXX</b> | XXXXmm |

#### NO. OF POWER CONTACTS

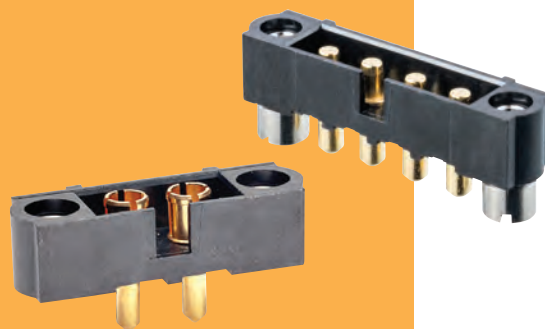
**02, 04, 06, 08**

All dimensions in mm.

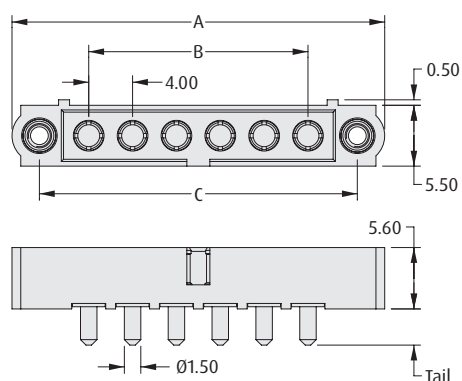
# Datamate Power Connectors

## Male Vertical Throughboard

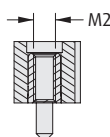
- ❖ A selection of stocked Datamate Mix-Tek solder tail standard layouts.
- ❖ Choice to suit two PCB thicknesses and two stud lengths.
- ❖ Standard Power contacts rated to 20A.
- ❖ High Power rated to 40A nominal, up to 80A max.



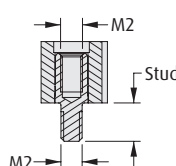
### STANDARD POWER



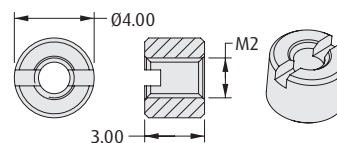
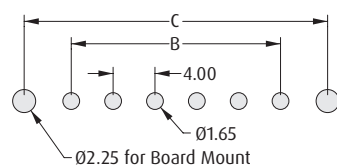
**Jackscrew fixing**



**Jackscrew with Board Mount**



**Recommended PC Board Pattern**

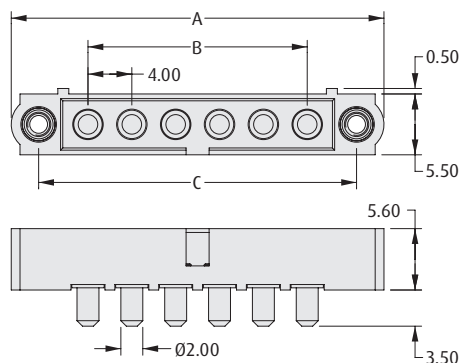


**Board Mount Nut, 2 per connector**

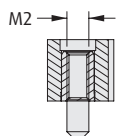
#### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 14$                                      |
| <b>B</b> | $(\text{No. of Power contacts} - 1) \times 4$ |
| <b>C</b> | $B + 9$                                       |

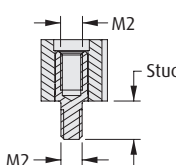
### HIGH POWER



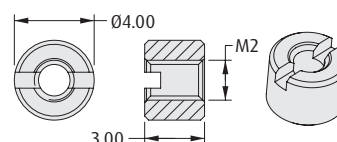
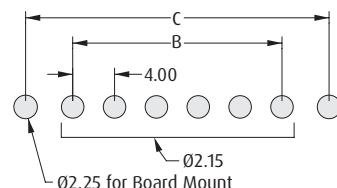
**Jackscrew fixing**



**Jackscrew with Board Mount**



**Recommended PC Board Pattern**



**Board Mount Nut, 2 per connector**

### HOW TO ORDER

**M80 - 5000000 XX - XX - XXX - 00 - 000**

#### JACKSCREW

|           |                             |
|-----------|-----------------------------|
| <b>M1</b> | Jackscrew only              |
| <b>M2</b> | With 3.5mm Board Mount stud |
| <b>M3</b> | With 5mm Board Mount stud   |

Check image chart to confirm Off-The-Shelf sizes available

#### NO. OF POWER CONTACTS

|                           |                                   |
|---------------------------|-----------------------------------|
| <b>02, 04</b>             | Standard Power (M1 Jackscrews)    |
| <b>02, 04, 06, 08, 10</b> | Standard Power (M2/M3 Jackscrews) |
| <b>02, 04, 06</b>         | High Power (M1/M2 Jackscrews)     |

#### POWER CONTACTS PART NO.

|            |                           |
|------------|---------------------------|
| <b>331</b> | 3.5mm Tail Standard Power |
| <b>332</b> | 5mm Tail Standard Power   |
| <b>PM1</b> | 3.5mm Tail High Power     |

All dimensions in mm.

# Datamate Power Connectors

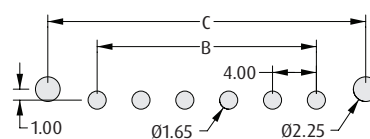
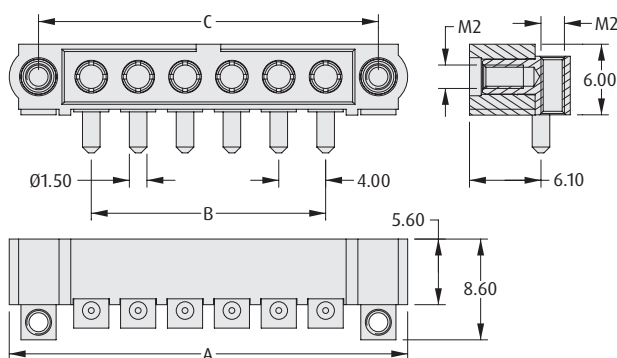
## Male Horizontal Throughboard

- Choice to suit two PCB thicknesses and two stud lengths.
- Standard Power contacts rated to 20A.
- High Power rated to 40A nominal, up to 80A max.



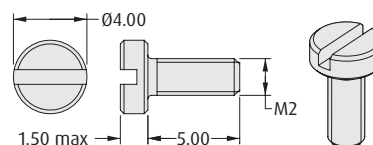
DATAMATE POWER

### STANDARD POWER



Recommended PC Board Pattern

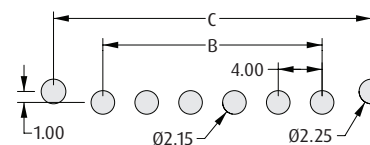
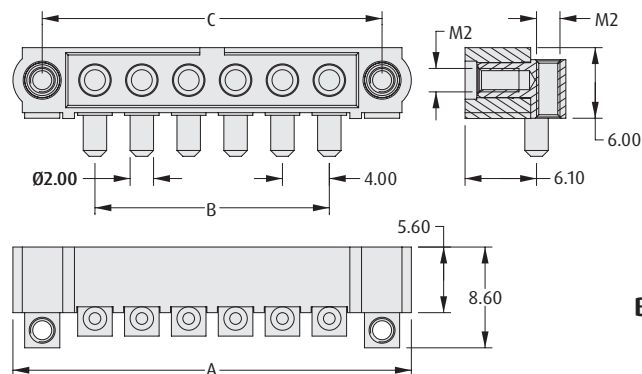
Board Mount Bolt,  
2 per connector



#### CALCULATION

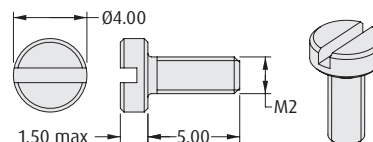
|          |   |
|----------|---|
| <b>A</b> | $B + 14$                                      |
| <b>B</b> | $(\text{No. of Power contacts} - 1) \times 4$ |
| <b>C</b> | $B + 9$                                       |

### HIGH POWER



Recommended PC Board Pattern

Board Mount Bolt,  
2 per connector



### HOW TO ORDER

**M80 - 5000000 M5 - XX - XXX - 00 - 000**

#### NO. OF POWER CONTACTS

|                           |                |
|---------------------------|----------------|
| <b>02, 04, 06, 08, 10</b> | Standard Power |
| <b>02, 04, 06,</b>        | High Power     |

#### POWER CONTACTS PART NO.

|            |                           |
|------------|---------------------------|
| <b>333</b> | 3.5mm Tail Standard Power |
| <b>PM3</b> | 3.5mm Tail High Power     |

All dimensions in mm.



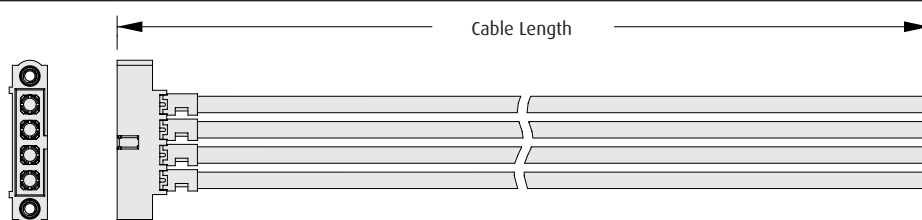
# Datamate Power Connectors

## Male Cable Assemblies

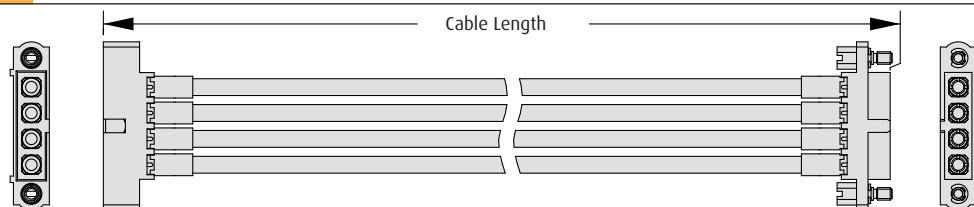
- ❖ Ready-made cable assemblies, fully tested and inspected.
- ❖ Standard Power contacts are rated to 20A, and are fitted with 12AWG, white PTFE-insulated cables.
- ❖ High Power are rated to 40A nominal, up to 80A max. Fitted with 10AWG, white PTFE-insulated cables.
- ❖ Cable assemblies are constructed with Contact A to Contact A, Contact B to Contact B, etc.



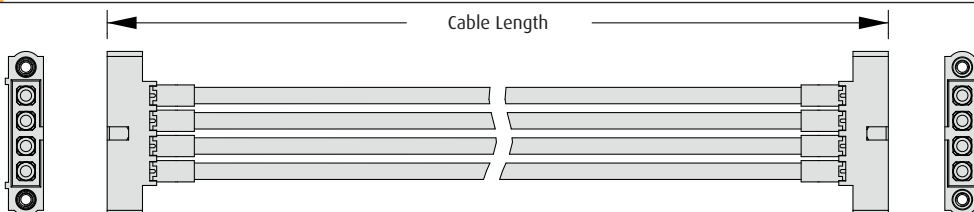
### MALE SINGLE-ENDED



### MALE - FEMALE



### MALE - MALE



### HOW TO ORDER

**M80 - MC XXX M1 - XX - XXXX XX**

#### SERIES CODE

#### POWER CONTACTS PART NO.

|            |                |
|------------|----------------|
| <b>335</b> | Standard Power |
| <b>PM5</b> | High Power     |

#### JACKSCREW

|           |                     |
|-----------|---------------------|
| <b>M1</b> | Internal Jackscrews |
|-----------|---------------------|

#### TERMINATION - SECOND END

|           |   |
|-----------|---|
| <b>L</b>  | Loose cut end                           |
| <b>F1</b> | Female (Floating Hex Slotted Jackscrew) |
| <b>M1</b> | Male connector                          |

#### CABLE LENGTH

|             |        |
|-------------|--------|
| <b>0150</b> | 150mm  |
| <b>XXXX</b> | XXXXmm |

#### NO. OF POWER CONTACTS

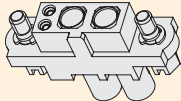
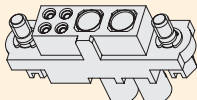
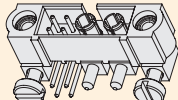
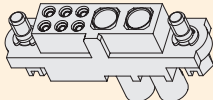
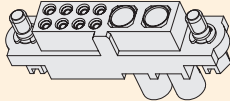
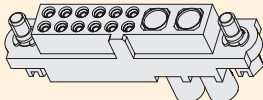
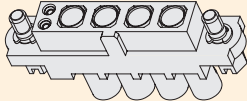
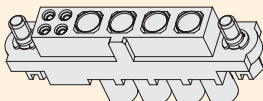
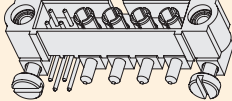
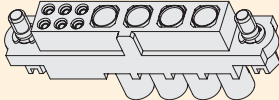
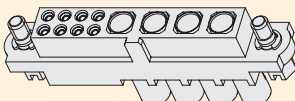
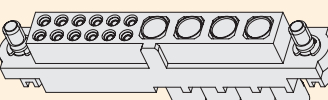
**02, 04, 06, 08**

All dimensions in mm.



# Datamate Power/Signal Connectors

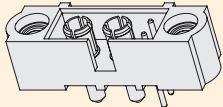
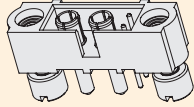
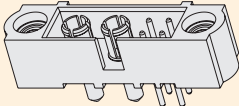
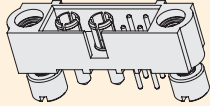
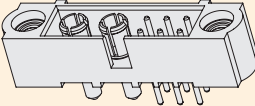
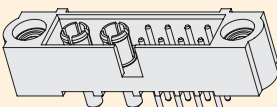
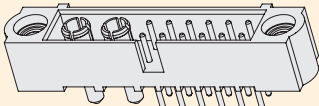
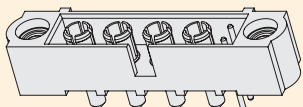
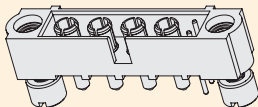
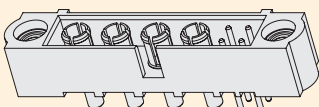
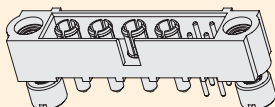
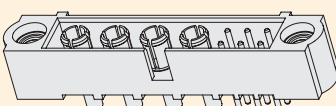
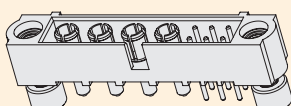
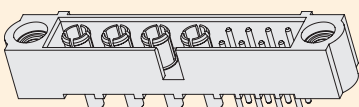
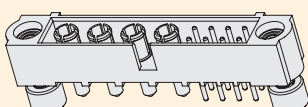
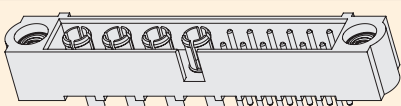
❖ Standard high-reliability connectors fitted with a combination of signal and 20A power contacts.

|                       |           | TYPE   |  |
|-----------------------|-----------|--|--|
|                       |           | Female Cable -<br>Hex Slotted Jackscrews   | Male Horizontal 3mm Tail -<br>5mm Board Mount Jackcrew   |
| TOTAL NO. OF CONTACTS | 2 Power   |  <p>M80-4C10205F1-02-325-00-000</p>   |  |
|                       | 4 Signal  |  <p>M80-4C10405F1-02-325-00-000</p>   |  <p>M80-5L10405M5-02-333-00-000</p>   |
|                       | 6 Signal  |  <p>M80-4C10605F1-02-325-00-000</p>   |  |
|                       | 8 Signal  |  <p>M80-4C10805F1-02-325-00-000</p>   |  |
|                       | 12 Signal |  <p>M80-4C11205F1-02-325-00-000</p> |  |
|                       | 2 Power   |  <p>M80-4C10205F1-04-325-00-000</p> |  |
|                       | 4 Signal  |  <p>M80-4C10405F1-04-325-00-000</p> |  <p>M80-5L10405M5-04-333-00-000</p> |
|                       | 6 Signal  |  <p>M80-4C10605F1-04-325-00-000</p> |  |
|                       | 8 Signal  |  <p>M80-4C10805F1-04-325-00-000</p> |  |
|                       | 12 Signal |  <p>M80-4C11205F1-04-325-00-000</p> |  |

All dimensions in mm.

# Datamate Power/Signal Connectors

- Standard high-reliability connectors fitted with a combination of signal and 20A power contacts.

|                       |         | TYPE   |  |
|-----------------------|---------|--|--|
|                       |         | Male Vertical 3mm Tail -<br>Jackscrew fixing   | Male Vertical 3mm Tail -<br>3.5mm Board Mount Jackcrew   |
| TOTAL NO. OF CONTACTS | 2 Power | <br>M80-5T10205M1-02-331-00-000   | <br>M80-5T10205M2-02-331-00-000   |
|                       |         | <br>M80-5T10405M1-02-331-00-000   | <br>M80-5T10405M2-02-331-00-000   |
|                       |         | <br>M80-5T10605M1-02-331-00-000   |  |
|                       |         | <br>M80-5T10805M1-02-331-00-000   |  |
|                       |         | <br>M80-5T11205M1-02-331-00-000 |  |
|                       | 4 Power | <br>M80-5T10205M1-04-331-00-000 | <br>M80-5T10205M2-04-331-00-000 |
|                       |         | <br>M80-5T10405M1-04-331-00-000 | <br>M80-5T10405M2-04-331-00-000 |
|                       |         | <br>M80-5T10605M1-04-331-00-000 | <br>M80-5T10605M2-04-331-00-000 |
|                       |         | <br>M80-5T10805M1-04-331-00-000 | <br>M80-5T10805M2-04-331-00-000 |
|                       |         | <br>M80-5T11205M1-04-331-00-000 |  |

All dimensions in mm.

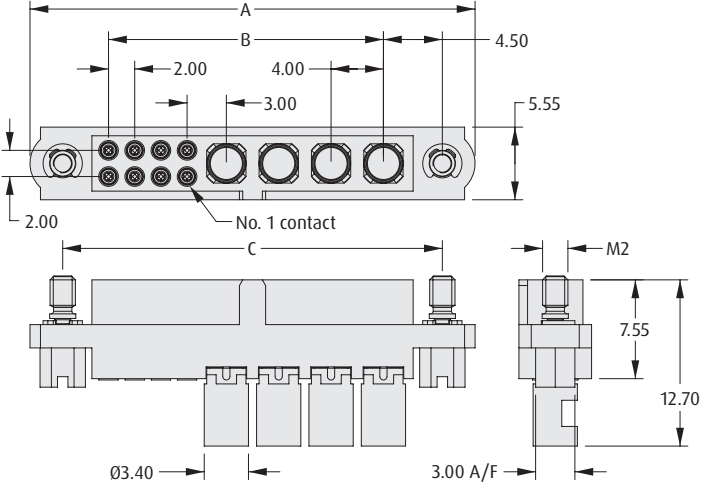
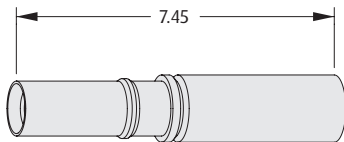
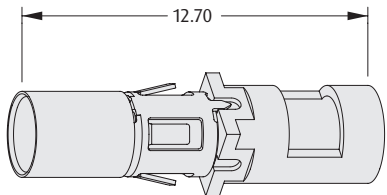
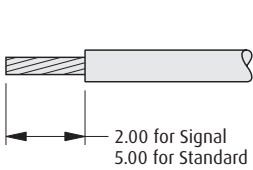
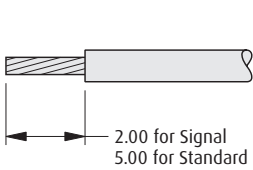
# Datamate Power/Signal Connectors

## Female Power/Signal Cable Connector Kit

- ❖ Part numbers are for a complete kit of a housing and the applicable number of contacts.
- ❖ Hexagonal slotted jackscrews are assembled.
- ❖ Polarized housings.
- ❖ Standard Power contacts rated to 20A, signal to 3A.



DATAMATE POWER/SIGNAL

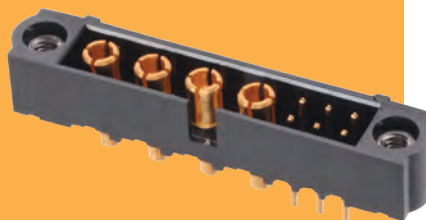
| SIGNAL AND POWER   |  | CALCULATION  |  | SPARE CONTACTS   |  |
|--|--|--|--|--|--|
|    |  | A  | B + 13   | <br>Signal (24 to 28 AWG)<br><br><br>Standard Power (12 AWG)<br><br><br>Wire Stripping Details |  |
|  |  | B  | (No. of Power contacts - 1) x 4 + Total no. of Signal contacts + 1 |  |  |
|  |  | C  | B + 8  |  |  |
|  |  |  |  | <div>ORDER CODE</div> <div>M80-0130005</div>   |  |
|  |  |  |  | <div>ORDER CODE</div> <div>M80-325</div>   |  |
| TOOLS  |  | WIRE STRIPPING DETAILS   |  |  |  |
| <div>Recommended Crimp Tool (Signal) - M22520/2-01</div> <div>Positioner (Signal) - T5747</div> <div>Contact Insertion/Removal Tool (Signal) - Z80-280</div> <div>Contact Removal Tool (Power) - Z80-290</div> <div>❖ No special tooling required for connecting Power wire, other than standard soldering equipment.</div> <div>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</div> |  | <br>Wire Stripping Details |  |  |  |
| HOW TO ORDER   |  |  |  |  |  |
| M80 - 4C1 XX 05F1 - XX - 325 - 00 - 000  |  |  |  |  |  |
| <div>NO. OF SIGNAL CONTACTS</div> <div>02, 04, 06, 08, 12</div>  |  |  |  | <div>NO. OF POWER CONTACTS</div> <div>02, 04</div>   |  |
| Check image chart to confirm Off-The-Shelf sizes available   |  |  |  |  |  |

All dimensions in mm.

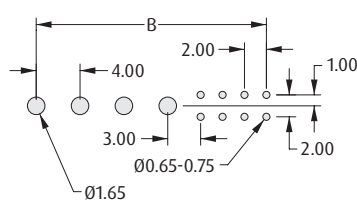
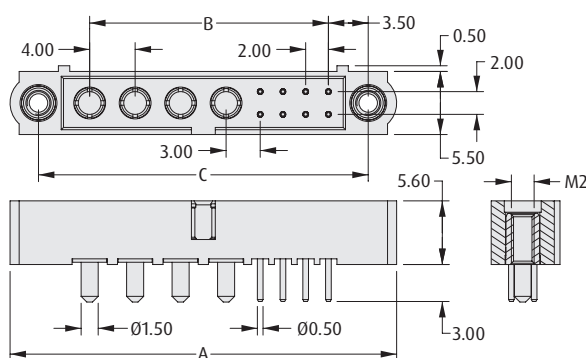
# Datamate Power/Signal Connectors

## Male Power/Signal Vertical Throughboard

- ❑ A selection of stocked Datamate Mix-Tek solder tail standard layouts.
- ❑ Choice to suit two PCB thicknesses and two stud lengths.
- ❑ Polarized housings.
- ❑ Standard Power contacts rated to 20A, signal to 3A.



### JACKSCREW ONLY

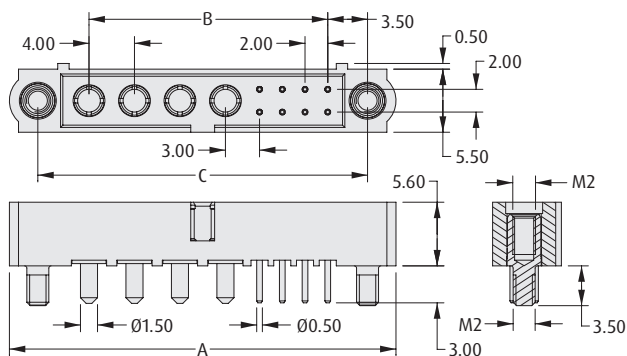


Recommended PC Board Pattern

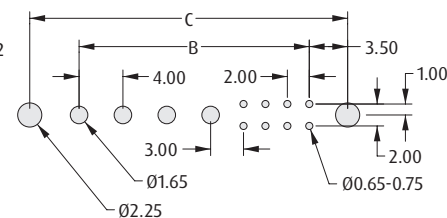
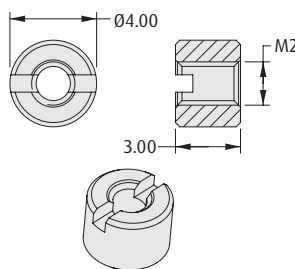
#### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 13$  |
| <b>B</b> | (No. of Power contacts - 1) x 4<br>+ Total no. of Signal contacts + 1 |
| <b>C</b> | $B + 8$   |

### WITH BOARD MOUNT



#### Board Mount Nut, 2 per connector



Recommended PC Board Pattern

### HOW TO ORDER

**M80 - 5T1 XX 05 XX - XX - 331 - 00 - 000**

#### NO. OF SIGNAL CONTACTS

02, 04, 06, 08, 12

#### NO. OF POWER CONTACTS

02, 04

#### JACKSCREW

|           |                             |
|-----------|-----------------------------|
| <b>M1</b> | Jackscrew only              |
| <b>M2</b> | With 3.5mm Board Mount stud |

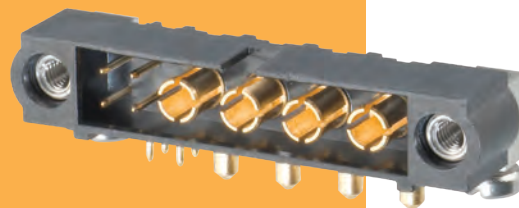
Check image chart to confirm Off-The-Shelf sizes available

All dimensions in mm.

# Datamate Power/Signal Connectors

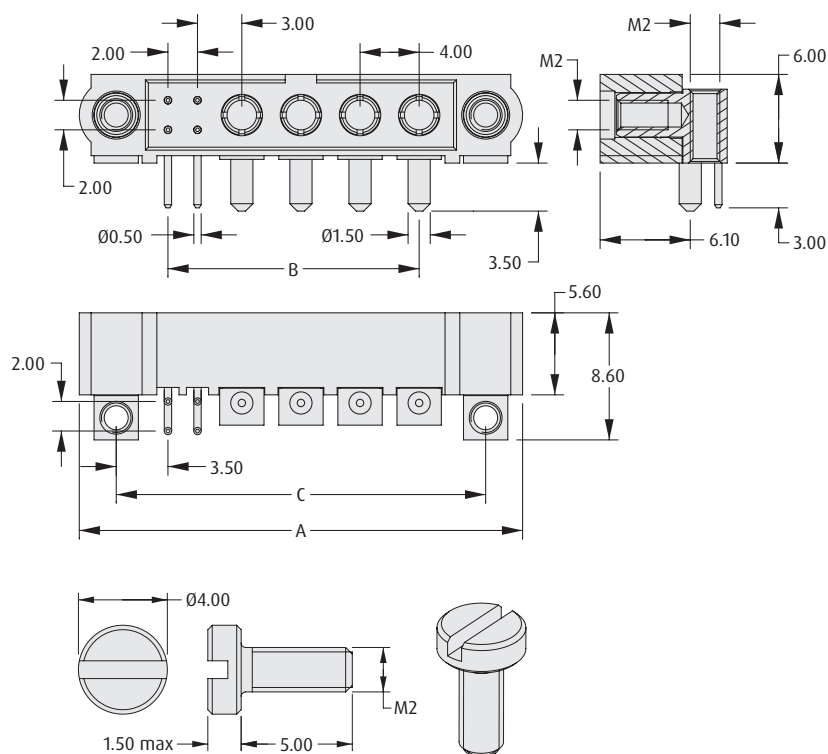
## Male Power/Signal Horizontal Throughboard

- ❖ A selection of stocked Datamate Mix-Tek solder tail standard layouts.
- ❖ Polarized housings.
- ❖ Standard Power contacts rated to 20A, signal to 3A.



DATAMATE POWER/SIGNAL

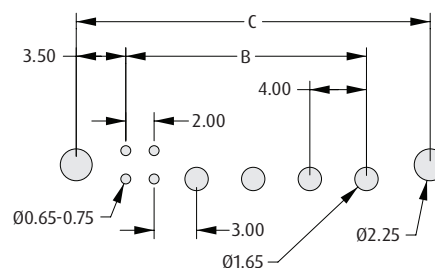
### SIGNAL AND POWER



**Board Mount Bolt, 2 per connector**

### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 13$   |
| <b>B</b> | $(\text{No. of Power contacts} - 1) \times 4$<br>+ Total no. of Signal contacts +1 |
| <b>C</b> | $B + 8$  |



Recommended PC Board Pattern

### HOW TO ORDER

**M80 - 5L1 04 05 M5 - XX - 333 - 00 - 000**

**NO. OF SIGNAL CONTACTS**

**04**

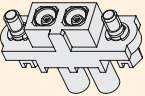
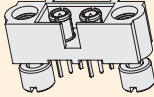
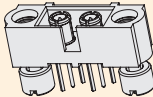
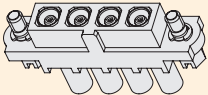
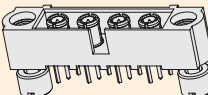
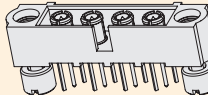
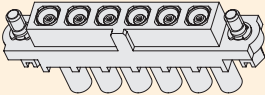
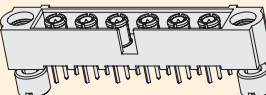
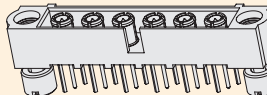
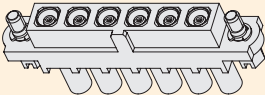
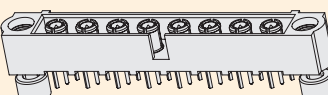
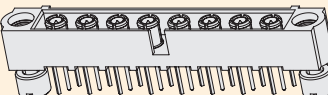
**NO. OF POWER CONTACTS**

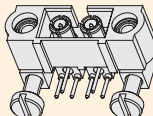
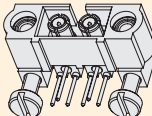
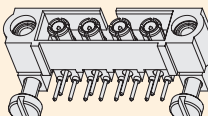
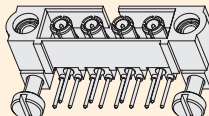
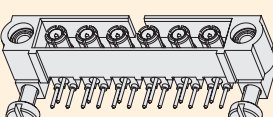
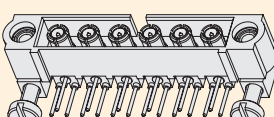
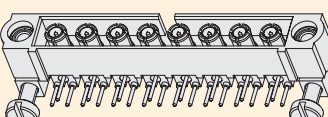
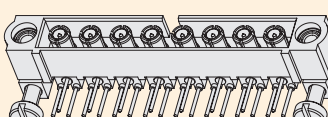
**02, 04**

All dimensions in mm.

# Datamate Coax Connectors

- Standard high-reliability connectors fitted with coax contacts on 4mm pitch.

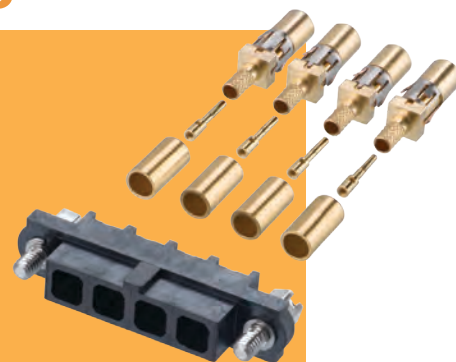
|                       |        | TYPE   |   |  |
|-----------------------|--------|--|---|--|
|                       |        | Female Cable Connectors - Hex Slotted Jackscrews   | Male Vertical 3mm Tail - 3.5mm Board Mount Jackcrew   | Male Vertical 4.5mm Tail - 5mm Board Mount Jackcrew  |
| TOTAL NO. OF CONTACTS | 2 Coax | <br>M80-FC305F1-02  | <br>M80-MV311M2-02   | <br>M80-MV312M3-02  |
|                       | 4 Coax | <br>M80-FC305F1-04  | <br>M80-MV311M2-04  | <br>M80-MV312M3-04  |
|                       | 6 Coax | <br>M80-FC305F1-06  | <br>M80-MV311M2-06  | <br>M80-MV312M3-06  |
|                       | 8 Coax | <br>M80-FC305F1-08 | <br>M80-MV311M2-08 | <br>M80-MV312M3-08 |

|                       |        | TYPE   |  |   |
|-----------------------|--------|--|--|---|
|                       |        | Female Cable Assemblies - Hex Slotted Jackscrews   | Male Horizontal 3mm Tail - 5mm Board Mount Jackcrew  | Male Horizontal 4.5mm Tail - 5mm Board Mount Jackcrew   |
| TOTAL NO. OF CONTACTS | 2 Coax | Single Ended (Female to Cut End)<br>M80-FC305F1-02-0150L<br>Double Ended (Female to Female)<br>M80-FC305F1-02-0150F1 | <br>M80-MH313M5-02  | <br>M80-MH314M5-02 |
|                       | 4 Coax | Single Ended (Female to Cut End)<br>M80-FC305F1-04-0150L<br>Double Ended (Female to Female)<br>M80-FC305F1-04-0150F1 | <br>M80-MH313M5-04 | <br>M80-MH314M5-04 |
|                       | 6 Coax | Single Ended (Female to Cut End)<br>M80-FC305F1-06-1050L<br>Double Ended (Female to Female)<br>M80-FC305F1-06-0150F1 | <br>M80-MH313M5-06 | <br>M80-MH314M5-06 |
|                       | 8 Coax | Single Ended (Female to Cut End)<br>M80-FC305F1-08-0150L<br>Double Ended (Female to Female)<br>M80-FC305F1-08-0150F1 | <br>M80-MH313M5-08 | <br>M80-MH314M5-08 |

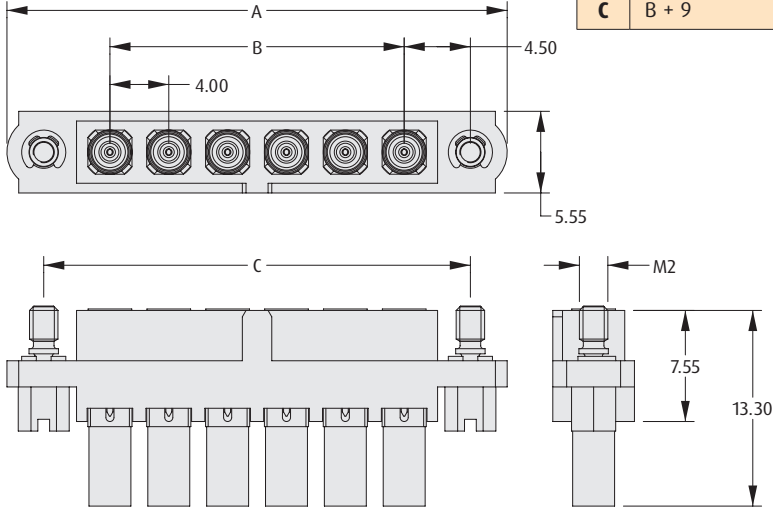
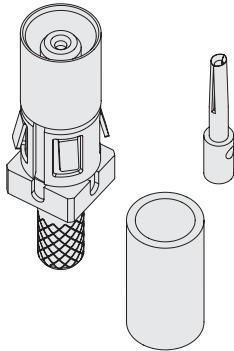
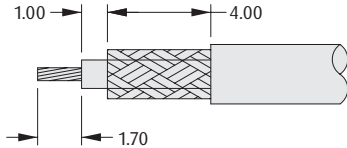
# Datamate Coax Connectors

## Jack (Female) Crimp Kit

- ❖ A selection of stocked jack cable connectors in standard layouts.
- ❖ 6GHz, 50Ω Coax contacts, suitable for RG178 cable.
- ❖ Product supplied as a complete kit; housing with jackscrews assembled, and the applicable number of coax contacts supplied loose, not assembled.
- ❖ Polarized housings.
- ❖ Hexagonal slotted jackscrew style.



DATAMATE COAX

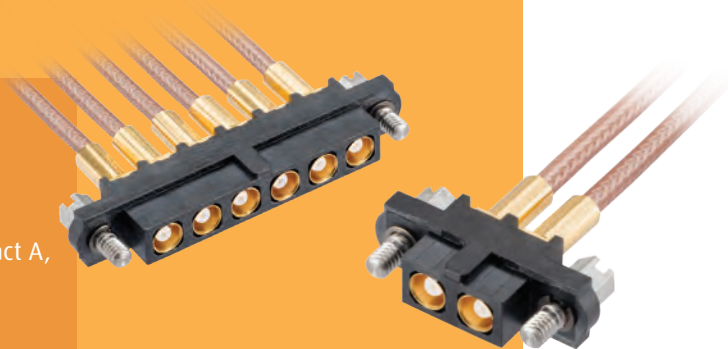
| CABLE   |  | CALCULATION  |  | SPARE COAX CONTACTS  |  |
|---|--|--|--|--|--|
|   |  | <b>A</b>   | $B + 14$                                     |  <div><b>ORDER CODE</b><br/><b>M80-305</b></div> |  |
|   |  | <b>B</b>   | $(\text{No. of Coax contacts} - 1) \times 4$ |  |  |
|   |  | <b>C</b>   | $B + 9$                                      |  |  |
| TOOLS   |  | WIRE STRIPPING DETAILS   |  |  |  |
| <p><b>Recommended Inner Contact Crimp Tool</b> – Z80-292</p> <p><b>Positioner for Inner Contact</b> – Z80-291</p> <p><b>Recommended Outer Sleeve Crimp Tool</b> – Z80-293</p> <p><b>Contact Removal Tool</b> – Z80-290</p> <p>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</p> |  |  |  |  |  |
| HOW TO ORDER  |  |  |  |  |  |
| <div><div><div><b>COAX CONTACT TYPE</b></div><div><b>305</b>    Ø2.00mm cable</div></div><div><div><b>M80 - FC 305 F1 - XX</b></div><div></div></div><div><div><b>NO. OF COAX CONTACTS</b></div><div><b>02, 04, 06, 08</b></div></div></div>  |  |  |  |  |  |

All dimensions in mm.

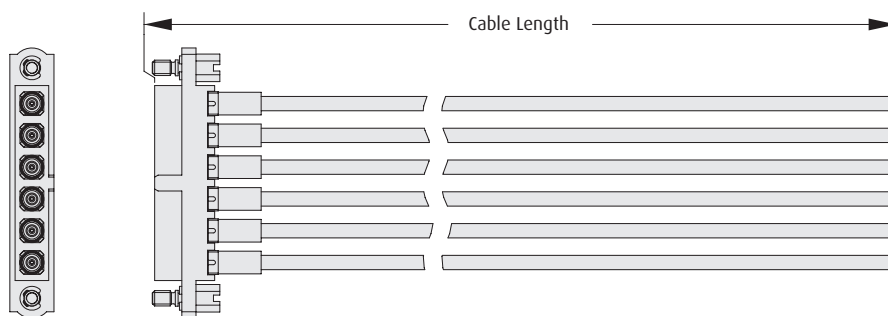
# Datamate Coax Connectors

## Jack (Female) Cable Assemblies

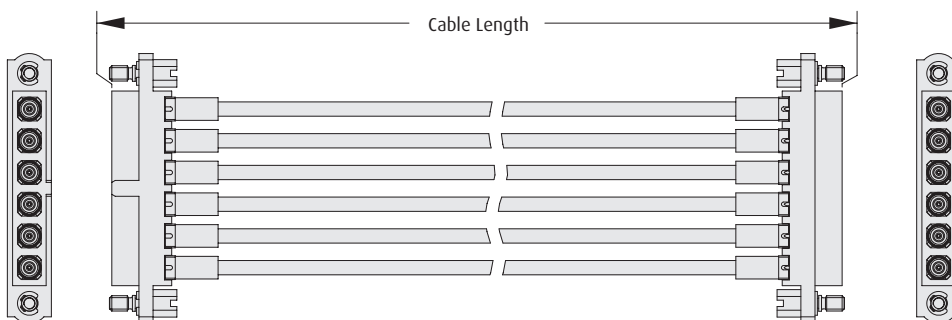
- ❖ A selection of stocked ganged multiport coaxial cable assemblies in standard layouts (custom also available).
- ❖ 6GHz, 50Ω Coax contacts, assembled with RG178 cable.
- ❖ Hexagonal slotted jackscrew style.
- ❖ Cable assemblies are constructed with Contact A to Contact A, Contact B to Contact B, etc.



### FEMALE SINGLE ENDED



### FEMALE - FEMALE



### HOW TO ORDER

**M80 - FC305F1 - XX - XXXX XX**

**SERIES CODE**

**NO. OF POWER CONTACTS**

**02, 04, 06, 08**

#### TERMINATION - SECOND END

|           |                  |
|-----------|------------------|
| <b>L</b>  | Loose cut end    |
| <b>F1</b> | Female connector |

#### CABLE LENGTH

|             |        |
|-------------|--------|
| <b>0150</b> | 150mm  |
| <b>0300</b> | 300mm  |
| <b>0450</b> | 450mm  |
| <b>XXXX</b> | XXXXmm |

All dimensions in mm.



# Datamate Coax Connectors

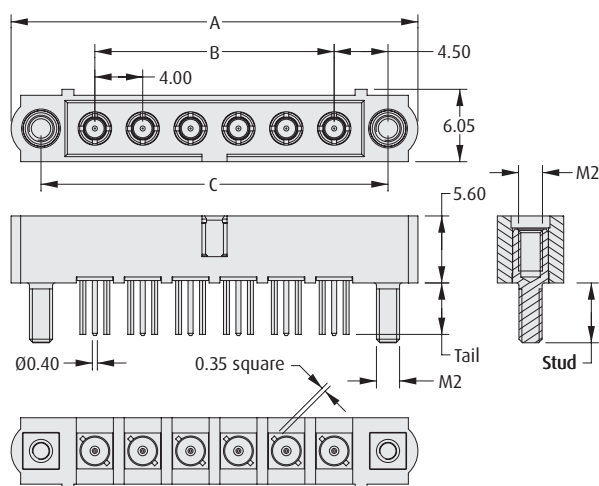
## Plug (Male) Vertical Throughboard

- ❑ Stocked coax connectors in vertical orientation, with board-mount jackscrews for added security.
- ❑ 6GHz, 50Ω Coax contacts.
- ❑ Choice to suit two PCB thicknesses.
- ❑ Order board mount nuts separately.
- ❑ Screwdriver **Z80-298** available for assembling slotted jackscrew nuts.



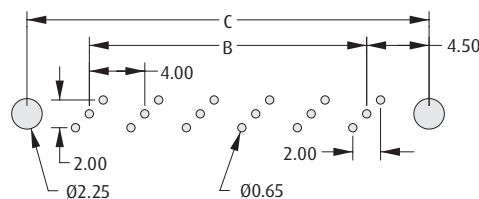
DATAMATE COAX

### VERTICAL



### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 14$                                     |
| <b>B</b> | $(\text{No. of Coax contacts} - 1) \times 4$ |
| <b>C</b> | $B + 9$                                      |



Recommended PCB Board Pattern

### HOW TO ORDER

**M80 - MV 3XX MX - XX**

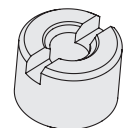
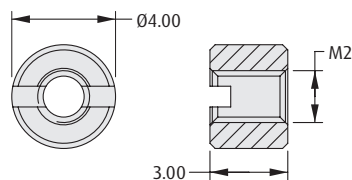
| TYPE         |                                      |
|--------------|--------------------------------------|
| <b>311M2</b> | 3mm Tail with 3.5mm Board Mount Stud |
| <b>312M3</b> | 4.5mm Tail with 5mm Board Mount Stud |

| NO. OF COAX CONTACTS |
|----------------------|
| 02, 04, 06, 08       |

### REQUIRED HARDWARE

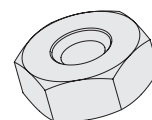
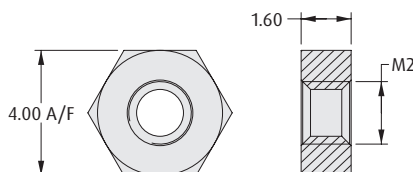
Order separately from connector

#### Slotted Board Mount Nut



**ORDER CODE**  
**M80-2130000B**

#### Hexagonal Board Mount Nut



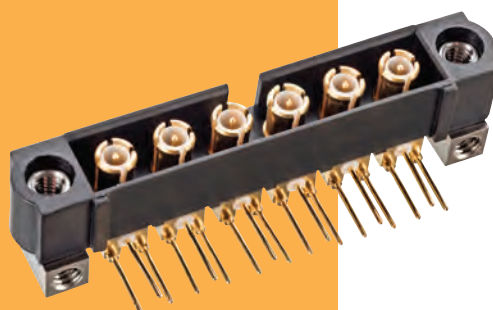
**ORDER CODE**  
**M80-2430000B**

All dimensions in mm.

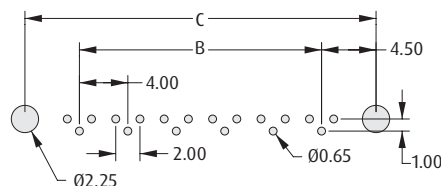
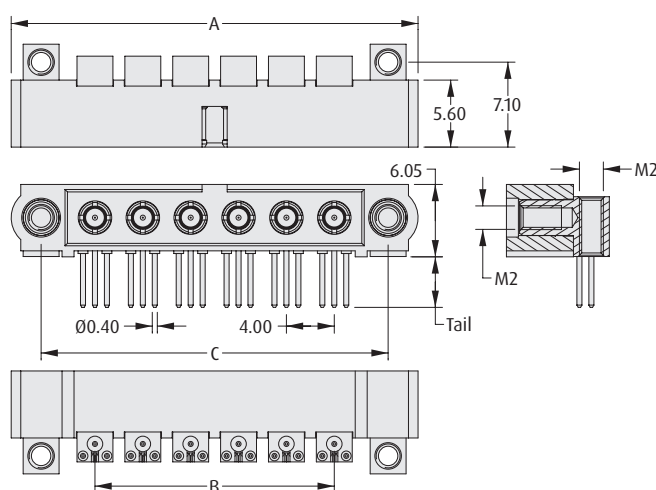
# Datamate Coax Connectors

## Plug (Male) Horizontal Throughboard

- ❖ Stocked coax connectors in horizontal orientation, with board-mount jackscrews for added security.
- ❖ 6GHz, 50Ω Coax contacts.
- ❖ Choice to suit two PCB thicknesses.
- ❖ Order board mount bolts separately.



### HORIZONTAL



Recommended PCB Board Pattern

### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 14$                                     |
| <b>B</b> | $(\text{No. of Coax contacts} - 1) \times 4$ |
| <b>C</b> | $B + 9$                                      |

### HOW TO ORDER

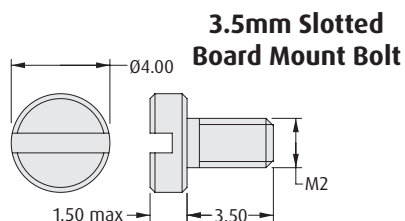
**M80 - MH 3XX M5 - XX**

| TYPE       |            |
|------------|------------|
| <b>313</b> | 3mm Tail   |
| <b>314</b> | 4.5mm Tail |

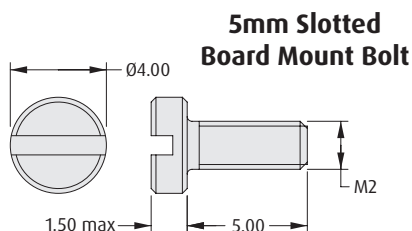
| NO. OF COAX CONTACTS |
|----------------------|
| 02, 04, 06, 08       |

### REQUIRED HARDWARE

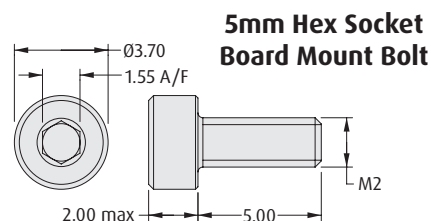
Order separately from connector



**ORDER CODE**  
**M80-2260000B**



**ORDER CODE**  
**M80-2270000B**



**ORDER CODE**  
**M80-2320000B**

All dimensions in mm.

# Datamate Mix-Tek Housings

- Housings only for cable connections, suitable for use with all power, high power and coax contacts. Contacts to be ordered separately.

| MIXED TECHNOLOGY HOUSINGS - FEMALE, HEX SLOTTED JACKSCREWS |                   |                   |                   |                   |
|--|-------------------|-------------------|-------------------|-------------------|
|  | 2 Power/Coax      | 3 Power/Coax      | 4 Power/Coax      | 6 Power/Coax      |
| 2 Signal   |                   |                   | M80-263F104-02-00 | M80-263F106-02-00 |
| 4 Signal   |                   |                   | M80-263F104-04-00 |                   |
| 6 Signal   | M80-263F102-06-00 |                   |                   |                   |
| 8 Signal   | M80-263F102-08-00 | M80-263F103-08-00 |                   |                   |
| 12 Signal  |                   |                   | M80-263F104-12-00 |                   |

| POWER/COAX ONLY HOUSINGS - STANDARD GENDER JACKSCREWS |                             |                            |                              |                         |
|---|-----------------------------|----------------------------|------------------------------|-------------------------|
|   | Female Hex Slotted floating | Female Hex Socket floating | Female Guide Pin panel mount | Male Internal jackscrew |
| 2 Contact   | M80-263F102-00-00           | M80-263F202-00-00          | M80-263F302-00-00            | M80-273M102-00-00       |
| 3 Contact   | M80-263F103-00-00           | M80-263F203-00-00          | M80-263F303-00-00            | M80-273M103-00-00       |
| 4 Contact   | M80-263F104-00-00           | M80-263F204-00-00          | M80-263F304-00-00            | M80-273M104-00-00       |
| 6 Contact   | M80-263F106-00-00           | M80-263F206-00-00          | M80-263F306-00-00            | M80-273M106-00-00       |
| 8 Contact   | M80-263F108-00-00           | M80-263F208-00-00          | M80-263F308-00-00            | M80-273M108-00-00       |
| 10 Contact  | M80-263F110-00-00           |                            |                              |                         |

| POWER/COAX ONLY HOUSINGS |                        |                       |                   |                   |
|--------------------------|------------------------|-----------------------|-------------------|-------------------|
| REVERSE FIX JACKSCREWS   |                        | 101LOK                |                   |                   |
|                          | Female 5mm panel mount | Male Slotted floating | Female            | Male              |
| 2 Contact                | M80-263F902-00-00      | M80-273MA02-00-00     | M80-263FC02-00-00 | M80-273MC02-00-00 |
| 3 Contact                | M80-263F903-00-00      | M80-273MA03-00-00     | M80-263FC03-00-00 | M80-273MC03-00-00 |
| 4 Contact                | M80-263F904-00-00      | M80-273MA04-00-00     | M80-263FC04-00-00 | M80-273MC04-00-00 |
| 6 Contact                | M80-263F906-00-00      | M80-273MA06-00-00     | M80-263FC06-00-00 | M80-273MC06-00-00 |
| 8 Contact                | M80-263F908-00-00      | M80-273MA08-00-00     | M80-263FC08-00-00 | M80-273MC08-00-00 |

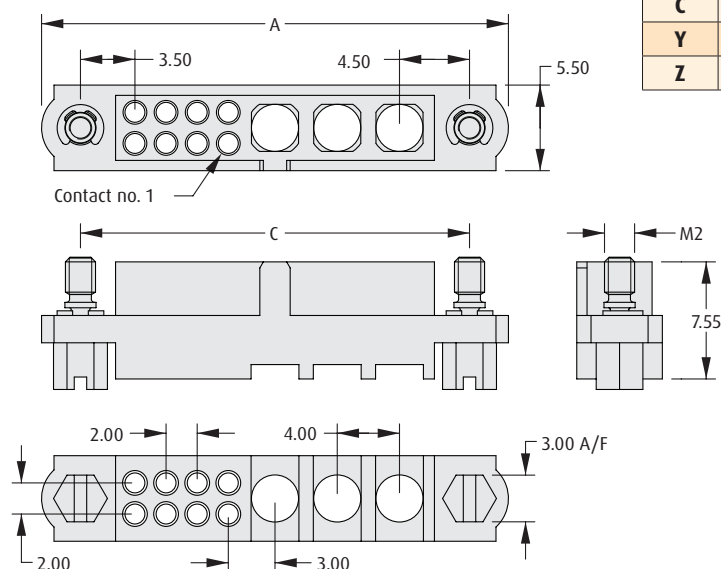
# Datamate Mix-Tek Housings

## Female Mixed Technology Cable Housings

- ❖ Female cable housings fitted with floating jackscrews (standard gender), hexagonal slotted heads.
- ❖ Compatible with all signal, power and coax female cable contacts.
- ❖ Housings only - compatible contacts must be purchased separately.
- ❖ Mates with any male mixed-technology connectors with the same signal + power/coax layout.
- ❖ For other combinations shown on the Technical Drawing, please consult our Experts at [www.harwin.com/contact](http://www.harwin.com/contact).



### SIGNAL + POWER/COAX



### CALCULATION

|          |                                     |
|----------|-------------------------------------|
| <b>A</b> | $(4 \times Y) + Z + 10$             |
| <b>C</b> | $(4 \times Y) + Z + 5$              |
| <b>Y</b> | No. of Power/Coax Contact positions |
| <b>Z</b> | No. of Signal Contact positions     |

### HOW TO ORDER

**M80 - 263 F1 XX - XX - 00**

#### SERIES CODE

#### HOUSING

**263**

Female

#### CONTACT POSITION COMBINATIONS

|              |   |
|--------------|---|
| <b>02-06</b> | 2 power/coax positions, 6 signal positions  |
| <b>02-08</b> | 2 power/coax positions, 8 signal positions  |
| <b>03-08</b> | 3 power/coax positions, 8 signal positions  |
| <b>04-02</b> | 4 power/coax positions, 2 signal positions  |
| <b>04-04</b> | 4 power/coax positions, 4 signal positions  |
| <b>04-12</b> | 4 power/coax positions, 12 signal positions |
| <b>06-02</b> | 6 power/coax positions, 2 signal positions  |

#### JACKSCREW

**F1**

Floating Hex Slotted, Standard Gender

All dimensions in mm.

# Datamate Mix-Tek Housings

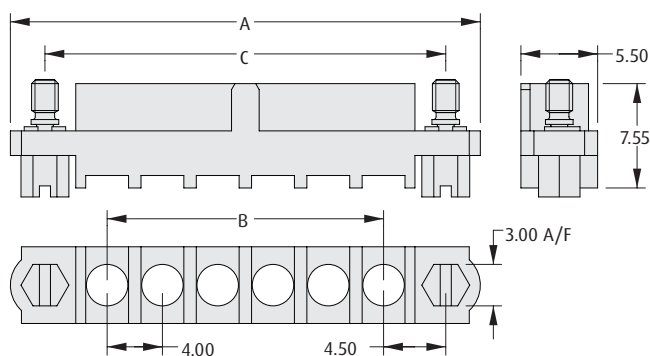
## Female Power/Coax Cable Housings

- ❖ Female cable housings fitted with floating jackscrews (standard gender).
- ❖ Choice of hexagonal slotted or hex socket for the jackscrew head.
- ❖ Compatible with all power and coax female cable contacts.
- ❖ Housings only - compatible contacts must be purchased separately.
- ❖ Mates with any male connectors with the same power/coax layout.
- ❖ For other combinations shown on the Technical Drawing, please consult our Experts at [www.harwin.com/contact](http://www.harwin.com/contact).



DATAMATE MIX-TEK

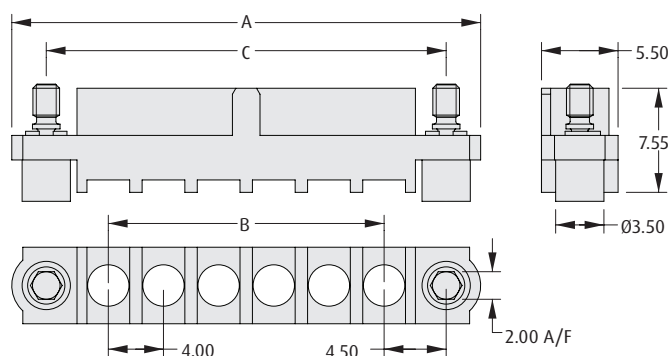
### HEX SLOTTED JACKSCREW



#### CALCULATION

|          |                                    |
|----------|------------------------------------|
| <b>A</b> | B + 14                             |
| <b>B</b> | (No. of contact positions - 1) x 4 |
| <b>C</b> | B + 9                              |

### HEX SOCKET JACKSCREW



### HOW TO ORDER

**M80 - 263 XX XX - 00 - 00**

#### SERIES CODE

#### HOUSING

**263** Female

#### NO. OF POWER/COAX CONTACT POSITIONS

|                           |                   |
|---------------------------|-------------------|
| <b>02, 03, 04, 06, 08</b> | All variations    |
| <b>10</b>                 | F1 jackscrew only |

#### JACKSCREW

|           |                      |
|-----------|----------------------|
| <b>F1</b> | Floating Hex Slotted |
| <b>F2</b> | Floating Hex Socket  |

All dimensions in mm.

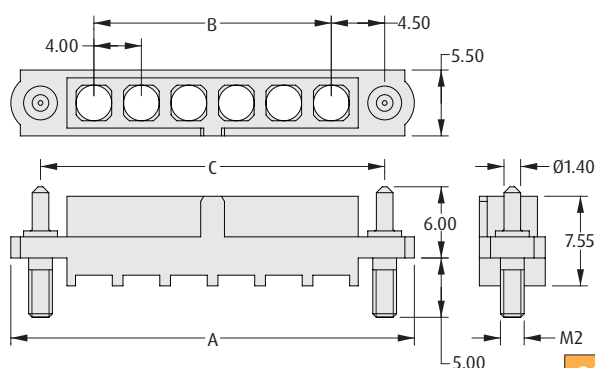
# Datamate Mix-Tek Housings

## Female Power/Coax Cable Housings - Guide Pin, Reverse Fix

- ❖ Female cable housings fitted with panel mount jackscrews.
- ❖ Guide Pins are compatible with male standard gender jackscrews.
- ❖ Reverse fix panel mount is only compatible with male connectors fitted with reverse fix.
- ❖ Compatible with all power and coax female cable contacts.
- ❖ Housings only - compatible contacts must be purchased separately.
- ❖ For other combinations shown on the Technical Drawing, please consult our Experts at [www.harwin.com/contact](http://www.harwin.com/contact).



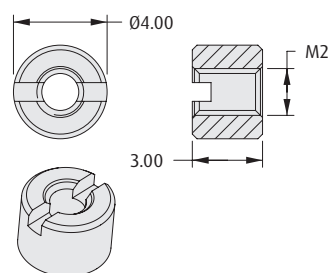
### GUIDE PIN WITH PANEL MOUNT



#### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 14$   |
| <b>B</b> | $(\text{No. of contact positions} - 1) \times 4$ |
| <b>C</b> | $B + 9$  |

### SLOTTED NUT

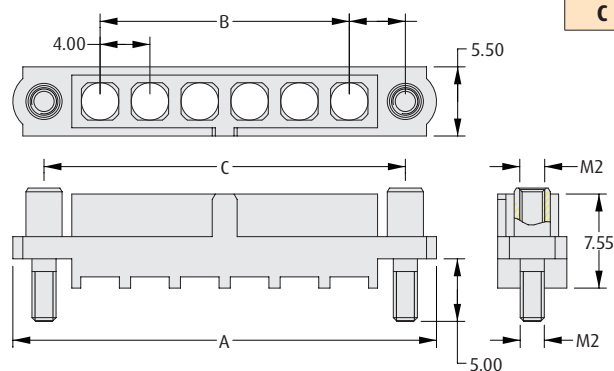


❖ Order separately from connector

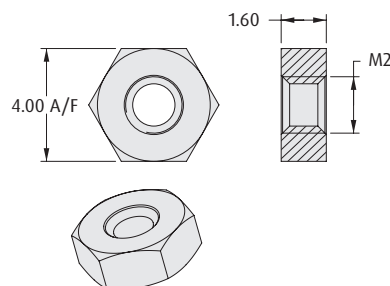
#### ORDER CODE

**M80-2130000B**

### REVERSE FIX WITH PANEL MOUNT



### HEXAGONAL NUT



❖ Order separately from connector

#### ORDER CODE

**M80-2430000B**

### HOW TO ORDER

**M80 - 263 XX XX - 00 - 00**

#### SERIES CODE

#### HOUSING

**263**

Female

#### NO. OF POWER/COAX CONTACT POSITIONS

**02, 03, 04, 06, 08**

#### JACKSCREW

**F3**

Guide pin with 5mm panel mount stud

**F9**

Reverse fix with 5mm panel mount stud

All dimensions in mm.

# Datamate Mix-Tek Housings

## Female Power/Coax Cable Housings - 101Lok

- ❖ Female cable housings fitted with secure, fast and simple bayonet fixings, no special tooling required.
- ❖ Mates with male connectors fitted with 101Lok receptacles.
- ❖ Housings only - compatible contacts must be purchased separately.
- ❖ Compatible with all power and coax female cable contacts.
- ❖ For other combinations shown on the Technical Drawing, please consult our Experts at [www.harwin.com/contact](http://www.harwin.com/contact).

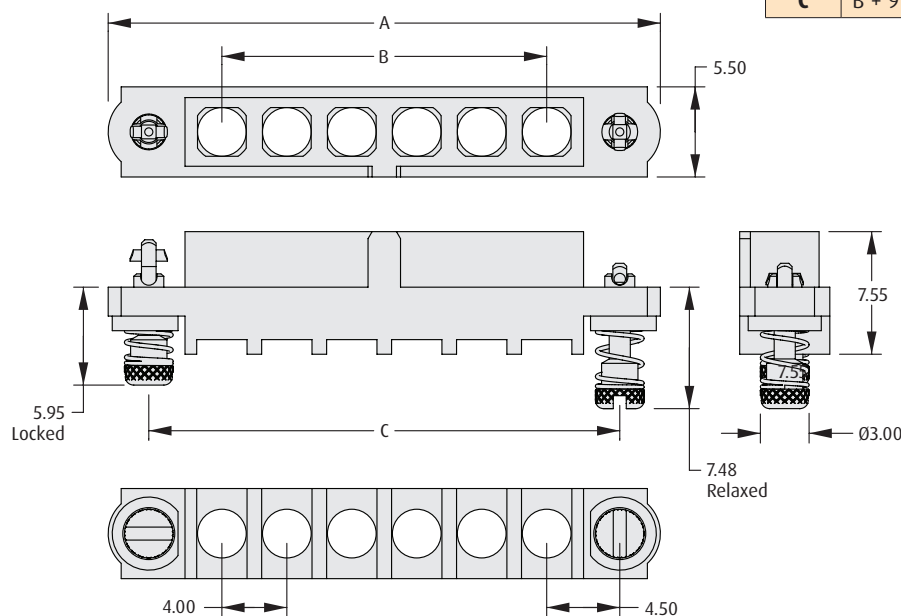


DATAMATE MIX-TEK

### 101LOK

### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 14$   |
| <b>B</b> | $(\text{No. of contact positions} - 1) \times 4$ |
| <b>C</b> | $B + 9$  |



### HOW TO ORDER

**M80 - 263 FC XX - 00 - 00**

**SERIES CODE**

**HOUSING**

**263**

Female

**NO. OF POWER/COAX CONTACT POSITIONS**

02, 03, 04, 06, 08

**JACKSCREW**

**FC**

101Lok fixing

All dimensions in mm.

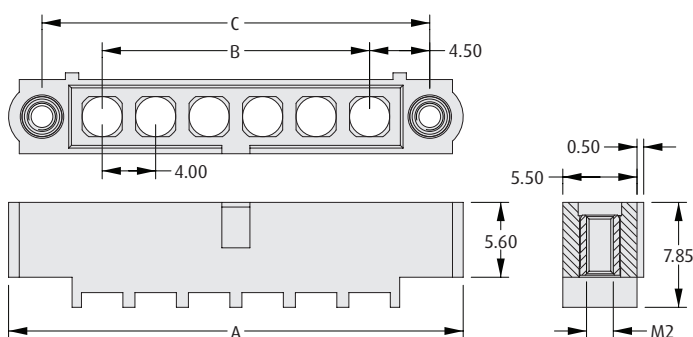
# Datamate Mix-Tek Housings

## Male Power/Coax Cable Housings

- ❖ Male cable housings fitted with either internally threaded jackscrews (standard gender) or 101Lok receptacles.
- ❖ Internal threaded jackscrews compatible with standard gender floating jackscrews or guide pins.
- ❖ 101Lok receptacle fixings compatible with 101Lok bayonet female fixings.
- ❖ Housings only - compatible power and coax male contacts must be purchased separately.
- ❖ For other combinations shown on the Technical Drawing, please consult our Experts at [www.harwin.com/contact](http://www.harwin.com/contact).



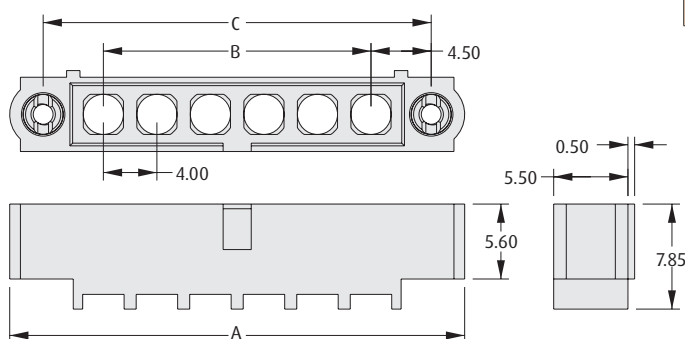
### INTERNAL THREADED JACKSCREW



#### CALCULATION

|          |                                    |
|----------|------------------------------------|
| <b>A</b> | B + 14                             |
| <b>B</b> | (No. of contact positions - 1) x 4 |
| <b>C</b> | B + 9                              |

### 101LOK RECEPTACLE



### HOW TO ORDER

**M80 - 273 XX XX - 00 - 00**

**SERIES CODE**

**HOUSING**

**273** Male

**NO. OF POWER/COAX CONTACT POSITIONS**

02, 03, 04, 06, 08

**JACKSCREW**

|           |   |
|-----------|---|
| <b>M1</b> | Internally threaded jack screw, standard gender |
| <b>MC</b> | 101Lok receptacle fixing                        |

All dimensions in mm.



# Datamate Mix-Tek Housings

## Male Power/Coax Cable Housings - Reverse Fix

- ❖ Male cable housings fitted with floating slotted jackscrews, reverse fix style.
- ❖ Mates with equivalent layout female connectors fitted with reverse fix jackscrews.
- ❖ Housings only - compatible power and coax male contacts must be purchased separately.
- ❖ For other combinations shown on the Technical Drawing, please consult our Experts at [www.harwin.com/contact](http://www.harwin.com/contact).

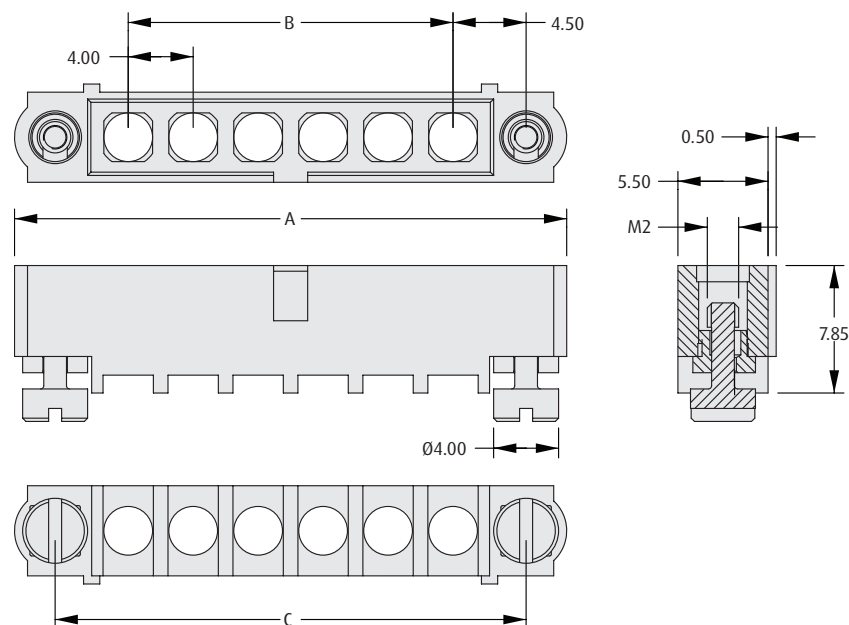


DATAMATE MIX-TEK

### REVERSE FIX

### CALCULATION

|          |                                    |
|----------|------------------------------------|
| <b>A</b> | B + 14                             |
| <b>B</b> | (No. of contact positions - 1) x 4 |
| <b>C</b> | B + 9                              |



### HOW TO ORDER

**M80 - 273 MA XX - 00 - 00**

**SERIES CODE**

**HOUSING**

**273** Male

**NO. OF POWER/COAX CONTACT POSITIONS**

**02, 03, 04, 06, 08**

**JACKSCREW**

**MA** Floating slotted, reverse fix

All dimensions in mm.

# Datamate Mix-Tek Cable Contacts

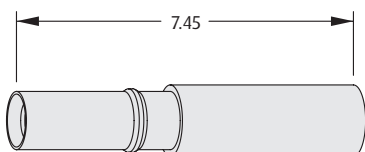
## Female Signal Contacts

- Compatible with the signal + power/coax housings. See following pages for power and coax contacts.

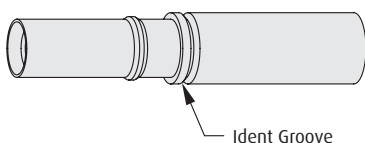


### CRIMP CONTACTS

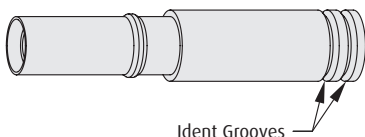
#### Large Bore (22 AWG)



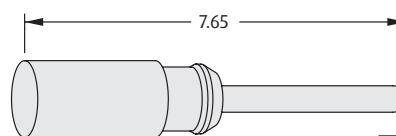
#### Small Bore (24 to 28 AWG)



#### Extra Small Bore (28 to 32 AWG)



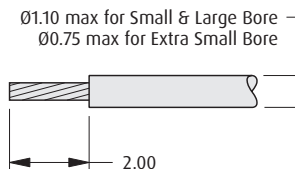
### DUMMY CONTACT



#### ORDER CODE

M80-023

### WIRE STRIPPING DETAILS



### TOOLS

**Recommended Crimp Tool** - M22520/2-01  
**Positioner** - T5747  
**Contact Insertion/Removal Tool** - Z80-280  
 Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### HOW TO ORDER

**M80 - 0XX 00 XX**

#### SERIES CODE

| TYPE |                              |
|------|------------------------------|
| 011  | Large Bore (22 AWG)          |
| 013  | Small Bore (24-28 AWG)       |
| 019  | Extra Small Bore (28-32 AWG) |

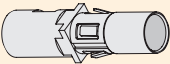
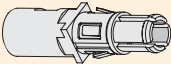
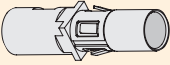
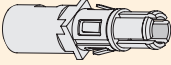

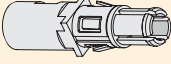
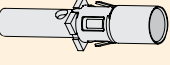
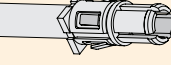







#### FINISH

|    |            |
|----|------------|
| 01 | Gold + Tin |
| 05 | Gold       |

All dimensions in mm.

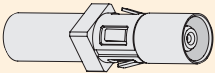
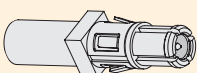
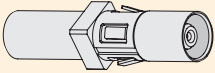
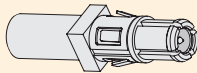
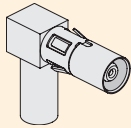
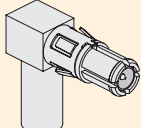
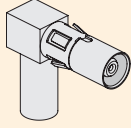
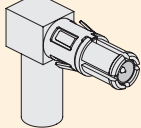
# Datamate Mix-Tek Cable Contacts

- ❖ Compatible contacts for use with all Mix-Tek cable housings.
- ❖ Female standard power contacts mate with male standard power, female high power with male high power. Standard power contacts do not mate with high power.

| STANDARD POWER  |  |           |  |            |                   |
|---|--|-----------|--|------------|-------------------|
| Female  | Male   | Wire Size | Current Rating   | Connection | Wire Strip Length |
| <br>M80-325                    | <br>M80-335   | 12 AWG    | Up to 20A  | Solder     | 5.00mm min        |
| <br>M80-326                    | <br>M80-336   | 14 AWG    | Up to 15A  | Solder     | 5.00mm min        |
| <br>M80-327                    | <br>M80-337   | 16 AWG    | Up to 10A  | Solder     | 5.00mm min        |
| <br>M80-328                    | <br>M80-338   | 18 AWG    | Up to 8A   | Crimp      | 4.75-5.25mm       |
| <br>M80-329                  | <br>M80-339 | 20 AWG    | Up to 5A   | Crimp      | 4.75-5.25mm       |
| <br>M80-32A                  |  | 12 AWG    | Up to 20A  | Solder     | 5.00mm min        |
| <br>M80-32B                  |  | 14 AWG    | Up to 15A  | Solder     | 5.00mm min        |
| <br>M80-32C                  |  | 16 AWG    | Up to 10A  | Solder     | 5.00mm min        |
| HIGH POWER  |  |           |  |            |                   |
| <br>M80-PF5                  | <br>M80-PM5 | 10 AWG    | Up to 40A  | Solder     | 5.00mm min        |
| TOOLS   |  |           |  |            |                   |
| <b>Recommended Crimp Tool</b> - Z80-294<br><b>Positioner</b> - Z80-295<br><b>Contact Removal Tool</b> - Z80-290 |  |           | ❖ Crimp Tool and Positioner required only for the Crimp contacts. No special tool is required for connecting wire to the solder contacts, other than standard soldering equipment.<br>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a> . |            |                   |

# Datamate Mix-Tek Cable Contacts

- Compatible contacts for use with all Mix-Tek cable housings.
- Straight coax contacts can mate with right-angle coax contacts.

| COAX   |  |           |                         |            |                   |
|--|--|-----------|-------------------------|------------|-------------------|
| Female   | Male   | Coax Size | Coax Type               | Connection | Wire Strip Length |
| <br>M80-305   | <br>M80-315   | Ø2.00mm   | RG178                   | Crimp      | See Figure 1      |
| <br>M80-307   | <br>M80-317   | Ø2.70mm   | RG174<br>RG179<br>RG316 | Crimp      | See Figure 1      |
| <br>M80-308   | <br>M80-318   | Ø2.00mm   | RG178                   | Crimp      | See Figure 2      |
| <br>M80-309 | <br>M80-319 | Ø2.70mm   | RG174<br>RG179<br>RG316 | Crimp      | See Figure 2      |

## TOOLS

**Recommended Inner Contact Crimp Tool** - Z80-292  
**Positioner for Inner Contact** - Z80-291  
**Recommended Outer Sleeve Crimp Tool** - Z80-293  
**Contact Removal Tool** - Z80-290

Instruction sheets available at  
[www.harwin.com/instructions](http://www.harwin.com/instructions).

## WIRE STRIPPING DETAILS

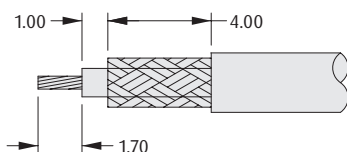


Figure 1

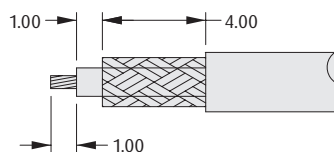


Figure 2

All dimensions in mm.

# Datamate Mix-Tek Connectors

## Metal Backshell Accessories

- ❖ Metal Backshells that can be used with any female cable connector (up to 12AWG), or male connectors with board mount jackscrews.
- ❖ Female backshells come with jackscrews - any existing jackscrews can be removed by removing the e-clip.
- ❖ Suitable for new designs, or in-production addition to enhance existing designs.



DATAMATE MIX-TEK

## PART NUMBERING SYSTEM

**M80 - 9 XX XX 02**

**SERIES CODE**

**FINISH**

**02** Nickel

**TYPE**

|           |                                   |
|-----------|-----------------------------------|
| <b>06</b> | Male                              |
| <b>45</b> | Female with Slotted Jackscrews    |
| <b>46</b> | Female with Hex Socket Jackscrews |

| EQUIVALENT NO. OF SIGNAL CONTACTS | NO. OF POWER ONLY OR COAX ONLY CONTACTS | NO. OF CONTACTS IN POWER/SIGNAL COMBINATION |
|-----------------------------------|---|---|
| <b>08</b>                         | 2 contacts                              | -   |
| <b>10</b>                         | -                                       | 2 Power, 2 Signal                           |
| <b>12</b>                         | 3 contacts                              | 2 Power, 4 Signal                           |
| <b>14</b>                         | -                                       | 2 Power, 6 Signal                           |
| <b>16</b>                         | 4 contacts                              | 2 Power, 8 Signal                           |
| <b>18</b>                         | -                                       | 4 Power, 2 Signal                           |
| <b>20</b>                         | 5 contacts                              | 2 Power, 12 Signal or 4 Power, 4 Signal     |
| <b>22</b>                         | -                                       | 4 Power, 6 Signal                           |
| <b>24</b>                         | 6 contacts                              | 4 Power, 8 Signal                           |
| <b>28</b>                         | 7 contacts                              | 4 Power, 12 Signal                          |
| <b>32</b>                         | 8 contacts                              | -   |
| <b>36</b>                         | 9 contacts                              | -   |
| <b>40</b>                         | 10 contacts                             | -   |
| <b>44</b>                         | 11 contacts                             | -   |
| <b>48</b>                         | 12 contacts                             | -   |

All dimensions in mm.

# Datamate Mix-Tek Connectors

## Female Metal Backshell

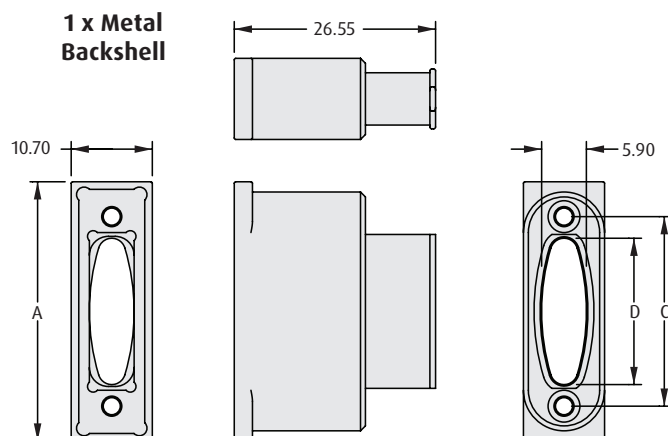
- ❖ Supplied as an accessory kit, including metal backshell, e-clips and the applicable jackscrews.
- ❖ To be used with the appropriate size of Female Cable connector kit without jackscrews (existing jackscrews can be removed).
- ❖ Gives 360 degree shielding when used with conductive braid and mated to a compatible male connector with metal backshell.
- ❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).



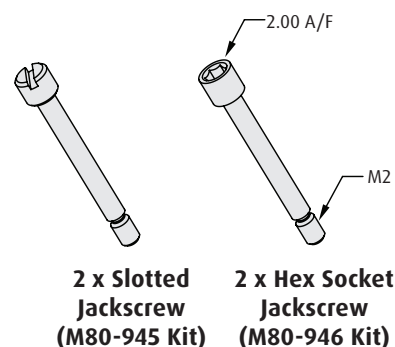
### FEMALE

### CALCULATION

|          |                                |
|----------|--------------------------------|
| <b>A</b> | $B + 16.2$                     |
| <b>B</b> | Equivalent no. of contacts - 2 |
| <b>C</b> | $B + 7$                        |
| <b>D</b> | $B + 0.8$                      |



4 x E-Clip  
(2 spare)



2 x Slotted  
Jackscrew  
(M80-945 Kit)

2 x Hex Socket  
Jackscrew  
(M80-946 Kit)

### E-CLIP TOOL



- ❖ For assembling E-Clips supplied with kit.

### ORDER CODE

**Z80-300**

### BAND-IT TIE



- ❖ For fixing braid to rear collar (requires Tie Dex II A30199 Micro Band tool).

### ORDER CODE

|                    |                  |
|--------------------|------------------|
| <b>M80-9470000</b> | Length = 206.8mm |
| <b>M80-9480000</b> | Length = 362.0mm |

### HOW TO ORDER

**M80 - 94 X XX 02**

### SERIES CODE

### TYPE

|          |                            |
|----------|----------------------------|
| <b>5</b> | With Slotted Jackscrews    |
| <b>6</b> | With Hex Socket Jackscrews |

### FINISH

**02** Nickel

### EQUIVALENT NO. OF SIGNAL CONTACTS

08, 10, 12, 14, 16, 18, 20, 22, 24, 28, 32, 36, 40, 44, 48

All dimensions in mm.

# Datamate Mix-Tek Connectors

## Male Metal Backshell

- ❖ Supplied as an accessory, to be used with existing male connectors.
- ❖ Can be fitted to either male vertical PCB connectors with board mount, or male cable connectors with panel mount jackscrews.
- ❖ Gives 360 degree shielding when mounted to a conductive panel and mated to a compatible female connector with metal backshell.

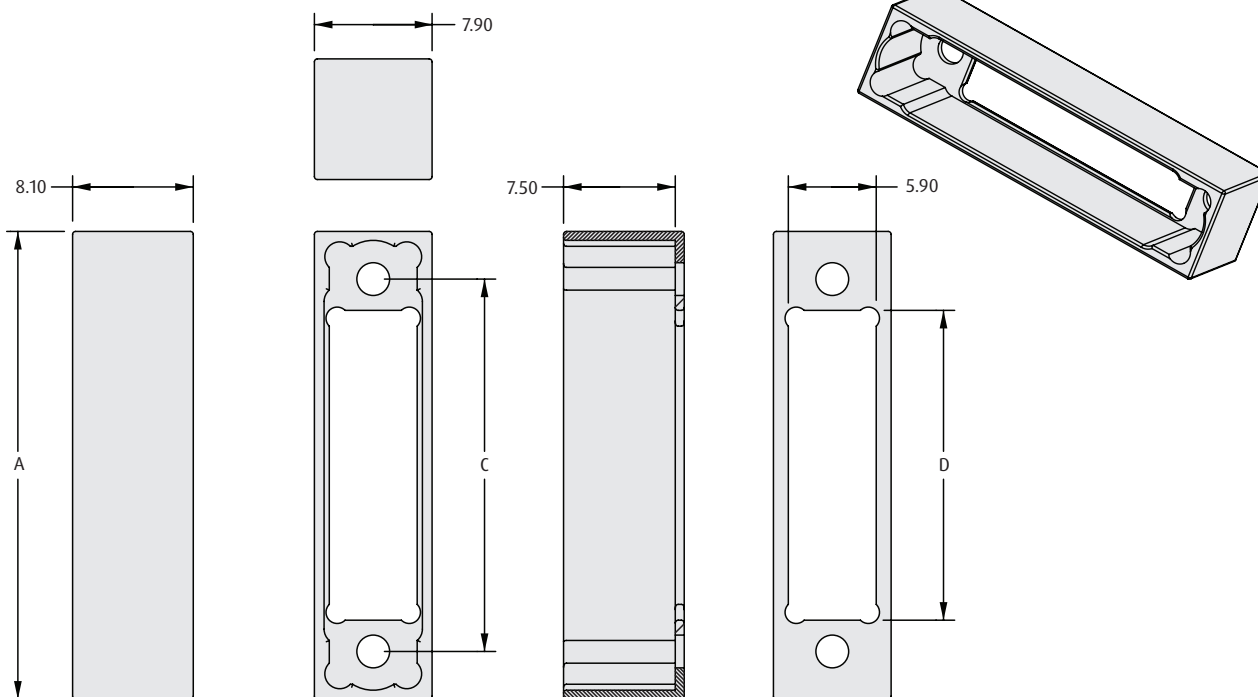


DATAMATE MIX-TEK

### MALE

### CALCULATION

|          |                                |
|----------|--------------------------------|
| <b>A</b> | $B + 13.7$                     |
| <b>B</b> | Equivalent no. of contacts - 2 |
| <b>C</b> | $B + 7$                        |
| <b>D</b> | $B + 2.8$                      |



### HOW TO ORDER

**M80 - 906 XX 02**

**SERIES CODE**

**FINISH**

**02** Nickel

**EQUIVALENT NO. OF SIGNAL CONTACTS**

08, 10, 12, 14, 16, 18, 20, 22, 24, 28, 32, 36, 40, 44, 48

All dimensions in mm.

# Datamate J-Tek Specification

## Materials

|                        |  |
|------------------------|--|
| <b>Housings:</b>       | Glass-filled thermoplastic UL94V-0               |
| <b>Female contacts</b> |  |
| Standard J-Tek:        | Brass shell, with Beryllium Copper inner contact |
| T-Contact:             | Beryllium Copper                                 |
| <b>Male contacts:</b>  | Copper alloy                                     |
| <b>Finish:</b>         | See individual pages                             |

## Electrical

|                                   |  |
|-----------------------------------|--|
| <b>Current - Standard J-Tek</b>   |  |
| Individual contacts in isolation: | 3.3A max (at 25°C)<br>2.6A max (at 85°C) |
| All contacts simultaneously:      | 3.0A max (at 25°C)<br>2.2A max (at 85°C) |
| Flex Circuit Assembly:            | 1.0A max per track (at 25°C)             |
| <b>Current - T-Contact</b>        |  |
| Individual contacts in isolation: | 8.5A max (at 25°C)<br>6.5A max (at 85°C) |
| All contacts simultaneously:      | 3.5A max (at 25°C)<br>2.6A max (at 85°C) |
| <b>Working voltage</b>            |  |
| At sea level 1013 mbar:           | 800V DC or AC peak                       |
| <b>Voltage proof</b>              |  |
| At sea level 1013 mbar:           | 1,200V DC or AC peak                     |
| <b>Contact resistance</b>         |  |
| Initial:                          | 20mΩ max                                 |
| After conditioning:               | 25mΩ max                                 |
| <b>Insulation resistance</b>      |  |
| Initial:                          | 1,000MΩ min                              |
| After conditioning:               | 100MΩ min                                |

## Mechanical

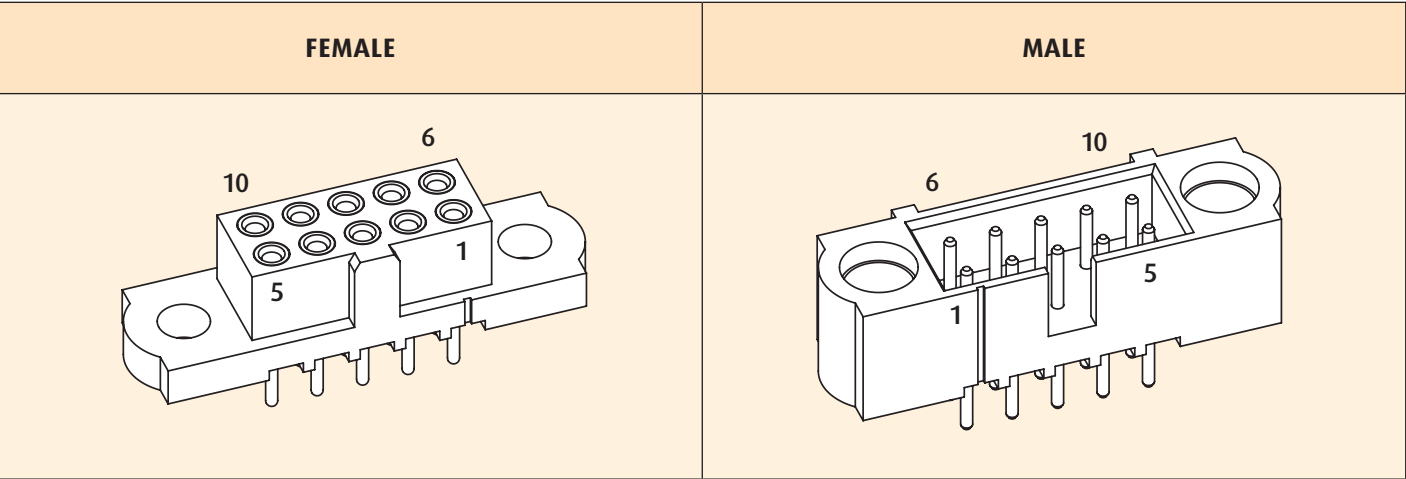
|                                    |   |
|------------------------------------|---|
| <b>Durability</b>                  |   |
| Standard J-Tek:                    | 500 operations                                    |
| T-Contact:                         | 1,000 operations                                  |
| <b>Insertion force (max)</b>       |   |
| Standard J-Tek:                    | 2.8N  |
| T-Contact:                         | 4.0N  |
| <b>Withdrawal force (min)</b>      |   |
| Standard J-Tek:                    | 0.2N  |
| T-Contact:                         | 0.5N  |
| <b>Signal crimp accommodation:</b> |   |
|                                    | 22 AWG to 32 AWG<br>BS 3G 210 Type A, MIL-W-16878 |

## Environmental

|                                      |   |
|--------------------------------------|---|
| <b>Environmental classification:</b> | 55/125/56 days at 95% RH  |
| <b>Operational temperature:</b>      | -55°C to +125°C   |
| <b>*Vibration sensitivity</b>        |   |
| Standard J-Tek:                      | 10Hz to 2000Hz, 0.75mm, 98m/s <sup>2</sup> (10G), duration 6 hours  |
| T-Contact:                           | 10Hz to 2000Hz, 0.75mm, 390m/s <sup>2</sup> (40G), duration 6 hours |
| <b>*Bump severity:</b>               | 390m/s <sup>2</sup> (40G), 4000 ±10 bumps                           |
| <b>*Shock severity:</b>              | 981m/s <sup>2</sup> (100G) for 6ms                                  |
| <b>*Acceleration severity:</b>       | 490m/s <sup>2</sup> (50G)   |

\* Tested with connectors with Jackscrews.

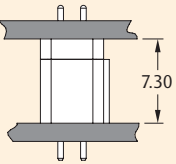
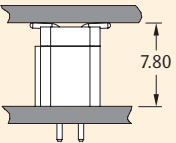
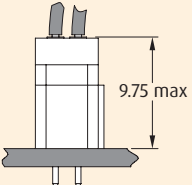
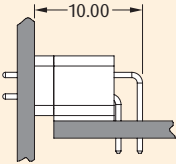
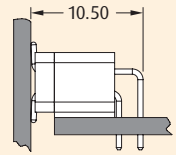
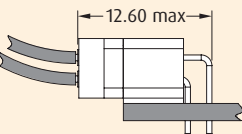
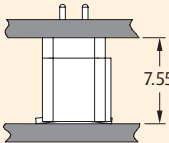
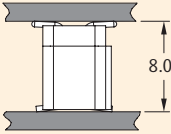
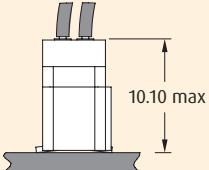
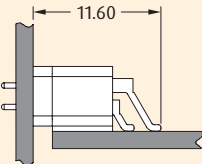
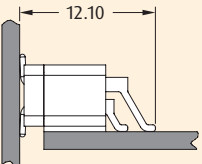
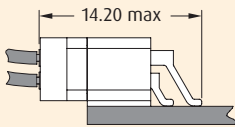
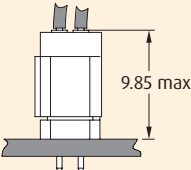
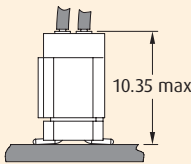
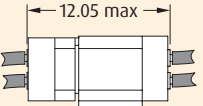
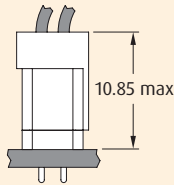
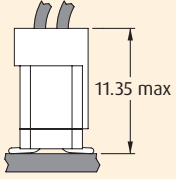
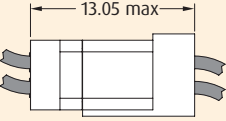
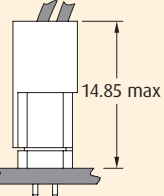
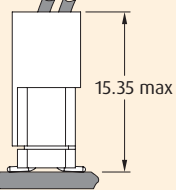
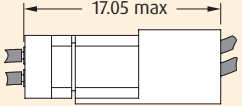
# Pin Numbering



All dimensions in mm.

