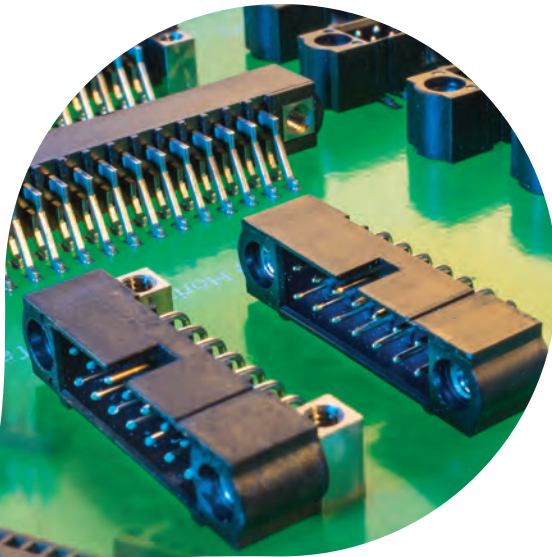
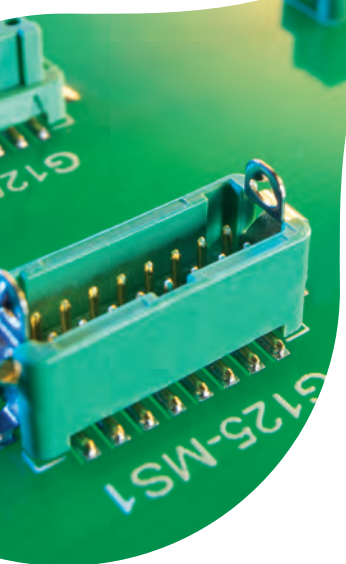
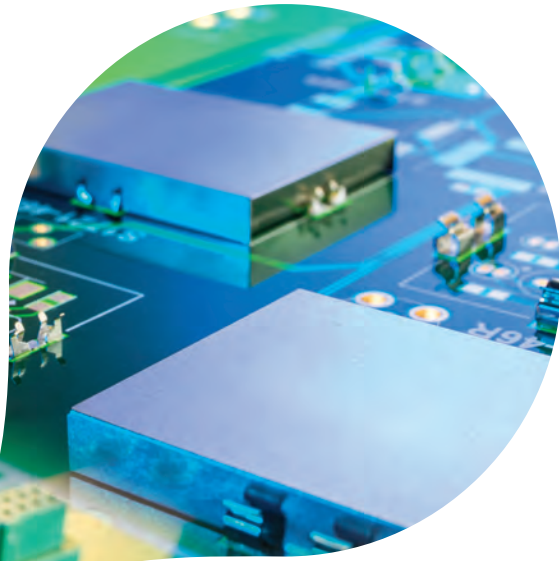




Product Catalog

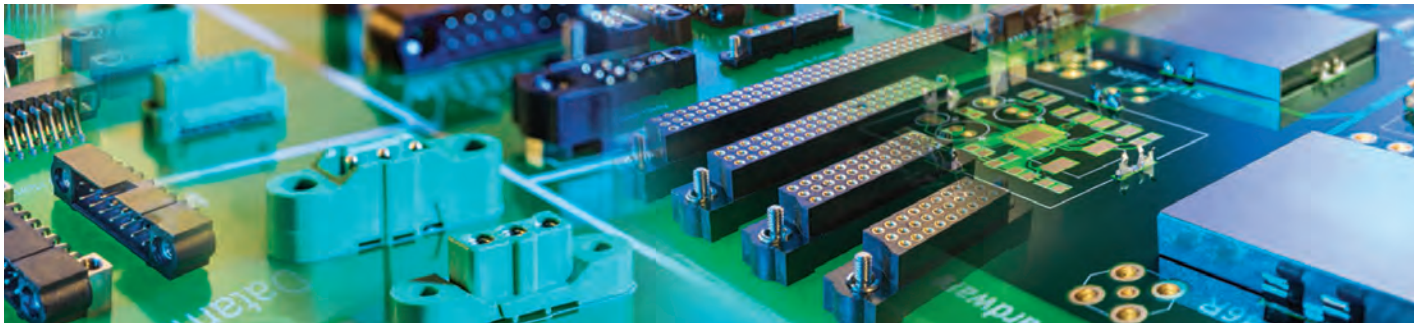
www.harwin.com

Your Harwin Catalog

Thank-you for choosing the latest Product Catalog from Harwin.

Inside you will find summary information on the more popular products in the Harwin portfolio. The full range is available from the website www.harwin.com. To assist you further with your design process, Harwin offers the following tools and facilities:

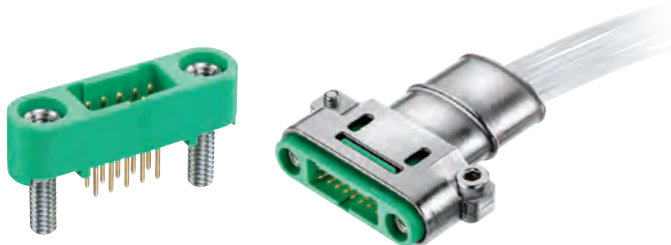
- ❖ Up-to-date Technical Drawings, Specifications, 3D CAD models, Test Reports and Instruction Sheets.
- ❖ Additional training and information documents and videos.
- ❖ Live Chat – get instant help online with one of our technical support engineers.
- ❖ Order evaluation samples using our basket facility.
- ❖ Search our global distribution network of distributors for stock.
- ❖ Download legislation documentation including RoHS, REACH and Conflict Minerals.



What's New

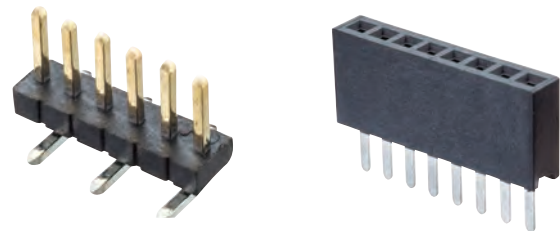
Gecko Screw-Lok (Gecko-SL)

- ❖ 1.27mm High-Reliability connectors now with stainless steel fixings for maximum strain relief.



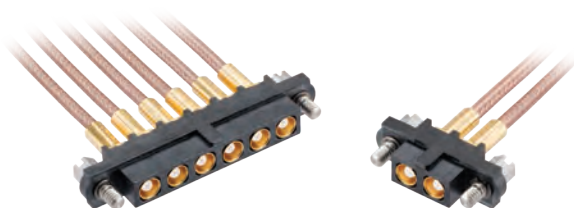
Archer M50 Single Row

- ❖ Industry Standard connectors at 1.27mm pitch now includes single row variations.



Cable Assemblies

- ❖ Let us provide your Harwin cable assembly requirements – contact cables@harwin.com.



Spring Contact Development Kit

- ❖ A selection of 16 different spring contacts in one box. Free refills available, ideal for prototyping.



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SPECIFICATIONS Harwin operates an ongoing development programme. This may result in changes to the product specifications shown in this catalogue. All dimensions are in millimetres and are nominal unless otherwise stated. All preferred sizes are held in stock. Check www.harwin.com for availability.

Harwin - Product Summary

EMC Shielding

Easy-to-use Shielding Solutions

- ❖ Surface mount components for simple BLS (Board Level Shielding)
- ❖ Removable and replaceable Shield Can system to eliminate secondary solder operations and damaging rework
- ❖ Award-winning Shield Can Kit; make your own custom can, ideal for prototyping and test
- ❖ Comprehensive range of Spring contacts, including Positive Stop and Multi-Directional



Gecko Connectors

1.25mm Pitch High-Reliability Connectors

- ❖ Multiple award-winning connector system
- ❖ 2.8A per contact in isolation, 2A per contact simultaneously
- ❖ Resists shock at 100G, and vibration at 20G
- ❖ Withstands extreme temperatures of -65°C to +150°C
- ❖ High performance patented four-finger contact
- ❖ Manufactured from environmentally-friendly materials

M300 Connectors

3.00mm Pitch High-Reliability Connectors

- ❖ Up to 10A or up to 5A per contact versions
- ❖ Resists shock at 100G and vibration at 10G, and extremes of temperature up to 175°C
- ❖ Choice of 3 contacts in single row, or 6 contacts in double row
- ❖ Cable-to-Cable, Cable-to-Board or Board-To-Board configurations
- ❖ Manufactured from environmentally-friendly materials



Datamate Connectors

2.00mm & 4.00mm Pitch High-Reliability Connectors

- ❖ 3A per contact achieved by a high-performance four-finger contact
- ❖ Resists shock at 100G and vibration at 10G
- ❖ Latches or jackscrews provide secure connections
- ❖ Proven history in Aerospace, Industrial controls, Oil & Gas, etc.
- ❖ Ideal for COTS applications
- ❖ Mixed technology versions available with high power (40A) and coax (6GHz) variations



Harwin - Product Summary



Connectors

Industry Standard Connectors starting at 1.00mm Pitch

- ❖ Industry-standard Board-to-Board and Cable-To-Board connectors
- ❖ Pitch options from 1.00mm to 2.54mm
- ❖ IDC ribbon cable connectors and cable assemblies available
- ❖ Dual entry and surface mount options
- ❖ Complimentary range of Jumper sockets

Circular Connectors

Durable RoHS-Compliant Connectors to MIL-DTL-5015

- ❖ COTS alternative circular connectors for exposed Cable-to-Cable connections
- ❖ IP rated for environmental protection
- ❖ Rugged construction for durable performance
- ❖ Threaded and polarised coupling system; solder terminations
- ❖ Pin and Socket contacts can be specified in either side of mating connectors



Sockets

PC Board and IC Package Sockets

- ❖ Individual turned sockets, modular strip and IC packages all utilising 4 and 6 finger contact clips
- ❖ Allows the user to make highly reliable connection between their PCB and a pluggable device
- ❖ Excellent reliability in extremes of temperature and vibration
- ❖ Proven track record in high-end applications

Spring Loaded Contacts

Test Probes and Turned Spring Contacts

- ❖ ATE Test probes for PCB test; variety of head styles, probe size and probe travel length for varied test requirements
- ❖ Individual or ganged Pogo Pins, utilising incorporated springs for maximum number of operational cycles



PCB Hardware

Accessories for PCB production and function

- ❖ Designers have a choice of connection and hardware solutions from stock
- ❖ Surface mount solutions for simplifying production processes and eliminating secondary operations
- ❖ Spacers available in a range of styles and materials with metric lengths and screw threads



EMC Shielding

Contents

Introduction

SMT Shielding Clips

Shielding Cans for SMT Clips

Spring Contacts

- Positive Stop

- C Style

- Extended C Style (Antenna)

- Box Style

- Multi-Directional

- Development Kit

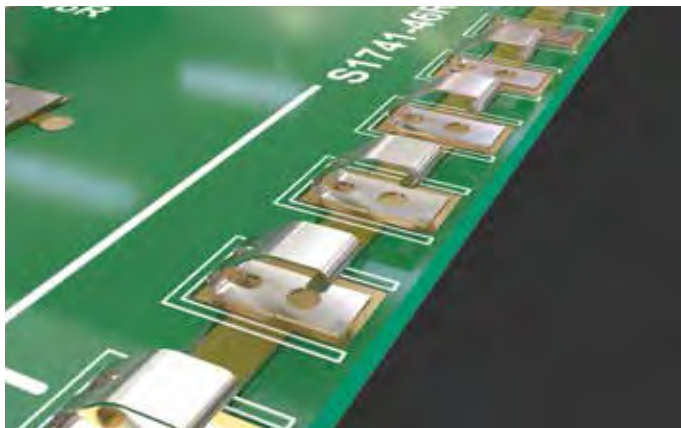


EMC Shielding Introduction

Harwin provides a range of Surface Mount Shield Clips, compatible Shield Cans, and a comprehensive selection of Spring Contacts, to solve a variety of EMC/RFI and grounding issues.