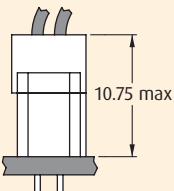
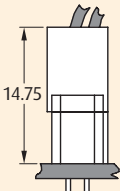
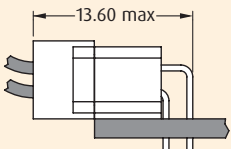
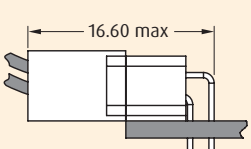
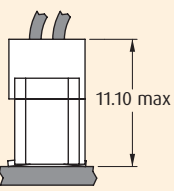
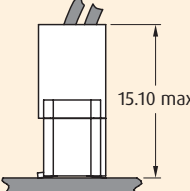
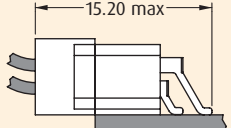
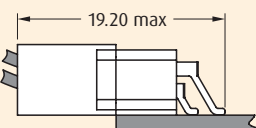
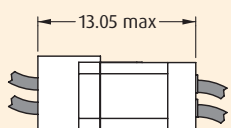
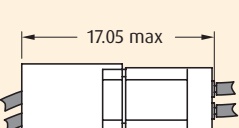
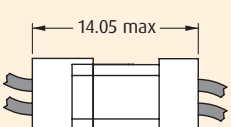
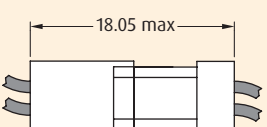
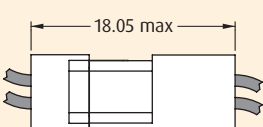
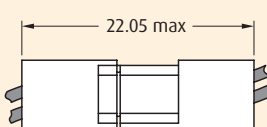


# Datamate J-Tek Mating Profiles

|      |                         | FEMALE  |  |   |
|------|-------------------------|---|--|---|
|      |                         | VERTICAL THROUGHBOARD   | VERTICAL SMT   | CRIMP   |
| MALE | VERTICAL THROUGHBOARD   |    |    |    |
|      | HORIZONTAL THROUGHBOARD |    |    |    |
|      | VERTICAL SMT            |    |    |    |
|      | HORIZONTAL SMT          |  |  |  |
|      | CRIMP                   |  |  |  |
|      | CRIMP 1mm EXTENDED WALL |  |  |  |
|      | CRIMP 5mm EXTENDED WALL |  |  |  |

All dimensions in mm.

# Datamate J-Tek Mating Profiles

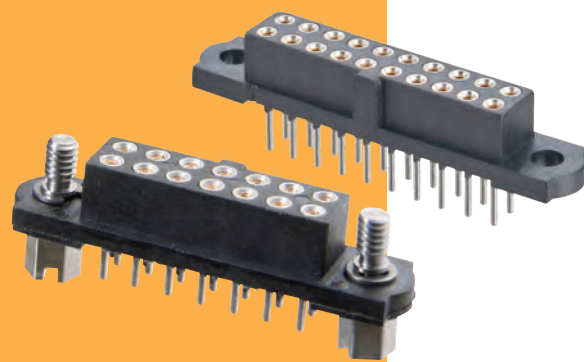
|      |                            | FEMALE  |   |
|------|----------------------------|---|---|
|      |                            | CRIMP<br>1mm EXTENDED WALL  | CRIMP<br>5mm EXTENDED WALL  |
| MALE | VERTICAL THROUGH-BOARD     |    |    |
|      | HORIZONTAL THROUGH-BOARD   |    |    |
|      | VERTICAL SMT               |    |    |
|      | HORIZONTAL SMT             |  |  |
|      | CRIMP                      |  |  |
|      | CRIMP<br>1mm EXTENDED WALL |  |  |
|      | CRIMP<br>5mm EXTENDED WALL |  |  |

All dimensions in mm.

# Datamate J-Tek Connectors

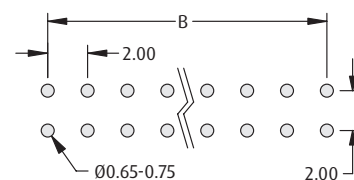
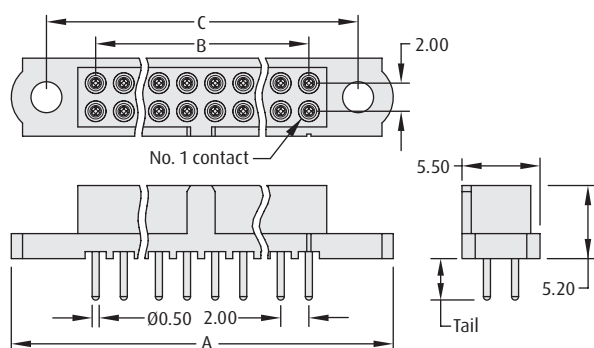
## Female Vertical Throughboard

- ❖ Fully shrouded contacts.
- ❖ Polarized housings.
- ❖ Mates with all Datamate J-Tek male connectors with compatible jackscrews.



DATAMATE J-TEK

### WITHOUT JACKSCREWS

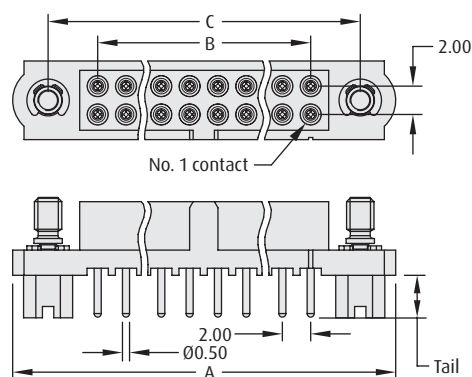


Recommended PC Board Pattern

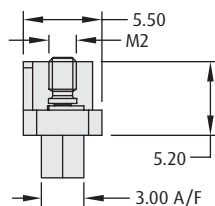
#### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | B + 12                    |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | B + 7                     |

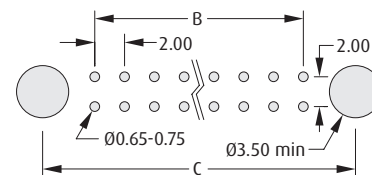
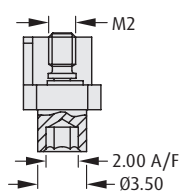
### WITH JACKSCREWS



#### Hex Slotted Jackscrew



#### Hex Socket Jackscrew



Recommended PC Board Pattern

### HOW TO ORDER

**M80 - 4 X X XX XX**

#### SERIES CODE

|          |                             |
|----------|-----------------------------|
| <b>0</b> | With Hex Slotted Jackscrews |
| <b>1</b> | Without Jackscrews          |
| <b>2</b> | With Hex Socket Jackscrews  |

|          |             |
|----------|-------------|
| <b>0</b> | 3mm Tails   |
| <b>1</b> | 4.5mm Tails |

#### FINISH

|           |            |
|-----------|------------|
| <b>05</b> | Gold       |
| <b>42</b> | Gold + Tin |

#### TOTAL NO. OF CONTACTS

04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50

All dimensions in mm.

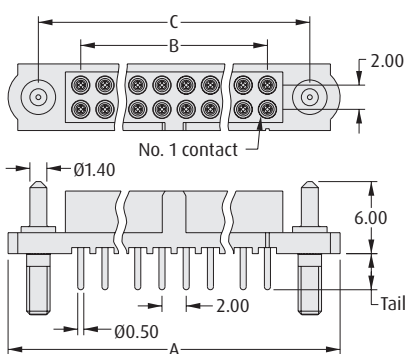
# Datamate J-Tek Connectors

## Female Vertical Throughboard, Guide Pin, 101Lok

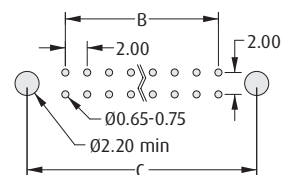
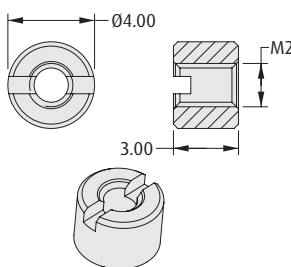
- Guide pin style includes board mount fixing, and mates with Datamate J-Tek male connectors with compatible jackscrows.
- 101Lok fixing gives secure, fast and simple mating; no special tooling required. Just a simple 101-degree turn is required to fix the connectors together.
- 101Lok style mates with Datamate J-Tek male connectors with compatible 101Lok fixings.



### GUIDE PIN JACKSCREWS



#### Board Mount Nut, 2 per connector

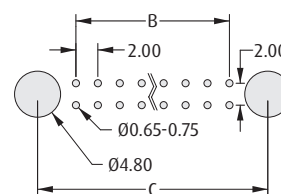
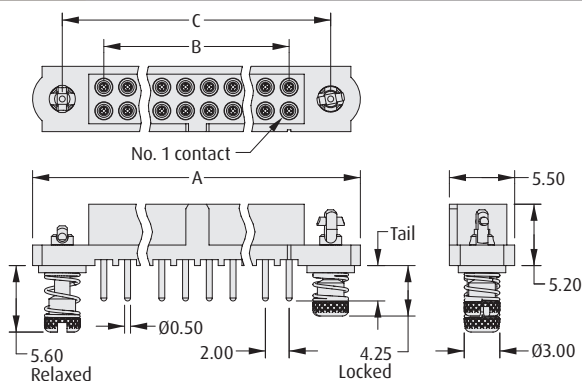


Recommended PC Board Pattern

#### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | B + 12                    |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | B + 7                     |

### 101LOK



Recommended PC Board Pattern

### HOW TO ORDER

**M80 - 4 TX XX XX FX**

#### SERIES CODE

#### TYPE

|           |             |
|-----------|-------------|
| <b>T1</b> | 3mm Tails   |
| <b>T2</b> | 4.5mm Tails |

#### TOTAL NO. OF CONTACTS

04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50

#### JACKSCREW

|           |           |
|-----------|-----------|
| <b>F3</b> | Guide Pin |
| <b>FD</b> | 101Lok    |

#### FINISH

|           |            |
|-----------|------------|
| <b>05</b> | Gold       |
| <b>42</b> | Gold + Tin |

All dimensions in mm.

# Datamate J-Tek Connectors

## Female Vertical Throughboard Reverse Fix

- ❖ Fully shrouded contacts.
- ❖ Polarized housings.
- ❖ Includes board mount fixing.
- ❖ Mates with male Datamate J-Tek connectors with compatible Reverse Fix jackscrews.

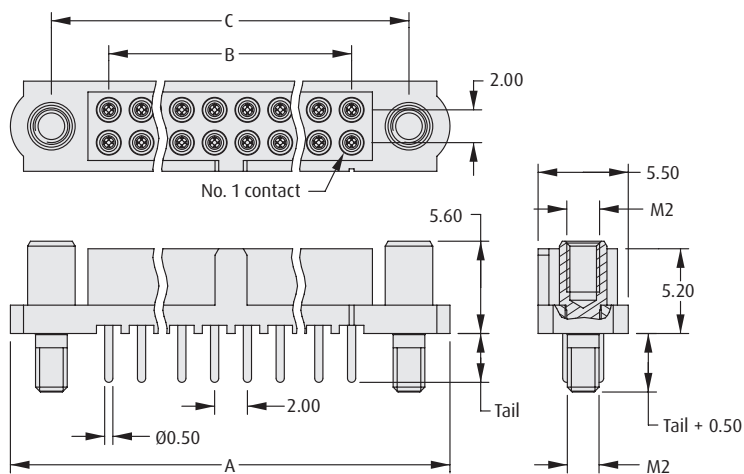


DATAMATE J-TEK

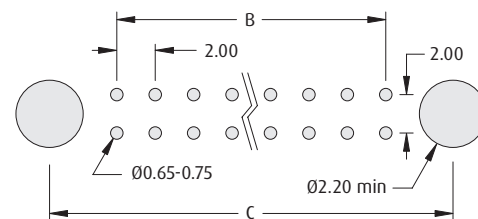
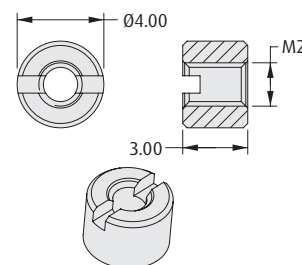
### REVERSE FIX

### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 12$                  |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 7$                   |



### Board Mount Nut, 2 per connector



Recommended PC Board Pattern

### HOW TO ORDER

**M80 - 40 X XX XX**

#### SERIES CODE

#### TYPE

|          |             |
|----------|-------------|
| <b>5</b> | 3mm Tails   |
| <b>6</b> | 4.5mm Tails |

#### FINISH

|           |            |
|-----------|------------|
| <b>05</b> | Gold       |
| <b>42</b> | Gold + Tin |

#### TOTAL NO. OF CONTACTS

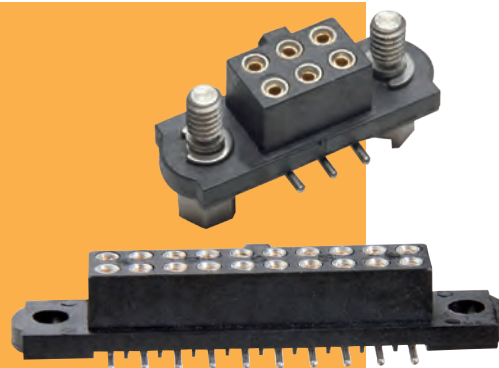
04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50

All dimensions in mm.

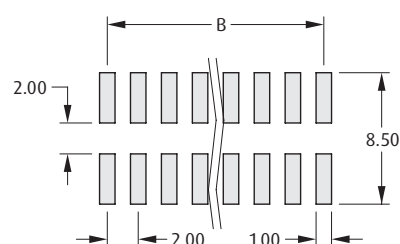
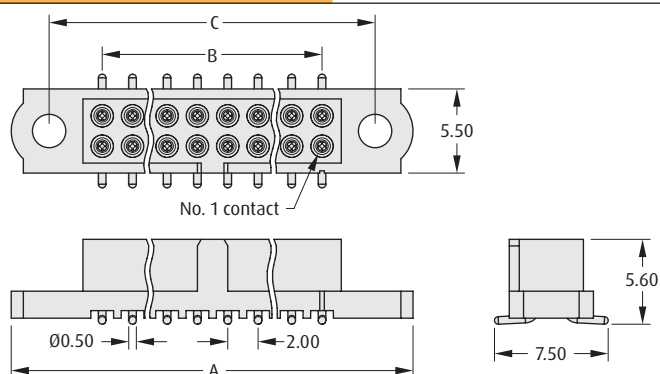
# Datamate J-Tek Connectors

## Female Vertical Surface Mount

- ▣ Mates with all Datamate J-Tek male connectors with compatible jackscrews.
- ▣ Gull wing SMT tails simplify inspection process.



### WITHOUT JACKSCREWS

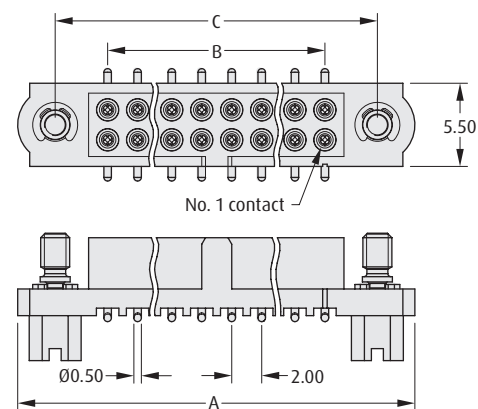


Recommended PC Board Pattern

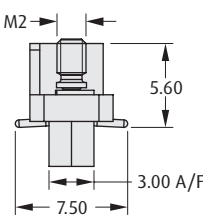
#### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 12$                  |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 7$                   |

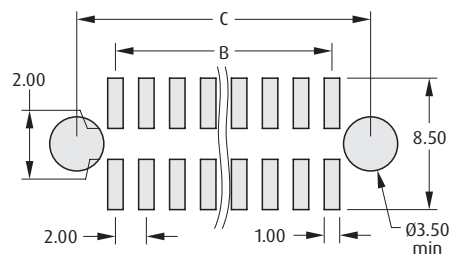
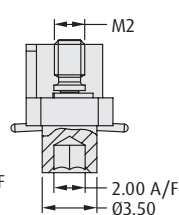
### WITH JACKSCREWS



#### Hex Slotted Jackscrew



#### Hex Socket Jackscrew



Recommended PC Board Pattern

### HOW TO ORDER

**M80 - 4 X 2 XX XX**

#### SERIES CODE

#### TYPE

|          |                             |
|----------|-----------------------------|
| <b>0</b> | With Hex Slotted Jackscrews |
| <b>1</b> | Without Jackscrews          |
| <b>2</b> | With Hex Socket Jackscrews  |

#### FINISH

|           |            |
|-----------|------------|
| <b>05</b> | Gold       |
| <b>42</b> | Gold + Tin |

#### TOTAL NO. OF CONTACTS

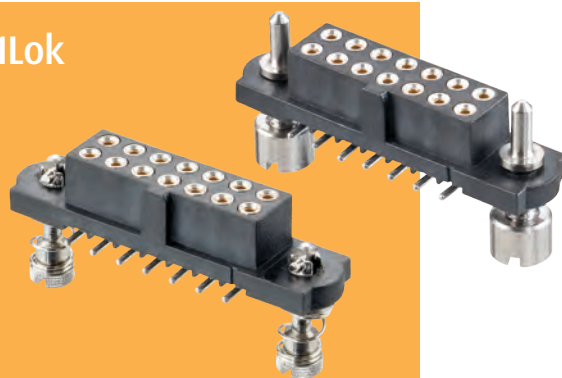
04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50

All dimensions in mm.

# Datamate J-Tek Connectors

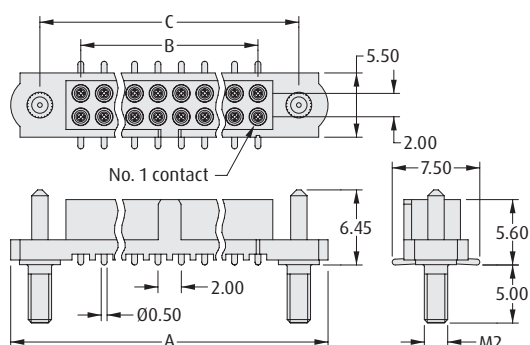
## Female Vertical Surface Mount Guide Pin, 101Lok

- ❖ Guide pin style includes board mount fixing, and mates with Datamate J-Tek male connectors with compatible jackscrews.
- ❖ 101Lok fixing gives secure, fast and simple mating; no special tooling required. Just a simple 101-degree turn is required to fix the connectors together.
- ❖ 101Lok style mates with Datamate J-Tek male connectors with compatible 101Lok fixings.

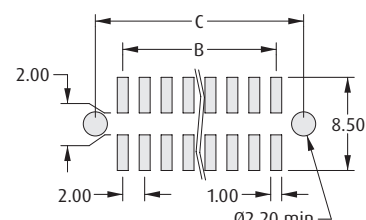
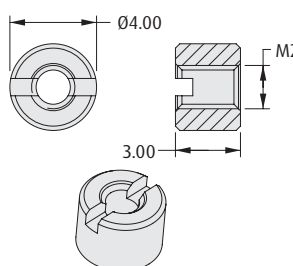


DATAMATE J-TEK

### GUIDE PIN JACKSCREWS



#### Board Mount Nut, 2 per connector

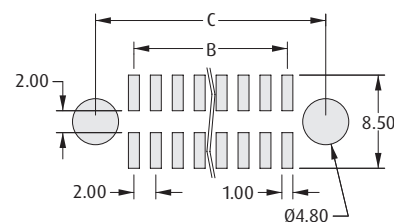
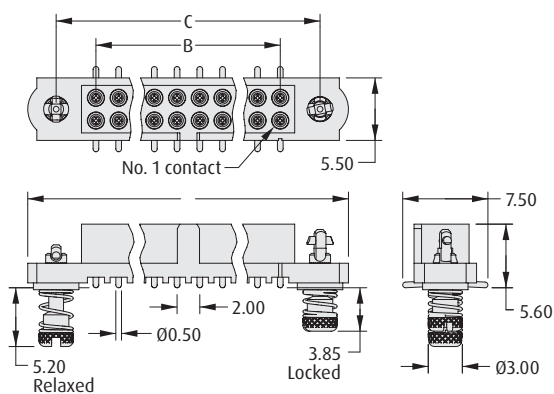


Recommended PC Board Pattern

#### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 12$                  |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 7$                   |

### 101LOK



Recommended PC Board Pattern

### HOW TO ORDER

**M80 - 4S1 XX XX FX**

**SERIES CODE**

**TOTAL NO. OF CONTACTS**

**04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50**

#### JACKSCREW

|           |           |
|-----------|-----------|
| <b>F3</b> | Guide Pin |
| <b>FD</b> | 101Lok    |

#### FINISH

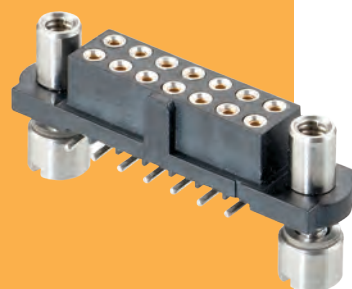
|           |            |
|-----------|------------|
| <b>05</b> | Gold       |
| <b>42</b> | Gold + Tin |

All dimensions in mm.

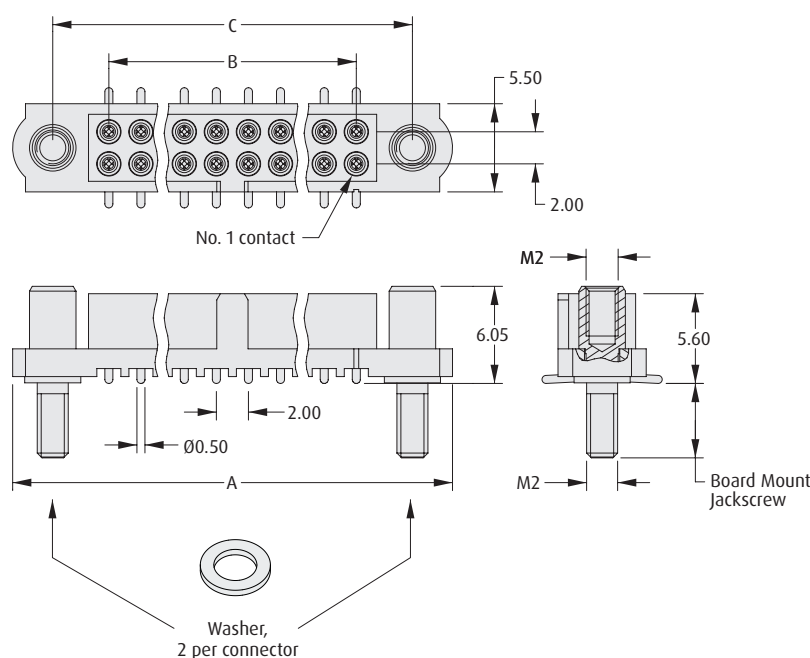
# Datamate J-Tek Connectors

## Female Vertical Surface Mount Reverse Fix

- Fully shrouded contacts.
- Polarized housings.
- Includes Board Mount fixing.
- Mates with male Datamate J-Tek connectors with compatible Reverse Fix jackscrews.
- Washers are supplied loose, and are to be fitted between the PCB and the housing, around the board mount studs.



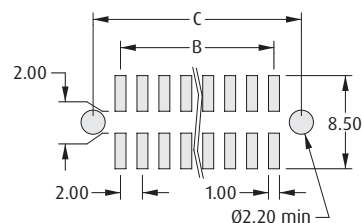
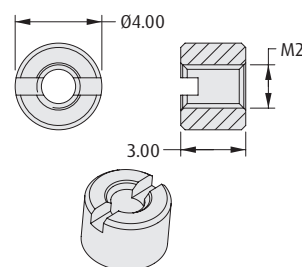
### REVERSE FIX



### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 12$                  |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 7$                   |

### Board Mount Nut, 2 per connector



Recommended PC Board Pattern

### HOW TO ORDER

**M80 - 4S1 XX XX FX**

#### SERIES CODE

#### TOTAL NO. OF CONTACTS

04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50

#### TYPE

|           |                             |
|-----------|-----------------------------|
| <b>F8</b> | 3.5mm Board Mount Jackscrew |
| <b>F9</b> | 5mm Board Mount Jackscrew   |

#### FINISH

|           |            |
|-----------|------------|
| <b>05</b> | Gold       |
| <b>42</b> | Gold + Tin |

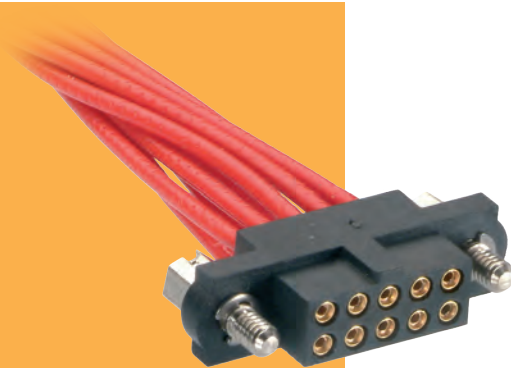
All dimensions in mm.



# Datamate J-Tek Connectors

## Female Crimp Kit

- ❖ Part numbers are for a complete kit of a housing and the applicable number of contacts.
- ❖ Jackscrews are assembled where specified.
- ❖ Crimp contacts are rear insertable.
- ❖ Version also available for 28 – 32 AWG cable – see the following page.
- ❖ Spare contacts are available.



DATAMATE J-TEK

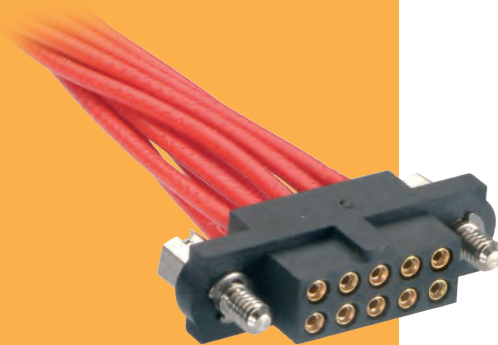
| WITHOUT JACKSCREWS  |                           | WITH JACKSCREWS   |        |     |                           |     |            |  |  |                    |                             |                            |  |  |
|---|---------------------------|---|--------|-----|---------------------------|-----|------------|--|--|--------------------|-----------------------------|----------------------------|--|--|
|   |                           |   |        |     |                           |     |            |  |  |                    |                             |                            |  |  |
| <div>Calculation</div> <table><tr><td>A</td><td>B + 12</td></tr><tr><td>B</td><td>Total no. of contacts - 2</td></tr><tr><td>C</td><td>B + 7</td></tr></table>  |                           | A   | B + 12 | B   | Total no. of contacts - 2 | C   | B + 7      | <div>Hex Slotted Jackscrew</div> <div>Hex Socket Jackscrew</div> |  |                    |                             |                            |  |  |
| A   | B + 12                    |   |        |     |                           |     |            |  |  |                    |                             |                            |  |  |
| B   | Total no. of contacts - 2 |   |        |     |                           |     |            |  |  |                    |                             |                            |  |  |
| C   | B + 7                     |   |        |     |                           |     |            |  |  |                    |                             |                            |  |  |
| TOOLS   |                           | WIRE STRIPPING DETAILS  |        |     |                           |     |            |  |  |                    |                             |                            |  |  |
| <p>Recommended Crimp Tool – M22520/2-01</p> <p>Positioner – T5747</p> <p>Contact Insertion/Removal Tool – Z80-280</p> <p>❖ Spare and pre-cabled contacts shown on following pages.</p> <p>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</p> |                           |   |        |     |                           |     |            |  |  |                    |                             |                            |  |  |
| HOW TO ORDER  |                           |   |        |     |                           |     |            |  |  |                    |                             |                            |  |  |
| <div>M80 - 4XX XX XX</div>  |                           | <div>FINISH</div> <table><tr><td>05</td><td>Gold</td></tr><tr><td>42</td><td>Gold + Tin</td></tr></table> |        | 05  | Gold                      | 42  | Gold + Tin |  |  |                    |                             |                            |  |  |
| 05  | Gold                      |   |        |     |                           |     |            |  |  |                    |                             |                            |  |  |
| 42  | Gold + Tin                |   |        |     |                           |     |            |  |  |                    |                             |                            |  |  |
| <div>SERIES CODE</div> <table><tr><th>LARGE BORE (22 AWG)</th><th>SMALL BORE (24-28 AWG)</th></tr><tr><td>470</td><td>471</td></tr><tr><td>460</td><td>461</td></tr><tr><td>480</td><td>481</td></tr></table>   | LARGE BORE (22 AWG)       | SMALL BORE (24-28 AWG)  | 470    | 471 | 460                       | 461 | 480        | 481  | <table><tr><td>Without Jackscrews</td></tr><tr><td>With Hex Slotted Jackscrews</td></tr><tr><td>With Hex Socket Jackscrews</td></tr></table> | Without Jackscrews | With Hex Slotted Jackscrews | With Hex Socket Jackscrews | <div>TOTAL NO. OF CONTACTS</div> <div>04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50</div> |  |
| LARGE BORE (22 AWG)   | SMALL BORE (24-28 AWG)    |   |        |     |                           |     |            |  |  |                    |                             |                            |  |  |
| 470   | 471                       |   |        |     |                           |     |            |  |  |                    |                             |                            |  |  |
| 460   | 461                       |   |        |     |                           |     |            |  |  |                    |                             |                            |  |  |
| 480   | 481                       |   |        |     |                           |     |            |  |  |                    |                             |                            |  |  |
| Without Jackscrews  |                           |   |        |     |                           |     |            |  |  |                    |                             |                            |  |  |
| With Hex Slotted Jackscrews   |                           |   |        |     |                           |     |            |  |  |                    |                             |                            |  |  |
| With Hex Socket Jackscrews  |                           |   |        |     |                           |     |            |  |  |                    |                             |                            |  |  |

All dimensions in mm.

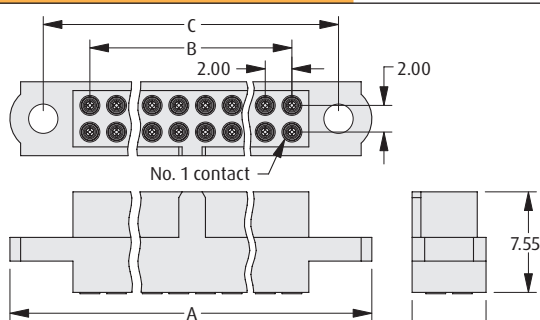
# Datamate J-Tek Connectors

## Female Crimp Kit - Extra Small Bore

- ❖ Part numbers are for a complete kit of a housing and the applicable number of contacts.
- ❖ Jackscrews are assembled where specified.
- ❖ Crimp contacts are rear insertable.
- ❖ Versions also available for 22 – 28 AWG cable – see the previous page.
- ❖ Spare contacts are available.



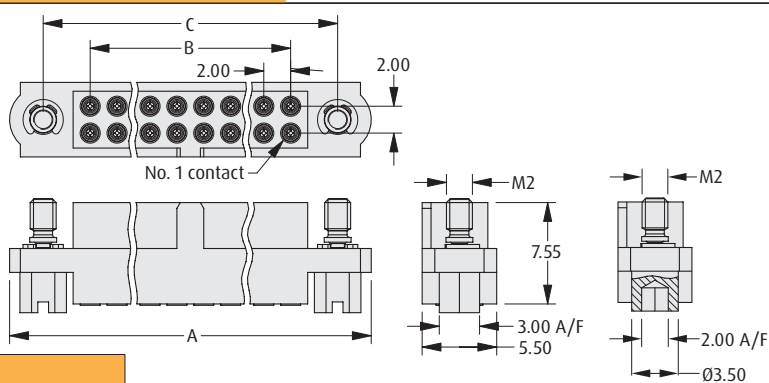
### WITHOUT JACKSCREWS



#### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 12$                  |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 7$                   |

### WITH JACKSCREWS



Hex Slotted Jackscrew

Hex Socket Jackscrew

### TOOLS

**Recommended Crimp Tool** - M22520/2-01

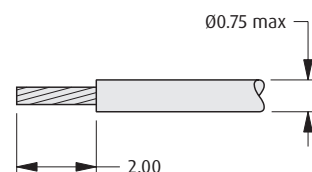
**Positioner** - T5747

**Contact Insertion/Removal Tool** - Z80-280

❖ Spare and pre-cabled contacts shown on following pages.

❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### WIRE STRIPPING DETAILS



### HOW TO ORDER

**M80 - 4 E1 XX XX FX**

#### SERIES CODE

#### TYPE

**E1** Extra Small Bore 28-32 AWG

#### TOTAL NO. OF CONTACTS

**04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50**

#### JACKSCREW

|           |                             |
|-----------|-----------------------------|
| <b>00</b> | Without Jackscrews          |
| <b>F1</b> | With Hex Slotted Jackscrews |
| <b>F2</b> | With Hex Socket Jackscrews  |

#### FINISH

|           |            |
|-----------|------------|
| <b>05</b> | Gold       |
| <b>42</b> | Gold + Tin |

All dimensions in mm.

# Datamate J-Tek Connectors

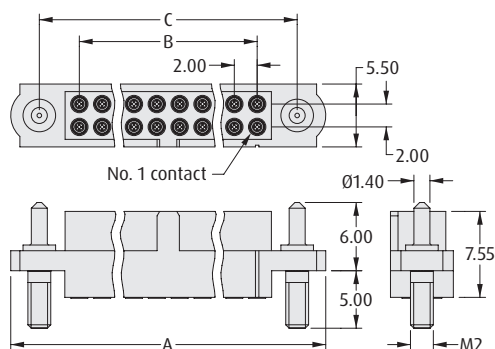
## Female Crimp Kit - Guide Pin, 101Lok

- ❖ Guide pin style includes board mount fixing.
- ❖ 101Lok fixing gives secure, fast and simple mating; no special tooling required. Just a simple 101-degree turn is required to fix the connectors together.
- ❖ Connectors mate with Datamate J-Tek male connectors with applicable jackscrews or 101Lok fixings.
- ❖ Part numbers are for a complete kit of a housing and the applicable number of contacts.

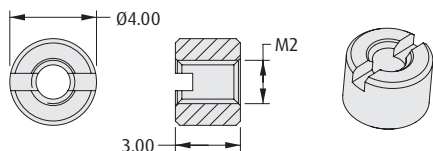


DATAMATE J-TEK

### GUIDE PIN JACKSCREWS



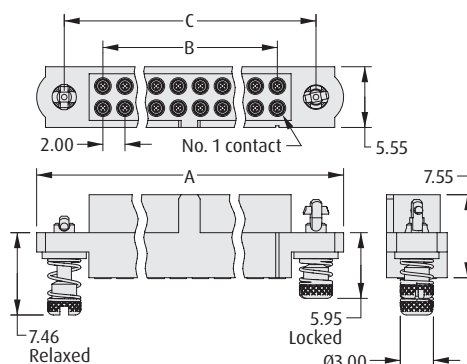
#### Board Mount Nut, 2 per connector



#### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 12$                  |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 7$                   |

### 101LOK



### TOOLS

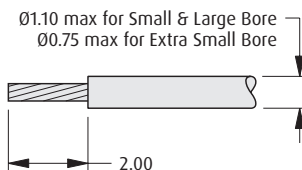
**Recommended Crimp Tool** - M22520/2-01

**Positioner** - T5747

**Contact Insertion/Removal Tool** - Z80-280

- ❖ Spare and pre-cabled contacts shown on following pages.
- ❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### WIRE STRIPPING DETAILS



### HOW TO ORDER

**M80 - 4 X1 XX XX FX**

#### SERIES CODE

#### TYPE

|           |                              |
|-----------|------------------------------|
| <b>C1</b> | Small Bore (24-28 AWG)       |
| <b>D1</b> | Large Bore (22 AWG)          |
| <b>E1</b> | Extra Small Bore (28-32 AWG) |

#### TOTAL NO. OF CONTACTS

04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50

#### JACKSCREW

|           |           |
|-----------|-----------|
| <b>F3</b> | Guide Pin |
| <b>FC</b> | 101Lok    |

#### FINISH

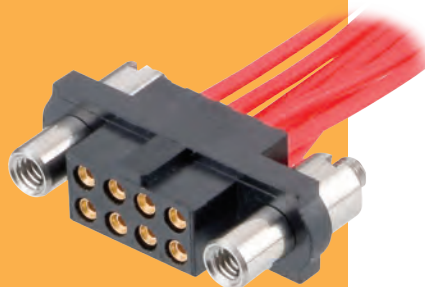
|           |            |
|-----------|------------|
| <b>05</b> | Gold       |
| <b>42</b> | Gold + Tin |

All dimensions in mm.

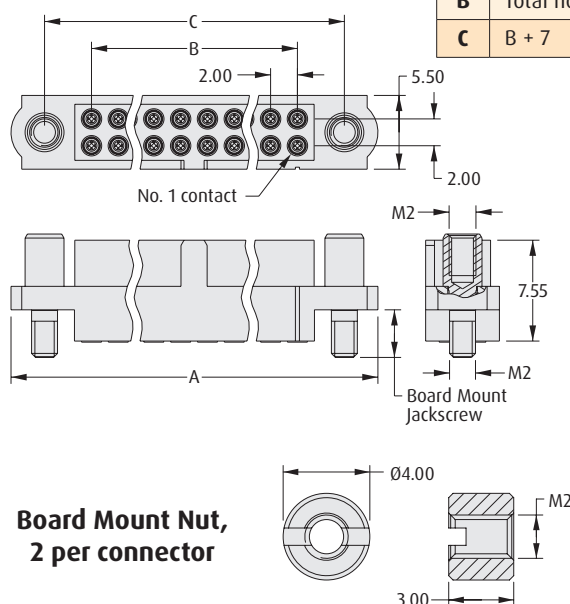
# Datamate J-Tek Connectors

## Female Crimp Kit - Reverse Fix

- ❖ Allows for further flexibility in system design.
- ❖ Crimp contacts supplied loose and are inserted from rear.
- ❖ Part numbers are for a complete kit of a housing and the applicable number of contacts.
- ❖ Jackscrews are assembled.
- ❖ Mates with male Datamate J-Tek connectors with compatible Reverse Fix jackscrews.



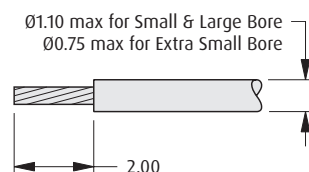
### WITH JACKSCREWS



### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 12$                  |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 7$                   |

### WIRE STRIPPING DETAILS



### TOOLS

**Recommended Crimp Tool** - M22520/2-01

**Positioner** - T5747

**Contact Insertion/Removal Tool** - Z80-280

- ❖ Spare and pre-cabled contacts shown on following pages.

- ❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### HOW TO ORDER

**M80 - 4XX XX XX**

#### SERIES CODE

#### TYPE

|            |                        |
|------------|------------------------|
| <b>462</b> | Large Bore (22 AWG)    |
| <b>463</b> | Small Bore (24-28 AWG) |

#### TOTAL NO. OF CONTACTS

04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50

#### FINISH

|           |            |
|-----------|------------|
| <b>05</b> | Gold       |
| <b>42</b> | Gold + Tin |

**3.5mm Board Mount Jackscrews only**

**M80 - 4 X1 XX XX FX**

#### SERIES CODE

#### TYPE

|           |                              |
|-----------|------------------------------|
| <b>C1</b> | Small Bore (24-28 AWG)       |
| <b>D1</b> | Large Bore (22 AWG)          |
| <b>E1</b> | Extra Small Bore (28-32 AWG) |

#### TOTAL NO. OF CONTACTS

04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50

#### FINISH

|           |            |
|-----------|------------|
| <b>05</b> | Gold       |
| <b>42</b> | Gold + Tin |

#### JACKSCREW

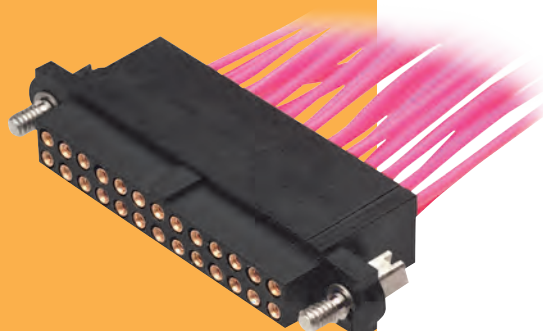
|           |                   |
|-----------|-------------------|
| <b>F8</b> | 3.5mm Board Mount |
| <b>F9</b> | 5mm Board Mount   |

All dimensions in mm.

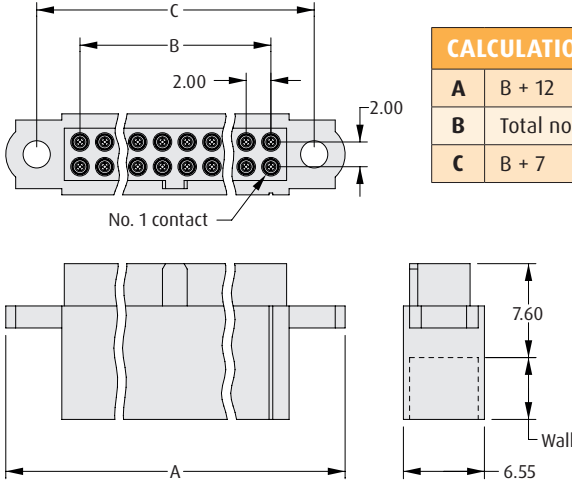
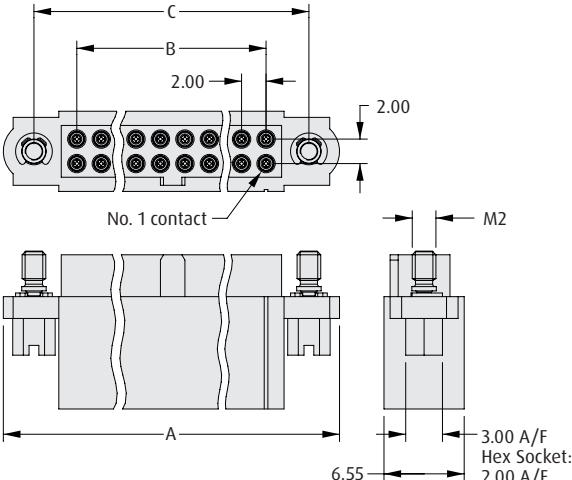
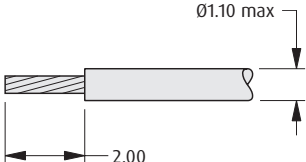
# Datamate J-Tek Connectors

## Female Crimp Kit - Extended Wall

- ❖ Extended Wall Datamate allows back potting to be performed.
- ❖ Polarized housings.
- ❖ Crimp contacts are rear insertable.
- ❖ Large bore 22 AWG, small bore 24 – 28 AWG.
- ❖ Part numbers are for a housing and the equivalent number of contacts.



DATAMATE J-TEK

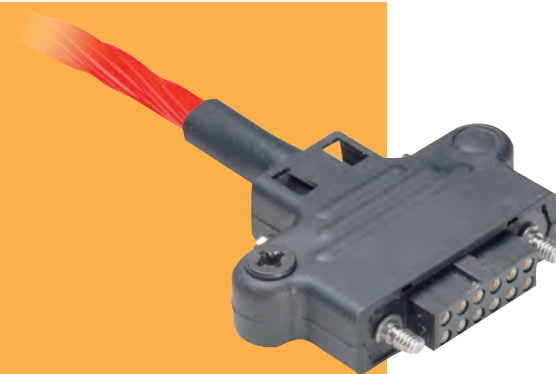
| WITHOUT JACKSCREWS  |                           | WITH JACKSCREWS  |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
|---|---------------------------|--|----|-----------------------|------------------------|--|---------------------------|-----|------------|-----|-----|--|--|-----|---|-----|----|----|
|   |                           |   |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
| <table><tr><th colspan="2">CALCULATION</th></tr><tr><td>A</td><td>B + 12</td></tr><tr><td>B</td><td>Total no. of contacts - 2</td></tr><tr><td>C</td><td>B + 7</td></tr></table>  |                           | CALCULATION  |    | A                     | B + 12                 | B                                      | Total no. of contacts - 2 | C   | B + 7      |     |     |  |  |     |   |     |    |    |
| CALCULATION   |                           |  |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
| A   | B + 12                    |  |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
| B   | Total no. of contacts - 2 |  |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
| C   | B + 7                     |  |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
| <b>TOOLS</b><br><br>Recommended Crimp Tool – M22520/2-01<br>Positioner – T5747<br>Contact Insertion/Removal Tool – Z80-280<br><br>❖ Spare and pre-cabled contacts shown on following pages.<br>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a> . |                           | <b>WIRE STRIPPING DETAILS</b><br><br>              |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
| <b>HOW TO ORDER</b>   |                           |  |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
| <table><tr><th colspan="2">SERIES CODE</th></tr><tr><td>LARGE BORE (22 AWG)</td><td>SMALL BORE (24-28 AWG)</td></tr><tr><td>475</td><td>476</td></tr><tr><td>465</td><td>466</td></tr><tr><td>485</td><td>486</td></tr></table>   |                           | SERIES CODE  |    | LARGE BORE (22 AWG)   | SMALL BORE (24-28 AWG) | 475                                    | 476                       | 465 | 466        | 485 | 486 | <table><tr><td>M80</td><td>-</td><td>XXX</td><td>XX</td><td>XX</td></tr></table> |  | M80 | - | XXX | XX | XX |
| SERIES CODE   |                           |  |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
| LARGE BORE (22 AWG)   | SMALL BORE (24-28 AWG)    |  |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
| 475   | 476                       |  |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
| 465   | 466                       |  |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
| 485   | 486                       |  |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
| M80   | -                         | XXX  | XX | XX                    |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
|   |                           | <table><tr><th colspan="2">WALL SIZE</th></tr><tr><td>BLANK</td><td>Wall = 5mm</td></tr><tr><td>A</td><td>Wall = 1mm</td></tr></table> |    | WALL SIZE             |                        | BLANK                                  | Wall = 5mm                | A   | Wall = 1mm |     |     |  |  |     |   |     |    |    |
| WALL SIZE   |                           |  |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
| BLANK   | Wall = 5mm                |  |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
| A   | Wall = 1mm                |  |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
|   |                           | <table><tr><th colspan="2">FINISH</th></tr><tr><td>05</td><td>Gold</td></tr><tr><td>42</td><td>Gold + Tin</td></tr></table>            |    | FINISH                |                        | 05                                     | Gold                      | 42  | Gold + Tin |     |     |  |  |     |   |     |    |    |
| FINISH  |                           |  |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
| 05  | Gold                      |  |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
| 42  | Gold + Tin                |  |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
|   |                           | <table><tr><th colspan="2">TOTAL NO. OF CONTACTS</th></tr><tr><td colspan="2">06, 10, 12, 14, 18, 20, 26, 34, 42, 50</td></tr></table> |    | TOTAL NO. OF CONTACTS |                        | 06, 10, 12, 14, 18, 20, 26, 34, 42, 50 |                           |     |            |     |     |  |  |     |   |     |    |    |
| TOTAL NO. OF CONTACTS   |                           |  |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |
| 06, 10, 12, 14, 18, 20, 26, 34, 42, 50  |                           |  |    |                       |                        |  |                           |     |            |     |     |  |  |     |   |     |    |    |

All dimensions in mm.

# Datamate J-Tek Connectors

## Female Crimp Kit with Hood

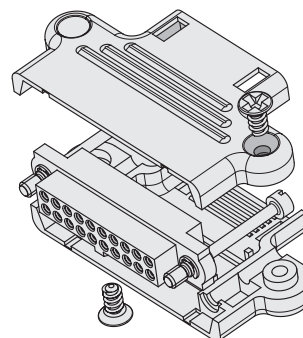
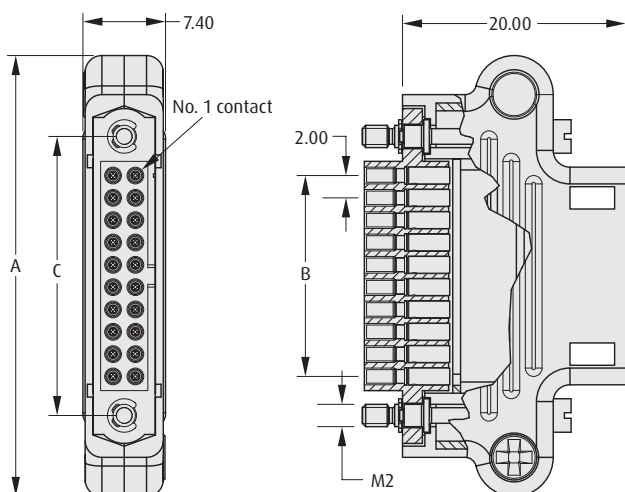
- ❖ Supplied as a complete kit: jackscrews assembled to housing; hood, contacts and assembly screws supplied loose.
- ❖ Provides strain relief by preventing cable bending at the rear of the connector, and also has the option of inserting a cable tie to reduce pull strain.



### FEMALE

### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 21.5$                |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 7$                   |



### TOOLS

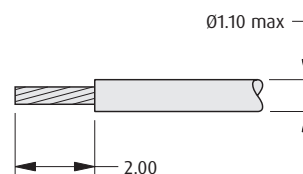
**Recommended Crimp Tool** - M22520/2-01

**Positioner** - T5747

**Contact Insertion/Removal Tool** - Z80-Z80

- ❖ Spare and pre-cabled contacts shown on following pages.
- ❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### WIRE STRIPPING DETAILS



### HOW TO ORDER

**M80 - 94 X XX XX**

#### SERIES CODE

#### TYPE

|          |                        |
|----------|------------------------|
| <b>0</b> | Small Bore (24-28 AWG) |
| <b>1</b> | Large Bore (22 AWG)    |

#### FINISH

|           |            |
|-----------|------------|
| <b>05</b> | Gold       |
| <b>42</b> | Gold + Tin |

#### TOTAL NO. OF CONTACTS

06, 08, 10, 12, 14, 20, 26, 34, 42, 50

All dimensions in mm.

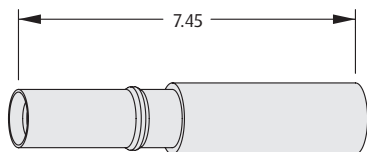
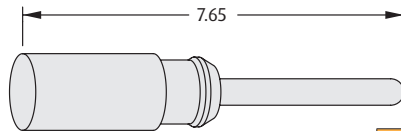
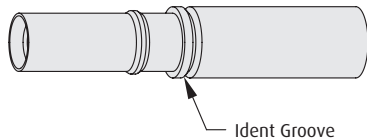
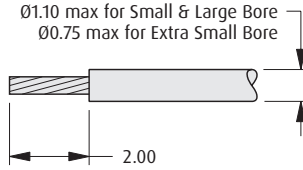
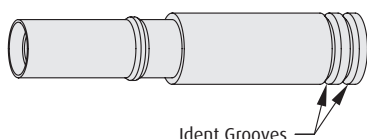
# Datamate J-Tek Connectors

## Spare Female Crimp Contacts

- ❖ Barrel Crimp Contacts are supplied with the connectors - see previous page. Use the order code for extra spare crimps.



DATAMATE J-TEK

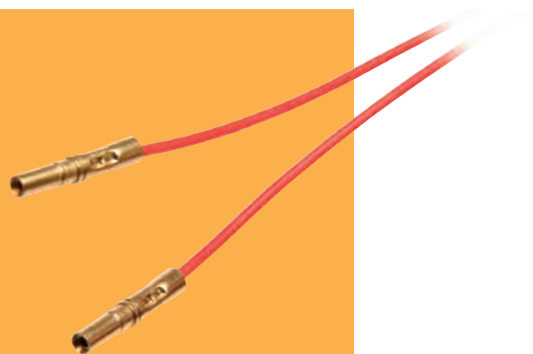
| CRIMP CONTACTS  |                              | DUMMY CONTACT   |  |     |                     |     |                        |     |                              |   |  |        |  |    |            |    |      |
|---|------------------------------|---|--|-----|---------------------|-----|------------------------|-----|------------------------------|---|--|--------|--|----|------------|----|------|
| <p>Large Bore (22 AWG)</p>   |                              |  <div>ORDER CODE</div> <div>M80-023</div>   |  |     |                     |     |                        |     |                              |   |  |        |  |    |            |    |      |
| <p>Small Bore (24 to 28 AWG)</p>   |                              | <p>WIRE STRIPPING DETAILS</p>    |  |     |                     |     |                        |     |                              |   |  |        |  |    |            |    |      |
| <p>Extra Small Bore (28 to 32 AWG)</p>   |                              | <p>TOOLS</p> <p>Recommended Crimp Tool - M22520/2-01</p> <p>Positioner - T5747</p> <p>Contact Insertion/Removal Tool - Z80-280</p> <p>❖ Pre-cabled contacts shown on following page.</p> <p>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</p> |  |     |                     |     |                        |     |                              |   |  |        |  |    |            |    |      |
| HOW TO ORDER  |                              |   |  |     |                     |     |                        |     |                              |   |  |        |  |    |            |    |      |
| <p>M80 - 0XX 00 XX</p>  |                              |   |  |     |                     |     |                        |     |                              |   |  |        |  |    |            |    |      |
| <p>SERIES CODE</p>  |                              |   |  |     |                     |     |                        |     |                              |   |  |        |  |    |            |    |      |
| <table><tr><th>TYPE</th><th></th></tr><tr><td>011</td><td>Large Bore (22 AWG)</td></tr><tr><td>013</td><td>Small Bore (24-28 AWG)</td></tr><tr><td>019</td><td>Extra Small Bore (28-32 AWG)</td></tr></table> |                              | TYPE  |  | 011 | Large Bore (22 AWG) | 013 | Small Bore (24-28 AWG) | 019 | Extra Small Bore (28-32 AWG) | <table><tr><th colspan="2">FINISH</th></tr><tr><td>01</td><td>Gold + Tin</td></tr><tr><td>05</td><td>Gold</td></tr></table> |  | FINISH |  | 01 | Gold + Tin | 05 | Gold |
| TYPE  |                              |   |  |     |                     |     |                        |     |                              |   |  |        |  |    |            |    |      |
| 011   | Large Bore (22 AWG)          |   |  |     |                     |     |                        |     |                              |   |  |        |  |    |            |    |      |
| 013   | Small Bore (24-28 AWG)       |   |  |     |                     |     |                        |     |                              |   |  |        |  |    |            |    |      |
| 019   | Extra Small Bore (28-32 AWG) |   |  |     |                     |     |                        |     |                              |   |  |        |  |    |            |    |      |
| FINISH  |                              |   |  |     |                     |     |                        |     |                              |   |  |        |  |    |            |    |      |
| 01  | Gold + Tin                   |   |  |     |                     |     |                        |     |                              |   |  |        |  |    |            |    |      |
| 05  | Gold                         |   |  |     |                     |     |                        |     |                              |   |  |        |  |    |            |    |      |

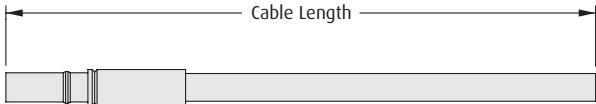
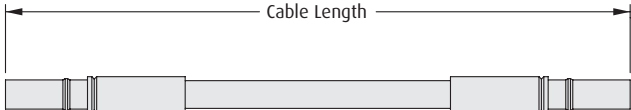
All dimensions in mm.

# Datamate J-Tek Connectors

## Female Crimp Contacts – Pre-Crimped Wires

- ❖ Female crimp contacts pre-assembled with a choice of BS 3G 210 Type A cable at selected lengths.
- ❖ PTFE-insulated, multi-strand silver-plated copper conductor equipment wire.
- ❖ Ideal for prototype and pre-production applications.



| FEMALE SINGLE ENDED   |   | FEMALE - FEMALE  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
|---|---|--|---------------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|--|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
|  |   |    |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| TOOLS   |   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| <b>Contact Insertion/Removal Tool</b> – Z80-Z80                                   |   | <ul style="list-style-type: none"><li>❖ Full crimp connector kits and spare crimp contacts shown on previous pages.</li><li>❖ Full cable assemblies shown on following page.</li><li>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</li></ul> |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| HOW TO ORDER  |   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| <b>M80 - 9XX 00 99</b>  |   | <table><tr><th colspan="2">CABLE COLOR</th></tr><tr><td>99</td><td>Red</td></tr></table>   |               | CABLE COLOR |     | 99  | Red |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| CABLE COLOR   |   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| 99  | Red   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| <b>SERIES CODE</b>  | <table><tr><th>SINGLE ENDED</th><th>FEMALE-FEMALE</th></tr><tr><td>910</td><td>918</td></tr><tr><td>911</td><td>919</td></tr><tr><td>912</td><td>920</td></tr><tr><td>913</td><td>921</td></tr><tr><td>914</td><td>922</td></tr><tr><td>915</td><td>923</td></tr><tr><td>916</td><td>924</td></tr><tr><td>917</td><td>925</td></tr></table> | SINGLE ENDED   | FEMALE-FEMALE | 910         | 918 | 911 | 919 | 912 | 920 | 913 | 921 | 914 | 922 | 915 | 923 | 916 | 924 | 917 | 925 | <table><tr><td>22 AWG Cable, 150mm length</td></tr><tr><td>24 AWG Cable, 150mm length</td></tr><tr><td>26 AWG Cable, 150mm length</td></tr><tr><td>28 AWG Cable, 150mm length</td></tr><tr><td>22 AWG Cable, 300mm length</td></tr><tr><td>24 AWG Cable, 300mm length</td></tr><tr><td>26 AWG Cable, 300mm length</td></tr><tr><td>28 AWG Cable, 300mm length</td></tr></table> |  | 22 AWG Cable, 150mm length | 24 AWG Cable, 150mm length | 26 AWG Cable, 150mm length | 28 AWG Cable, 150mm length | 22 AWG Cable, 300mm length | 24 AWG Cable, 300mm length | 26 AWG Cable, 300mm length | 28 AWG Cable, 300mm length |
| SINGLE ENDED  | FEMALE-FEMALE   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| 910   | 918   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| 911   | 919   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| 912   | 920   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| 913   | 921   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| 914   | 922   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| 915   | 923   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| 916   | 924   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| 917   | 925   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| 22 AWG Cable, 150mm length  |   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| 24 AWG Cable, 150mm length  |   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| 26 AWG Cable, 150mm length  |   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| 28 AWG Cable, 150mm length  |   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| 22 AWG Cable, 300mm length  |   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| 24 AWG Cable, 300mm length  |   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| 26 AWG Cable, 300mm length  |   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |
| 28 AWG Cable, 300mm length  |   |  |               |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |                            |                            |                            |                            |                            |                            |                            |                            |

All dimensions in mm.



# Datamate J-Tek Connectors

## Female Cable Assemblies

- Ready-made cable assemblies, fully tested and inspected.
- Extended wall connectors are backpotted for additional strain relief.
- Stainless steel jackscrews to mate with applicable male connector.
- Constructed with Contact 1 to Contact 1, Contact 2 to Contact 2, etc.
- For multicolor sequence, check applicable Technical Drawing.



DATAMATE J-TEK

## PART NUMBERING SYSTEM

**M80 - F X X XX XX FX - XXXX XX**

### SERIES CODE

### GENDER - FIRST END

**F** Female

### CONNECTOR STYLE

|          |                             |
|----------|-----------------------------|
| <b>C</b> | Standard (no extended wall) |
| <b>E</b> | 5mm Extended Wall           |
| <b>F</b> | 1mm Extended Wall           |

### CABLE SIZE

|          |        |
|----------|--------|
| <b>1</b> | 22 AWG |
| <b>2</b> | 24 AWG |
| <b>3</b> | 26 AWG |
| <b>4</b> | 28 AWG |
| <b>5</b> | 30 AWG |

### TOTAL NO. OF CONTACTS

**04 to 50 (even numbers only)**

### CABLE COLOR

|           |                                 |
|-----------|---------------------------------|
| <b>05</b> | White cable (double-ended)      |
| <b>68</b> | Multicolor cable (single-ended) |

### TERMINATION - SECOND END

|                         |                                      |
|-------------------------|--------------------------------------|
| <b>L</b>                | Loose cut end                        |
| <b>F0, F1, F2 or FC</b> | Female connector (same as First End) |

### CABLE LENGTH

|             |                      |
|-------------|----------------------|
| <b>0150</b> | 150mm                |
| <b>0300</b> | 300mm (double-ended) |
| <b>0450</b> | 450mm (single-ended) |
| <b>XXXX</b> | XXXXmm               |

### JACKSCREW

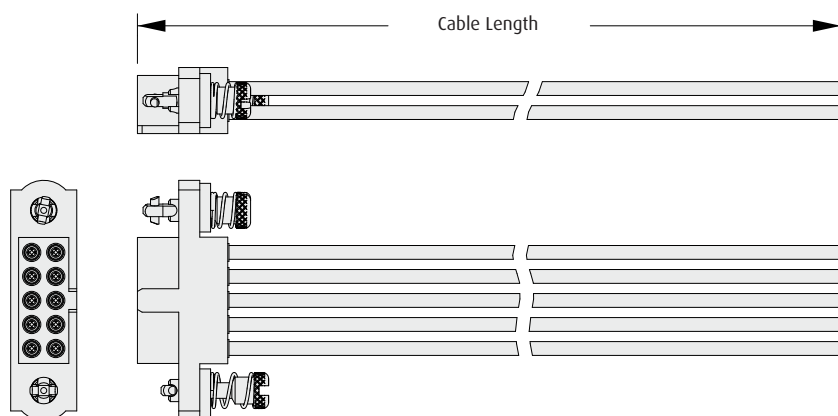
|           |                      |
|-----------|----------------------|
| <b>F0</b> | No fixings           |
| <b>F1</b> | Floating Hex Slotted |
| <b>F2</b> | Floating Hex Socket  |
| <b>FC</b> | 101Lok               |

All dimensions in mm.

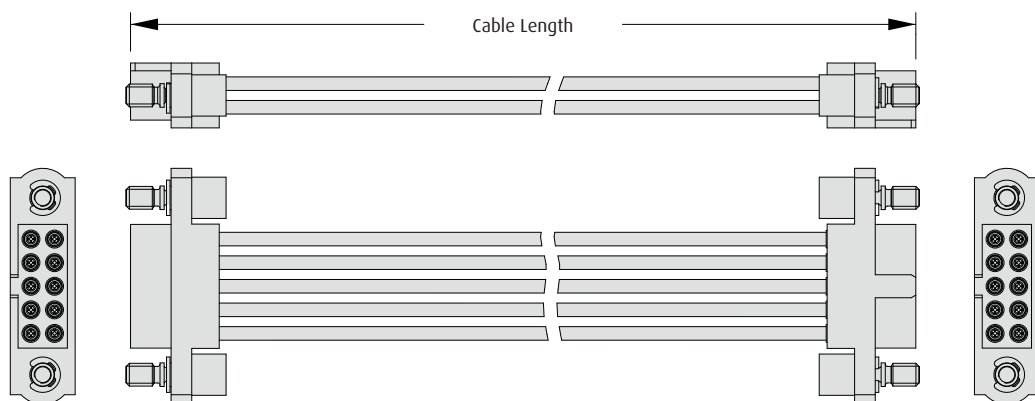
# Datamate J-Tek Connectors

- ❖ Examples of available cable assembly options - see previous page for part numbering.
- ❖ Cable assemblies are constructed with Contact 1 to Contact 1, Contact 2 to Contact 2, etc.

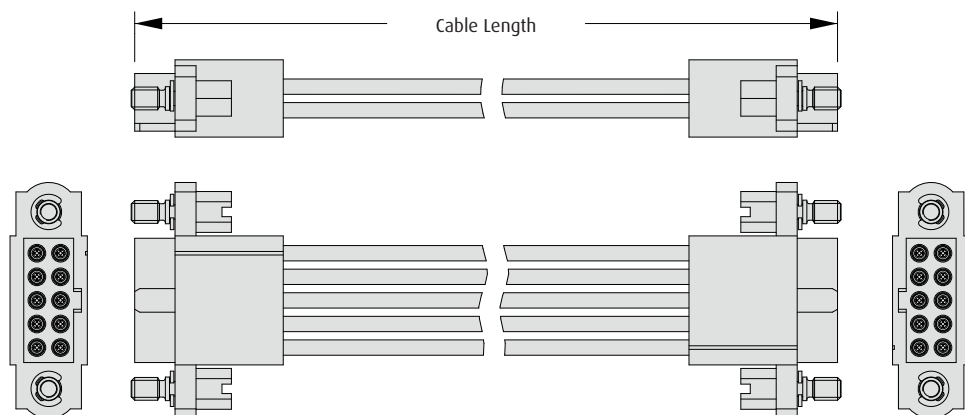
## FEMALE SINGLE ENDED



## FEMALE - FEMALE



## FEMALE - FEMALE WITH EXTENDED WALLS



All dimensions in mm.

# Datamate J-Tek Connectors

## Female Crimp T-Contact

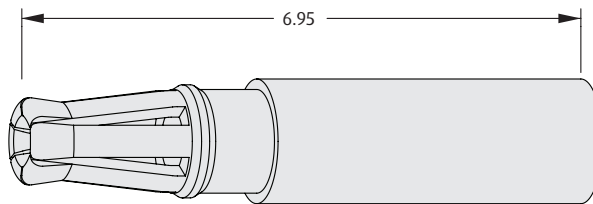
- ❖ Advanced single-piece contact design using Beryllium Copper for a 6-finger contact with improved capabilities.
- ❖ Current carrying capacity up to 8.5 Amps per contact.
- ❖ Improved mating durability to 1,000 operations.
- ❖ Suitable for use with 22AWG cable, Ø1.1mm maximum insulation diameter.
- ❖ Compatible cable housings showing on the following pages - order contact and housings separately.



DATAMATE J-TEK

### CRIMP CONTACTS

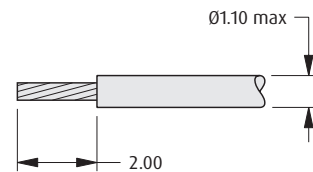
#### Large Bore (22 AWG)



### TOOLS

**Recommended Crimp Tool** - M22520/2-01  
**Positioner** - Z80-444  
**Contact insertion/Removal Tool** - Z80-280  
 ❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### WIRE STRIPPING DETAILS



### HOW TO ORDER

**M80 - 206 00 05**

**SERIES CODE**

**FINISH**

**05** Gold

All dimensions in mm.

Patent Pending

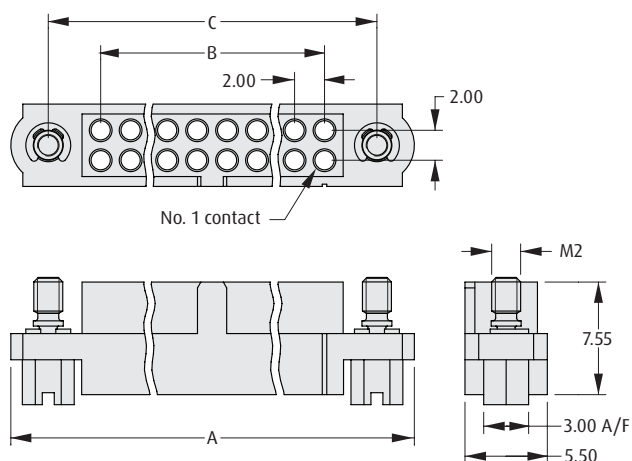
# Datamate J-Tek Connectors

## Female Crimp Housing

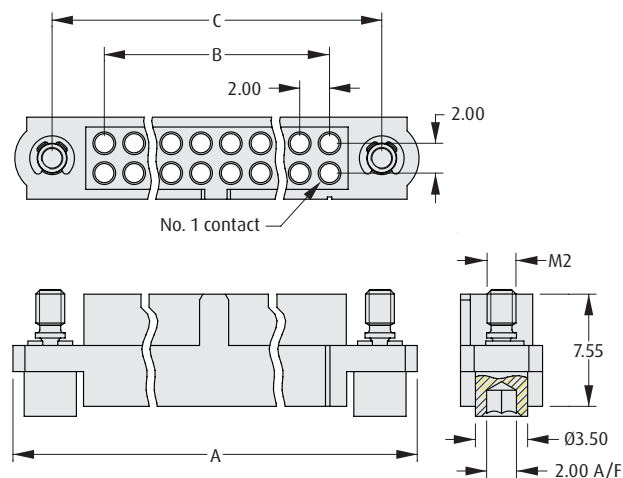
- ❖ Compatible with all female signal barrel crimp contacts, including T-Contact shown on previous page.
- ❖ Use insertion tool to insert crimped contacts into rear of connector housing: **order code Z80-Z80**.
- ❖ Connectors mate with Datamate J-Tek male connectors with applicable jackscrews.
- ❖ Jackscrews are supplied already assembled to housing.



### HEX SLOTTED JACKSCREWS



### HEX SOCKET JACKSCREWS



#### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 12$                  |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 7$                   |

### HOW TO ORDER

**M80 - 41 X XX 98**

**SERIES CODE**

**JACKSCREW TYPE**

|          |                        |
|----------|------------------------|
| <b>3</b> | Hex Slotted Jackscrews |
| <b>4</b> | Hex Socket Jackscrews  |

**TOTAL NO. OF CONTACTS**

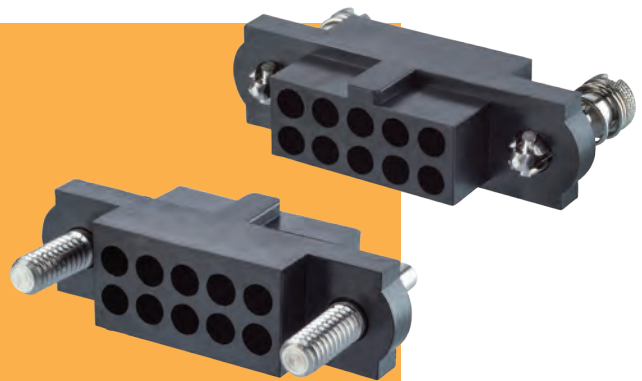
**04 to 50 (Even numbers only)**

All dimensions in mm.

# Datamate J-Tek Connectors

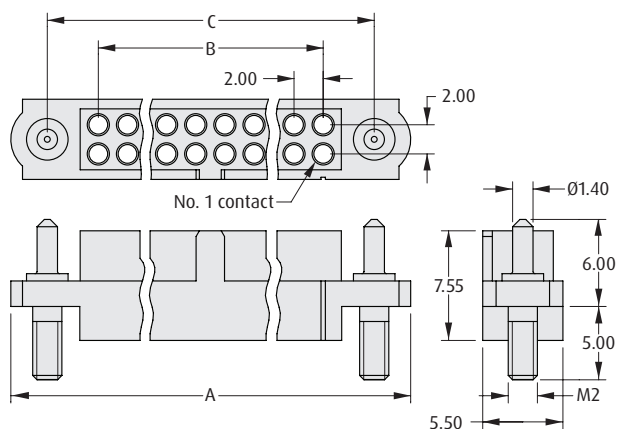
## Female Crimp Housing - Guide Pin, 101Lok

- ❖ Compatible with all female signal barrel crimp contacts, including T-Contact shown on previous page.
- ❖ Guide pin style includes board mount fixing.
- ❖ 101Lok fixing gives secure, fast and simple mating; no special tooling required. Just a simple 101-degree turn is required to fix the connectors together.
- ❖ Connectors mate with Datamate J-Tek male connectors with applicable jackscrews or 101Lok fixings.

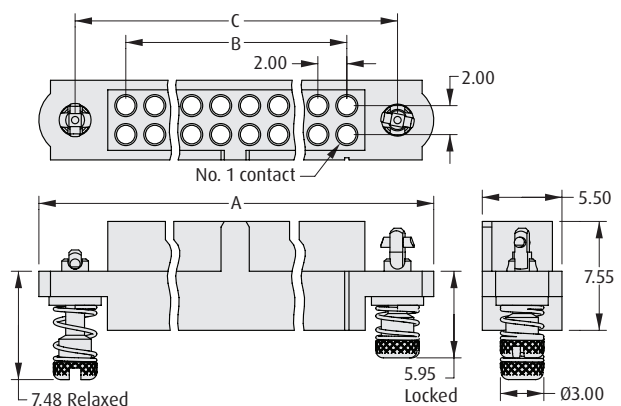


DATAMATE J-TEK

### GUIDE PIN JACKSCREWS



### 101LOK



#### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 12$                  |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 7$                   |

### HOW TO ORDER

**M80 - 41 X XX 98**

**SERIES CODE**

**JACKSCREW TYPE**

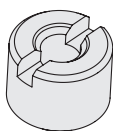
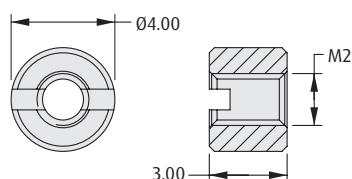
|          |                      |
|----------|----------------------|
| <b>7</b> | Guide Pin Jackscrews |
| <b>8</b> | 101Lok               |

**TOTAL NO. OF CONTACTS**

**04 to 50 (Even numbers only)**

### HARDWARE FOR GUIDE PIN STUD

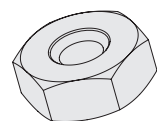
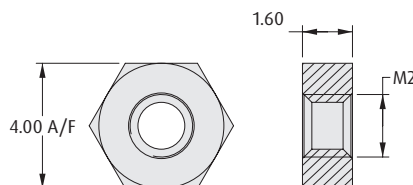
#### Slotted Board Mount Nut



**ORDER CODE**

**M80-2130000B**

#### Hexagonal Board Mount Nut



**ORDER CODE**

**M80-2430000B**

Order separately from connector

All dimensions in mm.

# Datamate J-Tek Connectors

## Female Crimp Housing - Reverse Fix

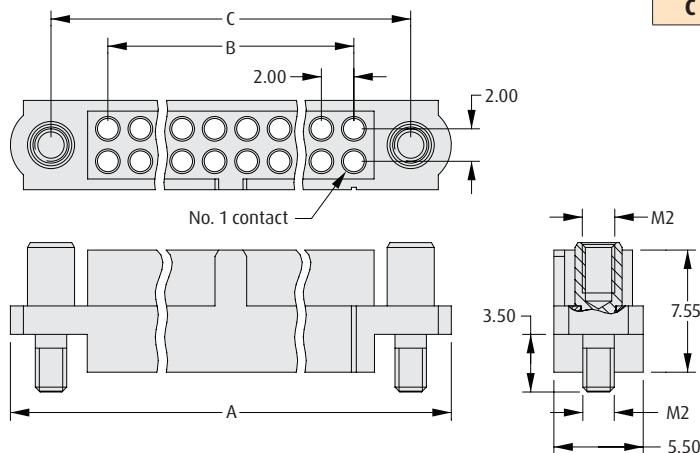
- Compatible with all female signal barrel crimp contacts, including T-Contact shown on previous page.
- Use insertion tool to insert crimped contacts into rear of connector housing: **order code Z80-280**.
- Jackscrews are supplied already assembled to housing.
- Connectors mate with Datamate J-Tek male connectors with compatible Reverse Fix jackscrews.



### REVERSE FIX JACKSCREWS

### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | B + 12                    |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | B + 7                     |



### HOW TO ORDER

**M80 - 41 5 XX 98**

#### SERIES CODE

#### JACKSCREW TYPE

**5**

Reverse Fix Jackscrew

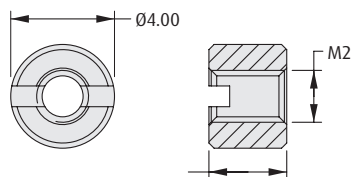
#### TOTAL NO. OF CONTACTS

04 to 50 (Even numbers only)

### HARDWARE FOR PANEL MOUNT STUD

Order separately from connector

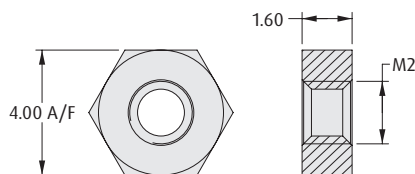
#### Slotted Board Mount Nut



#### ORDER CODE

**M80-2130000B**

#### Hexagonal Board Mount Nut



#### ORDER CODE

**M80-2430000B**

All dimensions in mm.

# Datamate J-Tek Connectors

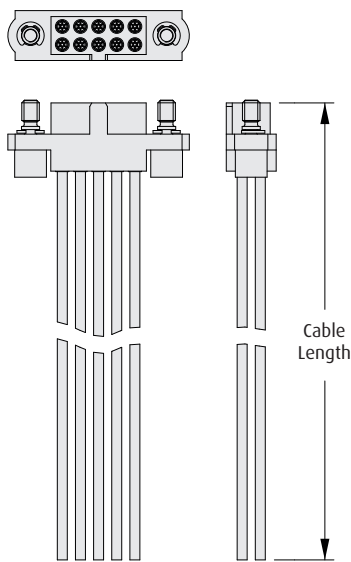
## Female Cable Assemblies - T-Contact

- Ready-made cable assemblies, fully tested and inspected.
- 6-finger Beryllium Copper T-Contacts, up to 8.5A per contact.
- Stainless steel jackscrews to mate with applicable male connector.
- Constructed with Contact 1 to Contact 1, Contact A to Contact A, etc.
- For multicolor sequence, check applicable Technical Drawing.

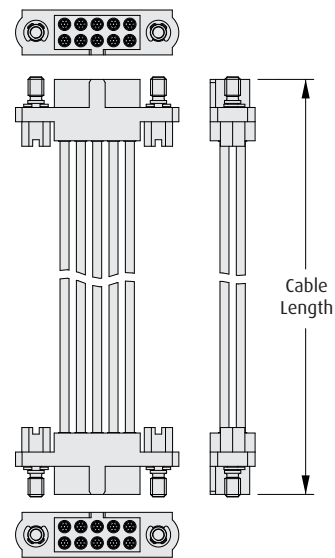


DATAMATE J-TEK

### FEMALE SINGLE ENDED



### FEMALE - FEMALE



### HOW TO ORDER

**M80 - F B1 XX XX FX - XXXX XX**

#### SERIES CODE

#### GENDER - FIRST END

**F** Female

#### CABLE SIZE

**B1** 22 AWG, T-Contact

#### TOTAL NO. OF CONTACTS

**04 to 50 (even numbers only)**

#### CABLE COLOR

**05** White cable (double-ended)

**68** Multicolor cable (single-ended)

#### TERMINATION - SECOND END

**L** Loose cut end

**F1, F2 or FC** Female connector (same as First End)

#### CABLE LENGTH

**XXXX** XXXXmm

#### SCREW-LOK

**F1** Floating Hex Slotted

**F2** Floating Hex Socket

**FC** 101Lok

All dimensions in mm.

# Datamate J-Tek Connectors

## Female Metal Backshell

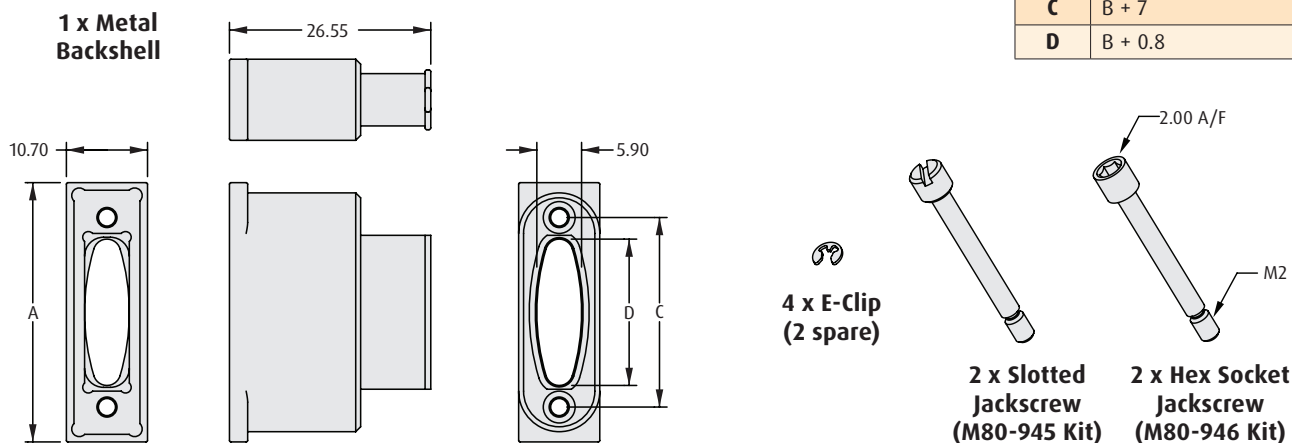
- ❖ Supplied as an accessory kit, including metal backshell, e-clips and the applicable jackscrews.
- ❖ To be used with the appropriate size of Female Crimp Kit without jackscrews.
- ❖ Gives 360 degree shielding when used with conductive braid and mated to a compatible male connector with metal backshell.
- ❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).



### FEMALE

### CALCULATION

|          |                                |
|----------|--------------------------------|
| <b>A</b> | $B + 16.2$                     |
| <b>B</b> | Equivalent no. of contacts - 2 |
| <b>C</b> | $B + 7$                        |
| <b>D</b> | $B + 0.8$                      |



### E-CLIP TOOL



- ❖ For assembling E-Clips supplied with kit.

### ORDER CODE

**Z80-300**

### BAND-IT TIE



- ❖ For fixing braid to rear collar (requires Tie Dex II A30199 Micro Band tool).

### ORDER CODE

|                    |                  |
|--------------------|------------------|
| <b>M80-9470000</b> | Length = 206.8mm |
| <b>M80-9480000</b> | Length = 362.0mm |

### HOW TO ORDER

|                    |                            |                         |  |  |  |  |  |        |
|--------------------|----------------------------|-------------------------|--|--|--|--|--|--------|
|                    |                            | <b>M80 - 94 X XX 02</b> |  |  |  |  |  |        |
| <b>SERIES CODE</b> |                            |                         |  |  |  |  | <b>FINISH</b>                            |        |
|                    |                            |                         |  |  |  |  | <b>02</b>                                | Nickel |
| <b>TYPE</b>        |                            |                         |  |  |  |  |  |        |
| <b>5</b>           | With Slotted Jackscrews    |                         |  |  |  |  |  |        |
| <b>6</b>           | With Hex Socket Jackscrews |                         |  |  |  |  |  |        |
|                    |                            |                         |  |  |  |  | <b>EQUIVALENT NO. OF SIGNAL CONTACTS</b> |        |
|                    |                            |                         |  |  |  |  | 08 to 28, 32 to 50 (Even numbers only)   |        |

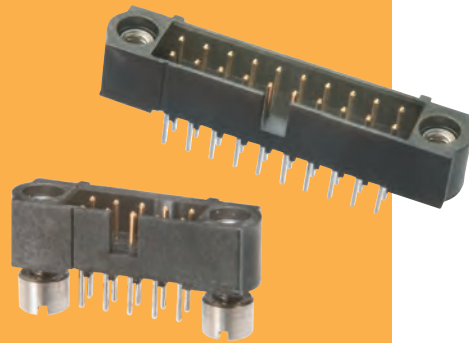
All dimensions in mm.



# Datamate J-Tek Connectors

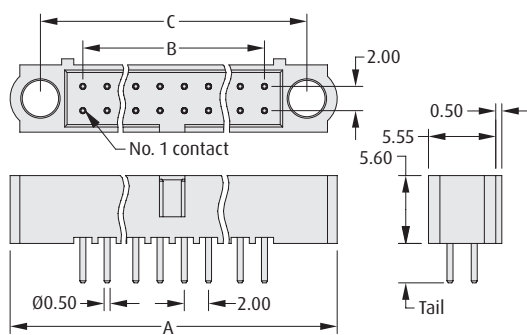
## Male Vertical Throughboard

- Polarized housings.
- Fully shrouded contacts.
- Jackscrews are assembled where specified.
- Choice of throughboard termination length.
- Board Mount provides PCB strain relief.
- Mates with female Datamate J-Tek connectors with compatible jackscrews.



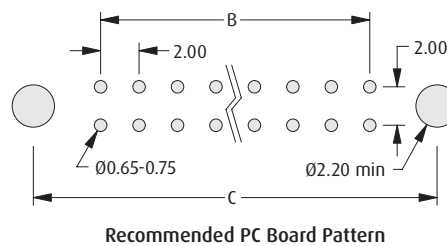
DATAMATE J-TEK

### WITHOUT JACKSCREWS

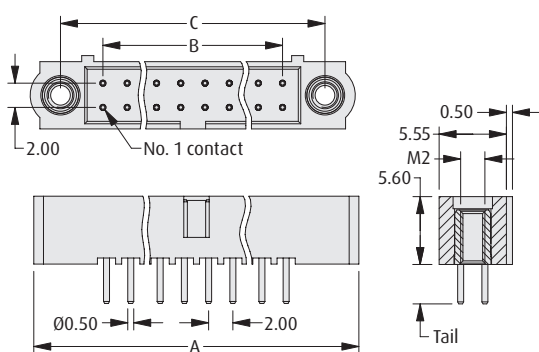


### CALCULATION

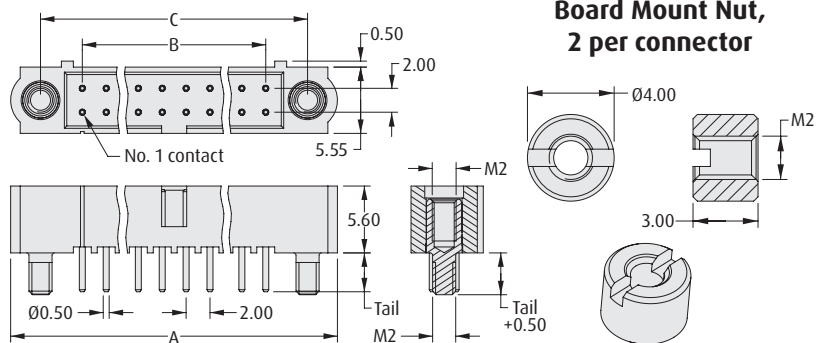
|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 12$                  |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 7$                   |



### WITH JACKSCREWS



### WITH BOARD MOUNT



### Board Mount Nut, 2 per connector

### HOW TO ORDER

**M80 - 5 X X XX XX**

#### SERIES CODE

|          |                    |
|----------|--------------------|
| <b>0</b> | With Jackscrews    |
| <b>1</b> | With Board Mount   |
| <b>2</b> | Without Jackscrews |

|          |             |
|----------|-------------|
| <b>0</b> | 3mm Tails   |
| <b>1</b> | 4.5mm Tails |

#### FINISH

|           |            |
|-----------|------------|
| <b>05</b> | Gold       |
| <b>42</b> | Gold + Tin |

#### TOTAL NO. OF CONTACTS

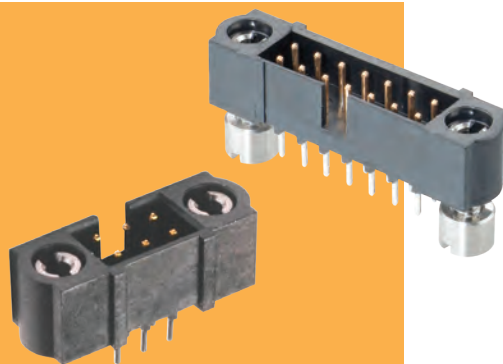
04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50

All dimensions in mm.

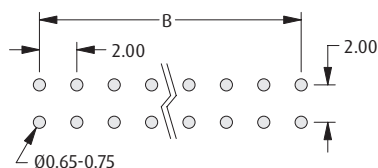
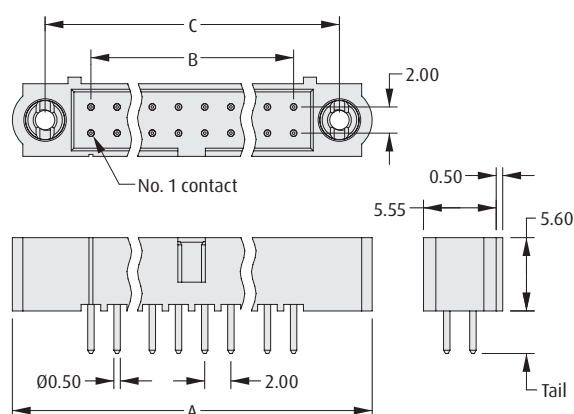
# Datamate J-Tek Connectors

## Male Vertical Throughboard 101Lok

- ❖ 101Lok fixing gives secure, fast and simple mating; no special tooling required. Just a simple 101-degree turn is required to fix the connectors together.
- ❖ Connectors mate with Datamate J-Tek female connectors with applicable 101Lok fixings.
- ❖ Board Mount provides PCB strain relief.
- ❖ Choice of throughboard termination length.



### 101LOK

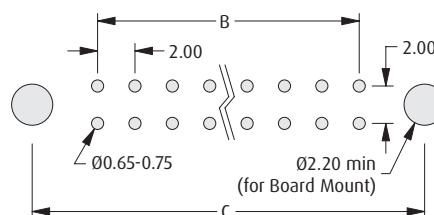
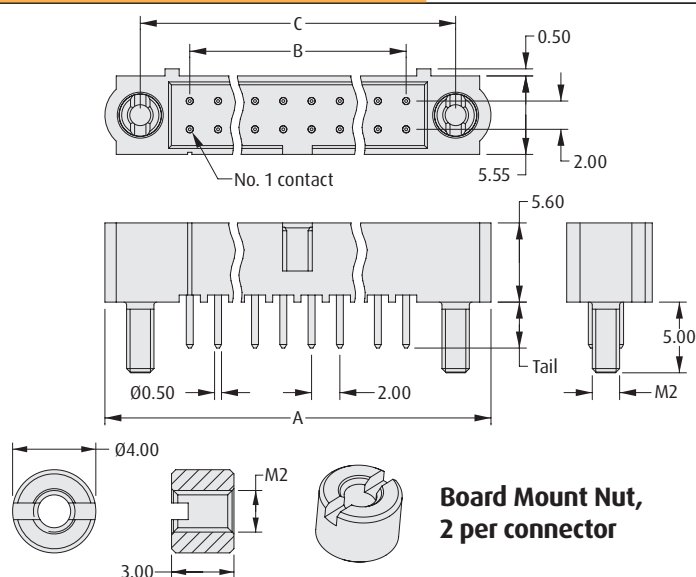


Recommended PC Board Pattern

#### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 12$                  |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 7$                   |

### 101LOK WITH BOARD MOUNT



Recommended PC Board Pattern

### HOW TO ORDER

**M80 - 5 TX XX XX MX**

#### SERIES CODE

#### TYPE

|           |             |
|-----------|-------------|
| <b>T1</b> | 3mm Tails   |
| <b>T2</b> | 4.5mm Tails |

#### TOTAL NO. OF CONTACTS

**04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50**

#### JACKSCREW

|           |                         |
|-----------|-------------------------|
| <b>MC</b> | 101Lok                  |
| <b>ME</b> | 101Lok with Board Mount |

#### FINISH

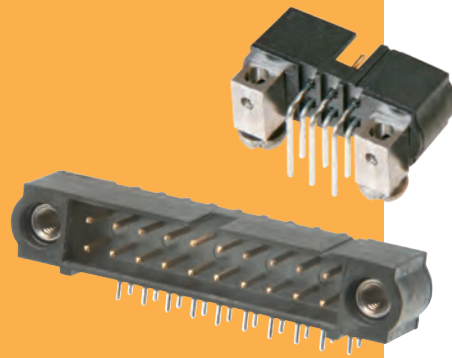
|           |            |
|-----------|------------|
| <b>05</b> | Gold       |
| <b>42</b> | Gold + Tin |

All dimensions in mm.

# Datamate J-Tek Connectors

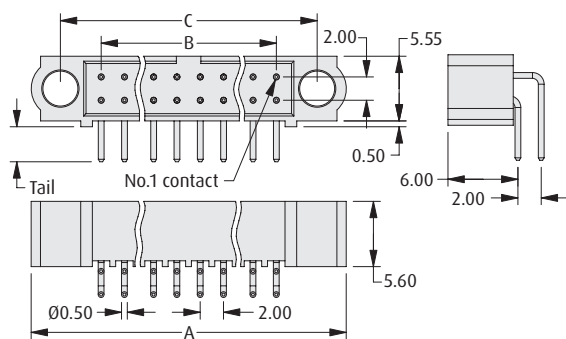
## Male Horizontal Throughboard

- Polarized housings.
- Fully shrouded contacts.
- Jackscrews are assembled where specified.
- Choice of throughboard termination length.
- Board Mount provides PCB strain relief.
- Mates with female Datamate J-Tek connectors with compatible jackscrews.



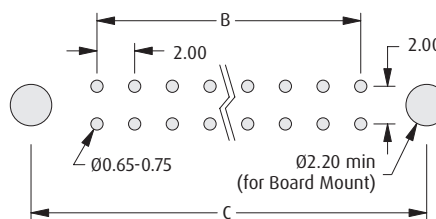
DATAMATE J-TEK

### WITHOUT JACKSCREWS



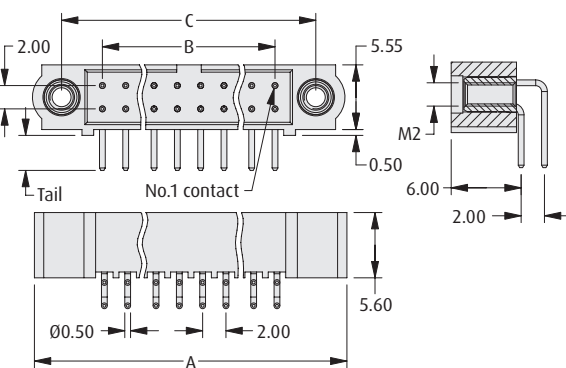
### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 12$                  |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 7$                   |

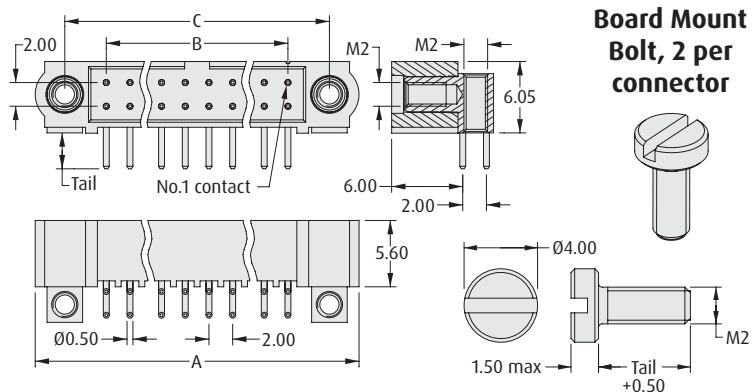


Recommended PC Board Pattern

### WITH JACKSCREWS



### WITH BOARD MOUNT



### HOW TO ORDER

**M80 - 5 X X XX XX**

#### SERIES CODE

|          |                    |
|----------|--------------------|
| <b>3</b> | With Jackscrews    |
| <b>4</b> | With Board Mount   |
| <b>5</b> | Without Jackscrews |

|          |             |
|----------|-------------|
| <b>0</b> | 3mm Tails   |
| <b>1</b> | 4.5mm Tails |

#### FINISH

|           |            |
|-----------|------------|
| <b>05</b> | Gold       |
| <b>42</b> | Gold + Tin |

#### TOTAL NO. OF CONTACTS

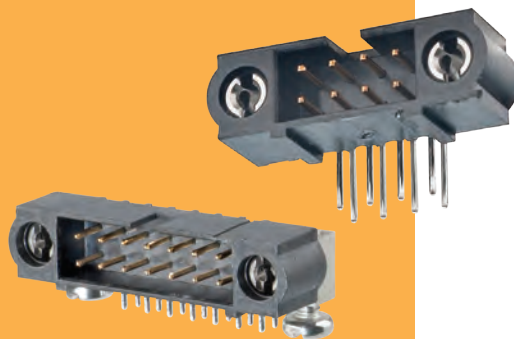
04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50

All dimensions in mm.

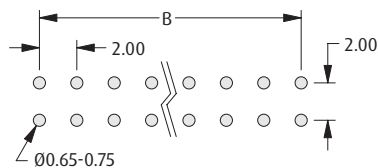
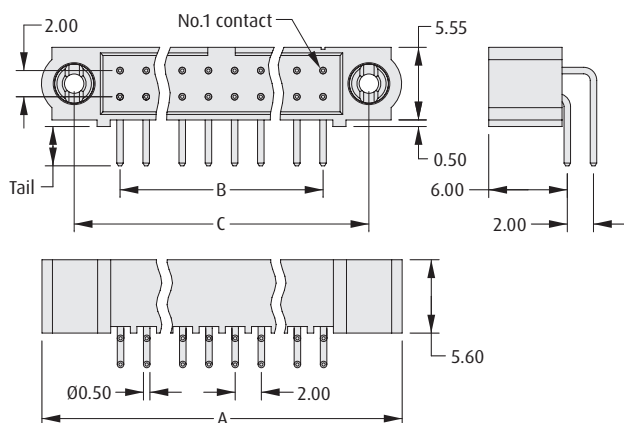
# Datamate J-Tek Connectors

## Male Horizontal Throughboard 101Lok

- ❖ 101Lok fixing gives secure, fast and simple mating; no special tooling required. Just a simple 101-degree turn is required to fix the connectors together.
- ❖ Connectors mate with Datamate J-Tek female connectors with applicable 101Lok fixings.
- ❖ Board Mount provides PCB strain relief.
- ❖ Choice of throughboard termination length.



### 101LOK

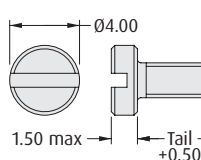
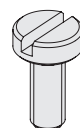
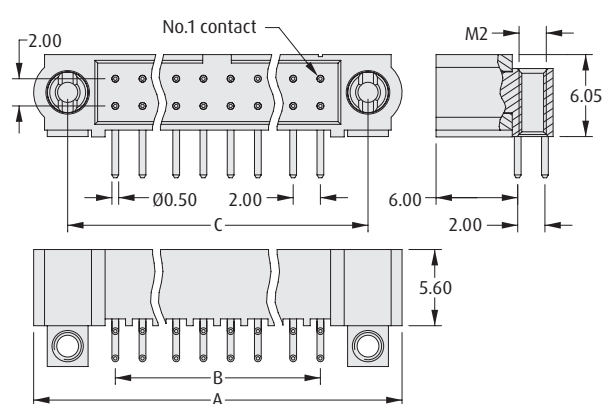


Recommended PC Board Pattern

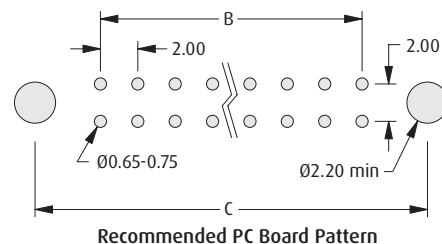
#### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | B + 12                    |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | B + 7                     |

### 101LOK WITH BOARD MOUNT



Board Mount Bolt,  
2 per connector



Recommended PC Board Pattern

### HOW TO ORDER

**M80 - 5 LX XX XX MX**

#### SERIES CODE

#### TYPE

|           |             |
|-----------|-------------|
| <b>L1</b> | 3mm Tails   |
| <b>L2</b> | 4.5mm Tails |

#### TOTAL NO. OF CONTACTS

**04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50**

#### JACKSCREW

|           |                         |
|-----------|-------------------------|
| <b>MC</b> | 101Lok                  |
| <b>MD</b> | 101Lok with Board Mount |

#### FINISH

|           |            |
|-----------|------------|
| <b>05</b> | Gold       |
| <b>42</b> | Gold + Tin |

All dimensions in mm.

# Datamate J-Tek Connectors

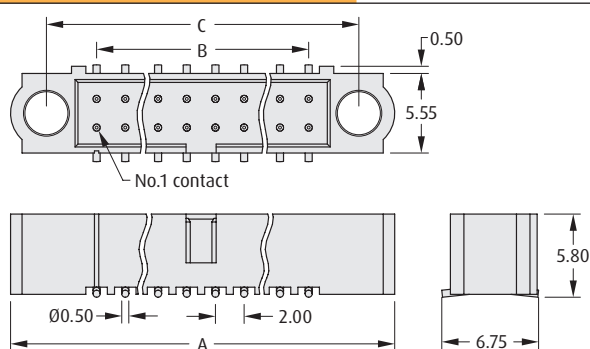
## Male Vertical Surface Mount

- Gull wing SMT tails simplify inspection process.
- Board Mount provides PCB strain relief.
- Optional pick and place cap.
- Mates with female Datamate J-Tek connectors with compatible jackscrews.



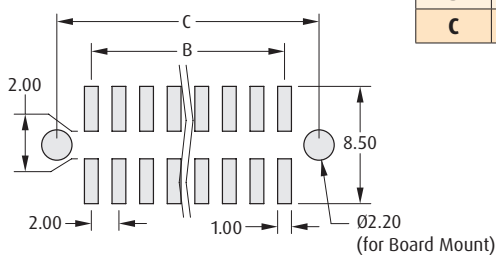
DATAMATE J-TEK

### WITHOUT JACKSCREWS



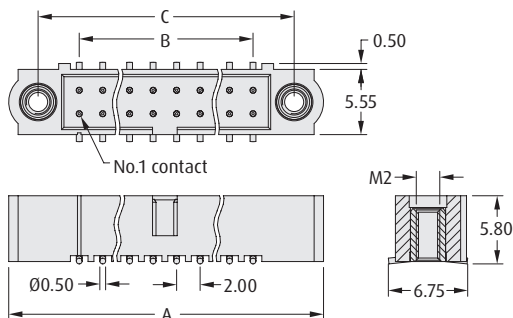
### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 12$                  |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 7$                   |

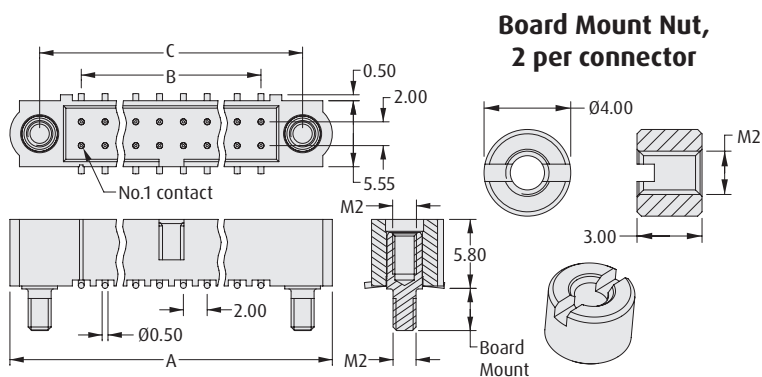


Recommended PC Board Pattern

### WITH JACKSCREWS



### WITH BOARD MOUNT



### HOW TO ORDER

**M80 - 5 XX XX XX P**

#### SERIES CODE

#### TYPE

|           |                        |
|-----------|------------------------|
| <b>02</b> | With Jackscrews        |
| <b>12</b> | With 3.5mm Board Mount |
| <b>13</b> | With 5mm Board Mount   |
| <b>22</b> | Without Jackscrews     |

#### PICK AND PLACE CAP

|              |                  |
|--------------|------------------|
| <b>BLANK</b> | No Cap           |
| <b>P</b>     | Pick & Place Cap |

#### FINISH

|           |            |
|-----------|------------|
| <b>05</b> | Gold       |
| <b>42</b> | Gold + Tin |

#### TOTAL NO. OF CONTACTS

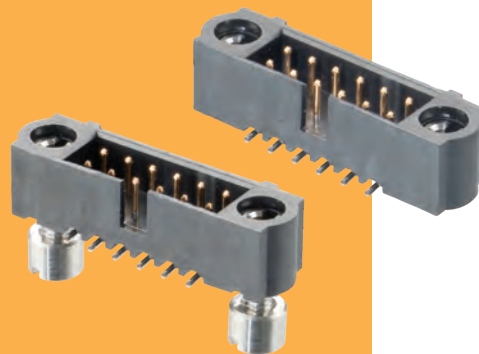
04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50

All dimensions in mm.

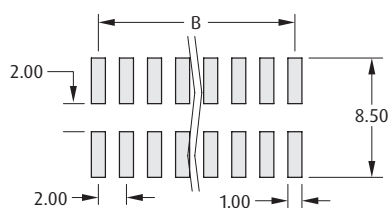
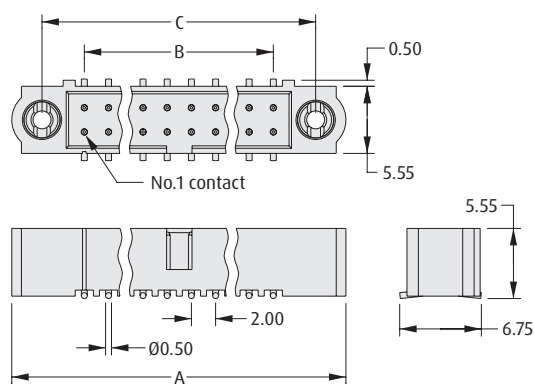
# Datamate J-Tek Connectors

## Male Vertical Surface Mount 101Lok

- ❖ 101Lok fixing gives secure, fast and simple mating; no special tooling required. Just a simple 101-degree turn is required to fix the connectors together.
- ❖ Connectors mate with Datamate J-Tek female connectors with applicable 101Lok fixings.
- ❖ Board Mount provides PCB strain relief.
- ❖ Gull wing SMT tails simplify inspection process.



### 101LOK

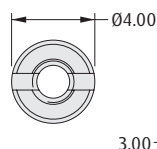
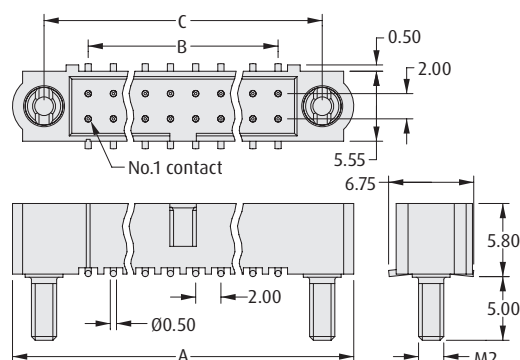


Recommended PC Board Pattern

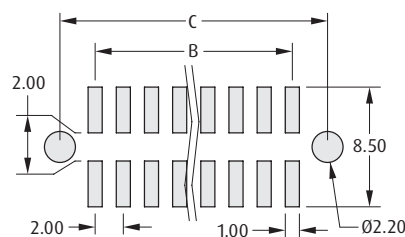
#### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 12$                  |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 7$                   |

### 101LOK WITH BOARD MOUNT



Board Mount Nut,  
2 per connector



Recommended PC Board Pattern

### HOW TO ORDER

**M80 - 5S1 XX XX MX**

**SERIES CODE**

**TOTAL NO. OF CONTACTS**

**04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50**

#### JACKSCREW

|           |                             |
|-----------|-----------------------------|
| <b>MC</b> | 101Lok                      |
| <b>ME</b> | 101Lok with 5mm Board Mount |

#### FINISH

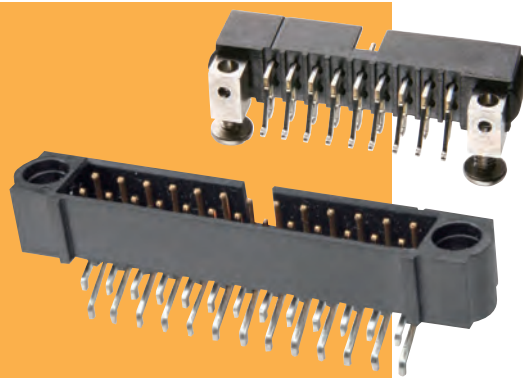
|           |            |
|-----------|------------|
| <b>05</b> | Gold       |
| <b>42</b> | Gold + Tin |

All dimensions in mm.

# Datamate J-Tek Connectors

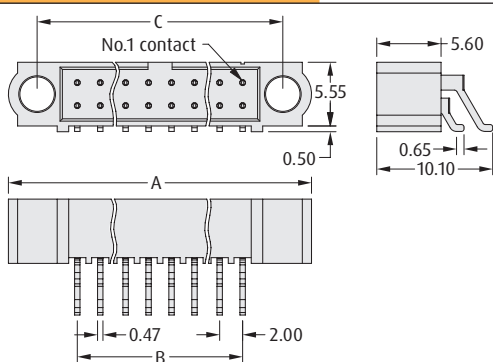
## Male Horizontal Surface Mount

- Stamped contact ensures co-planarity.
- Board Mount provides PCB strain relief.
- Mates with female Datamate J-Tek connectors with compatible jackscrews.



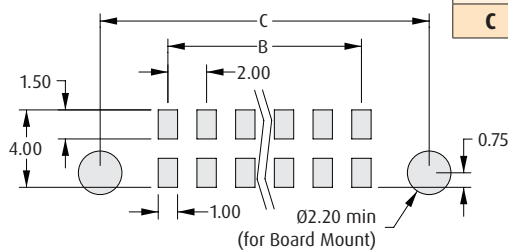
DATAMATE J-TEK

### WITHOUT JACKSCREWS



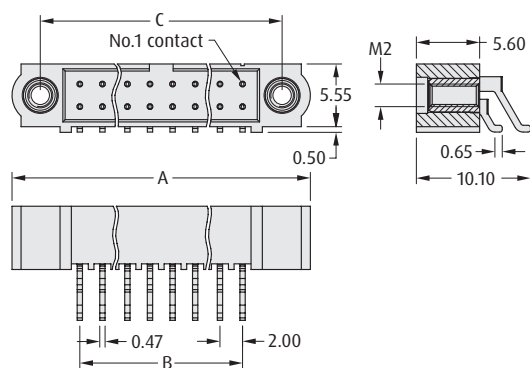
### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 12$                  |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 7$                   |

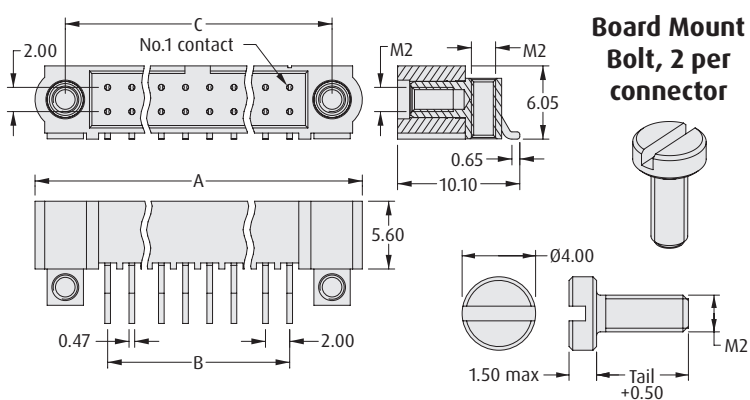


Recommended PC Board Pattern

### WITH JACKSCREWS



### WITH BOARD MOUNT



### HOW TO ORDER

**M80 - 5 XX XX XX**

#### SERIES CODE

| TYPE |                        |
|------|------------------------|
| 32   | With Jackscrews        |
| 42   | With 3.5mm Board Mount |
| 43   | With 5mm Board Mount   |
| 52   | Without Jackscrews     |

#### FINISH

|    |            |
|----|------------|
| 05 | Gold       |
| 42 | Gold + Tin |

#### TOTAL NO. OF CONTACTS

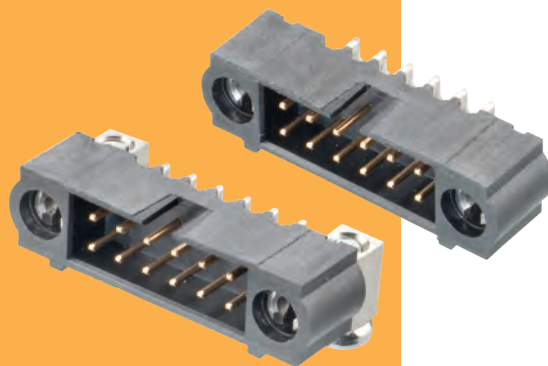
04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50

All dimensions in mm.

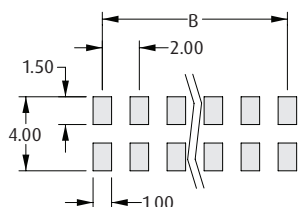
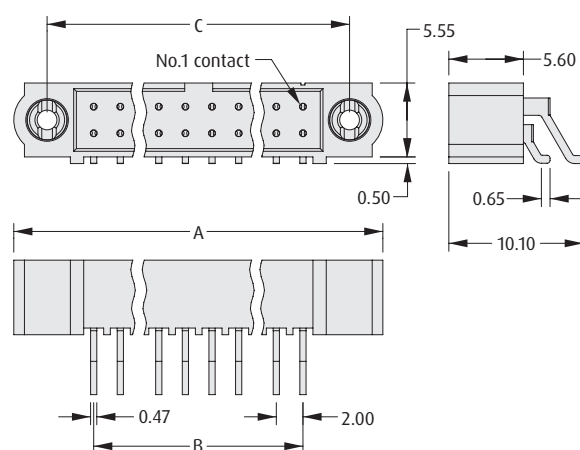
# Datamate J-Tek Connectors

## Male Horizontal Surface Mount 101Lok

- ❖ 101Lok fixing gives secure, fast and simple mating; no special tooling required. Just a simple 101-degree turn is required to fix the connectors together.
- ❖ Connectors mate with Datamate J-Tek female connectors with applicable 101Lok fixings.
- ❖ Board Mount provides PCB strain relief.
- ❖ Stamped contact ensures co-planarity.



### 101LOK

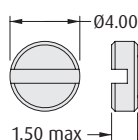
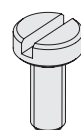
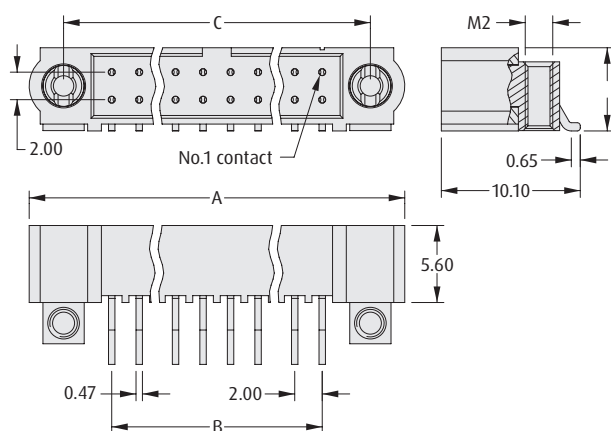


Recommended PC Board Pattern

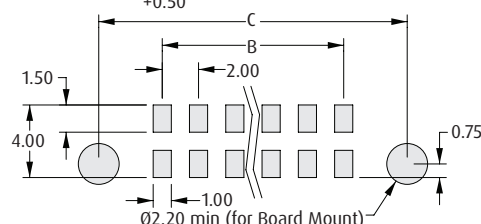
#### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 12$                  |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 7$                   |

### 101LOK WITH BOARD MOUNT



Board Mount Bolt, 2 per connector



Recommended PC Board Pattern

### HOW TO ORDER

**M80 - 5S2 XX XX MX**

#### SERIES CODE

#### TOTAL NO. OF CONTACTS

04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50

#### JACKSCREW

|           |                         |
|-----------|-------------------------|
| <b>MC</b> | 101Lok                  |
| <b>MD</b> | 101Lok with Board Mount |

#### FINISH

|           |            |
|-----------|------------|
| <b>05</b> | Gold       |
| <b>42</b> | Gold + Tin |

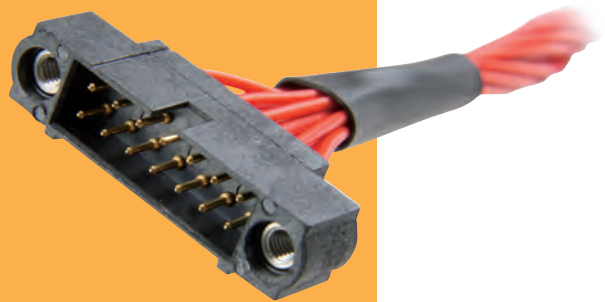
All dimensions in mm.



# Datamate J-Tek Connectors

## Male Crimp Kit

- ❖ Part numbers are for a complete kit of a housing and the applicable number of contacts.
- ❖ Jackscrews are assembled where specified.
- ❖ Crimp contacts supplied loose.
- ❖ Crimp contacts are rear insertable and replaceable.
- ❖ Spare contacts are available.



DATAMATE J-TEK

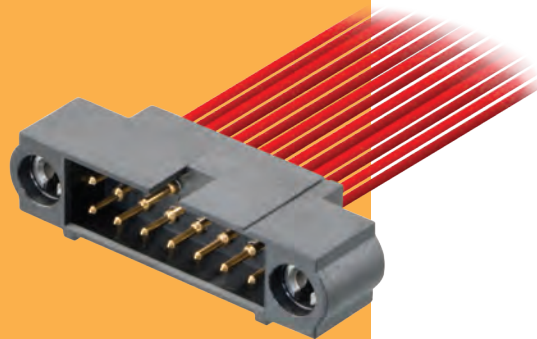
| WITHOUT JACKSCREWS   |  | WITH JACKSCREWS  |  |                       |   |  |  |     |                                      |     |   |  |  |        |  |    |      |
|--|--|--|--|-----------------------|---|--|--|-----|--------------------------------------|-----|---|--|--|--------|--|----|------|
|  |  |  |  |                       |   |  |  |     |                                      |     |   |  |  |        |  |    |      |
| <table><tr><th colspan="2">CALCULATION</th></tr><tr><td>A</td><td>B + 12</td></tr><tr><td>B</td><td>Total no. of contacts - 2</td></tr><tr><td>C</td><td>B + 7</td></tr></table>   |  |  |  | CALCULATION           |   | A  | B + 12                                     | B   | Total no. of contacts - 2            | C   | B + 7                                   |  |  |        |  |    |      |
| CALCULATION  |  |  |  |                       |   |  |  |     |                                      |     |   |  |  |        |  |    |      |
| A  | B + 12                                     |  |  |                       |   |  |  |     |                                      |     |   |  |  |        |  |    |      |
| B  | Total no. of contacts - 2                  |  |  |                       |   |  |  |     |                                      |     |   |  |  |        |  |    |      |
| C  | B + 7                                      |  |  |                       |   |  |  |     |                                      |     |   |  |  |        |  |    |      |
| TOOLS  |  | WIRE STRIPPING DETAILS   |  |                       |   |  |  |     |                                      |     |   |  |  |        |  |    |      |
| <p><b>Recommended Crimp Tool</b> - M22520/2-01</p> <p><b>Positioner</b> - Z80-193</p> <p><b>Contact Insertion/Removal Tool</b> - Z80-280</p> <p>❖ Spare contacts shown on following pages.</p> <p>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</p>                        |  |  |  |                       |   |  |  |     |                                      |     |   |  |  |        |  |    |      |
| HOW TO ORDER   |  |  |  |                       |   |  |  |     |                                      |     |   |  |  |        |  |    |      |
| <p><b>M80 - 5XX XX 05</b></p>  |  |  |  |                       |   |  |  |     |                                      |     |   |  |  |        |  |    |      |
| <table><tr><th colspan="2">SERIES CODE</th></tr><tr><td>570</td><td>Large Bore (22 AWG), without Jackscrews</td></tr><tr><td>571</td><td>Small Bore (24-28 AWG), without Jackscrews</td></tr><tr><td>560</td><td>Large Bore (22 AWG), with Jackscrews</td></tr><tr><td>561</td><td>Small Bore (24-28 AWG), with Jackscrews</td></tr></table> |  | SERIES CODE  |  | 570                   | Large Bore (22 AWG), without Jackscrews | 571  | Small Bore (24-28 AWG), without Jackscrews | 560 | Large Bore (22 AWG), with Jackscrews | 561 | Small Bore (24-28 AWG), with Jackscrews | <table><tr><th colspan="2">FINISH</th></tr><tr><td>05</td><td>Gold</td></tr></table> |  | FINISH |  | 05 | Gold |
| SERIES CODE  |  |  |  |                       |   |  |  |     |                                      |     |   |  |  |        |  |    |      |
| 570  | Large Bore (22 AWG), without Jackscrews    |  |  |                       |   |  |  |     |                                      |     |   |  |  |        |  |    |      |
| 571  | Small Bore (24-28 AWG), without Jackscrews |  |  |                       |   |  |  |     |                                      |     |   |  |  |        |  |    |      |
| 560  | Large Bore (22 AWG), with Jackscrews       |  |  |                       |   |  |  |     |                                      |     |   |  |  |        |  |    |      |
| 561  | Small Bore (24-28 AWG), with Jackscrews    |  |  |                       |   |  |  |     |                                      |     |   |  |  |        |  |    |      |
| FINISH   |  |  |  |                       |   |  |  |     |                                      |     |   |  |  |        |  |    |      |
| 05   | Gold                                       |  |  |                       |   |  |  |     |                                      |     |   |  |  |        |  |    |      |
|  |  | <table><tr><th colspan="2">TOTAL NO. OF CONTACTS</th></tr><tr><td colspan="2">04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50</td></tr></table> |  | TOTAL NO. OF CONTACTS |   | 04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50 |  |     |                                      |     |   |  |  |        |  |    |      |
| TOTAL NO. OF CONTACTS  |  |  |  |                       |   |  |  |     |                                      |     |   |  |  |        |  |    |      |
| 04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50   |  |  |  |                       |   |  |  |     |                                      |     |   |  |  |        |  |    |      |

All dimensions in mm.

# Datamate J-Tek Connectors

## Male Crimp Kit 101Lok

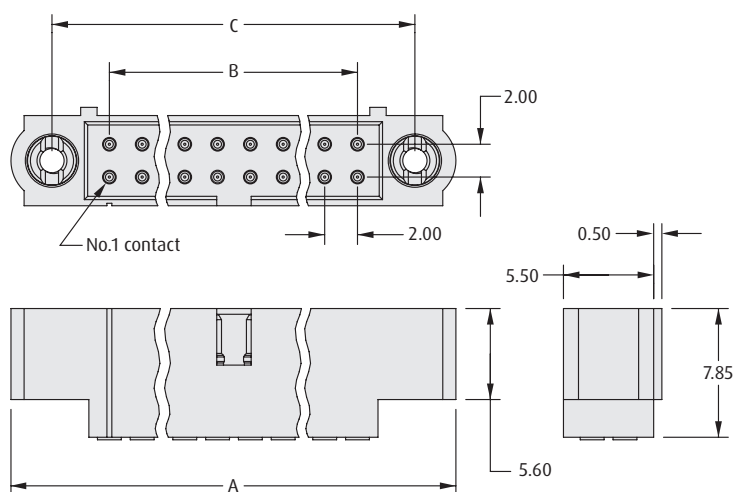
- ❖ Part numbers are for a complete kit of a housing and the applicable number of contacts.
- ❖ 101Lok fixing gives secure, fast and simple mating; no special tooling required. Just a simple 101-degree turn is required to fix the connectors together.
- ❖ Connectors mate with Datamate J-Tek female connectors with applicable 101Lok fixings.
- ❖ Crimp contacts supplied loose.



### 101LOK

### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 12$                  |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 7$                   |

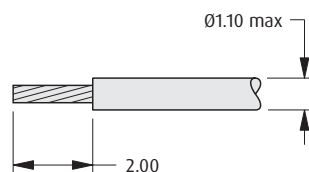


### TOOLS

**Recommended Crimp Tool** - M22520/2-01  
**Positioner** - Z80-193  
**Contact Insertion/Removal Tool** - Z80-280

- ❖ Spare contacts shown on following pages.
- ❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### WIRE STRIPPING DETAILS



### HOW TO ORDER

**M80 - 5 X1 XX 05 MC**

#### SERIES CODE

#### TYPE

|           |                        |
|-----------|------------------------|
| <b>C1</b> | Small Bore (24-28 AWG) |
| <b>D1</b> | Large Bore (22 AWG)    |

#### TOTAL NO. OF CONTACTS

04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50

#### JACKSCREW

**MC** 101Lok

#### FINISH

**05** Gold

All dimensions in mm.

# Datamate J-Tek Connectors

## Male Crimp Kit Reverse Fix

- ❖ Allows for further flexibility in system design.
- ❖ Part numbers are for a complete kit of a housing and the applicable number of contacts.
- ❖ Crimp contacts are rear insertable and replaceable.
- ❖ Mates with female Datamate J-Tek connectors with compatible Reverse Fix jackscrews.



DATAMATE J-TEK

| REVERSE FIX   |  | CALCULATION |                           |
|---|--|-------------|---------------------------|
| <p>No.1 contact</p> <p>2.00</p> <p>0.50</p> <p>5.50</p> <p>M2</p> <p>7.85</p> <p>Slotted</p> <p>Hex Socket</p> <p>2.00 A/F</p> <p>03.50</p> <p>04.00</p> <p>A</p> |  | <b>A</b>    | B + 12                    |
|   |  | <b>B</b>    | Total no. of contacts - 2 |
|   |  | <b>C</b>    | B + 7                     |

| TOOLS   | WIRE STRIPPING DETAILS       |
|---|------------------------------|
| <p><b>Recommended Crimp Tool</b> - M22520/2-01</p> <p><b>Positioner</b> - Z80-193</p> <p><b>Contact Insertion/Removal Tool</b> - Z80-280</p> <p>❖ Spare contacts shown on following pages.</p> <p>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</p> | <p>01.10 max</p> <p>2.00</p> |

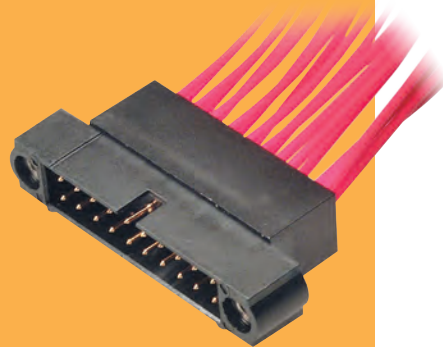
| HOW TO ORDER                  |   |   |  |
|-------------------------------|---|---|--|
| <p><b>M80 - 5XX XX 05</b></p> |   |   |  |
| <p><b>SERIES CODE</b></p>     |   | <p><b>FINISH</b></p>  |  |
| <p><b>TYPE</b></p>            |   | <p><b>05</b> Gold</p>   |  |
| <p><b>562</b></p>             | <p>Large Bore (22 AWG), Slotted Jackscrew</p>       | <p><b>TOTAL NO. OF CONTACTS</b></p> <p>04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50</p> |  |
| <p><b>563</b></p>             | <p>Small Bore (24-28 AWG), Slotted Jackscrew</p>    |   |  |
| <p><b>582</b></p>             | <p>Large Bore (22 AWG), Hex Socket Jackscrew</p>    |   |  |
| <p><b>583</b></p>             | <p>Small Bore (24-28 AWG), Hex Socket Jackscrew</p> |   |  |

All dimensions in mm.

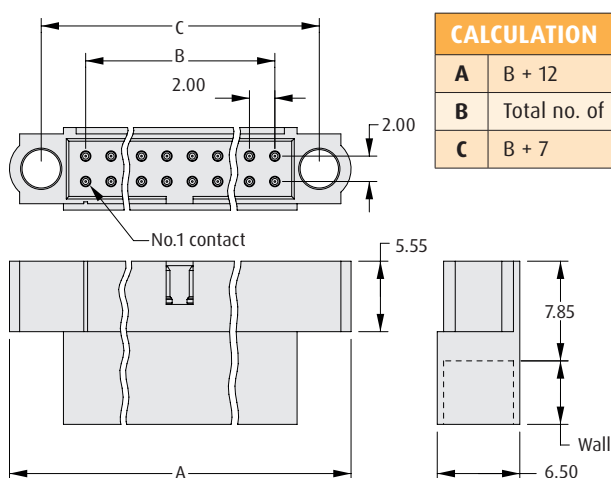
# Datamate J-Tek Connectors

## Male Crimp Kit Extended Wall

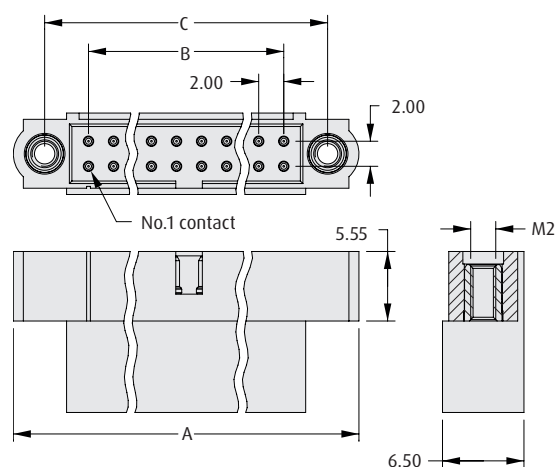
- Extended Wall Datamate allows back potting to be performed.
- Fully shrouded contacts.
- Large Bore 22 AWG, Small Bore 24 – 28 AWG.
- Part numbers are for a complete kit of a housing and the applicable number of contacts.
- Crimp contacts are rear insertable and replaceable.
- Crimp contacts supplied loose.



### WITHOUT JACKSCREWS



### WITH JACKSCREWS

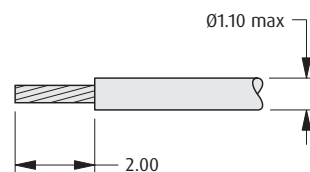


### TOOLS

**Recommended Crimp Tool** - M22520/2-01  
**Positioner** - Z80-193  
**Contact Insertion/Removal Tool** - Z80-280

- Spare contacts shown on following pages.
- Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### WIRE STRIPPING DETAILS



### HOW TO ORDER

**SERIES CODE** | **M80 - 5XX XX 05 X**

| TYPE |  |
|------|--|
| 575  | Large Bore (22 AWG), without Jackscrews    |
| 576  | Small Bore (24-28 AWG), without Jackscrews |
| 565  | Large Bore (22 AWG), with Jackscrews       |
| 566  | Small Bore (24-28 AWG), with Jackscrews    |

| WALL SIZE |            |
|-----------|------------|
| BLANK     | Wall = 5mm |
| A         | Wall = 1mm |

| FINISH |      |
|--------|------|
| 05     | Gold |

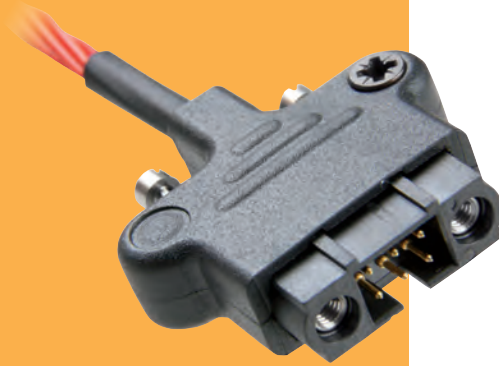
| TOTAL NO. OF CONTACTS  |  |
|------------------------|--|
| 06, 10, 14, 20, 26, 34 |  |

All dimensions in mm.

# Datamate J-Tek Connectors

## Male Crimp with Hood

- ❖ Supplied as a complete kit: jackscrews assembled to housing; hood, contacts and assembly screws supplied loose.
- ❖ Provides strain relief by preventing cable bending at the rear of the connector, and also the option of inserting a cable tie to reduce pull strain.

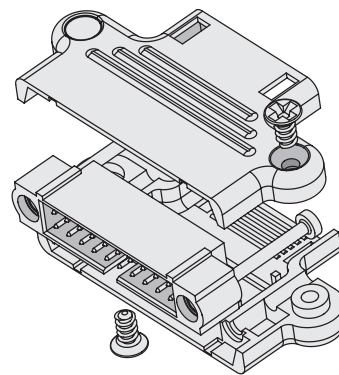
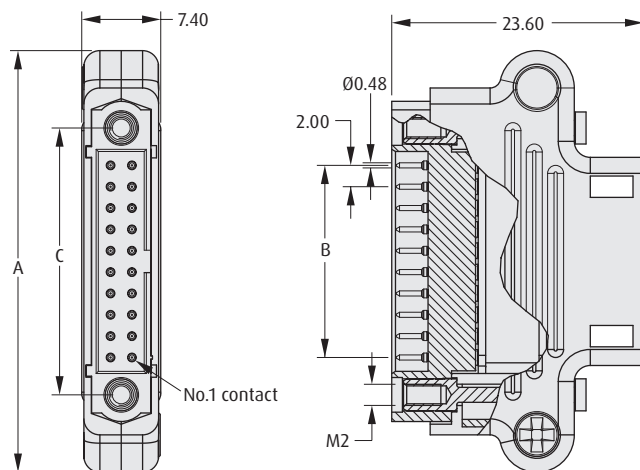


DATAMATE J-TEK

### MALE

### CALCULATION

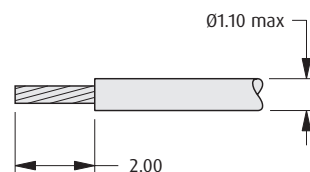
|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 21.5$                |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 7$                   |



### TOOLS

**Recommended Crimp Tool** - M22520/2-01  
**Positioner** - Z80-193  
**Contact Insertion/Removal Tool** - Z80-280  
❖ Spare contacts shown on following pages.  
❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### WIRE STRIPPING DETAILS



### HOW TO ORDER

**M80 - 94 X XX 05**

#### SERIES CODE

#### TYPE

|          |                        |
|----------|------------------------|
| <b>2</b> | Small Bore (24-28 AWG) |
| <b>3</b> | Large Bore (22 AWG)    |

#### FINISH

|           |      |
|-----------|------|
| <b>05</b> | Gold |
|-----------|------|

#### TOTAL NO. OF CONTACTS

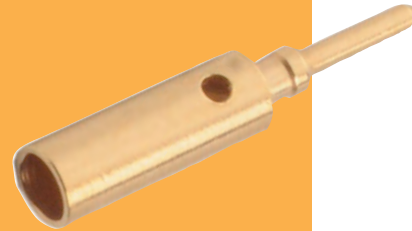
06, 08, 10, 12, 14, 20, 26, 34, 42, 50

All dimensions in mm.

# Datamate J-Tek Connectors

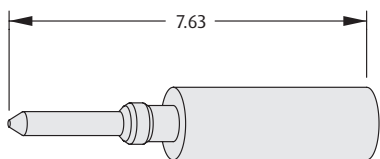
## Spare Male Crimp Contacts

- Barrel Crimp Contacts are supplied with the connectors - see previous page. Use the order code for extra spare crimps.

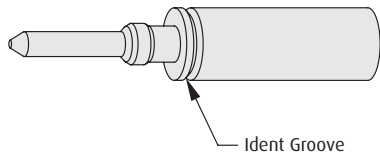


### CRIMP CONTACTS

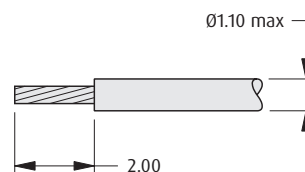
#### Large Bore (22 AWG)



#### Small Bore (24 to 28 AWG)



### WIRE STRIPPING DETAILS



### TOOLS

**Recommended Crimp Tool** - M22520/2-01  
**Positioner** - Z80-193  
**Contact Insertion/Removal Tool** - Z80-280  
 ❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### HOW TO ORDER

**M80 - 19 X 00 05**

**SERIES CODE**

**TYPE**

|          |                        |
|----------|------------------------|
| <b>4</b> | Large Bore (22 AWG)    |
| <b>5</b> | Small Bore (24-28 AWG) |

**FINISH**

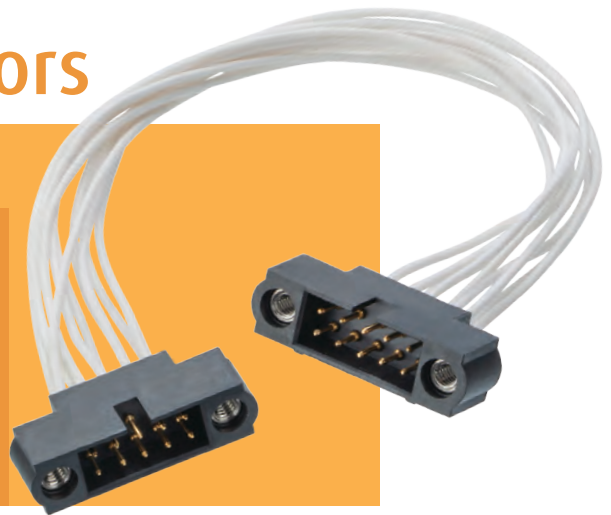
|           |      |
|-----------|------|
| <b>05</b> | Gold |
|-----------|------|

All dimensions in mm.

# Datamate J-Tek Connectors

## Male Cable Assemblies

- Ready-made cable assemblies, fully tested and inspected.
- Stainless steel jackscrews to mate with applicable male connector.
- Constructed with Contact 1 to Contact 1, Contact 2 to Contact 2, etc.
- For multicolor sequence, check applicable Technical Drawing.



DATAMATE J-TEK

### PART NUMBERING SYSTEM

**M80 - M X X XX XX MX - XXXX XX**

#### SERIES CODE

#### GENDER - FIRST END

**M** Male

#### CONNECTOR STYLE

**C** Standard (no extended wall)

#### CABLE SIZE

|          |        |
|----------|--------|
| <b>1</b> | 22 AWG |
| <b>2</b> | 24 AWG |
| <b>3</b> | 26 AWG |
| <b>4</b> | 28 AWG |

#### TOTAL NO. OF CONTACTS

**04 to 50 (even numbers only)**

#### CABLE COLOR

|           |                                 |
|-----------|---------------------------------|
| <b>05</b> | White cable (double-ended)      |
| <b>68</b> | Multicolor cable (single-ended) |

#### TERMINATION - SECOND END

|                      |                                    |
|----------------------|------------------------------------|
| <b>L</b>             | Loose cut end                      |
| <b>M1, MA, or MB</b> | Male connector (same as First End) |

#### CABLE LENGTH

**XXXX** XXXXmm

#### JACKSCREW

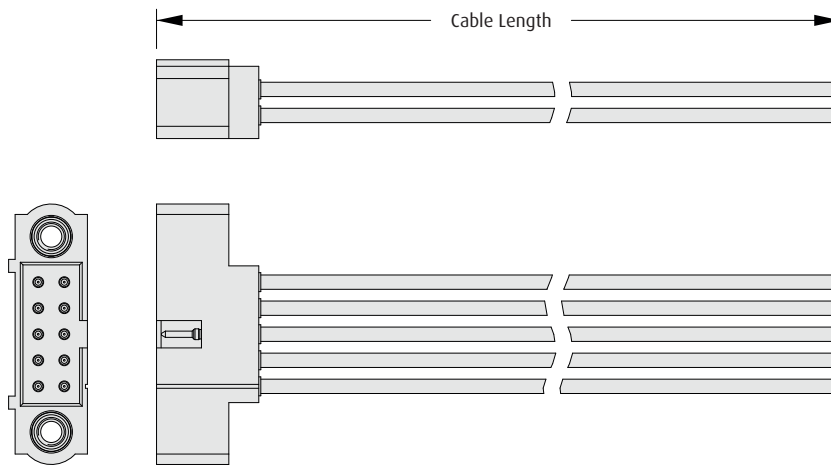
|           |                                   |
|-----------|-----------------------------------|
| <b>M1</b> | Internal Thread                   |
| <b>MA</b> | Floating Slotted (reverse fix)    |
| <b>MB</b> | Floating Hex Socket (reverse fix) |

All dimensions in mm.

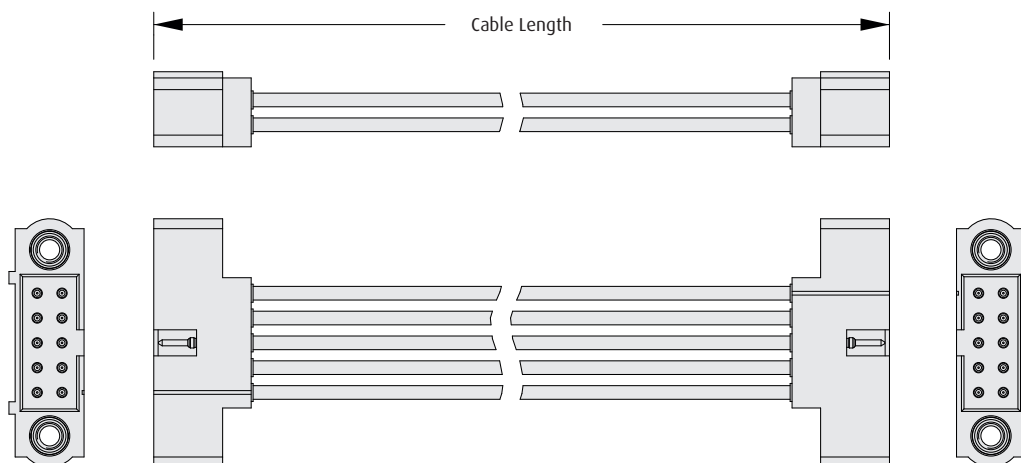
# Datamate J-Tek Connectors

- ❖ Examples of available cable assembly options - see previous page for part numbering.
- ❖ Cable assemblies are constructed with Contact 1 to Contact 1, Contact 2 to Contact 2, etc.

## MALE SINGLE ENDED



## MALE - MALE



All dimensions in mm.



# Datamate J-Tek Connectors

## Male Metal Backshell

- ❖ Supplied as an accessory, to be used with existing male connectors.
- ❖ Can be fitted to either male vertical PCB connectors with board mount, or male cable connectors with panel mount jackscrews.
- ❖ Gives 360 degree shielding when mounted to a conductive panel and mated to a compatible female connector with metal backshell.

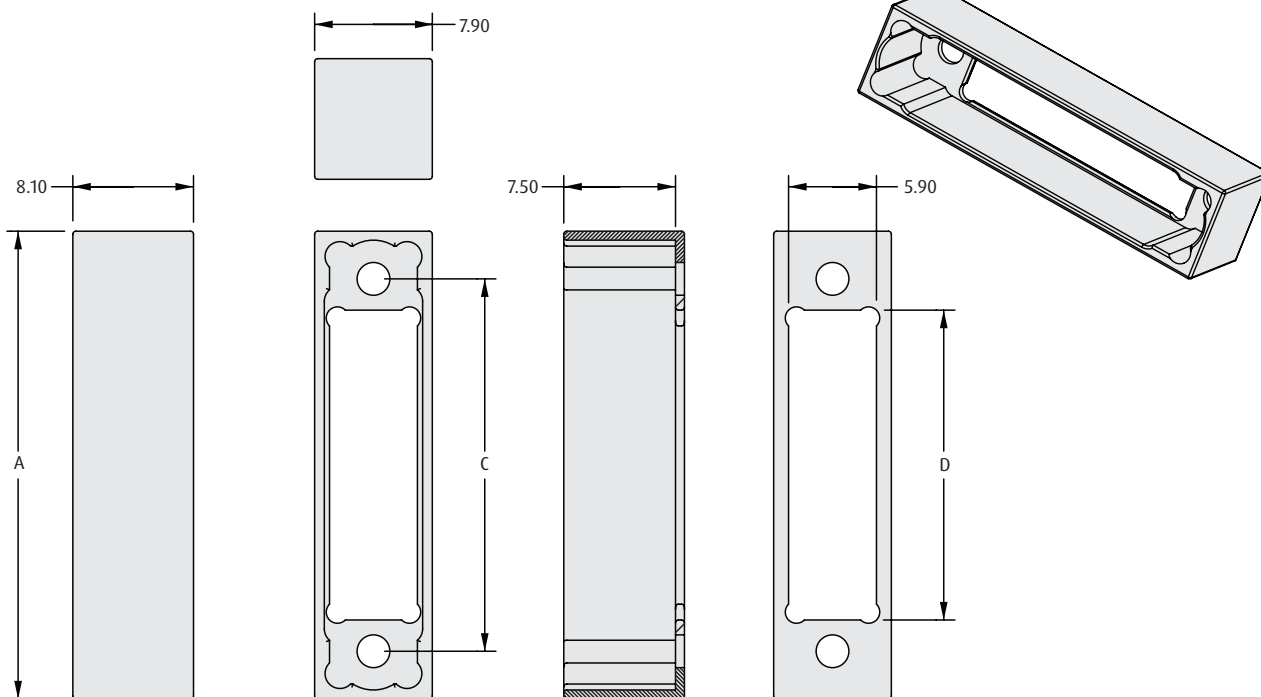


DATAMATE J-TEK

### MALE

### CALCULATION

|          |                                |
|----------|--------------------------------|
| <b>A</b> | $B + 13.7$                     |
| <b>B</b> | Equivalent no. of contacts - 2 |
| <b>C</b> | $B + 7$                        |
| <b>D</b> | $B + 2.8$                      |



### HOW TO ORDER

**M80 - 906 XX 02**

**SERIES CODE**

**FINISH**

**02** Nickel

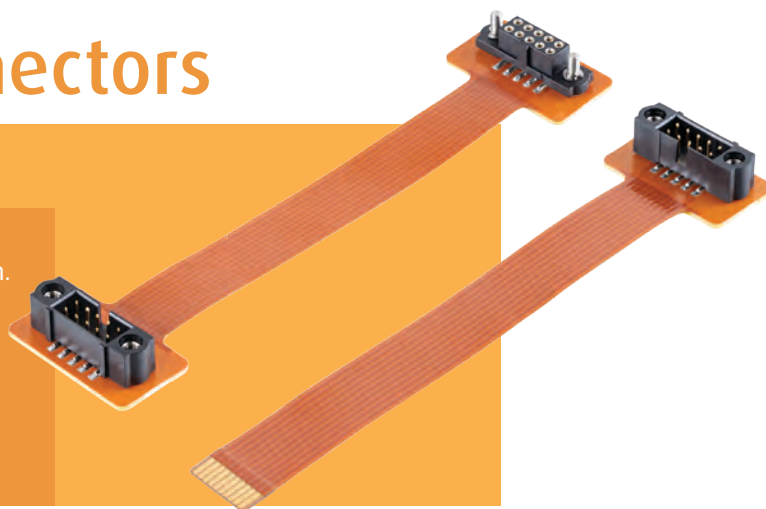
**EQUIVALENT NO. OF SIGNAL CONTACTS**  
08 to 28, 32 to 50 (Even numbers only)

All dimensions in mm.

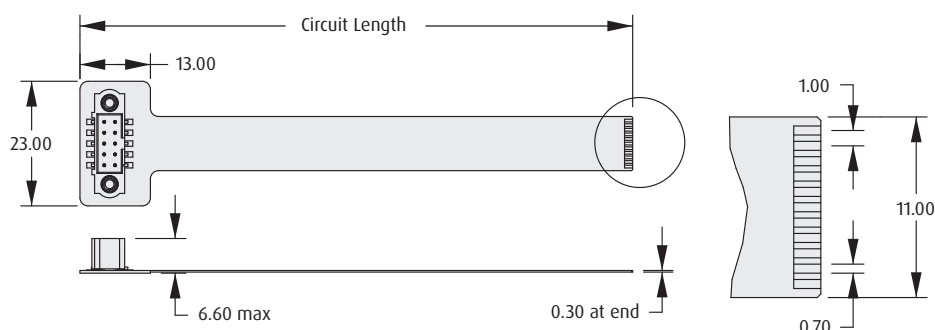
# Datamate J-Tek Connectors

## Flexible Circuit Assemblies

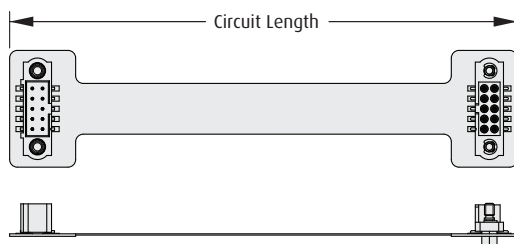
- ❖ Surface mount connectors with jackscrews, assembled to flexible printed circuit for an alternative to cable connection.
- ❖ Improved bend radius and lower mated height than equivalent cable assemblies.
- ❖ The free end of the single-ended assembly is compatible with 1mm pitch FPC connectors.
- ❖ Contact Harwin for alternative connector sizes and cable lengths.



### MALE SINGLE ENDED



### MALE - FEMALE DOUBLE ENDED



### HOW TO ORDER

**M80 - F1 502 10 - 100 - XXX**

#### SERIES CODE

#### CONNECTOR - FIRST END

**502** Male with internal jackscrews

#### TOTAL NO. OF CONTACTS

**10**

#### CONNECTOR - SECOND END

|            |                                    |
|------------|------------------------------------|
| <b>L</b>   | Free End (Single Ended)            |
| <b>402</b> | Female with Hex Slotted Jackscrews |

#### CIRCUIT LENGTH

**100** 100mm

All dimensions in mm.

# Datamate J-Tek 3-Row Specification

## Materials

|                  |  |
|------------------|--|
| Housings:        | Glass-filled thermoplastic UL94V-0               |
| Female contacts: | Brass shell, with Beryllium Copper inner contact |
| Male contacts:   | Phosphor bronze                                  |
| Finish:          | Gold   |

## Electrical

|                                   |  |
|-----------------------------------|--|
| <b>Current</b>                    |  |
| Individual contacts in isolation: | 3.3A max (at 25°C)<br>2.6A max (at 85°C) |
| All contacts simultaneously:      | 3.0A max (at 25°C)<br>2.2A max (at 85°C) |
| <b>Working voltage</b>            |  |
| At sea level 1013 mbar:           | 800V DC or AC <sub>rms</sub>             |
| <b>Voltage proof</b>              |  |
| At sea level 1013 mbar:           | 1,200V DC or AC <sub>rms</sub>           |
| <b>Contact resistance</b>         |  |
| Initial:                          | 20mΩ max                                 |
| After conditioning:               | 25mΩ max                                 |
| <b>Insulation resistance</b>      |  |
| Initial:                          | 1000MΩ min                               |
| After conditioning:               | 100MΩ min                                |

## Mechanical

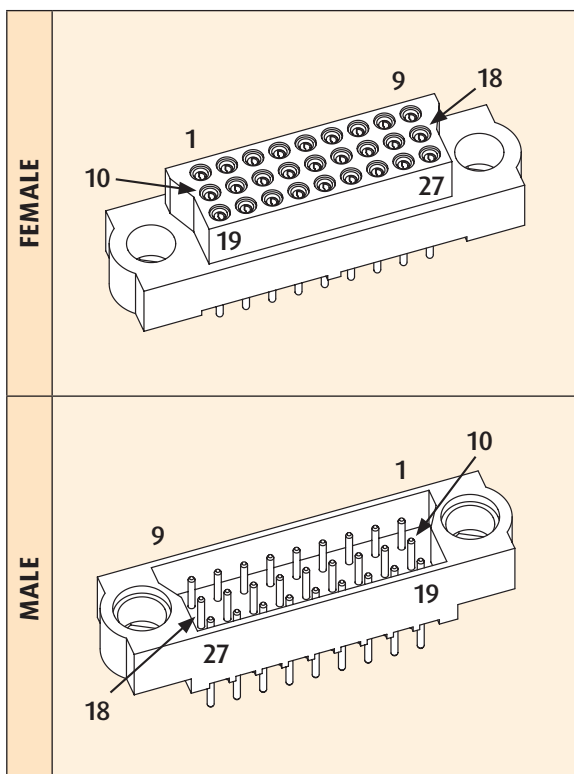
|                             |  |
|-----------------------------|--|
| Durability:                 | 500 operations   |
| Insertion force (max):      | 1.0N   |
| Withdrawal force (min):     | 0.2N   |
| Signal crimp accommodation: | 22 AWG to 28 AWG<br>BS 3G 210 Type A or<br>MIL-DTL-16878/6 Type ET |

## Environmental

|                               |   |
|-------------------------------|---|
| Environmental classification: | 55/125/56 days at 95% RH                                      |
| Operational temperature:      | -55°C to +125°C   |
| *Vibration sensitivity:       | 10Hz to 2000Hz, 0.75mm, 98m/s <sup>2</sup> (10G), duration 6h |
| *Bump severity:               | 390m/s <sup>2</sup> (40G), 4000 ±10 bumps                     |
| *Shock severity:              | 981m/s <sup>2</sup> (100G) for 6ms                            |
| *Acceleration severity:       | 490m/s <sup>2</sup> (50G)                                     |

\* Tested with connectors with Jackscrews.

## Pin Numbering



All dimensions in mm.

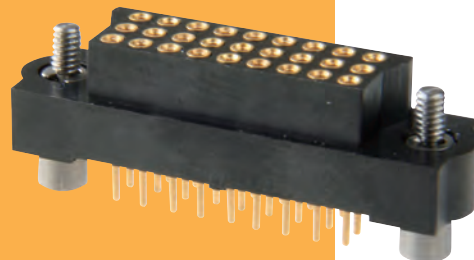
## Mating Profiles

|      |                         | FEMALE                |       |
|------|-------------------------|-----------------------|-------|
|      |                         | VERTICAL THROUGHBOARD | CRIMP |
| MALE | VERTICAL THROUGHBOARD   |                       |       |
|      | HORIZONTAL THROUGHBOARD |                       |       |

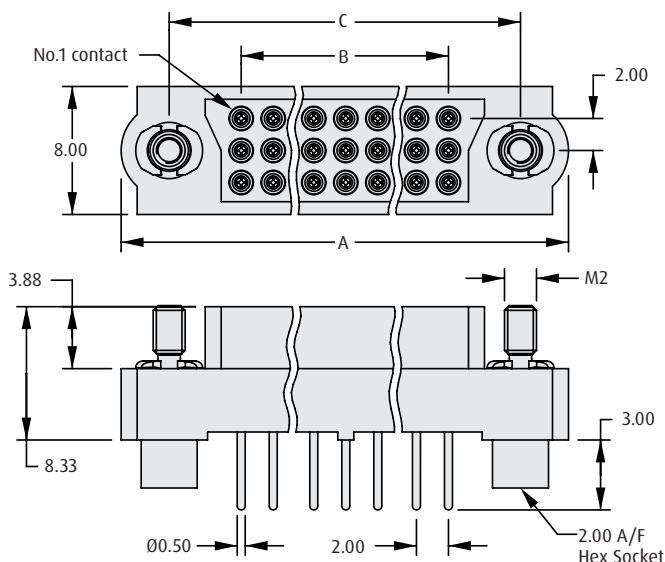
# Datamate J-Tek 3-Row Connectors

## Female Vertical Throughboard

- ❖ Low-force 4-finger Beryllium Copper contact clip.
- ❖ Fully shrouded contacts.
- ❖ Polarized housings.
- ❖ All contacts are gold finish for full RoHS compliance.
- ❖ Mates with all Datamate 3-Row male connectors with compatible jackscrews.

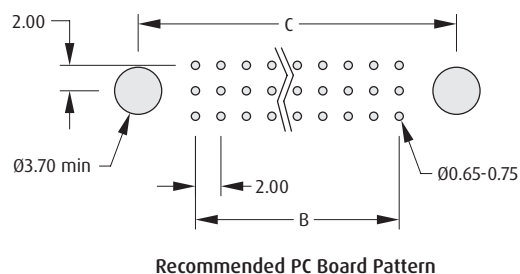


### THROUGHBOARD



### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 15$  |
| <b>B</b> | $(\text{Total no. of contacts} - 3) \times 2/3$ |
| <b>C</b> | $B + 9$   |



### HOW TO ORDER

**M83 - LF T1 F2 N XX - 0000 - 000**

#### SERIES CODE

#### TYPE

**T1**

3mm Tail

#### TOTAL NO. OF CONTACTS

18, 27, 36, 54, 60, 96

#### JACKSCREW

**F2**

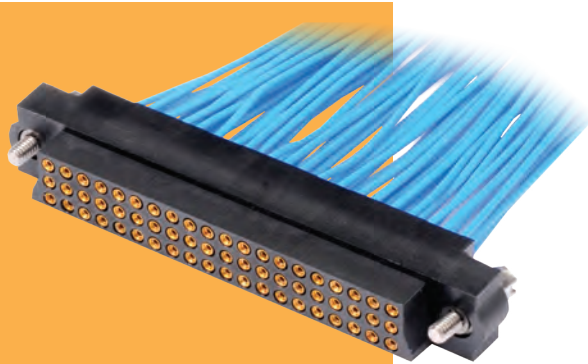
Hex Socket Jackscrew

All dimensions in mm.

# Datamate J-Tek 3-Row Connectors

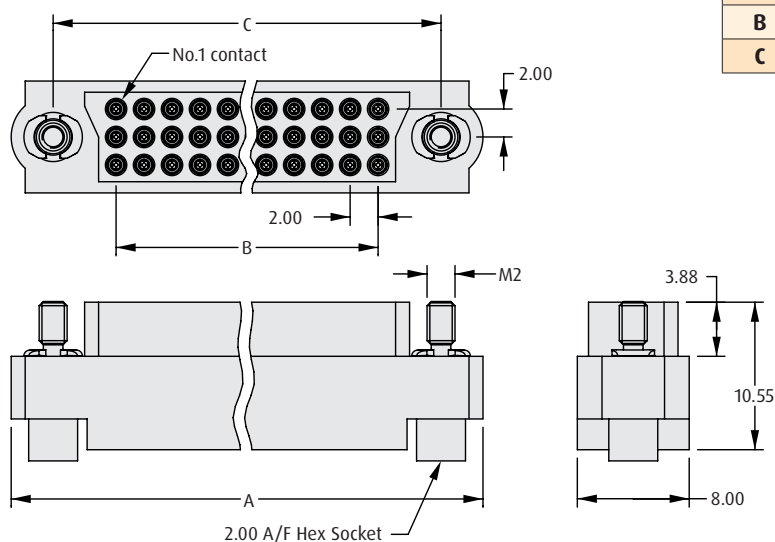
## Female Crimp Kit

- ❖ Part numbers are for a complete kit of a housing and the applicable number of contacts.
- ❖ Jackscrews are assembled where specified.
- ❖ Crimp contacts are rear insertable.
- ❖ Low-force 4-finger Beryllium Copper contact clip.
- ❖ Spare contacts are available.



DATAMATE J-TEK 3-ROW

### FEMALE CRIMP



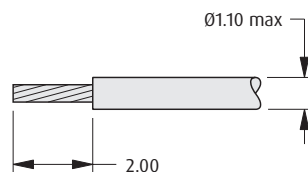
### CALCULATION

|          |                                   |
|----------|-----------------------------------|
| <b>A</b> | B + 15                            |
| <b>B</b> | (Total no. of contacts - 3) x 2/3 |
| <b>C</b> | B + 9                             |

### TOOLS

**Recommended Crimp Tool** - M22520/2-01  
**Positioner** - T5747  
**Contact Insertion/Removal Tool** - Z80-280  
 ❖ Spare contacts shown on following pages.  
 ❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### WIRE STRIPPING DETAILS



### HOW TO ORDER

**M83 - LF X1 F2 N XX - 0000 - 000**

#### SERIES CODE

#### TYPE

|           |                        |
|-----------|------------------------|
| <b>C1</b> | Small Bore (24-28 AWG) |
| <b>D1</b> | Large Bore (22 AWG)    |

#### TOTAL NO. OF CONTACTS

18, 27, 36, 54, 60, 96

#### JACKSCREW

**F2** Hex Socket Jackscrew

All dimensions in mm.

# Datamate J-Tek 3-Row Connectors

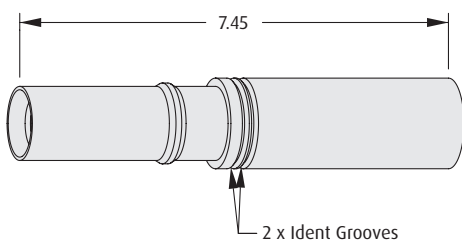
## Spare Female Crimp Contacts

- ❖ Barrel Crimp Contacts are supplied with the connectors - see previous page. Use the order code for extra spare crimps.

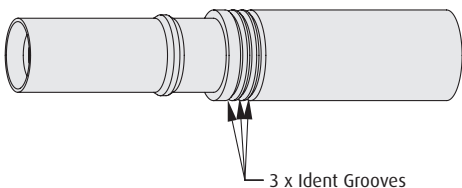


### CRIMP CONTACTS

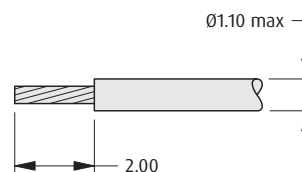
#### Large Bore (22 AWG)



#### Small Bore (24 to 28 AWG)



### WIRE STRIPPING DETAILS



### TOOLS

**Recommended Crimp Tool** - M22520/2-01  
**Positioner** - T5747  
**Contact Insertion/Removal Tool** - Z80-280  
 ❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### HOW TO ORDER

**M83 - 01X 00 05**

**SERIES CODE**

**TYPE**

|            |                        |
|------------|------------------------|
| <b>011</b> | Large Bore (22 AWG)    |
| <b>013</b> | Small Bore (24-28 AWG) |

**FINISH**

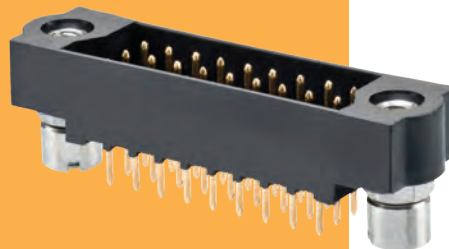
|           |      |
|-----------|------|
| <b>05</b> | Gold |
|-----------|------|

All dimensions in mm.

# Datamate J-Tek 3-Row Connectors

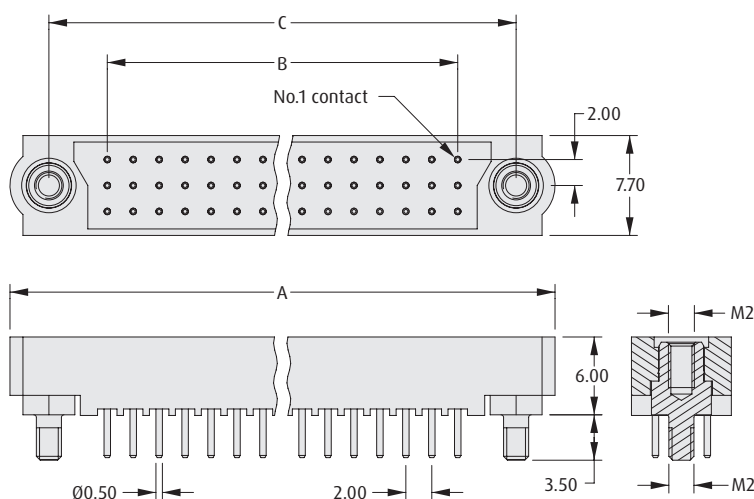
## Male Vertical Throughboard

- ❏ Board Mount nuts to be tightened to a maximum torque of 23cmN.
- ❏ Fully shrouded contacts.
- ❏ Polarized housings.
- ❏ All contacts are gold finish for full RoHS compliance.
- ❏ Mates with all Datamate 3-Row female connectors with compatible jackscrews.



DATAMATE J-TEK 3-ROW

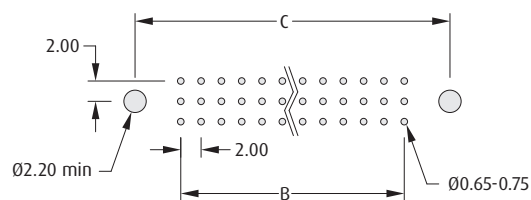
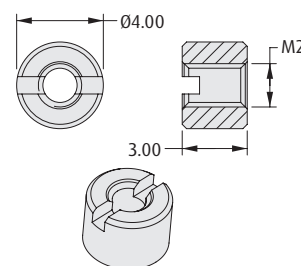
### MALE VERTICAL



### CALCULATION

|          |                                   |
|----------|-----------------------------------|
| <b>A</b> | B + 15                            |
| <b>B</b> | (Total no. of contacts - 3) x 2/3 |
| <b>C</b> | B + 9                             |

### Board Mount Nut, 2 per connector



Recommended PC Board Pattern

### HOW TO ORDER

**M83 - LM T1 M2 N XX - 0000 - 000**

#### SERIES CODE

#### TYPE

**T1** 3mm Tail

#### TOTAL NO. OF CONTACTS

18, 27, 36, 54, 60, 96

#### JACKSCREW

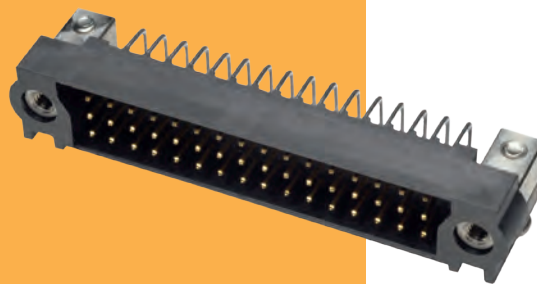
**M2** Board Mount Jackscrew

All dimensions in mm.

# Datamate J-Tek 3-Row Connectors

## Male Horizontal Throughboard

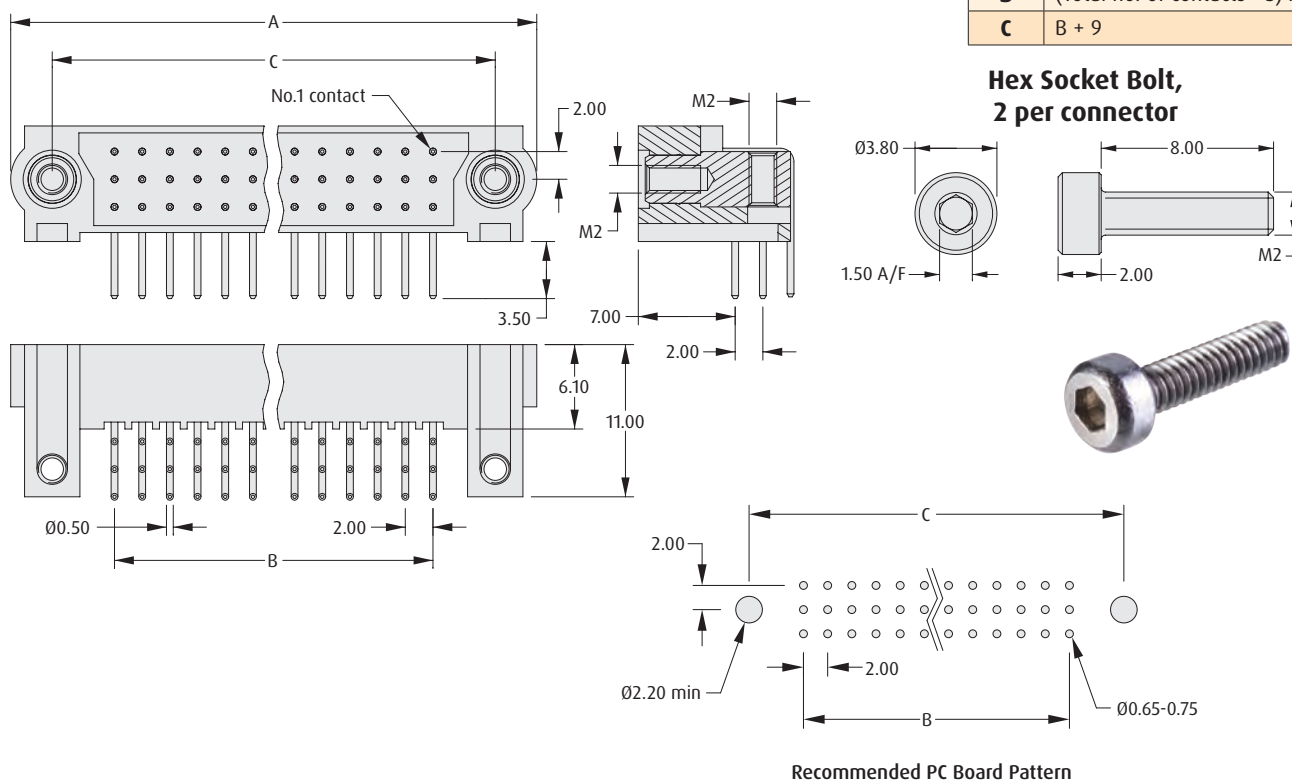
- ❖ Board Mount jackscrews provide PCB strain relief. Hex socket bolts are included, and are supplied loose - tighten to a maximum torque of 23cmN.
- ❖ Suitable for motherboard/daughterboard configurations.
- ❖ Fully shrouded contacts, polarized housings.
- ❖ All contacts are gold finish for full RoHS compliance.
- ❖ Mates with all Datamate 3-Row female connectors with compatible standard gender jackscrews.



### MALE HORIZONTAL

### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 15$  |
| <b>B</b> | $(\text{Total no. of contacts} - 3) \times 2/3$ |
| <b>C</b> | $B + 9$   |



### HOW TO ORDER

**M83 - LM L3 M7 N XX - 0000 - 000**

**SERIES CODE**

**TOTAL NO. OF CONTACTS**

18, 27, 36, 54, 60, 96

**TYPE**

**L3** 3.5mm Tails

**JACKSCREW**

**M7** Hex Socket Board Mount

All dimensions in mm.



# Datamate L-Tek Specification

## ✦ Materials

|                  |  |
|------------------|--|
| Housings:        | Glass-filled thermoplastic UL94V-0               |
| Female contacts: | Brass shell, with Beryllium Copper inner contact |
| Male contacts:   | Copper alloy                                     |
| Finish:          | See individual pages                             |

## ✦ Electrical

|                                   |  |
|-----------------------------------|--|
| <b>Current</b>                    |  |
| Individual contacts in isolation: | 3.3A max (at 25°C)<br>2.6A max (at 85°C) |
| All contacts simultaneously:      | 3.0A max (at 25°C)<br>2.2A max (at 85°C) |
| <b>Working voltage</b>            |  |
| At sea level 1013 mbar:           | 800V DC or AC <sub>rms</sub>             |
| <b>Voltage proof</b>              |  |
| At sea level 1013 mbar:           | 1,200V DC or AC <sub>rms</sub>           |
| <b>Contact resistance</b>         |  |
| Initial:                          | 20mΩ max                                 |
| After conditioning:               | 25mΩ max                                 |
| <b>Insulation resistance</b>      |  |
| Initial:                          | 1,000MΩ min                              |
| After conditioning:               | 100MΩ min                                |

## ✦ Mechanical

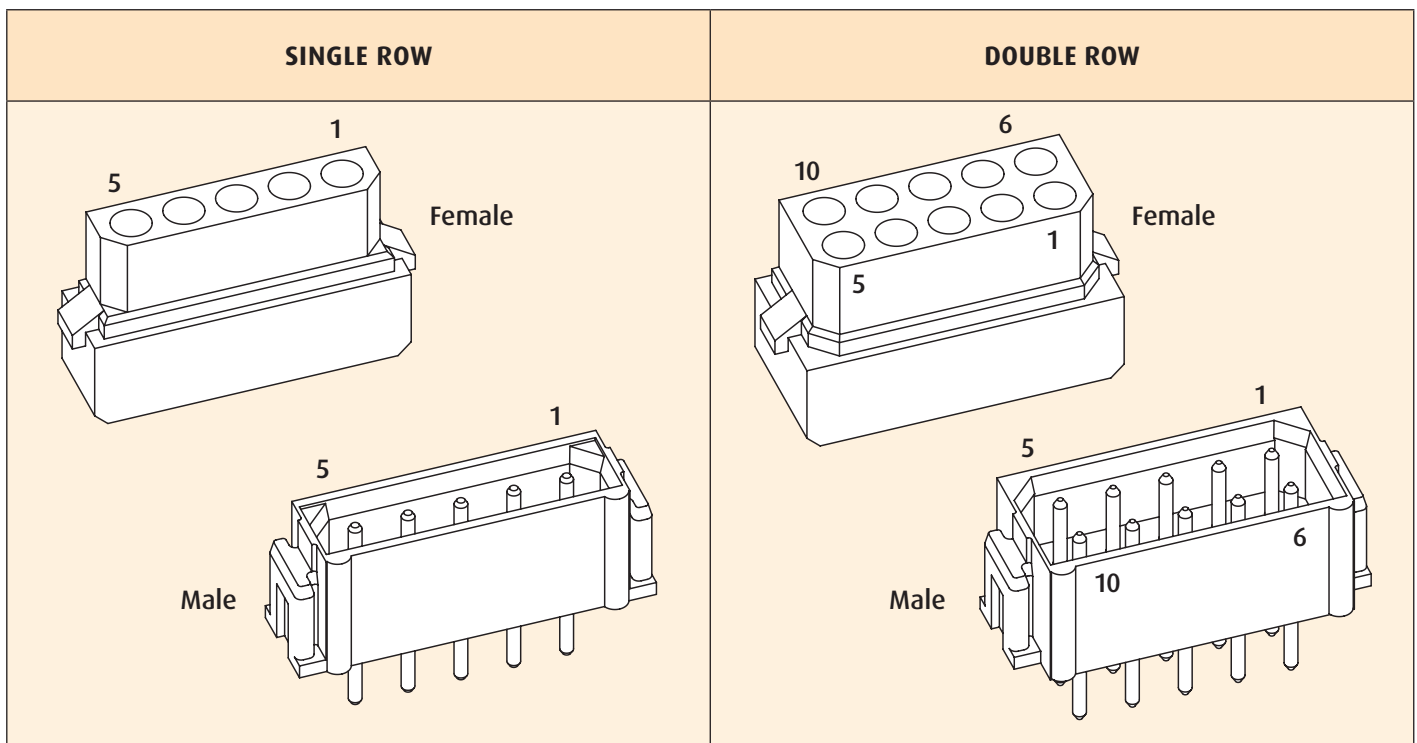
|                             |   |
|-----------------------------|---|
| Durability:                 | 500 operations                                    |
| Insertion force (max):      | 2.8N  |
| Withdrawal force (min):     | 0.2N  |
| Signal crimp accommodation: | 22 AWG to 32 AWG<br>BS 3G 210 Type A, MIL-W-16878 |

## ✦ Environmental

|                               |   |
|-------------------------------|---|
| Environmental classification: | 55/125/56 days at 95% RH                                      |
| Operational temperature:      | -55°C to +125°C   |
| *Vibration sensitivity:       | 10Hz to 2000Hz, 0.75mm, 98m/s <sup>2</sup> (10G), duration 6h |
| *Bump severity:               | 390m/s <sup>2</sup> (40G), 4000 ±10 bumps                     |
| *Shock severity:              | 981m/s <sup>2</sup> (100G) for 6ms                            |
| *Acceleration severity:       | 490m/s <sup>2</sup> (50G)                                     |

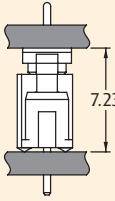
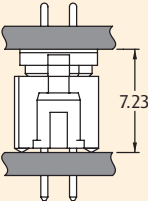
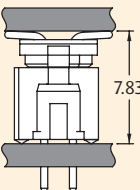
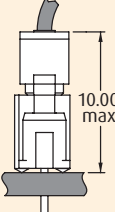
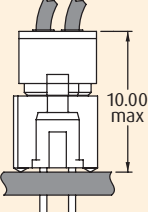
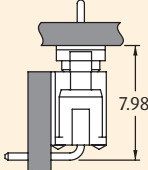
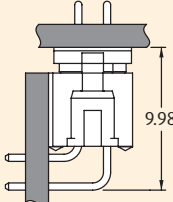
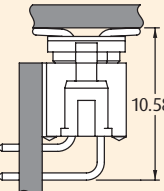
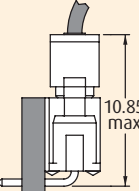
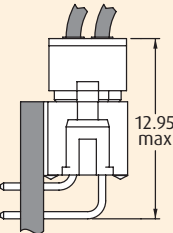
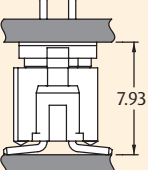
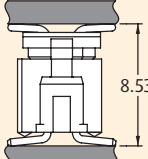
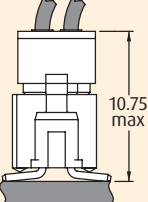
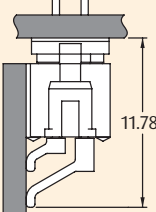
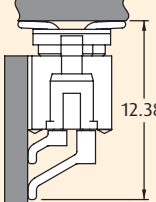
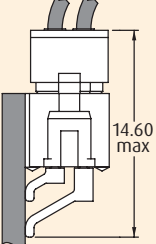
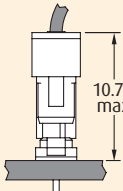
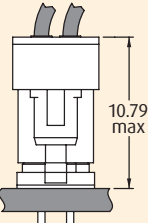
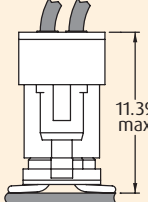
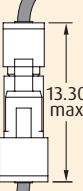
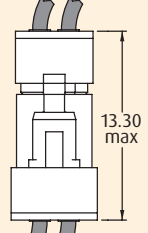
\* Tested with latched connectors.

# Pin Numbering



All dimensions in mm.

# Datamate L-Tek Mating Profiles

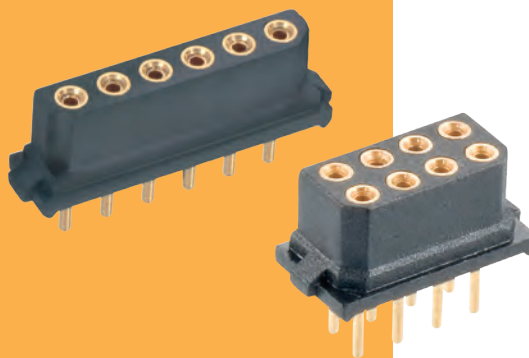
|      |                         | FEMALE   |  |  |  |  |
|------|-------------------------|--|--|--|--|--|
|      |                         | VERTICAL THROUGHBOARD  |  | VERTICAL SMT   | CRIMP  |  |
|      |                         | SIL  | DIL  | DIL  | SIL  | DIL  |
| MALE | VERTICAL THROUGHBOARD   | <br>7.23        | <br>7.23        | <br>7.83        | <br>10.00 max   | <br>10.00 max   |
|      | HORIZONTAL THROUGHBOARD | <br>7.98        | <br>9.98        | <br>10.58       | <br>10.85 max   | <br>12.95 max   |
|      | VERTICAL SMT            |  | <br>7.93      | <br>8.53      |  | <br>10.75 max |
|      | HORIZONTAL SMT          |  | <br>11.78     | <br>12.38     |  | <br>14.60 max |
|      | CRIMP                   | <br>10.79 max | <br>10.79 max | <br>11.39 max | <br>13.30 max | <br>13.30 max |

All dimensions in mm.

# Datamate L-Tek Connectors

## Female Vertical Throughboard

- Polarized housings.
- Dummy contacts are available for additional polarization, use **order code M80-023**.

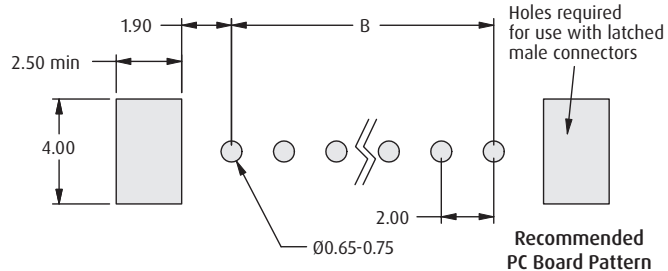
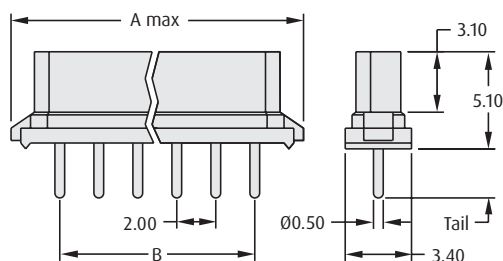


DATAMATE L-TEK

### SINGLE ROW

#### CALCULATION

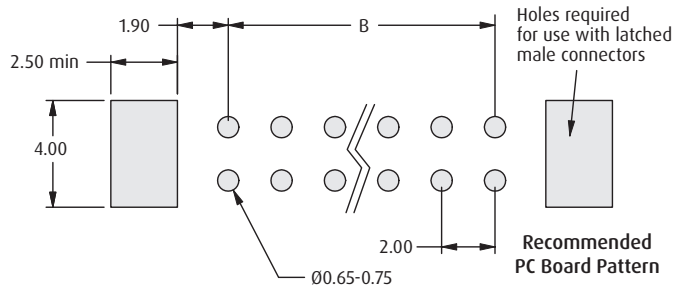
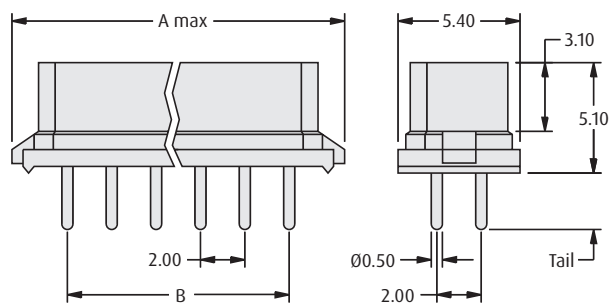
|          |   |
|----------|---|
| <b>A</b> | $B + 5.15$                                    |
| <b>B</b> | $(\text{Total no. of contacts} - 1) \times 2$ |



### DOUBLE ROW

#### CALCULATION

|          |                                    |
|----------|------------------------------------|
| <b>A</b> | $B + 5.15$                         |
| <b>B</b> | $\text{Total no. of contacts} - 2$ |



### HOW TO ORDER

**M80 - XXX XX XX**

#### SERIES CODE

#### TYPE

|            |                         |
|------------|-------------------------|
| <b>840</b> | Single Row (3mm tail)   |
| <b>850</b> | Double Row (3mm tail)   |
| <b>790</b> | Single Row (4.5mm tail) |
| <b>770</b> | Double Row (4.5mm tail) |

#### FINISH

|           |            |
|-----------|------------|
| <b>42</b> | Gold + Tin |
| <b>45</b> | Gold       |

#### TOTAL NO. OF CONTACTS

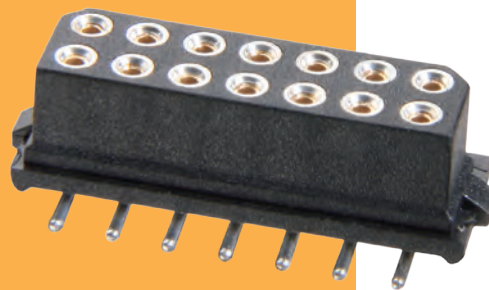
|   |            |
|---|------------|
| <b>02 to 07, 17, 22</b>                               | Single Row |
| <b>04, 06, 08, 10, 12, 14, 16, 18, 20, 26, 34, 44</b> | Double Row |

All dimensions in mm.

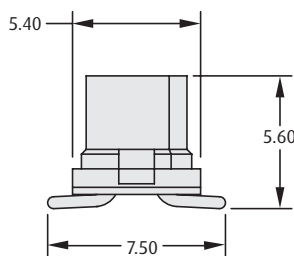
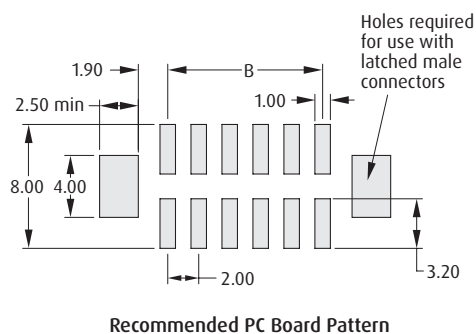
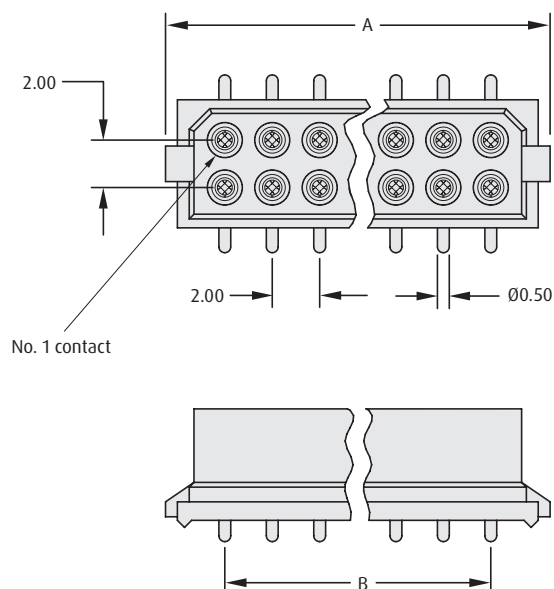
# Datamate L-Tek Connectors

## Female Vertical Surface Mount

- ❖ Optional pick and place cap.
- ❖ Gull wing SMT tails simplify inspection process.