The Harwin combination of SMT Clips and Cans provide a simple and cost-effective method of shielding vulnerable or EMI radiating board components.

- ❖ No secondary manual soldering operations - Shield Cans quickly and easily slot into Clips.
- ❖ Potential hot-spots from manual soldering eliminated.
- ❖ Rework now easy without a de-soldering operation.



Spring Contacts (also known as Shield Fingers, Antenna or Grounding Contacts) are available in a choice of finish and wide array of styles.

- ❖ Heights from 1.23mm to 7.25mm in a variety of spring forces.
- ❖ Ideal for antenna feeds in mobile devices, LED lamp connections, grounding metal devices or single signal connections.
- ❖ All contacts are SMT, supplied in Tape and Reel packaging for simplified automated assembly and low production costs.

RFI Shield Clips Summary

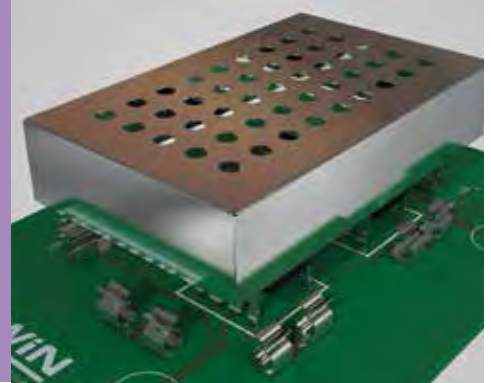
- ❖ Further dimensional information on the Shield Clips is available on the following pages.

Part No.	Type	Shield Thickness	Material	Finish	Pack Qty. on 0330mm reel	Insertion Force (max)	Withdrawal Force (max)
S1411-46R	Maxi	0.70-1.00mm	Beryllium Copper	Tin	1,900	7N	0.8N
S1711-46R	Midi	0.17-0.30mm	Beryllium Copper	Tin	1,900	4N	0.5N
S2711-46R	Midi	0.17-0.30mm	Cupro-Nickel (Beryllium-free)	Tin	1,900	4N	0.5N
S0971-46R	Mini	0.20-0.30mm	Stainless Steel	Tin	5,000	19.6N	0.98N
S1721-46R	Mini	0.13-0.23mm	Beryllium Copper	Tin	5,000	5N	0.35N
S0941-46R	Micro	0.15-0.20mm	Stainless Steel	Tin	10,000	9.8N	0.69N
S0951-46R	Micro	0.20mm	Stainless Steel	Tin	10,000	9.8N	0.69N
S0961-46R	Micro	0.15-0.20mm	Stainless Steel	Tin	10,000	24.5N	0.98N
S0991-46R	Micro	0.20-0.25mm	Stainless Steel	Tin	15,000	19.6N	0.98N
S1001-46R	Micro	0.15-0.20mm	Stainless Steel	Tin	20,000	19.6N	0.98N
S0981-46R	Corner	0.20-0.25mm	Stainless Steel	Tin	6,000	19.6N	0.98N

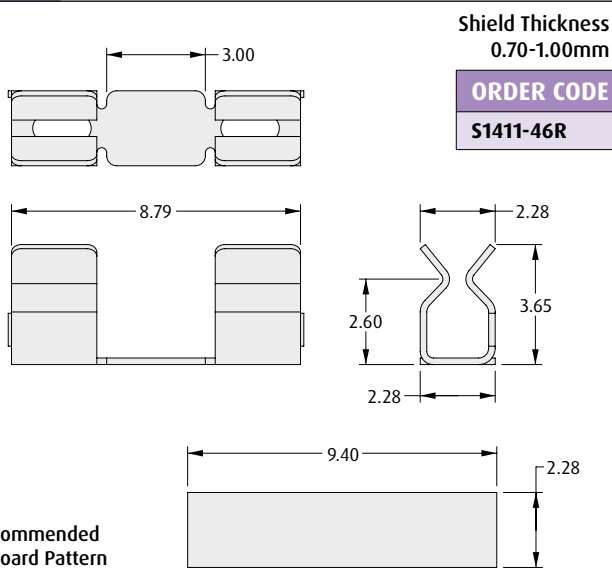
RFI Shield Clips

Shield Clips for EMI/RFI Shields

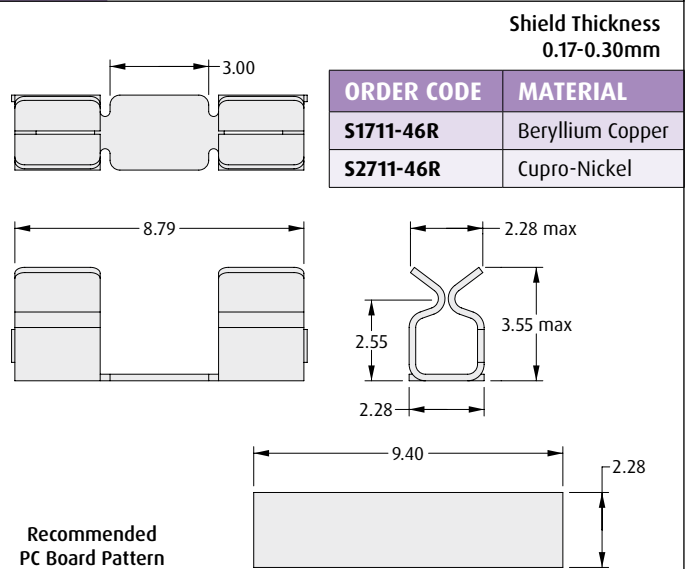
- ❖ SMT devices offering a fast solution for assembling RFI shields to PCBs.
- ❖ Eliminates the need for through holes and post reflow operations.
- ❖ Saves PCB real estate.
- ❖ Facilitates easy removal of the can for maintenance and repair.
- ❖ Substantial improvement in time and simplicity of assembly tuning and re-work.



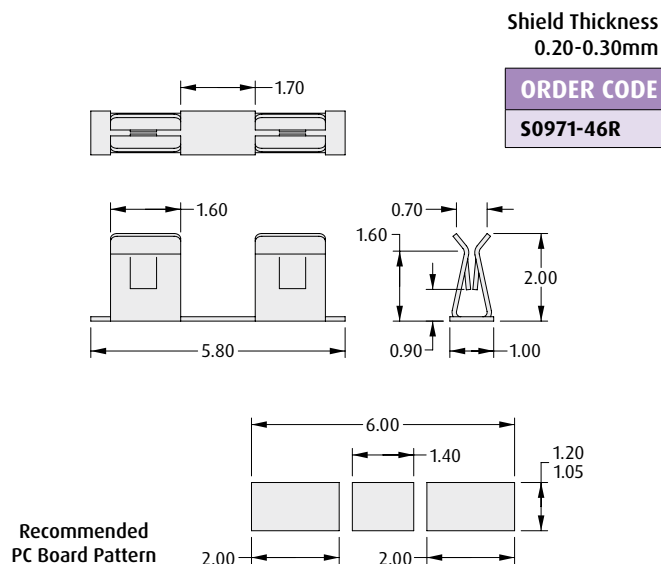
MAXI



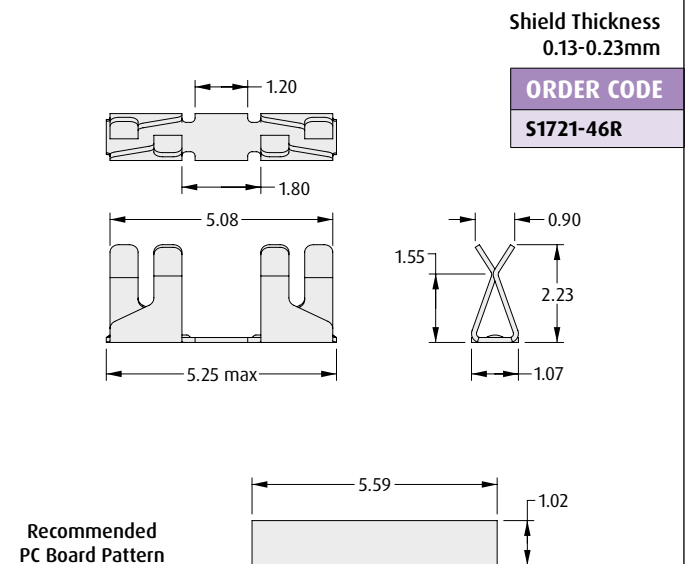
MIDI



MINI



MINI

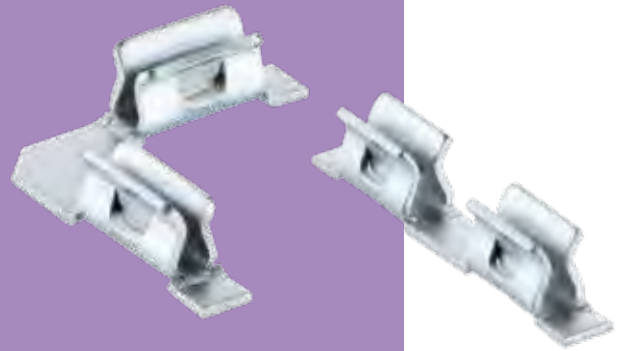


All dimensions in mm.

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.



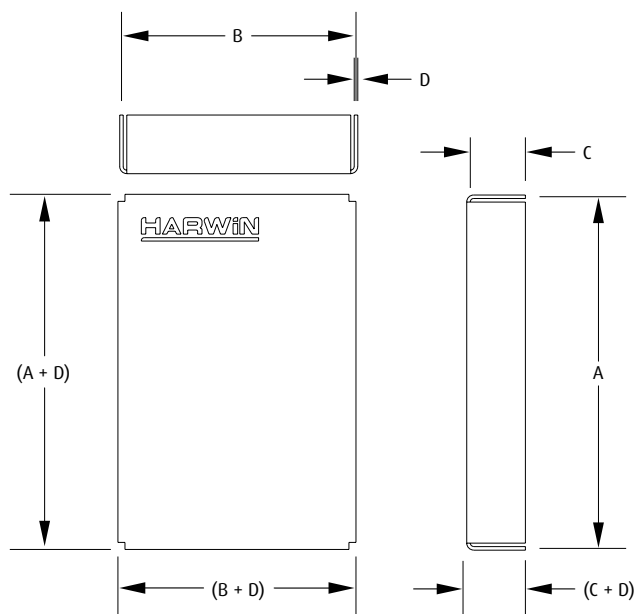
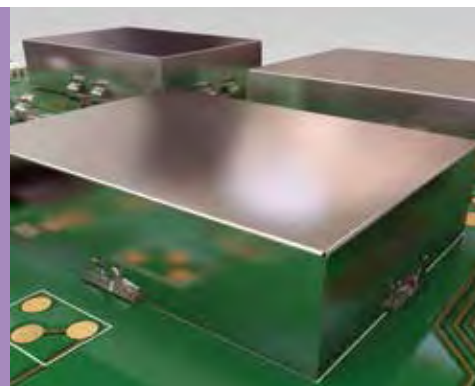
MICRO Recommended PC Board Pattern ORDER CODE S0941-46R Shield Thickness 0.15-0.20mm	MICRO Recommended PC Board Pattern ORDER CODE S0951-46R Shield Thickness 0.20mm
MICRO Recommended PC Board Pattern ORDER CODE S0961-46R Shield Thickness 0.15-0.20mm	MICRO Recommended PC Board Pattern ORDER CODE S0991-46R Shield Thickness 0.20-0.25mm
MICRO Recommended PC Board Pattern ORDER CODE S1001-46R Shield Thickness 0.15-0.20mm	CORNER Recommended PC Board Pattern Shield Thickness 0.20-0.25mm ORDER CODE S0981-46R

All dimensions in mm.

RFI Shield Cans

EMI/RFI Shielding

- ❖ 0.3mm thickness Shield Cans suitable for use with S1711, S2711 and S0971 Shield Clips.
- ❖ 0.2mm thickness Shield Cans suitable for use with most of the Harwin Shield Clips - check the chart on the introduction page.
- ❖ Provides excellent RFI and EMI protection to sensitive circuitry at the PCB level.
- ❖ Standard can sizes available from stock.



Materials

Material: Nickel Silver
Finish: Unplated

Standard Sizes

ORDER CODE	DIM A	DIM B	DIM C	DIM D
S01-30200500	30mm	20mm	5mm	0.3mm
S01-30300500	30mm	30mm	5mm	0.3mm
S01-50250500	50mm	25mm	5mm	0.3mm
S02-20150300	20mm	15mm	3mm	0.2mm
S02-25200300	25mm	20mm	3mm	0.2mm
S02-30200250	30mm	20mm	2.5mm	0.2mm

- ❖ Dimensions A and B are measured from the **CENTRE** 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

SERIES CODE	
S01	Thickness (Dim D) = 0.3mm
S02	Thickness (Dim D) = 0.2mm

DIMENSION A
Example: 30mm = 30

FINISH
0 Unplated

DIMENSION C
Example: 5mm = 050

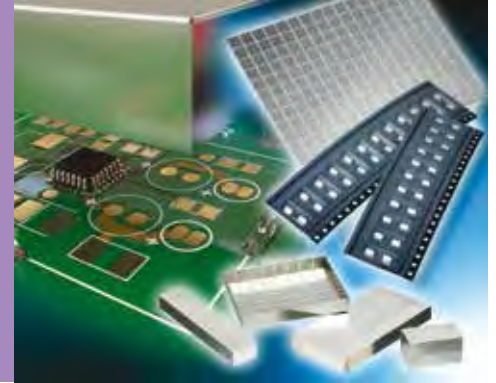
DIMENSION B
Example: 30mm = 30

All dimensions in mm.

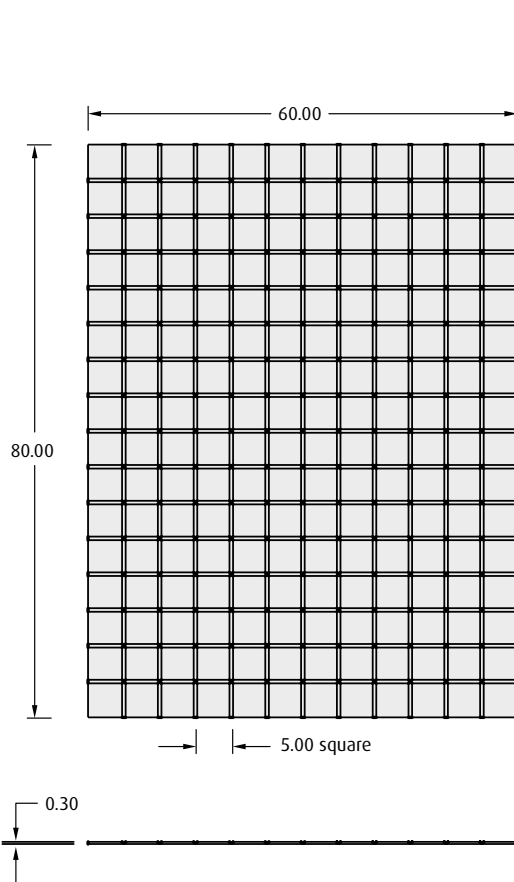
RFI Shield Can Kit

SMT Clips and Make-Your-Own Cans

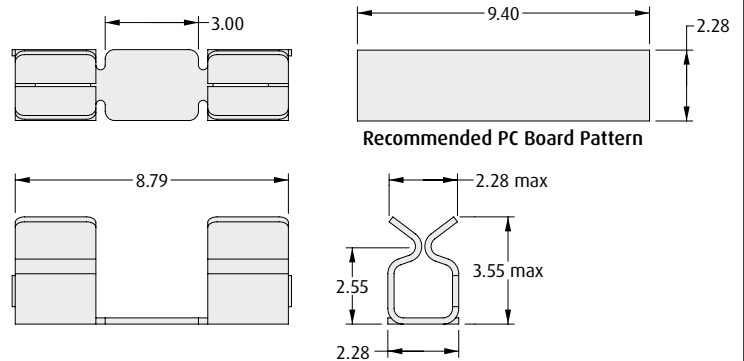
- ❖ Make your own Shield Cans in minutes, ideal for fast prototyping.
- ❖ Kit contains DIY Shield Can blanks, Shield retention clips and full instructions.
- ❖ Nickel Silver material for effective & useable shielding: up to 24dB attenuation achieved (frequency/configuration dependent).
- ❖ Shield Can is removable for adjustment.



SHIELD CAN KIT



2 x Shield Can Sheets
5mm pitch score lines, for folding



Recommended PC Board Pattern

24 x Shield Clip S1711-46R



Instruction Sheet
(available from www.harwin.com/instructions)

ORDER CODE

S01-806005KIT

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.



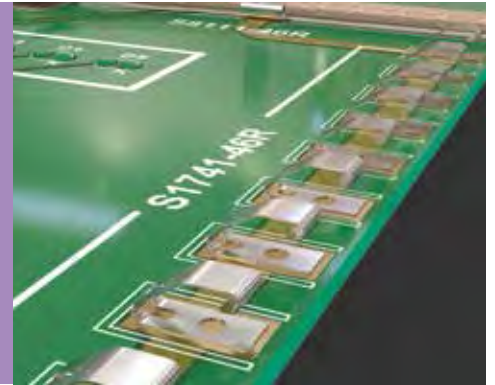
1.23mm HIGH	1.28mm HIGH								
Recommended PC Board Pattern <table border="1"> <thead> <tr> <th>ORDER CODE</th><th>FINISH</th></tr> </thead> <tbody> <tr> <td>S7221-45R</td><td>Gold</td></tr> </tbody> </table>	ORDER CODE	FINISH	S7221-45R	Gold	Recommended PC Board Pattern <table border="1"> <thead> <tr> <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								
1.3mm HIGH	1.5mm HIGH, 1.5mm WIDE								
Recommended PC Board Pattern <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	Recommended PC Board Pattern <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								
1.5mm HIGH, 2mm WIDE	2mm HIGH								
Recommended PC Board Pattern <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	Recommended PC Board Pattern <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

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.



1.7mm HIGH	2.5mm HIGH										
Recommended PC Board Pattern <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	Recommended PC Board Pattern <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										
2.7mm HIGH	3.5mm HIGH										
Recommended PC Board Pattern <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	Recommended PC Board Pattern <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										
4.0mm HIGH	5.5mm HIGH										
Recommended PC Board Pattern <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	Recommended PC Board Pattern <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.

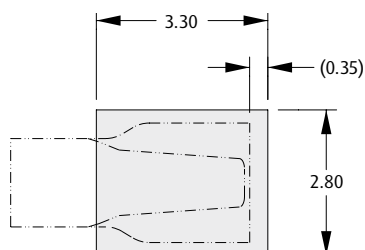
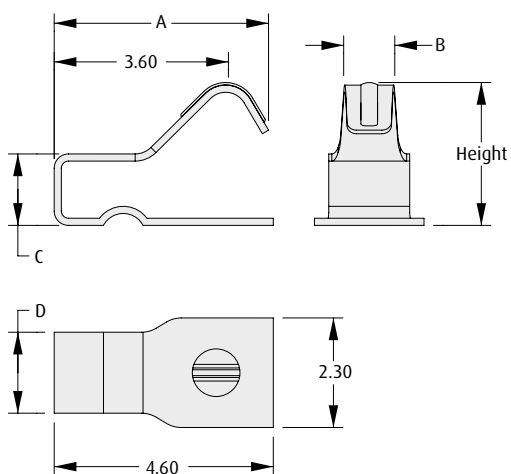
Spring Contacts

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
S7131-45R	2.00	4.30	0.80	1.00	1.55	Gold
S7141-45R	2.50	4.50	0.80	1.00	1.55	Gold
S7151-45R	3.00	4.50	0.90	1.50	1.70	Gold
S7161-45R	3.50	4.50	1.05	2.00	1.95	Gold
S7171-45R	4.00	4.50	1.36	2.50	2.30	Gold
S7181-45R	4.50	4.50	1.82	3.00	2.50	Gold
S7191-45R	5.00	4.50	2.08	3.50	3.00	Gold

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.