### DOUBLE ROW



#### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 5.15$                |
| <b>B</b> | Total no. of contacts - 2 |

### HOW TO ORDER

**M80 - 681 XX XX P**

**SERIES CODE**

**TOTAL NO. OF CONTACTS**

04, 06, 08, 10, 12, 14, 16, 18, 20, 26, 34, 44

#### PICK AND PLACE CAP

|              |                    |
|--------------|--------------------|
| <b>BLANK</b> | No cap             |
| <b>P</b>     | Pick and place cap |

#### FINISH

|           |            |
|-----------|------------|
| <b>42</b> | Gold + Tin |
| <b>45</b> | Gold       |

All dimensions in mm.

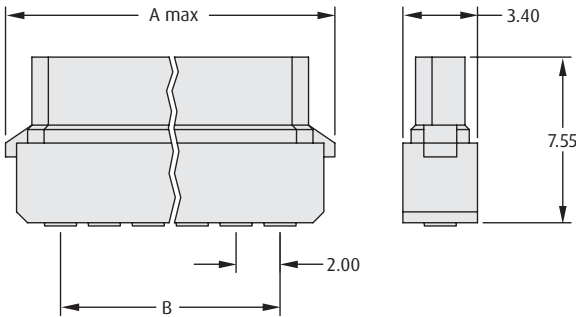
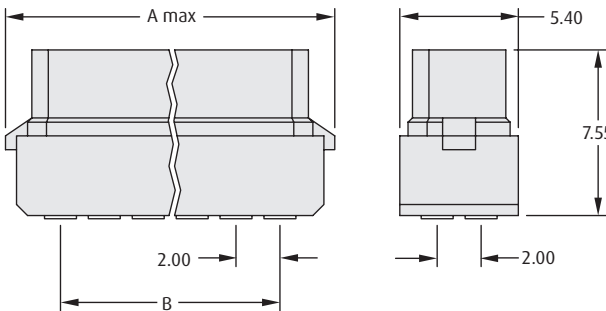
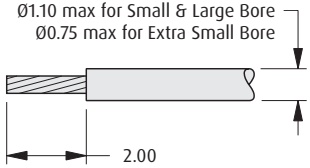
# Datamate L-Tek Connectors

## Female Crimp Kit

- Part numbers are for a complete kit of a housing and the applicable number of contacts.
- Contacts are rear insertable.
- Spare contacts are available – see the following page.



DATAMATE L-TEK

| SINGLE ROW  |  | CALCULATION  |   | DOUBLE ROW   |  | CALCULATION           |                                    |              |                                 |  |  |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |
|---|--|--|---|--|--|-----------------------|------------------------------------|--------------|---------------------------------|--|--|-----|------------------------------------|-----|---------------------------------|--|--|---|--|--------|--|----|------------|----|------|--|--|
|   |  | <b>A</b>   | $B + 5.15$                                    |   |  | <b>A</b>              | $B + 5.15$                         |              |                                 |  |  |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |
|   |  | <b>B</b>   | $(\text{Total no. of contacts} - 1) \times 2$ |  |  | <b>B</b>              | $\text{Total no. of contacts} - 2$ |              |                                 |  |  |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |
| TOOLS   |  | WIRE STRIPPING DETAILS   |   |  |  |                       |                                    |              |                                 |  |  |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |
| <p><b>Recommended Crimp Tool</b> – M22520/2-01</p> <p><b>Positioner</b> – T5747</p> <p><b>Contact Insertion/Removal Tool</b> – Z80-280</p> <p>❖ Spare and pre-cabled contacts shown on following pages.</p> <p>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</p>  |  |  |   |  |  |                       |                                    |              |                                 |  |  |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |
| HOW TO ORDER  |  |  |   |  |  |                       |                                    |              |                                 |  |  |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |
| <b>SERIES CODE</b>  |  | <b>M80 - XXX XX XX</b>   |   |  |  |                       |                                    |              |                                 |  |  |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |
| <table><tr><th colspan="2">TYPE</th></tr><tr><td>798</td><td>Single Row, Extra Small Bore (28-32 AWG)</td></tr><tr><td>898</td><td>Single Row, Small Bore (24-28 AWG)</td></tr><tr><td>899</td><td>Single Row, Large Bore (22 AWG)</td></tr><tr><td>788</td><td>Double Row, Extra Small Bore (28-32 AWG)</td></tr><tr><td>888</td><td>Double Row, Small Bore (24-28 AWG)</td></tr><tr><td>889</td><td>Double Row, Large Bore (22 AWG)</td></tr></table> |  | TYPE   |   | 798  | Single Row, Extra Small Bore (28-32 AWG) | 898                   | Single Row, Small Bore (24-28 AWG) | 899          | Single Row, Large Bore (22 AWG) | 788  | Double Row, Extra Small Bore (28-32 AWG) | 888 | Double Row, Small Bore (24-28 AWG) | 889 | Double Row, Large Bore (22 AWG) |  |  | <table><tr><th colspan="2">FINISH</th></tr><tr><td>01</td><td>Gold + Tin</td></tr><tr><td>05</td><td>Gold</td></tr></table> |  | FINISH |  | 01 | Gold + Tin | 05 | Gold |  |  |
| TYPE  |  |  |   |  |  |                       |                                    |              |                                 |  |  |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |
| 798   | Single Row, Extra Small Bore (28-32 AWG) |  |   |  |  |                       |                                    |              |                                 |  |  |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |
| 898   | Single Row, Small Bore (24-28 AWG)       |  |   |  |  |                       |                                    |              |                                 |  |  |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |
| 899   | Single Row, Large Bore (22 AWG)          |  |   |  |  |                       |                                    |              |                                 |  |  |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |
| 788   | Double Row, Extra Small Bore (28-32 AWG) |  |   |  |  |                       |                                    |              |                                 |  |  |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |
| 888   | Double Row, Small Bore (24-28 AWG)       |  |   |  |  |                       |                                    |              |                                 |  |  |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |
| 889   | Double Row, Large Bore (22 AWG)          |  |   |  |  |                       |                                    |              |                                 |  |  |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |
| FINISH  |  |  |   |  |  |                       |                                    |              |                                 |  |  |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |
| 01  | Gold + Tin                               |  |   |  |  |                       |                                    |              |                                 |  |  |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |
| 05  | Gold                                     |  |   |  |  |                       |                                    |              |                                 |  |  |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |
|   |  |  |   | <table><tr><th colspan="2">TOTAL NO. OF CONTACTS</th></tr><tr><td>02 to 07, 17</td><td>Single Row</td></tr><tr><td>04, 06, 08, 10, 12, 14, 16, 18, 20, 26, 34</td><td>Double Row</td></tr></table> |  | TOTAL NO. OF CONTACTS |                                    | 02 to 07, 17 | Single Row                      | 04, 06, 08, 10, 12, 14, 16, 18, 20, 26, 34 | Double Row                               |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |
| TOTAL NO. OF CONTACTS   |  |  |   |  |  |                       |                                    |              |                                 |  |  |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |
| 02 to 07, 17  | Single Row                               |  |   |  |  |                       |                                    |              |                                 |  |  |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |
| 04, 06, 08, 10, 12, 14, 16, 18, 20, 26, 34  | Double Row                               |  |   |  |  |                       |                                    |              |                                 |  |  |     |                                    |     |                                 |  |  |   |  |        |  |    |            |    |      |  |  |

All dimensions in mm.

# Datamate L-Tek Connectors

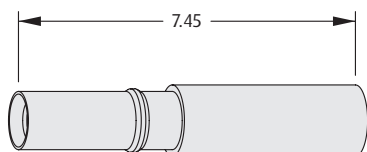
## Spare Female Crimp Contacts

- ❖ Barrel Crimp Contacts are supplied with the connectors - see previous page. Use the order code for extra spare crimps.

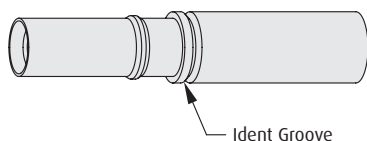


### CRIMP CONTACTS

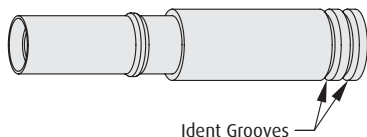
#### Large Bore (22 AWG)



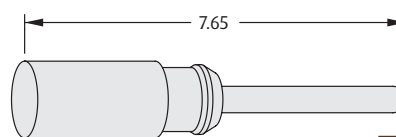
#### Small Bore (24 to 28 AWG)



#### Extra Small Bore (28 to 32 AWG)



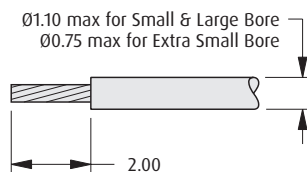
### DUMMY CONTACT



#### ORDER CODE

M80-023

### WIRE STRIPPING DETAILS



### TOOLS

**Recommended Crimp Tool** - M22520/2-01

**Positioner** - T5747

**Contact Insertion/Removal Tool** - Z80-280

- ❖ Pre-cabled contacts shown on following page.

- ❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### HOW TO ORDER

**M80 - 0XX 00 XX**

#### SERIES CODE

#### TYPE

|            |                              |
|------------|------------------------------|
| <b>011</b> | Large Bore (22 AWG)          |
| <b>013</b> | Small Bore (24-28 AWG)       |
| <b>019</b> | Extra Small Bore (28-32 AWG) |

#### FINISH

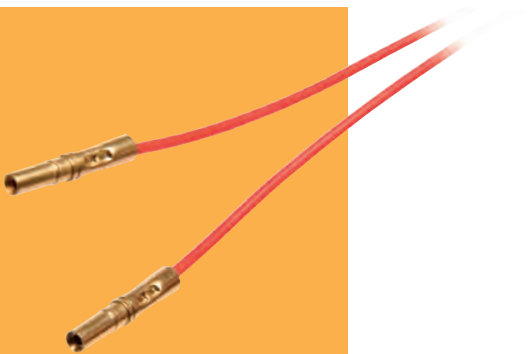
|           |            |
|-----------|------------|
| <b>01</b> | Gold + Tin |
| <b>05</b> | Gold       |

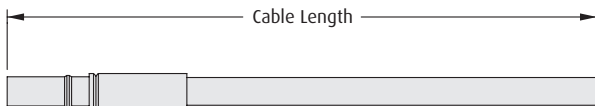
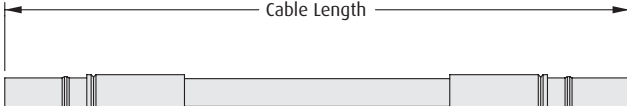
All dimensions in mm.

# Datamate L-Tek Connectors

## Female Crimp Contacts – Pre-Crimped Wires

- ❖ Female crimp contacts pre-assembled with a choice of BS 3G 210 Type A cable at selected lengths.
- ❖ PTFE-insulated, multi-strand silver-plated copper conductor equipment wire.
- ❖ Ideal for prototype and pre-production applications.



| FEMALE SINGLE ENDED  | FEMALE - FEMALE  |                            |               |    |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |
|--|--|----------------------------|---------------|----|-----|-----|----------------------------|-----|-----|----------------------------|-----|-----|----------------------------|-----|-----|----------------------------|-----|-----|----------------------------|-----|-----|----------------------------|-----|-----|----------------------------|-----|-----|----------------------------|
|   |  |                            |               |    |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |
| TOOLS  |  |                            |               |    |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |
| <p><b>Contact Insertion/Removal Tool</b> – Z80-Z80</p> <ul style="list-style-type: none"><li>❖ Full crimp connector kits and spare crimp contacts shown on previous pages.</li><li>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</li></ul>   |  |                            |               |    |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |
| HOW TO ORDER   |  |                            |               |    |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |
| <div><div>SERIES CODE</div><div>M80 - 9XX 00 99</div></div>  |  |                            |               |    |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |
| <table><tr><th colspan="2">CABLE COLOR</th></tr><tr><td>99</td><td>Red</td></tr></table>   |  | CABLE COLOR                |               | 99 | Red |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |
| CABLE COLOR  |  |                            |               |    |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |
| 99   | Red  |                            |               |    |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |
| <table><tr><th>SINGLE ENDED</th><th>FEMALE-FEMALE</th><th></th></tr><tr><td>910</td><td>918</td><td>22 AWG Cable, 150mm length</td></tr><tr><td>911</td><td>919</td><td>24 AWG Cable, 150mm length</td></tr><tr><td>912</td><td>920</td><td>26 AWG Cable, 150mm length</td></tr><tr><td>913</td><td>921</td><td>28 AWG Cable, 150mm length</td></tr><tr><td>914</td><td>922</td><td>22 AWG Cable, 300mm length</td></tr><tr><td>915</td><td>923</td><td>24 AWG Cable, 300mm length</td></tr><tr><td>916</td><td>924</td><td>26 AWG Cable, 300mm length</td></tr><tr><td>917</td><td>925</td><td>28 AWG Cable, 300mm length</td></tr></table> |  | SINGLE ENDED               | FEMALE-FEMALE |    | 910 | 918 | 22 AWG Cable, 150mm length | 911 | 919 | 24 AWG Cable, 150mm length | 912 | 920 | 26 AWG Cable, 150mm length | 913 | 921 | 28 AWG Cable, 150mm length | 914 | 922 | 22 AWG Cable, 300mm length | 915 | 923 | 24 AWG Cable, 300mm length | 916 | 924 | 26 AWG Cable, 300mm length | 917 | 925 | 28 AWG Cable, 300mm length |
| SINGLE ENDED   | FEMALE-FEMALE  |                            |               |    |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |
| 910  | 918  | 22 AWG Cable, 150mm length |               |    |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |
| 911  | 919  | 24 AWG Cable, 150mm length |               |    |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |
| 912  | 920  | 26 AWG Cable, 150mm length |               |    |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |
| 913  | 921  | 28 AWG Cable, 150mm length |               |    |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |
| 914  | 922  | 22 AWG Cable, 300mm length |               |    |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |
| 915  | 923  | 24 AWG Cable, 300mm length |               |    |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |
| 916  | 924  | 26 AWG Cable, 300mm length |               |    |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |
| 917  | 925  | 28 AWG Cable, 300mm length |               |    |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |     |     |                            |

All dimensions in mm.

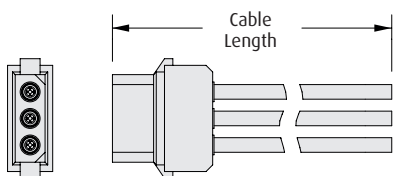
# Datamate L-Tek Connectors

## Female Cable Assemblies

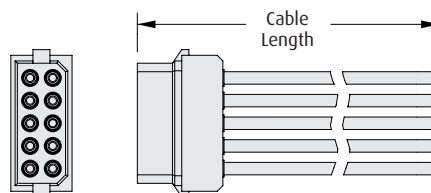
- Ready-made cable assemblies, fully tested and inspected.
- Constructed with Contact 1 to Contact 1, Contact 2 to Contact 2, etc.
- Double Row connectors (10 contacts and larger) compatible with plastic Hood shown on following page.
- For multicolor sequence, check applicable Technical Drawing.



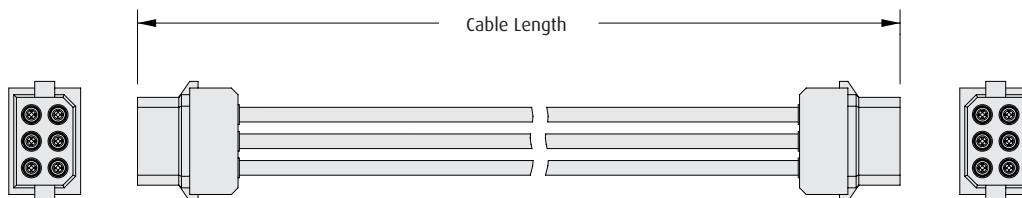
### SINGLE ROW, SINGLE ENDED



### DOUBLE ROW, SINGLE ENDED



### FEMALE - FEMALE DOUBLE ENDED



## HOW TO ORDER

**M80 - FX X XX XX L0 - XXXX X**

| SERIES CODE   |            |
|---------------|------------|
| <b>M80-FD</b> | Single Row |
| <b>M80-FC</b> | Double Row |

| CABLE SIZE |        |
|------------|--------|
| <b>1</b>   | 22 AWG |
| <b>2</b>   | 24 AWG |
| <b>3</b>   | 26 AWG |
| <b>4</b>   | 28 AWG |
| <b>5</b>   | 30 AWG |

| TOTAL NO. OF CONTACTS                             |            |
|---|------------|
| <b>02 to 07, 17</b>                               | Single Row |
| <b>04, 06, 08, 10, 12, 14, 16, 18, 20, 26, 34</b> | Double Row |

| TERMINATION - SECOND END |                  |
|--------------------------|------------------|
| <b>L</b>                 | Loose cut end    |
| <b>F</b>                 | Female connector |

| CABLE LENGTH |        |
|--------------|--------|
| <b>0150</b>  | 150mm  |
| <b>XXXX</b>  | XXXXmm |

| WIRE COLOR |                                 |
|------------|---------------------------------|
| <b>05</b>  | White cable (double-ended)      |
| <b>68</b>  | Multicolor cable (single-ended) |

All dimensions in mm.



# Datamate L-Tek Connectors

## Female Plastic Cable Hood

- ❖ Supplied as a kit of parts, including body, lid, cable clamp and 4 screws.
- ❖ For use with double row female crimp connectors.
- ❖ Mates with unlatched male connectors.

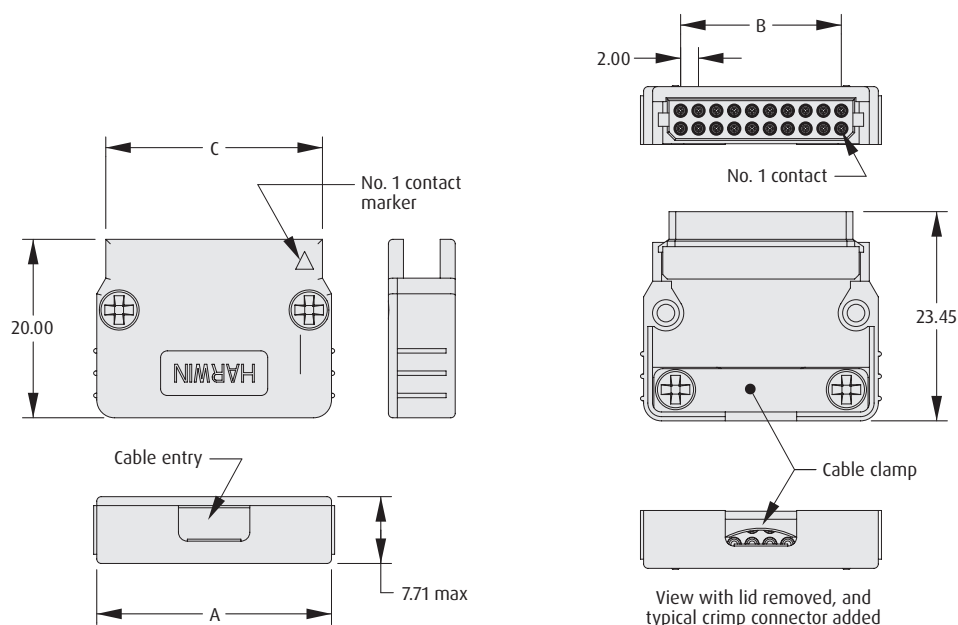


DATAMATE L-TEK

### CRIMP HOOD

### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 8.3$                 |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 6.3$                 |



### HOW TO ORDER

**M80 - 880 XX 98**

**SERIES CODE**

**TOTAL NO. OF CONTACTS**

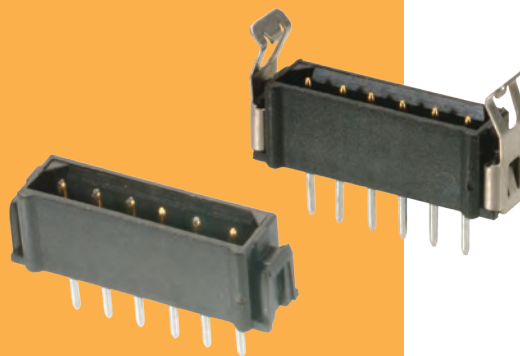
10, 12, 14, 16, 18, 20, 26, 34

All dimensions in mm.

# Datamate L-Tek Connectors

## Male Single Row Vertical Throughboard

- ❑ Polarized housings.
- ❑ Fully shrouded contacts.
- ❑ Mates with standard Datamate L-Tek female connectors.
- ❑ Can be used with optional Strain Relief straps, available to order separately: **order code M80-0030006**.



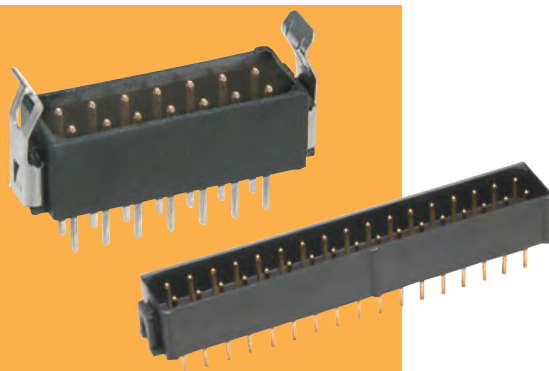
| NO LATCHES          |  | CALCULATION                          |                                 | LOCKING LATCH           |  | CALCULATION                  |                                 |
|---------------------|--|--------------------------------------|---------------------------------|-------------------------|--|------------------------------|---------------------------------|
|                     |  | A                                    | B + 5.6                         |                         |  | A                            | B + 6.1                         |
|                     |  | B                                    | (Total no. of contacts - 1) x 2 |                         |  | B                            | (Total no. of contacts - 1) x 2 |
|                     |  |                                      |                                 |                         |  |                              |                                 |
| STRAIN RELIEF STRAP |  | Order separately from connector      |                                 |                         |  | Recommended PC Board Pattern |                                 |
|                     |  |                                      |                                 |                         |  |                              |                                 |
|                     |  | View of Strain Relief strap in place |                                 |                         |  | ORDER CODE<br>M80-0030006    |                                 |
| HOW TO ORDER        |  |                                      |                                 |                         |  |                              |                                 |
| SERIES CODE         |  | M80 -                                |                                 | XXX                     |  | XX XX                        |                                 |
| TYPE                |  | 852                                  |                                 | 882                     |  | 782                          |                                 |
|                     |  | No Latches, 3mm Tail                 |                                 | Locking Latch, 3mm Tail |  | Locking Latch, 4.5mm Tail    |                                 |
|                     |  |                                      |                                 |                         |  | FINISH                       |                                 |
|                     |  |                                      |                                 |                         |  | 42 Gold + Tin                |                                 |
|                     |  |                                      |                                 |                         |  | 45 Gold                      |                                 |
|                     |  |                                      |                                 |                         |  | TOTAL NO. OF CONTACTS        |                                 |
|                     |  |                                      |                                 |                         |  | 02 to 07                     |                                 |

All dimensions in mm.

# Datamate L-Tek Connectors

## Male Double Row Vertical Throughboard

- ❖ Polarized housings.
- ❖ Fully shrouded contacts.
- ❖ Mates with standard Datamate L-Tek female connectors.
- ❖ Can be used with optional Strain Relief straps, available to order separately: **order code M80-0030006**.



DATAMATE L-TEK

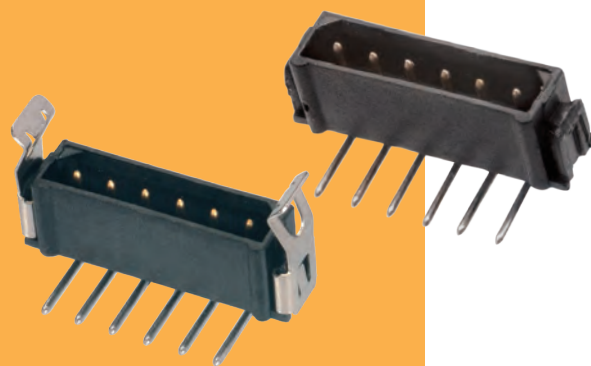
| NO LATCHES          |  | CALCULATION                     |                           | LOCKING LATCH                                  |  | CALCULATION                  |                           |
|---------------------|--|---------------------------------|---------------------------|--|--|------------------------------|---------------------------|
|                     |  | A                               | B + 5.6                   |  |  | A                            | B + 6.1                   |
|                     |  | B                               | Total no. of contacts - 2 |  |  | B                            | Total no. of contacts - 2 |
|                     |  |                                 |                           |  |  |                              |                           |
| STRAIN RELIEF STRAP |  | Order separately from connector |                           |  |  | Recommended PC Board Pattern |                           |
|                     |  |                                 |                           |  |  |                              |                           |
|                     |  | ORDER CODE                      |                           |  |  |                              |                           |
|                     |  | M80-0030006                     |                           |  |  |                              |                           |
| HOW TO ORDER        |  |                                 |                           |  |  |                              |                           |
| SERIES CODE         |  | M80                             |                           | - XXX  |  | XX XX                        |                           |
| 3mm TAIL            |  | 4.5mm TAIL                      |                           | No Latches                                     |  | FINISH                       |                           |
| 854                 |  | 754                             |                           |  |  | 42 Gold + Tin                |                           |
| 853                 |  | 753                             |                           | Locking Latch                                  |  | 45 Gold                      |                           |
|                     |  |                                 |                           | TOTAL NO. OF CONTACTS                          |  |                              |                           |
|                     |  |                                 |                           | 04, 06, 08, 10, 12, 14, 16, 18, 20, 26, 34, 44 |  |                              |                           |

All dimensions in mm.

# Datamate L-Tek Connectors

## Male Single Row Horizontal Throughboard

- ❏ Polarized housings.
- ❏ Fully shrouded contacts.
- ❏ Mates with standard Datamate L-Tek female connectors.
- ❏ Supplied with two Strain Relief straps per connector; spares available under **order code M80-0030006**.



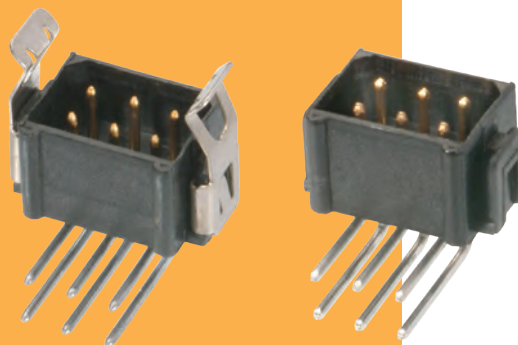
| NO LATCHES          |  | CALCULATION                          |                                 | LOCKING LATCH             |  | CALCULATION                  |                                 |
|---------------------|--|--------------------------------------|---------------------------------|---------------------------|--|------------------------------|---------------------------------|
|                     |  | A                                    | B + 5.6                         |                           |  | A                            | B + 6.1                         |
|                     |  | B                                    | (Total no. of contacts - 1) x 2 |                           |  | B                            | (Total no. of contacts - 1) x 2 |
|                     |  |                                      |                                 |                           |  |                              |                                 |
| STRAIN RELIEF STRAP |  | Supplied with connector              |                                 |                           |  | Recommended PC Board Pattern |                                 |
|                     |  |                                      |                                 |                           |  |                              |                                 |
|                     |  | View of Strain Relief strap in place |                                 |                           |  |                              |                                 |
| HOW TO ORDER        |  |                                      |                                 |                           |  |                              |                                 |
| SERIES CODE         |  | M80                                  |                                 | - XXX                     |  | XX XX                        |                                 |
| TYPE                |  | 843                                  |                                 | No Latches, 3mm Tail      |  | FINISH                       |                                 |
|                     |  | 842                                  |                                 | Locking Latch, 3mm Tail   |  | 42 Gold + Tin                |                                 |
|                     |  | 792                                  |                                 | Locking Latch, 4.5mm Tail |  | 45 Gold                      |                                 |
|                     |  |                                      |                                 |                           |  | TOTAL NO. OF CONTACTS        |                                 |
|                     |  |                                      |                                 |                           |  | 02 to 07                     |                                 |

All dimensions in mm.

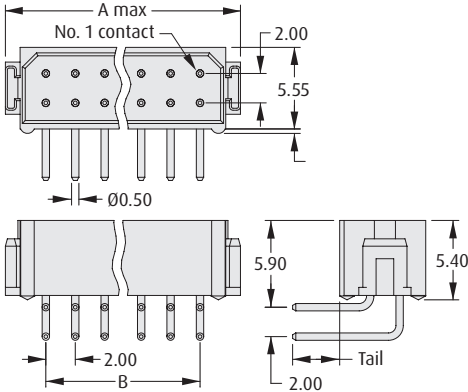
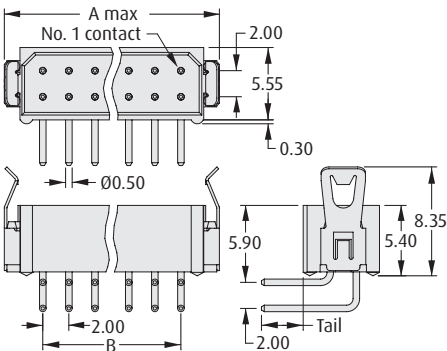
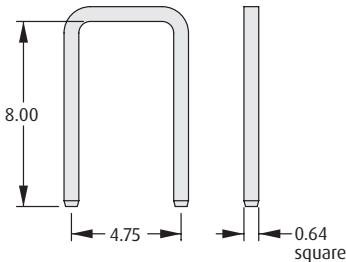
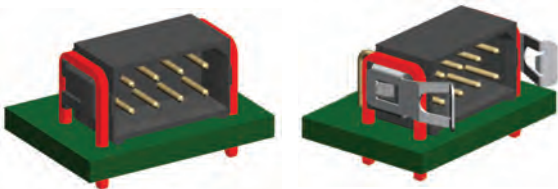
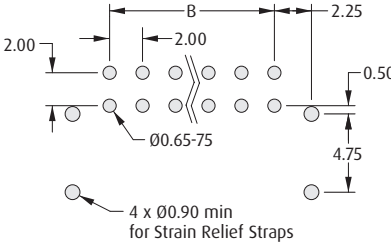
# Datamate L-Tek Connectors

## Male Double Row Horizontal Throughboard

- ❖ Polarized housings.
- ❖ Fully shrouded contacts.
- ❖ Mates with standard Datamate L-Tek female connectors.
- ❖ Supplied with two Strain Relief straps per connector; spares available under **order code M80-0030006**.



DATAMATE L-TEK

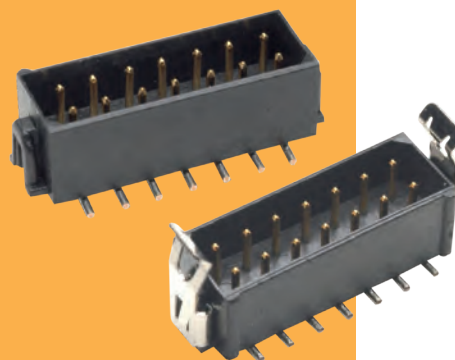
| NO LATCHES  |  | CALCULATION  |                           | LOCKING LATCH   |  | CALCULATION   |                           |
|---|--|--|---------------------------|---|--|---|---------------------------|
|   |  | <b>A</b>   | $B + 5.6$                 |  |  | <b>A</b>  | $B + 6.1$                 |
|   |  | <b>B</b>   | Total no. of contacts - 2 |   |  | <b>B</b>  | Total no. of contacts - 2 |
| STRAIN RELIEF STRAP   |  | Supplied with connector  |                           |   |  | Recommended PC Board Pattern  |                           |
|  |  | <br>View of Strain Relief strap in place |                           |   |  |  |                           |
| HOW TO ORDER  |  |  |                           |   |  |   |                           |
| SERIES CODE   |  | M80  |                           | - XXX   |  | XX XX   |                           |
| TYPE  |  | 841  |                           | No Latches, 3mm Tail  |  | FINISH  |                           |
| 851   |  | Locking Latch, 3mm Tail  |                           | 42  |  | Gold + Tin  |                           |
| 771   |  | Locking Latch, 4.5mm Tail  |                           | 45  |  | Gold  |                           |
|   |  |  |                           | TOTAL NO. OF CONTACTS   |  | 04, 06, 08, 10, 12, 14, 16, 18, 20, 26, 34, 44  |                           |

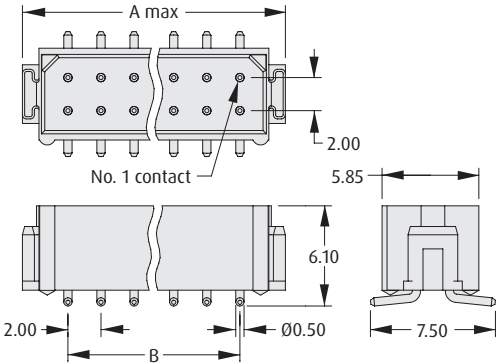
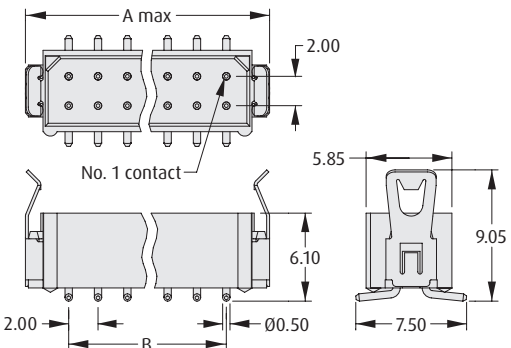
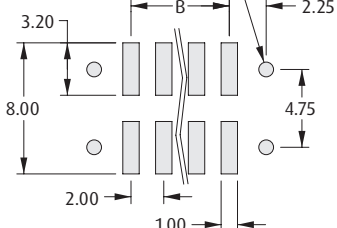
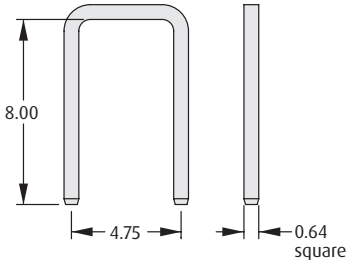
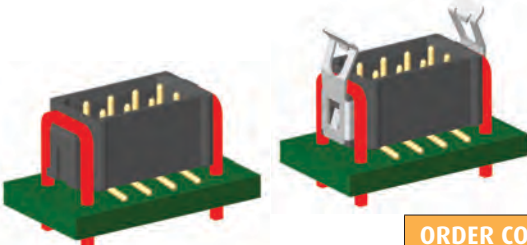
All dimensions in mm.

# Datamate L-Tek Connectors

## Male Vertical Surface Mount

- ❑ Mates with standard Datamate L-Tek female connectors.
- ❑ Can be used with optional Strain Relief straps, available to order separately: **order code M80-0030006**.
- ❑ Optional pick and place cap.
- ❑ Gull wing SMT tails simplify inspection process.



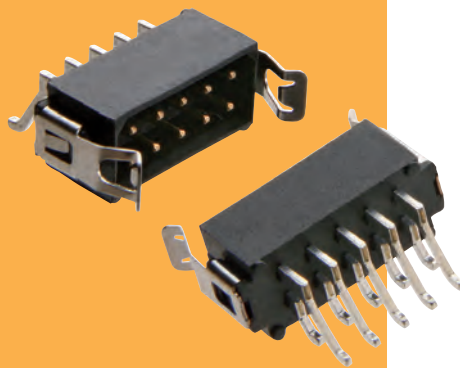
| NO LATCHES  |  | CALCULATION  |                           | LOCKING LATCH   |  | CALCULATION  |                           |
|---|--|--|---------------------------|---|--|--|---------------------------|
|   |  | A  | B + 5.6                   |   |  | A  | B + 6.1                   |
|   |  | B  | Total no. of contacts - 2 |   |  | B  | Total no. of contacts - 2 |
|   |  |  |                           |  |  |  |                           |
| STRAIN RELIEF STRAP   |  | Order separately from connector  |                           |   |  | <p>Recommended PC Board Pattern</p> <p>4 x Ø0.90 min (optional)<br/>for Strain Relief Straps</p>  |                           |
|  |  |  |                           |   |  |  |                           |
|   |  | View of Strain Relief strap in place   |                           |   |  | ORDER CODE<br>M80-0030006  |                           |
| HOW TO ORDER  |  |  |                           |   |  |  |                           |
| M80 - 82X XX XX P   |  |  |                           |   |  |  |                           |
| SERIES CODE   |  |  |                           |   |  | PICK AND PLACE CAP   |                           |
|   |  |  |                           |   |  | BLANK No cap<br>P Pick and place cap   |                           |
| TYPE  |  |  |                           |   |  | FINISH   |                           |
| 826 No Latches<br>828 Locking Latch   |  | TOTAL NO. OF CONTACTS<br>04, 06, 08, 10, 12, 14, 16, 18, 20, 26, 34                  |                           |   |  | 42 Gold + Tin<br>45 Gold   |                           |

All dimensions in mm.

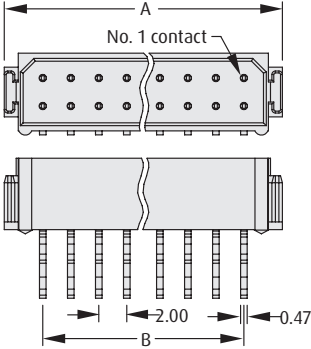
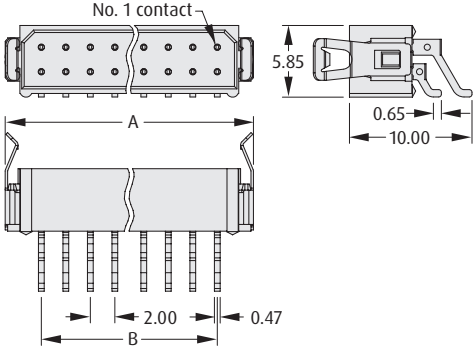
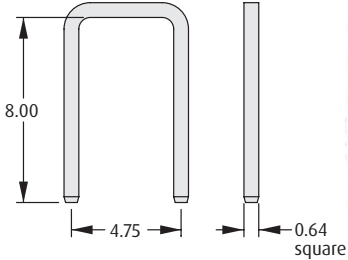
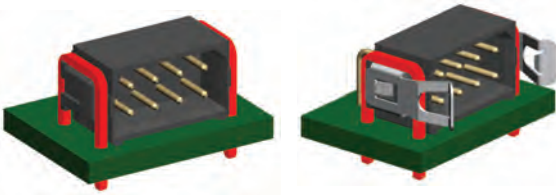
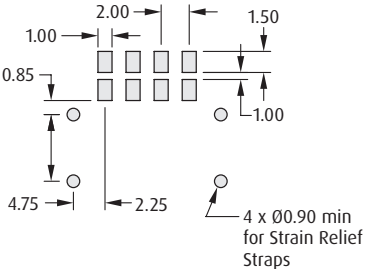
# Datamate L-Tek Connectors

## Male Horizontal Surface Mount

- ❖ Mates with standard Datamate L-Tek female connectors.
- ❖ Supplied with two Strain Relief straps per connector; spares available under **order code M80-0030006**.
- ❖ Stamped contact ensures co-planarity.



DATAMATE L-TEK

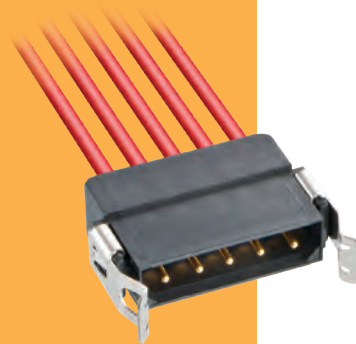
| NO LATCHES  |  | CALCULATION  |                           | LOCKING LATCH   |  | CALCULATION   |                           |
|---|--|--|---------------------------|---|--|---|---------------------------|
|   |  | <b>A</b>   | $B + 5.6$                 |  |  | <b>A</b>  | $B + 6.1$                 |
|   |  | <b>B</b>   | Total no. of contacts - 2 |   |  | <b>B</b>  | Total no. of contacts - 2 |
| STRAIN RELIEF STRAP   |  | Supplied with connector  |                           |   |  | Recommended PC Board Pattern  |                           |
|  |  | <br>View of Strain Relief strap in place |                           |   |  |  |                           |
| HOW TO ORDER  |  |  |                           |   |  |   |                           |
| SERIES CODE   |  | M80 - 66X XX 42  |                           |   |  | FINISH  |                           |
| TYPE  |  |  |                           |   |  | 42 Gold + Tin   |                           |
| 665 No Latches  |  |  |                           |   |  | TOTAL NO. OF CONTACTS   |                           |
| 666 Locking Latch   |  |  |                           |   |  | 04, 06, 08, 10, 12, 14, 16, 18, 20, 26, 34  |                           |

All dimensions in mm.

# Datamate L-Tek Connectors

## Male Crimp Kit

- Part numbers are for a complete kit of a housing and the applicable number of contacts.
- Contacts are rear insertable.
- Spare contacts are available - see the following page.

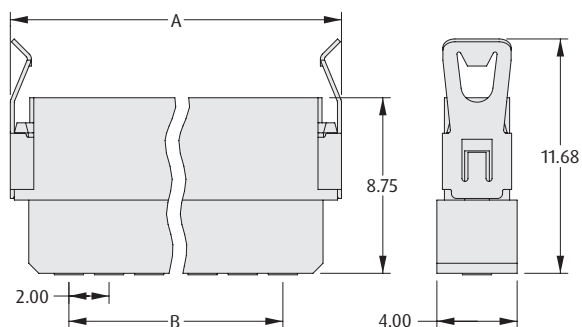


### SINGLE ROW

#### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 5.6$                                     |
| <b>B</b> | $(\text{Total no. of contacts} - 1) \times 2$ |

Latches (when fitted) add 0.5mm to overall length 'A'

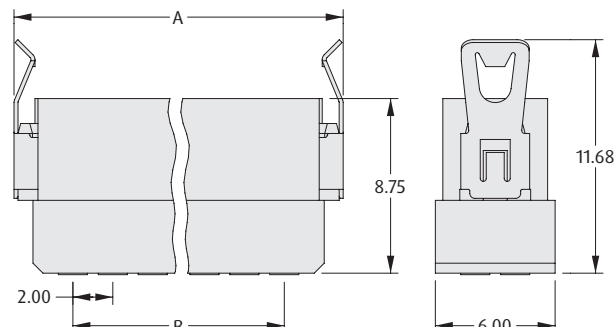


### DOUBLE ROW

#### CALCULATION

|          |                                    |
|----------|------------------------------------|
| <b>A</b> | $B + 5.6$                          |
| <b>B</b> | $\text{Total no. of contacts} - 2$ |

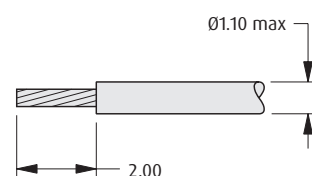
Latches (when fitted) add 0.5mm to overall length 'A'



### TOOLS

**Recommended Crimp Tool** - M22520/2-01  
**Positioner** - T5747  
**Contact Insertion/Removal Tool** - Z80-280  
 Spare contacts shown on following page.  
 Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### WIRE STRIPPING DETAILS



### HOW TO ORDER

**M80 - 8XX XX 05**

#### SERIES CODE

| SINGLE ROW | DOUBLE ROW |                                       |
|------------|------------|---------------------------------------|
| 806        | 810        | Small Bore (24-28 AWG), No Latches    |
| 807        | 811        | Large Bore (22 AWG), No Latches       |
| 808        | 812        | Small Bore (24-28 AWG), Locking Latch |
| 809        | 813        | Large Bore (22 AWG), Locking Latch    |

#### FINISH

**05** Gold

#### TOTAL NO. OF CONTACTS

|                        |            |
|------------------------|------------|
| 02, 03, 04, 05, 06, 07 | Single Row |
| 04, 06, 08, 10, 12     | Double Row |

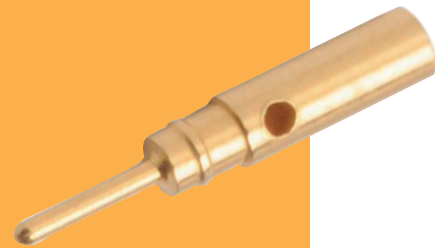
All dimensions in mm.



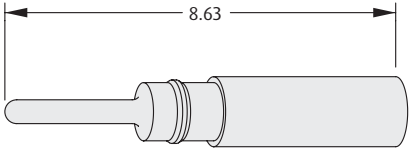
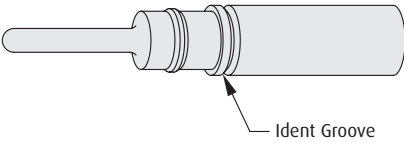
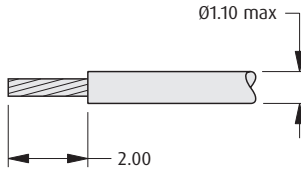
# Datamate L-Tek Connectors

## Spare Male Crimp Contacts

- ❖ Barrel Crimp Contacts are supplied with the connectors - see previous page. Use the order code for extra Spare crimps.



DATAMATE L-TEK

| CRIMP CONTACTS   | WIRE STRIPPING DETAILS   |      |  |     |                     |     |                        |    |      |
|--|--|------|--|-----|---------------------|-----|------------------------|----|------|
| <p><b>Large Bore (22 AWG)</b></p>  <p><b>Small Bore (24 to 28 AWG)</b></p>   |  <p><b>TOOLS</b></p> <p><b>Recommended Crimp Tool</b> - M22520/2-01<br/> <b>Positioner</b> - T5747<br/> <b>Contact Insertion/Removal Tool</b> - Z80-280</p> <p>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</p> |      |  |     |                     |     |                        |    |      |
| HOW TO ORDER   |  |      |  |     |                     |     |                        |    |      |
| <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p><b>M80 - 04X 00 05</b></p> <p><b>SERIES CODE</b></p> <table border="1" style="margin-top: 10px;"> <thead> <tr> <th colspan="2">TYPE</th> </tr> </thead> <tbody> <tr> <td>040</td> <td>Large Bore (22 AWG)</td> </tr> <tr> <td>041</td> <td>Small Bore (24-28 AWG)</td> </tr> </tbody> </table> </div> <div style="text-align: center;"> <p><b>FINISH</b></p> <table border="1" style="margin-top: 10px;"> <tbody> <tr> <td>05</td> <td>Gold</td> </tr> </tbody> </table> </div> </div> |  | TYPE |  | 040 | Large Bore (22 AWG) | 041 | Small Bore (24-28 AWG) | 05 | Gold |
| TYPE   |  |      |  |     |                     |     |                        |    |      |
| 040  | Large Bore (22 AWG)  |      |  |     |                     |     |                        |    |      |
| 041  | Small Bore (24-28 AWG)   |      |  |     |                     |     |                        |    |      |
| 05   | Gold   |      |  |     |                     |     |                        |    |      |

All dimensions in mm.

# Datamate Tooling

- ❖ Instruction sheets can be accessed at [www.harwin.com/instructions](http://www.harwin.com/instructions).
- ❖ A Datamate Crimping Instruction video is available at [www.harwin.com/harwintv](http://www.harwin.com/harwintv).

## HAND CRIMP TOOL

- ❖ Standard circular crimp tool BS5210-3A-300 and MIL specification M22520/2-01.
- ❖ Precision tool with ratchet mechanism and 8-indent form.
- ❖ Must be used with applicable positioner shown below.
- ❖ Instruction sheet available.



### ORDER CODE

|                 |                    |
|-----------------|--------------------|
| Signal contacts | <b>M22520/2-01</b> |
|-----------------|--------------------|

## HAND CRIMP TOOL

- ❖ Standard circular crimp tools.
- ❖ Precision tool with ratchet mechanism and 8-indent form.
- ❖ Must be used with applicable positioner shown below.
- ❖ Instruction sheets available.



### ORDER CODE

|                                |                |
|--------------------------------|----------------|
| Inner contact of Coax contacts | <b>Z80-292</b> |
| Power crimp contacts           | <b>Z80-294</b> |

## HAND CRIMP TOOL

- ❖ Standard coax crimp tool for crimping the outer sleeve of Mix-Tek coax contacts.
- ❖ Instruction sheet available.



### ORDER CODE

|                               |                |
|-------------------------------|----------------|
| Outer sleeve of Coax contacts | <b>Z80-293</b> |
|-------------------------------|----------------|

## POSITIONER

- ❖ Used with applicable hand crimp tool.



### ORDER CODE

|   |                |
|---|----------------|
| Signal contacts: Male L-Tek, all Female | <b>T5747</b>   |
| Signal contacts: Male J-Tek, Mix-Tek    | <b>Z80-193</b> |
| Inner contact of Coax contacts          | <b>Z80-291</b> |
| Female T-Contact                        | <b>Z80-444</b> |
| Power crimp contacts                    | <b>Z80-295</b> |

All dimensions in mm.

# Datamate Tooling

- ❖ Instruction sheets can be accessed at [www.harwin.com/instructions](http://www.harwin.com/instructions).
- ❖ A Datamate Crimping Instruction video is available at [www.harwin.com/harwintv](http://www.harwin.com/harwintv).

| INSERTION/REMOVAL TOOL  | REMOVAL TOOL    |  |                 |                |  |            |  |  |                |   |                 |   |                 |   |                 |   |                 |
|---|-----------------|--|-----------------|----------------|--|------------|--|--|----------------|---|-----------------|---|-----------------|---|-----------------|---|-----------------|
| <ul style="list-style-type: none"> <li>❖ For inserting crimped contacts into the rear of housings.</li> <li>❖ Suitable for all Datamate signal Barrel crimp contacts.</li> </ul>  <table border="1"> <thead> <tr> <th colspan="2">ORDER CODE</th></tr> </thead> <tbody> <tr> <td>Signal contacts</td><td><b>Z80-280</b></td></tr> </tbody> </table>  | ORDER CODE      |  | Signal contacts | <b>Z80-280</b> | <ul style="list-style-type: none"> <li>❖ To aid removal of special cable contacts from Mix-Tek connectors.</li> </ul>  <table border="1"> <thead> <tr> <th colspan="2">ORDER CODE</th></tr> </thead> <tbody> <tr> <td>Power &amp; Coax cable contacts</td><td><b>Z80-290</b></td></tr> </tbody> </table>   | ORDER CODE |  | Power & Coax cable contacts                | <b>Z80-290</b> |   |                 |   |                 |   |                 |   |                 |
| ORDER CODE  |                 |  |                 |                |  |            |  |  |                |   |                 |   |                 |   |                 |   |                 |
| Signal contacts   | <b>Z80-280</b>  |  |                 |                |  |            |  |  |                |   |                 |   |                 |   |                 |   |                 |
| ORDER CODE  |                 |  |                 |                |  |            |  |  |                |   |                 |   |                 |   |                 |   |                 |
| Power & Coax cable contacts   | <b>Z80-290</b>  |  |                 |                |  |            |  |  |                |   |                 |   |                 |   |                 |   |                 |
| SEPARATOR TOOL  | DRIVERS         |  |                 |                |  |            |  |  |                |   |                 |   |                 |   |                 |   |                 |
| <ul style="list-style-type: none"> <li>❖ Recommended for unplugging L-Tek latched connectors (tool releases the latches prior to disengagement).</li> <li>❖ Can also be used with unlatched connectors.</li> <li>❖ Adjustable to suit all housing sizes.</li> </ul>  <table border="1"> <thead> <tr> <th colspan="2">ORDER CODE</th></tr> </thead> <tbody> <tr> <td>L-Tek</td><td><b>Z80-299</b></td></tr> </tbody> </table> | ORDER CODE      |  | L-Tek           | <b>Z80-299</b> | <ul style="list-style-type: none"> <li>❖ Mating jackscrews to be tightened to a torque of 23cmN max.</li> <li>❖ Board mount nuts and bolts to be tightened to a torque of 21 ±2cmN.</li> </ul>  <table border="1"> <thead> <tr> <th colspan="2">ORDER CODE</th></tr> </thead> <tbody> <tr> <td>Slotted Nut Screwdriver (board mount nuts)</td><td><b>Z80-298</b></td></tr> <tr> <td>1.5mm A/F Hex Drive Bit (board mount bolts)</td><td><b>Z9950-00</b></td></tr> <tr> <td>2mm A/F Hex Drive Bit (floating jackscrews)</td><td><b>Z9951-00</b></td></tr> <tr> <td>1.5mm A/F Ball Hex Driver (board mount bolts)</td><td><b>Z9952-00</b></td></tr> <tr> <td>2mm A/F Ball Hex Driver (floating jackscrews)</td><td><b>Z9953-00</b></td></tr> </tbody> </table> | ORDER CODE |  | Slotted Nut Screwdriver (board mount nuts) | <b>Z80-298</b> | 1.5mm A/F Hex Drive Bit (board mount bolts) | <b>Z9950-00</b> | 2mm A/F Hex Drive Bit (floating jackscrews) | <b>Z9951-00</b> | 1.5mm A/F Ball Hex Driver (board mount bolts) | <b>Z9952-00</b> | 2mm A/F Ball Hex Driver (floating jackscrews) | <b>Z9953-00</b> |
| ORDER CODE  |                 |  |                 |                |  |            |  |  |                |   |                 |   |                 |   |                 |   |                 |
| L-Tek   | <b>Z80-299</b>  |  |                 |                |  |            |  |  |                |   |                 |   |                 |   |                 |   |                 |
| ORDER CODE  |                 |  |                 |                |  |            |  |  |                |   |                 |   |                 |   |                 |   |                 |
| Slotted Nut Screwdriver (board mount nuts)  | <b>Z80-298</b>  |  |                 |                |  |            |  |  |                |   |                 |   |                 |   |                 |   |                 |
| 1.5mm A/F Hex Drive Bit (board mount bolts)   | <b>Z9950-00</b> |  |                 |                |  |            |  |  |                |   |                 |   |                 |   |                 |   |                 |
| 2mm A/F Hex Drive Bit (floating jackscrews)   | <b>Z9951-00</b> |  |                 |                |  |            |  |  |                |   |                 |   |                 |   |                 |   |                 |
| 1.5mm A/F Ball Hex Driver (board mount bolts)   | <b>Z9952-00</b> |  |                 |                |  |            |  |  |                |   |                 |   |                 |   |                 |   |                 |
| 2mm A/F Ball Hex Driver (floating jackscrews)   | <b>Z9953-00</b> |  |                 |                |  |            |  |  |                |   |                 |   |                 |   |                 |   |                 |

All dimensions in mm.

See the full range  
from page 200

**ARCHER**  
KONTROL



## Increased Reliability for Industrial Applications

**New 1.27mm pitch Archer Kontrol connectors in horizontal, vertical and cable layouts with 12 to 80 contacts.**

Designed with surface mount solder tabs for additional board retention strength, it can withstand lateral and twisting forces in high vibration environments.

- Temperature range of -55°C to +125°C
- Assists with blind mating
- Female IDC cable assemblies for cable-to-board
- Fully shrouded connector system
- Tested to perform up to 500 operations
- Data transmission rate up to 3Gbit/s

**[harwin.com/kontrol](http://harwin.com/kontrol)**

**HARWIN**  
Connect with confidence



# M300

## Contents

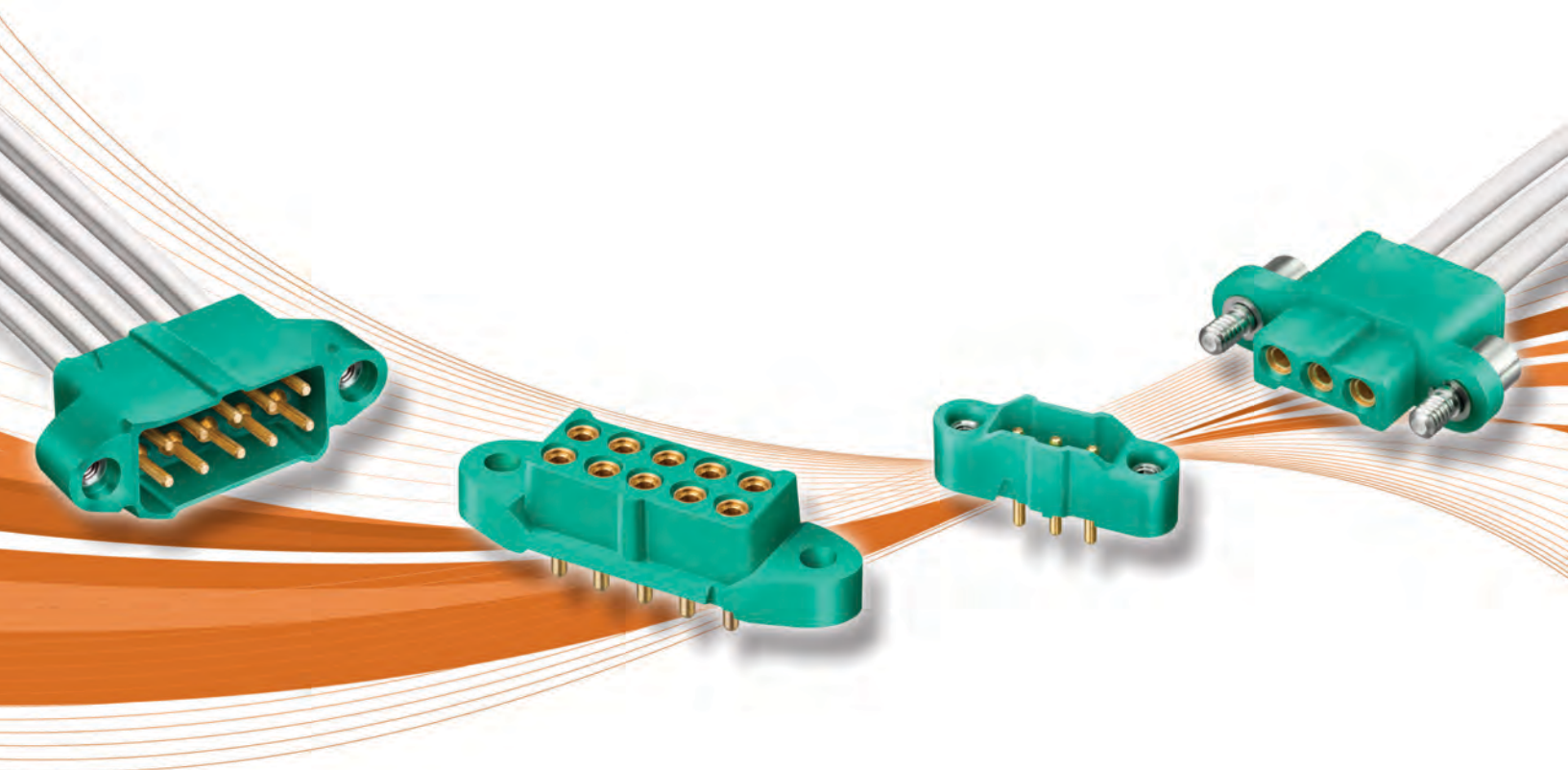
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# M300 Connectors Introduction

M300 Series is a 3.00mm pitch High-Reliability, high performance connector range from Harwin. Building on the Datamate series design, these connectors increase the power-handling capacity in a larger contact size, while maintaining compactness and weight saving features.

The M300 series provides a robust mid-range power connector range for board-to-board, board-to-cable and cable-to-cable requirements. The compact form can carry up to 10A in a small space envelope, suited to aerospace, defense, industrial and other harsh environments. Stainless Steel jackscrews, replicated from both Datamate and Gecko, provide the vibration and shock resistance required in these applications. Housings are manufactured from Halogen-free and Red-Phosphorus-free glass-filled thermoplastic and all connectors are fully RoHS compliant.

- ❖ Up to 5A or up to 10A current ratings (dependent on cable size choice)
- ❖ Increased durability of 1,000 mating operations (minimum)
- ❖ Improved heat resistance: withstands -65°C to +175°C operating temperature
- ❖ Recessed contact design to help prevent damage in blind-mating conditions
- ❖ Ready-made cable assemblies manufactured in-house by experienced Harwin personnel
- ❖ Strong stainless steel jackscrews for maximum strain relief



# M300 Connectors Product Features

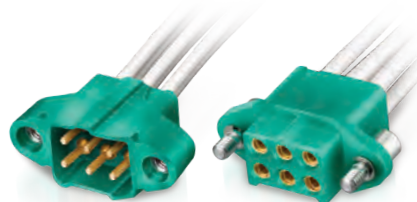
## Four Finger Beryllium Copper Contact

Proven high-reliability contact design ensures signal integrity under extremes of bump, vibration and shock. Durable to over 1,000 mating cycles.



## Keyway Polarization Points

3 polarizing points on each component prevent mis-mating.



## No. 1 Position identified

Housings are clearly marked with identifier for fast visual inspection.



## Rugged Construction

For use in harsh environments where high vibration, shock and temperature are a consideration.



## Pre-assembled Cable Configurations

Cable connectors supplied in ready-made cable assemblies. Single-ended configurations available in standard lengths off-the-shelf, or custom assemblies on request.



## Potting Wall

Cable connectors feature a rear potting wall adding an extra level of strain relief.



## Minimal Outgassing

Low outgassing properties from future-proofed plastic; within NASA and ESA recommendations.



## Comprehensive Operating Temperature

Performance is maintained across the full operating temperature range of -65°C to +175°C.



# M300 Connectors Specifications

M300

## Materials

|                     |   |
|---------------------|---|
| Housings:           | Glass Filled Thermoplastic UL94V-0            |
| Female contacts:    | Beryllium Copper Contact Clip,<br>Brass Shell |
| Male contacts:      | Brass   |
| Contact finish      | Gold  |
| Male contacts:      | Brass   |
| JackscREW hardware: | Stainless Steel                               |

## Electrical

|   |                           |
|---|---------------------------|
| <b>Current</b>                                |                           |
| All contacts simultaneously with 18 AWG wire: | 10A max (30°C temp. rise) |
| All contacts simultaneously with 22 AWG wire: | 5A max (30°C temp. rise)  |
| <b>Working voltage</b>                        |                           |
| (at sea level, 913/1050mb):                   | 600V min DC or AC peak    |
| (at altitude 21,336m/70,000ft, 44mb):         | 150V min DC or AC peak    |
| <b>Voltage proof</b>                          |                           |
| (at sea level, 913/1050mb):                   | 1800V max DC or AC peak   |
| (at altitude 21,336m/70,000ft, 44mb):         | 450V max DC or AC peak    |
| Contact resistance:                           | 6mΩ max                   |
| Insulation resistance:                        | 100MΩ min at 100V DC      |

## Mechanical

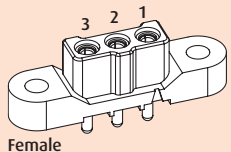
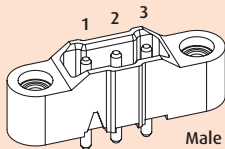
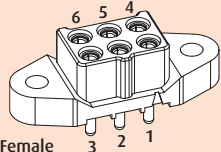
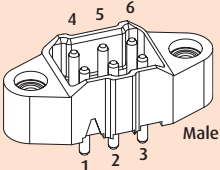
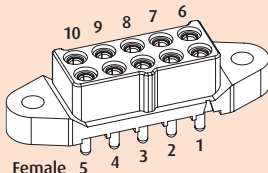
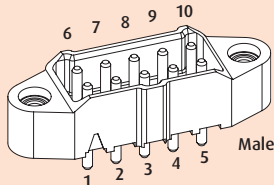
|   |   |
|---|---|
| Durability:                             | 1000 operations   |
| <b>Mating forces (per contact pair)</b> |   |
| Insertion force:                        | 9N max  |
| Withdrawal force:                       | 1N min  |
| <b>Contact retention in housing</b>     |   |
| Cable contact:                          | 15N min   |
| PC-Tail contact:                        | 5N min  |
| Signal crimp accommodation:             | 18 AWG to 22 AWG<br>BS 3G 210 Type A, MIL-16878E Type E |

## Environmental

|                               |   |
|-------------------------------|---|
| Environmental Classification: | 65/175/56 days at 90%RH                                       |
| Operating temperature:        | -65°C to +175°C   |
| Vibration sensitivity:        | 10Hz to 2000Hz, 1.52mm, 196.1m/s <sup>2</sup> (20G), 12 hours |
| Bump severity:                | 390m/s <sup>2</sup> (40G), 4000 bumps                         |
| Shock severity:               | 981m/s <sup>2</sup> (100G), 6ms                               |
| Acceleration severity:        | 490m/s <sup>2</sup> (50G)                                     |

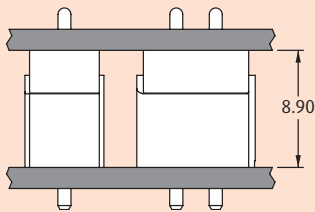
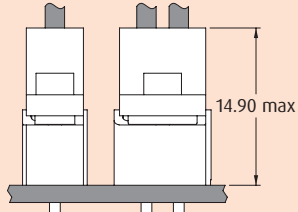
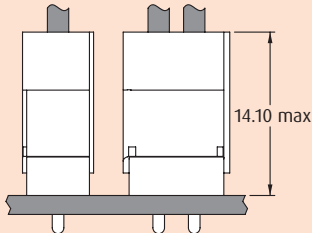
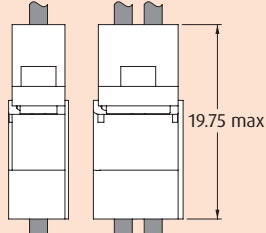


# M300 Connectors Pin Numbering

| SINGLE ROW  | DOUBLE ROW  |
|---|---|
|  <p>Female</p>  <p>Male</p> |  <p>Female</p>  <p>Male</p>  <p>Female</p>  <p>Male</p> |

M300

## M300 Connectors Mating Profiles

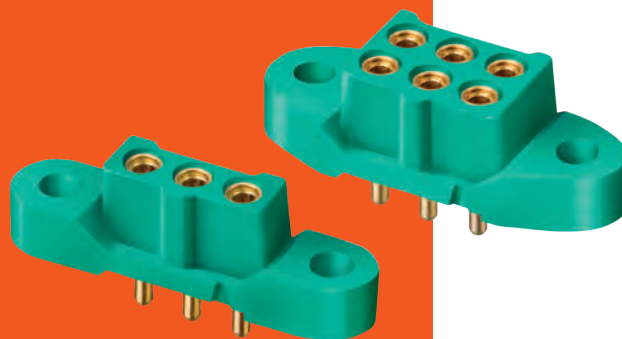
|      |                       | FEMALE  |   |
|------|-----------------------|---|---|
|      |                       | VERTICAL THROUGHBOARD   | CABLE   |
| MALE | VERTICAL THROUGHBOARD |  |  |
|      | CABLE                 |  |  |

All dimensions in mm.

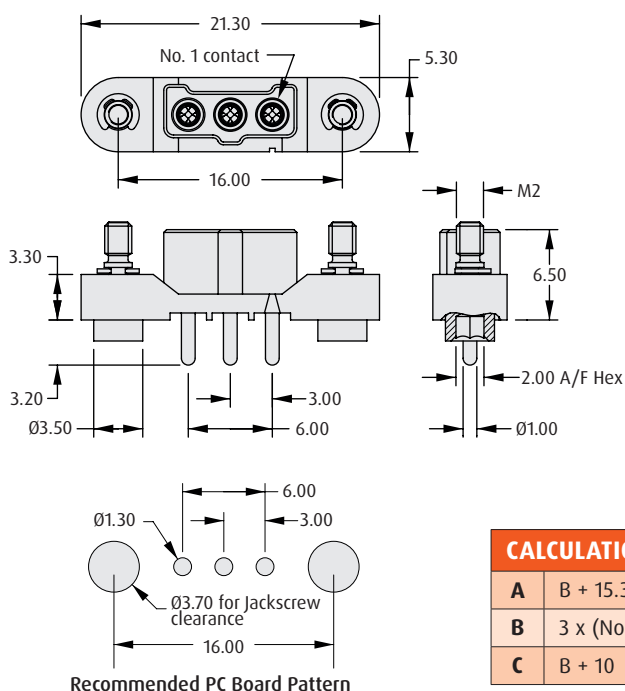
# M300 Connectors

## Female Throughboard

- ❖ 4-finger Beryllium Copper contact.
- ❖ Positive keyway polarization features.
- ❖ 10A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +175°C.
- ❖ Scoop-proof contacts.
- ❖ No. 1 position ident on housing.



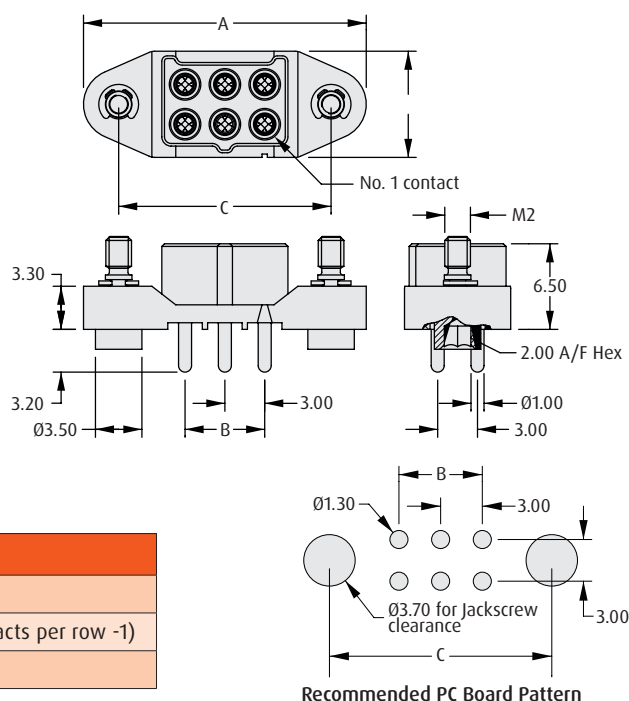
### SINGLE ROW



#### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 15.3$                                      |
| <b>B</b> | $3 \times (\text{No. of contacts per row} - 1)$ |
| <b>C</b> | $B + 10$  |

### DOUBLE ROW



### HOW TO ORDER

**M300 - F VX XX 45 XX**

#### SERIES CODE

#### GENDER

**F** Female

#### TYPE

|           |            |
|-----------|------------|
| <b>V1</b> | Single Row |
| <b>V3</b> | Double Row |

#### TYPE

|           |                      |
|-----------|----------------------|
| <b>00</b> | No Jackscrew         |
| <b>F2</b> | Hex Socket Jackscrew |

#### FINISH

**45** Gold

#### TOTAL NO. OF CONTACTS

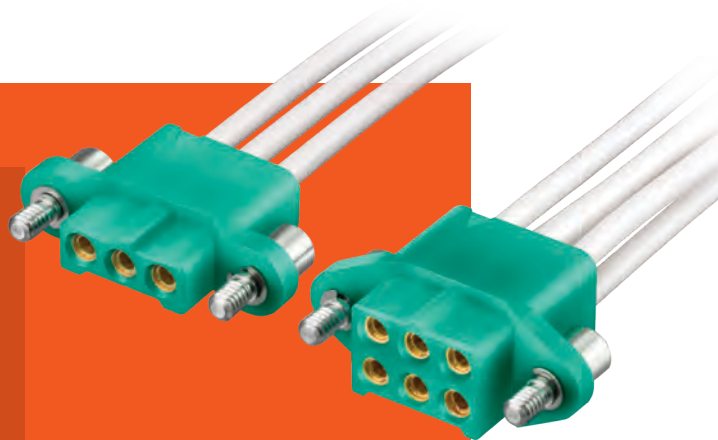
|               |            |
|---------------|------------|
| <b>03</b>     | Single Row |
| <b>06, 10</b> | Double Row |

All dimensions in mm.

# M300 Connectors

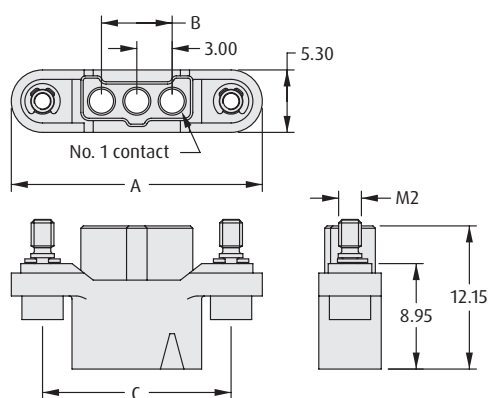
## Female Cable Connector Housings

- ❖ 3 polarizing points on each housing to prevent mis-mating.
- ❖ Features potting wall for extra security.
- ❖ No. 1 position identified on housing.
- ❖ Scoop-proof contacts.
- ❖ 10A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +175°C.

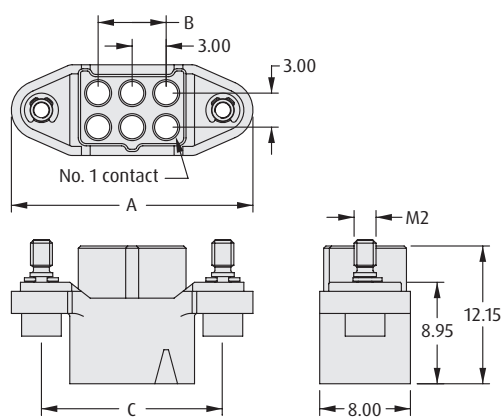


M300

### SINGLE ROW



### DOUBLE ROW



#### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 15.3$                                      |
| <b>B</b> | $3 \times (\text{No. of contacts per row} - 1)$ |
| <b>C</b> | $B + 10$  |

### TOOLS

**Recommended Crimp Tool** - M22520/2-01  
**Positioner** - Z80-058  
**Contact Insertion/Removal Tool** - Z300-902

- ❖ Female contacts shown on following pages.
- ❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### HOW TO ORDER

**M300 - 22X XX 96 F2**

#### SERIES CODE

#### TYPE

|            |            |
|------------|------------|
| <b>224</b> | Double Row |
| <b>225</b> | Single Row |

#### TOTAL NO. OF CONTACTS

|               |            |
|---------------|------------|
| <b>03</b>     | Single Row |
| <b>06, 10</b> | Double Row |

#### FIXING

|           |                      |
|-----------|----------------------|
| <b>F2</b> | Hex Socket Jackscrew |
|-----------|----------------------|

#### FINISH

|           |         |
|-----------|---------|
| <b>96</b> | Housing |
|-----------|---------|

All dimensions in mm.

# M300 Connectors

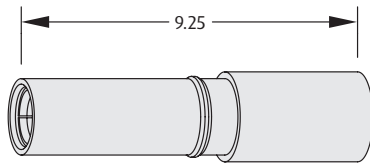
## Female Cable Connector Contacts

- ❖ 4-finger Beryllium Copper contact.
- ❖ Crimp barrel meets all crimp guidelines and standards.
- ❖ 10A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +175°C.

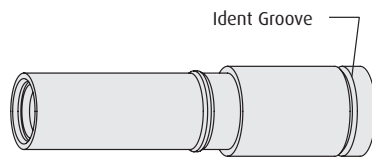


### CONTACTS

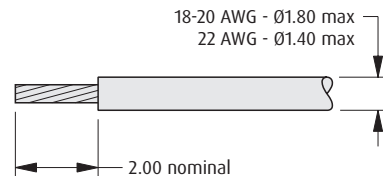
#### 18-20 AWG



#### 22 AWG



### WIRE STRIPPING DETAILS



### TOOLS

**Recommended Crimp Tool** – M22520/2-01  
**Positioner** – Z80-058  
**Contact Insertion/Removal Tool** – Z300-902

- ❖ Female crimp housings shown on previous page.
- ❖ Full cable assemblies shown on following page.
- ❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### HOW TO ORDER

**M300 - 00X 00 45**

#### SERIES CODE

#### TYPE

|            |                         |
|------------|-------------------------|
| <b>001</b> | 18-20 AWG crimp contact |
| <b>002</b> | 22 AWG crimp contact    |

#### FINISH

**45** Gold

All dimensions in mm.

# M300 Connectors

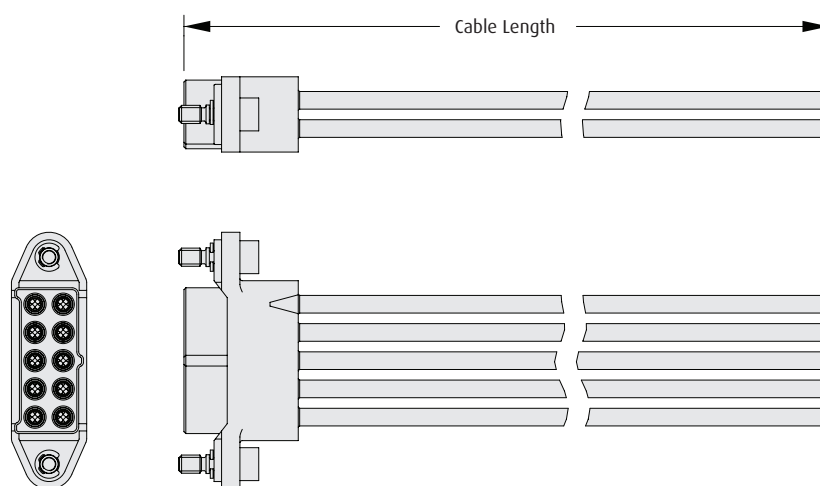
## Female Cable Assemblies

- Ready-made cable assemblies, fully tested and inspected.
- No. 1 position identified on housing.
- 10A current capacity, resists high vibration and shock.
- Back potted for added strain relief.
- White cables with PTFE insulation.



M300

### FEMALE



### HOW TO ORDER

**M300 - F C X XX 05 F2 - XXXX L**

#### SERIES CODE

#### GENDER - FIRST END

**F** Female

#### CABLE SIZE

|          |                        |
|----------|------------------------|
| <b>1</b> | 18 AWG, for Double Row |
| <b>2</b> | 20 AWG, for Double Row |
| <b>3</b> | 22 AWG, for Double Row |
| <b>5</b> | 18 AWG, for Single Row |
| <b>6</b> | 20 AWG, for Single Row |
| <b>7</b> | 22 AWG, for Single Row |

#### TERMINATION - SECOND END

**L** Loose cut end

#### CABLE LENGTH

|             |        |
|-------------|--------|
| <b>0150</b> | 150mm  |
| <b>0300</b> | 300mm  |
| <b>0450</b> | 450mm  |
| <b>XXXX</b> | XXXXmm |

#### FIXING

**F2** Hex Socket Jackscrew

#### TOTAL NO. OF CONTACTS

|               |            |
|---------------|------------|
| <b>03</b>     | Single Row |
| <b>06, 10</b> | Double Row |

All dimensions in mm.

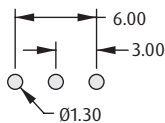
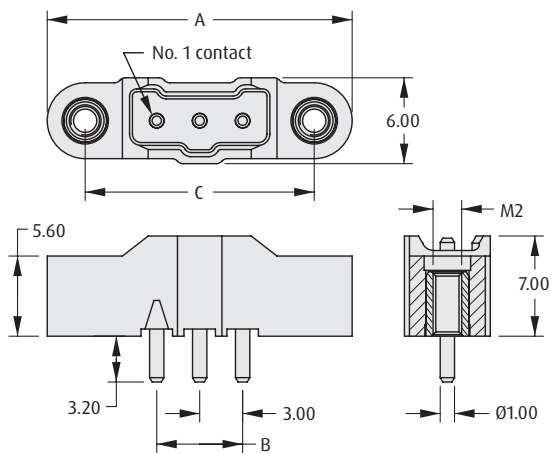
# M300 Connectors

## Male Throughboard

- 10A current capacity, resists high vibration and shock.
- Withstands extremes of temperature: -65°C to +175°C.



### SINGLE ROW

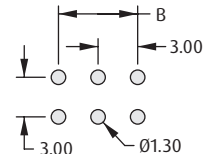
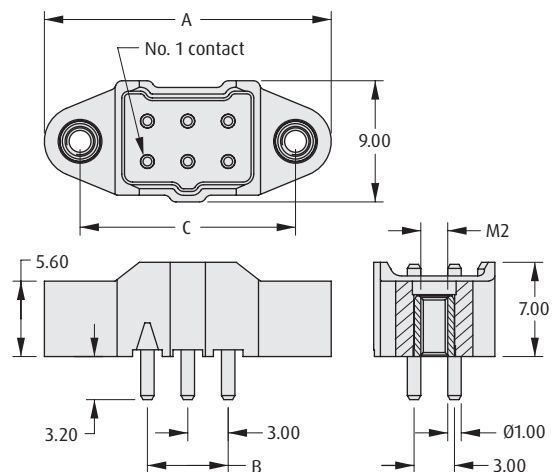


Recommended PC Board Pattern

#### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 15.3$                                      |
| <b>B</b> | $3 \times (\text{No. of contacts per row} - 1)$ |
| <b>C</b> | $B + 10$  |

### DOUBLE ROW



Recommended PC Board Pattern

### HOW TO ORDER

**M300 - M VX XX 45 M1**

#### SERIES CODE

#### GENDER

**M** Male

#### TYPE

**V1** Single Row  
**V3** Double Row

#### TYPE

**M1** Jackscrew

#### FINISH

**45** Gold

#### TOTAL NO. OF CONTACTS

**03** Single Row  
**06, 10** Double Row

All dimensions in mm.

# M300 Connectors

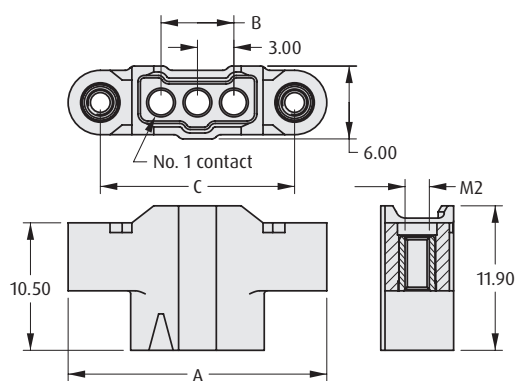
## Male Cable Connector Housings

- ❖ Features potting wall for extra security.
- ❖ No. 1 position identified on housing.
- ❖ 3 polarizing points on each housing to prevent mis-mating.
- ❖ 10A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +175°C.

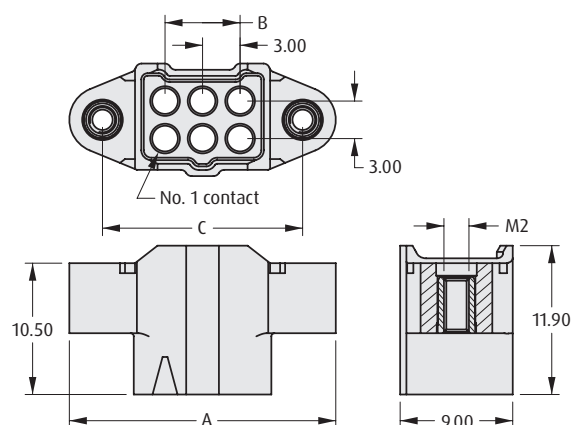


M300

### SINGLE ROW



### DOUBLE ROW



#### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 15.3$                                      |
| <b>B</b> | $3 \times (\text{No. of contacts per row} - 1)$ |
| <b>C</b> | $B + 10$  |

### TOOLS

**Recommended Crimp Tool** – M22520/2-01  
**Positioner** – Z80-058  
**Contact Insertion/Removal Tool** – Z300-902

- ❖ Male contacts shown on following pages.
- ❖ Instruction sheets available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### HOW TO ORDER

**M300 - 32X XX 96 M1**

#### SERIES CODE

#### TYPE

|            |            |
|------------|------------|
| <b>324</b> | Double Row |
| <b>325</b> | Single Row |

#### TOTAL NO. OF CONTACTS

|               |            |
|---------------|------------|
| <b>03</b>     | Single Row |
| <b>06, 10</b> | Double Row |

#### TYPE

|           |           |
|-----------|-----------|
| <b>M1</b> | JackscREW |
|-----------|-----------|

#### FINISH

|           |         |
|-----------|---------|
| <b>96</b> | Housing |
|-----------|---------|

All dimensions in mm.

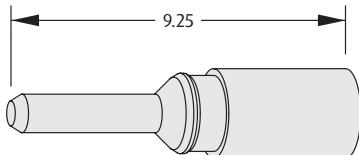
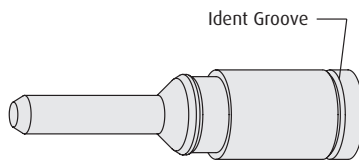
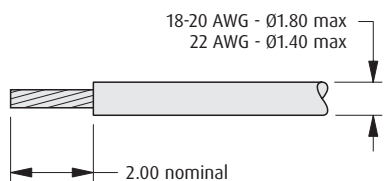
# M300 Connectors

M300

## Male Cable Connector Contacts

- ❖ Crimp barrel meets all crimp guidelines and standards.
- ❖ 10A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +175°C.



| CONTACTS   |                         | WIRE STRIPPING DETAILS  |                         |     |                      |  |  |
|--|-------------------------|---|-------------------------|-----|----------------------|--|--|
| <div>18-20 AWG</div>  <div>22 AWG</div>  |                         |    |                         |     |                      |  |  |
| TOOLS  |                         |   |                         |     |                      |  |  |
| <div>Recommended Crimp Tool – M22520/2-01</div> <div>Positioner – Z80-058</div> <div>Contact Insertion/Removal Tool – Z300-902</div>   |                         | <div>❖ Male crimp housings shown on previous page.</div> <div>❖ Full cable assemblies shown on following page.</div> <div>❖ Instruction sheets available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</div> |                         |     |                      |  |  |
| HOW TO ORDER   |                         |   |                         |     |                      |  |  |
| <div>M300 - 10X 00 45</div>  |                         |   |                         |     |                      |  |  |
| <div>SERIES CODE</div>   |                         | <div>FINISH</div> <div>45Gold</div>   |                         |     |                      |  |  |
| <div>TYPE</div> <table><tr><td>101</td><td>18-20 AWG crimp contact</td></tr><tr><td>102</td><td>22 AWG crimp contact</td></tr></table>   |                         | 101   | 18-20 AWG crimp contact | 102 | 22 AWG crimp contact |  |  |
| 101  | 18-20 AWG crimp contact |   |                         |     |                      |  |  |
| 102  | 22 AWG crimp contact    |   |                         |     |                      |  |  |

All dimensions in mm.



# M300 Connectors

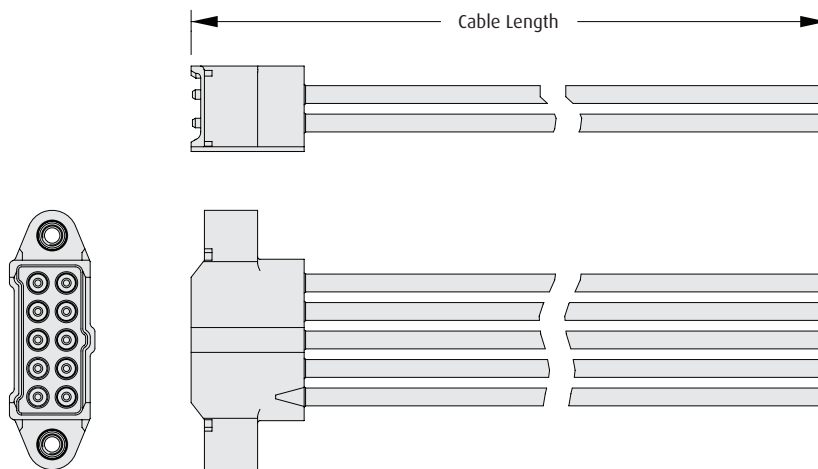
## Male Cable Assemblies

- ❖ Ready-made cable assemblies, fully tested and inspected.
- ❖ No. 1 position identified on housing.
- ❖ 10A current capacity, resists high vibration and shock.
- ❖ Back potted for added strain relief.
- ❖ White cables with PTFE insulation.



M300

### MALE



### HOW TO ORDER

**M300 - M C X XX 05 M1 - XXXX L**

#### SERIES CODE

#### GENDER - FIRST END

**M** Male

#### CABLE SIZE

|          |                        |
|----------|------------------------|
| <b>1</b> | 18 AWG, for Double Row |
| <b>2</b> | 20 AWG, for Double Row |
| <b>3</b> | 22 AWG, for Double Row |
| <b>5</b> | 18 AWG, for Single Row |
| <b>6</b> | 20 AWG, for Single Row |
| <b>7</b> | 22 AWG, for Single Row |

#### TERMINATION - SECOND END

**L** Loose cut end

#### CABLE LENGTH

|             |        |
|-------------|--------|
| <b>0150</b> | 150mm  |
| <b>0300</b> | 300mm  |
| <b>0450</b> | 450mm  |
| <b>XXXX</b> | XXXXmm |

#### FIXING

**M1** Jackscrew

#### TOTAL NO. OF CONTACTS

|               |            |
|---------------|------------|
| <b>03</b>     | Single Row |
| <b>06, 10</b> | Double Row |

All dimensions in mm.

# M300 Connectors Tooling

❖ Instruction sheets can be accessed at [www.harwin.com/instructions](http://www.harwin.com/instructions).

## HAND CRIMP TOOL

- ❖ Standard circular crimp tool BS5210-3A-300 and MIL specification M22520/2-01.
- ❖ Precision tool with ratchet mechanism and 8-indent form.
- ❖ Must be used together.
- ❖ Instruction sheet available.



### ORDER CODE

|                 |             |
|-----------------|-------------|
| Hand Crimp Tool | M22520/2-01 |
| Positioner      | Z80-058     |

## INSERTION/REMOVAL TOOL

- ❖ For inserting and removing crimped contacts into the rear of housings.
- ❖ Instruction sheet available.



### ORDER CODE

Z300-902

## HEX DRIVE BIT

- ❖ 2mm A/F Hex end for M300 Hex Socket jackscrews.
- ❖ For use with torque tooling or similar equipment.



### ORDER CODE

Z9951-00

## BALL HEX DRIVER

- ❖ 2mm A/F Hex end for M300 Hex Socket jackscrews.
- ❖ Ball-shaped end can be used at a wide range of angles.



### ORDER CODE

Z9953-00

All dimensions in mm.

# Kona

## Contents

|                         |     |
|-------------------------|-----|
| Introduction            | 192 |
| Specifications          | 194 |
| Mating Profiles         | 194 |
| Female Cable Connectors | 195 |
| Male PCB Connectors     | 197 |
| Tooling                 | 198 |

# Kona Connectors Introduction

KONA

Kona is a 8.50mm pitch High-Reliability, high performance connector range from Harwin. The largest connector with a rugged construction, providing the ultimate in power-handling capability and voltage flashover resistance. The compact design delivers savings on space and weight.

At 60A per contact, Kona supplies maximum power in cable-to-board for extreme environments. The rugged and resilient performance is suited for power delivery in aerospace and UAVs, industrial and energy applications. Stainless steel screw fixings assist with vibration and shock resistance, and single-piece Beryllium Copper contacts perform under a wide range of temperatures. All components are fully RoHS-compliant, and low outgassing with future-proofed thermoplastics ensure suitability for many applications on the ground and above it.

- ❖ Up to 60A per contact in a space-saving design - just 21.5mm height for cable-to-board
- ❖ Mating durability of 250 cycles, with easy-to-use screw-fixings that mate-before-lock
- ❖ High levels of heat resistance: -65° to +150°C operating temperature
- ❖ Individually shrouded contacts with polarized housings, avoiding damage from physical knocks and mis-mating
- ❖ Great for SWaP constraints - minimal design and lightweight mated connections
- ❖ Ongoing development program for future range expansion



# Kona Connectors Product Features

## Six Finger Beryllium Copper Contact

High-reliability contact design ensures electrical integrity under extremes of vibration and shock. Durable to 250 mating cycles.



## Individually Shrouded Scoop-proof Contacts

Each contact is protected from accidental touch and physical knocks from all directions, including onto the mating face.



## No. 1 Position Identified

Both cable and PCB mounted housings are clearly marked with an identifier for fast visual inspection.



## Comprehensive Operating Temperature

Performance maintained across the full operating temperature range of -65°C to +150°C. De-rating curves available.



## Stainless Steel Mate-Before-Lock Fixings

Rugged easy-to-use fixings between mated connectors, to assist with vibration & shock, and to prevent accidental disconnection. Simple to use - fully mate connectors, then engage screw fixing.



## Polarization Elements

Simple polarized housing designs, to prevent mis-mating the wrong way round.