EMC SHIELDING

3.5mm HIGH	4.0mm HIGH								
Recommended PC Board Pattern <table border="1"> <thead> <tr> <th>ORDER CODE</th><th>FINISH</th></tr> </thead> <tbody> <tr> <td>S7101-42R</td><td>Gold + Tin</td></tr> </tbody> </table>	ORDER CODE	FINISH	S7101-42R	Gold + Tin	Recommended PC Board Pattern <table border="1"> <thead> <tr> <th>ORDER CODE</th><th>FINISH</th></tr> </thead> <tbody> <tr> <td>S7041-42R</td><td>Gold + Tin</td></tr> </tbody> </table>	ORDER CODE	FINISH	S7041-42R	Gold + Tin
ORDER CODE	FINISH								
S7101-42R	Gold + Tin								
ORDER CODE	FINISH								
S7041-42R	Gold + Tin								
4.5mm HIGH	6.0mm HIGH								
Recommended PC Board Pattern <table border="1"> <thead> <tr> <th>ORDER CODE</th><th>FINISH</th></tr> </thead> <tbody> <tr> <td>S7111-42R</td><td>Gold + Tin</td></tr> </tbody> </table>	ORDER CODE	FINISH	S7111-42R	Gold + Tin	Recommended PC Board Pattern <table border="1"> <thead> <tr> <th>ORDER CODE</th><th>FINISH</th></tr> </thead> <tbody> <tr> <td>S7051-42R</td><td>Gold + Tin</td></tr> </tbody> </table>	ORDER CODE	FINISH	S7051-42R	Gold + Tin
ORDER CODE	FINISH								
S7111-42R	Gold + Tin								
ORDER CODE	FINISH								
S7051-42R	Gold + Tin								

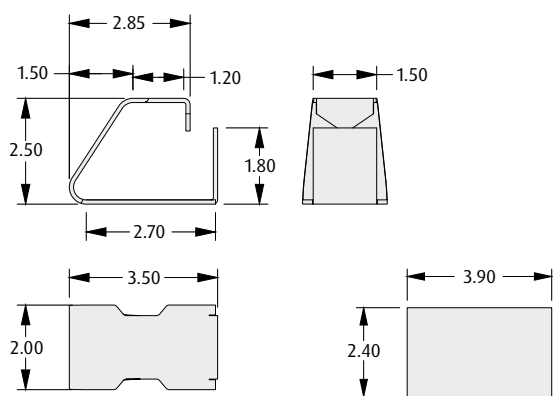
All dimensions in mm.

EMC SHIELDING

- ❖ 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.

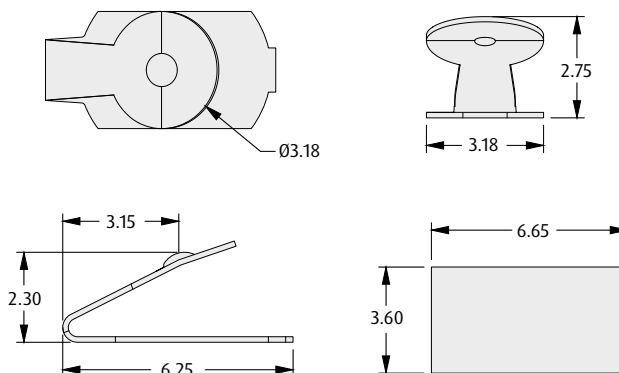


2.75mm HIGH



Recommended PC Board Pattern

ORDER CODE	FINISH
S7071-46R	Tin



Recommended PC Board Pattern

ORDER CODE	FINISH
S7081-42R	Gold + Tin

Technical drawings of the S1951 Low Force version. The top drawing is a side view showing vertical deflection (7.25), horizontal deflection (6.57), and a slot (3.50). The bottom drawing is a top view showing a width of 9.59 and a height of 5.70.

Recommended PC Board Pattern

ORDER CODE	TYPE	FINISH
S1941-42R	Normal Force	Gold + Tin
S1941-46R	Normal Force	Tin
S1951-46R	Low Force	Tin

www.harwin.com

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.



- ❖ 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.

Gecko

Contents

Introduction

Screw-Lok 1.25mm pitch High-Reliability Connectors

- Specifications

- Mating Profiles

- Female PCB Connectors

- Female Cable Connectors

- Male PCB Connectors

- Male Cable Connectors

Latched 1.25mm pitch High-Reliability Connectors

- Specifications

- Mating Profiles

- Female PCB Connectors

- Female Cable Connectors

- Female Cable Assemblies

- Male PCB Connectors

- Male Cable Connectors

- Male Cable Assemblies

Tooling



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 Screw-Lok

- ❖ Strong stainless-steel screw fixings for maximum strain relief
- ❖ Lightweight hoods for additional cable protection and shielding
- ❖ Pre-wired contacts available for prototyping and pre-production

Gecko with Latches

- ❖ The maximum weight and space saving, designed with lightweight robust latches for minimal PCB real estate
- ❖ Product range includes complete cable assemblies, ideal for prototyping and pre-production



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 Polarisation Points

3 polarising 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.



Gecko Screw-Lok - 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.



Gecko with Latches - 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.



Gecko Screw-Lok - Maximum strain relief

Fixings with 2mm screw thread for maximum board and connection retention or strain relief.



Gecko with Latches - Combined Latching & PCB retention

Optional latches allow simple and fast de-latching and require no special tooling. Solder tabs for SMT and barbs for PC Tail versions ensure retention to the PCB.



Gecko Connectors Specifications

Materials

Mouldings:	Glass-filled High Temperature Thermoplastic UL94V-0
Female contacts:	Beryllium Copper
Male contacts	
PCT/SMT:	Phosphor Bronze
Crimp:	Brass
Finish:	0.2 – 0.3µm (8 – 12µ") Gold, over 1.5 – 2.0µm (60 – 80µ") Nickel
Screw-Loks:	Stainless Steel
Latches:	Copper Alloy

Electrical

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

Mechanical

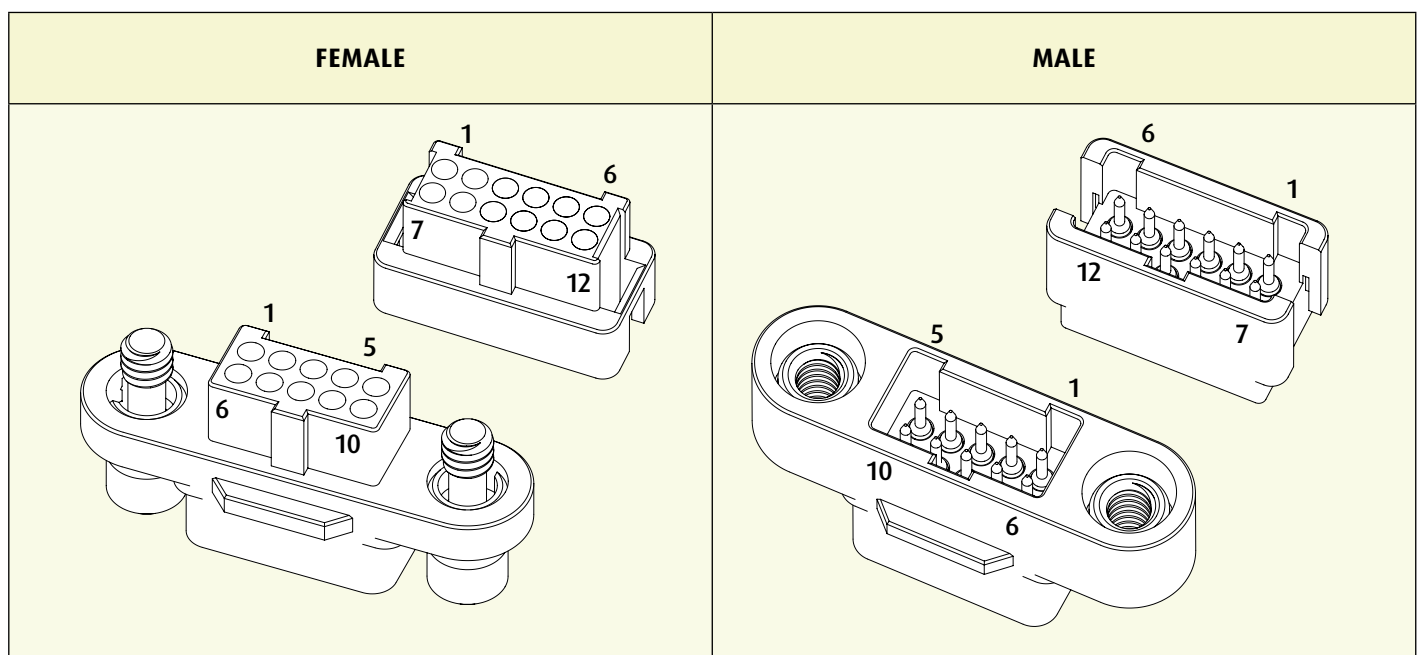
Contact durability:	1000 operations
Mating forces (per contact pair)	
Insertion force:	2.8N max
Withdrawal force:	0.2N min
Contact retention in moulding:	6N min

Environmental

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

* Tested with latched connectors.