# Kona Specification

## Materials

|           |                                    |
|-----------|------------------------------------|
| Housings: | Glass-filled thermoplastic UL94V-0 |
| Contacts: | Beryllium Copper                   |
| Finish:   | Gold (Nickel on Latching Collar)   |

## Electrical

|                        |                                 |
|------------------------|---------------------------------|
| Current:               | 60A max per contact             |
| Working voltage:       | 1,500V DC or AC <sub>peak</sub> |
| Voltage proof          |                                 |
| At sea level 1013mbar: | 3,000V AC for 1 minute          |
| At altitude 44mbar:    | 500V AC for 1 minute            |
| Contact resistance:    | 2mΩ max                         |
| Insulation resistance: | 10GΩ min at 1,000V              |

## Mechanical

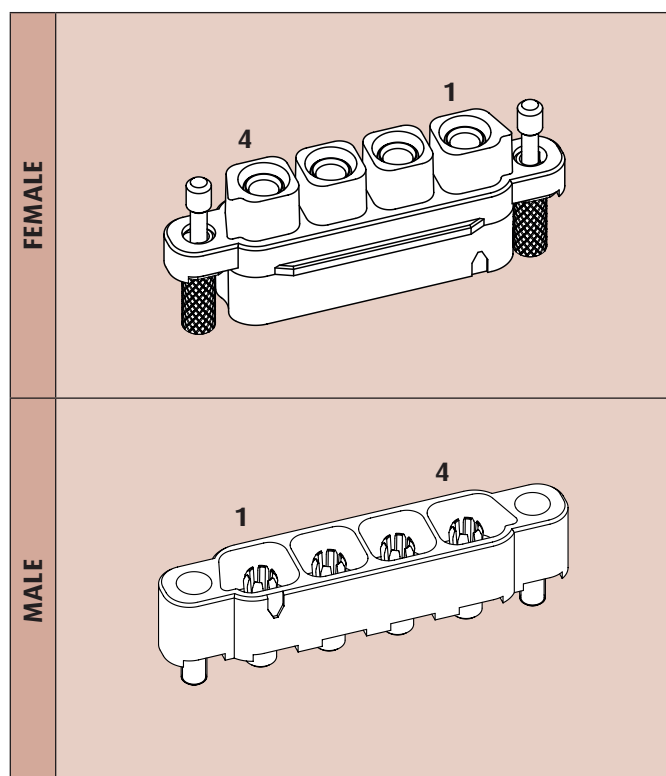
|                         |                  |
|-------------------------|------------------|
| Durability:             | 250 operations   |
| Insertion force (max):  | 0.8N per contact |
| Initial:                | 50N per contact  |
| After conditioning:     | 70N per contact  |
| Withdrawal force (min): | 5N per contact   |

## Environmental

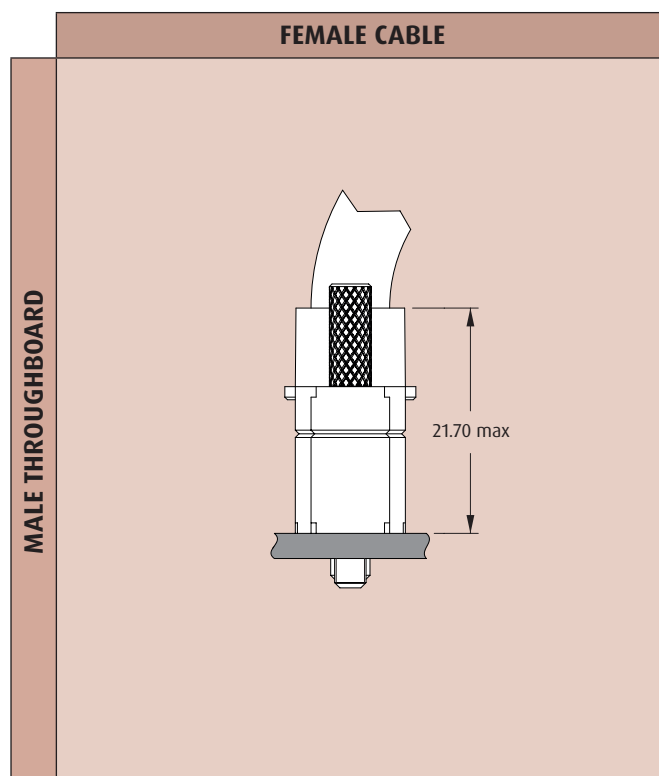
|                          |  |
|--------------------------|--|
| Operational temperature: | -65°C to +150°C  |
| *Vibration sensitivity:  | 10Hz to 2000Hz, 1.52mm, 196m/s <sup>2</sup> (20G), duration 12 hours |
| *Shock sensitivity:      | 981m/s <sup>2</sup> (100G) for 6ms                                   |

\*Tested with connectors with screw-locks

## Pin Numbering



## Mating Profiles



# Kona Connectors

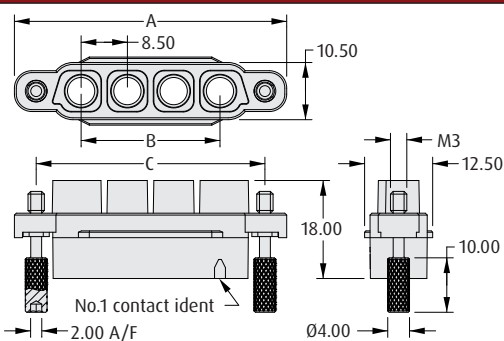
## Female Cable Connector Housings

- ❑ All contact locations are individually shrouded.
- ❑ No. 1 position identified on housing.
- ❑ Scoop-proof contacts.
- ❑ Stainless steel screw fixing to mate with applicable male connector.



KONA

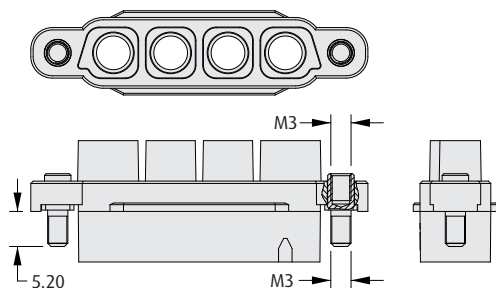
### FLOATING THUMBSCREW WITH HEX SOCKET



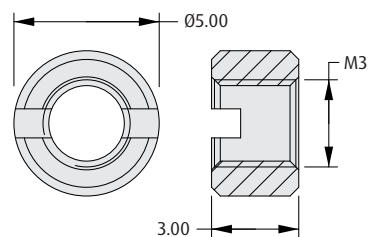
#### CALCULATION

|   |   |
|---|---|
| A | $B + 24.5$                                |
| B | $8.5 \times (\text{No. of contacts} - 1)$ |
| C | $B + 16.5$                                |

### REVERSE FIX WITH PANEL MOUNT



### PANEL MOUNT NUT



#### ORDER CODE

KA1-4240000

### TOOLS

Contact Removal Tool - ZA1-9040000

- ❑ Female contact shown on following page.
- ❑ Instruction sheet available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

### HOW TO ORDER

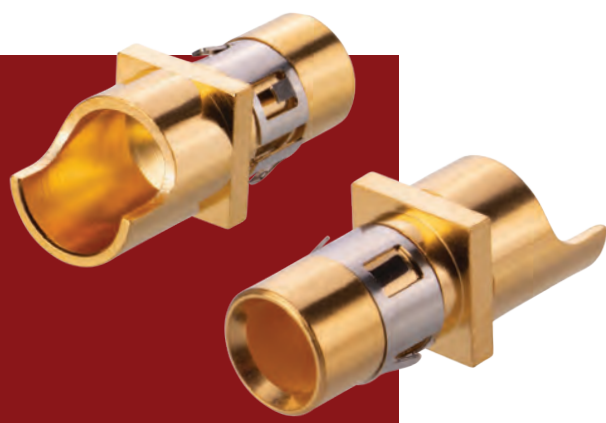
|                              |  |            |   |     |    |    |    |
|------------------------------|--|------------|---|-----|----|----|----|
| <b>SERIES CODE</b>           |  | KA1        | -                                       | 201 | XX | 98 | FX |
| <b>TYPE</b>                  |  | 201        | Female Housing                          |     |    |    |    |
| <b>TOTAL NO. OF CONTACTS</b> |  | 02, 03, 04 |   |     |    |    |    |
| <b>FIXING</b>                |  | F1         | Floating Thumbscrew with Hex Socket     |     |    |    |    |
|                              |  | F2         | Reverse Fix with 5.2mm Panel Mount stud |     |    |    |    |

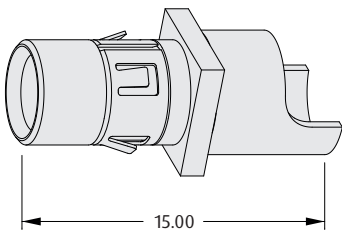
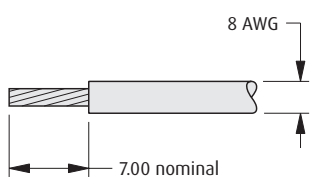
All dimensions in mm.

# Kona Connectors

## Female Cable Connector Contacts

- ❖ Beryllium Copper contact with retention collar.
- ❖ Solder cup accepts 8 AWG cable.



| CONTACT  |  | WIRE STRIPPING DETAILS  |  |
|--|--|---|--|
|   |  |   |  |
| TOOLS  |  |   |  |
| Contact Removal Tool – ZA1-9040000   |  | <div><div></div>Female cable housing shown on previous page.</div> <div><div></div>Instruction sheet available at <a href="http://www.harwin.com/instructions">www.harwin.com/instructions</a>.</div> |  |
| HOW TO ORDER   |  |   |  |
| <div><div>KA1 - 040 00 05</div><div><div>SERIES CODE</div><div>TYPE</div><div>040 8 AWG solder contact</div></div></div> |  | <div><div>FINISH</div><div>05 Gold</div></div>  |  |

All dimensions in mm.



# Kona Connectors

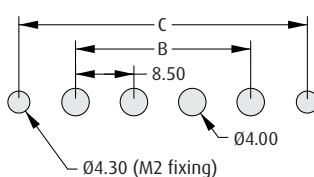
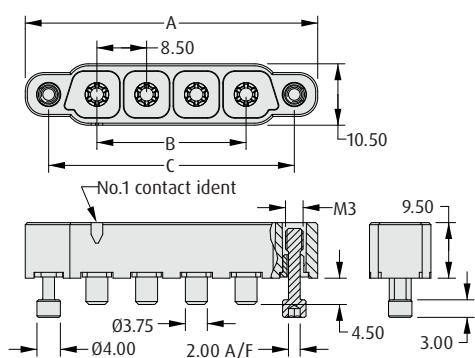
## Male Vertical Throughboard

- ❑ All contact locations are individually shrouded.
- ❑ No. 1 position identified on housing.
- ❑ Scoop-proof contacts.
- ❑ Stainless steel screw fixing to mate with applicable female connector.
- ❑ Supplied in tubes with pick and place caps.
- ❑ Order nuts for board mount separately.



KONA

### FLOATING HEX SOCKET - REVERSE FIX

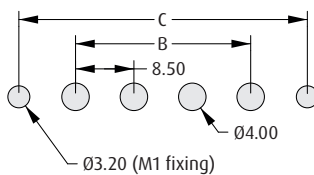
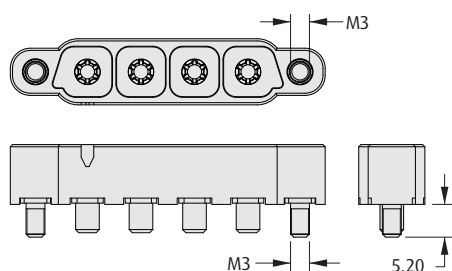


Recommended PCB Board Pattern

#### CALCULATION

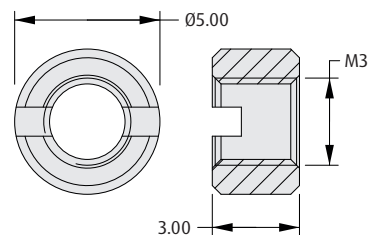
|   |   |
|---|---|
| A | $B + 24.5$                                |
| B | $8.5 \times (\text{No. of contacts} - 1)$ |
| C | $B + 16.5$                                |

### WITH BOARD MOUNT STUD



Recommended PCB Board Pattern

### BOARD MOUNT NUT



#### ORDER CODE

KA1-4240000

### HOW TO ORDER

**KA1 - M V1 XX 05 MX**

#### SERIES CODE

#### TYPE

**M** Male

#### TYPE

**V1** Vertical

#### TOTAL NO. OF CONTACTS

**02, 03, 04**

#### FIXING

|           |                                   |
|-----------|-----------------------------------|
| <b>M1</b> | With 5.2mm Board Mount stud       |
| <b>M2</b> | Floating Hex Socket (reverse fix) |

#### FINISH

**05** Gold

All dimensions in mm.

# Kona Connectors Tooling

❖ Instruction sheets can be accessed at [www.harwin.com/instructions](http://www.harwin.com/instructions).

## CONTACT REMOVAL TOOL

- ❖ For removal of cable contacts from housing.
- ❖ Instruction sheet available.



### ORDER CODE

ZA1-9040000

## SLOTTED SCREWDRIVER

- ❖ Nuts for panel mount or board mount to be tightened to a torque of 22 to 25cmN.



### ORDER CODE

ZA1-9020000

## HEX DRIVE BIT

- ❖ 2mm A/F Hex end for Kona Hex Socket screw-locks.
- ❖ For use with torque tooling or similar equipment.



### ORDER CODE

Z9951-00

## BALL HEX DRIVER

- ❖ 2mm A/F Hex end for Kona Hex Socket screw-locks.
- ❖ Ball-shaped end can be used at a wide range of angles.



### ORDER CODE

Z9953-00

All dimensions in mm.

# Durable Industrial Connectors

## Contents

|  |     |
|--|-----|
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| Archer Kontrol: 1.27mm pitch Connectors      |     |
| Specifications                               | 202 |
| Mating Profiles                              | 203 |
| Female PCB Connectors                        | 204 |
| Female Cable Assemblies                      | 206 |
| Male PCB Connectors                          | 207 |
| M225 Series: 2.00mm pitch Connectors         |     |
| Specifications                               | 209 |
| Mating Profiles                              | 209 |
| Female Cable Connectors                      | 210 |
| Male PCB Connectors                          | 212 |
| Circular Connectors: MIL-DTL-5015 equivalent |     |
| Introduction                                 | 213 |
| Specifications                               | 215 |
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# Rectangular Connectors Introduction

**Durable, rugged double-row high performance connection systems, designed to meet the tough challenges of industrial application environments and cost requirements.**

These rectangular connectors are supplied in a choice of contact pitches - 1.27mm pitch for board-to-board & cable-to-board (Archer Kontrol), or 2mm pitch for cable-to-board (M225 Series). Shrouded and polarized connector bodies help withstand lateral and twisting forces, and protect unmated connector contacts.

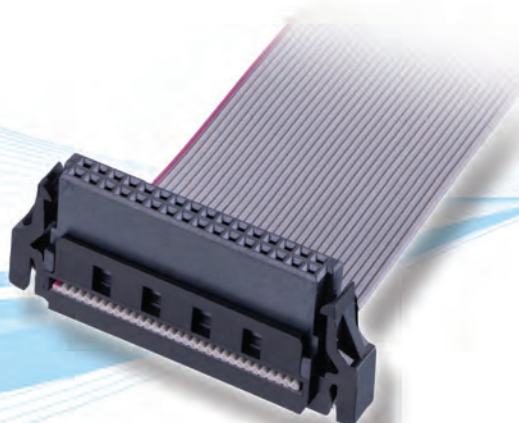
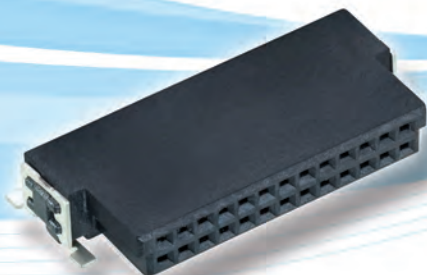
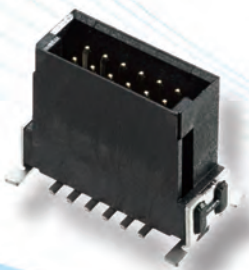
- ❖ Increased operating temperature range: -55°C to +125°C
- ❖ Stocked in depth across Harwin's authorized distributor network

**Durable Industrial Rectangular Connectors provide an excellent connection system for a variety of demanding industrial environments.**

- ❖ Industrial: factory and mobile machinery, control panels and sub-systems, drives, robotics and other automation
- ❖ Instrumentation: test equipment and portable hand-held devices
- ❖ Site Control: remote control devices, ground and machinery monitoring
- ❖ IOT installations, dataloggers, trackside monitoring equipment, vehicle control systems

## Archer Kontrol

- ❖ Current rating of 1.2A per contact
- ❖ Vertical and Horizontal options in both male and female connectors - board-to-board connection for parallel/mezzanine with variable stacking heights, motherboard to daughterboard, or coplanar/edge-to-edge PCB layouts
- ❖ Ready-made IDC cable assemblies, double ended with latching female connectors



## M225 Connectors

- ❖ Current rating of 3A per signal contact (all electrically loaded; 3.3A per individual contact)
- ❖ Cable-to-board connection, with vertical PCB mounted male
- ❖ Female crimp contacts on continuous strip for automated crimping
- ❖ Simple locking mechanism - push fixing pin fully home to expand and lock the rubber collar into the male connector



# Rectangular Connectors Product Features

## Designed for Automated Manufacturing

All board-to-board (Archer Kontrol) connectors are supplied in tape and reel, all female cable contacts (M225 Series) are available on continuous feed strip.



## Rugged construction and polarization

Vibration resistant to 20G (Archer Kontrol) and 10G (M225 Series), suitable for operational temperatures from -55°C to +125°C, with significant polarization features to prevent mis-mating in daily use.



## Archer Kontrol - High speed data transmission

Data transmission rates of 3Gbit/s if the system is suitably designed, by analysis of insertion loss and near-end crosstalk (NEXT).



## Archer Kontrol - IDC connection for cable-to-board

Ready-made cable assemblies constructed with 30AWG ribbon cable, off-the-shelf for immediate availability. Latching features for added strain relief.



## Archer Kontrol - Wide choice of stacking heights

Variable stack heights for parallel / mezzanine PCB placement, from 8.00mm to 20.00mm. Right angle mother/daughterboard and co-planar orientations also possible.



## Archer Kontrol - PCB location and strain relief

Both vertical and horizontal connectors feature location pegs to assist with SMT board placement, and additional strain relief is provided with SMT hold-down tabs.



## M225 Series - Fast and easy locking system

Simple locking mechanism - push fixing pin fully home to expand and lock the rubber collar into the male connector.



## M225 Series - 3 points of contact

Improved signal integrity assurance with female Beryllium Copper contacts, giving vibration and shock resistance.



# Archer Kontrol Specification

## Materials

|                     |                                    |
|---------------------|------------------------------------|
| Housings:           | High Temperature Plastic UL94V-0   |
| Cable Cover:        | Nylon UL94V-0                      |
| Contacts:           | Phosphor Bronze                    |
| Retaining Strap:    | Brass                              |
| Cable Latch Spring: | Stainless Steel                    |
| Cable Insulation:   | PVC                                |
| Finish              |                                    |
| Contacts:           | Gold on contact area, Tin on tails |
| Retaining Strap:    | Tin                                |

## Electrical

|                       |                      |
|-----------------------|----------------------|
| Current               |                      |
| PCB Connectors:       | 1.2A max per contact |
| Cable Assemblies:     | 0.5A max per contact |
| Working voltage:      | 100V AC              |
| Voltage proof:        | 500V AC for 1 minute |
| Contact resistance    |                      |
| Initial:              | 25mΩ max             |
| After Conditioning:   | 35mΩ max             |
| Insulation resistance |                      |
| PCB Connectors:       | 10GΩ min             |
| Cable Assemblies:     | 1GΩ min              |
| Data Rate:            | Up to 3GBits/s       |

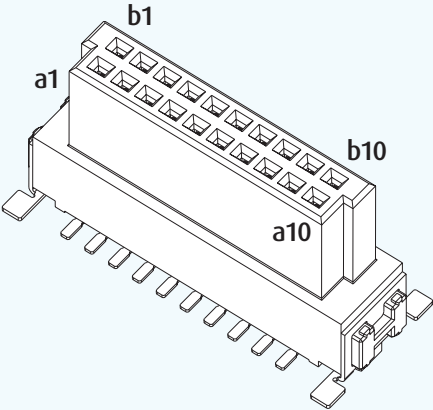
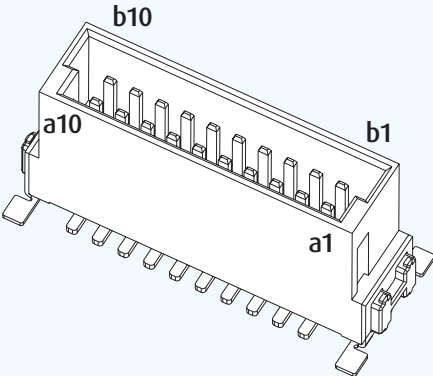
## Mechanical

|                         |                  |
|-------------------------|------------------|
| Durability:             | 500 operations   |
| Insertion force (max):  | 0.8N per contact |
| Withdrawal force (min): | 0.2N per contact |

## Environmental

|                            |   |
|----------------------------|---|
| Operating temperature      |   |
| PCB Connectors:            | -55°C to +125°C   |
| Cable Assemblies:          | -20°C to +105°C   |
| Vibration sensitivity:     | 10Hz to 2000Hz, 1.52mm, 196m/s <sup>2</sup> (20G), duration 12h |
| Solderability:             | 245°C for 5 seconds   |
| Soldering heat resistance: | 260°C for 10 seconds  |

## Pin Numbering

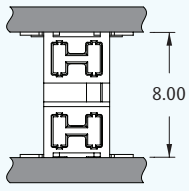
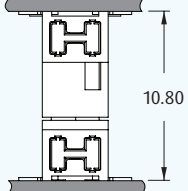
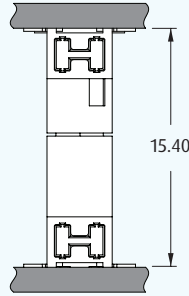
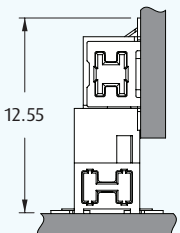
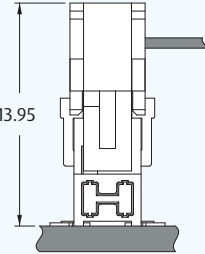
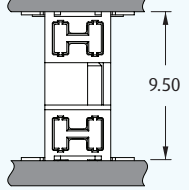
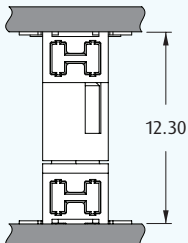
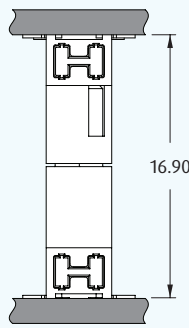
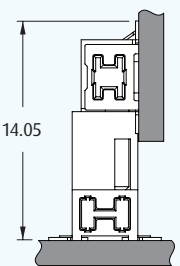
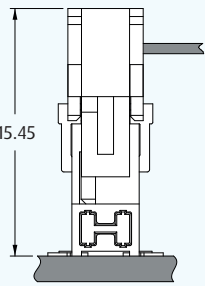
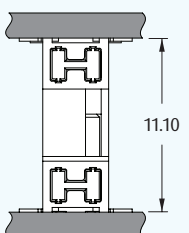
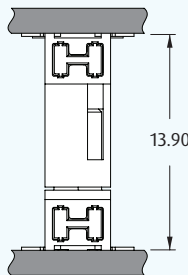
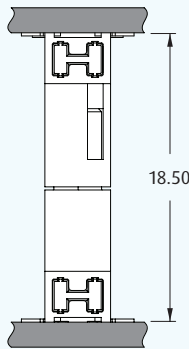
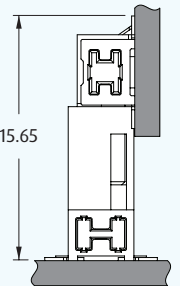
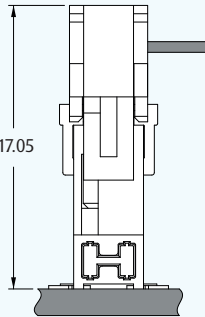
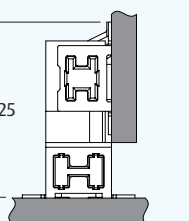
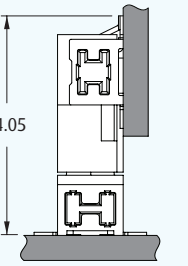
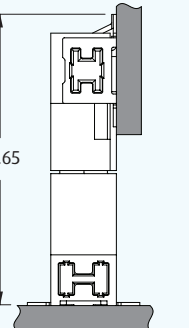
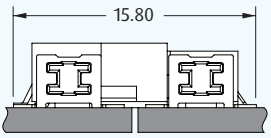
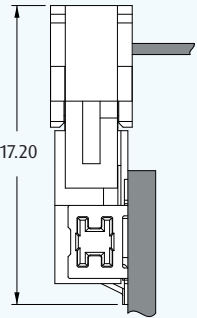
| FEMALE  | MALE   |
|---|--|
|  |  |

All dimensions in mm.



# Archer Kontrol Mating Profiles

- ❖ Mating heights shown in fully mated condition.
- ❖ Board-to-Board products can be used up to 1.5mm separated and still perform to the same specifications.

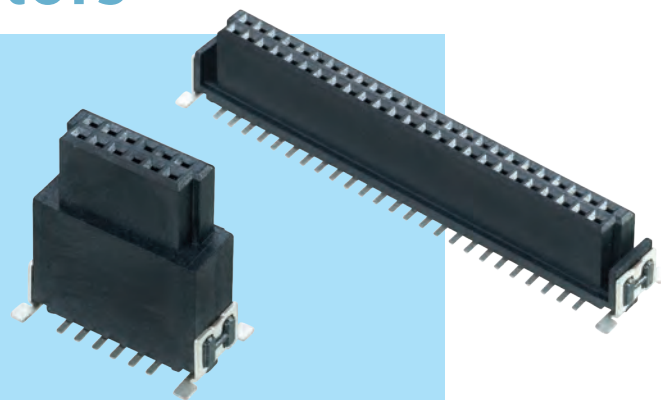
|      |                | FEMALE   |  |  |  |  |
|------|----------------|--|--|--|--|--|
|      |                | VERTICAL SMT   |  |  | HORIZONTAL SMT   | CABLE  |
|      |                | 6.25mm HEIGHT  | 9.05mm HEIGHT  | 13.65mm HEIGHT   |  |  |
| MALE | VERTICAL SMT   | <br>8.00    | <br>10.80   | <br>15.40   | <br>12.55   | <br>13.95   |
|      |                | <br>9.50   | <br>12.30  | <br>16.90  | <br>14.05  | <br>15.45  |
|      |                | <br>11.10 | <br>13.90 | <br>18.50 | <br>15.65 | <br>17.05 |
|      | HORIZONTAL SMT | <br>11.25 | <br>14.05 | <br>18.65 | <br>15.80  | <br>17.20 |

All dimensions in mm.

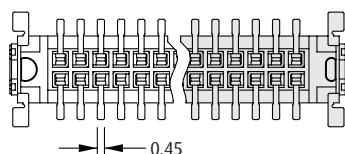
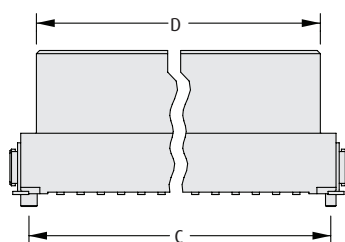
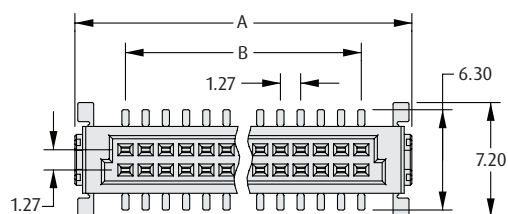
# Archer Kontrol Connectors

## Female Vertical Surface Mount

- ❖ Suitable for parallel board-to-board (mezzanine stacking) or motherboard-to-daughterboard configurations.
- ❖ Choice of three height options.
- ❖ Polarized and shrouded housing design.
- ❖ Location pegs and tape & reel packaging for automated assembly processes.

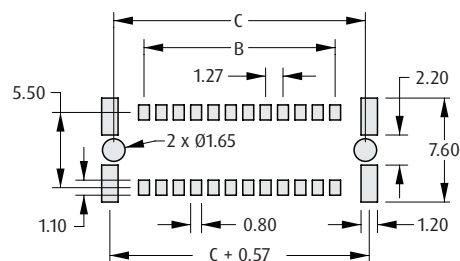


### VERTICAL



### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 6.35$  |
| <b>B</b> | $0.635 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 4.42$  |
| <b>D</b> | $B + 3.02$  |



Recommended PC Board Pattern

### HOW TO ORDER

**M55 - 60 X XX 42 R**

#### SERIES CODE

#### CONNECTOR HEIGHT

|          |             |
|----------|-------------|
| <b>0</b> | H = 6.25mm  |
| <b>1</b> | H = 9.05mm  |
| <b>2</b> | H = 13.65mm |

#### PACKAGING

**R** Tape & Reeled

#### FINISH

**42** Gold + Tin

#### TOTAL NO. OF CONTACTS

12, 16, 20, 26, 32, 40, 50, 68, 80

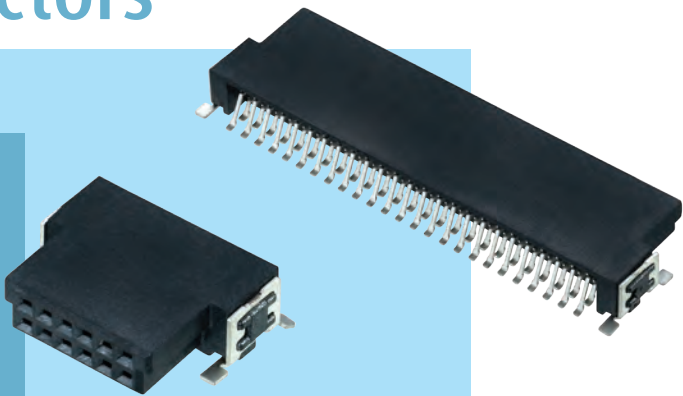
All dimensions in mm.



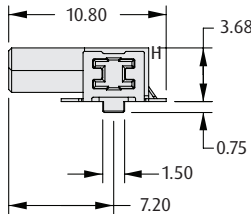
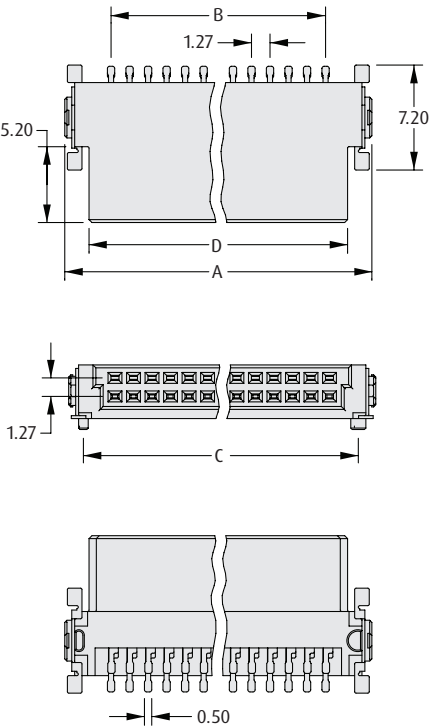
# Archer Kontrol Connectors

## Female Horizontal Surface Mount

- ❖ Suitable for coplanar (edge-to-edge) or motherboard-to-daughterboard configurations.
- ❖ Hold-down SMT retaining straps for additional retention to the board.
- ❖ Polarized and shrouded housing design.
- ❖ Location pegs and tape & reel packaging for automated assembly processes.

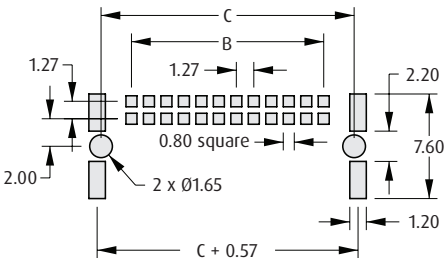


### HORIZONTAL



### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 6.35$  |
| <b>B</b> | $0.635 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 4.42$  |
| <b>D</b> | $B + 3.02$  |



Recommended PC Board Pattern

### HOW TO ORDER

**M55 - 610 XX 42 R**

**SERIES CODE**

**TOTAL NO. OF CONTACTS**

12, 16, 20, 26, 32, 40, 50, 68, 80

**PACKAGING**

**R** Tape & Reeled

**FINISH**

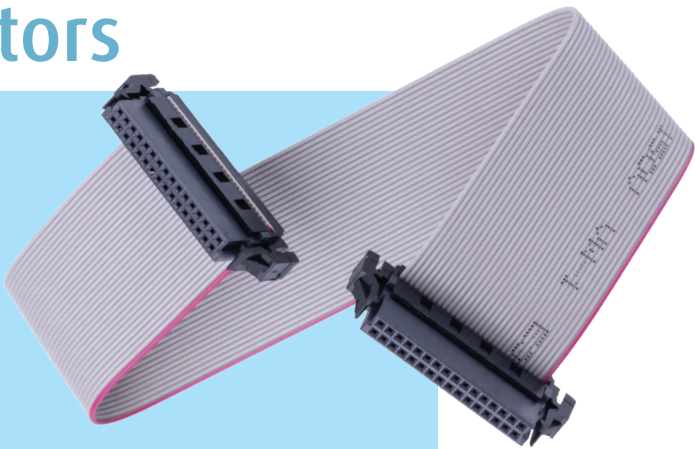
**42** Gold + Tin

All dimensions in mm.

# Archer Kontrol Connectors

## Female Cable Assemblies

- Ready-made cable assemblies with female IDC connectors on both ends.
- Fitted with 30AWG ribbon cable to UL2678.
- Contact a1 is attached to a1, contact b1 attached to b1, etc.
- Compatible with all male Archer Kontrol connectors.
- For additional cable lengths, please consult our Experts at [www.harwin.com/contact](http://www.harwin.com/contact).



FEMALE-FEMALE DOUBLE ENDED

| CALCULATION |   |
|-------------|---|
| A           | $B + 9.65$  |
| B           | $0.635 \times (\text{Total No. of contacts} - 2)$ |
| D           | $B + 3$   |

HOW TO ORDER

M55

-

800

XX

42

-

XXXX

-

A

SERIES CODE

TOTAL NO. OF CONTACTS

12, 16, 20, 26, 32, 40, 50, 68, 80

CABLE LENGTH

|      |       |
|------|-------|
| 0150 | 150mm |
| 0300 | 300mm |

FINISH

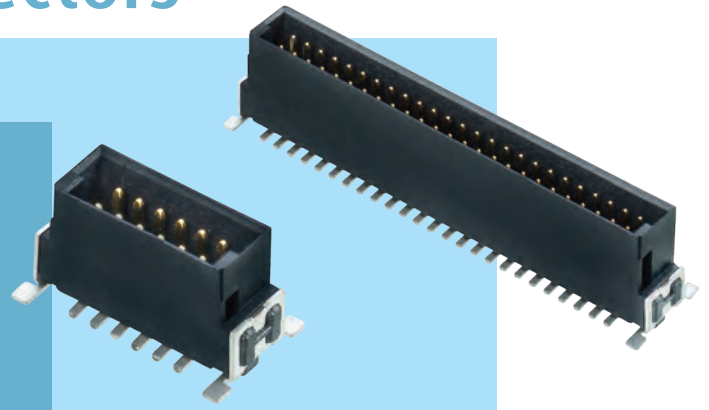
|    |            |
|----|------------|
| 42 | Gold + Tin |
|----|------------|

All dimensions in mm.

# Archer Kontrol Connectors

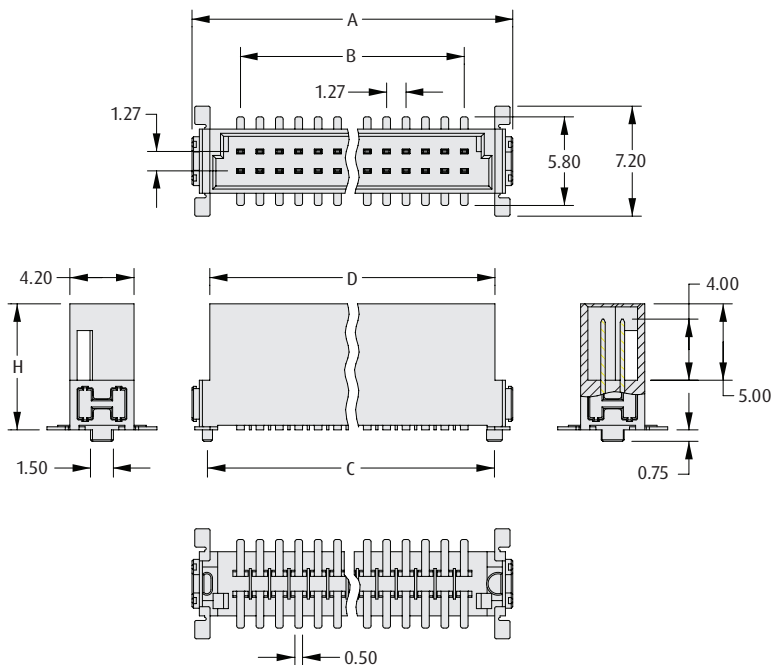
## Male Vertical Surface Mount

- ❖ Suitable for parallel board-to-board (mezzanine stacking) or motherboard-to-daughterboard configurations.
- ❖ Choice of three height options.
- ❖ Polarized and shrouded housing design.
- ❖ Location pegs and tape & reel packaging for automated assembly processes.



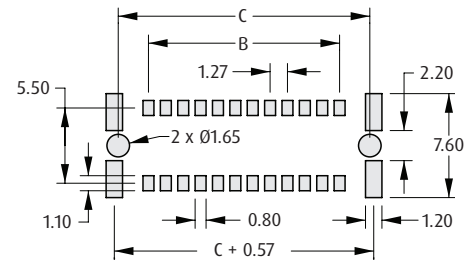
ARCHER KONTROL

### VERTICAL



### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 6.35$  |
| <b>B</b> | $0.635 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 4.42$  |
| <b>D</b> | $B + 4.02$  |



Recommended PC Board Pattern

### HOW TO ORDER

**M55 - 70 X XX 42 R**

#### SERIES CODE

#### CONNECTOR HEIGHT

|          |            |
|----------|------------|
| <b>0</b> | H = 6.75mm |
| <b>1</b> | H = 8.25mm |
| <b>2</b> | H = 9.85mm |

#### PACKAGING

|          |               |
|----------|---------------|
| <b>R</b> | Tape & Reeled |
|----------|---------------|

#### FINISH

|           |            |
|-----------|------------|
| <b>42</b> | Gold + Tin |
|-----------|------------|

#### TOTAL NO. OF CONTACTS

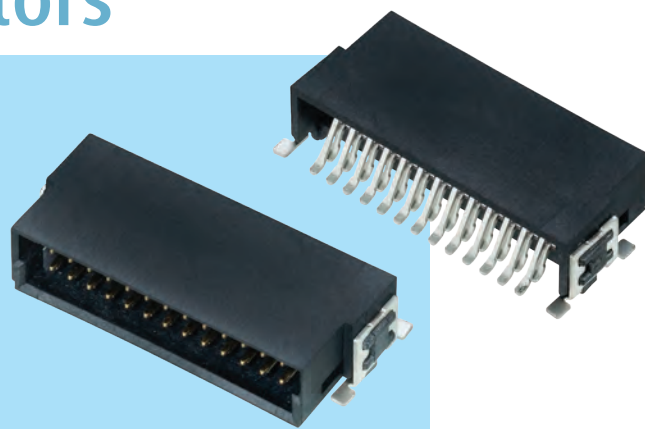
12, 16, 20, 26, 32, 40, 50, 68, 80

All dimensions in mm.

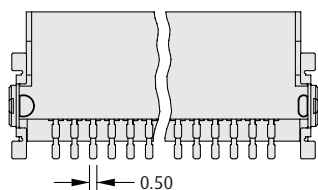
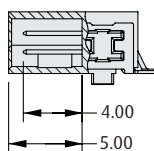
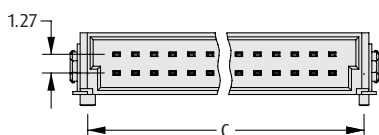
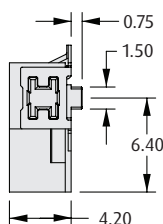
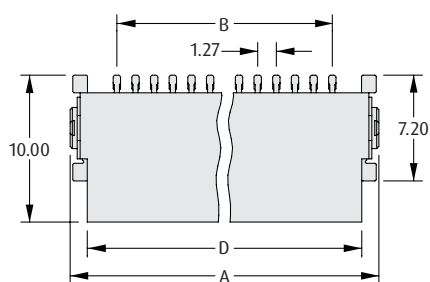
# Archer Kontrol Connectors

## Male Horizontal Surface Mount

- ❖ Suitable for coplanar (edge-to-edge) or motherboard-to-daughterboard configurations.
- ❖ Hold-down SMT retaining straps for additional retention to the board.
- ❖ Polarized and shrouded housing design.
- ❖ Location pegs and tape & reel packaging for automated assembly processes.

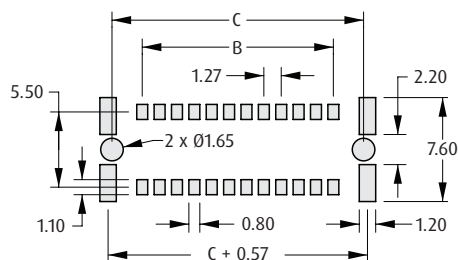


### HORIZONTAL



### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 6.35$  |
| <b>B</b> | $0.635 \times (\text{Total No. of contacts} - 2)$ |
| <b>C</b> | $B + 4.42$  |
| <b>D</b> | $B + 4.02$  |



Recommended PC Board Pattern

### HOW TO ORDER

**M55 - 710 XX 42 R**

**SERIES CODE**

### PACKAGING

**R** Tape & Reeled

### FINISH

**42** Gold + Tin

### TOTAL NO. OF CONTACTS

12, 16, 20, 26, 32, 40, 50, 68, 80

All dimensions in mm.

# M225 Connectors Specifications

## Materials

|                        |                                   |
|------------------------|-----------------------------------|
| Housings, Pins:        | High Temperature Plastic, UL94V-0 |
| Contacts               |                                   |
| Female:                | Beryllium Copper, Tin finish      |
| Male:                  | Phosphor Bronze, Tin finish       |
| Rubber Locking Collar: | Fluoroelastic Polymer             |

## Electrical

|                                   |  |
|-----------------------------------|--|
| Current                           |  |
| Individual contacts in isolation: | 3.3A max (at 25°C)<br>2.6A max (at 85°C) |
| All contacts simultaneously:      | 3.0A max (at 25°C)<br>2.2A max (at 85°C) |
| Working voltage:                  | 800V DC or AC peak                       |
| Voltage proof:                    | 1,200V DC or AC peak                     |
| Contact resistance:               | 25mΩ max                                 |
| Insulation resistance:            | 100MΩ min                                |

## Mechanical

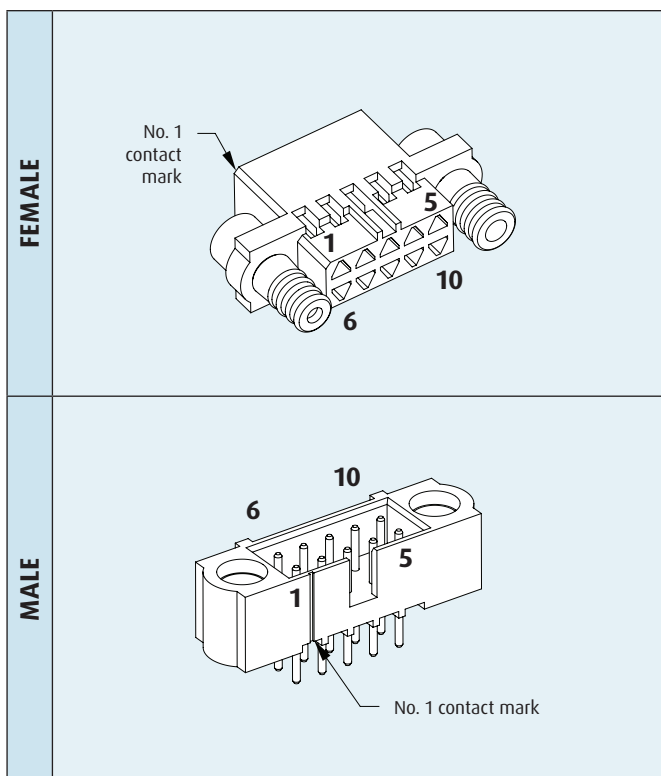
|                         |                  |
|-------------------------|------------------|
| Durability:             | 50 operations    |
| Insertion force (max):  | 2.8N per contact |
| Withdrawal force (min): | 0.2N per contact |

## Environmental

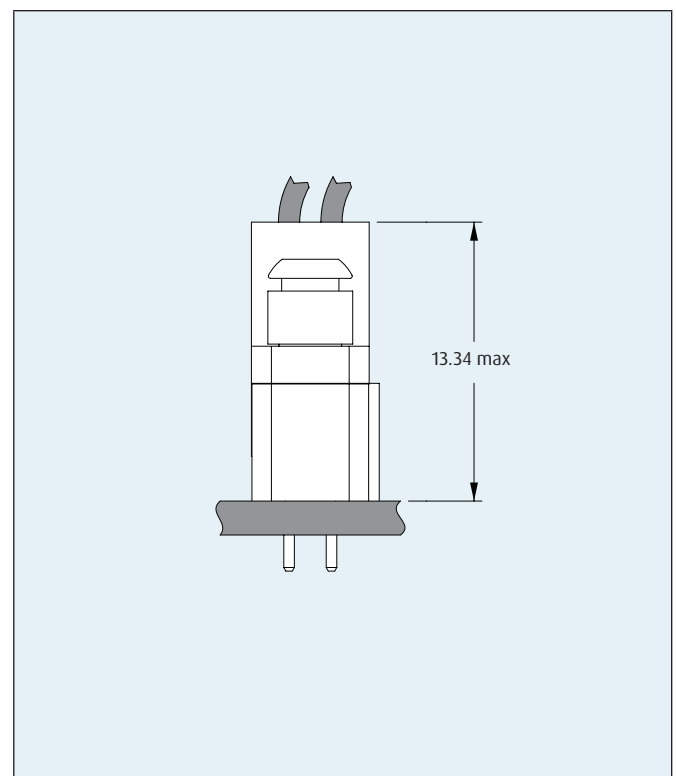
|                               |  |
|-------------------------------|--|
| Environmental classification: | 55/125/56 days at 95% RH   |
| Operational temperature:      | -55°C to +125°C  |
| *Vibration sensitivity:       | 10Hz to 20000Hz, 0.75mm,<br>98m/s <sup>2</sup> (10G), duration 6 hours |
| *Bump severity:               | 390m/s <sup>2</sup> (40G), 4000 ±10 bumps                              |
| *Shock severity:              | 981m/s <sup>2</sup> (100G), for 6ms                                    |
| *Acceleration severity:       | 490m/s <sup>2</sup> (50G)  |

\* Tested with fixing pins fully engaged

## Pin Numbering



## Mating Profile

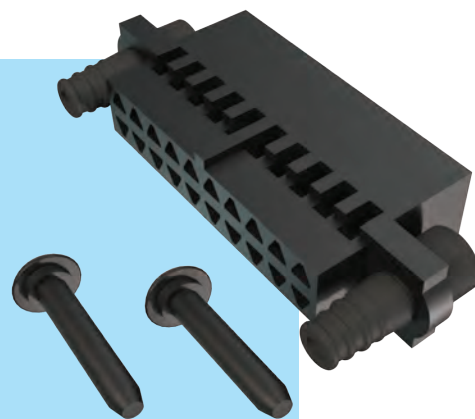


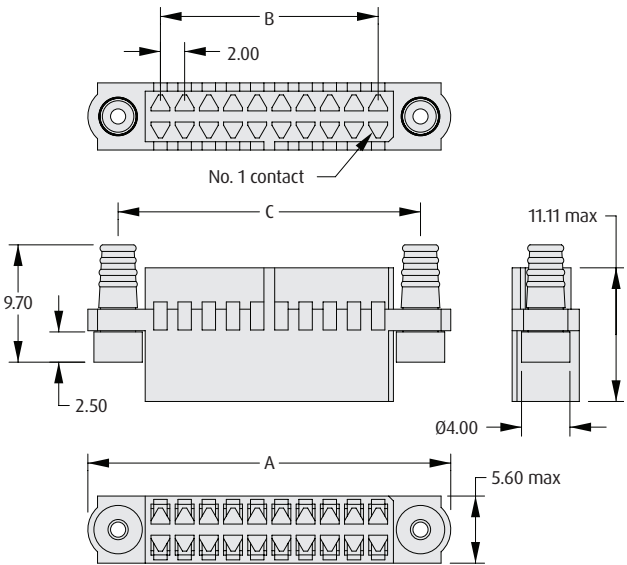


All dimensions in mm.

# M225 Connectors

## Female Crimp Housings

- Female crimp housing kits - contacts are ordered separately (shown on following page).
- Housings are supplied fitted with the rubber locking collars, and supplied with loose fixing pins. Collars and pins only needed to be ordered separately if spares are required.



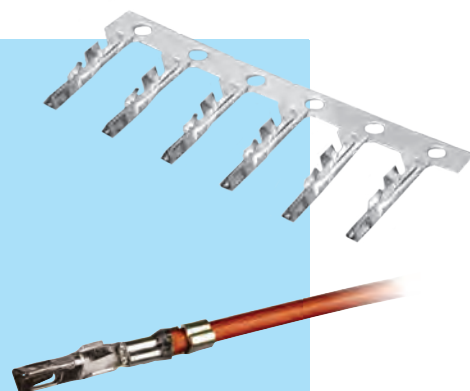
| HOUSING   | CALCULATION                        | SPARE RUBBER LOCKING COLLAR  |  |
|---|------------------------------------|--|--|
|  <p>Technical drawing of the M225 female crimp housing. Dimensions shown include: B (length of contact area), 2.00 (pitch), No. 1 contact, C (length of housing), 11.11 max (height of locking collar), 9.70 (height of housing), 2.50 (height of base), A (total length), 5.60 max (height of base), and Ø4.00 (diameter of base).</p> | <b>A</b> B + 12                    |  <p><b>ORDER CODE</b><br/>M225-0500098</p>                                 |  |
|   | <b>B</b> Total no. of contacts - 2 |  |  |
|   | <b>C</b> B + 7                     |  |  |
| <p>❖ Housing Kit includes 2 x Rubber Locking Collars (fitted) and 2 x Fixing Pins (loose).</p>  |                                    | <p><b>SPARE FIXING PIN</b></p>  <p><b>ORDER CODE</b><br/>M225-0600098</p> |  |
|   |                                    |  |  |
| HOW TO ORDER  |                                    |  |  |
| <p><b>M225 - 455 XX 98</b></p>  |                                    |  |  |
| <b>SERIES CODE</b>  |                                    | <b>NO. OF CONTACTS</b>   |  |
|   |                                    | 10, 20, 26, 34, 50   |  |

All dimensions in mm.

# M225 Connectors

## Female Crimp Contacts

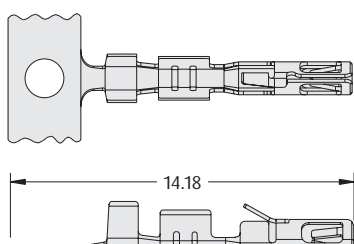
- ❖ Crimp contacts must be ordered separately, see previous pages for applicable housings.
- ❖ Crimp contacts are available loose, or in continuous reeled format for automated crimping.



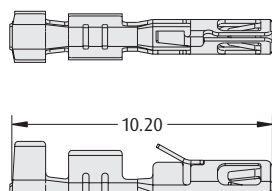
M225 SERIES

### CRIMP CONTACTS

#### Reeled



#### Loose



### HAND CRIMP TOOL



- ❖ Instruction sheet available at [www.harwin.com/instructions](http://www.harwin.com/instructions).

**ORDER CODE**  
Z80-255

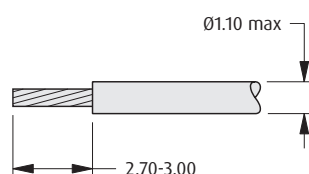
### REMOVAL TOOL

- ❖ For removal of crimped contacts from housings.
- ❖ Instruction sheet available at [www.harwin.com/instructions](http://www.harwin.com/instructions).



**ORDER CODE**  
Z80-258

### WIRE STRIPPING DETAIL



### HOW TO ORDER

**M225 - XXX 00 46**

#### SERIES CODE

#### TYPE

|            |                                |
|------------|--------------------------------|
| <b>253</b> | Female Crimp 22-24 AWG, Reeled |
| <b>254</b> | Female Crimp 26-28 AWG, Reeled |
| <b>283</b> | Female Crimp 22-24 AWG, Loose  |
| <b>284</b> | Female Crimp 26-28 AWG, Loose  |

#### FINISH

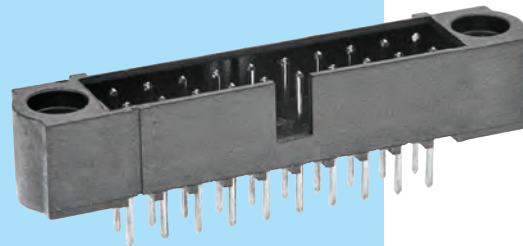
**46** Tin

All dimensions in mm.

# M225 Connectors

## Male Vertical Throughboard

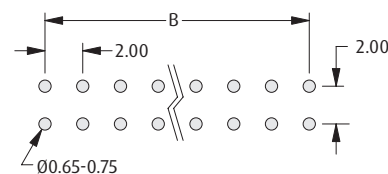
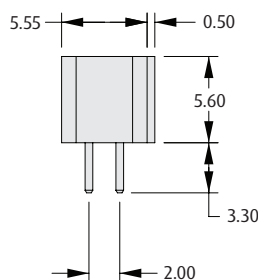
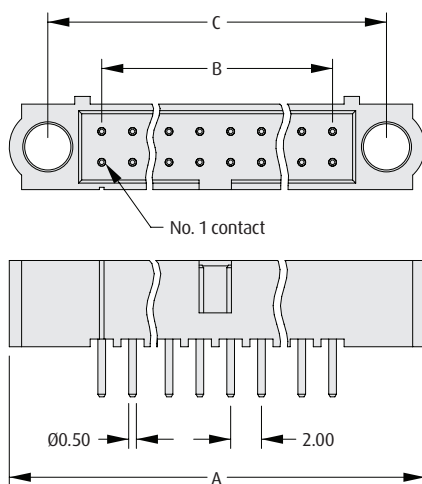
- ❑ Polarized housings.
- ❑ Fully shrouded contacts.



### MALE

### CALCULATION

|          |                           |
|----------|---------------------------|
| <b>A</b> | $B + 12$                  |
| <b>B</b> | Total no. of contacts - 2 |
| <b>C</b> | $B + 7$                   |



Recommended PC Board Pattern

### HOW TO ORDER

**M225 - 520 XX 46**

SERIES CODE

FINISH

46 Tin

TOTAL NO. OF CONTACTS

10, 20, 26, 34, 50

All dimensions in mm.



# Circular Connectors Introduction

**A range of high reliability, rugged, RoHS-compliant Circular Connectors to meet the high standards of MIL-DTL-5015, priced to be cost-effective for commercial and industrial applications.**

These connectors are designed for use in harsh environments. The high specification connectors are Cadmium-free and Hexavalent-Chromium-free to satisfy the requirements of RoHS (unlike the military standard version of MIL-DTL-5015). The connector range features free plugs, panel mount and cable connector orientations, in a number of popular shell and layout types. Pin and socket contacts can be selected in either side of a mating pair.

- ❖ Increased operating temperature range: -55°C to +125°C
- ❖ Stocked in depth across Harwin's authorized distributor network

## Features

- ❖ Intermateable with MIL-DTL-5015
- ❖ Low cost, highly durable & rugged connector system
- ❖ Solder termination
- ❖ Full environmental sealing with the use of backshells and sealing gaskets, exceeds IP67
- ❖ Threaded and polarized coupling
- ❖ Zinc Cobalt alloy black shells, for RoHS compliance
- ❖ COTS applications where MIL spec is not mandatory



All dimensions in mm.

# Circular Connectors Product Features

## RoHS compliant alternative

The military version of these connectors requires a Hexavalent Chromium mixture in the black coating - the Harwin alternative uses a different Zinc Cobalt alloy which is just as durable.



## Fully compatible with MIL-DTL-5015

All other material, dimensional and performance specifications are met. Connectors are fully compatible with MIL-DTL-5015 connectors.



## Watertight connection

Exceeds IP67 sealing requirements - when mated and fitted with all gaskets and rubber bushings, capable of water immersion of 1.8m for 48 hours.



## Simple solder cable assembly

All contacts are terminated in a solder cup design, for attachment to 16 to 22AWG cables.



## Strong, durable body and backshell

Connector bodies are manufactured from a strong aluminium alloy, coated with a black zinc cobalt alloy for additional durability.



## Ideal for COTS substitution

Meeting all the requirements for the existing military product, substitution for this RoHS alternative gives potential product cost savings.



All dimensions in mm.

# Circular Connectors Specification

## ✦ Materials

|                     |   |
|---------------------|---|
| Outer shell:        | Aluminium Alloy base material,<br>Zinc Cobalt Alloy, Black finish |
| Inner contacts:     | Copper Alloy, Silver finish                                       |
| Insulator, Grommet: | Synthetic Rubber  |

## ✦ Electrical

|                        |                  |
|------------------------|------------------|
| Current:               | 13A              |
| Working voltage        |                  |
| 10SL shell:            | 500V AC, 700V DC |
| 12S shell:             | 500V AC, 700V DC |
| 14S shell:             | 200V AC, 250V DC |
| Voltage proof          |                  |
| 10SL shell:            | 2,000V AC        |
| 12S shell:             | 2,000V AC        |
| 14S shell:             | 1,000V AC        |
| Insulation resistance: | 5,000MΩ min      |

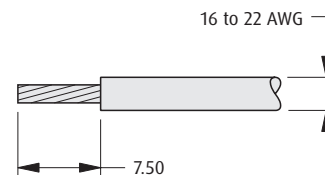
## ✦ Mechanical

|             |                |
|-------------|----------------|
| Durability: | 500 operations |
|-------------|----------------|

## ✦ Environmental

|                             |   |
|-----------------------------|---|
| Operating temperature:      | -55°C to +125°C                         |
| Vibration sensitivity:      | 10Hz to 500Hz, 98m/s <sup>2</sup> (10G) |
| Shock severity:             | 490m/s <sup>2</sup> (50G) for 11ms      |
| Water resistance (sealing): | 1.8m for 48 hours – exceeds IP67        |

## ✦ Wire Detail



# Pin Numbering & Spacing

✦ Views are shown onto the mating face of each connector type.

|               | 10SL SHELL            |                       | 12S SHELL            | 14S SHELL            |                      |
|---------------|-----------------------|-----------------------|----------------------|----------------------|----------------------|
|               | 2 CONTACT<br>(10SL-4) | 3 CONTACT<br>(10SL-3) | 2 CONTACT<br>(12S-3) | 4 CONTACT<br>(14S-2) | 6 CONTACT<br>(14S-6) |
| <b>FEMALE</b> |                       |                       |                      |                      |                      |
| <b>MALE</b>   |                       |                       |                      |                      |                      |

All dimensions in mm.

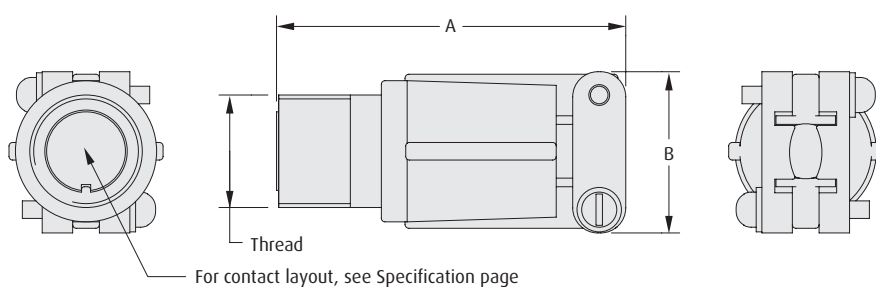
# Circular Connectors

## Cable Connector & Straight Plug

- Male & female circular connectors intermateable with MIL-DTL-5015.
- Rugged connector system for harsh environments.
- Exceeds IP67.
- Recommended wire strip length is 7.5mm.



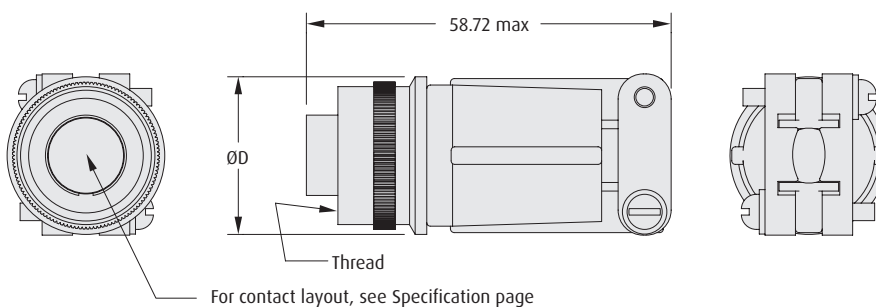
### CABLE CONNECTOR



| SHELL SIZE | THREAD     | A max | B max |
|------------|------------|-------|-------|
| 10SL-3     | 5/8-24UNEF | 54.10 | 22.76 |
| 10SL-4     | 5/8-24UNEF | 54.10 | 22.76 |
| 12S-3      | 3/4-20UNEF | 54.10 | 22.76 |
| 14S-2      | 7/8-20UNEF | 54.10 | 25.94 |
| 14S-6      | 7/8-20UNEF | 54.10 | 25.94 |

- Connector Kit includes internal sealing grommet (not shown here).

### STRAIGHT PLUG



| SHELL SIZE | THREAD     | ØD    |
|------------|------------|-------|
| 10SL-3     | 5/8-24UNEF | 22.04 |
| 10SL-4     | 5/8-24UNEF | 22.04 |
| 12S-3      | 3/4-20UNEF | 25.40 |
| 14S-2      | 7/8-20UNEF | 28.30 |
| 14S-6      | 7/8-20UNEF | 28.30 |

- Connector Kit includes internal sealing grommet and rear rubber bushing (not shown here).

### HOW TO ORDER

**C90 - 310XX XXXX - X X**

#### SERIES CODE

#### TYPE

|       |                                |
|-------|--------------------------------|
| 3101F | Cable connector with backshell |
| 3106F | Straight plug with backshell   |

#### CONTACT GENDER

|   |        |
|---|--------|
| P | Male   |
| S | Female |

#### SHELL SIZE

|        |                               |
|--------|-------------------------------|
| 10SL-3 | Thread 5/8-24UNEF, 3 contacts |
| 10SL-4 | Thread 5/8-24UNEF, 2 contacts |
| 12S-3  | Thread 3/4-20UNEF, 2 contacts |
| 14S-2  | Thread 7/8-20UNEF, 4 contacts |
| 14S-6  | Thread 7/8-20UNEF, 6 contacts |

All dimensions in mm.

# Circular Connectors

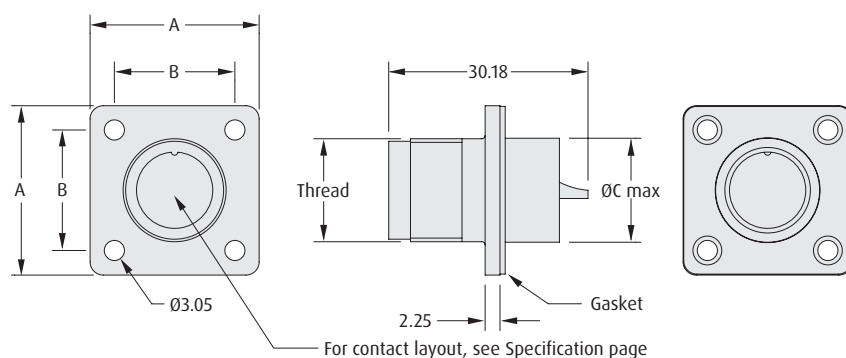
## Panel Mount Connector, Receptacle Style

- Male & female circular connectors intermateable with MIL-DTL-5015.
- Features screw holes for panel mounting.
- Gaskets provide panel mount sealing, and can be used either side of the flange (not shown).
- Mates with C90-3106F Straight Plug connectors shown on previous page.

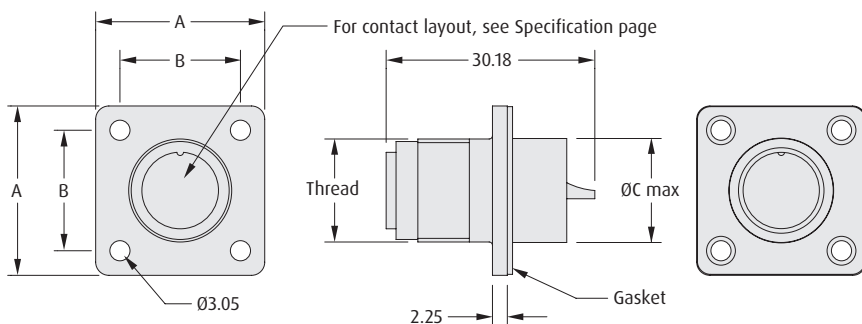


CIRCULAR

### MALE CONTACT



### FEMALE CONTACT



| SHELL SIZE | THREAD     | A     | B     | ØC    |
|------------|------------|-------|-------|-------|
| 10SL-3     | 5/8-24UNEF | 25.40 | 18.25 | 15.75 |
| 10SL-4     | 5/8-24UNEF | 25.40 | 18.25 | 15.75 |
| 12S-3      | 3/4-20UNEF | 28.02 | 20.62 | 17.17 |
| 14S-2      | 7/8-20UNEF | 30.40 | 23.02 | 18.92 |
| 14S-6      | 7/8-20UNEF | 30.40 | 23.02 | 18.92 |

### HOW TO ORDER

**C90 - 3102R XXXX - X X**

**SERIES CODE**

**TYPE**

**3102R** Panel mount connector with gasket

#### CONTACT GENDER

|          |        |
|----------|--------|
| <b>P</b> | Male   |
| <b>S</b> | Female |

#### SHELL SIZE

|               |                               |
|---------------|-------------------------------|
| <b>10SL-3</b> | Thread 5/8-24UNEF, 3 contacts |
| <b>10SL-4</b> | Thread 5/8-24UNEF, 2 contacts |
| <b>12S-3</b>  | Thread 3/4-20UNEF, 2 contacts |
| <b>14S-2</b>  | Thread 7/8-20UNEF, 4 contacts |
| <b>14S-6</b>  | Thread 7/8-20UNEF, 6 contacts |

All dimensions in mm.

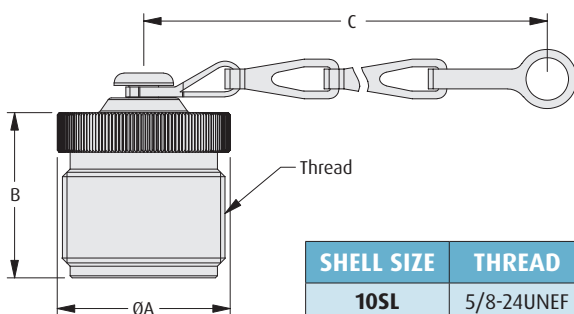
# Circular Connectors

## Dust Caps & Rubber Bushing

- ❖ Dust cap with external thread for use with Straight Plugs (C90-3106F).
- ❖ Dust cap with internal thread for use with Cable connectors (C90-3101F) and Panel Mount connectors (C90-3102R).
- ❖ Dust caps supplied fitted with chain.
- ❖ Rubber Bushing for use with Cable connectors (C90-3101F).

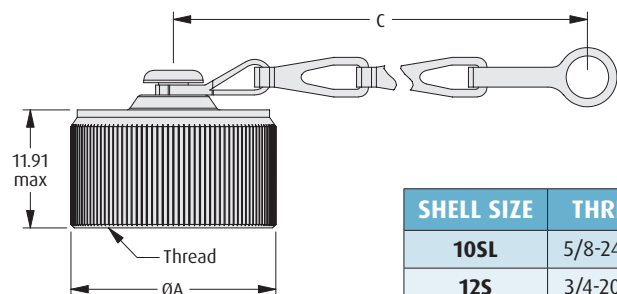


### DUST CAP – EXTERNAL THREAD



| SHELL SIZE | THREAD     | ØA max | B max | C      |
|------------|------------|--------|-------|--------|
| 10SL       | 5/8-24UNEF | 17.45  | 16.66 | 101.60 |
| 12S        | 3/4-20UNEF | 20.62  | 21.44 | 114.30 |
| 14S        | 7/8-20UNEF | 23.80  | 21.44 | 114.30 |

### DUST CAP – INTERNAL THREAD



| SHELL SIZE | THREAD     | ØA max | C      |
|------------|------------|--------|--------|
| 10SL       | 5/8-24UNEF | 20.70  | 101.60 |
| 12S        | 3/4-20UNEF | 25.40  | 114.30 |
| 14S        | 7/8-20UNEF | 28.57  | 114.30 |

### HOW TO ORDER

**C90 - 2504 X - XXXX**

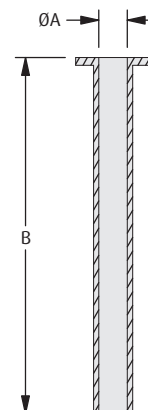
#### SERIES CODE

| TYPE |                 |
|------|-----------------|
| 2    | External thread |
| 3    | Internal thread |

#### SIZE

|      |                     |
|------|---------------------|
| 10SL | For 10SL shell size |
| 12S  | For 12SL shell size |
| 14S  | For 14SL shell size |

### RUBBER BUSHING



| TYPE | ØA   | B     |
|------|------|-------|
| 4    | 5.59 | 69.85 |
| 6    | 7.92 | 66.68 |

### HOW TO ORDER

**C90 - 3420 - X**

#### SERIES CODE

| TYPE |                     |
|------|---------------------|
| 4    | For 10SL shell size |
| 4    | For 12SL shell size |
| 6    | For 14SL shell size |

All dimensions in mm.



# PCB Connectors

## Contents

|  |     |
|--|-----|
| <b>M40 Series: 1.00mm pitch Connectors</b> |     |
| Board-To-Board M40-600/620 Connectors      | 220 |
| Board-To-Board M40-310/320 Connectors      | 222 |
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| M52 Specifications                         | 254 |
| M52 Female PCB Connectors                  | 255 |
| M52 Male PCB Connectors                    | 257 |

# M40-600/620 Connectors Specification

❖ A range of double row 1.00mm pitch SMT male and female connectors for board-to-board stacking.

## ❖ Materials

|           |                                  |
|-----------|----------------------------------|
| Housings: | High Temp Thermoplastic, UL94V-0 |
| Contacts: | Phosphor Bronze                  |
| Finish:   | Tin                              |

## ❖ Electrical

|                        |                  |
|------------------------|------------------|
| Current:               | 0.5A per contact |
| Working voltage:       | 150V AC          |
| Voltage proof:         | 250V AC          |
| Contact resistance:    | 50mΩ max         |
| Insulation resistance: | 500MΩ min        |

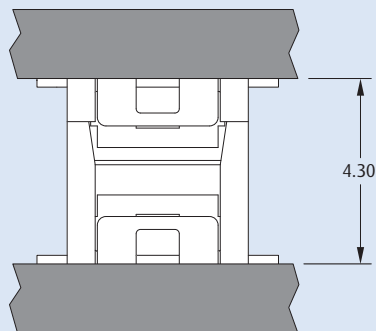
## ❖ Mechanical

|                         |                  |
|-------------------------|------------------|
| Durability:             | 30 operations    |
| Insertion force (max):  | 2.7N per contact |
| Withdrawal force (min): | 0.4N per contact |

## ❖ Environmental

|                            |                      |
|----------------------------|----------------------|
| Operating temperature:     | -20°C to +125°C      |
| Solderability:             | 210°C for 5 seconds  |
| Soldering heat resistance: | 260°C for 10 seconds |

## Mating Profile



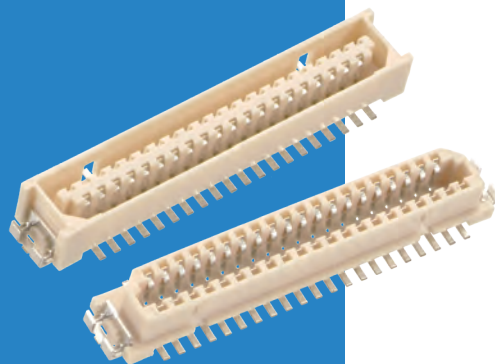
All dimensions in mm.



# M40-600/620 Connectors

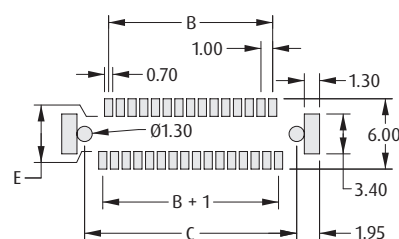
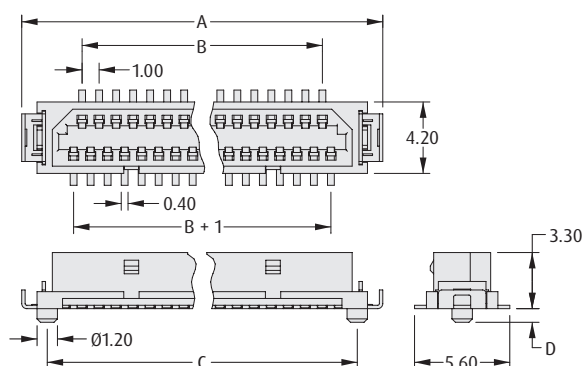
## Vertical Surface Mount

- ❏ Locating pegs to ensure correct positioning onto the board.
- ❏ Polarized to prevent mis-mating.
- ❏ Staggered pin-out to help board layout.



1mm (.039") PITCH

### FEMALE

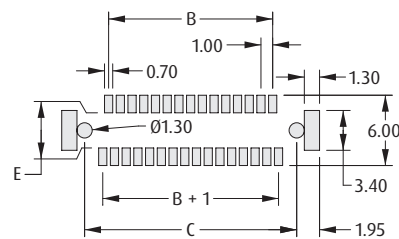
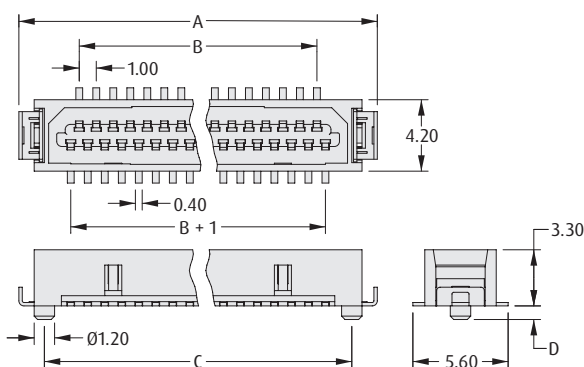


Recommended PC Board Pattern

#### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 7.1$                                      |
| <b>B</b> | $(\text{Total No. Of Contacts} - 3) / 2$       |
| <b>C</b> | $B + 4.1$                                      |
| <b>D</b> | 1.00mm for 9, 15, 21, 25 way; otherwise 0.80mm |
| <b>E</b> | 1.84mm for 9, 15, 21, 25 way; otherwise 3.00mm |

### MALE



Recommended PC Board Pattern

### HOW TO ORDER

**M40 - 6 X 0 XX XX X**

#### SERIES CODE

#### GENDER

|          |        |
|----------|--------|
| <b>0</b> | Male   |
| <b>2</b> | Female |

#### PACKAGING

|              |               |
|--------------|---------------|
| <b>Blank</b> | Loose         |
| <b>R</b>     | Tape & Reeled |

#### FINISH

|           |     |
|-----------|-----|
| <b>46</b> | Tin |
|-----------|-----|

#### TOTAL NO. OF CONTACTS

09, 15, 21, 25, 31, 41, 51

All dimensions in mm.

# M40-310/320 Connectors Specification

❖ A range of double row 1.00mm pitch SMT pin header and socket connectors.

## ❖ Materials

|           |                                  |
|-----------|----------------------------------|
| Housings: | High Temp Thermoplastic, UL94V-0 |
| Contacts  |                                  |
| Male:     | Brass                            |
| Female:   | Phosphor Bronze                  |
| Finish:   | Gold                             |

## ❖ Electrical

|                        |                  |
|------------------------|------------------|
| Current:               | 1.0A per contact |
| Voltage proof:         | 500V AC          |
| Contact resistance:    | 30mΩ max         |
| Insulation resistance: | 1,000MΩ min      |

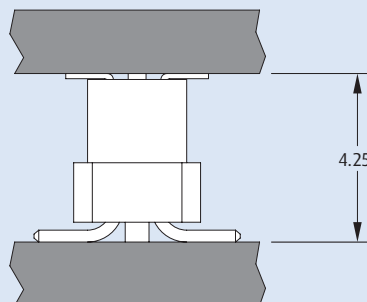
## ❖ Mechanical

|                         |                                    |
|-------------------------|------------------------------------|
| Durability:             | 300 operations                     |
| Insertion force (max):  | 1.5N per contact                   |
| Withdrawal force (min): | 0.1N per contact                   |
| Vibration sensitivity:  | 50 – 2000Hz, 45 minutes duration   |
| Shock severity:         | 294m/s <sup>2</sup> (30G) for 11ms |

## ❖ Environmental

|                            |                      |
|----------------------------|----------------------|
| Operating temperature:     | -40°C to +105°C      |
| Solderability:             | 245°C for 5 seconds  |
| Soldering heat resistance: | 260°C for 10 seconds |

## Mating Profile

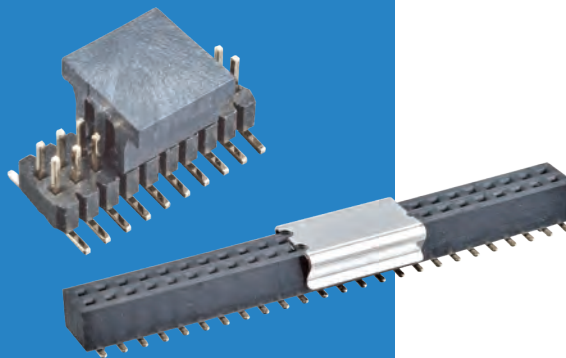


All dimensions in mm.

# M40-310/320 Connectors

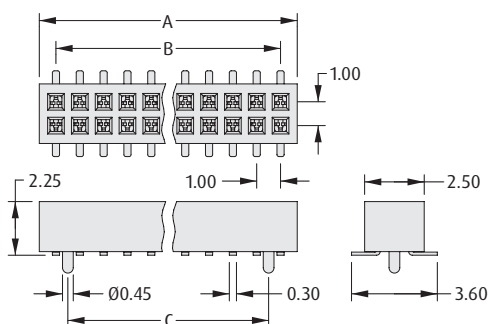
## Vertical Surface Mount

- ❖ Locating pegs to ensure correct positioning onto the board.
- ❖ Supplied in tape and reel packaging with pick and place caps as standard.
- ❖ Twin beam female connector for higher durability.



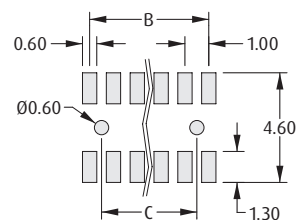
1mm (.039") PITCH

### FEMALE



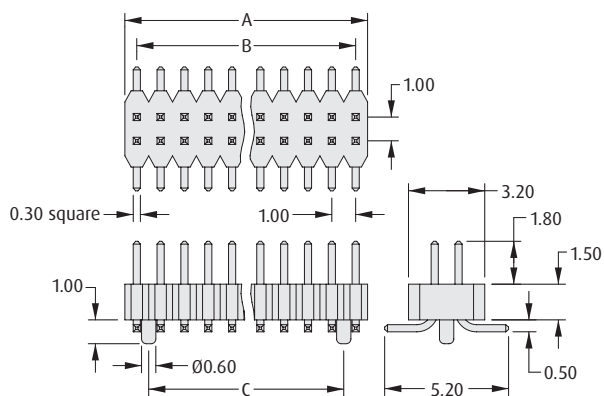
### CALCULATION

|          |                             |
|----------|-----------------------------|
| <b>A</b> | $B + 1.4$                   |
| <b>B</b> | No. of contacts per row - 1 |
| <b>C</b> | No. of contacts per row - 2 |



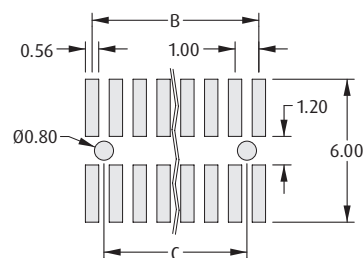
Recommended PC Board Pattern

### MALE



### CALCULATION

|          |                             |
|----------|-----------------------------|
| <b>A</b> | No. of contacts per row     |
| <b>B</b> | No. of contacts per row - 1 |
| <b>C</b> | No. of contacts per row - 2 |



Recommended PC Board Pattern

## HOW TO ORDER

**M40 - 3 X 0 XX 45 R**

**SERIES CODE**

**GENDER**

|   |        |
|---|--------|
| 1 | Female |
| 2 | Male   |

**TAPE & REELED**

**FINISH**

**45** Gold

**NO. OF CONTACTS PER ROW**

03, 04, 05, 06, 08, 10, 20, 25

All dimensions in mm.

# M40 Cable-to-Board Specification

- A range of cable-to-board connectors on 1.00mm pitch - SMT male connectors and cable female connectors in single and double row options.

## Materials

|                 |                                  |
|-----------------|----------------------------------|
| Housings        |                                  |
| SMT Connectors: | High Temp Thermoplastic, UL94V-0 |
| Cable Housings: | Thermoplastic, UL94V-0           |
| Contacts:       | Phosphor Bronze                  |
| Finish:         | Tin                              |

## Electrical

|                        |                |
|------------------------|----------------|
| Current:               | 1A per contact |
| Working voltage:       | 50V AC/DC      |
| Voltage proof:         | 500V AC/DC     |
| Contact resistance:    | 30mΩ max       |
| Insulation resistance: | 100MΩ min      |

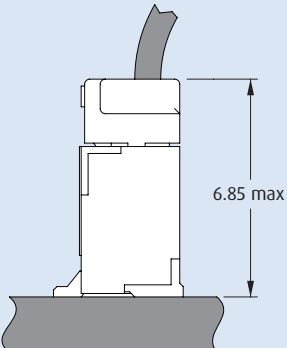
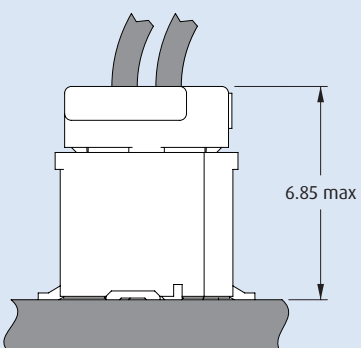
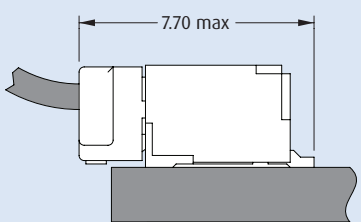
## Mechanical

|                              |                                    |
|------------------------------|------------------------------------|
| Durability:                  | 50 operations                      |
| Insertion force (max):       | 2.0N per contact                   |
| Withdrawal force (min):      | 0.4N per contact                   |
| Crimped wire retention (min) |                                    |
| 28 AWG wire:                 | 12.7N                              |
| 30 AWG wire:                 | 9.8N                               |
| 32 AWG wire:                 | 4.9N                               |
| Vibration sensitivity:       | 10 – 55Hz, 1.5mm, 6 hours duration |
| Shock severity:              | 490m/s <sup>2</sup> (50G) for 11ms |

## Environmental

|                            |                     |
|----------------------------|---------------------|
| Operating temperature:     | -25°C to +85°C      |
| Solderability:             | 245°C for 5 seconds |
| Soldering heat resistance: | 260°C for 5 seconds |

## Mating Profiles

|      |                | FEMALE CRIMP  |   |
|------|----------------|---|---|
|      |                | SINGLE ROW  | DOUBLE ROW  |
| MALE | VERTICAL SMT   |  |  |
|      | HORIZONTAL SMT |  |   |

All dimensions in mm.

# M40 Cable-to-Board Connectors

## Female Crimp Housings

- ❖ Crimp contacts or pre-cabled contacts are ordered separately - see following pages.
- ❖ Crimped contacts on wires are inserted into rear of connector housing - no additional tooling required.



1mm (.039") PITCH

| SINGLE ROW  |                             | DOUBLE ROW  |                             |
|-------------|-----------------------------|-------------|-----------------------------|
| CALCULATION |                             | CALCULATION |                             |
| <b>A</b>    | $B + 4$                     | <b>A</b>    | $B + 4$                     |
| <b>B</b>    | No. of contacts per row - 1 | <b>B</b>    | No. of contacts per row - 1 |
|             |                             |             |                             |

## HOW TO ORDER

**M40 - 1X0 XX 00**

### SERIES CODE

### TYPE

|            |            |
|------------|------------|
| <b>110</b> | Single Row |
| <b>120</b> | Double Row |

### NO. OF CONTACTS PER ROW

|                                 |            |
|---------------------------------|------------|
| <b>02 to 20</b>                 | Single Row |
| <b>05 to 10, 12, 15, 20, 25</b> | Double Row |

All dimensions in mm.

# M40 Cable-to-Board Connectors

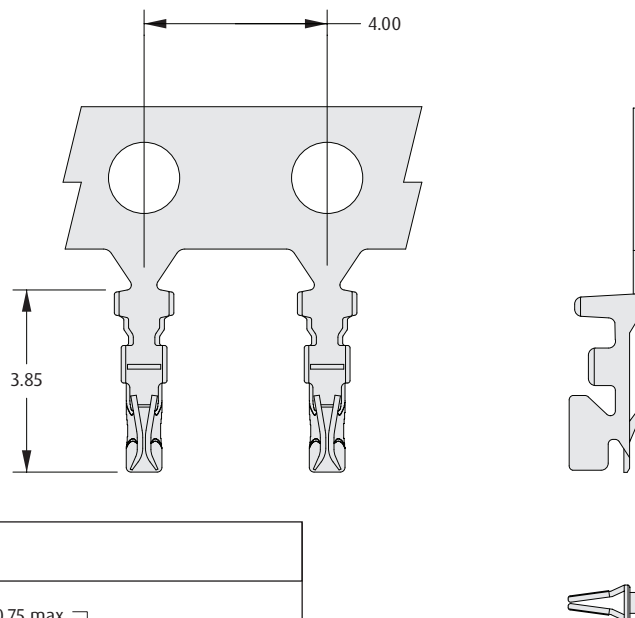
## Female Crimp Contacts

- ❖ Open crimp design, ideal for automation.
- ❖ Use with female crimp housings shown on previous page.
- ❖ Pre-crimped contacts with wire attached shown on following page.
- ❖ Requires crimp machine with applicable tooling for crimping to wires.

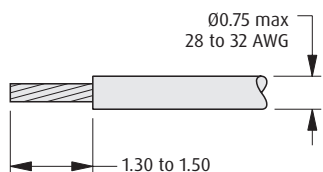


### CONTACTS

- ❖ Order code is for one reel of 15,000 contacts.



### WIRE STRIPPING DETAIL



### HOW TO ORDER

**M40 - 100 00 46**

**SERIES CODE**

**FINISH**

**46**

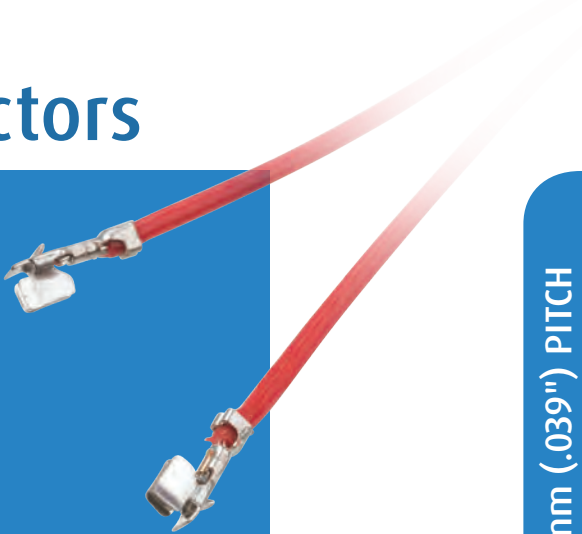
Tin

All dimensions in mm.

# M40 Cable-to-Board Connectors

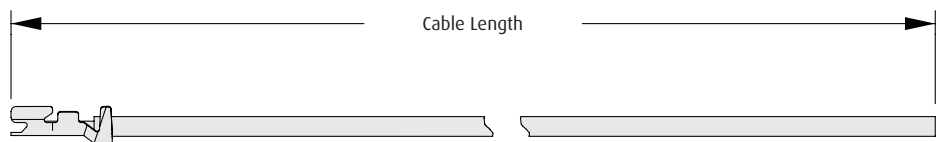
## Female Crimp Contacts - Pre-Crimped Wires

- ❖ Female crimp contacts pre-assembled with a choice of wire sizes and lengths.
- ❖ PVC insulated multi-strand tinned copper equipment wire to UL1571.
- ❖ Use with female crimp housings shown on previous page.
- ❖ Ideal for prototype and pre-production applications.
- ❖ Individual contacts without wire shown on previous page.

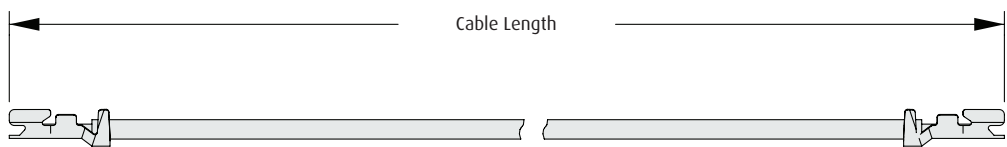


1mm (.039") PITCH

### FEMALE SINGLE ENDED



### FEMALE - FEMALE



### HOW TO ORDER

**M40 - 9XX 00 99**

**SERIES CODE**

#### CABLE COLOR

**99** Red

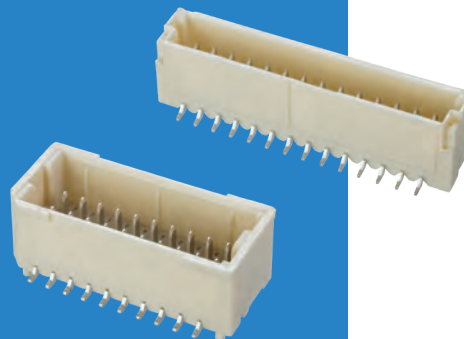
| SINGLE ENDED | FEMALE - FEMALE |                            |
|--------------|-----------------|----------------------------|
| 900          | 904             | 28 AWG cable, 150mm length |
| 901          | 905             | 32 AWG cable, 150mm length |
| 902          | 906             | 28 AWG cable, 300mm length |
| 903          | 907             | 32 AWG cable, 300mm length |
| 910          |                 | 30 AWG cable, 150mm length |
| 911          |                 | 30 AWG cable, 300mm length |

All dimensions in mm.

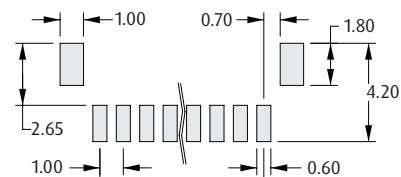
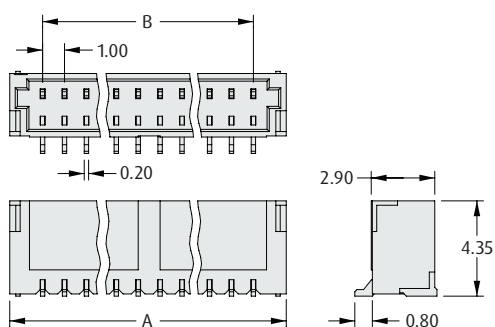
# M40 Cable-to-Board Connectors

## Male Vertical Surface Mount

- ❖ Shrouded male connectors.
- ❖ Double row connector features locating pegs to ensure correct positioning onto the board.
- ❖ Tape and Reeled packaging is supplied fitted with pick and place cap.



### SINGLE ROW

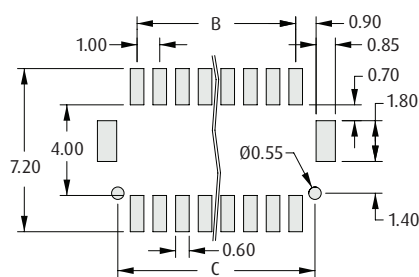
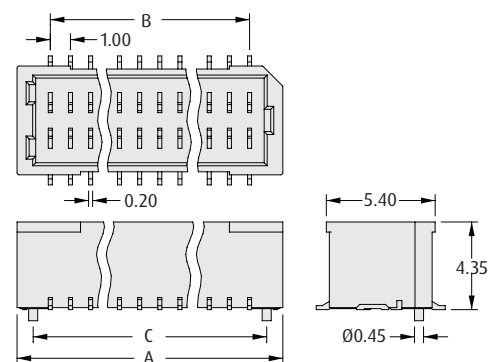


Recommended PC Board Pattern

#### CALCULATION

|          |                             |
|----------|-----------------------------|
| <b>A</b> | $B + 3$                     |
| <b>B</b> | No. of contacts per row - 1 |

### DOUBLE ROW



Recommended PC Board Pattern

#### CALCULATION

|          |                             |
|----------|-----------------------------|
| <b>A</b> | $B + 3$                     |
| <b>B</b> | No. of contacts per row - 1 |
| <b>C</b> | $B + 1.7$                   |

### HOW TO ORDER

**M40 - 30 X XX 46 X**

#### SERIES CODE

#### TYPE

|          |            |
|----------|------------|
| <b>1</b> | Single Row |
| <b>2</b> | Double Row |

#### PACKAGING

|              |                         |
|--------------|-------------------------|
| <b>Blank</b> | Loose (double row only) |
| <b>R</b>     | Tape & Reeled           |

#### FINISH

**46** Tin

#### NO. OF CONTACTS PER ROW

|                             |            |
|-----------------------------|------------|
| <b>02 to 20</b>             | Single Row |
| <b>05 to 08, 10, 12, 15</b> | Double Row |

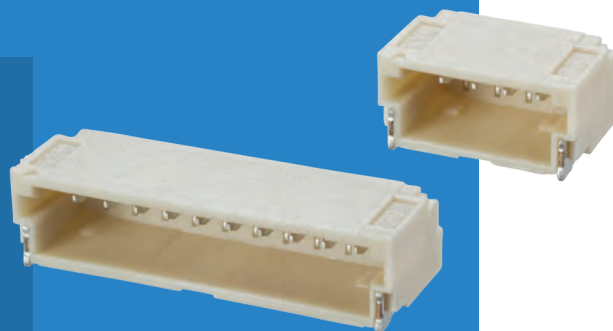
All dimensions in mm.



# M40 Cable-to-Board Connectors

## Male Horizontal Surface Mount

- Shrouded male connectors.
- Tape and Reeled packaging - does not require pick and place cap.

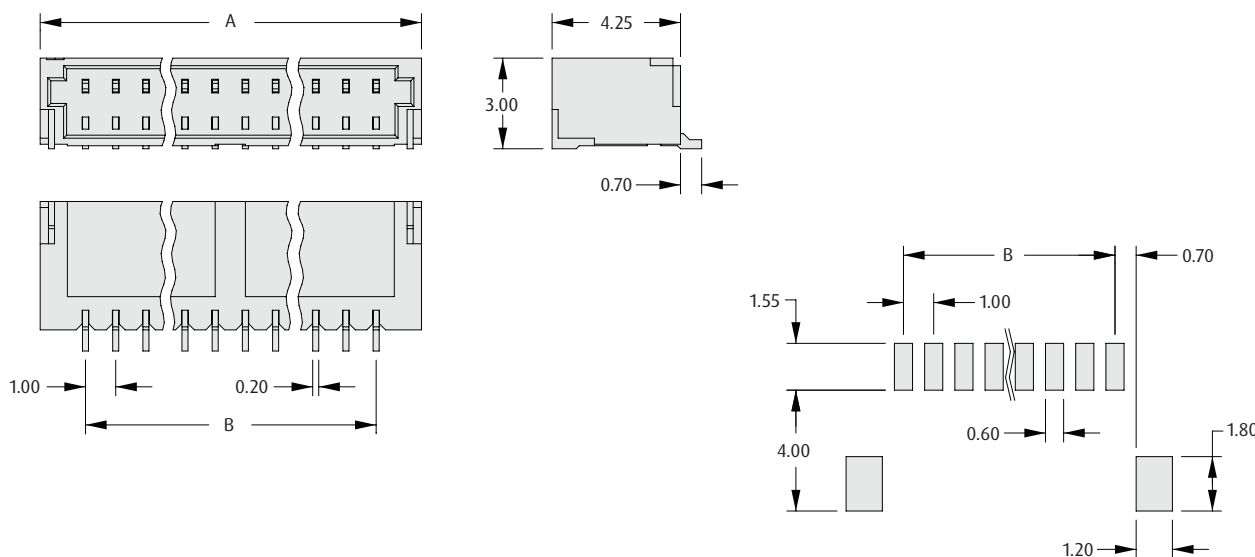


1mm (.039") PITCH

### SINGLE ROW

### CALCULATION

|          |                             |
|----------|-----------------------------|
| <b>A</b> | $B + 3$                     |
| <b>B</b> | No. of contacts per row - 1 |



Recommended PC Board Pattern

### HOW TO ORDER

**M40 - 401 XX 46 R**

**SERIES CODE**

**NO. OF CONTACTS PER ROW**

02 to 20

**PACKAGING**

**R** Tape & Reeled

**FINISH**

**46** Tin

All dimensions in mm.

# M30 Connectors Specification

❖ A range of 1.25mm pitch male and female connectors, for cable-to-board applications.

## ❖ Material

|          |                   |
|----------|-------------------|
| Housings |                   |
| SMT:     | Nylon 6T, UL94V-0 |
| Others:  | Nylon 66, UL94V-0 |
| Contacts |                   |
| Male:    | Brass             |
| Female:  | Phosphor Bronze   |
| Finish:  | Tin               |

## ❖ Electrical

|                        |                |
|------------------------|----------------|
| Current:               | 1A per contact |
| Working voltage:       | 150V AC        |
| Voltage proof:         | 500V AC/DC     |
| Contact resistance:    | 30mΩ max       |
| Insulation resistance: | 500MΩ min      |

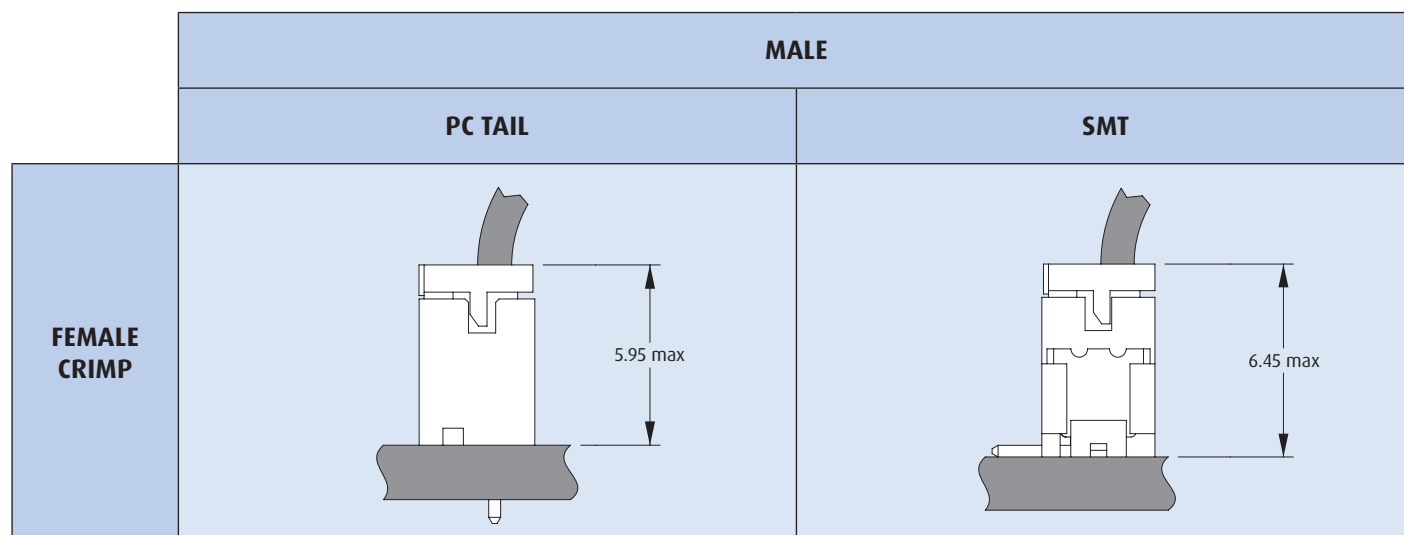
## ❖ Mechanical

|                              |                                    |
|------------------------------|------------------------------------|
| Durability:                  | 50 operations                      |
| Insertion force (max):       | 4.9N per contact                   |
| Withdrawal force (min):      | 0.5N per contact                   |
| Crimp retention (min):       | 4.9N per contact                   |
| Crimped wire retention (min) |                                    |
| 26 AWG wire:                 | 19.6N                              |
| 28 AWG wire:                 | 9.8N                               |
| 30 AWG wire:                 | 7.8N                               |
| Vibration sensitivity:       | 10 – 55Hz, 1.5mm, 6 hours duration |
| Shock severity:              | 490m/s <sup>2</sup> (50G) for 11ms |

## ❖ Environmental

|                           |                      |
|---------------------------|----------------------|
| Operating temperature:    | -25°C to +85°C       |
| Solderability:            | 245°C for 5 seconds  |
| Soldering heat resistance |                      |
| PC Tail:                  | 250°C for 5 seconds  |
| SMT:                      | 260°C for 10 seconds |

## Mating Profiles

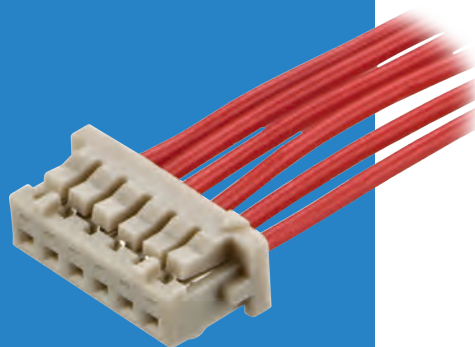


All dimensions in mm.

# M30 Connectors

## Female Crimp Housing

- ❖ Loose or reeled contacts.
- ❖ Crimp contacts or pre-cabled contacts are ordered separately - see the following pages.

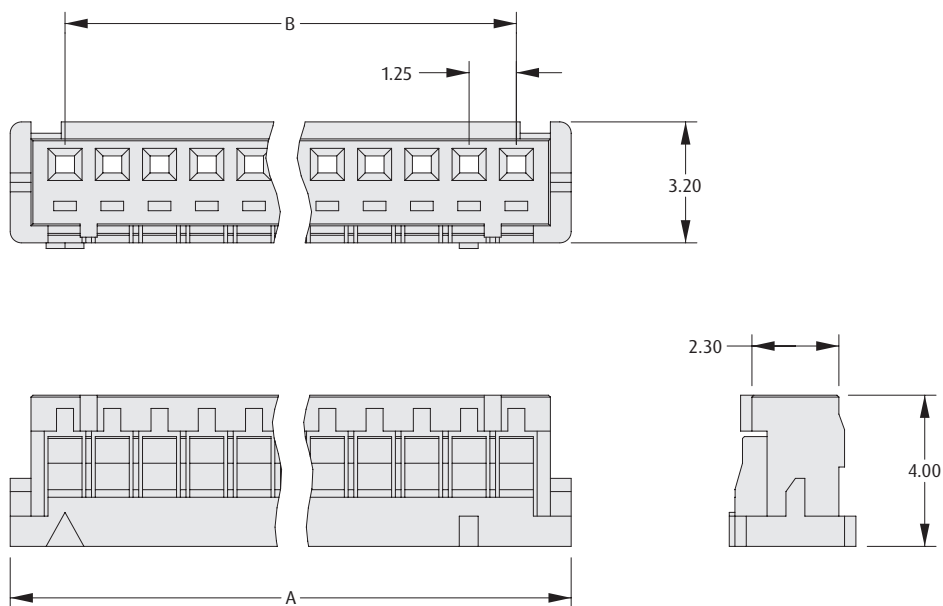


1.25mm (.049") PITCH

### HOUSING

### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 2.9$  |
| <b>B</b> | $1.25 \times (\text{No. of contacts per row} - 1)$ |



### HOW TO ORDER

**M30 - 110 XX 00**

**SERIES CODE**

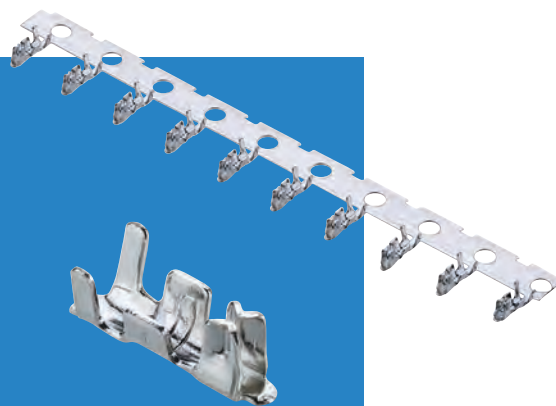
**NO. OF CONTACTS PER ROW**  
02 to 15

All dimensions in mm.

# M30 Connectors

## Female Crimp Contacts

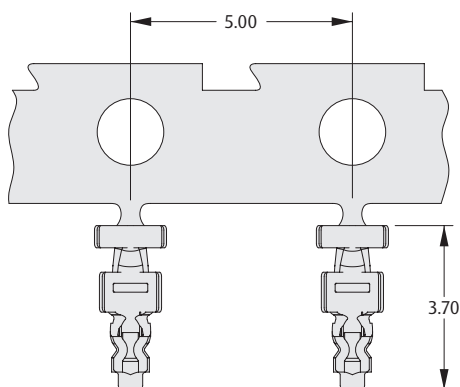
- ❖ Loose or reeled contacts.
- ❖ Open crimp design, ideal for automation.
- ❖ Use with female crimp housings shown on previous page.
- ❖ Pre-crimped contacts with wire attached shown on following page.



### CONTACTS

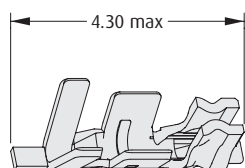
#### Reeled (continuous strip)

- ❖ Order code is for one reel of 10,000 contacts.



#### Loose (cropped)

- ❖ Order code is for one pack of 100 contacts.



### HAND CRIMP TOOL

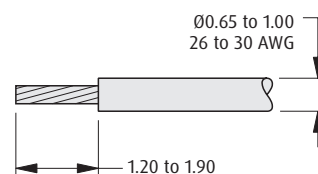
- ❖ Instruction sheet is available at [www.harwin.com/instructions](http://www.harwin.com/instructions).
- ❖ For use with loose contacts.



#### ORDER CODE

Z30-021

### WIRE STRIPPING DETAILS



### HOW TO ORDER

**M30 - 10 X 00 46**

#### SERIES CODE

#### TYPE

|   |                |
|---|----------------|
| 5 | Reeled contact |
| 6 | Loose contact  |

#### FINISH

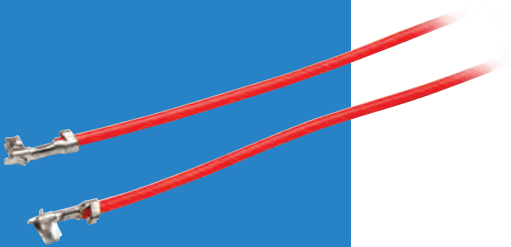
46 Tin

All dimensions in mm.

# M30 Connectors

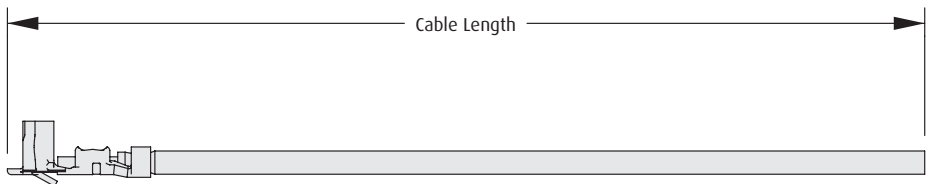
## Female Crimp Contacts – Pre-Crimped Wires

- ❖ Female crimp contacts pre-assembled with a choice of wire sizes and lengths.
- ❖ PTFE-insulated, multi-strand silver-plated copper conductor equipment wire.
- ❖ Use with female crimp housings shown on previous page.
- ❖ Ideal for prototype and pre-production applications.
- ❖ Individual contacts without wire shown on previous page.

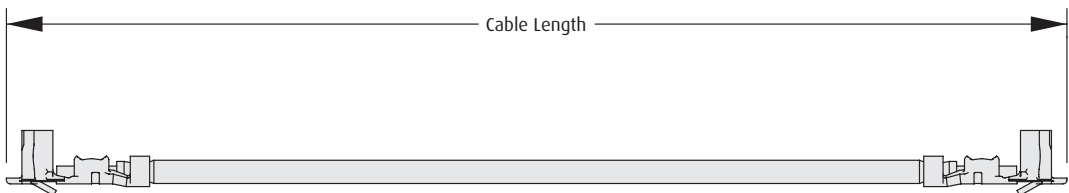


1.25mm (.049") PITCH

### FEMALE SINGLE ENDED



### FEMALE - FEMALE



### HOW TO ORDER

**M30 - 9XX 00 99**

**SERIES CODE**

**CABLE COLOR**

**99** Red

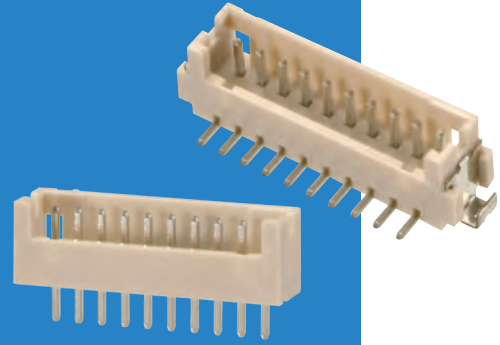
| SINGLE ENDED | FEMALE - FEMALE |                            |
|--------------|-----------------|----------------------------|
| 900          | 904             | 26 AWG cable, 150mm length |
| 901          | 905             | 30 AWG cable, 150mm length |
| 902          | 906             | 26 AWG cable, 300mm length |
| 903          | 907             | 30 AWG cable, 300mm length |

All dimensions in mm.

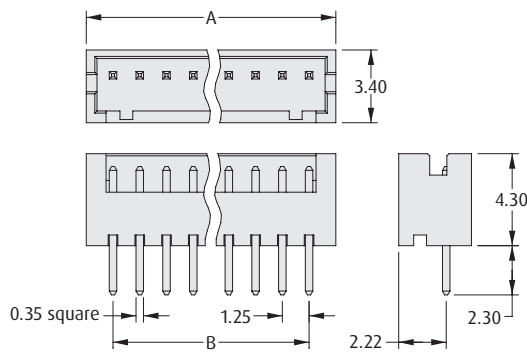
# M30 Connectors

## Male Vertical

- ❖ Shrouded male connectors.
- ❖ SMT version features metal solder-down tabs and locating pegs to ensure correct positioning onto the board.
- ❖ Tape and Reel option supplied fitted with Pick and Place cap.

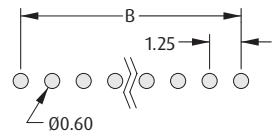


### THROUGHBOARD



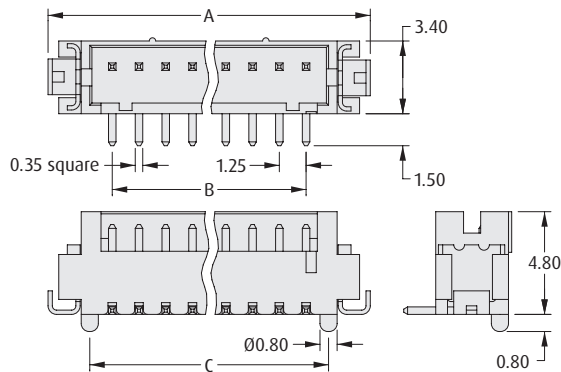
### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $1.25 \times (\text{No. of contacts per row} + 1)$ |
| <b>B</b> | $1.25 \times (\text{No. of contacts per row} - 1)$ |



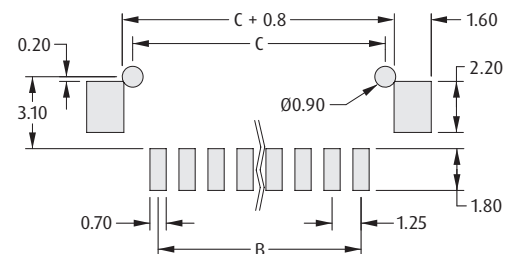
Recommended PC Board Pattern

### SURFACE MOUNT



### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 6$  |
| <b>B</b> | $1.25 \times (\text{No. of contacts per row} - 1)$ |
| <b>C</b> | $B + 2.1$  |



Recommended PC Board Pattern

### HOW TO ORDER

**M30 - 6 X 0 XX XX X**

#### SERIES CODE

#### TYPE

|          |               |
|----------|---------------|
| <b>0</b> | Surface Mount |
| <b>1</b> | PC Tail       |

#### PACKAGING

|              |                         |
|--------------|-------------------------|
| <b>Blank</b> | Loose                   |
| <b>R</b>     | Tape & Reeled (M30-600) |

#### FINISH

|           |     |
|-----------|-----|
| <b>46</b> | Tin |
|-----------|-----|

#### NO. OF CONTACTS PER ROW

**02 to 15**

All dimensions in mm.

# Archer Connectors - M50 Specification

❖ 1.27mm pitch male pin headers (with 0.4mm square pins) and female sockets, for board-to-board connection.

## ❖ Materials

|           |                                  |
|-----------|----------------------------------|
| Housings: | High Temperature Plastic UL94V-0 |
| Contacts: | Copper Alloy                     |
| Finish:   | See individual pages             |

## ❖ Electrical

|                        |  |
|------------------------|--|
| Current:               | 1A per contact   |
| Voltage proof:         | 300V AC, 500V DC for 1 minute<br>(see individual drawings) |
| Contact resistance:    | 30mΩ max   |
| Insulation resistance: | 500MΩ min  |

## ❖ Mechanical

|                               |                                    |
|-------------------------------|------------------------------------|
| <b>Durability</b>             |                                    |
| M50-310, 312, 491:            | 100 operations                     |
| M50-311:                      | 600 operations                     |
| M50-315:                      | 25 operations                      |
| M50-353, 363, 393:            | 500 operations                     |
| Others:                       | 300 operations                     |
| <b>Insertion force (max)</b>  |                                    |
| M50-303, 313, 314:            | 1.17N per contact                  |
| Jumper sockets:               | 10.0N                              |
| Others:                       | 2.0N per contact                   |
| <b>Withdrawal force (min)</b> |                                    |
| Jumper sockets:               | 1.3N                               |
| Others:                       | 0.1N per contact                   |
| <b>Vibration sensitivity:</b> | 10 - 55Hz, 1.5mm, 6 hours duration |
| <b>Shock severity:</b>        | 294m/s <sup>2</sup> (30G) for 11ms |

## ❖ Environmental

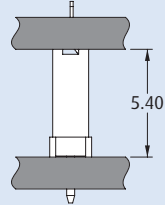
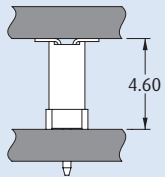
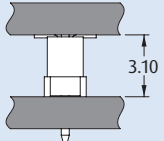
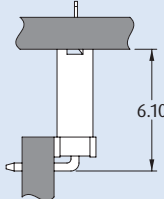
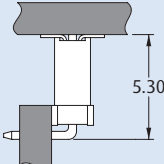
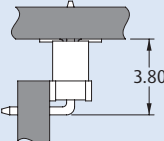
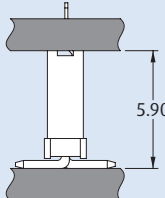
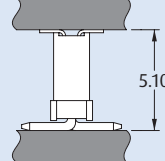
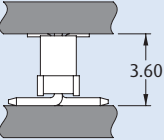
|                            |                     |
|----------------------------|---------------------|
| Operating temperature:     | -40°C to +105°C     |
| Solderability:             | 245°C for 5 seconds |
| Soldering heat resistance: | 260°C for 5 seconds |

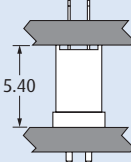
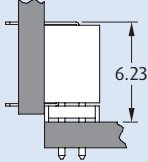
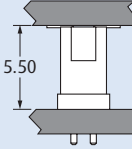
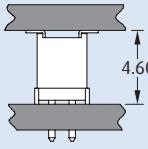
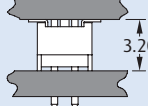
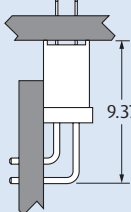
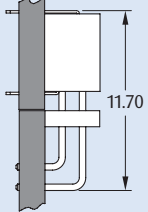
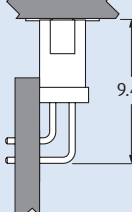
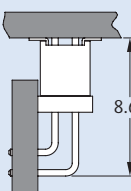
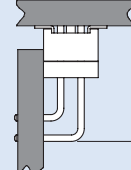
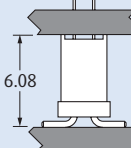
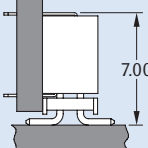
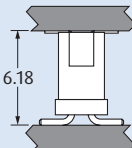
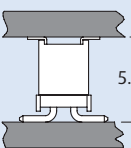
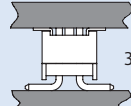
1.27mm (.050") PITCH

All dimensions in mm.

# Archer Connectors - M50 Mating Profiles

1.27mm (.050") PITCH

| SINGLE ROW |                    | FEMALE   |   |  |
|------------|--------------------|--|---|--|
|            |                    | VERTICAL PC TAIL   | VERTICAL SMT  | VERTICAL SMT<br>Low Profile  |
| MALE       | VERTICAL PC TAIL   |   |   |   |
|            | HORIZONTAL PC TAIL |   |   |   |
|            | VERTICAL SMT       |  |  |  |

| DOUBLE ROW |                    | FEMALE  |   |   |   |   |
|------------|--------------------|---|---|---|---|---|
|            |                    | VERTICAL PC TAIL  | HORIZONTAL PC TAIL  | VERTICAL SMT  | VERTICAL SMT<br>Low Profile   |   |
| MALE       | VERTICAL PC TAIL   |  |  |  |  |  |
|            | HORIZONTAL PC TAIL |  |  |  |  |  |
|            | VERTICAL SMT       |  |  |  |  |  |

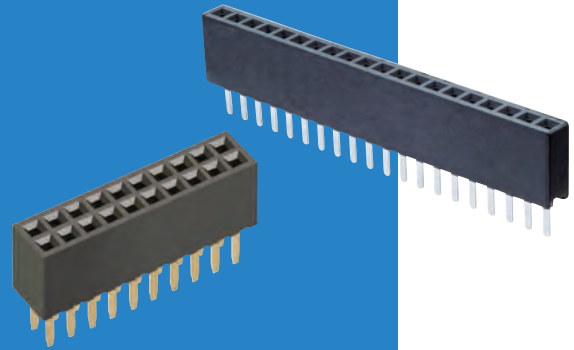
All dimensions in mm.



# Archer Connectors – M50

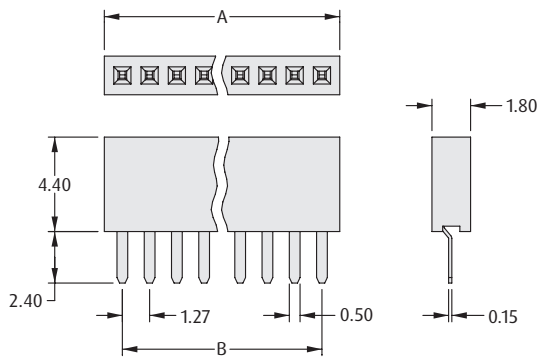
## Female Vertical Throughboard

- Twin beam connector for higher durability.



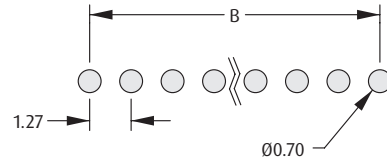
1.27mm (.050") PITCH

### SINGLE ROW



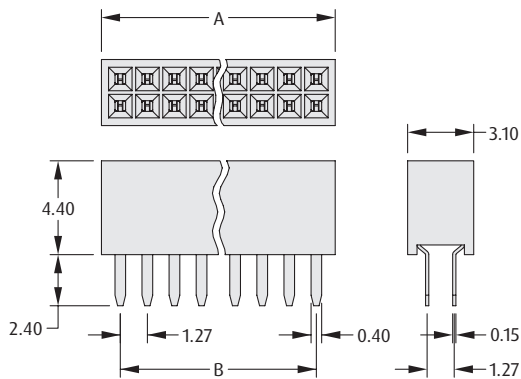
#### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 1.67$   |
| <b>B</b> | $1.27 \times (\text{No. of contacts per row} - 1)$ |



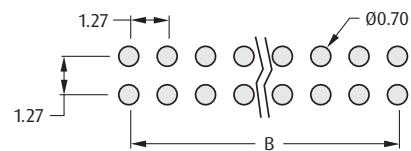
Recommended PC Board Pattern

### DOUBLE ROW



#### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 1.77$   |
| <b>B</b> | $1.27 \times (\text{No. of contacts per row} - 1)$ |



Recommended PC Board Pattern

### HOW TO ORDER

#### SERIES CODE

**M50 - 3 0 X XX XX**

#### TYPE

|          |            |
|----------|------------|
| <b>0</b> | Double Row |
| <b>3</b> | Single Row |

#### FINISH

|           |                         |
|-----------|-------------------------|
| <b>42</b> | Gold + Tin (Single Row) |
| <b>45</b> | Gold (Double Row)       |

#### NO. OF CONTACTS PER ROW

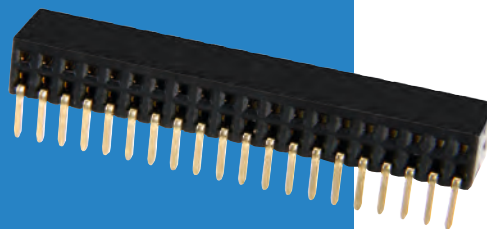
|                             |            |
|-----------------------------|------------|
| <b>02 to 06, 08, 10, 20</b> | Single Row |
| <b>03 to 15, 20, 25, 50</b> | Double Row |

All dimensions in mm.

# Archer Connectors – M50

## Female Horizontal Throughboard

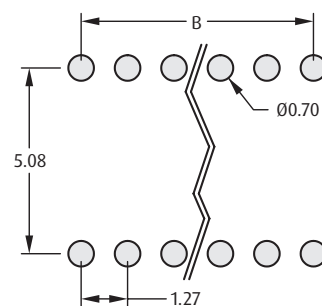
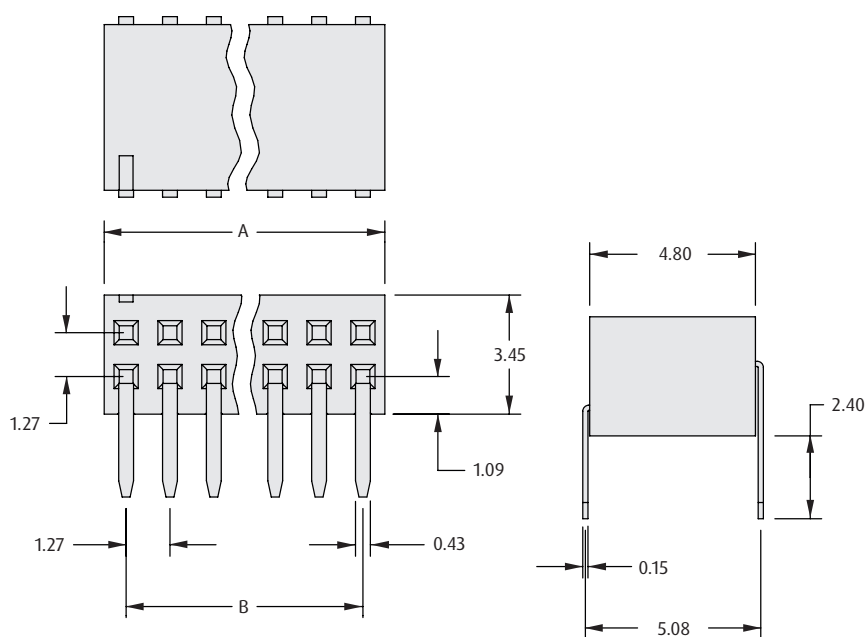
- Horizontal connector has two point solder fixing for connector rigidity.
- Twin beam connector for higher durability.



### HORIZONTAL

### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 1.67$   |
| <b>B</b> | $1.27 \times (\text{No. of contacts per row} - 1)$ |



Recommended PC Board Pattern

### HOW TO ORDER

**M50 - 320 XX 45**

SERIES CODE

FINISH

45 Gold

NO. OF CONTACTS PER ROW

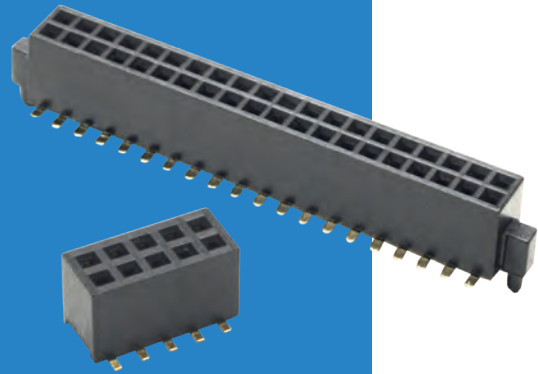
03 to 06, 08 to 10, 12, 15, 20

All dimensions in mm.

# Archer Connectors – M50

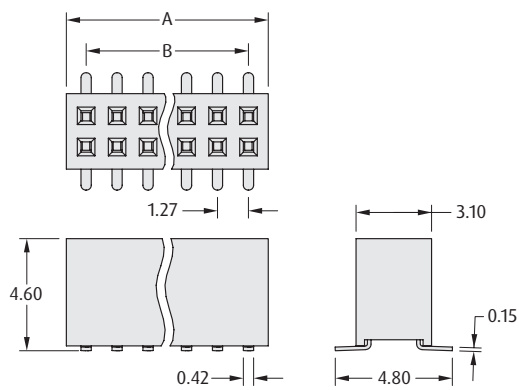
## Female Vertical Surface Mount

- ❖ Locating pegs (posts) available to ensure correct positioning on the board.
- ❖ Alternative height connectors available on the following page.
- ❖ Dual entry connector can be used as either top or bottom entry.



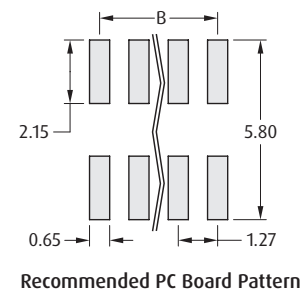
1.27mm (.050") PITCH

### WITHOUT POST

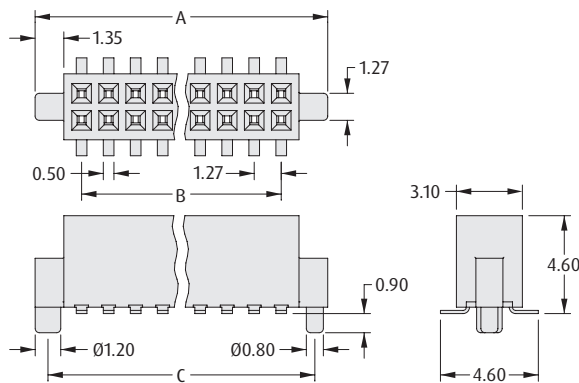


### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 1.62$   |
| <b>B</b> | $1.27 \times (\text{No. of contacts per row} - 1)$ |

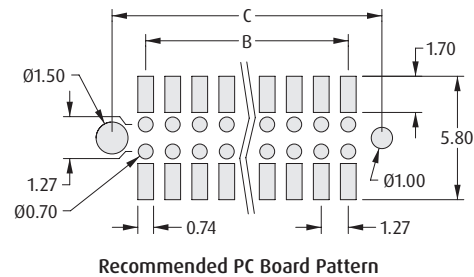


### WITH POST, DUAL ENTRY



### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 4.37$   |
| <b>B</b> | $1.27 \times (\text{No. of contacts per row} - 1)$ |
| <b>C</b> | $B + 3.16$   |



### HOW TO ORDER

#### SERIES CODE

**M50 - 31 X XX XX**

#### TYPE

|          |               |
|----------|---------------|
| <b>0</b> | Without Posts |
| <b>1</b> | With Posts    |

#### FINISH

|           |                         |
|-----------|-------------------------|
| <b>42</b> | Gold + Tin (With Posts) |
| <b>45</b> | Gold (Without Posts)    |

#### NO. OF CONTACTS PER ROW

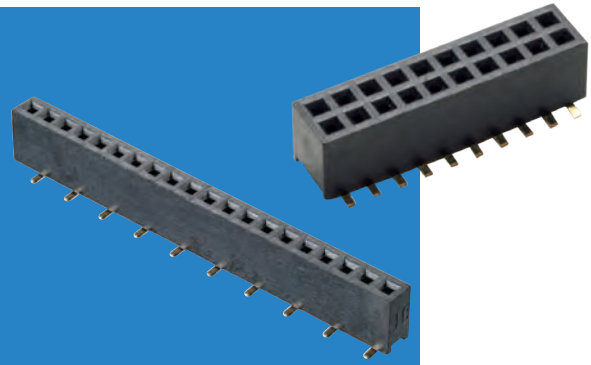
|                                     |               |
|-------------------------------------|---------------|
| <b>03 to 10, 12, 14, 20, 25, 30</b> | Without Posts |
| <b>05, 10, 25, 30</b>               | With Posts    |

All dimensions in mm.

# Archer Connectors – M50

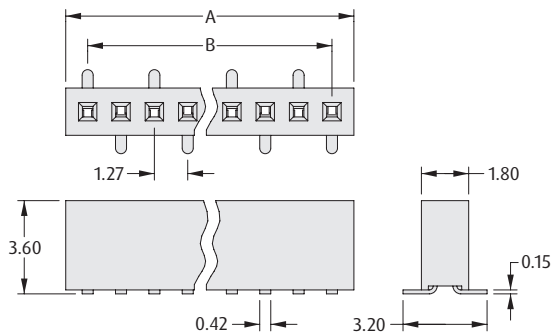
## Female Vertical Surface Mount, Low Profile

- Lower profile surface mount connector with twin beam contacts for additional board-to-board height options.



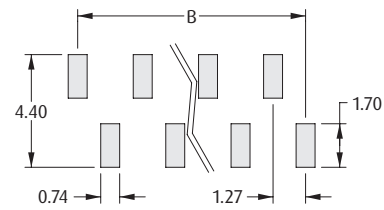
1.27mm (.050") PITCH

### SINGLE ROW



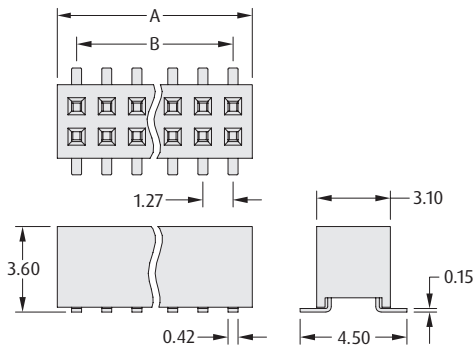
### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 1.67$   |
| <b>B</b> | $1.27 \times (\text{No. of contacts per row} - 1)$ |



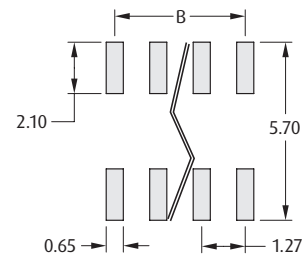
Recommended PC Board Pattern

### DOUBLE ROW



### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 1.73$   |
| <b>B</b> | $1.27 \times (\text{No. of contacts per row} - 1)$ |



Recommended PC Board Pattern

### HOW TO ORDER

**M50 - 31 X XX XX X**

#### SERIES CODE

#### TYPE

|          |            |
|----------|------------|
| <b>2</b> | Double Row |
| <b>4</b> | Single Row |

#### PACKAGING

|              |                            |
|--------------|----------------------------|
| <b>R</b>     | Tape & Reeled (Single Row) |
| <b>Blank</b> | Loose                      |

#### FINISH

|           |      |
|-----------|------|
| <b>45</b> | Gold |
|-----------|------|

#### NO. OF CONTACTS PER ROW

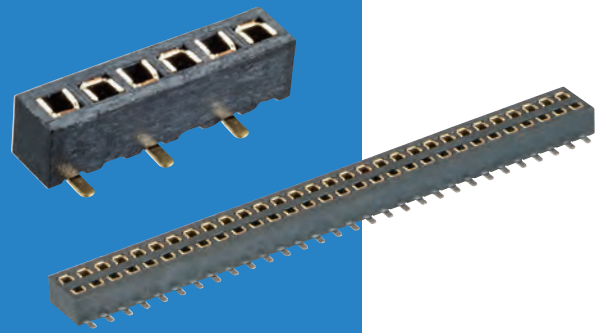
|                                 |            |
|---------------------------------|------------|
| <b>03 to 15, 20, 25, 30, 50</b> | Double Row |
| <b>02 to 06, 08, 10, 20</b>     | Single Row |

All dimensions in mm.

# Archer Connectors – M50

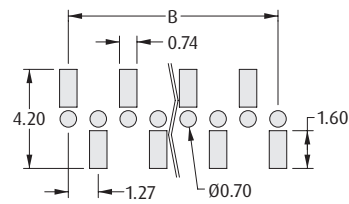
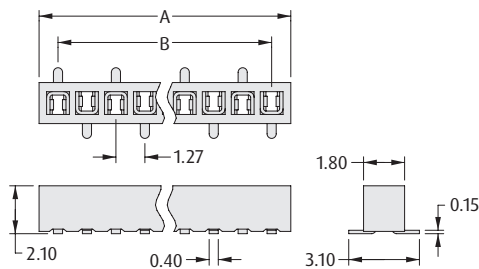
## Female Vertical Surface Mount, Low Profile

- ❑ Locating pegs (posts) available on double row to ensure correct positioning on the board.
- ❑ Dual entry connectors can be used as either top or bottom entry.



1.27mm (.050") PITCH

### SINGLE ROW

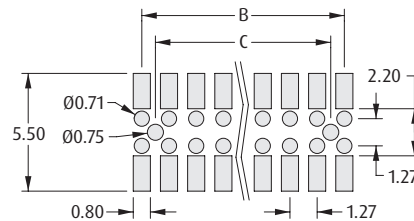
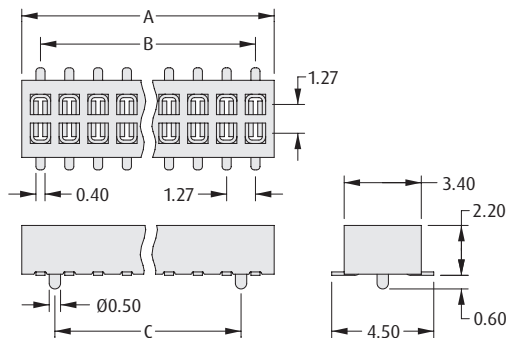


Recommended PC Board Pattern

### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 1.67$   |
| <b>B</b> | $1.27 \times (\text{No. of contacts per row} - 1)$ |

### DOUBLE ROW WITH POSTS



Recommended PC Board Pattern

### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 1.67$   |
| <b>B</b> | $1.27 \times (\text{No. of contacts per row} - 1)$ |
| <b>C</b> | $B + 1.27$   |

### HOW TO ORDER

**M50 - 31 X XX XX X**

#### SERIES CODE

#### TYPE

|          |                            |
|----------|----------------------------|
| <b>3</b> | Single Row (without posts) |
| <b>5</b> | Double Row with posts      |

#### PACKAGING

|              |                            |
|--------------|----------------------------|
| <b>R</b>     | Tape & Reeled (Single Row) |
| <b>Blank</b> | Loose                      |

#### FINISH

|           |                         |
|-----------|-------------------------|
| <b>42</b> | Gold + Tin (Double Row) |
| <b>45</b> | Gold (Single Row)       |

#### NO. OF CONTACTS PER ROW

|   |            |
|---|------------|
| <b>02 to 06, 08, 10, 20</b>               | Single Row |
| <b>03, 05, 06, 08, 10, 12, 15, 20, 25</b> | Double Row |

All dimensions in mm.

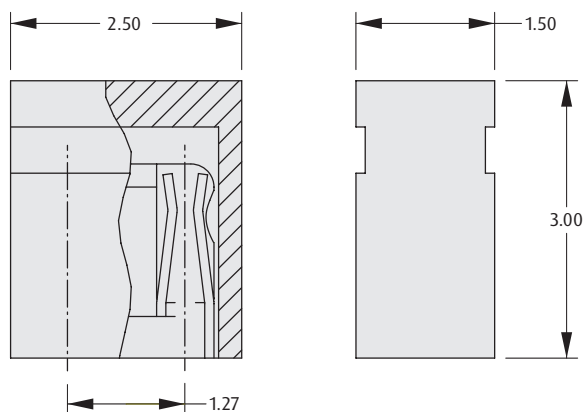
# Archer Connectors – M50

## Jumper Sockets

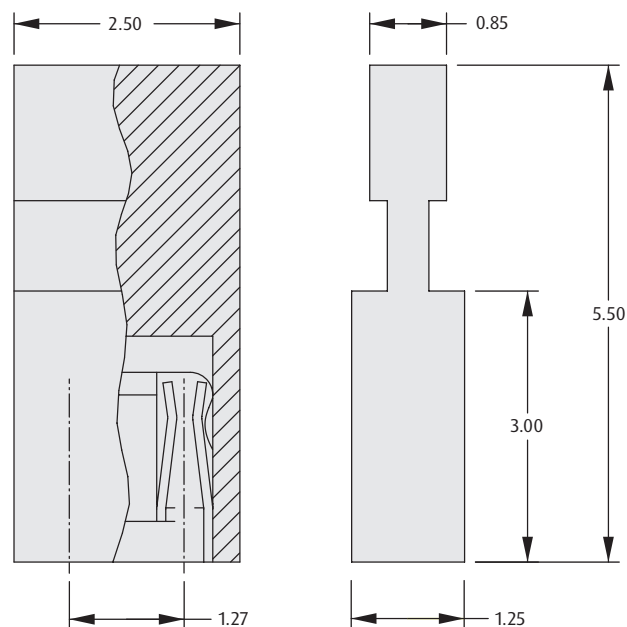
- ❖ Can be fitted and removed by hand, giving an alternative on-board programming method to DIP switches.
- ❖ Suitable for use with male M50 pin headers.
- ❖ Choice of colors available.
- ❖ Closed top with handle available for easier handling, placing and removing.



### CLOSED TOP



### CLOSED TOP WITH HANDLE



## HOW TO ORDER

### SERIES CODE

**M50 XXX 00 05**

### TYPE

| Closed Top |       | Closed Top with Handle |       |
|------------|-------|------------------------|-------|
| <b>190</b> | Black | <b>200</b>             | Black |
| <b>192</b> | Red   | <b>202</b>             | Red   |
| <b>193</b> | Blue  | <b>203</b>             | Blue  |

### FINISH

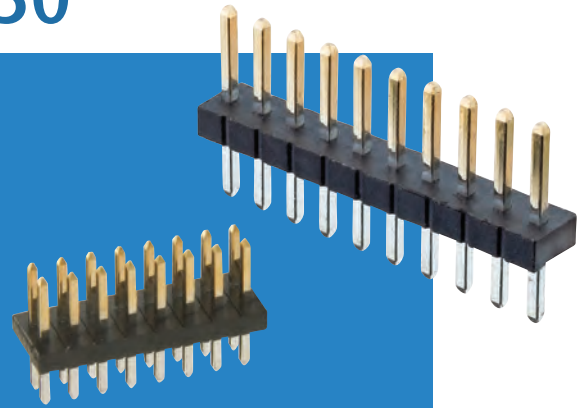
|           |      |
|-----------|------|
| <b>05</b> | Gold |
|-----------|------|

All dimensions in mm.

# Archer Connectors – M50

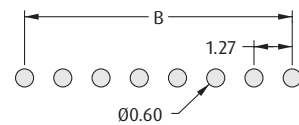
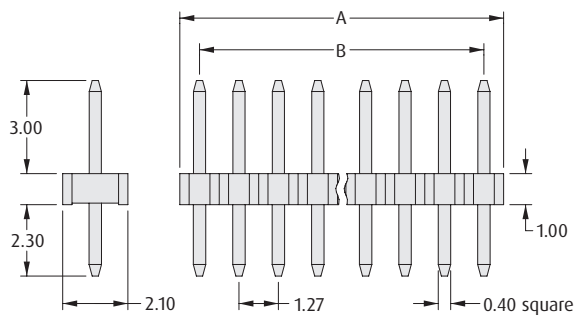
## Male Vertical Throughboard

- Suitable for use with female connectors and jumper sockets.



1.27mm (.050") PITCH

### SINGLE ROW

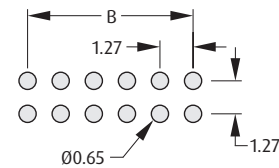
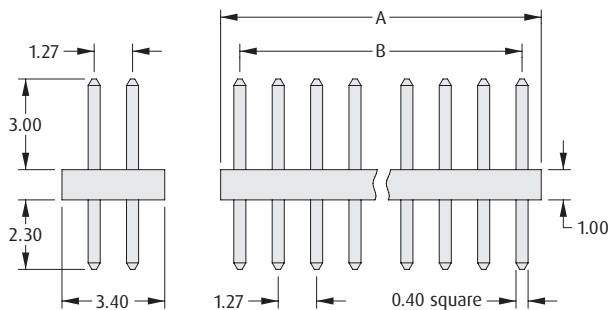


Recommended PC Board Pattern

### CALCULATION

|          |                                      |
|----------|--------------------------------------|
| <b>A</b> | 1.27 x No. of contacts per row       |
| <b>B</b> | 1.27 x (No. of contacts per row - 1) |

### DOUBLE ROW



Recommended PC Board Pattern

### HOW TO ORDER

**M50 - 35 X XX 42**

#### SERIES CODE

#### TYPE

|          |            |
|----------|------------|
| <b>0</b> | Double Row |
| <b>3</b> | Single Row |

#### FINISH

|           |            |
|-----------|------------|
| <b>42</b> | Gold + Tin |
|-----------|------------|

#### NO. OF CONTACTS PER ROW

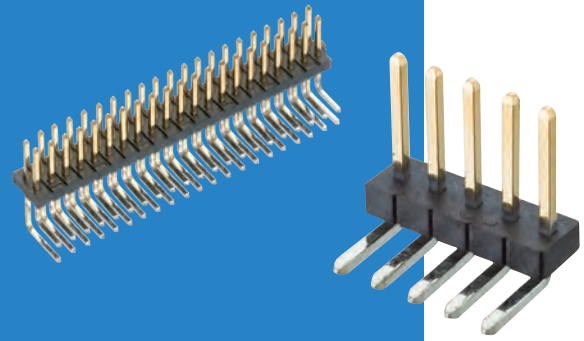
|   |            |
|---|------------|
| <b>05 to 08, 10, 12, 14, 15, 20, 25, 50</b> | Double Row |
| <b>02 to 06, 08, 10, 20</b>                 | Single Row |

All dimensions in mm.

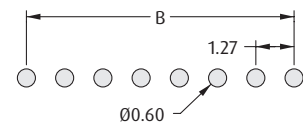
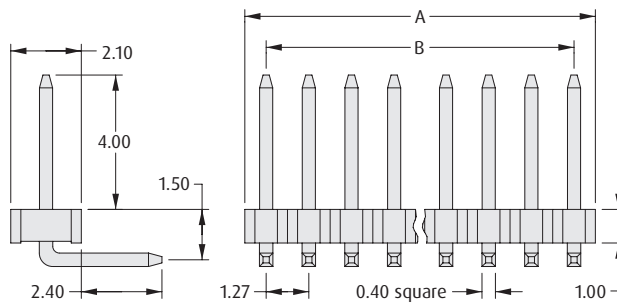
# Archer Connectors – M50

## Male Horizontal Throughboard

- Suitable for use with female connectors and jumper sockets.



### SINGLE ROW

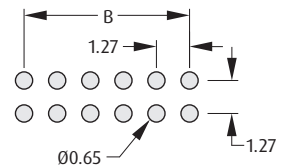
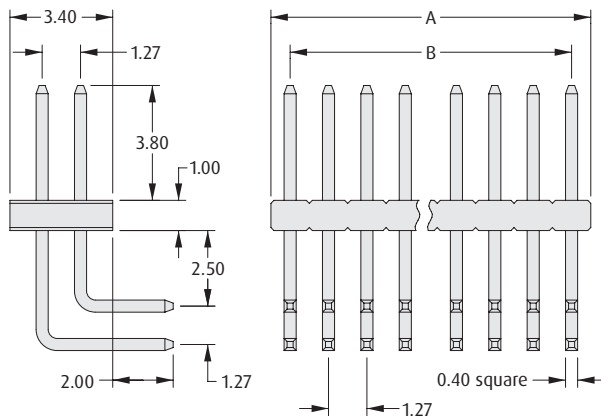


Recommended PC Board Pattern

### CALCULATION

|          |                                      |
|----------|--------------------------------------|
| <b>A</b> | 1.27 x No. of contacts per row       |
| <b>B</b> | 1.27 x (No. of contacts per row - 1) |

### DOUBLE ROW



Recommended PC Board Pattern

### HOW TO ORDER

**M50 - 39 X XX 42**

#### SERIES CODE

#### TYPE

|          |            |
|----------|------------|
| <b>0</b> | Double Row |
| <b>3</b> | Single Row |

#### FINISH

**42** Gold + Tin

#### NO. OF CONTACTS PER ROW

|   |            |
|---|------------|
| <b>02, 05, 06, 08, 10, 12, 15, 20, 25, 50</b> | Double Row |
| <b>02 to 06, 08, 10, 20</b>                   | Single Row |

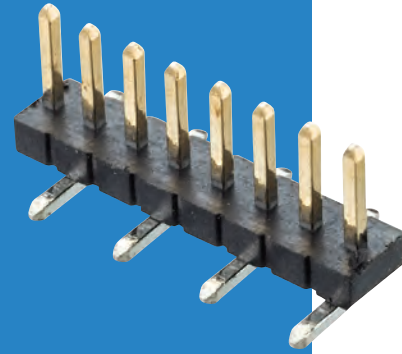
All dimensions in mm.



# Archer Connectors – M50

## Male Vertical Surface Mount Single Row

- ❖ Suitable for use with female connectors and jumper sockets.
- ❖ Tape and Reel packaging option includes Pick and Place cap for automated assembly.

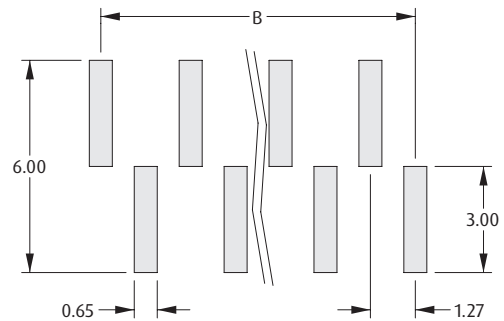
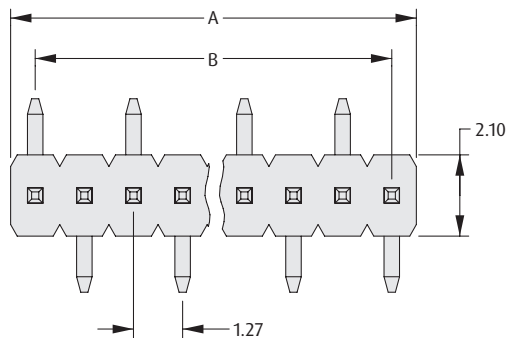


1.27mm (.050") PITCH

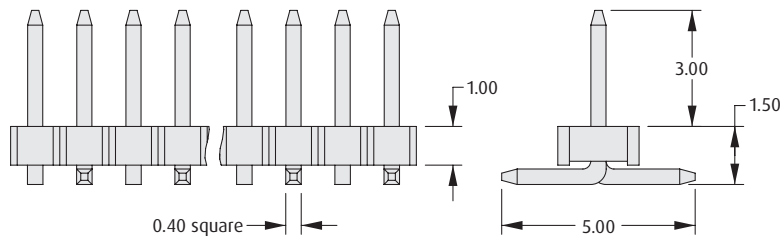
### SINGLE ROW

### CALCULATION

|          |                                      |
|----------|--------------------------------------|
| <b>A</b> | 1.27 x No. of contacts per row       |
| <b>B</b> | 1.27 x (No. of contacts per row - 1) |



Recommended PC Board Pattern



### HOW TO ORDER

**M50 - 363 XX 42 X**

**SERIES CODE**

**NO. OF CONTACTS PER ROW**

02 to 06, 08, 10, 20

### PACKAGING

|              |               |
|--------------|---------------|
| <b>Blank</b> | Loose         |
| <b>R</b>     | Tape & Reeled |

### FINISH

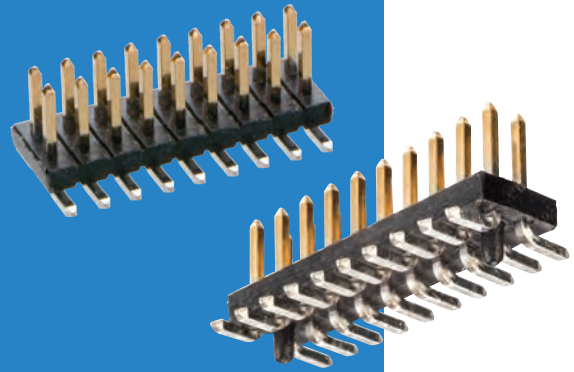
|           |            |
|-----------|------------|
| <b>42</b> | Gold + Tin |
|-----------|------------|

All dimensions in mm.

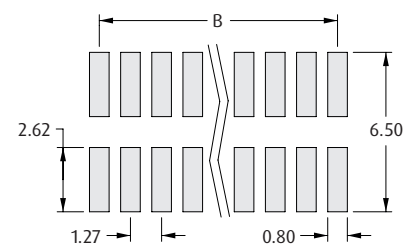
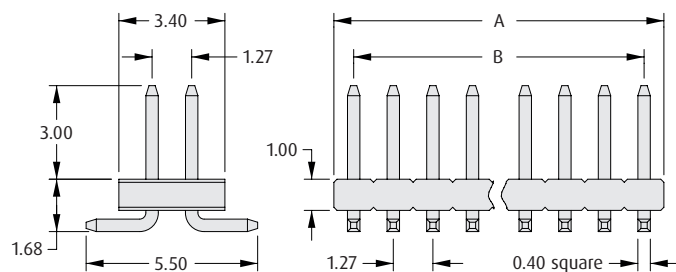
# Archer Connectors – M50

## Male Vertical Surface Mount Double Row

- ❖ Suitable for use with female connectors and jumper sockets.
- ❖ Available with or without location posts.
- ❖ Tape and Reel packaging option includes Pick and Place cap for automated assembly.



### WITHOUT POSTS

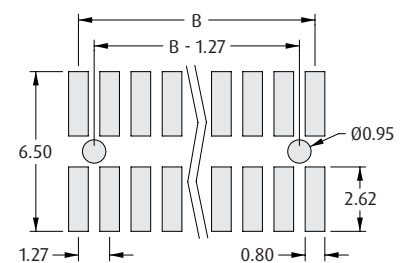
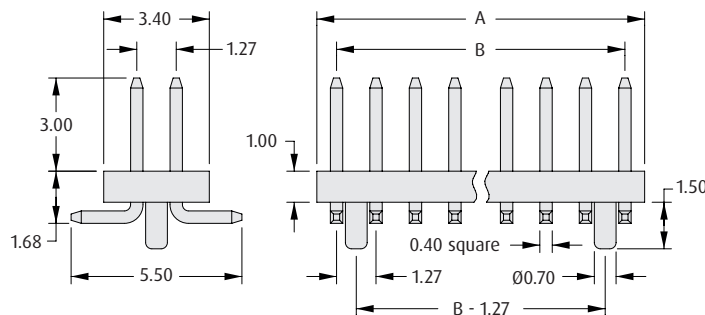


Recommended PC Board Pattern

### CALCULATION

|          |                                      |
|----------|--------------------------------------|
| <b>A</b> | 1.27 x No. of contacts per row       |
| <b>B</b> | 1.27 x (No. of contacts per row - 1) |

### WITH POSTS



Recommended PC Board Pattern

### HOW TO ORDER

**M50 - 36 X XX 42 X**

#### SERIES CODE

#### TYPE

|          |               |
|----------|---------------|
| <b>0</b> | Without Posts |
| <b>1</b> | With Posts    |

#### NO. OF CONTACTS PER ROW

|   |               |
|---|---------------|
| <b>02, 03, 05 to 10, 12, 15, 20, 25, 30, 50</b> | Without Posts |
| <b>05 to 08, 10, 12, 15, 20, 25</b>             | With Posts    |

#### PACKAGING

|              |  |
|--------------|--|
| <b>Blank</b> | Loose  |
| <b>R</b>     | Tape & Reeled<br>(check website for available sizes) |

#### FINISH

|           |            |
|-----------|------------|
| <b>42</b> | Gold + Tin |
|-----------|------------|

All dimensions in mm.

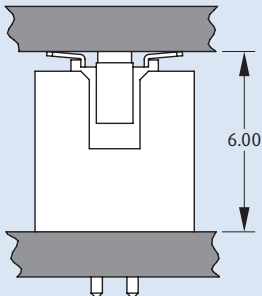
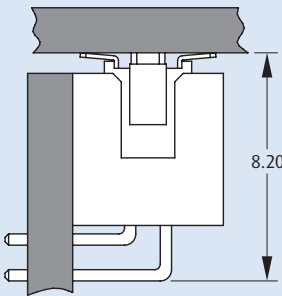
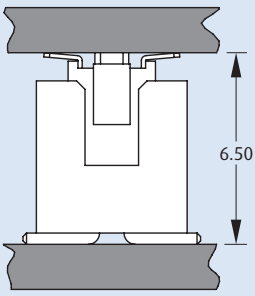
# Archer Connectors – Polarized Specification

➤ 1.27mm pitch male and female connectors, for board-to-board connection with polarization.

| ➤ Materials            |                                  | ➤ Mechanical               |                      |
|------------------------|----------------------------------|----------------------------|----------------------|
| Housings:              | High Temperature Plastic UL94V-0 | Durability:                | 100 operations       |
| Contacts:              | Copper Alloy                     | Insertion force (max):     | 2.0N per contact     |
| Finish:                | Gold                             | Withdrawal force (min):    | 0.15N per contact    |
| ➤ Electrical           |                                  | ➤ Environmental            |                      |
| Current:               | 1A per contact                   | Operating temperature:     | -40°C to +105°C      |
| Voltage proof:         | 300V AC, 500V DC for 1 minute    | Solderability:             | 245°C for 5 seconds  |
| Contact resistance:    | 30mΩ max                         | Soldering heat resistance: | 260°C for 10 seconds |
| Insulation resistance: | 500MΩ min                        |                            |                      |

1.27mm (.050") PITCH

## Mating Profiles

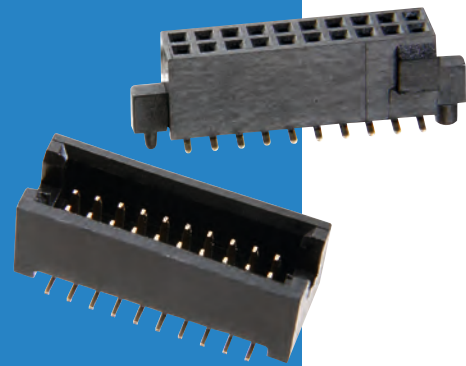
| MALE                |   |  |   |
|---------------------|---|--|---|
|                     | VERTICAL THROUGHBOARD   | HORIZONTAL THROUGHBOARD  | VERTICAL SMT  |
| FEMALE VERTICAL SMT |  |  |  |

All dimensions in mm.

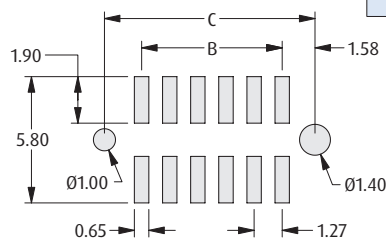
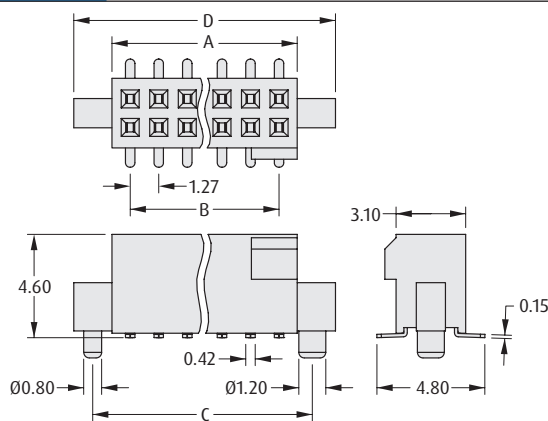
# Archer Connectors – Polarized

## Vertical Surface Mount

- ❖ Mating connectors in Surface Mount format.
- ❖ Female connector is also suitable for use with male PC Tail connectors on the following page.
- ❖ Polarization to prevent mis-mating.
- ❖ Locating pegs of different sizes ensure correct orientation and positioning on the board.
- ❖ Shrouded for additional pin protection.



### FEMALE

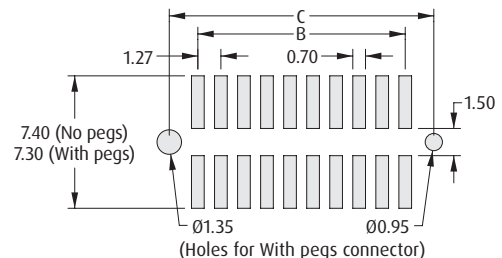
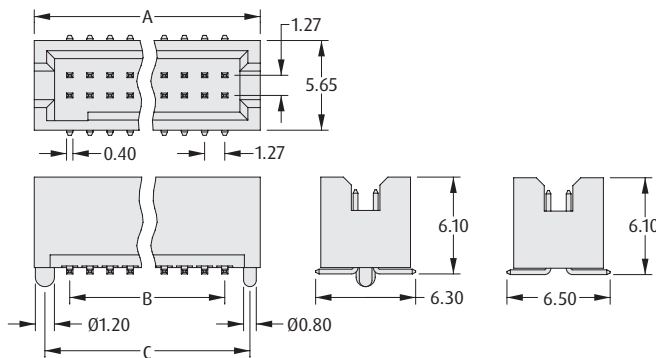


Recommended PC Board Pattern

### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 1.62$   |
| <b>B</b> | $1.27 \times (\text{No. of contacts per row} - 1)$ |
| <b>C</b> | $B + 3.15$   |
| <b>D</b> | $B + 5.02$   |

### MALE



Recommended PC Board Pattern

### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 4.47$   |
| <b>B</b> | $1.27 \times (\text{No. of contacts per row} - 1)$ |
| <b>C</b> | $B + 3.15$   |

## HOW TO ORDER

### SERIES CODE

### TYPE

|            |                   |
|------------|-------------------|
| <b>430</b> | Female            |
| <b>490</b> | Male without pegs |
| <b>491</b> | Male with pegs    |

### NO. OF CONTACTS PER ROW

|   |                   |
|---|-------------------|
| <b>05 to 08, 10, 12, 15, 19, 20, 25</b>   | Female            |
| <b>05, 07, 08, 10, 12, 14, 15, 20, 25</b> | Male without pegs |
| <b>05 to 08, 10, 12, 15, 20, 25</b>       | Male with pegs    |

### PACKAGING

|              |  |
|--------------|--|
| <b>Blank</b> | Loose  |
| <b>R</b>     | Tape & Reeled<br>(check website for available sizes) |

### FINISH

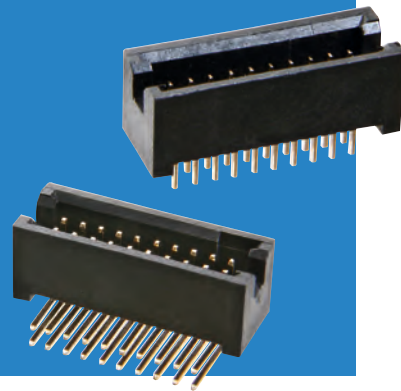
|           |      |
|-----------|------|
| <b>45</b> | Gold |
|-----------|------|

All dimensions in mm.

# Archer Connectors – Polarized

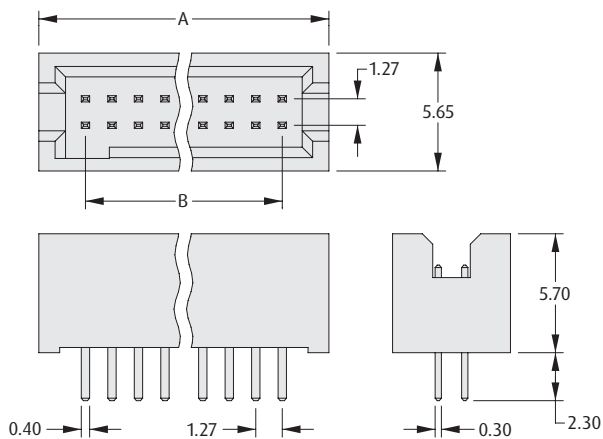
## Male Throughboard

- Throughboard male connectors suitable for use with female connector M50-430 Series, shown on previous page.
- Polarization to prevent mis-mating.
- Shrouded for additional pin protection.

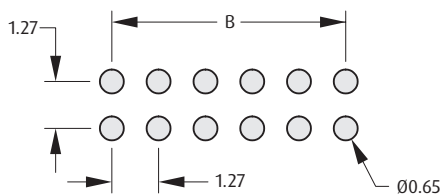
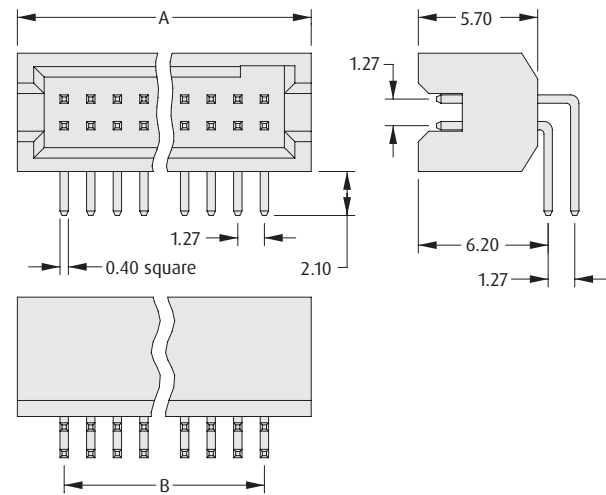


1.27mm (.050") PITCH

### VERTICAL



### HORIZONTAL



Recommended PC Board Pattern

### CALCULATION

|   |  |
|---|--|
| A | $B + 4.47$   |
| B | $1.27 \times (\text{No. of contacts per row} - 1)$ |

### HOW TO ORDER

**M50 - 4 X 0 XX 45**

**SERIES CODE**

**TYPE**

|   |            |
|---|------------|
| 7 | Vertical   |
| 8 | Horizontal |

**FINISH**

45 Gold

**NO. OF CONTACTS PER ROW**

|                          |            |
|--------------------------|------------|
| 05, 08, 10, 15, 17, 20   | Vertical   |
| 05 to 07, 10, 12, 15, 25 | Horizontal |

All dimensions in mm.

# Archer Connectors – M50 IDC Specification

- 1.27mm pitch cable-to-board connectors, with latching and polarization.

## Materials

|                       |                                    |
|-----------------------|------------------------------------|
| <b>Housings</b>       |                                    |
| PCB Connectors:       | LCP, UL94V-0                       |
| IDC Cable Connectors: | PBT, UL94V-0                       |
| <b>Contacts:</b>      |                                    |
| Copper Alloy          |                                    |
| <b>Finish</b>         |                                    |
| M50-380:              | Gold on contact area               |
| Others:               | Gold on contact area, Tin on tails |

## Electrical

|                              |                        |
|------------------------------|------------------------|
| <b>Current</b>               |                        |
| M50-330, 91X:                | 1A per contact         |
| M50-355, 365:                | 1.75A per contact      |
| M50-380, 90X:                | 0.5A per contact       |
| <b>Voltage proof</b>         |                        |
| M50-90X/91X:                 | 300V DC for 1 minute   |
| Others:                      | 1,000V AC for 1 minute |
| <b>Contact resistance:</b>   |                        |
| 30mΩ max                     |                        |
| <b>Insulation resistance</b> |                        |
| M50-90X, 91X:                | 5MΩ min                |
| Others:                      | 1,000MΩ min            |

## Mechanical

|                                |                   |
|--------------------------------|-------------------|
| <b>Durability:</b>             | 100 operations    |
| <b>Insertion force (max):</b>  | 1.0N per contact  |
| <b>Withdrawal force (min):</b> | 0.15N per contact |

## Environmental

|                                   |                 |
|-----------------------------------|-----------------|
| <b>Operating temperature</b>      |                 |
| PCB Connectors:                   | -55°C to +125°C |
| IDC Cable Connectors:             | -40°C to +105°C |
| Cable Assembly:                   | -20°C to +105°C |
| <b>Solderability:</b>             |                 |
| 245°C for 5 seconds               |                 |
| <b>Soldering heat resistance:</b> |                 |
| 260°C for 10 seconds              |                 |

## Mating Profiles

|              | MALE                  |              |       |
|--------------|-----------------------|--------------|-------|
|              | VERTICAL THROUGHBOARD | VERTICAL SMT | CABLE |
| FEMALE CABLE |                       |              |       |

All dimensions in mm.

# Archer Connectors – M50 IDC

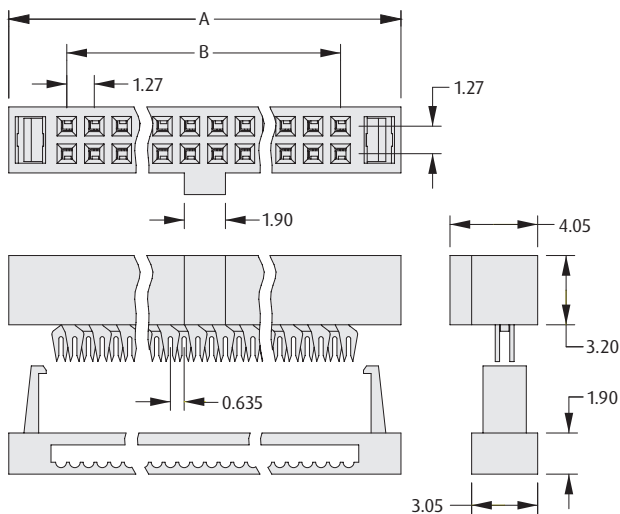
## Female Cable Connector & Cable Assembly

- ❖ Suitable for use with male vertical latching connectors shown on the following page.
- ❖ IDC connection for fast termination of multiple contacts.
- ❖ Polarized to prevent mis-mating.
- ❖ Secure cable retention with positive latching to header.
- ❖ Standard cable assembly lengths from stock.
- ❖ Instruction sheet for Hand Tool is available at [www.harwin.com/instructions](http://www.harwin.com/instructions).



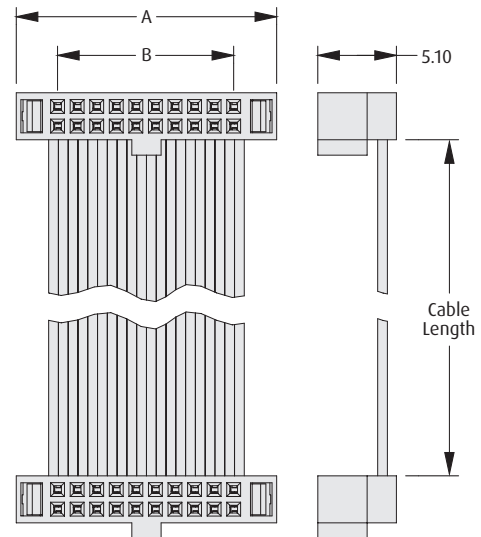
1.27mm (.050") PITCH

### FEMALE IDC



### FEMALE-TO-FEMALE CABLE

- ❖ Uses 0.635mm pitch 30 AWG Ribbon cable to UL2678.
- ❖ Constructed with Contact 1 attached to Contact 1, Contact 2 to Contact 2, etc.



### HAND TOOL



**ORDER CODE**  
**Z50-020**

### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 5.47$   |
| <b>B</b> | $1.27 \times (\text{No. of contacts per row} - 1)$ |

### HOW TO ORDER

**M50 - XXX XX 42**

#### SERIES CODE

#### TYPE

|            |                      |
|------------|----------------------|
| <b>330</b> | Female IDC Connector |
| <b>910</b> | 150mm Cable Assembly |
| <b>911</b> | 300mm Cable Assembly |

#### FINISH

|           |            |
|-----------|------------|
| <b>42</b> | Gold + Tin |
|-----------|------------|

#### NO. OF CONTACTS PER ROW

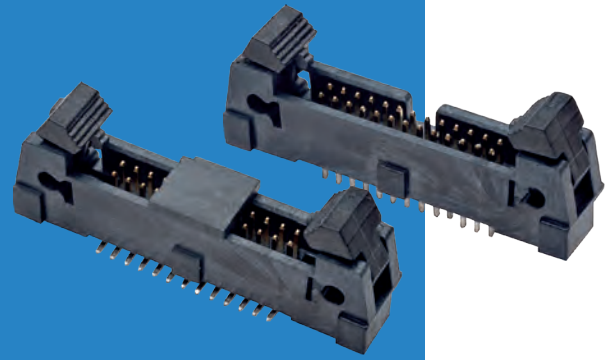
|                               |              |
|-------------------------------|--------------|
| <b>05, 10, 13, 17, 20, 25</b> | All          |
| <b>06, 07, 08</b>             | M50-330 only |

All dimensions in mm.

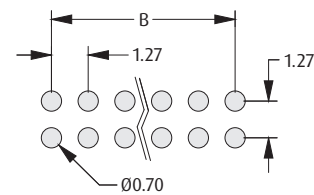
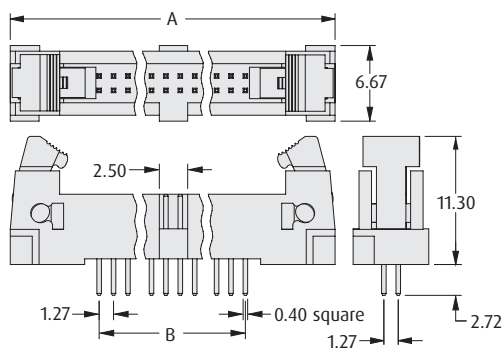
# Archer Connectors – M50 IDC

## Male Vertical Latching Connectors

- ❑ Suitable for use with female cable connectors shown on previous page.
- ❑ Surface mount option has locking pegs for location and retention.
- ❑ Shrouded for robust pin protection.
- ❑ Polarized to prevent mis-mating.
- ❑ Secure, positive latch & ejection system.
- ❑ Tape and Reel packaging option includes Pick and Place cap for automated assembly.



### THROUGHBOARD

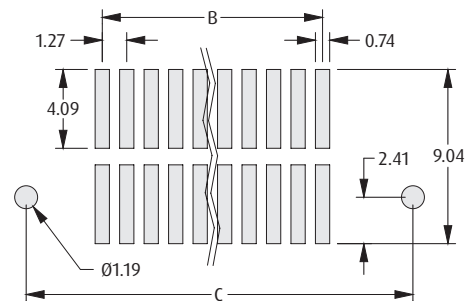
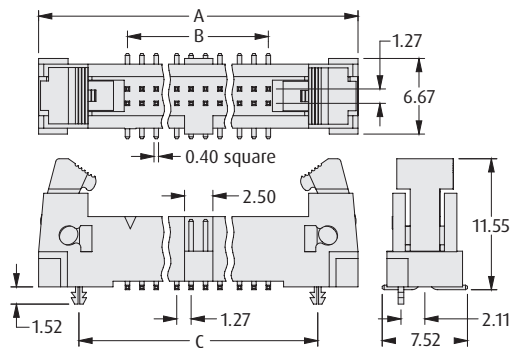


Recommended PC Board Pattern

#### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 15.75$  |
| <b>B</b> | $1.27 \times (\text{No. of contacts per row} - 1)$ |
| <b>C</b> | $B + 8.64$   |

### SURFACE MOUNT



Recommended PC Board Pattern

### HOW TO ORDER

**M50 - 3 X 5 XX 42 X**

#### SERIES CODE

#### TYPE

|          |               |
|----------|---------------|
| <b>5</b> | Throughboard  |
| <b>6</b> | Surface Mount |

#### NO. OF CONTACTS PER ROW

|                                       |               |
|---------------------------------------|---------------|
| <b>05, 06, 08, 10, 13, 17, 20, 25</b> | Throughboard  |
| <b>05 to 08, 10, 13, 17, 20, 25</b>   | Surface Mount |

#### PACKAGING

|              |                         |
|--------------|-------------------------|
| <b>R</b>     | Tape & Reeled (M50-365) |
| <b>Blank</b> | Loose (M50-355)         |

#### FINISH

|           |            |
|-----------|------------|
| <b>42</b> | Gold + Tin |
|-----------|------------|

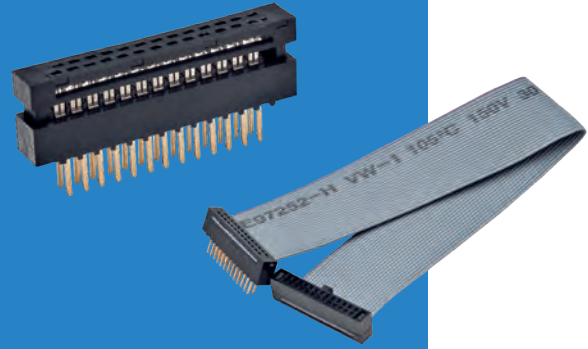
All dimensions in mm.



# Archer Connectors – M50 IDC

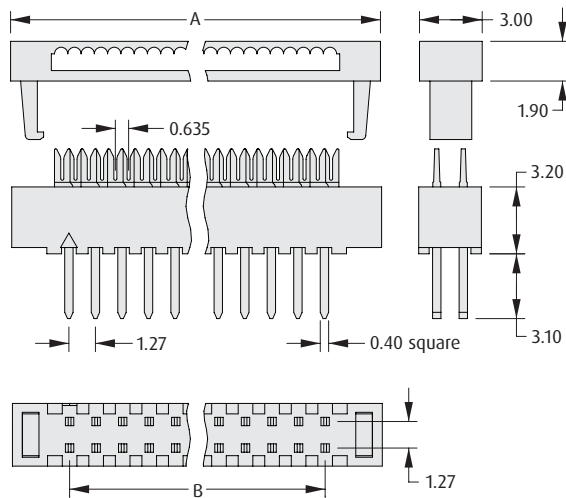
## Male Cable Connector & Cable Assembly

- Male transitional cable connector suitable for soldering directly to PCB, permits cost effective cable to PCB attachment.
- IDC connection for fast termination of multiple contacts.
- Suitable for mating with other sockets from the Archer range.
- Low profile, small footprint.
- Instruction sheet for Hand Tool is available at [www.harwin.com/instructions](http://www.harwin.com/instructions).



1.27mm (.050") PITCH

### MALE IDC



### HAND TOOL



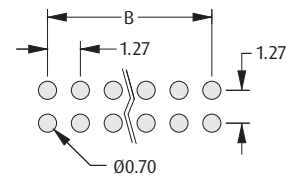
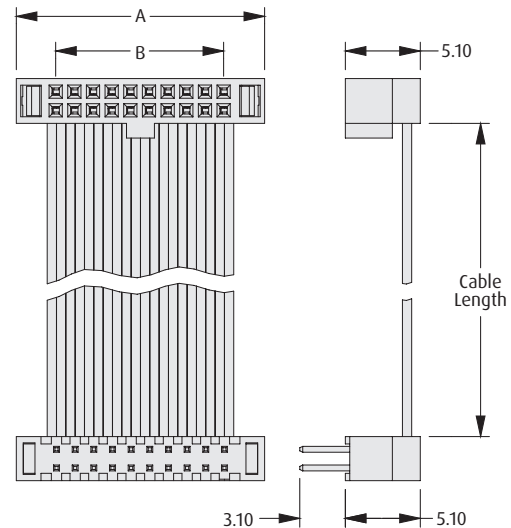
**ORDER CODE**  
**Z50-030**

### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $B + 5.47$   |
| <b>B</b> | $1.27 \times (\text{No. of contacts per row} - 1)$ |

### MALE-TO-FEMALE CABLE

- Uses 0.635mm pitch 30 AWG Ribbon cable to UL2678.
- Constructed with Contact 1 attached to Contact 1, Contact 2 to Contact 2, etc.



Recommended  
PC Board Pattern

### HOW TO ORDER

#### SERIES CODE

#### TYPE

|            |                      |
|------------|----------------------|
| <b>380</b> | Male IDC Connector   |
| <b>901</b> | 150mm Cable Assembly |
| <b>902</b> | 300mm Cable Assembly |

**M50 - XXX XX 42**

#### FINISH

|           |            |
|-----------|------------|
| <b>42</b> | Gold + Tin |
|-----------|------------|

#### NO. OF CONTACTS PER ROW

|                               |              |
|-------------------------------|--------------|
| <b>05, 10, 13, 17, 20, 25</b> | All          |
| <b>06, 07, 08</b>             | M50-380 only |

All dimensions in mm.

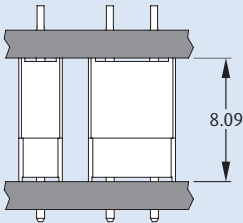
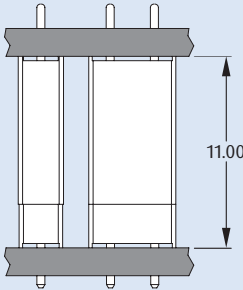
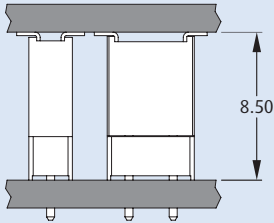
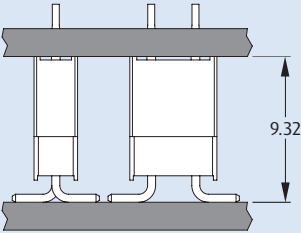
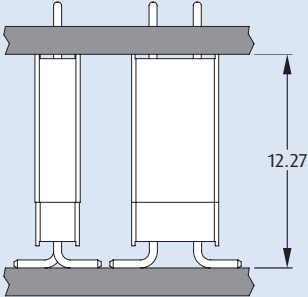
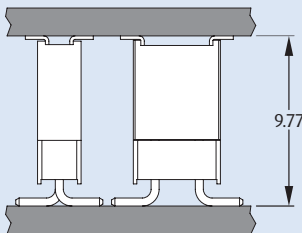
# Archer Connectors – M52 Specification

1.27mm (.050") PITCH

❖ 1.27mm x 2.54mm pitch male pin headers (with 0.46mm square pins) and female sockets, for vertical board-to-board connection.

| ❖ Materials           |                                  | ❖ Mechanical               |  |
|-----------------------|----------------------------------|----------------------------|--|
| Housings:             | High Temperature Plastic UL94V-0 | Durability:                | 300 operations                         |
| Contacts:             | Copper Alloy                     | Insertion force (max)      |  |
| Finish:               | Gold                             | M52-500, 510:              | 1.0N per contact                       |
|                       |                                  | Others:                    | 1.5N per contact                       |
|                       |                                  | Withdrawal force (min)     |  |
|                       |                                  | M52-500, 510:              | 0.12N per contact                      |
|                       |                                  | Others:                    | 0.1N per contact                       |
|                       |                                  | Vibration sensitivity:     | 50-2,000Hz, 3.13G, 45 minutes duration |
|                       |                                  | Shock severity:            | 294m/s <sup>2</sup> (30G) for 11ms     |
| ❖ Electrical          |                                  | ❖ Environmental            |  |
| Current:              | 1A per contact                   | Operating temperature:     | -40°C to +105°C                        |
| Voltage proof         |                                  | Solderability:             | 245°C for 5 seconds                    |
| M52-500, 510:         | 500V AC, 1,000V DC for 1 minute  | Soldering heat resistance: | 260°C for 10 seconds                   |
| Others:               | 1,000V AC/DC for 1 minute        |                            |  |
| Contact resistance:   | 30mΩ max                         |                            |  |
| Insulation resistance | 1,000MΩ min                      |                            |  |

## Mating Profiles

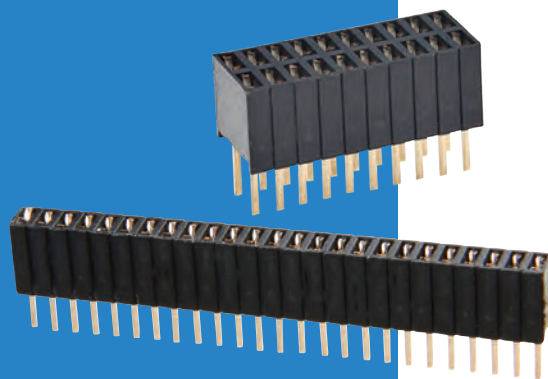
|      |                        | FEMALE  |  |   |
|------|------------------------|---|--|---|
|      |                        | VERTICAL THROUGHBOARD<br>(4.6mm Height)   | VERTICAL THROUGHBOARD<br>(8.5mm Height)  | VERTICAL SMT  |
| MALE | VERTICAL THROUGH-BOARD |  |  |  |
|      | VERTICAL SMT           |  |  |  |

All dimensions in mm.

# Archer Connectors – M52

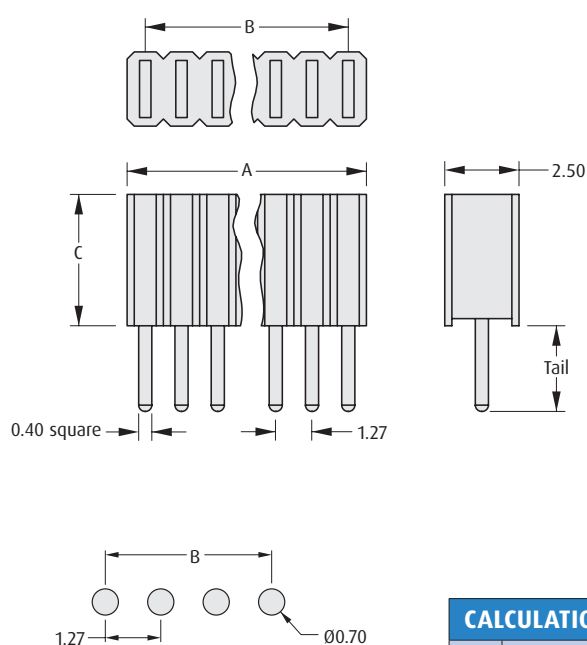
## Female Vertical Throughboard

- ❖ Choice of connector height.
- ❖ Suitable for use with male connectors with 0.46mm square pins.