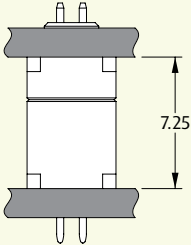
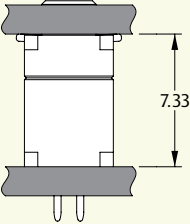
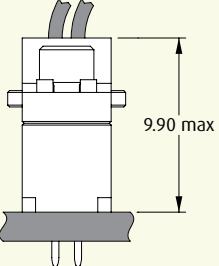
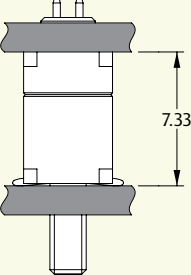
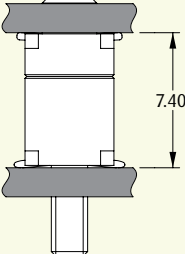
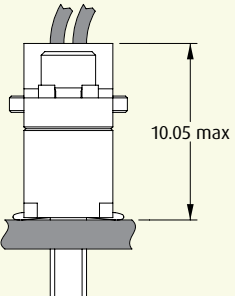
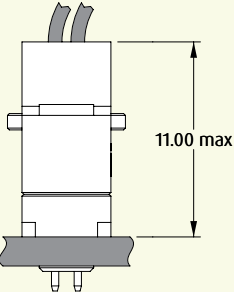
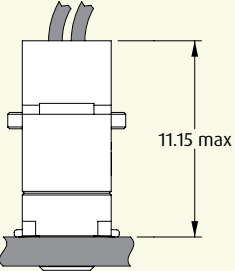
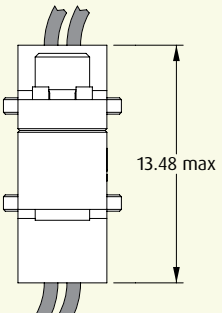
Pin Numbering



Patent Published

Gecko Screw-Lok Mating Profiles

GECKO SCREW-LOK

		FEMALE		
		VERTICAL PC TAIL	VERTICAL SMT	CABLE
MALE	VERTICAL PC TAIL	 7.25	 7.33	 9.90 max
	VERTICAL SMT	 7.33	 7.40	 10.05 max
	CABLE	 11.00 max	 11.15 max	 13.48 max

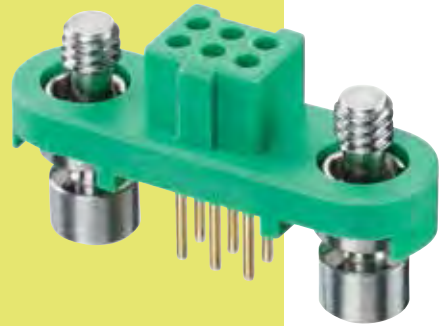
All dimensions in mm.

Patent Published

Gecko Screw-Lok Connectors

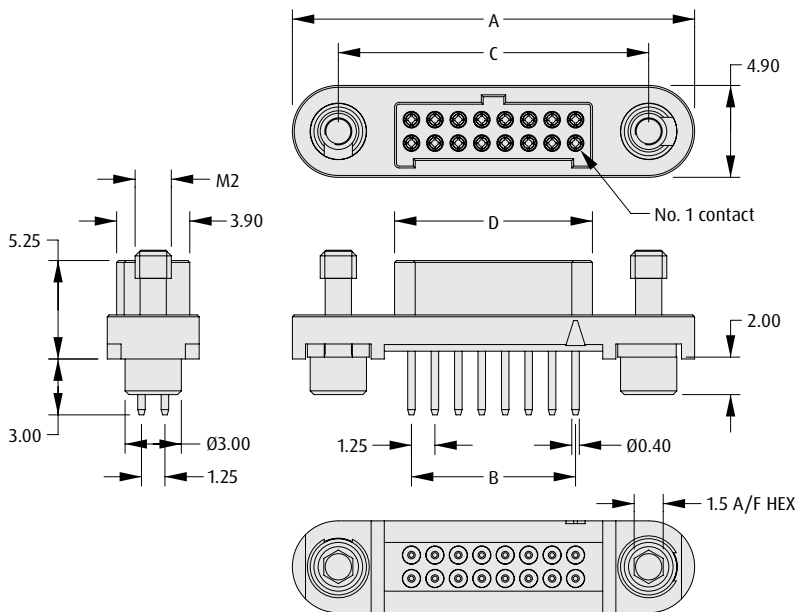
Female PC Tail

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



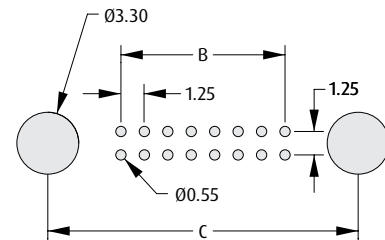
GECKO SCREW-LOK

3mm PC TAIL



CALCULATION

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



Recommended PC Board Pattern

HOW TO ORDER

G125 - F V1 XX 05 F1 X

SERIES CODE

TYPE

V1 3mm PC Tail

PACKAGING

R	Tape & Reeled
P	Loose

FINISH

05 Gold

TOTAL NO. OF CONTACTS

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

All dimensions in mm.

Patent Published

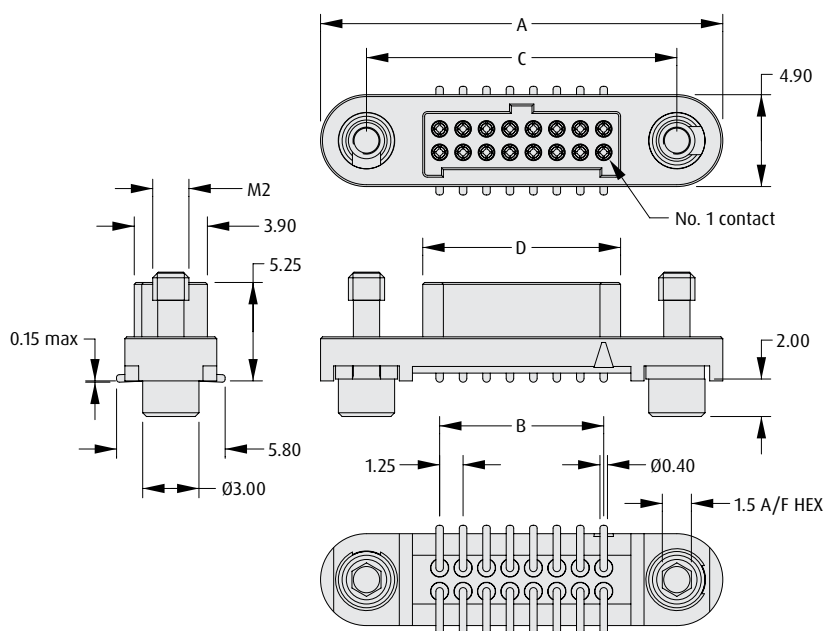
Gecko Screw-Lok Connectors

Female Surface Mount

- ❖ 4-finger Beryllium Copper contact.
- ❖ Stainless steel screw fixing to mate with applicable male connector.
- ❖ Positive keyway polarisation 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.

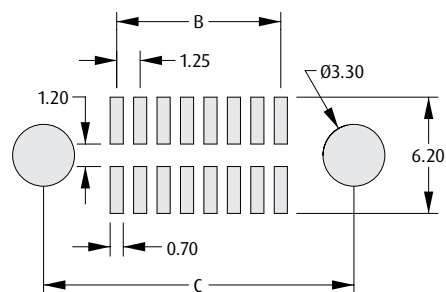


SURFACE MOUNT



CALCULATION

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



Recommended PC Board Pattern

HOW TO ORDER

G125 - F S1 XX 05 F1 X

SERIES CODE

TYPE

S1

Surface Mount

PACKAGING

R

Tape & Reeled

P

Loose

FINISH

05

Gold

TOTAL NO. OF CONTACTS

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

Gecko Screw-Lok Connectors

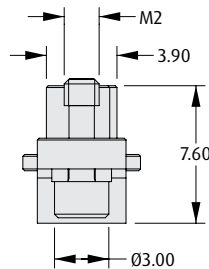
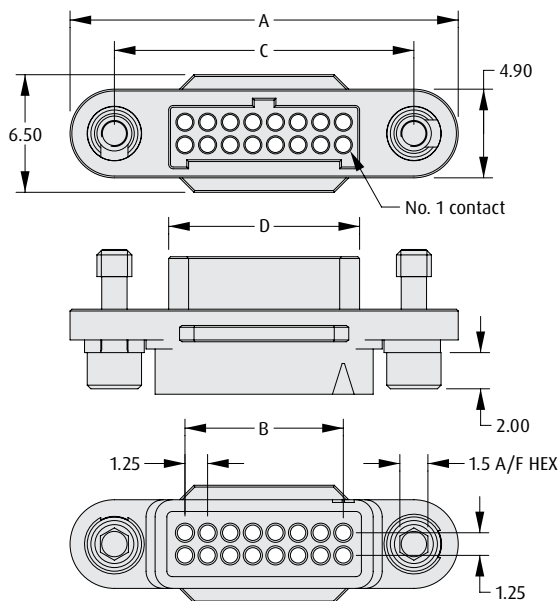
Female Crimp Housings

- ❖ Features 2.5mm potting wall for extra security.
- ❖ No. 1 position identified on moulding.
- ❖ 3 polarising points on each housing prevent mis-mating.
- ❖ Available without fixing screws, for use with metal hoods shown on a following page.
- ❖ Use with female crimp contacts and pre-cabled contacts shown on following pages.



GECKO SCREW-LOK

FEMALE



CALCULATION

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

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.

HOW TO ORDER

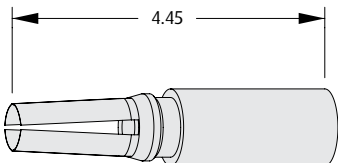
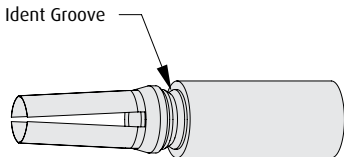
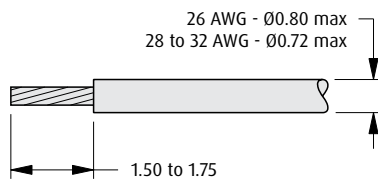
SERIES CODE		G125 - 224		XX	96	XX
TYPE						
224	Female Housing					
TOTAL NO. OF CONTACTS						
06, 10, 12, 16, 20, 26, 34, 50						
				</		

Gecko Screw-Lok Connectors

Female Crimp Contacts

- ❖ 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.



CONTACTS		WIRE STRIPPING DETAILS									
26 AWG  28 – 32 AWG 											
TOOLS											
Recommended Crimp Tool – Z125-900 Positioner – Z125-901 Contact Insertion/Removal Tool – Z125-902		❖ Female crimp housing shown on previous page. ❖ Pre-cabled contacts shown on following page. ❖ Instruction sheets available at www.harwin.com/instructions.									
HOW TO ORDER											
SERIES CODE <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></table>		TYPE	001	Female 26 AWG crimp contact	002	Female 28-32 AWG crimp contact	G125 – 00X 00 05 <table><tr><th>FINISH</th></tr><tr><td>05</td><td>Gold</td></tr></table>		FINISH	05	Gold
TYPE											
001	Female 26 AWG crimp contact										
002	Female 28-32 AWG crimp contact										
FINISH											
05	Gold										

All dimensions in mm.