1.27mm (.050") PITCH

### SINGLE ROW

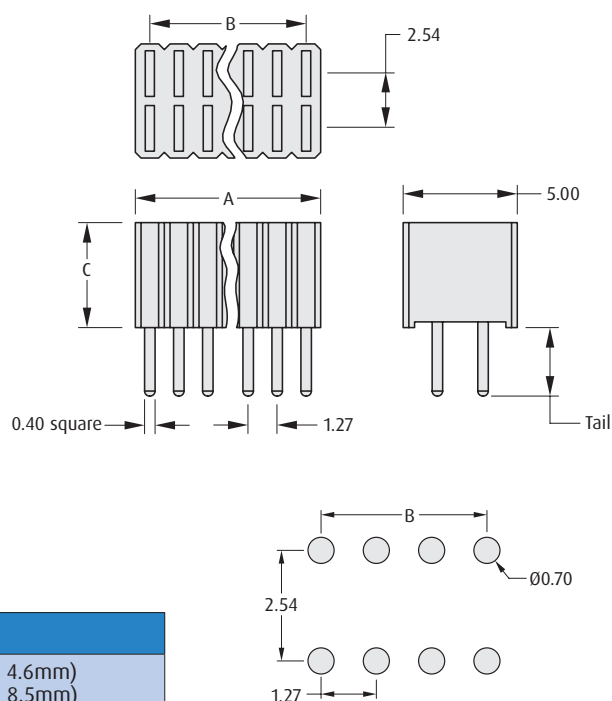


Recommended PC Board Pattern

#### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | B + 1.67 (when C = 4.6mm)<br>B + 1.27 (when C = 8.5mm) |
| <b>B</b> | 1.27 x (No. of contacts per row - 1)                   |

### DOUBLE ROW



Recommended PC Board Pattern

### HOW TO ORDER

**M52 - 5 X X XX 45**

#### SERIES CODE

#### NO. OF ROWS

|          |            |
|----------|------------|
| <b>0</b> | Single Row |
| <b>1</b> | Double Row |

#### HEIGHT

|          |                          |
|----------|--------------------------|
| <b>0</b> | C = 4.6mm, Tail = 3.00mm |
| <b>1</b> | C = 8.5mm, Tail = 2.80mm |

#### FINISH

|           |      |
|-----------|------|
| <b>45</b> | Gold |
|-----------|------|

#### NO. OF CONTACTS PER ROW

|   |               |
|---|---------------|
| <b>03 to 10, 12, 14 to 16, 20, 25, 40</b> | Single, 4.6mm |
| <b>03 to 10, 12, 15, 20, 23, 25</b>       | Single, 8.5mm |
| <b>03 to 10, 12, 15, 20, 25, 30, 40</b>   | Double 4.6mm  |
| <b>03 to 10, 12, 15, 20, 23, 25</b>       | Double, 8.5mm |

All dimensions in mm.

# Archer Connectors – M52

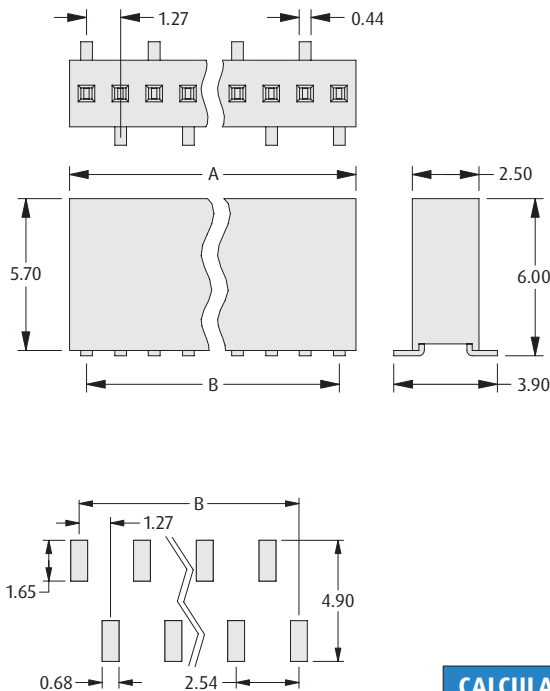
## Female Vertical Surface Mount

- Suitable for use with male pin headers with 0.46mm square pins.
- Twin beam contact for cost-effective reliability.



1.27mm (.050") PITCH

### SINGLE ROW

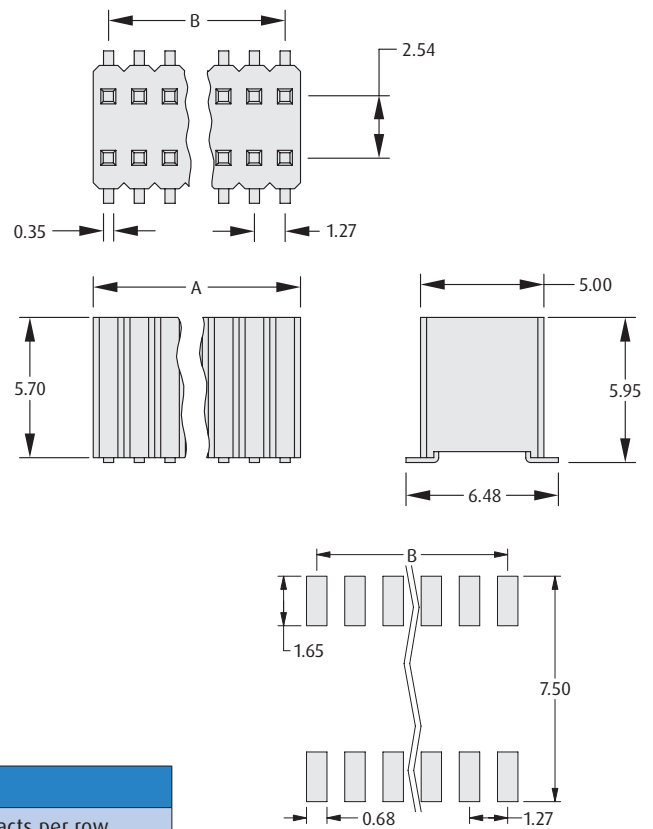


Recommended PC Board Pattern

#### CALCULATION

|          |                                      |
|----------|--------------------------------------|
| <b>A</b> | 1.27 x No. of contacts per row       |
| <b>B</b> | 1.27 x (No. of contacts per row - 1) |

### DOUBLE ROW



Recommended PC Board Pattern

### HOW TO ORDER

**M52 - 5 X 5 XX 45**

**SERIES CODE**

**TYPE**

|          |            |
|----------|------------|
| <b>0</b> | Single Row |
| <b>1</b> | Double Row |

**FINISH**

**45** Gold

**NO. OF CONTACTS PER ROW**

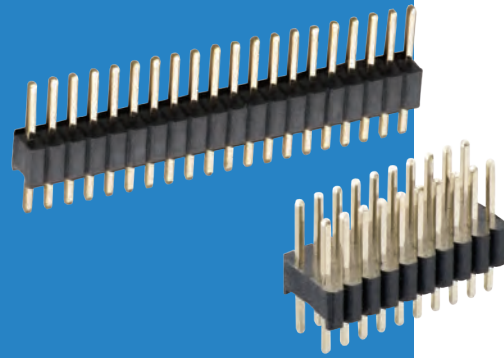
**03 to 10, 12, 15, 20, 25**

All dimensions in mm.

# Archer Connectors – M52

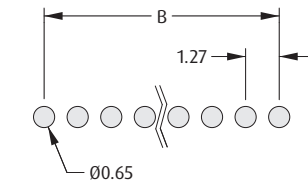
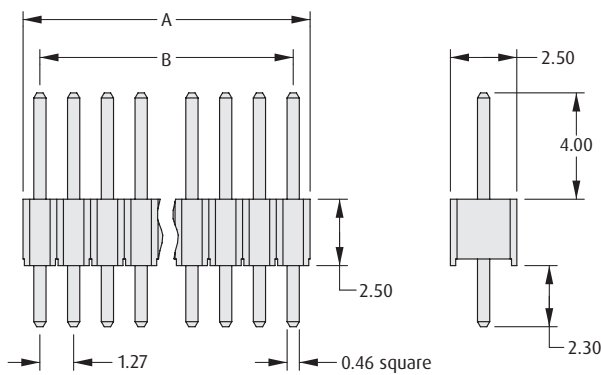
## Male Vertical Throughboard

- Suitable for use with female connectors shown on previous page.



1.27mm (.050") PITCH

### SINGLE ROW

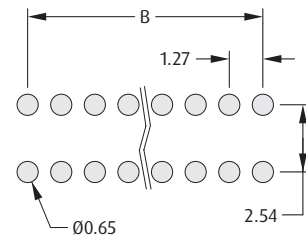
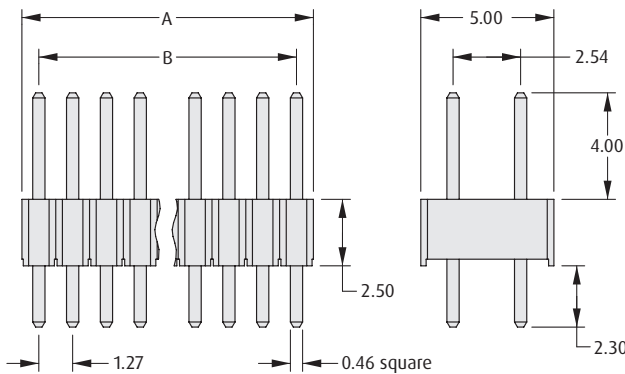


Recommended PC Board Pattern

### CALCULATION

|          |                                      |
|----------|--------------------------------------|
| <b>A</b> | 1.27 x No. of contacts per row       |
| <b>B</b> | 1.27 x (No. of contacts per row - 1) |

### DOUBLE ROW



Recommended PC Board Pattern

### HOW TO ORDER

**M52 - 040023 X XX 45**

**SERIES CODE**

**TYPE**

|          |            |
|----------|------------|
| <b>V</b> | Single Row |
| <b>W</b> | Double Row |

**FINISH**

|           |      |
|-----------|------|
| <b>45</b> | Gold |
|-----------|------|

**NO. OF CONTACTS PER ROW**

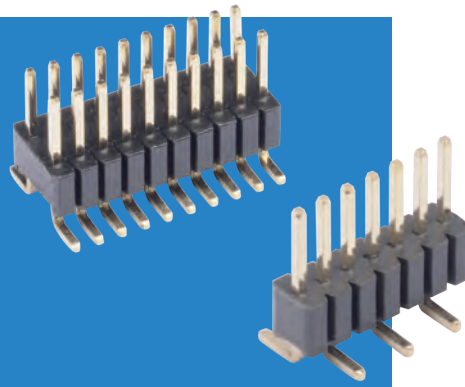
05, 10, 20, 25

All dimensions in mm.

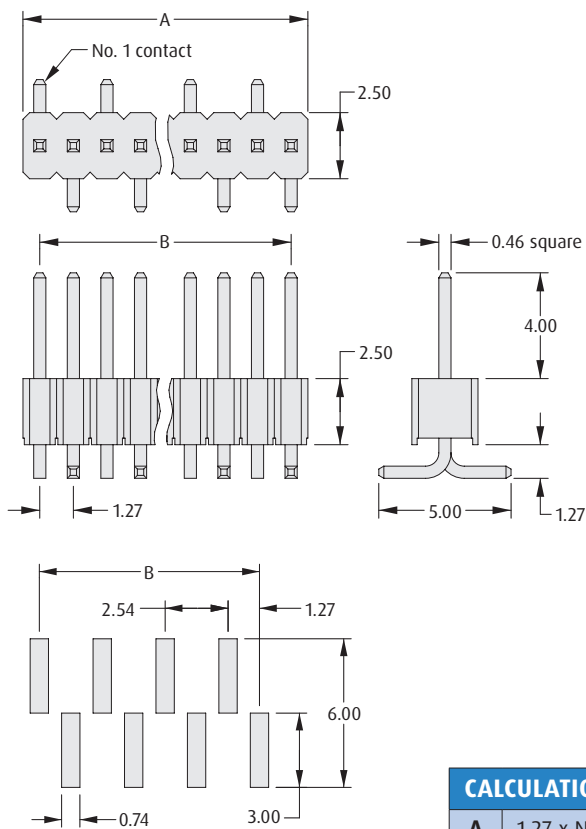
# Archer Connectors – M52

## Male Vertical Surface Mount

- Suitable for use with female connectors shown on previous page.



### SINGLE ROW

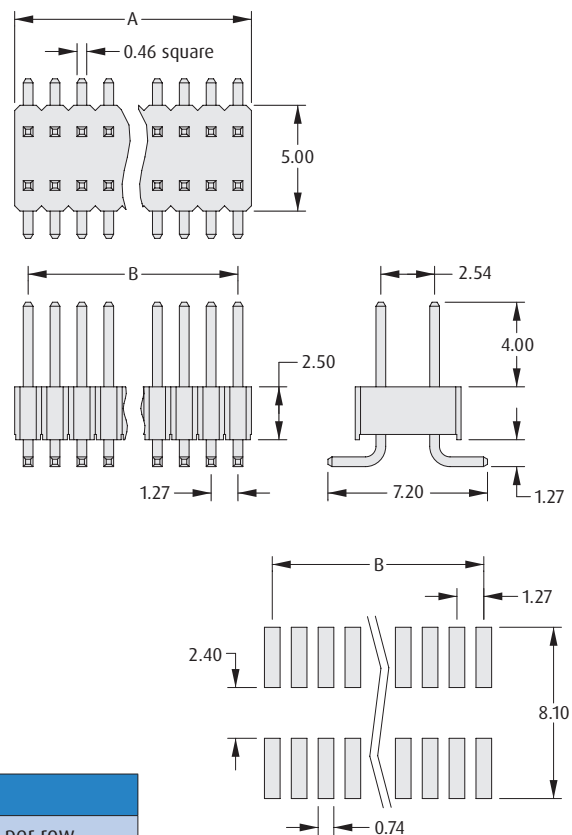


Recommended PC Board Pattern

#### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $1.27 \times \text{No. of contacts per row}$       |
| <b>B</b> | $1.27 \times (\text{No. of contacts per row} - 1)$ |

### DOUBLE ROW



Recommended PC Board Pattern

### HOW TO ORDER

**M52 - 040000 X XX 45**

**SERIES CODE**

**TYPE**

|          |            |
|----------|------------|
| <b>P</b> | Single Row |
| <b>S</b> | Double Row |

**FINISH**

|           |      |
|-----------|------|
| <b>45</b> | Gold |
|-----------|------|

**NO. OF CONTACTS PER ROW**

05, 10, 20, 25

All dimensions in mm.

# PCB Sockets

## Contents

|                        |     |
|------------------------|-----|
| Introduction           | 260 |
| Specifications         | 262 |
| SMT PCB Sockets        | 263 |
| Sockets For Ø0.5mm Pin | 265 |
| Sockets For Ø0.8mm Pin | 268 |
| Sockets For Ø1mm Pin   | 269 |
| Sockets For Ø2mm Pin   | 271 |
| Test Sockets           | 272 |
| IC Socket Strip        | 273 |
| Dual Row IC Socket     | 274 |

# PC Board Sockets

Individual sockets for PCB mounting, these contacts give a simple alternative to hard-wiring connections and oddform components directly to the PCB - allowing for rework, module replacement or upgrade, and in-service repair.

The individual sockets come in a choice of styles and mounting options. The primary specification for all PCB sockets is the size of male pin (or component termination tail) that will mate with the socket. Additional options may also then be available, depending on the socket range at that size.

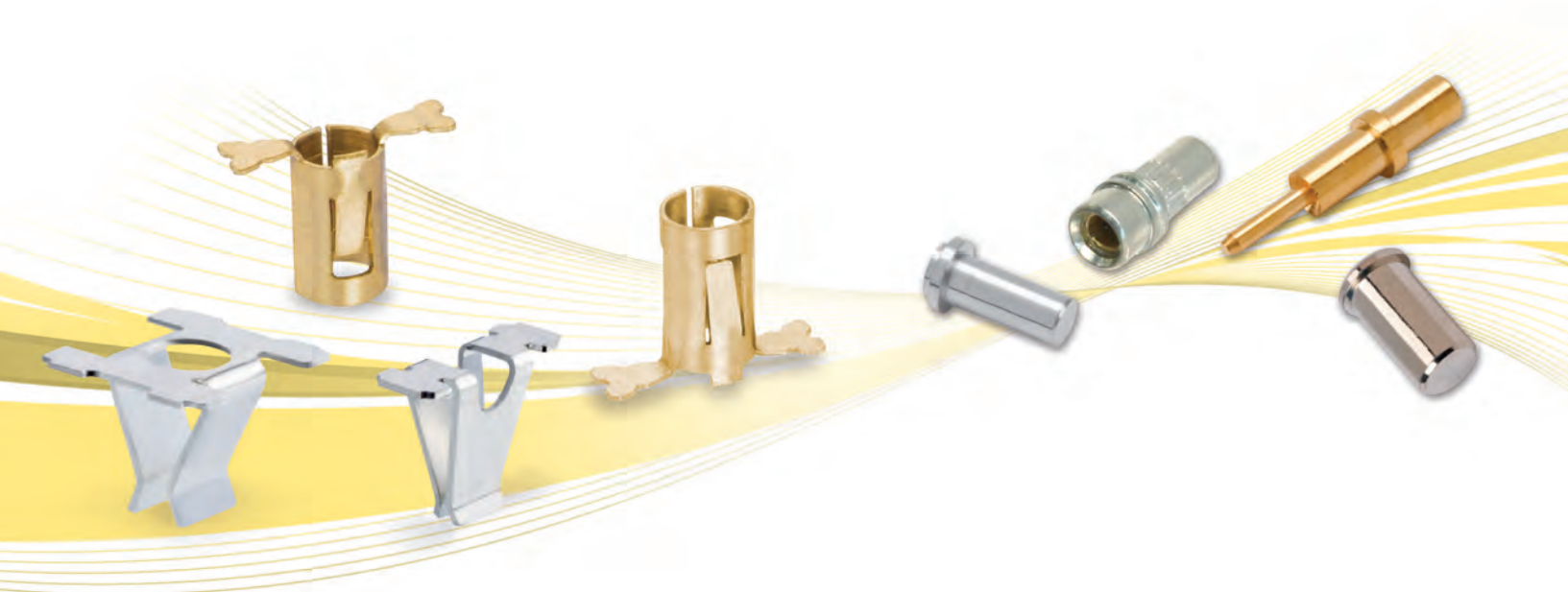
- ❖ Typically very low-profile, with most of the socket sitting within the PCB thickness, or below
- ❖ Full range accepts pin sizes from Ø0.41mm to Ø2.30mm
- ❖ Product styles range from 2 to 6 points of contact
- ❖ Gives the added flexibility of custom board layouts
- ❖ Stocked in depth throughout Harwin's authorized distributor network
- ❖ Reduces process costs with the elimination of secondary socket soldering operations

## Surface Mount

- ❖ Ultra-Low profile with either 2 or 3 contact points, single piece construction with flat upper surface for pick and place
- ❖ Rated between 5 Amps and 9 Amps (design-dependant)
- ❖ Supplied in Tape and Reel packaging. Suitable for high volume applications with automated SMT systems

## Throughboard

- ❖ High reliability contacts. Proven history in high end industrial and Mil/Aero applications.
- ❖ Designed for robustness and reliability, and based on the same design as the Datamate and M300 four finger Beryllium Copper contacts
- ❖ Suited for use in environments where high vibration, shock and extremes of temperature are a consideration
- ❖ The socket design is a two-part construction comprising of a contact clip retained in a precision-turned outer shell





# PC Board Sockets Product Features

## Surface Mount - Ultra-low profile

Ultra-low profile on the PCB - barely more than a material thickness above the board.



## Throughboard - Retention features

Variants include knurls for mechanical PCB retention, and open-ended sockets for longer pins.



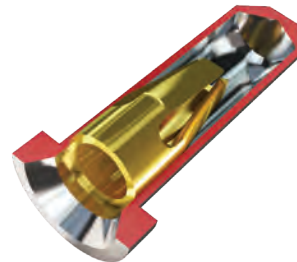
## Surface Mount - Automated product placement

Supplied as standard in Tape and Reel packaging, ideally suited for high volume automated assembly. Pick and place location built into the design.



## Throughboard - Beryllium Copper contact

Proven 4-finger and 6 finger contact designs (based on Datamate) to maintain electrical contact through high vibration and shock. -55°C to +125°C operating temperature range.



## Surface Mount - Round or Square mating pins

Accommodates mating pins 0.80mm to 1.90mm, square or round profile pins. Sycamore Contacts can be mated via top or bottom entry (design dependant).



## Throughboard - Up to Ø2.30mm mating pin

Accepts nominal mating pin sizes of Ø0.50mm, Ø0.80mm, Ø1.00mm and Ø2.00mm (Ø2.30mm maximum).



# PC Board Sockets Specifications

## ❖ 3-Beam SYCAMORE Contact and Twin Beam sockets: Surface mount, single piece construction

### ❖ Materials

|               |                      |
|---------------|----------------------|
| Base material |                      |
| 3-Beam:       | Beryllium Copper     |
| Twin Beam:    | Phosphor Bronze      |
| Finish:       | See individual pages |

### ❖ Electrical

|                       |          |
|-----------------------|----------|
| Current               |          |
| 3-Beam:               | 6A max   |
| Twin Beam Ø0.8-1.5mm: | 5A max   |
| Twin Beam Ø1.1-1.8mm: | 9A max   |
| Contact resistance:   | 20mΩ max |

### ❖ Mechanical

|                        |                               |
|------------------------|-------------------------------|
| Durability             |                               |
| 3-Beam:                | 500 operations                |
| Twin Beam Ø0.8-1.5mm:  | 25 operations                 |
| Twin Beam Ø1.1-1.8mm:  | 100 operations                |
| Insertion force (max)  |                               |
| 3-Beam Ø1.5-1.9mm:     | 3.5N (Ø1.5mm), 17.0N (Ø1.9mm) |
| 3-Beam Ø0.8-1.3mm:     | 3.0N (Ø0.8mm), 6.0N (Ø1.3mm)  |
| Twin Beam Ø0.8-1.5mm:  | 8.0N (Ø1mm), 17.0N (Ø1.5mm)   |
| Twin Beam Ø1.1-1.8mm:  | 2.8N (Ø1.1mm), 6.0N (Ø1.8mm)  |
| Withdrawal force (min) |                               |
| 3-Beam Ø1.5-1.9mm:     | 0.5N (Ø1.5mm), 1.0N (Ø1.9mm)  |
| 3-Beam Ø0.8-1.3mm:     | 0.3N (Ø0.8mm), 0.6N (Ø1.3mm)  |
| Twin Beam Ø0.8-1.5mm:  | 0.5N (Ø1mm), 1.0N (Ø1.5mm)    |
| Twin Beam Ø1.1-1.8mm:  | 0.3N (Ø1.1mm), 0.5N (Ø1.8mm)  |

### ❖ Environmental

|                            |                      |
|----------------------------|----------------------|
| Operating temperature      |                      |
| 3-Beam:                    | -50°C to +125°C      |
| Twin Beam:                 | -40°C to +105°C      |
| Solderability:             | 235°C for 5 seconds  |
| Soldering heat resistance: | 260°C for 10 seconds |

## ❖ Throughboard, two piece construction

### ❖ Materials

|                |                      |
|----------------|----------------------|
| Outer shell:   | Brass                |
| Inner contact: | Beryllium Copper     |
| Finish:        | See individual pages |

### ❖ Electrical

|                     |          |
|---------------------|----------|
| Current             |          |
| Ø0.50mm:            | 2A max   |
| Ø0.80mm, Ø1.00mm:   | 10A max  |
| Ø2.00mm:            | 20A max  |
| Contact resistance: | 25mΩ max |

### ❖ Mechanical

|                        |  |
|------------------------|--|
| Durability             |  |
| Ø0.50, Ø2.00mm:        | 500 operations   |
| Ø0.80, Ø1.00mm:        | 1,000 operations   |
| Insertion force (max)  |  |
| Ø0.50, Ø2.00mm:        | 6.0N   |
| Ø0.80mm:               | 5.0N   |
| Ø1.00mm:               | 9.0N   |
| Withdrawal force (min) |  |
| Ø0.50mm:               | 0.5N   |
| Ø0.80, Ø1.00, Ø2.00mm: | 1.0N   |
| Vibration sensitivity: | 10 – 2,000Hz, 0.75mm, 98m/s <sup>2</sup> (10G), 6 hours duration |

### ❖ Environmental

|                            |                      |
|----------------------------|----------------------|
| Operating temperature:     | -55°C to +125°C      |
| Solderability:             | 235°C for 5 seconds  |
| Soldering heat resistance: | 260°C for 10 seconds |

# PC Board Sockets

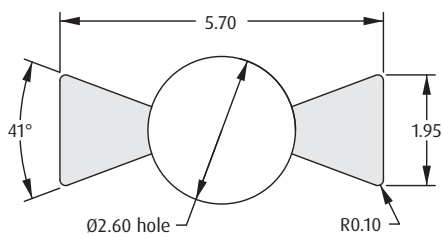
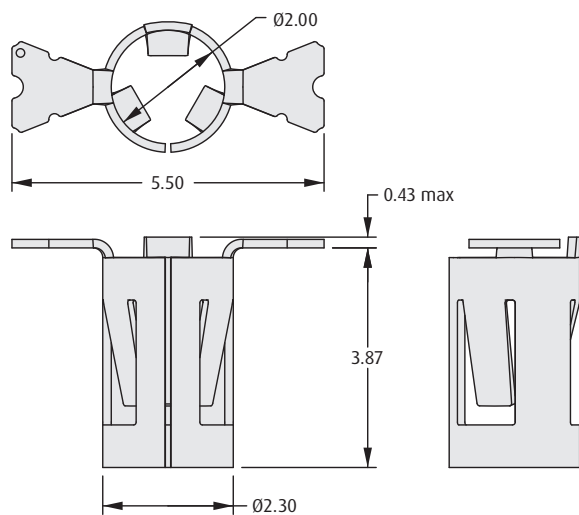
## SYCAMORE Contact, 3-Beam

The SYCAMORE Contact is a low-profile single-piece open-ended socket design.

- ❖ 3 points of contact for enhanced reliability.
- ❖ SMT product is pick and place-able using standard assembly machines.
- ❖ Beryllium Copper base material for enhanced temperature range of -50°C to +125°C.
- ❖ Gold plating for improved durability and decreased wear.

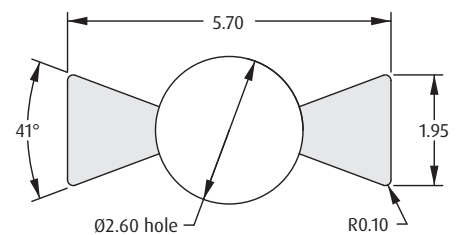
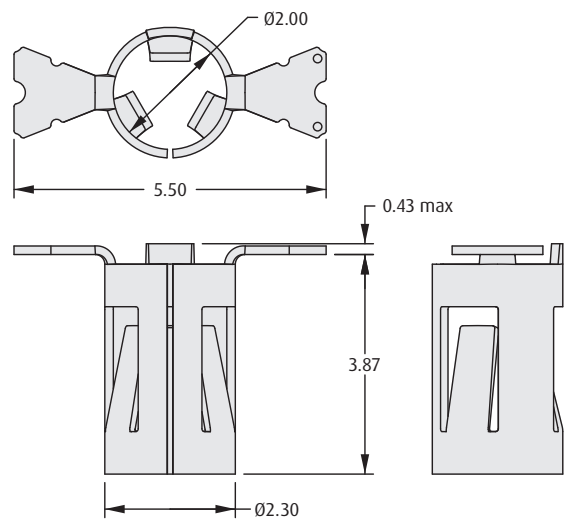


### TOP ENTRY



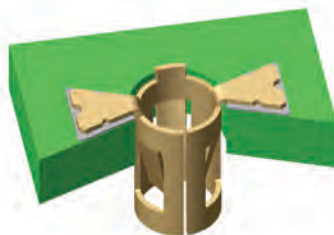
Recommended PC Board Pattern

### BOTTOM ENTRY



Recommended PC Board Pattern

### Orientation of SMT Socket in PCB



### HOW TO ORDER

**S91X1 - 45 R**

#### SERIES CODE

|              |   |
|--------------|---|
| <b>S9111</b> | Top Entry, 0.15 to 0.19mm Mating pin    |
| <b>S9121</b> | Bottom Entry, 0.15 to 0.19mm Mating pin |
| <b>S9131</b> | Top Entry, 0.08 to 0.13mm Mating pin    |
| <b>S9141</b> | Bottom Entry, 0.08 to 0.13mm Mating pin |

#### PACKAGING

|          |               |
|----------|---------------|
| <b>R</b> | Tape & Reeled |
|----------|---------------|

#### FINISH

|           |      |
|-----------|------|
| <b>45</b> | Gold |
|-----------|------|

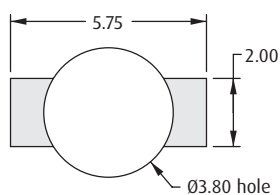
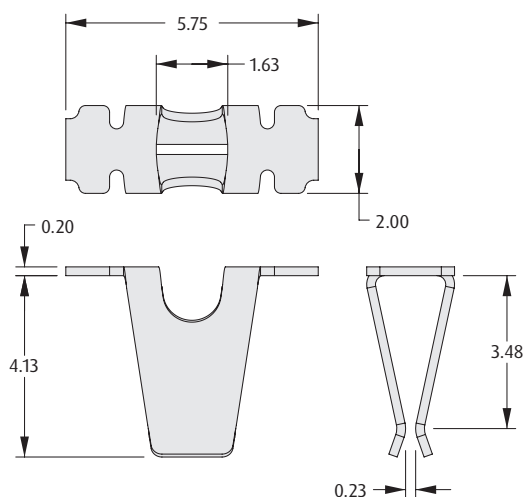
# PC Board Sockets

## Surface Mount, Low Profile

- ❑ Accepts pins between 0.8mm and 1.8mm diameter.
- ❑ SMT product is pick and place-able using standard assembly machines.
- ❑ Rated to 5 Amps and 9 Amps electrical current.
- ❑ Greatly reduces process costs by removing the need for secondary operations.
- ❑ Reduced component costs.

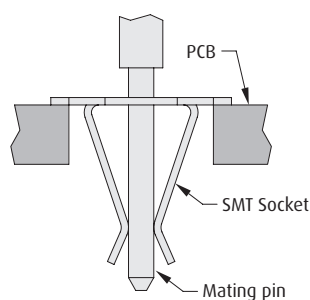


### Ø0.8mm TO Ø1.5mm MATING PIN

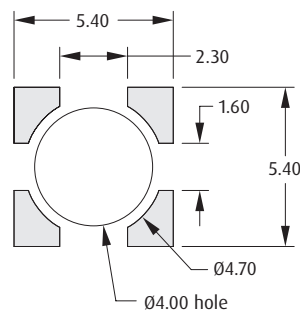
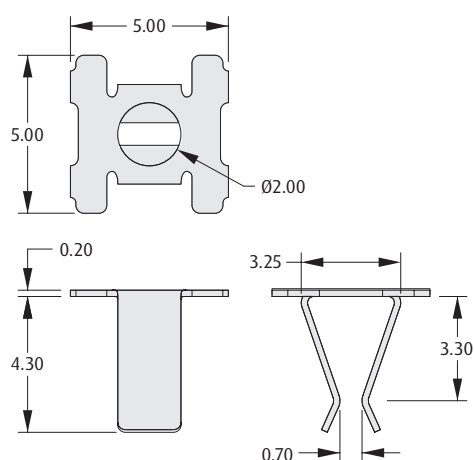


Recommended PC Board Pattern

#### Orientation of SMT Socket in PCB



### Ø1.1mm TO Ø1.8mm MATING PIN



Recommended PC Board Pattern

## HOW TO ORDER

**S9XX1 - 46 R**

#### SERIES CODE

|              |                           |
|--------------|---------------------------|
| <b>S9091</b> | Ø0.8 to Ø1.5mm Mating pin |
| <b>S9101</b> | Ø1.1 to Ø1.8mm Mating pin |

#### PACKAGING

|          |               |
|----------|---------------|
| <b>R</b> | Tape & Reeled |
|----------|---------------|

#### FINISH

|           |     |
|-----------|-----|
| <b>46</b> | Tin |
|-----------|-----|

# PC Board Sockets

## Sub-Miniature - Ø0.50mm Mating Pin

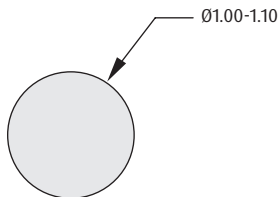
- ❖ Compatible with Ø0.50mm mating pins.
- ❖ Suitable for a variety of mating pin lengths.
- ❖ Utilizes the Datamate four finger Beryllium Copper contact clip.



SOCKETS

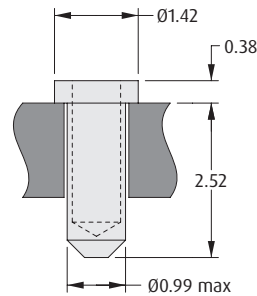
### Specifications

Mating pin size: Ø0.46 - 0.51mm  
 Contact depth: 2.30mm max  
 Pin length: See individual sockets



Recommended PC Board Pattern

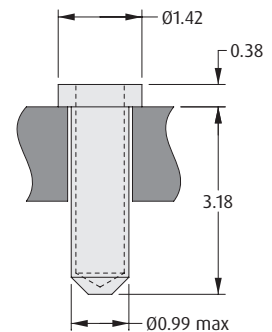
### 2.52mm BODY LENGTH



| ORDER CODE | FINISH                   |
|------------|--------------------------|
| H3190-01   | Gold contact, Tin shell  |
| H3190-05   | Gold contact, Gold shell |

Maximum Pin Length = 2.40mm

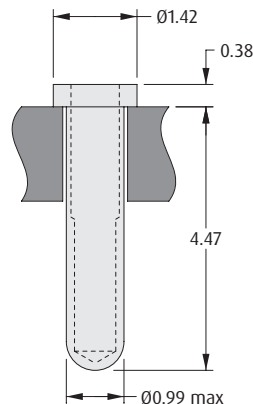
### 3.18mm BODY LENGTH



| ORDER CODE | FINISH                   |
|------------|--------------------------|
| H3153-01   | Gold contact, Tin shell  |
| H3153-05   | Gold contact, Gold shell |

Maximum Pin Length = 3.15mm

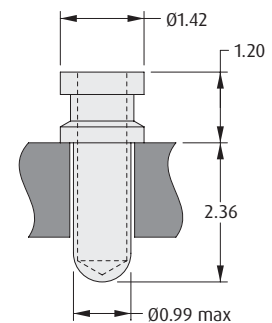
### 4.47mm BODY LENGTH



| ORDER CODE | FINISH                   |
|------------|--------------------------|
| H3191-01   | Gold contact, Tin shell  |
| H3191-05   | Gold contact, Gold shell |

Maximum Pin Length = 4.50mm

### RAISED SHOULDER



| ORDER CODE | FINISH                   |
|------------|--------------------------|
| H3155-01   | Gold contact, Tin shell  |
| H3155-05   | Gold contact, Gold shell |

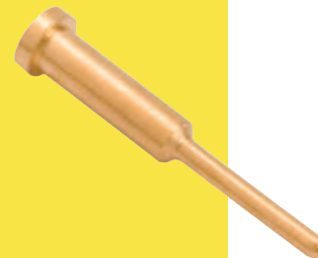
Maximum Pin Length = 3.15mm

All dimensions in mm.

# PC Board Sockets

## Ø0.50mm Mating Pin - Extended Tails

- Compatible with Ø0.50mm mating pins.
- Utilizes the Datamate four finger Beryllium Copper contact clip.
- Extended tail sizes for stacked mating or wire wrap functions.

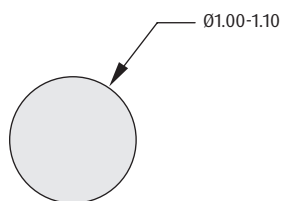


### Specifications

Mating pin size:  
H3192-XX      Ø0.46 - 0.51mm  
H3175-XX      Ø0.41 - 0.53mm

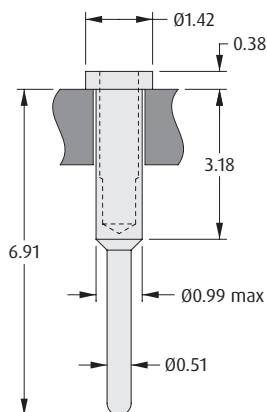
Contact depth:  
H3192-XX      2.30mm max  
H3175-XX      2.16mm max

Pin length:      3.15mm max



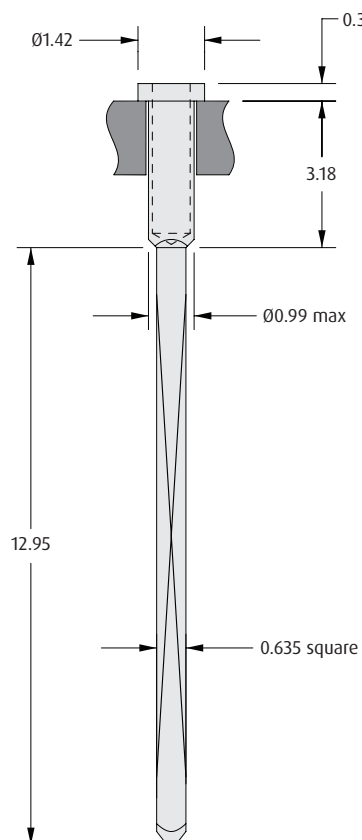
Recommended PC Board Pattern

### EXTENDED TAIL



| ORDER CODE | FINISH                   |
|------------|--------------------------|
| H3192-01   | Gold contact, Tin shell  |
| H3192-05   | Gold contact, Gold shell |

### WIRE WRAP TAIL



| ORDER CODE | FINISH                   |
|------------|--------------------------|
| H3175-01   | Gold contact, Tin shell  |
| H3175-05   | Gold contact, Gold shell |

All dimensions in mm.

# PC Board Sockets

## Strips of Sub-Miniature Sockets

- ❖ Sub-miniature sockets using the four finger Beryllium Copper contact, mounted on carrier strips for ease of production use.
- ❖ See previous page for information on the individual sockets.

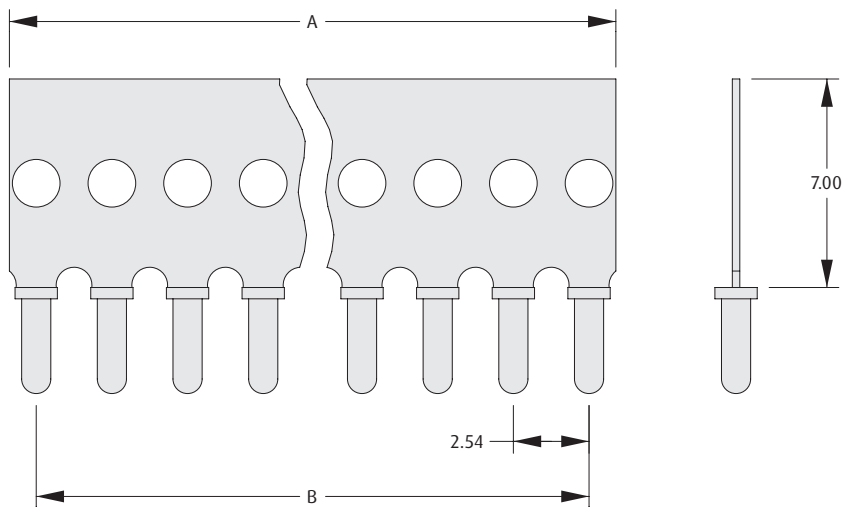


### SINGLE-IN-LINE SOCKET CARRIERS

- ❖ Brass carriers are supplied fitted with the sub-miniature socket shown in the tables below.
- ❖ Supplied in standard lengths.

#### CALCULATION

|          |   |
|----------|---|
| <b>A</b> | $B + 1.8$                                 |
| <b>B</b> | $2.54 \times (\text{No. of sockets} - 1)$ |



### HOW TO ORDER

**D01 - 9XX XX 01**

#### SERIES CODE

#### TYPE

|            |   |
|------------|---|
| <b>979</b> | Single-in-line Socket Carrier with H3192-01 |
| <b>982</b> | Single-in-line Socket Carrier with H3191-01 |
| <b>984</b> | Single-in-line Socket Carrier with H3155-01 |
| <b>990</b> | Single-in-line Socket Carrier with H3153-01 |

#### FINISH

|           |                         |
|-----------|-------------------------|
| <b>01</b> | Gold contact, Tin shell |
|-----------|-------------------------|

#### NO. OF CONTACTS PER STRIP

|   |
|---|
| <b>04, 06 to 10, 12, 14, 16, 20, 32</b> |
|---|

All dimensions in mm.

# PC Board Sockets

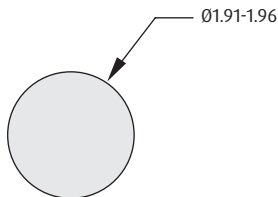
## Ø0.80mm Mating Pin

- ❖ Compatible with Ø0.80mm mating pins – see table below.
- ❖ Knurled option available for added board retention.
- ❖ Ident groove in shoulder, to differentiate from Ø1mm mating pin sockets as shown on the next page.
- ❖ Construction uses four finger Beryllium Copper contact from M300 range.

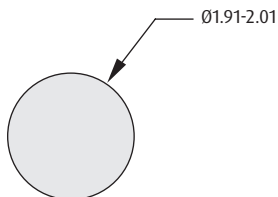


### Specifications

Mating pin size: Ø0.60 - 0.85mm  
 Contact depth: 3.30mm max  
 Pin length: See individual sockets

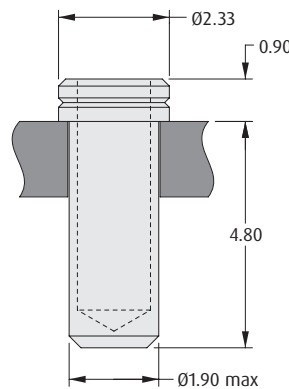


Recommended PC Board Pattern  
with Retention Knurl



Recommended PC Board Pattern  
without Retention Knurl

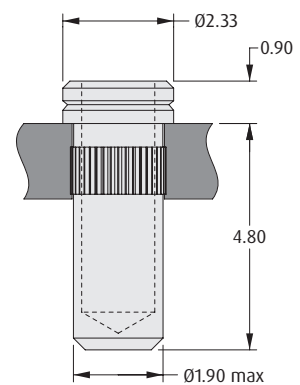
### 4.8mm BODY LENGTH



| ORDER CODE | FINISH                   |
|------------|--------------------------|
| H8504-01   | Gold contact, Tin shell  |
| H8504-05   | Gold contact, Gold shell |

Maximum Pin Length = 4.65mm

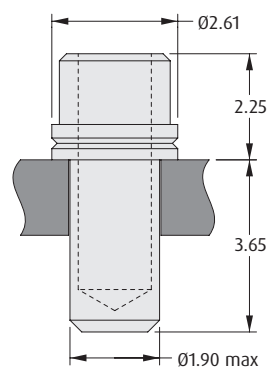
### 4.8mm BODY, KNURL



| ORDER CODE | FINISH                   |
|------------|--------------------------|
| H8501-01   | Gold contact, Tin shell  |
| H8501-05   | Gold contact, Gold shell |

Maximum Pin Length = 4.65mm

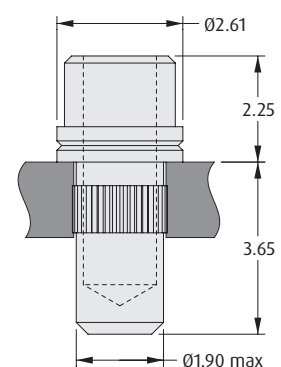
### 3.65mm BODY LENGTH



| ORDER CODE | FINISH                   |
|------------|--------------------------|
| H8505-01   | Gold contact, Tin shell  |
| H8505-05   | Gold contact, Gold shell |

Maximum Pin Length = 4.85mm

### 3.65mm BODY, KNURL



| ORDER CODE | FINISH                   |
|------------|--------------------------|
| H8502-01   | Gold contact, Tin shell  |
| H8502-05   | Gold contact, Gold shell |

Maximum Pin Length = 4.85mm

All dimensions in mm.



# PC Board Sockets

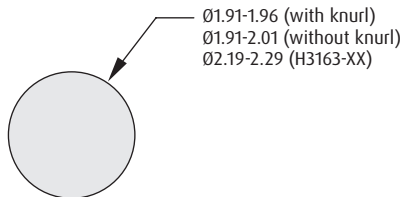
## Ø1.00mm Mating Pin

- Compatible with Ø1.00mm mating pins – see table below.
- Knurled option available for added pin retention.
- Construction uses four finger Beryllium Copper contact from M300 range.



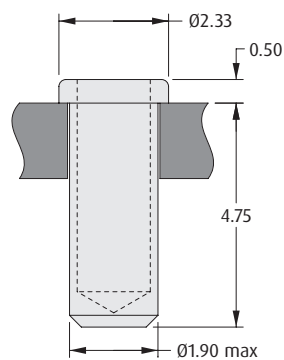
### Specifications

Mating pin size: Ø0.90 - 1.05mm  
 Contact depth: 3.55mm max  
 Pin length: See individual sockets



Recommended PC Board Pattern

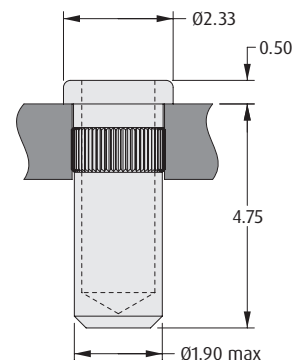
### 4.75mm BODY LENGTH



| ORDER CODE | FINISH                   |
|------------|--------------------------|
| H3183-01   | Gold contact, Tin shell  |
| H3183-05   | Gold contact, Gold shell |

Maximum Pin Length = 4.60mm

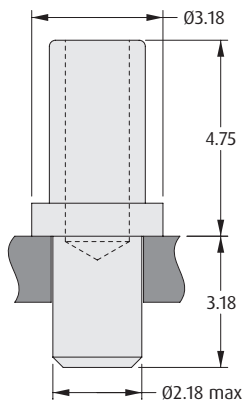
### 4.75mm BODY, KNURL



| ORDER CODE | FINISH                   |
|------------|--------------------------|
| H3161-01   | Gold contact, Tin shell  |
| H3161-05   | Gold contact, Gold shell |

Maximum Pin Length = 4.60mm

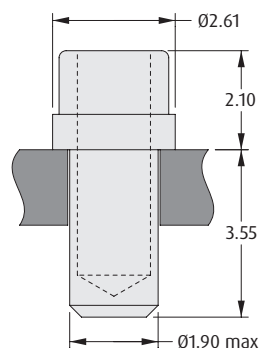
### RAISED SHOULDER



| ORDER CODE | FINISH                   |
|------------|--------------------------|
| H3163-01   | Gold contact, Tin shell  |
| H3163-05   | Gold contact, Gold shell |

Maximum Pin Length = 5.00mm

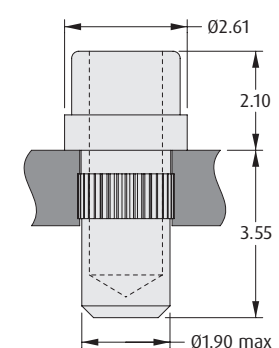
### 3.55mm BODY LENGTH



| ORDER CODE | FINISH                   |
|------------|--------------------------|
| H3182-01   | Gold contact, Tin shell  |
| H3182-05   | Gold contact, Gold shell |

Maximum Pin Length = 4.85mm

### 3.55mm BODY, KNURL



| ORDER CODE | FINISH                   |
|------------|--------------------------|
| H3165-01   | Gold contact, Tin shell  |
| H3165-05   | Gold contact, Gold shell |

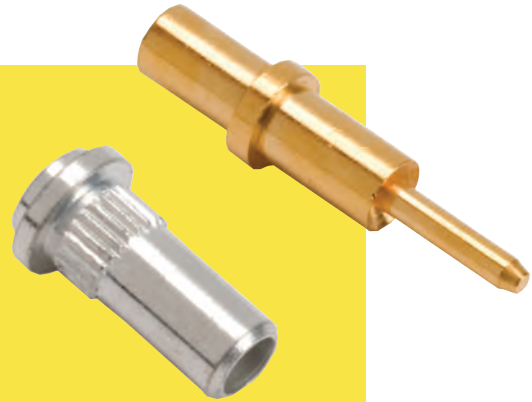
Maximum Pin Length = 4.85mm

All dimensions in mm.

# PC Board Sockets

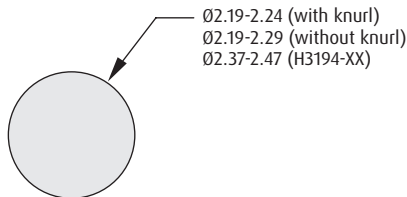
## Ø1.00mm Mating Pin

- ❖ Compatible with Ø1.00mm mating pins – see table below.
- ❖ Knurled option available for added pin retention.
- ❖ Construction uses four finger Beryllium Copper contact from M300 range.



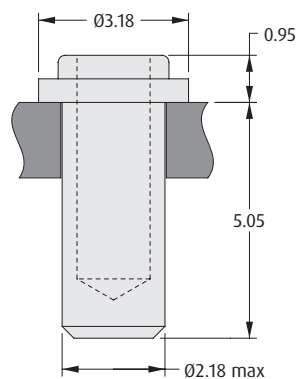
### Specifications

Mating pin size: Ø0.90 - 1.05mm  
 Contact depth: 3.55mm max  
 Pin length: See individual sockets



Recommended PC Board Pattern

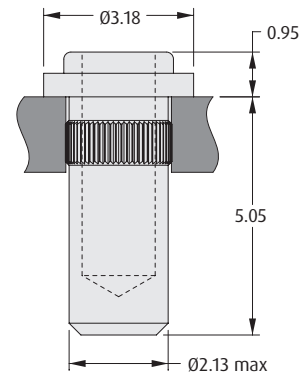
### 5.05mm BODY LENGTH



| ORDER CODE | FINISH                   |
|------------|--------------------------|
| H3184-01   | Gold contact, Tin shell  |
| H3184-05   | Gold contact, Gold shell |

Maximum Pin Length = 4.75mm

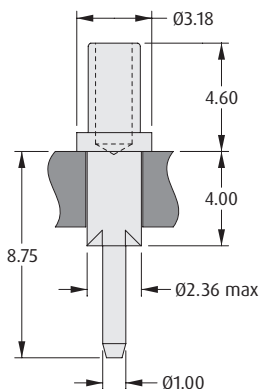
### 5.05mm BODY, KNURL



| ORDER CODE | FINISH                   |
|------------|--------------------------|
| H3167-01   | Gold contact, Tin shell  |
| H3167-05   | Gold contact, Gold shell |

Maximum Pin Length = 4.75mm

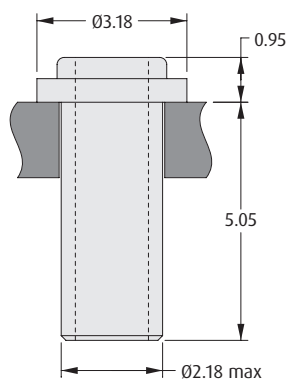
### RAISED SHOULDER, TAIL



| ORDER CODE | FINISH                   |
|------------|--------------------------|
| H3194-01   | Gold contact, Tin shell  |
| H3194-05   | Gold contact, Gold shell |

Maximum Pin Length = 4.30mm

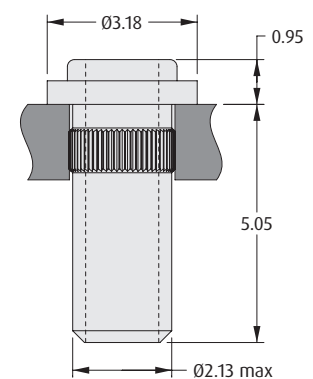
### 5.05mm BODY, OPEN END



| ORDER CODE | FINISH                   |
|------------|--------------------------|
| H3185-01   | Gold contact, Tin shell  |
| H3185-05   | Gold contact, Gold shell |

Open End - No Maximum Pin Length

### 5.05mm OPEN END, KNURL



| ORDER CODE | FINISH                   |
|------------|--------------------------|
| H3169-01   | Gold contact, Tin shell  |
| H3169-05   | Gold contact, Gold shell |

Open End - No Maximum Pin Length

All dimensions in mm.

# PC Board Sockets

## Ø2.00mm Mating Pin

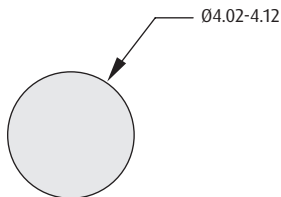
- ❖ Compatible with Ø2.00mm mating pins.
- ❖ Uses six finger Beryllium Copper contact for high-reliability performance.



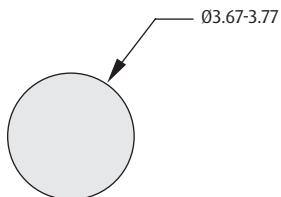
SOCKETS

### ❖ Specifications

Mating pin size: Ø2.00 - 2.30mm  
 Contact depth: 4.10mm max  
 Pin length: See individual sockets

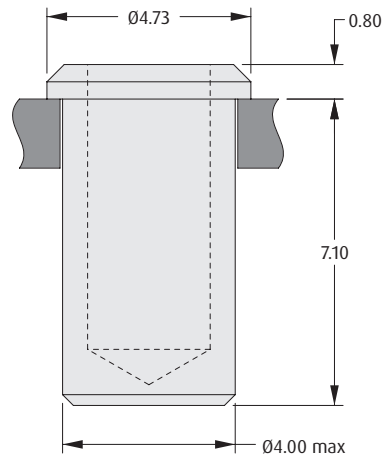


Recommended PC Board Pattern  
for 7.1mm Body Length (H3492-XX)



Recommended PC Board Pattern  
for 8mm Body Length (H3490-XX)

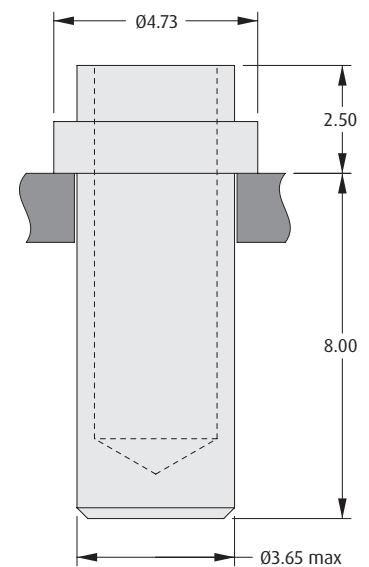
### 7.1mm BODY LENGTH



| ORDER CODE | FINISH                  |
|------------|-------------------------|
| H3492-01   | Gold contact, Tin shell |

Maximum Pin Length = 6.30mm

### 8mm BODY LENGTH



| ORDER CODE | FINISH                  |
|------------|-------------------------|
| H3490-01   | Gold contact, Tin shell |

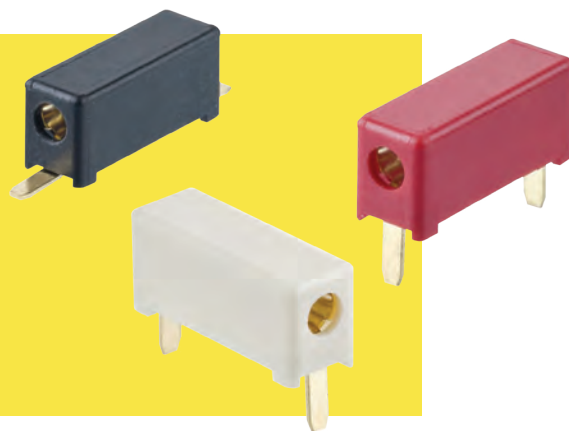
Maximum Pin Length = 8.50mm

All dimensions in mm.

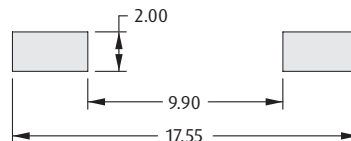
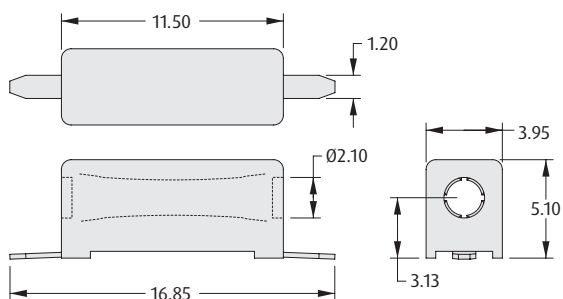
# Test Sockets

## Ø2.03mm Mating Probe

- ❖ Dual entry horizontal sockets with gold plated contacts.
- ❖ Color coded options available.
- ❖ Surface Mount product features a flat top area, and is available in tape and reel packaging for automated assembly, using standard pick and place machines.
- ❖ 5A current rating and 1,500V voltage rating.
- ❖ Please consult Technical Drawings online for further specifications.

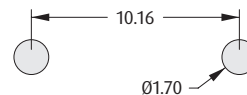
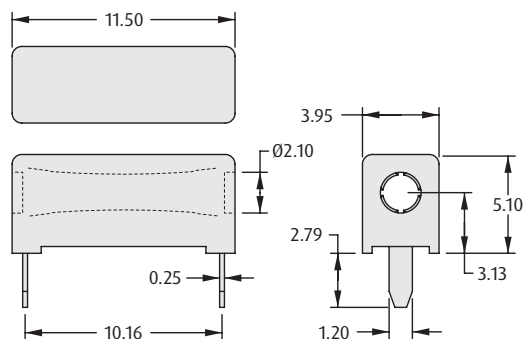


### SURFACE MOUNT



Recommended PC Board Pattern

### PC TAIL / THROUGHBOARD



Recommended PC Board Pattern

### HOW TO ORDER

**M349 X - XX X**

#### SERIES CODE

#### TYPE

| TYPE |               |
|------|---------------|
| 7    | Surface Mount |
| 8    | Throughboard  |

#### PACKAGING

|       |                            |
|-------|----------------------------|
| Blank | Loose                      |
| R     | Tape & Reeled (M3497 only) |

#### TYPE

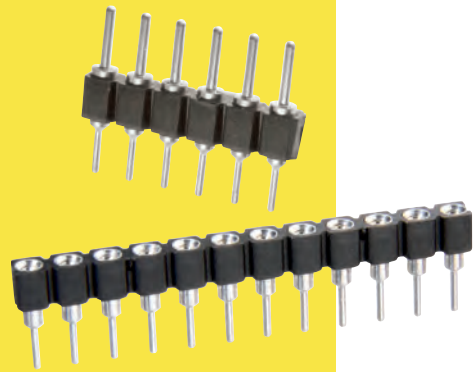
|    |                    |
|----|--------------------|
| 94 | White (M3498 only) |
| 98 | Black              |
| 99 | Red (M3498 only)   |

All dimensions in mm.

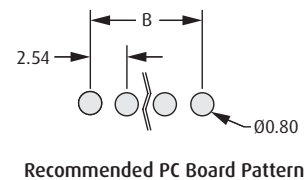
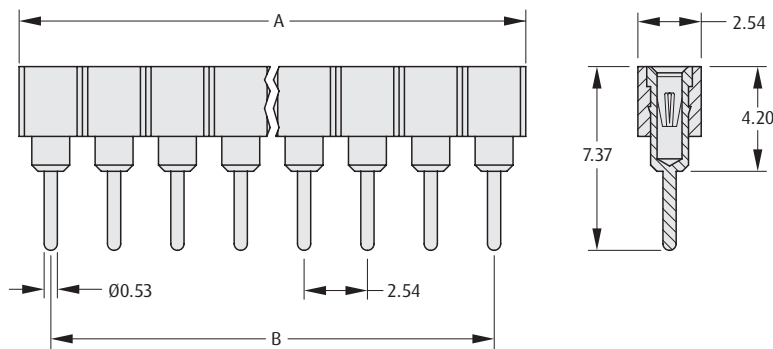
# IC Sockets

## Modular Single Row

- Connectors can be cut to smaller sizes.
- Socket accepts mating pin  $\varnothing 0.40$  to  $0.56\text{mm}$ , using four finger Beryllium Copper contact technology.
- Please consult Technical Drawings online for further specifications.



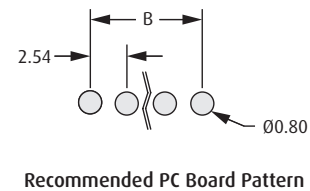
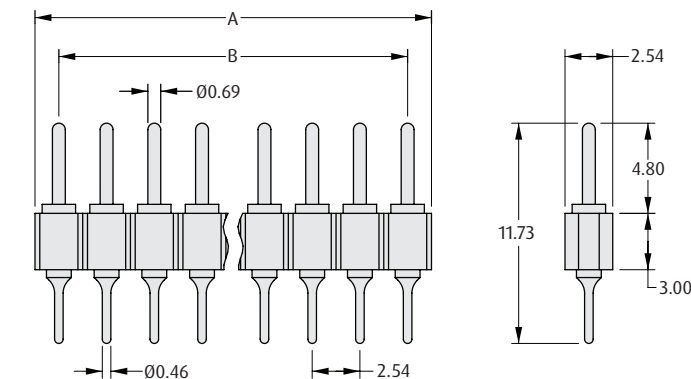
### FEMALE



### CALCULATION

|          |  |
|----------|--|
| <b>A</b> | $2.54 \times \text{No. of contacts}$       |
| <b>B</b> | $2.54 \times (\text{No. of contacts} - 1)$ |

### MALE



### HOW TO ORDER

**D01 - 99 X XX XX**

#### SERIES CODE

#### TYPE

|          |        |
|----------|--------|
| <b>7</b> | Female |
| <b>2</b> | Male   |

#### FINISH

|           |                     |
|-----------|---------------------|
| <b>42</b> | Gold + Tin (Female) |
| <b>46</b> | Tin (Male)          |

#### NO. OF CONTACTS

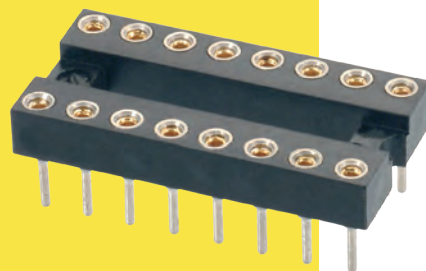
**20, 32**

All dimensions in mm.

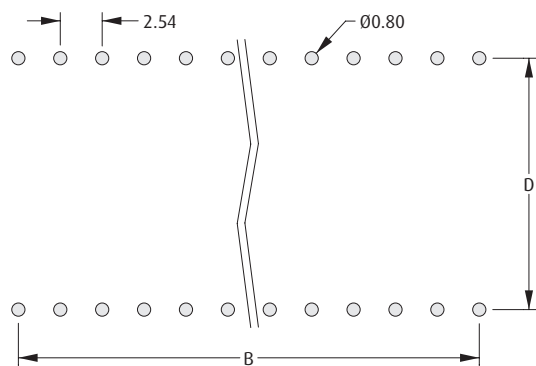
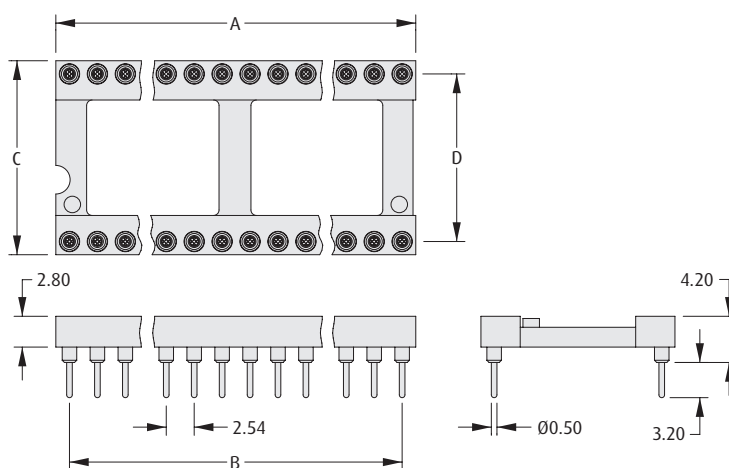
# IC Sockets

## Dual Row IC Socket

- ❖ Socket accepts IC leads Ø0.40 to 0.56mm.
- ❖ End and side stackable.
- ❖ Utilizes four finger Beryllium Copper contact technology.
- ❖ Gold finish on contact, with Tin finish on shells/termination.
- ❖ Please consult Technical Drawings online for further specifications.



### IC SOCKET



Recommended PC Board Pattern

| ORDER CODE | NO. OF CONTACTS | A     | B     | C     | D            |
|------------|-----------------|-------|-------|-------|--------------|
| D2806-42   | 6               | 7.60  | 5.08  | 10.02 | 7.62 (0.3")  |
| D2808-42   | 8               | 10.10 | 7.62  | 10.02 | 7.62 (0.3")  |
| D2814-42   | 14              | 17.70 | 15.24 | 10.02 | 7.62 (0.3")  |
| D2816-42   | 16              | 20.30 | 17.78 | 10.02 | 7.62 (0.3")  |
| D2818-42   | 18              | 22.80 | 20.32 | 10.02 | 7.62 (0.3")  |
| D2820-42   | 20              | 25.30 | 22.86 | 10.02 | 7.62 (0.3")  |
| D2922-42   | 22              | 27.80 | 25.40 | 10.02 | 7.62 (0.3")  |
| D2822-42   | 22              | 27.80 | 25.40 | 12.60 | 10.16 (0.4") |
| D2924-42   | 24              | 30.40 | 27.94 | 10.02 | 7.62 (0.3")  |
| D2724-42   | 24              | 30.40 | 27.94 | 12.60 | 10.16 (0.4") |
| D2824-42   | 24              | 30.40 | 27.94 | 17.64 | 15.24 (0.6") |
| D2928-42   | 28              | 35.50 | 33.02 | 10.02 | 7.62 (0.3")  |
| D2828-42   | 28              | 35.50 | 33.02 | 17.64 | 15.24 (0.6") |
| D2832-42   | 32              | 40.60 | 38.10 | 17.64 | 15.24 (0.6") |
| D2840-42   | 40              | 50.80 | 48.26 | 17.64 | 15.24 (0.6") |
| D2948-42   | 48              | 60.90 | 58.42 | 17.64 | 15.24 (0.6") |
| D2864-42   | 64              | 81.20 | 78.74 | 25.40 | 22.86 (0.9") |

All dimensions in mm.

# Spring Contacts

## Contents

|                           |     |
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# Spring Contact Introduction

**These designs provide single contact points with high durability (number of mating cycles) and require no special shape of mating surface or connector.**

The Spring Contact family provides a choice of single contact options, that mate with flat metal surfaces. The spring force designed into the contact gives a positive connection, maintaining electrical connectivity between the assembled contact and another PCB, an antenna, a grounding plane, or the outer enclosure panels. Suitable for passing a full current, or for use as a grounding element with trickle current.

- ❖ Free heights from 1.23mm to 8.20mm, recommended working heights from 0.90mm to 7.10mm
- ❖ Total flexibility with multiple design styles and performance capabilities
- ❖ High mating durability, from 1,000 to 10,000 minimum operations
- ❖ Most designs supplied on Tape and Reel packaging, for fully automated assembly systems within high volume manufacturing applications
- ❖ Stocked in depth throughout Harwin's authorized distributor network

## Spring Contacts

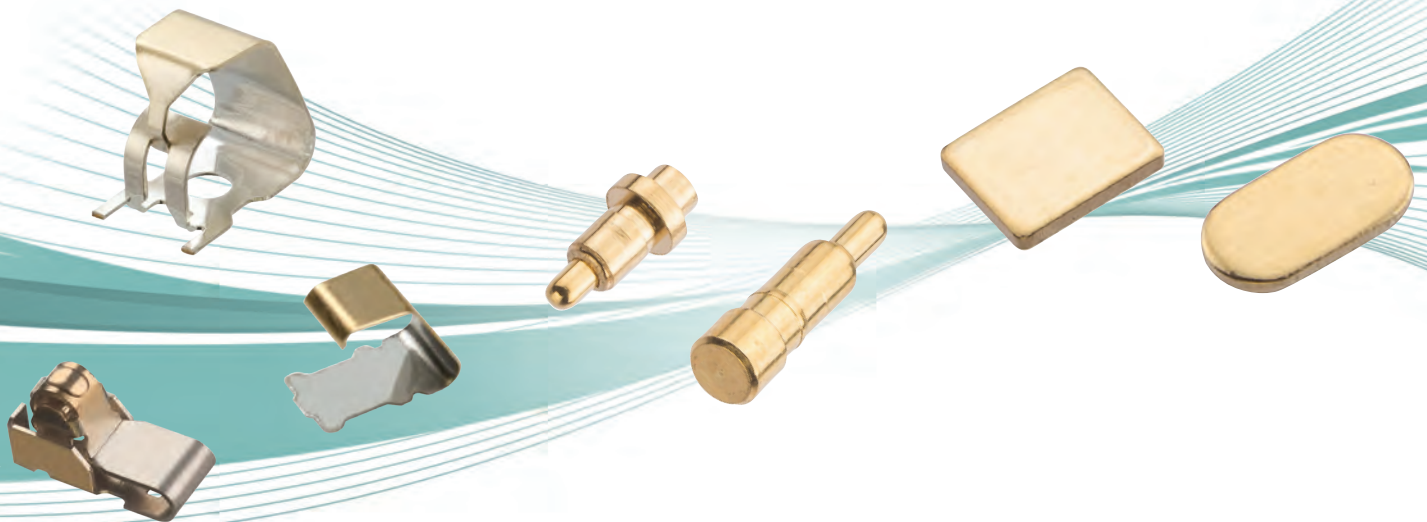
- ❖ Manufactured from various grades and compositions of Copper Alloy, these products utilise the inherent spring properties of the metal to provide the spring force.
- ❖ Rated from 1A to 9A max current, depending on design.
- ❖ Alternative uses include grounding contacts, antenna contacts, single or parallel connections. Also called Spring Fingers.

## Pogo Pins

- ❖ Precision construction consisting of plunger, barrel and inner miniature stainless steel spring.
- ❖ Provides robust connections with high mating cycle durability of 10,000 operations.
- ❖ Design options for heights and additional locating peg to assist with SMT mating and vertical stability.

## SMT Contact Pads

- ❖ Provides a mating connection surface with a compatible gold finish for either the spring contact or pogo pin designs.
- ❖ Choice of three shapes and pad depths up to 0.5mm.
- ❖ Supplied in Tape and reel for easy automation during assembly.

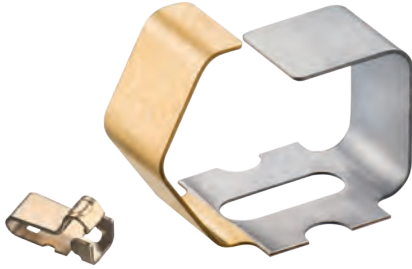




# Spring Contact Product Features

## Spring Contacts – Simple flexible designs

Single piece contact designs with a variety of additional features. Small and compact, down to ultra-miniature for mobile antenna connection.



## Spring Contacts – Positive Stop design

Rigid upstands on the lower contact surface prevent the mating surface from completely flattening the contact.



## Spring Contacts – Anti-hooking design

Full 360 degree loop, to prevent the end of the upper contact surface from getting snagged during or after production and installation. Known as a Box style.



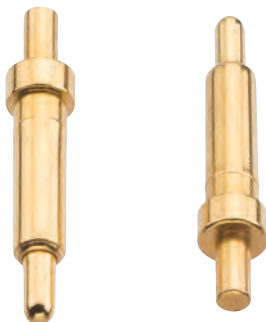
## Spring Contacts & SMT Pads – Automated placement

Supplied as standard in tape and reel for fast and easy high volume automated assembly. Pick and place location built into the design.



## Pogo Pins – SMT Locating Peg

Additional locating peg on base of contact, to assist with SMT location during assembly, and also maintain vertical stability during all assembly operations.



## Pogo Pins – Automated placement

Most designs supplied as standard in tape and reel for high volume automated assembly. Pick and place caps pre-assembled to provide vacuum nozzle location.



All dimensions in mm.

# Spring Contact Specifications

## Materials

### Base Metal

S1741, S7131 to S7191:  
S1941, S1951, S7061-46R:  
Others:

Phosphor Bronze  
Beryllium Copper  
Titanium Copper

### Finish:

See individual product

## Environmental

### Operating temperature

S1001: -40°C to +150°C  
S7131 to S7191: -20°C to +70°C  
S7221 to S7271: -40°C to +85°C  
Others: -55°C to +125°C

| ORDER CODE | CURRENT (MAX) | DURABILITY (OPERATIONS) | WORKING HEIGHT | FORCE AT WORKING HEIGHT |
|------------|---------------|-------------------------|----------------|-------------------------|
| S1741-46R  | 6A            | 5,000                   | 1.75mm         | 1.50N                   |
| S1761-XXR  | 4A            | 1,500                   | 2.50mm         | 1.50N                   |
| S1791-42R  | 3A            | 1,500                   | 3.00mm         | 1.00N                   |
| S1941-XXR  | 9A            | 5,000                   | 6.95mm         | 1.20N                   |
| S1951-46R  | 7A            | 5,000                   | 6.75mm         | 1.20N                   |
| S7041-42R  | 5A            | 1,500                   | 3.40mm         | 1.20N                   |
| S7051-42R  | 4A            | 2,500                   | 4.50mm         | 1.20N                   |
| S7061-XXR  | 4A            | 2,500                   | 4.60mm         | 1.20N                   |
| S7071-46R  | 5A            | 3,500                   | 2.10mm         | 1.20N                   |
| S7081-42R  | 4A            | 1,000                   | 2.10mm         | 1.20N                   |
| S7091-42R  | 6A            | 2,000                   | 2.30mm         | 1.20N                   |
| S7101-42R  | 3A            | 2,500                   | 3.00mm         | 1.20N                   |
| S7111-42R  | 6A            | 2,000                   | 3.80mm         | 1.20N                   |
| S7121-42R  | 4A            | 3,000                   | 1.50mm         | 1.20N                   |
| S7131-45R  | 1A            | 10,000                  | 1.20mm         | 0.49N                   |
| S7141-45R  | 1A            | 10,000                  | 1.65mm         | 0.49N                   |
| S7151-45R  | 1A            | 10,000                  | 2.15mm         | 0.49N                   |
| S7161-45R  | 1A            | 10,000                  | 2.65mm         | 0.49N                   |
| S7171-45R  | 1A            | 10,000                  | 3.15mm         | 0.49N                   |
| S7181-45R  | 1A            | 10,000                  | 3.65mm         | 0.49N                   |
| S7191-45R  | 1A            | 10,000                  | 4.15mm         | 0.49N                   |
| S7221-45R  | 1A            | 10,000                  | 0.90mm         | 0.39N                   |
| S7231-45R  | 1A            | 10,000                  | 0.98mm         | 0.39N                   |
| S7241-45R  | 1A            | 10,000                  | 1.00mm         | 0.39N                   |
| S7251-45R  | 1A            | 10,000                  | 1.20mm         | 0.58N                   |
| S7261-45R  | 1A            | 10,000                  | 1.20mm         | 0.78N                   |
| S7271-45R  | 1A            | 10,000                  | 1.70mm         | 0.39N                   |

All dimensions in mm.

# Spring Contacts

## Antenna Contacts with Positive Stop

- Extended beam miniature spring contacts, ultra-low profile.
- Ideal for antenna feed in mobile devices, LED lamp connections or RFID tags.
- Ultra-low connection system - free height from just 1.23mm to 2mm.
- Positive Stop to prevent over-compression and permanent set.
- Surface Mount with Pick and Place area for automated placement.



| <p><b>1.23mm HIGH</b></p> <p>Recommended PC Board Pattern</p> <table border="1"> <thead> <tr> <th>ORDER CODE</th> <th>FINISH</th> </tr> </thead> <tbody> <tr> <td>S7221-45R</td> <td>Gold</td> </tr> </tbody> </table>          | ORDER CODE | FINISH | S7221-45R | Gold | <p><b>1.28mm HIGH</b></p> <p>Recommended PC Board Pattern</p> <table border="1"> <thead> <tr> <th>ORDER CODE</th> <th>FINISH</th> </tr> </thead> <tbody> <tr> <td>S7231-45R</td> <td>Gold</td> </tr> </tbody> </table>            | ORDER CODE | FINISH | S7231-45R | Gold |
|---|------------|--------|-----------|------|---|------------|--------|-----------|------|
| ORDER CODE  | FINISH     |        |           |      |   |            |        |           |      |
| S7221-45R   | Gold       |        |           |      |   |            |        |           |      |
| ORDER CODE  | FINISH     |        |           |      |   |            |        |           |      |
| S7231-45R   | Gold       |        |           |      |   |            |        |           |      |
| <p><b>1.3mm HIGH</b></p> <p>Recommended PC Board Pattern</p> <table border="1"> <thead> <tr> <th>ORDER CODE</th> <th>FINISH</th> </tr> </thead> <tbody> <tr> <td>S7241-45R</td> <td>Gold</td> </tr> </tbody> </table>           | ORDER CODE | FINISH | S7241-45R | Gold | <p><b>1.5mm HIGH, 1.5mm WIDE</b></p> <p>Recommended PC Board Pattern</p> <table border="1"> <thead> <tr> <th>ORDER CODE</th> <th>FINISH</th> </tr> </thead> <tbody> <tr> <td>S7251-45R</td> <td>Gold</td> </tr> </tbody> </table> | ORDER CODE | FINISH | S7251-45R | Gold |
| ORDER CODE  | FINISH     |        |           |      |   |            |        |           |      |
| S7241-45R   | Gold       |        |           |      |   |            |        |           |      |
| ORDER CODE  | FINISH     |        |           |      |   |            |        |           |      |
| S7251-45R   | Gold       |        |           |      |   |            |        |           |      |
| <p><b>1.5mm HIGH, 2mm WIDE</b></p> <p>Recommended PC Board Pattern</p> <table border="1"> <thead> <tr> <th>ORDER CODE</th> <th>FINISH</th> </tr> </thead> <tbody> <tr> <td>S7261-45R</td> <td>Gold</td> </tr> </tbody> </table> | ORDER CODE | FINISH | S7261-45R | Gold | <p><b>2mm HIGH</b></p> <p>Recommended PC Board Pattern</p> <table border="1"> <thead> <tr> <th>ORDER CODE</th> <th>FINISH</th> </tr> </thead> <tbody> <tr> <td>S7271-45R</td> <td>Gold</td> </tr> </tbody> </table>               | ORDER CODE | FINISH | S7271-45R | Gold |
| ORDER CODE  | FINISH     |        |           |      |   |            |        |           |      |
| S7261-45R   | Gold       |        |           |      |   |            |        |           |      |
| ORDER CODE  | FINISH     |        |           |      |   |            |        |           |      |
| S7271-45R   | Gold       |        |           |      |   |            |        |           |      |

All dimensions in mm.

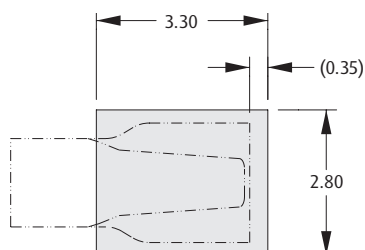
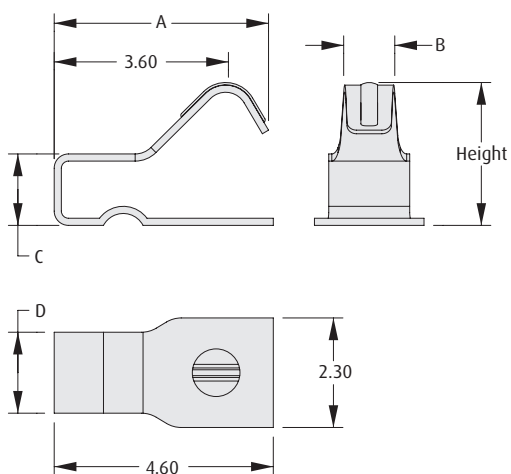
# Spring Contacts

## Extended Antenna Contacts

- Extended beam miniature spring contacts, ideal for antenna feed in mobile devices.
- Identical footprint contacts, with incremental step heights from 2mm to 5mm.
- Suitable for both wiping and sliding actions.
- Surface Mount with Pick and Place area for automated placement.
- Packaged in standard (EIA 481) Tape & Reel format.



### EXTENDED ANTENNA CONTACTS



Recommended PC Board Pattern

### HOW TO ORDER

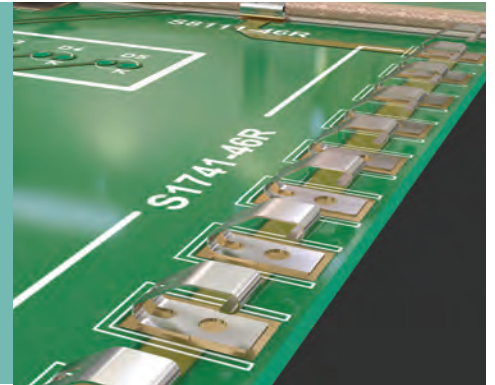
| PART NO.         | HEIGHT | DIM A | DIM B | DIM C | DIM D | FINISH |
|------------------|--------|-------|-------|-------|-------|--------|
| <b>S7131-45R</b> | 2.00   | 4.30  | 0.80  | 1.00  | 1.55  | Gold   |
| <b>S7141-45R</b> | 2.50   | 4.50  | 0.80  | 1.00  | 1.55  | Gold   |
| <b>S7151-45R</b> | 3.00   | 4.50  | 0.90  | 1.50  | 1.70  | Gold   |
| <b>S7161-45R</b> | 3.50   | 4.50  | 1.05  | 2.00  | 1.95  | Gold   |
| <b>S7171-45R</b> | 4.00   | 4.50  | 1.36  | 2.50  | 2.30  | Gold   |
| <b>S7181-45R</b> | 4.50   | 4.50  | 1.82  | 3.00  | 2.50  | Gold   |
| <b>S7191-45R</b> | 5.00   | 4.50  | 2.08  | 3.50  | 3.00  | Gold   |

All dimensions in mm.

# Spring Contacts

## Grounding/RFI Contacts

- ❖ SMT devices for use in shielding and grounding applications.
- ❖ For use on surface mount PCBs, in contact with metal shields or frames.
- ❖ Suitable for both wiping and sliding actions.
- ❖ Ideal for automated requirements, using standard placement equipment.



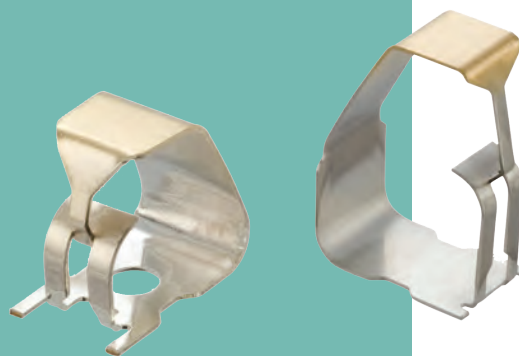
| <p><b>1.7mm HIGH</b></p> <p>Recommended PC Board Pattern</p> <table border="1"> <thead> <tr> <th>ORDER CODE</th> <th>FINISH</th> </tr> </thead> <tbody> <tr> <td>S7121-42R</td> <td>Gold</td> </tr> </tbody> </table>       | ORDER CODE | FINISH | S7121-42R | Gold       | <p><b>2.5mm HIGH</b></p> <p>Recommended PC Board Pattern</p> <table border="1"> <thead> <tr> <th>ORDER CODE</th> <th>FINISH</th> </tr> </thead> <tbody> <tr> <td>S1741-46R</td> <td>Tin</td> </tr> </tbody> </table>   | ORDER CODE | FINISH | S1741-46R | Tin        |           |     |
|---|------------|--------|-----------|------------|--|------------|--------|-----------|------------|-----------|-----|
| ORDER CODE  | FINISH     |        |           |            |  |            |        |           |            |           |     |
| S7121-42R   | Gold       |        |           |            |  |            |        |           |            |           |     |
| ORDER CODE  | FINISH     |        |           |            |  |            |        |           |            |           |     |
| S1741-46R   | Tin        |        |           |            |  |            |        |           |            |           |     |
| <p><b>2.7mm HIGH</b></p> <p>Recommended PC Board Pattern</p> <table border="1"> <thead> <tr> <th>ORDER CODE</th> <th>FINISH</th> </tr> </thead> <tbody> <tr> <td>S7091-42R</td> <td>Gold + Tin</td> </tr> </tbody> </table> | ORDER CODE | FINISH | S7091-42R | Gold + Tin | <p><b>3.5mm HIGH</b></p> <p>Recommended PC Board Pattern</p> <table border="1"> <thead> <tr> <th>ORDER CODE</th> <th>FINISH</th> </tr> </thead> <tbody> <tr> <td>S1761-42R</td> <td>Gold + Tin</td> </tr> <tr> <td>S1761-46R</td> <td>Tin</td> </tr> </tbody> </table> | ORDER CODE | FINISH | S1761-42R | Gold + Tin | S1761-46R | Tin |
| ORDER CODE  | FINISH     |        |           |            |  |            |        |           |            |           |     |
| S7091-42R   | Gold + Tin |        |           |            |  |            |        |           |            |           |     |
| ORDER CODE  | FINISH     |        |           |            |  |            |        |           |            |           |     |
| S1761-42R   | Gold + Tin |        |           |            |  |            |        |           |            |           |     |
| S1761-46R   | Tin        |        |           |            |  |            |        |           |            |           |     |
| <p><b>4.0mm HIGH</b></p> <p>Recommended PC Board Pattern</p> <table border="1"> <thead> <tr> <th>ORDER CODE</th> <th>FINISH</th> </tr> </thead> <tbody> <tr> <td>S1791-42R</td> <td>Gold</td> </tr> </tbody> </table>       | ORDER CODE | FINISH | S1791-42R | Gold       | <p><b>5.6mm HIGH</b></p> <p>Recommended PC Board Pattern</p> <table border="1"> <thead> <tr> <th>ORDER CODE</th> <th>FINISH</th> </tr> </thead> <tbody> <tr> <td>S7061-42R</td> <td>Gold + Tin</td> </tr> <tr> <td>S7061-46R</td> <td>Tin</td> </tr> </tbody> </table> | ORDER CODE | FINISH | S7061-42R | Gold + Tin | S7061-46R | Tin |
| ORDER CODE  | FINISH     |        |           |            |  |            |        |           |            |           |     |
| S1791-42R   | Gold       |        |           |            |  |            |        |           |            |           |     |
| ORDER CODE  | FINISH     |        |           |            |  |            |        |           |            |           |     |
| S7061-42R   | Gold + Tin |        |           |            |  |            |        |           |            |           |     |
| S7061-46R   | Tin        |        |           |            |  |            |        |           |            |           |     |

All dimensions in mm.

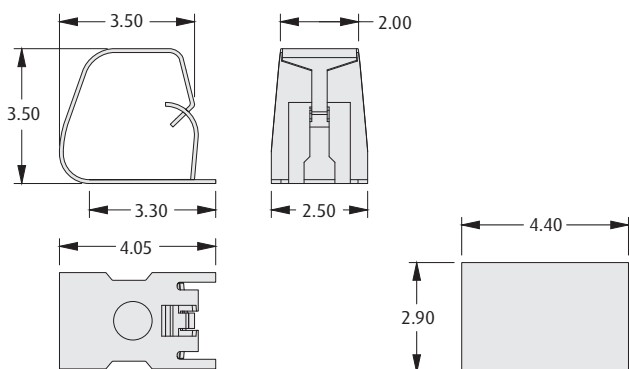
# Spring Contacts

## Grounding/RFI Contacts

- ❖ Prevents EMC noise and static.
- ❖ Simple and effective method for connecting multiple PCBs.
- ❖ No special tooling required, uses standard Pick and Place equipment.
- ❖ Protected tips prevent product from hooking.



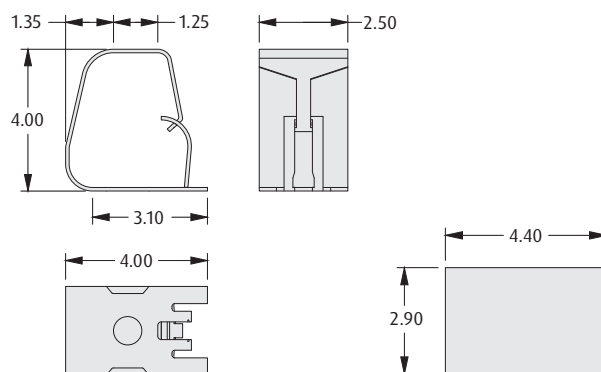
### 3.5mm HIGH



Recommended  
PC Board Pattern

| ORDER CODE | FINISH     |
|------------|------------|
| S7101-42R  | Gold + Tin |

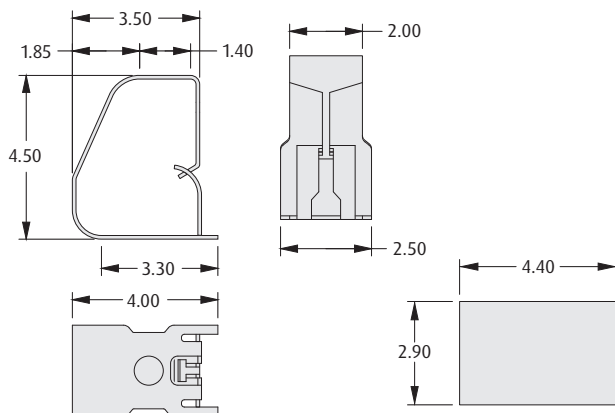
### 4.0mm HIGH



Recommended  
PC Board Pattern

| ORDER CODE | FINISH     |
|------------|------------|
| S7041-42R  | Gold + Tin |

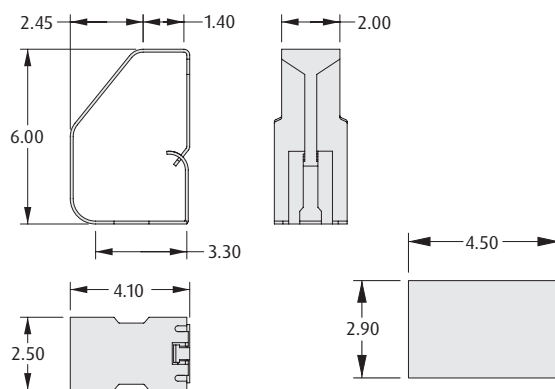
### 4.5mm HIGH



Recommended  
PC Board Pattern

| ORDER CODE | FINISH     |
|------------|------------|
| S7111-42R  | Gold + Tin |

### 6.0mm HIGH



Recommended  
PC Board Pattern

| ORDER CODE | FINISH     |
|------------|------------|
| S7051-42R  | Gold + Tin |

All dimensions in mm.

## SPRING CONTACTS

- ❖ Packaged in standard (EIA 481) Tape & Reel format.
- ❖ Spring contacts maintain a positive force and stable electrical contact.
- ❖ Small PCB footprint.
- ❖ Multi-Directional contacts can be used in either vertical or horizontal orientations.



All dimensions in mm.



# Spring Contacts

## Development Kit

- ❖ Selection of 16 different Spring Contacts in one box.
- ❖ Ideal for prototyping on new projects.
- ❖ Free refills available on all Spring Contacts.
- ❖ For individual contact details, see previous catalog pages or search for the part number on [www.harwin.com](http://www.harwin.com).



- ❖ External box dimensions are 338mm x 261mm, 57mm high
- ❖ Free refills available - registration card included with each box with further details on claiming your spring contact replacements.

### ❖ Box Contents

| ORDER CODE | CONTACT STYLE    | QUANTITY |
|------------|------------------|----------|
| S7221-45R  | Positive Stop    | 20       |
| S7271-45R  | Positive Stop    | 20       |
| S7121-42R  | C Style          | 20       |
| S1741-46R  | C Style          | 20       |
| S1761-42R  | C Style          | 20       |
| S1761-46R  | C Style          | 20       |
| S1791-42R  | C Style          | 20       |
| S7061-42R  | C Style          | 20       |
| S7061-46R  | C Style          | 20       |
| S7131-45R  | Extended Antenna | 20       |
| S7161-45R  | Extended Antenna | 20       |
| S7101-42R  | Box Style        | 20       |
| S7051-42R  | Box Style        | 20       |
| S7071-46R  | C/Box Style      | 20       |
| S7081-42R  | Point Contact    | 20       |
| S1941-46R  | Multi-Direction  | 20       |

**ORDER CODE**  
**DEV-001**

All dimensions in mm.