Patent Published

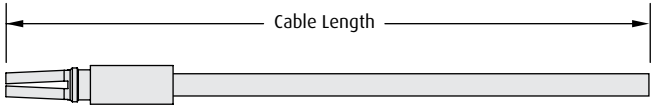
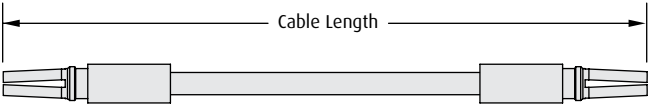
Gecko Screw-Lok Connectors

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.
- ❖ For non-standard cable lengths, please contact cables@harwin.com with your requirements.



GECKO SCREW-LOK

FEMALE SINGLE ENDED		FEMALE – FEMALE																					
																							
TOOLS																							
Contact Insertion/Removal Tool – Z125-902		❖ Female crimp housing and loose contacts shown on previous pages. ❖ Instruction sheets available at www.harwin.com/instructions.																					
HOW TO ORDER																							
SERIES CODE G125 GENDER - FIRST END F CABLE SIZE <table><tr><td>W1</td><td>26 AWG</td></tr><tr><td>W2</td><td>28 AWG</td></tr><tr><td>W3</td><td>30 AWG</td></tr><tr><td>W4</td><td>32 AWG</td></tr></table> CABLE COLOUR <table><tr><td>94</td><td>White</td></tr></table> TERMINATION - SECOND END <table><tr><td>L</td><td>Loose cut end</td></tr><tr><td>F</td><td>Female</td></tr></table> CABLE LENGTH <table><tr><td>0150</td><td>150mm</td></tr><tr><td>0300</td><td>300mm (double-ended)</td></tr><tr><td>0450</td><td>450mm (single-ended)</td></tr></table> G125 – F WX XXXX X 94				W1	26 AWG	W2	28 AWG	W3	30 AWG	W4	32 AWG	94	White	L	Loose cut end	F	Female	0150	150mm	0300	300mm (double-ended)	0450	450mm (single-ended)
W1	26 AWG																						
W2	28 AWG																						
W3	30 AWG																						
W4	32 AWG																						
94	White																						
L	Loose cut end																						
F	Female																						
0150	150mm																						
0300	300mm (double-ended)																						
0450	450mm (single-ended)																						

All dimensions in mm.

Patent Published

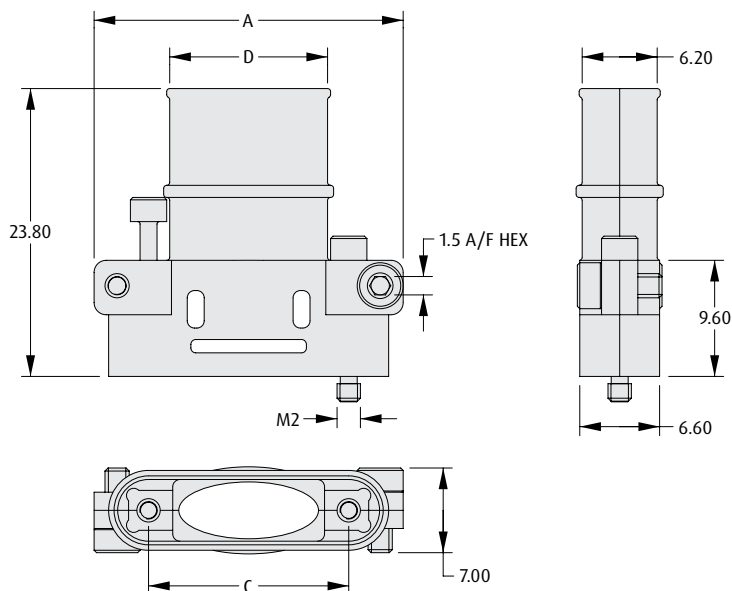
Gecko Screw-Lok Connectors

Female Metal Hood / Backshell

- ❖ Supplied as a kit, including 2 metal hood halves, tie-band (not shown), extended fixing screws for female connectors, and short screws to join the two hood halves together.
- ❖ Use with G125-224xx9600 female crimp housings without fixings - fixings are supplied with these hoods.
- ❖ Tie-band can be used to attached external braid, to construct a shielded cable assembly.

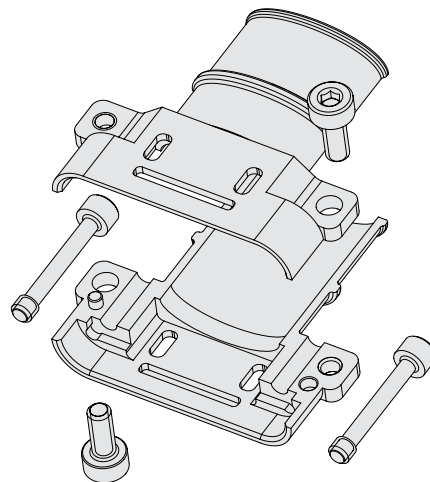


HOOD / BACKSHELL



CALCULATION

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



HOW TO ORDER

G125 - 964 XX F1

SERIES CODE

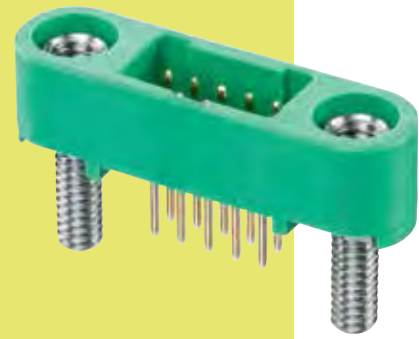
TOTAL NO. OF CONTACTS

06, 10, 12, 16

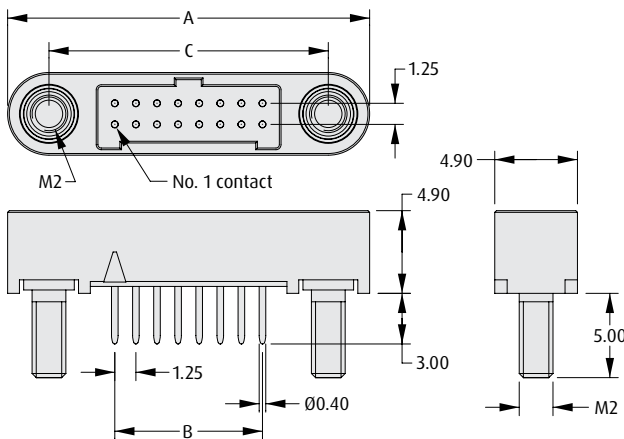
Gecko Screw-Lok Connectors

Male Vertical PC Tail

- ❑ 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.

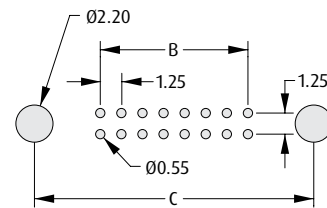


PC TAIL



CALCULATION

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



Recommended PC Board Pattern

HOW TO ORDER

G125 - M V1 XX 05 M2 X

SERIES CODE

TYPE

V1 3mm PC Tail

TOTAL NO. OF CONTACTS

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

PACKAGING

R	Tape & Reeled
P	Loose

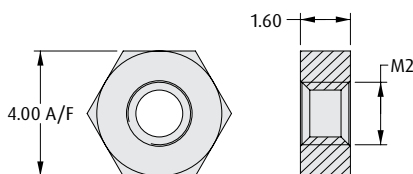
FINISH

05 Gold

REQUIRED HARDWARE

Order separately from connector

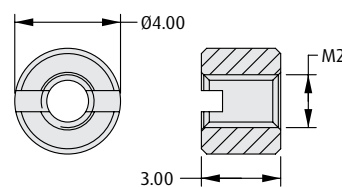
Hexagonal Board Mount Nut



ORDER CODE

G125-4500000B

Slotted Board Mount Nut



ORDER CODE

G125-4510000B

All dimensions in mm.

Patent Published

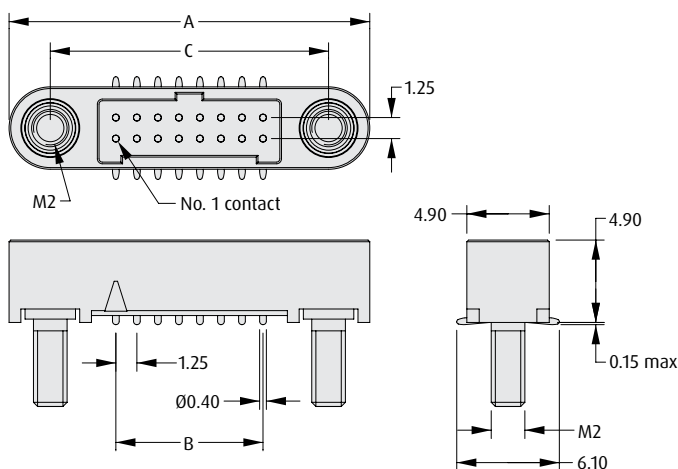
Gecko Screw-Lok Connectors

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.

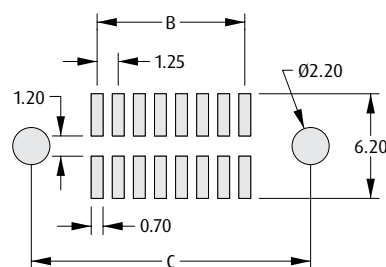


SURFACE MOUNT



CALCULATION

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



Recommended PC Board Pattern

HOW TO ORDER

G125 - M S1 XX 05 M2 X

SERIES CODE

TYPE

S1 Surface Mount

TOTAL NO. OF CONTACTS

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

PACKAGING

R	Tape & Reeled
P	Loose

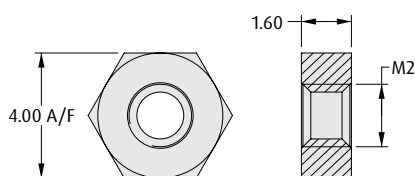
FINISH

05 Gold

REQUIRED HARDWARE

Order separately from connector

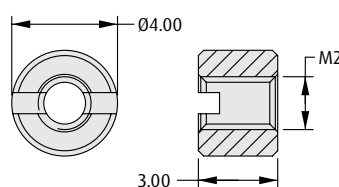
Hexagonal Board Mount Nut



ORDER CODE

G125-4500000B

Slotted Board Mount Nut



ORDER CODE

G125-4510000B

All dimensions in mm.