# Pogo Pin Specification

## Materials

|          |                    |
|----------|--------------------|
| Plunger: | Brass, Gold finish |
| Barrel:  | Brass, Gold finish |
| Spring:  | Stainless Steel    |

## Electrical

|                     |                                 |
|---------------------|---------------------------------|
| Current:            | 2A or 1A (see individual pages) |
| Contact resistance: | 50mΩ max                        |

## Mechanical

|                                 |                      |
|---------------------------------|----------------------|
| Durability:                     | 10,000 operations    |
| Spring force at working height: | See individual pages |

## Environmental

|                            |                      |
|----------------------------|----------------------|
| Operating temperature:     | -40°C to +85°C       |
| Solderability:             | 235°C for 5 seconds  |
| Soldering heat resistance: | 260°C for 10 seconds |

# Pogo Pins

## Single Spring Loaded Contacts – SMT with Peg

- ❖ These pogo pins are intended to be used as surface mount with a location peg, but they can also be used as a throughboard tail version.
- ❖ Available in Tape and Reeled packaging format for automated assembly methods.
- ❖ Gold finish for improved wear resistance.
- ❖ Additional height options shown on following page.



### ❖ Packaging

#### Reel quantity

|               |                        |
|---------------|------------------------|
| P70-6000045R: | 1,800 on a Ø330mm reel |
| P70-2000045R: | 800 on a Ø330mm reel   |
| P70-2010045R: | 700 on a Ø330mm reel   |

### ❖ Electrical

#### Current

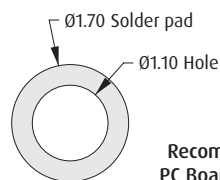
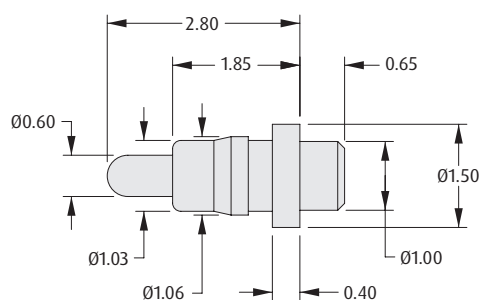
|               |    |
|---------------|----|
| P70-6000045R: | 1A |
| P70-2000045R: | 2A |
| P70-2010045R: | 2A |

### ❖ Mechanical

#### Spring force at working height

|               |   |
|---------------|---|
| P70-6000045R: | 0.39N ±0.09N at 2.10mm working height       |
| P70-2000045R: | 1.27N ±0.34N at 2.90mm working height       |
| P70-2010045R: | 1.32N +0.39/-0.29N at 4.00mm working height |

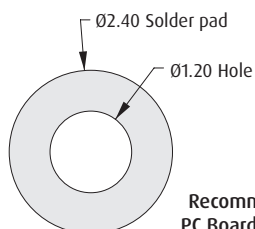
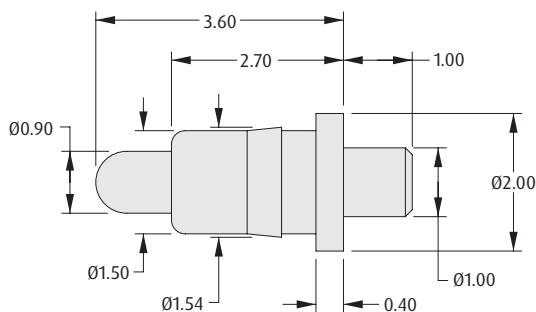
### 2.8mm FREE HEIGHT



Recommended  
PC Board Pattern

**ORDER CODE**  
**P70-6000045R**

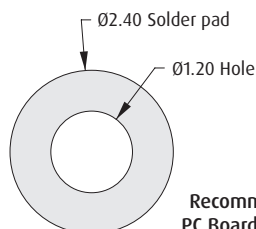
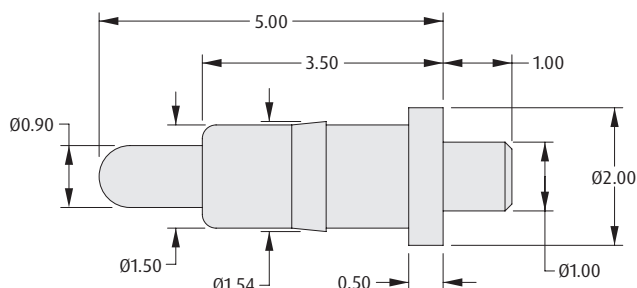
### 3.6mm FREE HEIGHT



Recommended  
PC Board Pattern

**ORDER CODE**  
**P70-2000045R**

### 5.0mm FREE HEIGHT



Recommended  
PC Board Pattern

**ORDER CODE**  
**P70-2010045R**

All dimensions in mm.

# Pogo Pins

## Single Spring Loaded Contacts – SMT with Peg

- ❖ These pogo pins are intended to be used as surface mount with a location peg, but they can also be used as a throughboard tail version.
- ❖ Available in Tape and Reeled packaging format for automated assembly methods.
- ❖ Gold finish for improved wear resistance.
- ❖ Additional height options shown on previous page.



### ❖ Packaging

#### Reel quantity

|               |                      |
|---------------|----------------------|
| P70-2100045R: | 600 on a Ø330mm reel |
| P70-2300045R: | 580 on a Ø330mm reel |
| P70-2200045:  | Loose                |

### ❖ Electrical

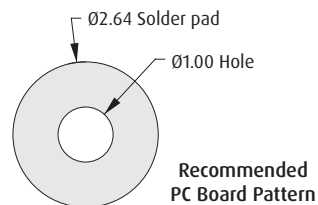
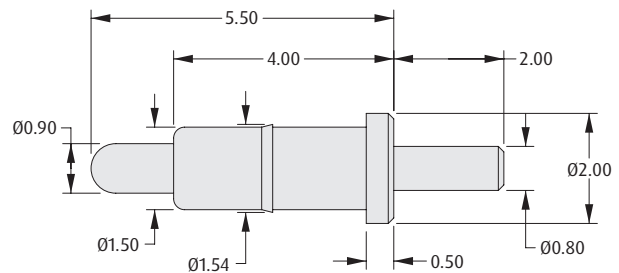
Current: 2A

### ❖ Mechanical

#### Spring force at working height

|               |                                       |
|---------------|---------------------------------------|
| P70-2100045R: | 0.68N ±0.24N at 4.50mm working height |
| P70-2300045R: | 0.83N ±0.25N at 4.90mm working height |
| P70-2200045:  | 0.98N ±0.19N at 7.10mm working height |

### 5.5mm FREE HEIGHT

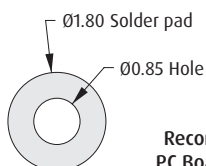
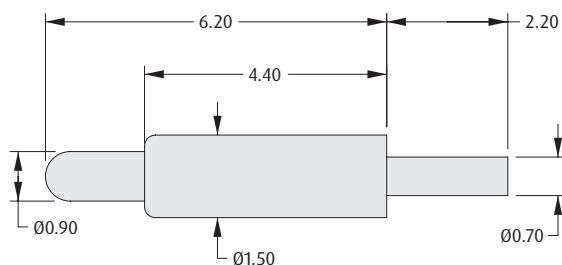


Recommended  
PC Board Pattern

#### ORDER CODE

P70-2100045R

### 6.2mm FREE HEIGHT

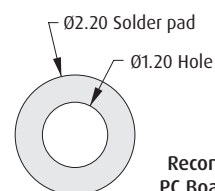
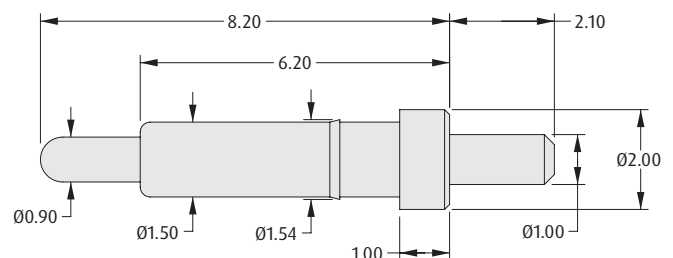


Recommended  
PC Board Pattern

#### ORDER CODE

P70-2300045R

### 8.2mm FREE HEIGHT



Recommended  
PC Board Pattern

#### ORDER CODE

P70-2200045

All dimensions in mm.

# Pogo Pins

## Single Spring Loaded Contacts – Surface Mount

- ❖ Used for individual contacts or irregular layout requirements.
- ❖ Available in Tape and Reeled packaging format for automated assembly methods.
- ❖ Gold finish for improved wear resistance.
- ❖ Additional height options shown on following page.



### ❖ Packaging

#### Reel quantity

|               |                        |
|---------------|------------------------|
| P70-5000045R: | 2,000 on a Ø330mm reel |
| P70-7000045:  | Loose                  |
| P70-5100045:  | Loose                  |

### ❖ Electrical

#### Current

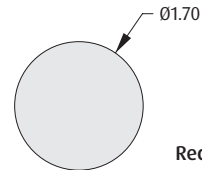
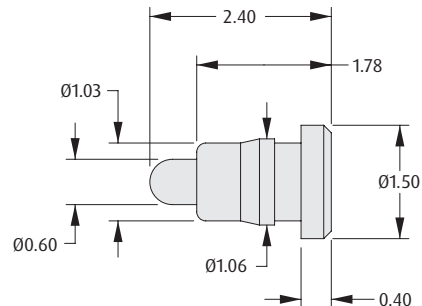
|               |    |
|---------------|----|
| P70-5000045R: | 1A |
| P70-7000045:  | 2A |
| P70-5100045:  | 2A |

### ❖ Mechanical

#### Spring force at working height

|               |                                       |
|---------------|---------------------------------------|
| P70-5000045R: | 0.68N ±0.19N at 1.90mm working height |
| P70-7000045:  | 0.68N ±0.19N at 2.00mm working height |
| P70-5100045:  | 0.98N ±0.29N at 4.00mm working height |

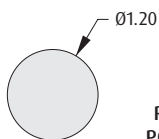
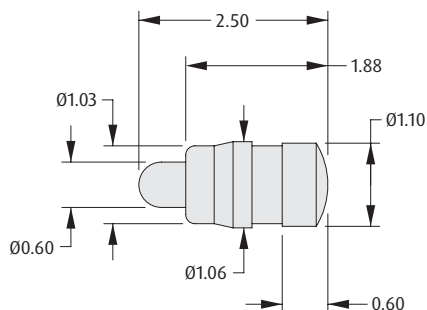
### 2.4mm FREE HEIGHT



Recommended  
PC Board Pattern

**ORDER CODE**  
**P70-5000045R**

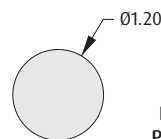
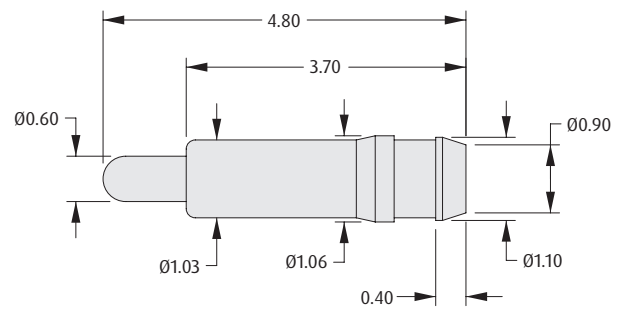
### 2.5mm FREE HEIGHT



Recommended  
PC Board Pattern

**ORDER CODE**  
**P70-7000045**

### 4.8mm FREE HEIGHT



Recommended  
PC Board Pattern

**ORDER CODE**  
**P70-5100045**

All dimensions in mm.

# Pogo Pins

## Single Spring Loaded Contacts – Surface Mount

- Used for individual contacts or irregular layout requirements.
- Available in Tape and Reeled packaging format for automated assembly methods.
- Gold finish for improved wear resistance.
- Additional height options shown on previous page.



POGO PINS

### ➤ Packaging

#### Reel Quantity

|               |                        |
|---------------|------------------------|
| P70-1100045R: | 650 on a Ø330mm reel   |
| P70-1030045R: | 600 on a Ø330mm reel   |
| P70-1000045R: | 1,400 on a Ø330mm reel |
| P70-1010045R: | 800 on a Ø330mm reel   |
| P70-1020045R: | 700 on a Ø330mm reel   |

### ➤ Electrical

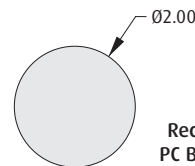
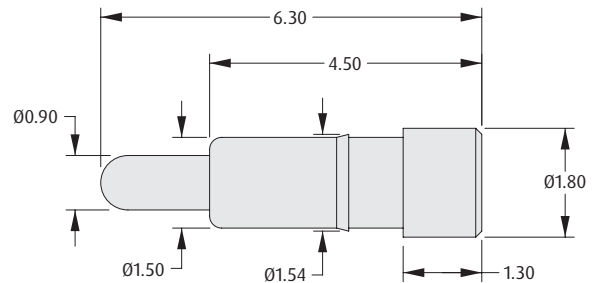
Current: 2A

### ➤ Mechanical

#### Spring force at working height

|               |  |
|---------------|--|
| P70-1100045R: | 1.22N ±0.34N at 5.00mm working height        |
| P70-1000045R: | 0.88N ±0.29N at 2.90mm working height        |
| P70-1010045R: | 1.17N ±0.29N at 4.00mm working height        |
| P70-1020045R: | 1.17N ±0.29N/-0.19N at 4.50mm working height |
| P70-1030045R: | 1.29N ±0.29N at 6.20mm working height        |

### 6.3mm FREE HEIGHT

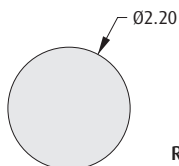
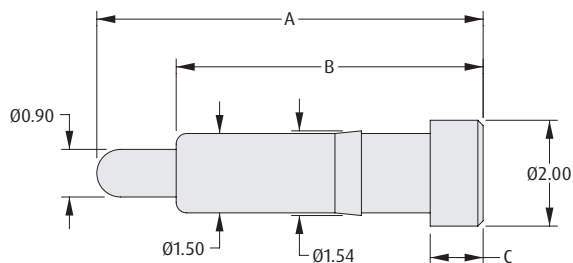


Recommended  
PC Board Pattern

#### ORDER CODE

P70-1100045R

### 3.5mm TO 7.3mm FREE HEIGHT



Recommended PC Board Pattern

| ORDER CODE   | DIM A | DIM B | DIM C |
|--------------|-------|-------|-------|
| P70-1000045R | 3.50  | 2.50  | 0.40  |
| P70-1010045R | 5.00  | 3.50  | 0.50  |
| P70-1020045R | 5.50  | 4.00  | 0.50  |
| P70-1030045R | 7.30  | 5.80  | 1.00  |

All dimensions in mm.

# Contact Pads

## Surface Mount Contacts

- ❖ Surface mountable contact pad, ideal as a mating area for spring contacts and pogo pins.
- ❖ Supplied in Tape and Reeled packaging format for automated assembly methods.
- ❖ Gold finish for improved wear resistance.
- ❖ Available in 3 shapes, with a choice of pad dimensions.



### Materials

Base material: Beryllium Copper  
Finish: Gold

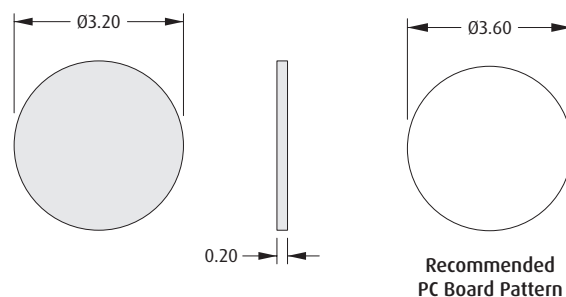
### Electrical

Current: 6A  
Contact resistance: 0.15mΩ max

### Environmental

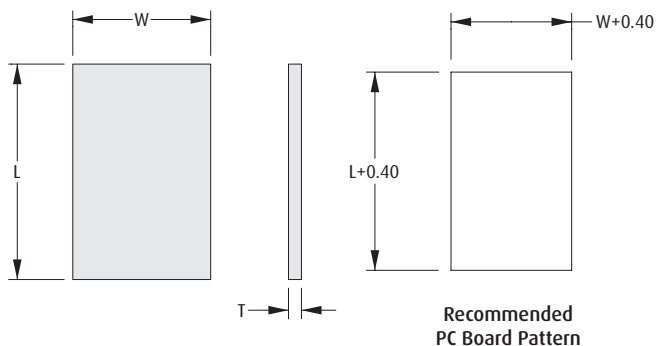
Operating temperature: -40°C to +180°C

### CIRCULAR



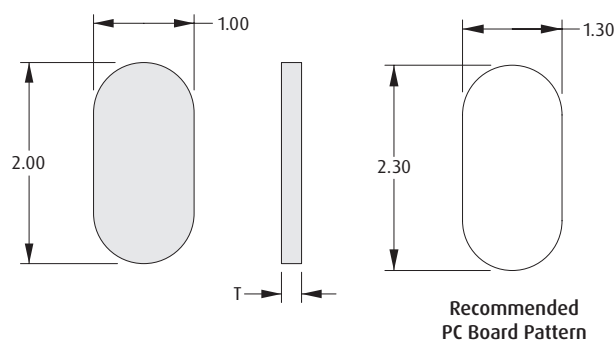
| ORDER CODE     | TAPE & REEL          |
|----------------|----------------------|
| S70-332002045R | 2,000 on a Ø178 reel |

### RECTANGULAR



| ORDER CODE     | DIM L | DIM W | DIM T | TAPE & REEL          |
|----------------|-------|-------|-------|----------------------|
| S70-125161545R | 2.50  | 1.60  | 0.15  | 4,000 on a Ø178 reel |
| S70-138181045R | 3.80  | 1.80  | 0.10  | 2,000 on a Ø178 reel |
| S70-138305045R | 3.80  | 3.00  | 0.50  | 2,000 on a Ø178 reel |

### OVAL



| ORDER CODE     | DIM T | TAPE & REEL          |
|----------------|-------|----------------------|
| S70-220101045R | 0.10  | 9,000 on a Ø178 reel |
| S70-220102045R | 0.20  | 9,000 on a Ø178 reel |

All dimensions in mm.

# EMC Shielding

## Contents

|                              |     |
|------------------------------|-----|
| Introduction                 | 292 |
| SMT Shielding Clips          | 294 |
| Shielding Cans for SMT Clips | 297 |
| Development Kit              | 298 |



# EMC Shielding Introduction

**Industry standard types of Board Level Shielding (BLS) to prevent electromagnetic interference often involves additional expensive secondary operations that can damage circuits and components. Harwin's EMC Shielding range provides BLS without the additional expense or damage.**

Existing BLS solutions require the full shield can to be soldered to the circuit board. This normally involves a secondary soldering operation, often hand-soldered and therefore expensive and slow. This can also give rise to hotspots and potential IC or track damage. In addition, if any rework or in-field replacement is required, the whole can must be de-soldered, causing more delays and expenditure.

Harwin's solution involves two separate components. The first is a SMT clip, which can be assembled in the same SMT process as the rest of the PCB components. The second is the Shield can. This is a simple five-sided construction, which quickly and easily snaps into place into the clips – no heat source and very little assembly time required. If rework or in-field service is necessary, the can be simply lifted off, and replaced once the work is completed.

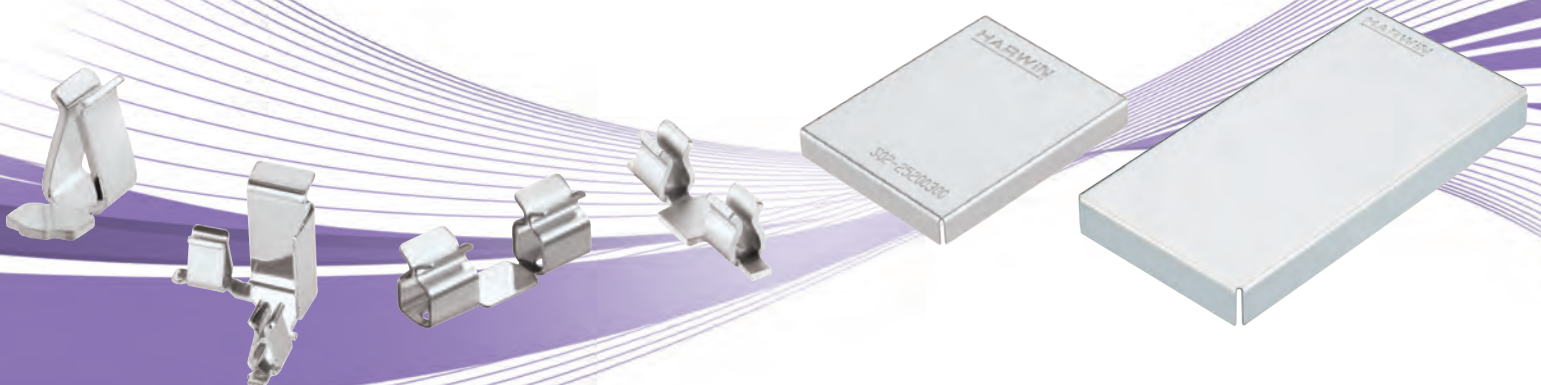
- ❖ Significant decreases in manual operation times and damage potential
- ❖ Simple to use, easy to assemble, more cost effective than fence and lid can solutions
- ❖ Development kit available – make your own shield can from scored flat sheet during low-volume prototyping phases
- ❖ All SMT clips supplied on Tape and Reel for fully automated assembly at the same time as the rest of the board is populated, eliminating post-operation hotspots
- ❖ Stocked in depth throughout Harwin's authorized distributor network

## SMT RFI Shield Clips

- ❖ Simple to assemble to the circuit board with conventional surface mount technologies, as the same pass as the rest of the components
- ❖ Very low profile designs, down to 0.8mm high
- ❖ Corner clip styles for options on track layouts, including an integrated corner shield cover to further minimise signal ingress/leakage and address localized eddy interference at folded can corners

## Shield Cans

- ❖ Available in miniature sizes with a choice of 0.15mm, 0.2mm or 0.3mm thickness material, compatible with most of the Harwin Shield Clips
- ❖ Manufactured from Nickel Silver, ideal for high frequency shielding
- ❖ Development kit consists of two 80 x 60mm scored flat sheets, and 24 SMT Shield Clips, for prototype, pre-production or very low volume requirements





# RFI Shield Clips Summary

Summary of SMT Shield Clips (further dimensional information on the following pages)

| Order Code       | Type    | Shield Thickness | Material                      | Finish | Pack Qty. on Ø330mm reel | Insertion Force (max) | Withdrawal Force (min) |
|------------------|---------|------------------|-------------------------------|--------|--------------------------|-----------------------|------------------------|
| <b>S1411-46R</b> | Maxi    | 0.70-1.00mm      | Beryllium Copper              | Tin    | 1,900                    | 7.0N                  | 0.80N                  |
| <b>S1711-46R</b> | Midi    | 0.17-0.30mm      | Beryllium Copper              | Tin    | 1,900                    | 4.0N                  | 0.50N                  |
| <b>S2711-46R</b> | Midi    | 0.17-0.30mm      | Cupro-Nickel (Beryllium-free) | Tin    | 1,900                    | 4.0N                  | 0.50N                  |
| <b>S0971-46R</b> | Mini    | 0.20-0.30mm      | Stainless Steel               | Tin    | 5,000                    | 19.6N                 | 0.98N                  |
| <b>S1721-46R</b> | Mini    | 0.13-0.23mm      | Beryllium Copper              | Tin    | 5,000                    | 5.0N                  | 0.35N                  |
| <b>S0941-46R</b> | Micro   | 0.135-0.16mm     | Stainless Steel               | Tin    | 10,000                   | 9.8N                  | 0.69N                  |
| <b>S0951-46R</b> | Micro   | 0.20mm           | Stainless Steel               | Tin    | 10,000                   | 9.8N                  | 0.69N                  |
| <b>S0961-46R</b> | Micro   | 0.15-0.20mm      | Stainless Steel               | Tin    | 10,000                   | 24.5N                 | 0.98N                  |
| <b>S0991-46R</b> | Micro   | 0.20-0.25mm      | Stainless Steel               | Tin    | 15,000                   | 19.6N                 | 0.98N                  |
| <b>S1001-46R</b> | Micro   | 0.15-0.20mm      | Stainless Steel               | Tin    | 20,000                   | 19.6N                 | 0.98N                  |
| <b>S0911-46R</b> | Compact | 0.15-0.20mm      | Beryllium Copper              | Tin    | 6,500                    | 3.0N                  | 0.10N                  |
| <b>S0981-46R</b> | Corner  | 0.20-0.25mm      | Stainless Steel               | Tin    | 6,000                    | 19.6N                 | 0.98N                  |
| <b>S0921-46R</b> | Corner  | 0.30-0.40mm      | Cupro-Nickel                  | Tin    | 600                      | 15.0N                 | 0.30N                  |

## RFI Shield Can Specifications

### Materials

Material: Nickel Silver  
Finish: Unplated

### Packaging

S01-XXXXXXX0: Loose (Individual Bags)  
S02-XXXXXXX0: Loose (Individual Bags)  
S02-20150300R: Tape & Reel, 900 on a Ø330mm reel  
S02-25200300R: Tape & Reel, 700 on a Ø330mm reel  
S03-XXXXXXX0R: Tape & Reel, 900 on a Ø330mm reel

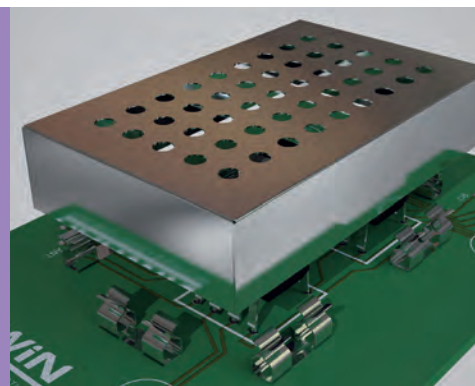
### Compatible RFI Shield Clips

For S01-XXXXXXX0: 0.3mm thick  
S1711-46R, S2711-46R, S0971-46R, S0921-46R  
For S02-XXXXXXX0(R): 0.2mm thick  
S1711-46R, S2711-46R, S0971-46R, S1721-46R, S0951-46R, S0961-46R, S0991-46R, S1001-46R, S0911-46R, S0981-46R  
For S03-XXXXXXX0R: 0.15mm thick  
S1721-46R, S0941-46R, S0961-46R, S1001-46R, S0911-46R

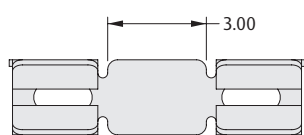
# RFI Shield Clips

## Shield Clips for EMI/RFI Shields

- ❖ SMT devices offering a fast solution for assembling RFI shields to PCBs.
- ❖ Eliminates the need for through holes and post reflow operations.
- ❖ Saves PCB real estate.
- ❖ Facilitates easy removal of the can for maintenance and repair.
- ❖ Substantial improvement in time and simplicity of assembly tuning and re-work.



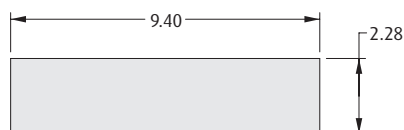
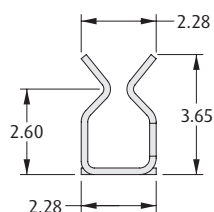
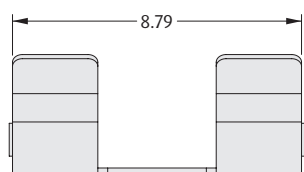
### MAXI



Shield Thickness  
0.70-1.00mm

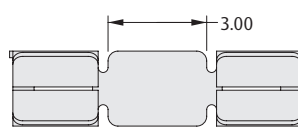
#### ORDER CODE

**S1411-46R**



Recommended  
PC Board Pattern

### MIDI



Shield Thickness  
0.17-0.30mm

#### ORDER CODE

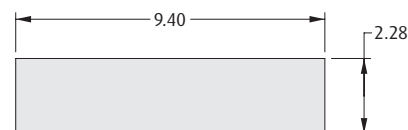
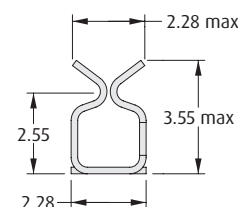
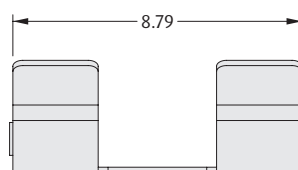
**S1711-46R**

#### MATERIAL

Beryllium Copper

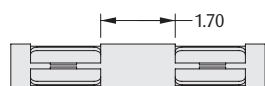
**S2711-46R**

Cupro-Nickel



Recommended  
PC Board Pattern

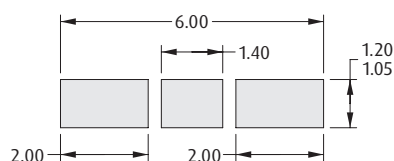
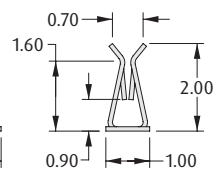
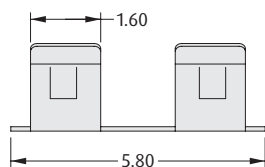
### MINI



Shield Thickness  
0.20-0.30mm

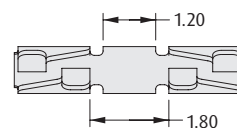
#### ORDER CODE

**S0971-46R**



Recommended  
PC Board Pattern

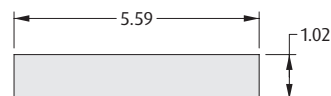
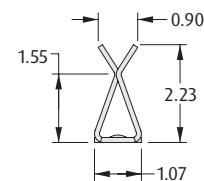
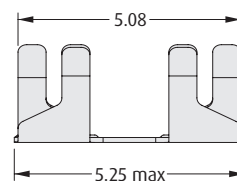
### MINI



Shield Thickness  
0.13-0.23mm

#### ORDER CODE

**S1721-46R**



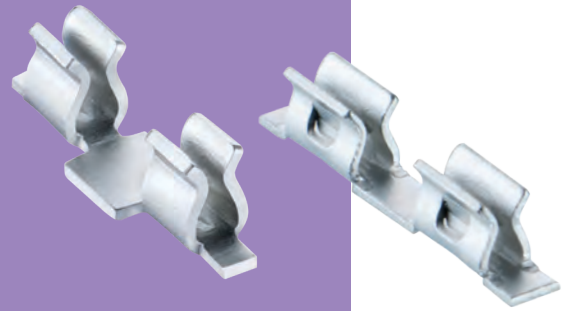
Recommended  
PC Board Pattern

All dimensions in mm.

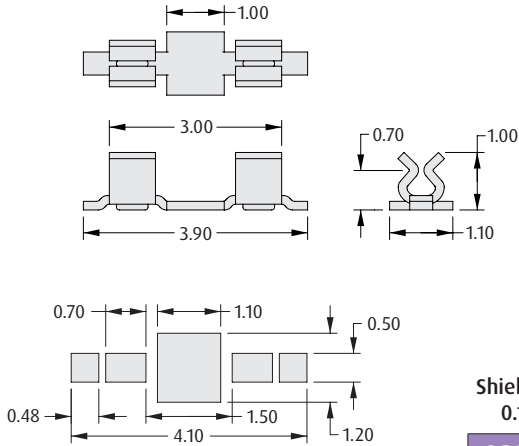
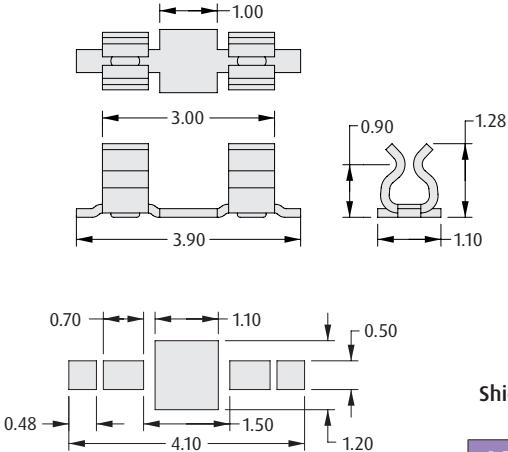
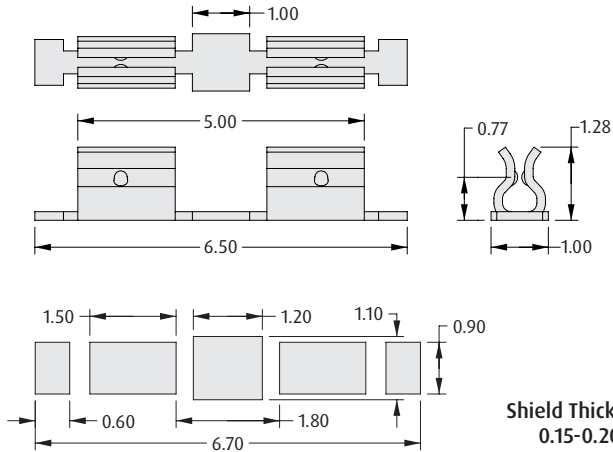
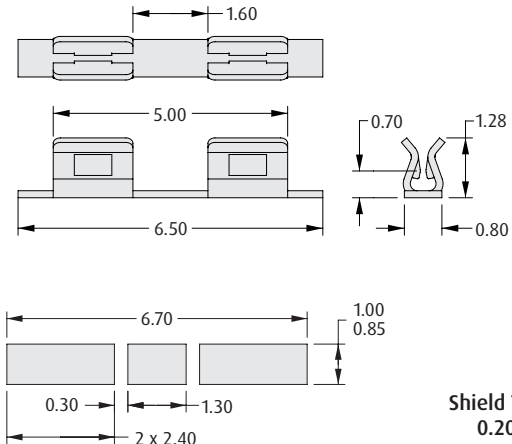
# RFI Shield Clips

## Shield Clips for EMI/RFI Shields

- ❖ Compatible with industry standard placement machines.
- ❖ Packaged in standard (EIA 481) Tape & Reel format.
- ❖ Spring contact design provides secure can retention.
- ❖ Higher force options for retention under vibration.



EMC SHIELDING

| MICRO   | MICRO  |
|---|--|
|  <p>Shield Thickness<br/>0.135-0.16mm</p> <p><b>ORDER CODE</b><br/><b>S0941-46R</b></p> <p>Recommended PC Board Pattern</p> |  <p>Shield Thickness<br/>0.20mm</p> <p><b>ORDER CODE</b><br/><b>S0951-46R</b></p> <p>Recommended PC Board Pattern</p>       |
| MICRO   | MICRO  |
|  <p>Shield Thickness<br/>0.15-0.20mm</p> <p><b>ORDER CODE</b><br/><b>S0961-46R</b></p> <p>Recommended PC Board Pattern</p> |  <p>Shield Thickness<br/>0.20-0.25mm</p> <p><b>ORDER CODE</b><br/><b>S0991-46R</b></p> <p>Recommended PC Board Pattern</p> |

All dimensions in mm.

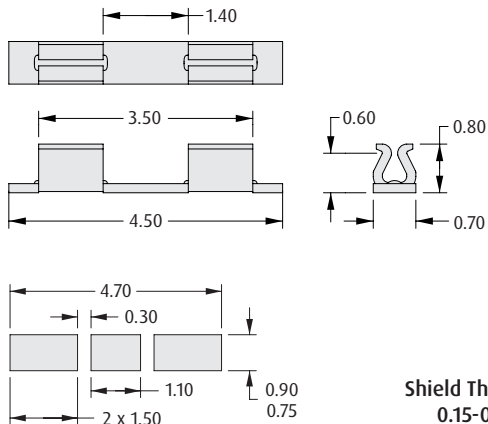
# RFI Shield Clips

## Shield Clips for EMI/RFI Shields

- ❖ Compatible with industry standard placement machines.
- ❖ Packaged in standard (EIA 481) Tape & Reel format.
- ❖ Spring contact design provides secure retention.
- ❖ Ideally suited to miniature electronics.
- ❖ Low profile and corner clips offer design flexibility.



### MICRO



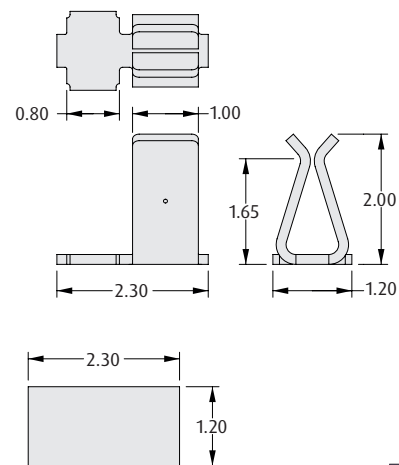
Recommended PC Board Pattern

Shield Thickness  
0.15-0.20mm

**ORDER CODE**

**S1001-46R**

### COMPACT



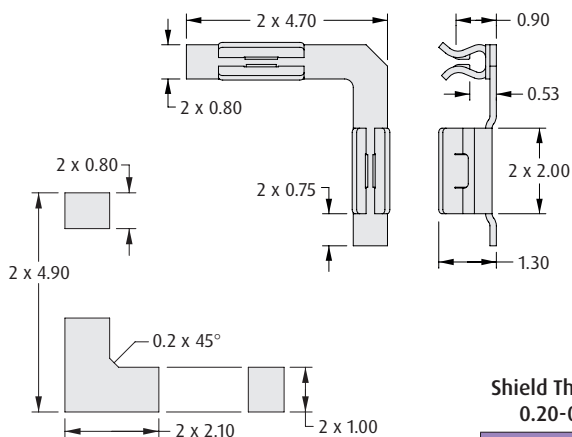
Recommended PC Board Pattern

Shield Thickness  
0.15-0.20mm

**ORDER CODE**

**S0911-46R**

### CORNER



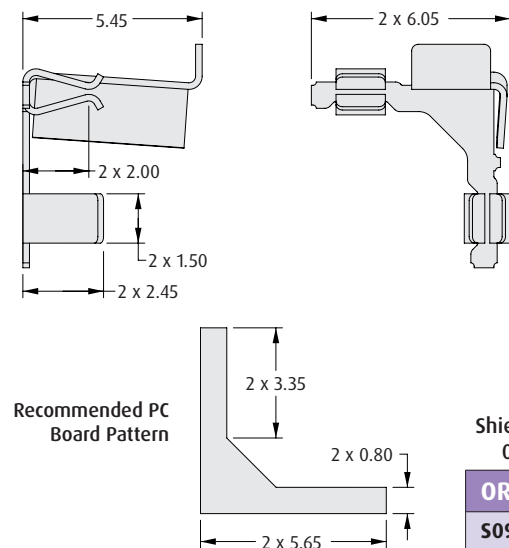
Recommended  
PC Board Pattern

Shield Thickness  
0.20-0.25mm

**ORDER CODE**

**S0981-46R**

### CORNER



Recommended PC  
Board Pattern

Shield Thickness  
0.30-0.40mm

**ORDER CODE**

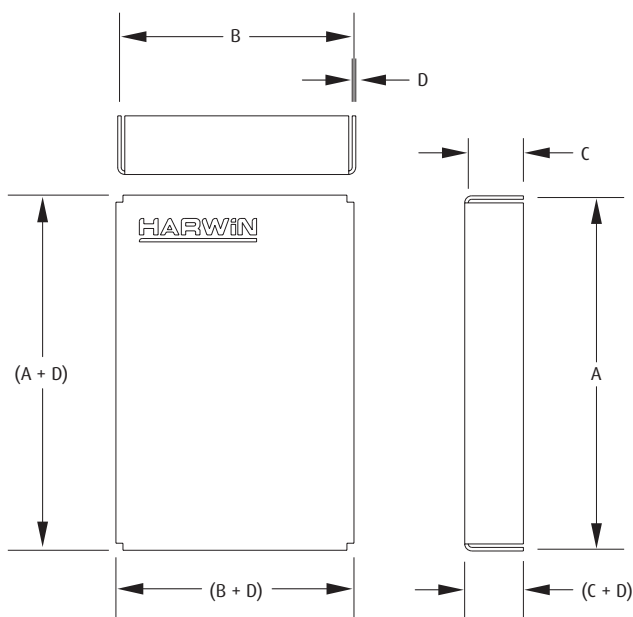
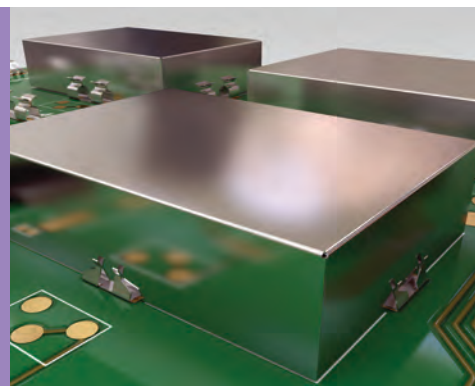
**S0921-46R**

All dimensions in mm.

# RFI Shield Cans

## EMI/RFI Shielding

- ❖ Provides excellent RFI and EMI protection to sensitive circuitry at the PCB level.
- ❖ Standard can sizes available from stock.



| ORDER CODE             | DIM A | DIM B | DIM C | DIM D  |
|------------------------|-------|-------|-------|--------|
| <b>S01-30200500</b>    | 30mm  | 20mm  | 5mm   | 0.3mm  |
| <b>S01-30300500</b>    | 30mm  | 30mm  | 5mm   | 0.3mm  |
| <b>S01-50250500</b>    | 50mm  | 25mm  | 5mm   | 0.3mm  |
| <b>S02-20150300(R)</b> | 20mm  | 15mm  | 3mm   | 0.2mm  |
| <b>S02-25200300(R)</b> | 25mm  | 20mm  | 3mm   | 0.2mm  |
| <b>S02-30200250</b>    | 30mm  | 20mm  | 2.5mm | 0.2mm  |
| <b>S03-10100300R</b>   | 10mm  | 10mm  | 3mm   | 0.15mm |
| <b>S03-15100300R</b>   | 15mm  | 10mm  | 3mm   | 0.15mm |
| <b>S03-30100300R</b>   | 30mm  | 10mm  | 3mm   | 0.15mm |

- ❖ Dimensions A and B are measured from the **CENTER** of the material thickness.
- ❖ Dimension C is measured from the bottom edge to the **INSIDE** of the top face.

## HOW TO ORDER

**S0X - XX XX XXX 0 X**

| SERIES CODE |                            |
|-------------|----------------------------|
| <b>S01</b>  | Thickness (Dim D) = 0.3mm  |
| <b>S02</b>  | Thickness (Dim D) = 0.2mm  |
| <b>S03</b>  | Thickness (Dim D) = 0.15mm |

| DIMENSION A        |
|--------------------|
| Example: 30mm = 30 |

| PACKAGING    |                          |
|--------------|--------------------------|
| <b>Blank</b> | Loose (S01, S02)         |
| <b>R</b>     | Tape & Reeled (S02, S03) |

| FINISH |          |
|--------|----------|
| 0      | Unplated |

| DIMENSION C        |
|--------------------|
| Example: 5mm = 050 |

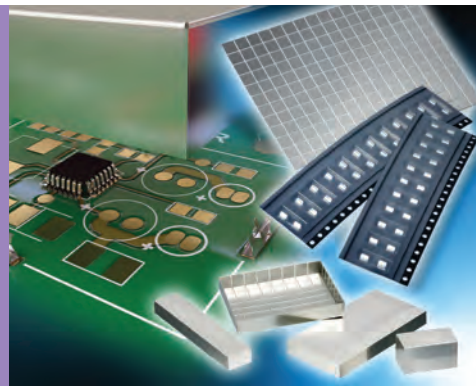
| DIMENSION B        |
|--------------------|
| Example: 30mm = 30 |

All dimensions in mm.

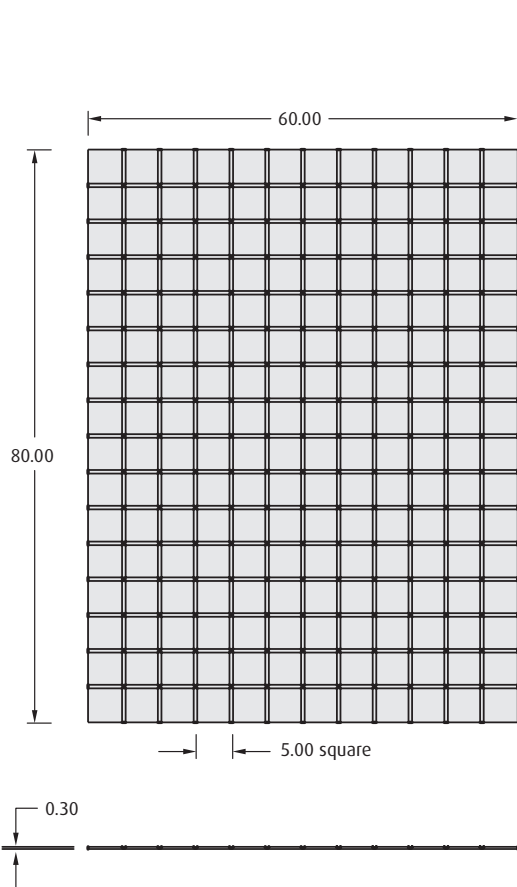
# RFI Shield Can Kit

## SMT Clips and Make-Your-Own Cans

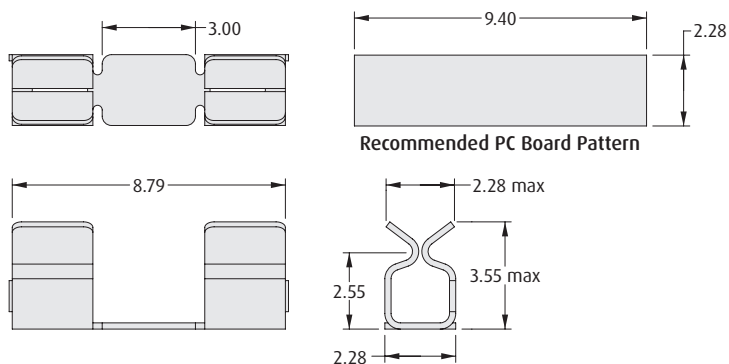
- ❖ Make your own Shield Cans in minutes, ideal for fast prototyping.
- ❖ Kit contains DIY Shield Can blanks, Shield retention clips and full instructions.
- ❖ Nickel Silver material for effective & useable shielding (frequency/configuration dependent).
- ❖ Shield Can is removable for adjustment.



### SHIELD CAN KIT



**2 x Shield Can Sheets**  
5mm pitch score lines, for folding



**24 x Shield Clip S1711-46R**



**Instruction Sheet**  
(available from [www.harwin.com/instructions](http://www.harwin.com/instructions))

**ORDER CODE**

**S01-806005KIT**

All dimensions in mm.

# PCB Hardware

## Contents

|                              |     |
|------------------------------|-----|
| SMT Test Points              | 300 |
| SMT Cable Clips              | 301 |
| Coin Cell Holders            | 302 |
| SMT Jumper Links             | 304 |
| PCB Jumper Links             | 305 |
| PCB Terminals, Turret Lugs   | 306 |
| Spacers / Pillars / Standoff |     |
| Clearance Spacers            | 309 |
| Threaded Spacers             | 310 |



# SMT Hardware

## Test Points

- ❖ Ideal for use with standard probes, clips and hooks.
- ❖ Can be placed using industry standard equipment.
- ❖ Suitable for automatic or manual test.
- ❖ High speed placement.
- ❖ Industry standard tape and reel packaging.
- ❖ Strong and durable.



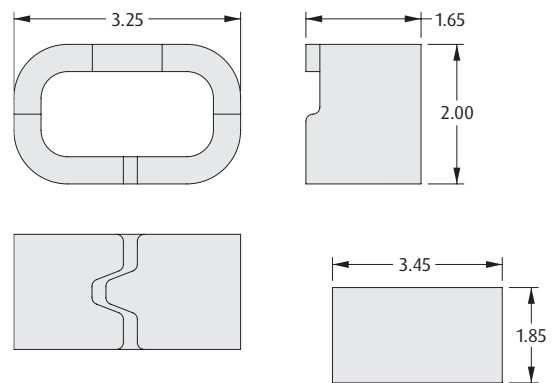
### ❖ Materials

Material: Copper Alloy  
Finish: Tin

### ❖ Packaging

Format: Tape & Reel  
Reel quantity  
S1751-46R: 2,500 on a Ø330mm reel  
S2751-46R: 2,500 on a Ø178mm reel  
S2761-46R: 3,000 on a Ø178mm reel

### 2.00mm HIGH

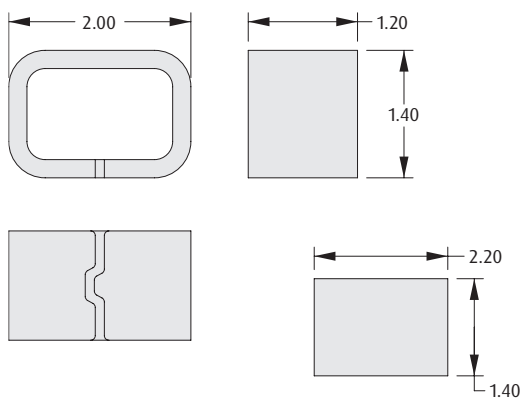


Recommended PC Board Pattern

**ORDER CODE**

**S1751-46R**

### 1.40mm HIGH

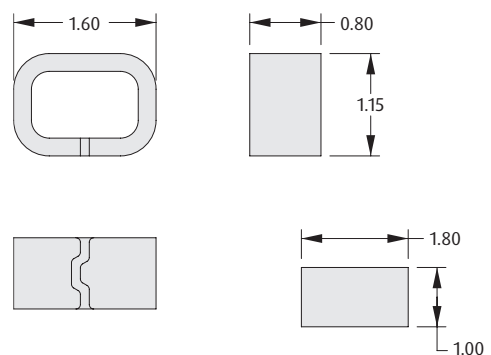


Recommended PC Board Pattern

**ORDER CODE**

**S2751-46R**

### 1.15mm HIGH



Recommended PC Board Pattern

**ORDER CODE**

**S2761-46R**

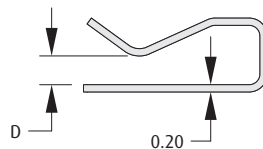
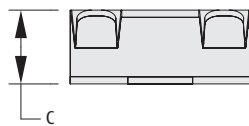
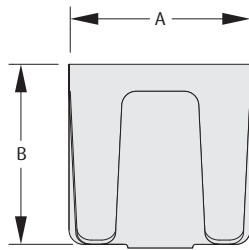
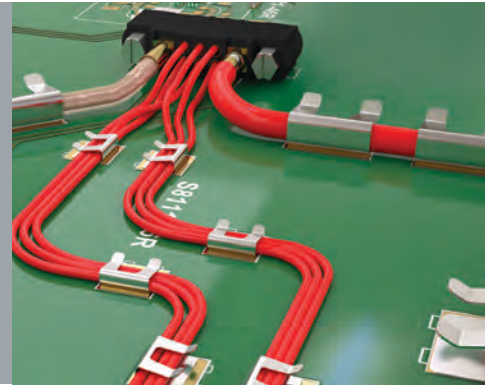
All dimensions in mm.



# SMT Hardware

## Cable Management & Grounding Clips

- ❖ Suitable for use with insulated cables with outer diameters Ø0.9 to Ø3mm and grounding braided coax cables.
- ❖ Cable clip can be soldered at same time as rest of board, reducing additional operation time required for mounting plastic clip types.
- ❖ Low profile & small footprint saves PCB space.

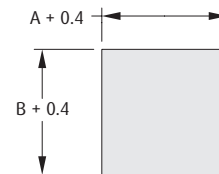


### ❖ Materials

Material: Copper Alloy  
Finish: Tin

### ❖ Packaging

Format: Tape & Reel  
Reel quantity: Ø330mm reel, see table



Recommended PC Board Pattern

## HOW TO ORDER

| PART NO.         | A     | B    | C    | D    | COAX GROUNDING      | CABLE RETENTION        | REEL QUANTITY |
|------------------|-------|------|------|------|---------------------|------------------------|---------------|
| <b>S8091-46R</b> | 5.00  | 4.00 | 1.35 | 0.70 | Ø1.12mm             | 2 x Ø0.9mm             | 3,000         |
| <b>S8101-46R</b> | 5.00  | 4.00 | 1.50 | 0.80 | RG178, RG179, RG316 | 2 x Ø1.0mm             | 3,000         |
| <b>S8111-46R</b> | 5.00  | 5.00 | 2.05 | 0.80 | RG174, RG179, RG316 | 3 x Ø1.0mm, 2 x Ø1.5mm | 1,500         |
| <b>S8121-46R</b> | 7.00  | 5.50 | 2.55 | 1.30 | n/a                 | 2 x Ø1.5mm, 1 x Ø2.0mm | 1,300         |
| <b>S8131-46R</b> | 10.00 | 8.00 | 3.55 | 1.80 | RG58                | 3 x Ø2.0mm, 1 x Ø3.0mm | 800           |

All dimensions in mm.

# SMT Coin Cell Holder

## Battery Retainer for Ø12mm Coin Cell

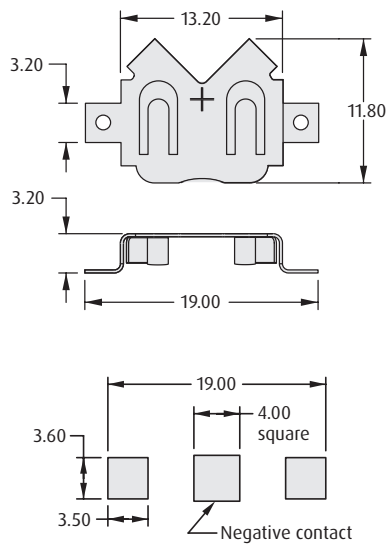
- ❖ Tape & reel packaged for auto-placement to PCB.
- ❖ Highly effective retention of coin cell batteries.
- ❖ Eliminates the need for soldered-in coin cells.
- ❖ Low profile design available with dual independent contact points for enhanced electrical reliability.
- ❖ Accommodates CR1220, CR1225 and similar coin cell batteries.



### LOW PROFILE

#### ❖ Packaging

Format: Tape & Reel  
 Reel quantity: 1,000 on a Ø330mm reel  
 Suitable for battery size: BR1225, CR1216, CR1220, CR1225

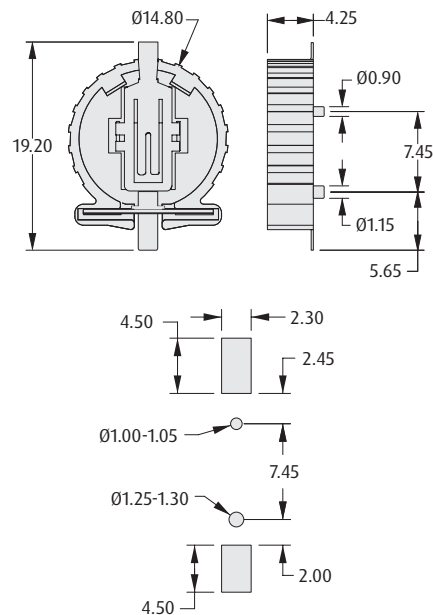


Recommended PC Board Pattern

### STANDARD

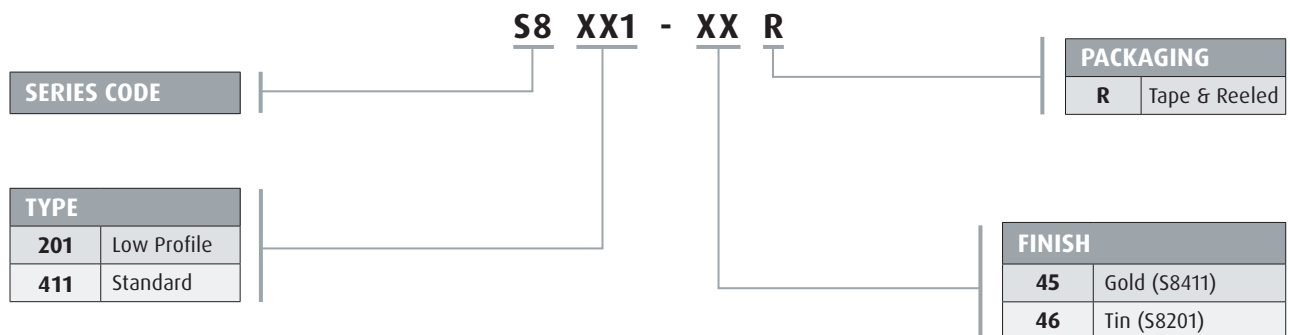
#### ❖ Packaging

Format: Tape & Reel  
 Reel quantity: 500 on a Ø330mm reel  
 Suitable for battery size: CR1220



Recommended PC Board Pattern

### HOW TO ORDER

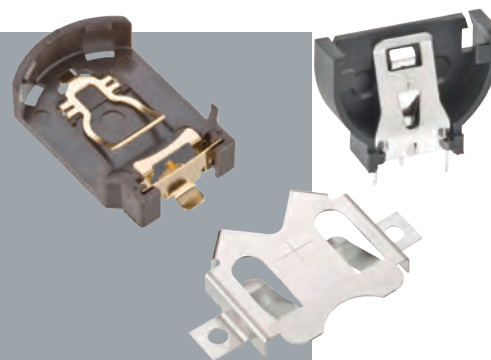


All dimensions in mm.

# Coin Cell Holder

## Battery Retainer for Ø20mm Coin Cell

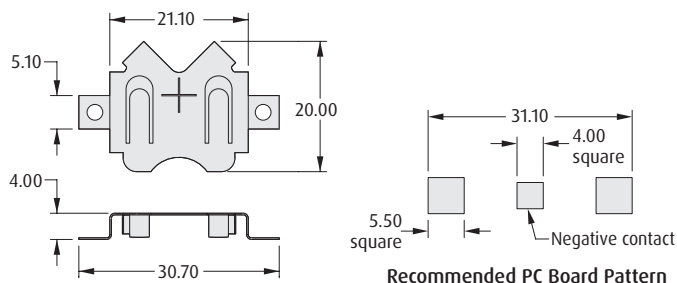
- ❖ Horizontal designs are tape & reel packaged for auto placement.
- ❖ Highly effective retention of coin cell batteries.
- ❖ Eliminates the need for soldered-in cells.
- ❖ Vertical mount minimises PCB real estate usage.
- ❖ Low profile design available with dual independent contact points for enhanced electrical reliability.
- ❖ Accommodates CR2032 and similar coin cell batteries.



### LOW PROFILE

#### ❖ Packaging

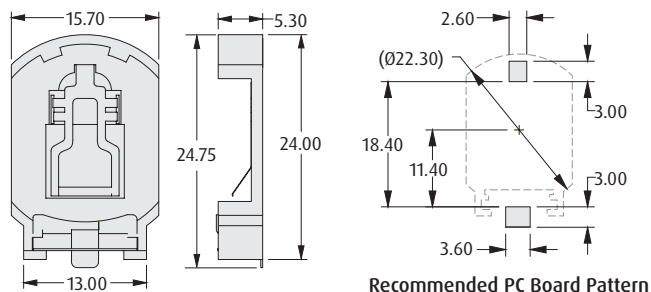
Format: Tape & Reel  
 Reel quantity: 550 on a Ø330mm reel  
 Suitable for battery size: CR2016, CR2025, CR2032



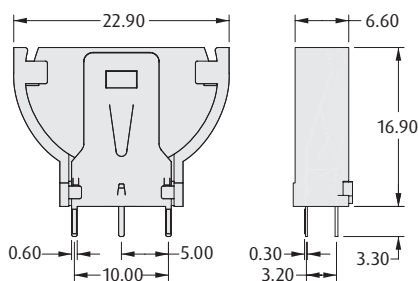
### STANDARD

#### ❖ Packaging

Format: Tape & Reel  
 Reel quantity: 500 on a Ø330mm reel  
 Suitable for battery size: CR2032

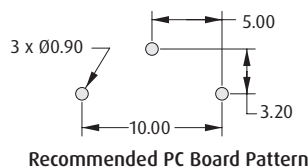


### VERTICAL



#### ❖ Packaging

Format: Reeled Tray  
 Suitable for battery size: CR2032



### HOW TO ORDER

#### SERIES CODE

#### TYPE

|     |             |
|-----|-------------|
| 211 | Low Profile |
| 401 | Vertical    |
| 421 | Standard    |

S8 XX1 - XX R

#### PACKAGING

|       |                     |
|-------|---------------------|
| R     | Tape & Reeled       |
| Blank | Reeled Tray (S8401) |

#### FINISH

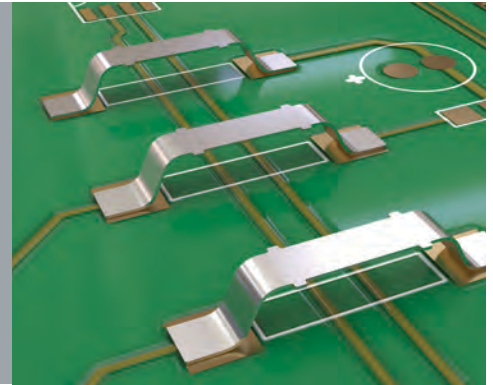
|    |                    |
|----|--------------------|
| 45 | Gold (S8421)       |
| 46 | Tin (S8201, S8401) |

All dimensions in mm.

# SMT Hardware

## SMT Fixed Jumper Link

- Designed to link PCB tracks where through hole links are not possible.
- Typical applications include use on aluminium backplanes in power applications.
- High current.
- Small footprint.
- Low profile options available for space saving design.



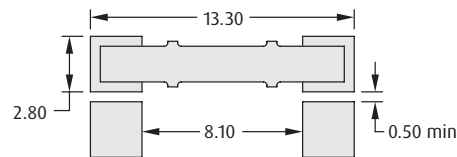
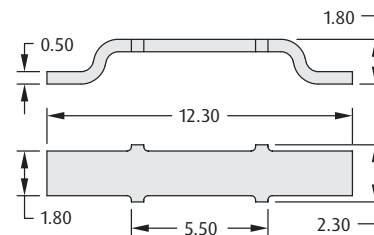
### Materials

**Material:** Copper Alloy (S1621, S1911)  
Copper (S1731)  
**Finish:** Tin

### Packaging

**Format:** Tape & Reel  
**Reel quantity**  
S1621-46R: 5,000 on a Ø330mm reel  
S1731-46R: 2,500 on a Ø330mm reel  
S1911-46R: 4,000 on a Ø330mm reel

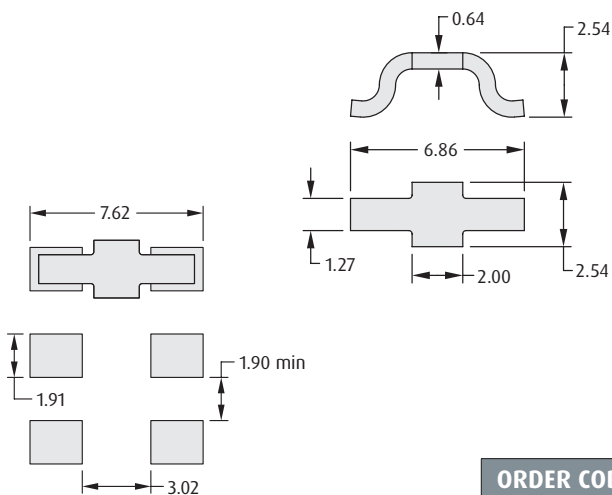
### 12.3mm LONG



Recommended PC Board Pattern

**ORDER CODE**  
**S1621-46R**

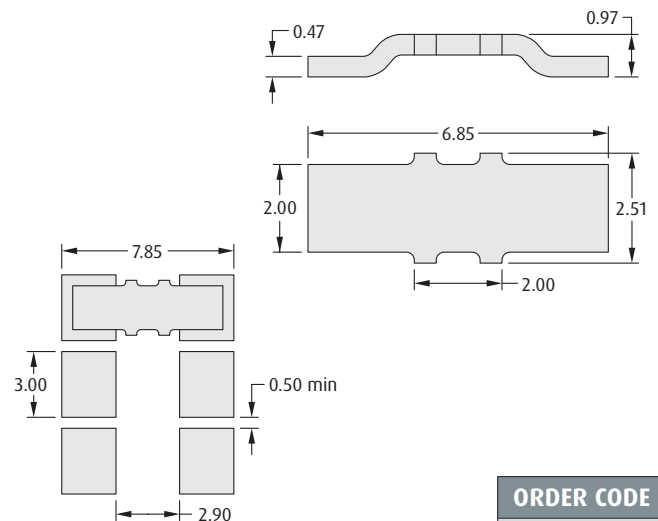
### 6.86mm LONG, 2.54mm HIGH



Recommended PC Board Pattern

**ORDER CODE**  
**S1731-46R**

### 6.85mm LONG, 0.97mm HIGH



Recommended PC Board Pattern

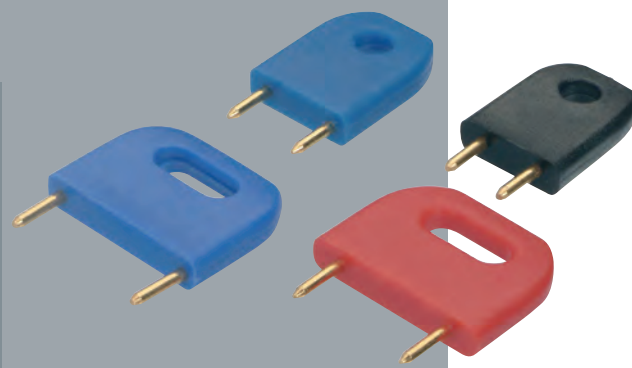
**ORDER CODE**  
**S1911-46R**

All dimensions in mm.

# PCB Hardware

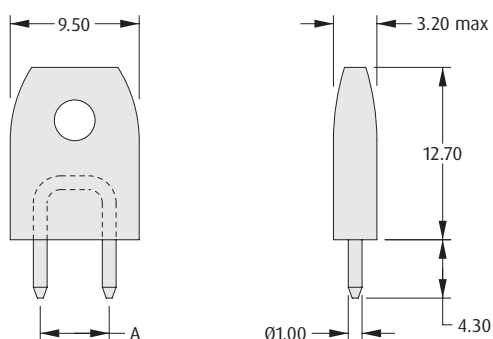
## Ø1mm Shorting Link Plugs

- Choice of insulated or un-insulated links.
- Insulated links supplied in a variety of colors, with a high-performance gold finish.
- Un-insulated links can be soldered directly into the PCB for permanent linking.
- Can be used with individual PCB sockets for hardware programming applications.

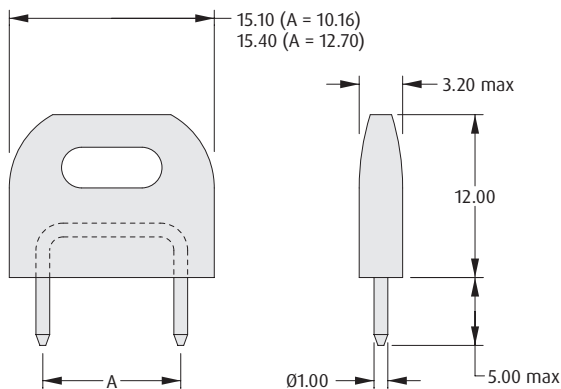


### INSULATED

#### Style 1



#### Style 2



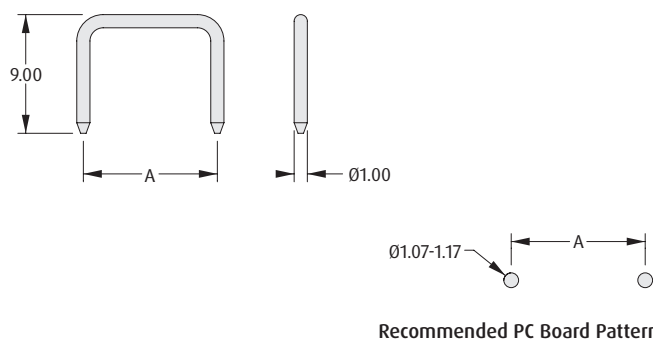
### Materials

Housing: PBT UL94V-0  
Contact: Brass  
Finish  
Insulated: Gold  
Un-insulated: See order code

### Electrical

Current rating: 10A at 20°C

### UN-INSULATED



### HOW TO ORDER

**D308 X - XX**

#### SERIES CODE

| PITCH (A) | STYLE   |
|-----------|---------|
| 6         | 5.08mm  |
| 7         | 6.35mm  |
| 8         | 10.16mm |
| 9         | 12.70mm |

#### COLOR

|    |       |
|----|-------|
| 97 | Blue  |
| 98 | Black |
| 99 | Red   |

### HOW TO ORDER

**D308 X - XX**

#### SERIES CODE

| PITCH (A) |         |
|-----------|---------|
| 0         | 5.08mm  |
| 1         | 6.35mm  |
| 2         | 10.16mm |

#### FINISH

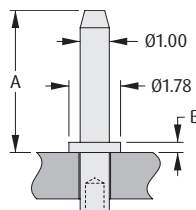
|    |      |
|----|------|
| 05 | Gold |
| 46 | Tin  |

All dimensions in mm.

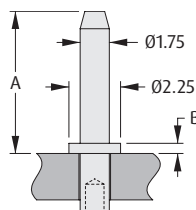
# PCB Hardware

## Turned Terminals

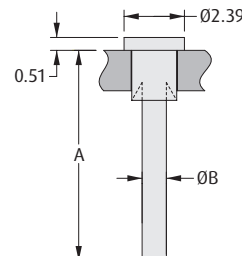
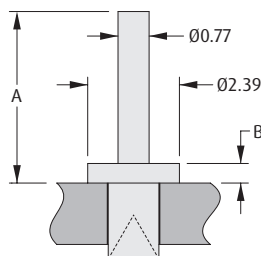
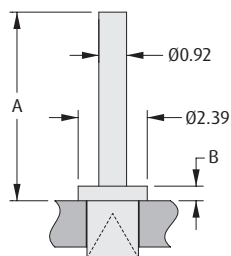
- Material: Brass with tin plating - also available in gold plating for the Ø1mm and Ø1.75mm chamfered terminal pins (H217x and H218x series).
- Retention by swaging feature available.
- Suitable for a variety of PCB thicknesses from 1.6mm to 3.2mm.



|                   |                 |                 |                 |                 |                 |                 |
|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| ORDER CODE (TIN)  | <b>H2174-01</b> | <b>H2175-01</b> | <b>H2173-01</b> | <b>H2176-01</b> | <b>H2170-01</b> | <b>H2171-01</b> |
| ORDER CODE (GOLD) | <b>H2174-05</b> | <b>H2175-05</b> | <b>H2173-05</b> | <b>H2176-05</b> | <b>H2170-05</b> | <b>H2171-05</b> |
| A                 | 4.32mm          | 4.90mm          | 8.13mm          | 9.53mm          | 13.21mm         | 19.56mm         |
| B                 | 0.51mm          | 0.35mm          | 0.51mm          | 0.51mm          | 0.51mm          | 0.51mm          |
| PANEL THICKNESS   | 1.60mm          | 1.60mm          | 1.60mm          | 1.60mm          | 1.60mm          | 1.60mm          |
| MOUNTING HOLE     | Ø1.04 - 1.14mm  | Ø1.04 - 1.14mm  | Ø1.04 - 1.14mm  | Ø1.04 - 1.14mm  | Ø1.04 - 1.14mm  | Ø1.04 - 1.14mm  |



|                   |                 |                 |                 |                 |                 |
|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| ORDER CODE (TIN)  | <b>H2181-01</b> | <b>H2182-01</b> | <b>H2183-01</b> | <b>H2184-01</b> | <b>H2185-01</b> |
| ORDER CODE (GOLD) | <b>H2181-05</b> | <b>H2182-05</b> | <b>H2183-05</b> | <b>H2184-05</b> | <b>H2185-05</b> |
| A                 | 5.35mm          | 8.45mm          | 9.85mm          | 15.65mm         | 22.00mm         |
| B                 | 0.35mm          | 0.35mm          | 0.35mm          | 0.35mm          | 0.35mm          |
| PANEL THICKNESS   | 1.60mm          | 1.60mm          | 1.60mm          | 1.60mm          | 1.60mm          |
| MOUNTING HOLE     | Ø1.80 - 1.90mm  | Ø1.80 - 1.90mm  | Ø1.80 - 1.90mm  | Ø1.80 - 1.90mm  | Ø1.80 - 1.90mm  |



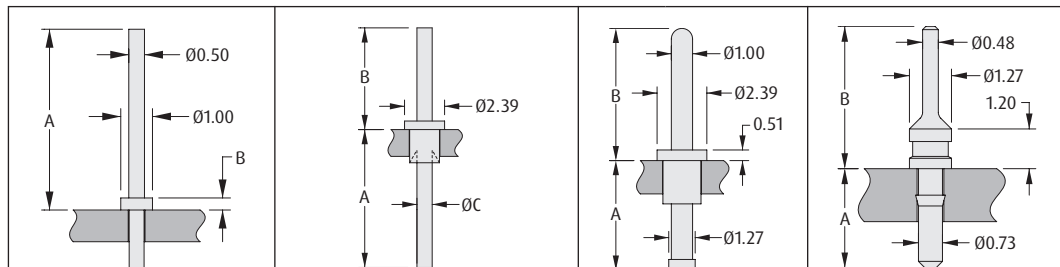
|                 |                 |                 |                 |                 |                 |                 |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| ORDER CODE      | <b>H2101A01</b> | <b>H2103A01</b> | <b>H2105A01</b> | <b>H2106A01</b> | <b>H2101B01</b> | <b>H2105B01</b> |
| A               | 6.53mm          | 6.53mm          | 4.47mm          | 4.47mm          | 8.39mm          | 6.37mm          |
| B               | 0.51mm          | 0.51mm          | 0.51mm          | 0.51mm          | Ø0.93mm         | Ø0.77mm         |
| PANEL THICKNESS | 1.60mm          | 3.20mm          | 1.60mm          | 2.40mm          | 1.60mm          | 1.60mm          |
| MOUNTING HOLE   | Ø1.79 - 1.87mm  | Ø1.79 - 1.87mm  | Ø1.33 - 1.41mm  | Ø1.33 - 1.41mm  | Ø1.79 - 1.87mm  | Ø1.33 - 1.41mm  |

All dimensions in mm.

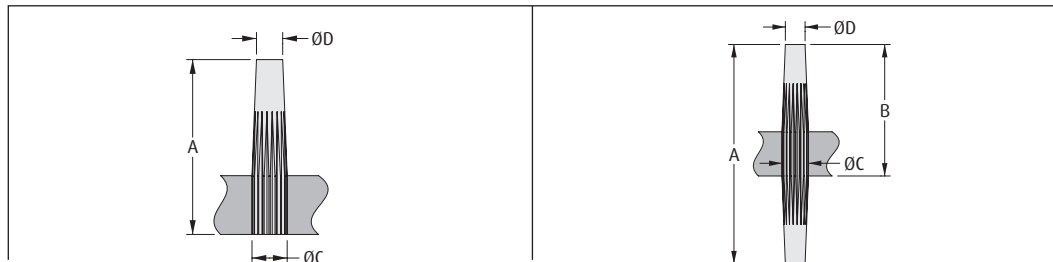
# PCB Hardware

## Turned Terminals

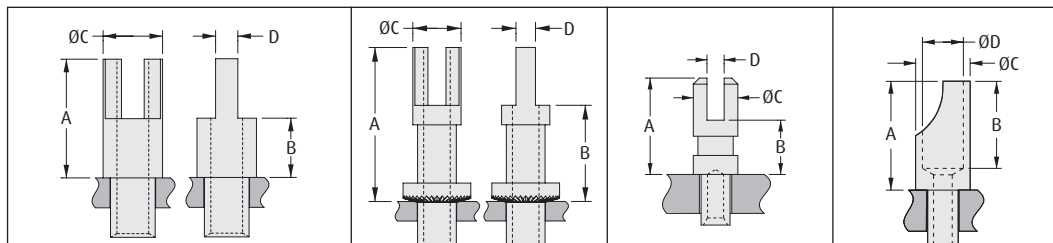
- Material: Brass with tin plating.
- Retention by swaging feature available.
- Suitable for a variety of PCB thicknesses from 1mm to 3.2mm.



| ORDER CODE      | H3108-01       | H2101-01       | H2105-01       | H9051-01       | H2475-01       |
|-----------------|----------------|----------------|----------------|----------------|----------------|
| A               | 5.70mm         | 8.23mm         | 5.05mm         | 5.26mm         | 3.00mm         |
| B               | 0.38mm         | 6.07mm         | 4.48mm         | 6.35mm         | 4.30mm         |
| C               | -              | Ø0.87mm        | Ø0.77mm        | -              | -              |
| PANEL THICKNESS | 1.00mm         | 1.60mm         | 1.60mm         | 1.60mm         | 1.60mm         |
| MOUNTING HOLE   | Ø0.50 - 0.55mm | Ø1.79 - 1.87mm | Ø1.33 - 1.41mm | Ø1.83 - 1.88mm | Ø0.77 - 0.85mm |



| ORDER CODE      | H2088-01       | H2085-01       | H2081-01       | H2089-01       | H2087-01       | H2083-01       |
|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| A               | 7.14mm         | 7.14mm         | 9.53mm         | 11.91mm        | 11.91mm        | 15.88mm        |
| B               | -              | -              | -              | 7.14mm         | 7.14mm         | 9.52mm         |
| C               | Ø1.13mm        | Ø1.43mm        | Ø1.68mm        | Ø1.13mm        | Ø1.43mm        | Ø1.68mm        |
| D               | Ø0.76mm        | Ø1.12mm        | Ø1.22mm        | Ø0.76mm        | Ø1.12mm        | Ø1.22mm        |
| PANEL THICKNESS | 2.40mm         | 2.40mm         | 2.40mm         | 2.40mm         | 2.40mm         | 2.40mm         |
| MOUNTING HOLE   | Ø1.00 - 1.05mm | Ø1.30 - 1.35mm | Ø1.55 - 1.60mm | Ø1.00 - 1.05mm | Ø1.30 - 1.35mm | Ø1.55 - 1.60mm |



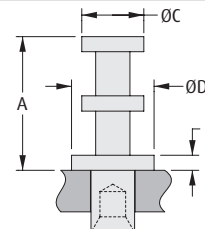
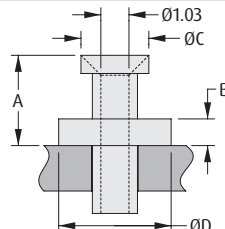
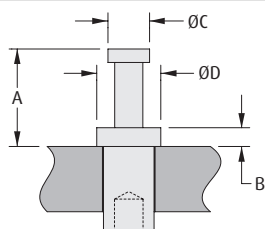
| ORDER CODE      | H2051-01       | H2055-01       | H2039-01       | H9023-01       | H9026-01       |
|-----------------|----------------|----------------|----------------|----------------|----------------|
| A               | 4.78mm         | 6.35mm         | 12.65mm        | 3.96mm         | 6.35mm         |
| B               | 2.39mm         | 3.17mm         | 7.90mm         | 2.23mm         | 5.08mm         |
| C               | Ø3.18mm        | Ø3.18mm        | Ø3.90mm        | Ø1.83mm        | Ø3.18mm        |
| D               | 0.73mm         | 1.13mm         | 1.54mm         | 0.71mm         | Ø2.39mm        |
| THROUGH HOLE    | Ø1.06mm        | Ø1.74mm        | Ø2.22mm        | -              | Ø1.13mm        |
| PANEL THICKNESS | 1.60mm         | 2.40mm         | 3.20mm         | 1.60mm         | 2.40mm         |
| MOUNTING HOLE   | Ø1.60 - 1.68mm | Ø2.40 - 2.48mm | Ø3.19 - 3.27mm | Ø1.28 - 1.38mm | Ø1.84 - 1.92mm |

All dimensions in mm.

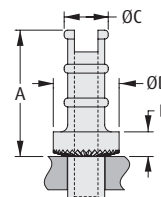
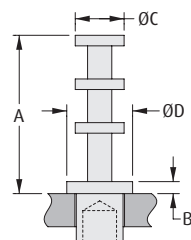
# PCB Hardware

## Turned Terminals

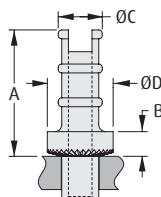
- Material: Brass with tin plating.
- Retention by swaging feature available.
- Suitable for a variety of PCB thicknesses from 1.6mm to 3.2mm.



| ORDER CODE      | H9001-01       | H9004-01       | H2061-01       | H2121-01       |
|-----------------|----------------|----------------|----------------|----------------|
| A               | 2.39mm         | 4.74mm         | 3.18mm         | 5.15mm         |
| B               | 0.46mm         | 1.19mm         | 0.94mm         | 0.58mm         |
| C               | Ø1.02mm        | Ø1.91mm        | Ø2.33mm        | Ø2.39mm        |
| D               | Ø1.57mm        | Ø3.18mm        | Ø4.03mm        | Ø3.18mm        |
| PANEL THICKNESS | 1.60mm         | 1.60mm         | 1.60mm         | 1.60mm         |
| MOUNTING HOLE   | Ø1.25 - 1.33mm | Ø2.01 - 2.09mm | Ø1.60 - 1.68mm | Ø1.69 - 1.74mm |



| ORDER CODE      | H9020-01       | H9021-01       | H2072-01       | H2072Z01       | H2072ZL1       |
|-----------------|----------------|----------------|----------------|----------------|----------------|
| A               | 7.65mm         | 7.65mm         | 6.29mm         | 6.52mm         | 6.52mm         |
| B               | 0.58mm         | 0.58mm         | 1.01mm         | 1.24mm         | 1.24mm         |
| C               | Ø2.36mm        | Ø2.36mm        | Ø3.25mm        | Ø2.54mm        | Ø2.54mm        |
| D               | Ø3.18mm        | Ø3.18mm        | Ø3.96mm        | Ø3.96mm        | Ø3.96mm        |
| PANEL THICKNESS | 1.60mm         | 2.40mm         | 1.60mm         | 1.60mm         | 2.40mm         |
| MOUNTING HOLE   | Ø2.35 - 2.45mm | Ø2.35 - 2.45mm | Ø2.17 - 2.27mm | Ø2.01 - 2.11mm | Ø2.01 - 2.11mm |



| ORDER CODE      | H2074Z01       | H2071ZS1       | H2071Z01       | H2073Z01       |
|-----------------|----------------|----------------|----------------|----------------|
| A               | 8.74mm         | 9.12mm         | 9.12mm         | 9.12mm         |
| B               | 1.60mm         | 1.78mm         | 1.78mm         | 1.78mm         |
| C               | Ø4.57mm        | Ø3.18mm        | Ø3.18mm        | Ø3.18mm        |
| D               | Ø6.35mm        | Ø4.75mm        | Ø4.75mm        | Ø4.75mm        |
| PANEL THICKNESS | 3.20mm         | 1.60mm         | 2.40mm         | 3.20mm         |
| MOUNTING HOLE   | Ø3.93 - 4.03mm | Ø2.68 - 2.78mm | Ø2.68 - 2.78mm | Ø2.68 - 2.78mm |

All dimensions in mm.



# Metric Spacers

## Clearance Spacers

- Standard lengths available from 3 to 30mm.
- Brass spacers: base material is free-machining brass, with nickel plating.
- Aluminium spacers: supplied with a clear passivation finish to prevent oxidation.
- Plastic material: Nylon 66 UL94V-2.



### CLEARANCE FOR M3 THREAD

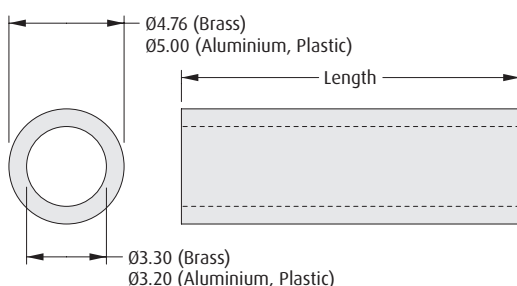
#### Materials

Base material: Brass, Aluminium or Plastic

Finish

Brass: Nickel

Aluminium: Clear Passivate



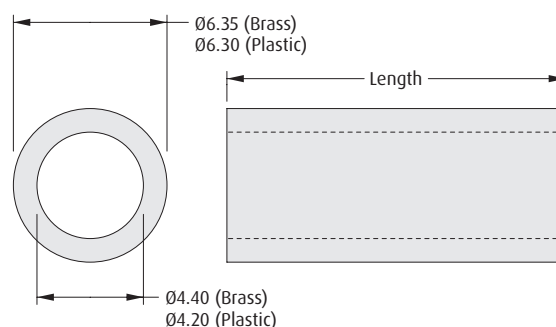
### CLEARANCE FOR M4 THREAD

#### Materials

Base material: Brass or Plastic

Finish

Brass: Nickel



### HOW TO ORDER

**R30 - 6 XX XX XX**

#### SERIES CODE

#### MATERIAL

|    |           |
|----|-----------|
| 01 | Brass     |
| 20 | Aluminium |
| 70 | Plastic   |

#### LENGTH (mm)

|                          |                  |
|--------------------------|------------------|
| 03 to 16, 18, 20, 25, 30 | Brass, Aluminium |
| 03 to 16, 18, 20, 25     | Plastic          |

#### FINISH

|    |                              |
|----|------------------------------|
| 02 | Nickel (Brass only)          |
| 14 | Passivation (Aluminium only) |
| 94 | White (Plastic only)         |

### HOW TO ORDER

**R40 - 6 XX XX XX**

#### SERIES CODE

#### MATERIAL

|    |         |
|----|---------|
| 00 | Brass   |
| 71 | Plastic |

#### LENGTH (mm)

|                                |         |
|--------------------------------|---------|
| 03 to 16, 18, 20, 25, 30       | Brass   |
| 03, 05 to 08, 10 to 12, 15, 18 | Plastic |

#### FINISH

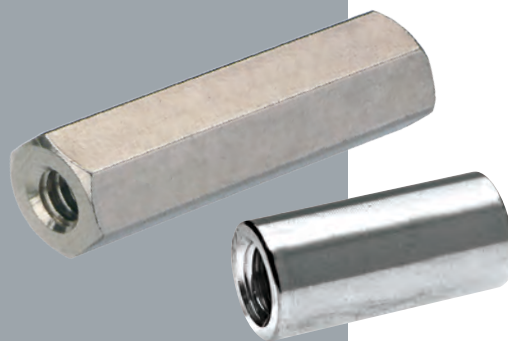
|    |                      |
|----|----------------------|
| 02 | Nickel (Brass only)  |
| 94 | White (Plastic only) |

All dimensions in mm.

# Metric Spacers

## Threaded Female Spacers

- ❖ Available in a variety of standard body lengths.
- ❖ Brass spacers: base material is free-machining brass, with nickel plating.
- ❖ Plastic material: Nylon 66 UL94V-2.
- ❖ Longer thread lengths may not be threaded through the complete length, but have female threads at both ends.



### HEXAGONAL

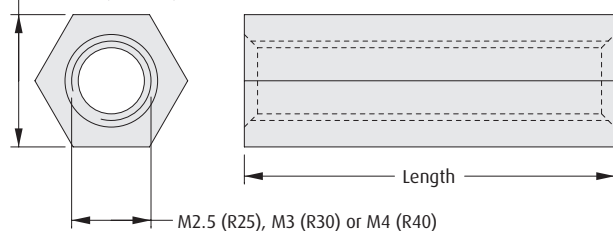
#### ❖ Materials

Base material: Brass or Plastic

Finish

Brass: Nickel

5.00 A/F (R25-100, R30-100)  
5.50 A/F (R30-101, R30-161)  
7.00 A/F (R40-100)



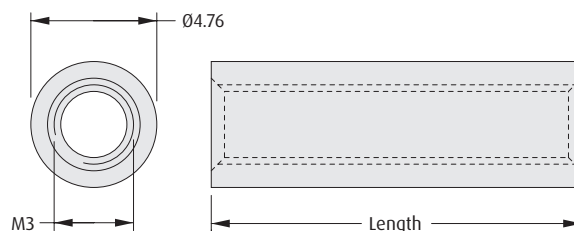
### CIRCULAR

#### ❖ Materials

Base material: Brass

Finish

Brass: Nickel



### HOW TO ORDER

**RXX - XXX XX XX**

#### SERIES CODE

|                |                               |
|----------------|-------------------------------|
| <b>R25-100</b> | Hexagonal, Brass, M2.5 Thread |
| <b>R30-100</b> | Hexagonal, Brass, M3 Thread   |
| <b>R30-101</b> | Hexagonal, Brass, M3 Thread   |
| <b>R30-161</b> | Hexagonal, Plastic, M3 Thread |
| <b>R30-500</b> | Circular, Brass, M3 Thread    |
| <b>R40-100</b> | Hexagonal, Brass, M4 Thread   |

#### FINISH

|           |                      |
|-----------|----------------------|
| <b>00</b> | White (Plastic only) |
| <b>02</b> | Nickel (Brass only)  |

#### LENGTH (mm)

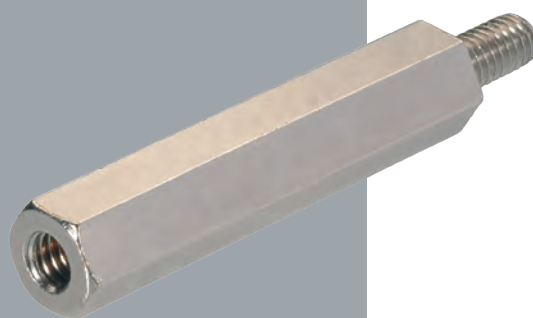
|                             |                  |
|-----------------------------|------------------|
| <b>06 to 16, 18, 20, 25</b> | R30-161, R40-100 |
| <b>04 to 16, 18, 20, 25</b> | Other            |

All dimensions in mm.

# Metric Spacers

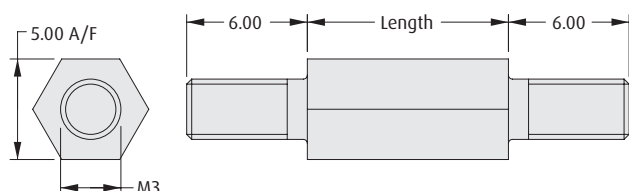
## Threaded Male Pillars

- Available in a choice of thread sizes, with a variety of standard body lengths.
- Base material is free-machining Brass, with nickel plating.



SPACERS

### MALE/MALE



#### HOW TO ORDER

**R30 - 400 XX 02**

#### SERIES CODE

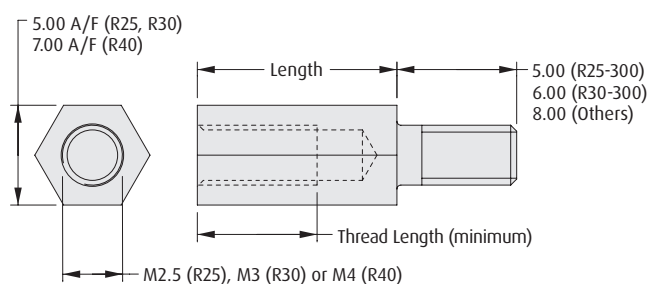
#### LENGTH (mm)

04 to 16, 18, 20, 25, 30, 35, 40

#### FINISH

02 Nickel

### MALE/FEMALE



- Thread sizes are the same both ends for all standard spacers.

#### HOW TO ORDER

**RXX - 30X XX 02**

#### SERIES CODE

**R25-300** M2.5 Thread

**R30-300** M3 Thread, 6mm Stud

**R30-301** M3 Thread, 8mm Stud

**R40-300** M4 Thread

#### FINISH

02 Nickel

#### LENGTH (mm)

|               | 03  | 04  | 05  | 06  | 07  | 08  | 09  | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 18  | 20  | 25  | 30  | 35  | 40  |         |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------|
| THREAD LENGTH | 1.9 | 2.5 | 2.5 | 3.5 | 4.5 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 | R25-300 |
|               |     | 2.0 | 2.5 | 3.0 | 4.5 | 5.5 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | R30-300 |
|               |     | 2.5 | 3.0 | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | R30-301 |
|               |     |     |     | 2.5 | 3.5 | 4.5 | 5.5 | 6.5 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | R40-300 |

All dimensions in mm.

See the full range  
from page 192

**KONA**  
HIGH RELIABILITY | HIGH POWER



# High power **AND** reliability?

You wanted **more current per contact** from our hi-rel connectors.

You wanted **ease of use and great performance** in vibration conditions.

You wanted Harwin's **high quality standard**.

## We listened.

- 60A per contact
- Shock to 100G
- Stainless steel mate-before-lock fixings
- Operating temperature up to 150°C

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**HARWIN**  
Connect with confidence

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