Patent Published

Gecko Screw-Lok Connectors

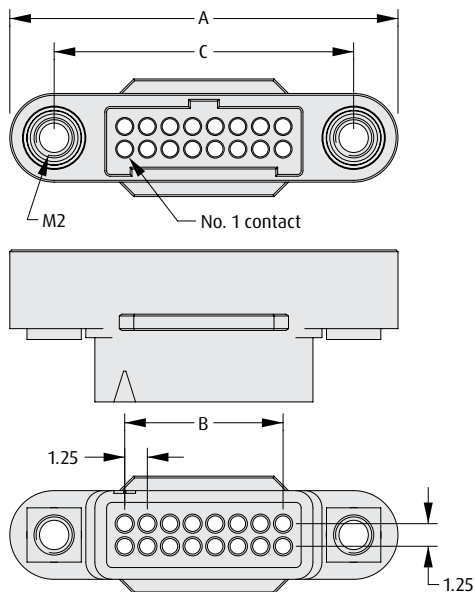
Male Crimp Housing

- ❖ Features 2.5mm potting wall for extra security.
- ❖ No. 1 position identified on moulding.
- ❖ 3 polarising points on each housing prevent mis-mating.
- ❖ Use with male crimp contacts and pre-cabled contacts shown on following pages.



GECKO SCREW-LOK

MALE



CALCULATION

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

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.

HOW TO ORDER

G125 - 324 XX 96 M1

SERIES CODE

TYPE

324 Male Housing

FINISH

96 Housing

TOTAL NO. OF CONTACTS

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

All dimensions in mm.

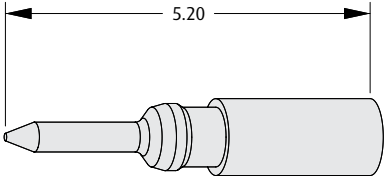
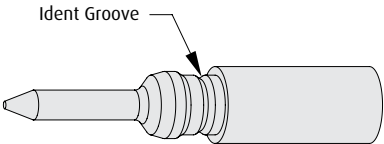
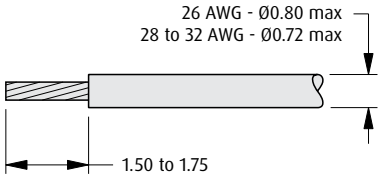
Patent Published

Gecko Screw-Lok 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.



CONTACTS	WIRE STRIPPING DETAILS								
26 AWG  28 - 32 AWG 									
TOOLS									
Recommended Crimp Tool - Z125-900 Positioner - Z125-901 Contact Insertion/Removal Tool - Z125-902									
❖ Male crimp housing shown on previous page. ❖ Pre-cabled contacts shown on following page. ❖ Instruction sheets available at www.harwin.com/instructions.									
HOW TO ORDER									
G125 - 10X 00 05 SERIES CODE <table border="1" style="width: 100%;"> <thead> <tr> <th colspan="2">TYPE</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">101</td> <td>Male 26 AWG crimp contact</td> </tr> <tr> <td style="text-align: center;">102</td> <td>Male 28-32 AWG crimp contact</td> </tr> </tbody> </table> _____ _____ _____ FINISH <table border="1" style="width: 100%;"> <tbody> <tr> <td style="text-align: center;">05</td> <td>Gold</td> </tr> </tbody> </table>		TYPE		101	Male 26 AWG crimp contact	102	Male 28-32 AWG crimp contact	05	Gold
TYPE									
101	Male 26 AWG crimp contact								
102	Male 28-32 AWG crimp contact								
05	Gold								

All dimensions in mm.

Patent Published

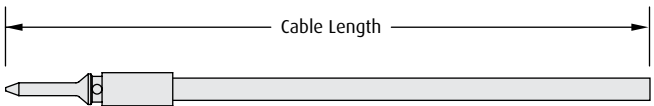
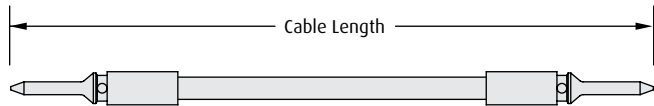
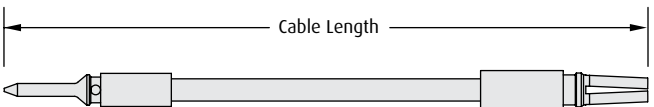
Gecko Screw-Lok Connectors

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.
- For non-standard cable lengths, please contact cables@harwin.com with your requirements.



GECKO SCREW-LOK

MALE SINGLE ENDED	MALE – MALE
	
MALE – FEMALE	TOOLS
	Contact Insertion/Removal Tool – Z125-902 ➤ Male crimp housing and loose contacts shown on previous pages. ➤ Instruction sheets available at www.harwin.com/instructions.

HOW TO ORDER

G125 – M WX XXXX X 94

SERIES CODE

GENDER – FIRST END

M Male

CABLE SIZE

W1	26 AWG
W2	28 AWG
W3	30 AWG
W4	32 AWG

CABLE COLOUR

94 White

TERMINATION – SECOND END

L	Loose cut end
F	Female
M	Male

CABLE LENGTH

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

All dimensions in mm.

Patent Published

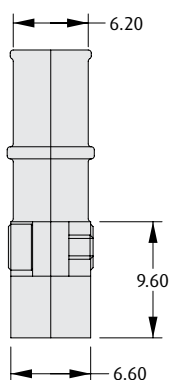
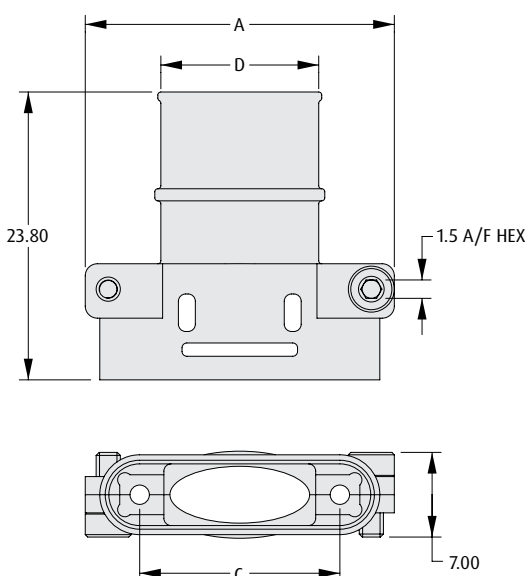
Gecko Screw-Lok Connectors

Male Metal Hood / Backshell

- ❖ Supplied as a kit, including 2 metal hood halves, tie-band (not shown), and short screws to join the two hood halves together.
- ❖ Use with G125-324xx96M1 male crimp housings.
- ❖ Tie-band can be used to attached external braid, to construct a shielded cable assembly.

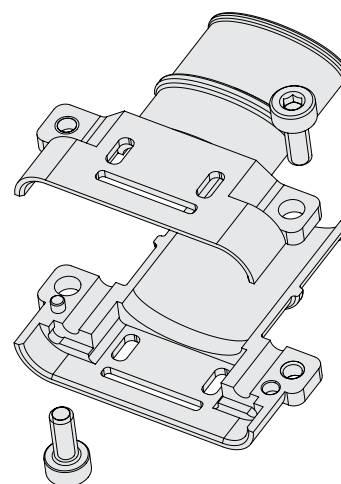


HOOD / BACKSHELL



CALCULATION

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



HOW TO ORDER

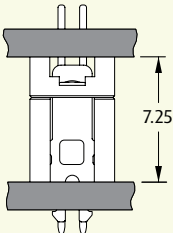
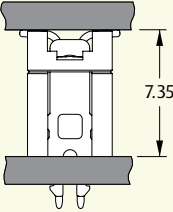
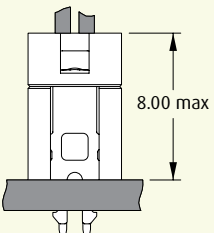
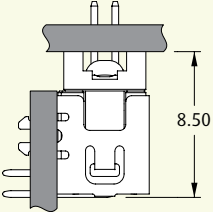
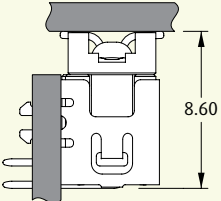
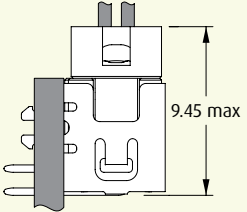
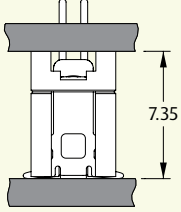
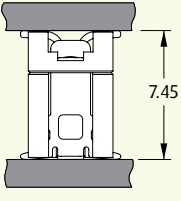
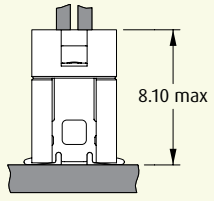
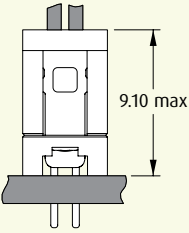
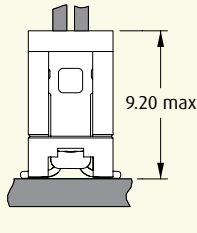
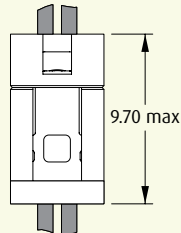
G125 - 964 XX 00

SERIES CODE

TOTAL NO. OF CONTACTS

06, 10, 12, 16

Gecko with Latches Mating Profiles

		FEMALE		
		VERTICAL PC TAIL	VERTICAL SMT	CABLE
MALE	VERTICAL PC TAIL			
	HORIZONTAL PC TAIL			
	VERTICAL SMT			
	CABLE			

GECKO WITH LATCHES

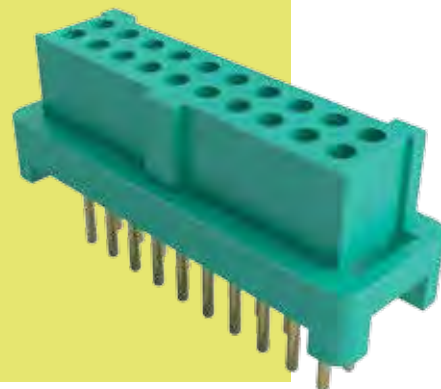
All dimensions in mm.

Patent Published

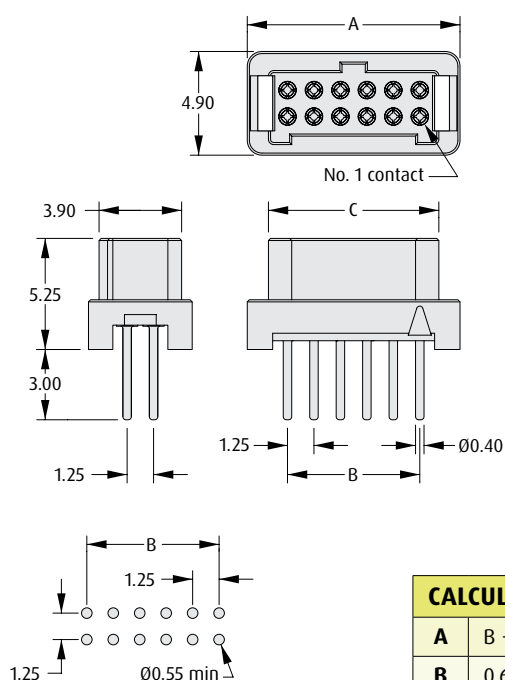
Gecko with Latches Connectors

Female PC Tail

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



3mm PC TAIL

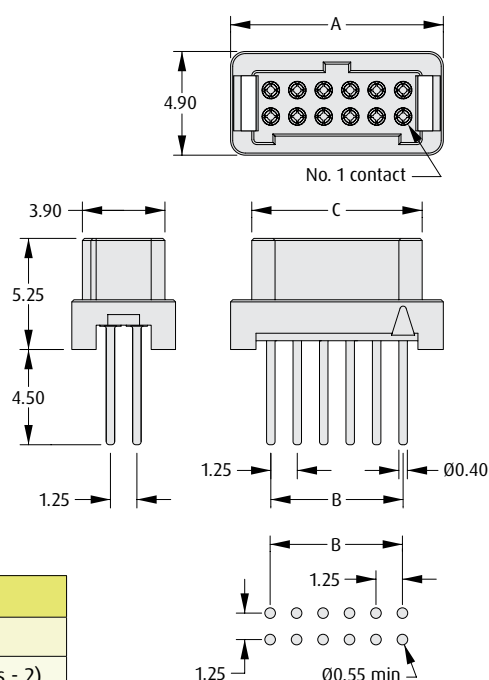


Recommended PC Board Pattern

CALCULATION

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

4.5mm PC TAIL



Recommended PC Board Pattern

HOW TO ORDER

G125 - F VX XX 05 L0 X

SERIES CODE

TYPE

V1	3mm PC Tail
V2	4.5mm PC Tail

PACKAGING

R	Tape & Reeled
P	Loose

FINISH

05	Gold
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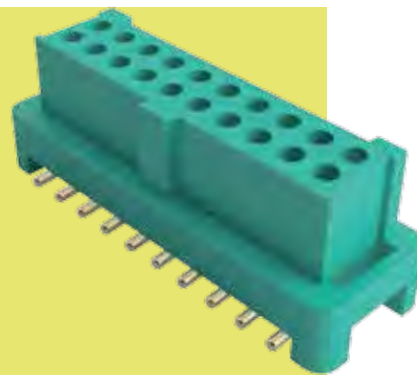
TOTAL NO. OF CONTACTS

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

Gecko with Latches Connectors

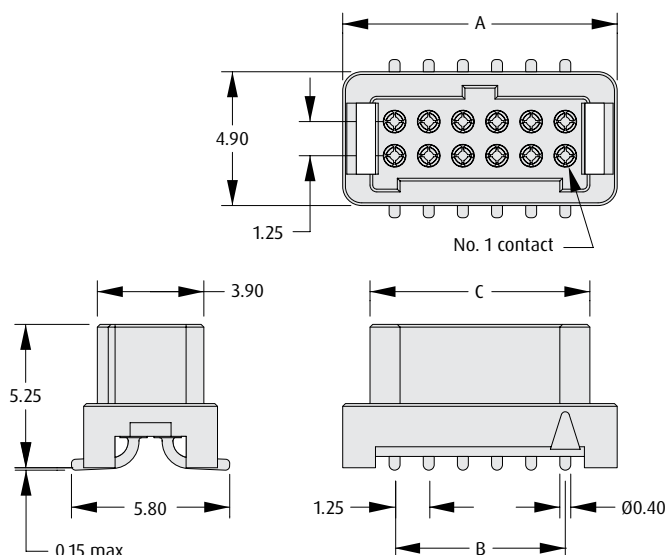
Female Surface Mount

- ❖ 4-finger Beryllium Copper contact.
- ❖ Positive keyway polarisation 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.



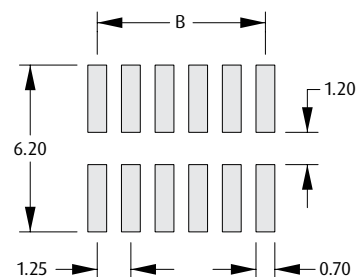
GECKO WITH LATCHES

SURFACE MOUNT



CALCULATION

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



Recommended PC Board Pattern

HOW TO ORDER

G125 - F S1 XX 05 L0 X

SERIES CODE

TYPE

S1

Surface Mount

PACKAGING

R

Tape & Reeled

P

Loose

FINISH

05

Gold

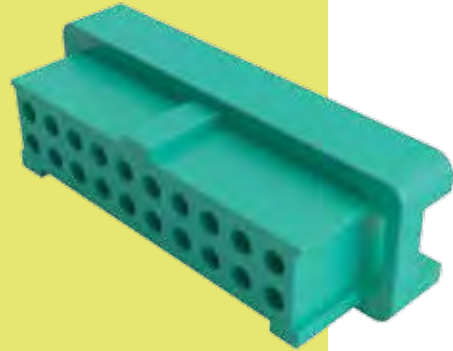
TOTAL NO. OF CONTACTS

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

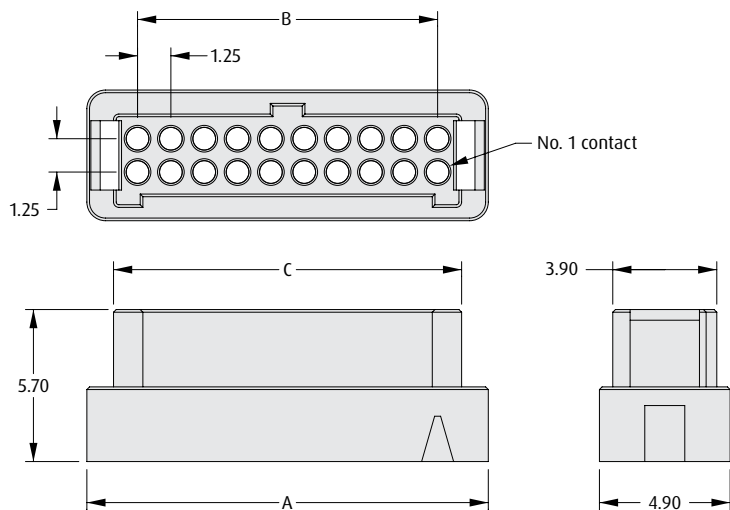
Gecko with Latches Connectors

Female Crimp Housings

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



FEMALE



CALCULATION

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

TOOLS

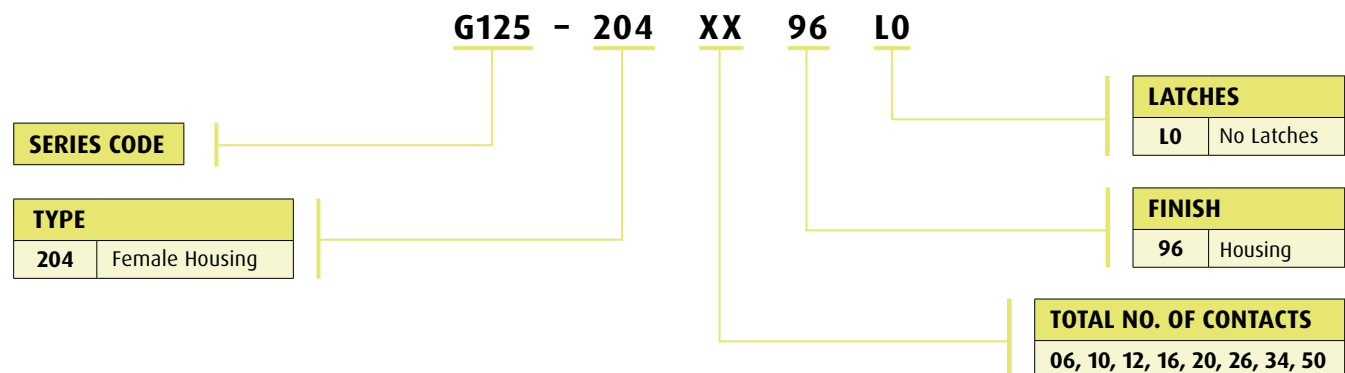
Recommended Crimp Tool - Z125-900

Positioner - Z125-901

Contact Insertion/Removal Tool - Z125-902

- ❖ Female contacts shown on following pages.
- ❖ Instruction sheets available at www.harwin.com/instructions.

HOW TO ORDER



All dimensions in mm.

Patent Published

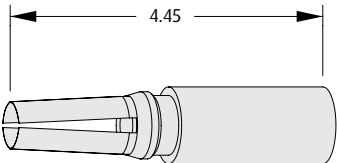
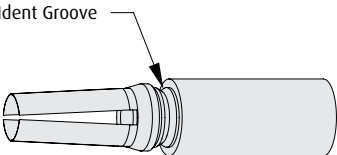
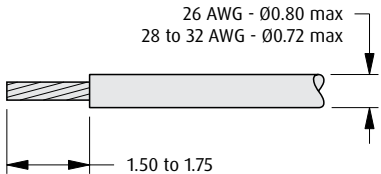
Gecko with Latches Connectors

Female Crimp Contacts

- ❖ 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.



GECKO WITH LATCHES

CONTACTS	WIRE STRIPPING DETAILS								
26 AWG  28 - 32 AWG 	 26 AWG - Ø0.80 max 28 to 32 AWG - Ø0.72 max 1.50 to 1.75								
TOOLS									
Recommended Crimp Tool - Z125-900 Positioner - Z125-901 Contact Insertion/Removal Tool - Z125-902									
❖ Female crimp housing shown on previous page. ❖ Pre-cabled contacts shown on following page. ❖ Instruction sheets available at www.harwin.com/instructions.									
HOW TO ORDER									
G125 - 00X 00 05 SERIES CODE <table border="1" data-bbox="147 1703 581 1820"> <thead> <tr> <th colspan="2">TYPE</th></tr> </thead> <tbody> <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> </tbody> </table> FINISH <table border="1" data-bbox="1320 1682 1472 1764"> <tbody> <tr> <td>05</td><td>Gold</td></tr> </tbody> </table>		TYPE		001	Female 26 AWG crimp contact	002	Female 28-32 AWG crimp contact	05	Gold
TYPE									
001	Female 26 AWG crimp contact								
002	Female 28-32 AWG crimp contact								
05	Gold								

All dimensions in mm.

Patent Published

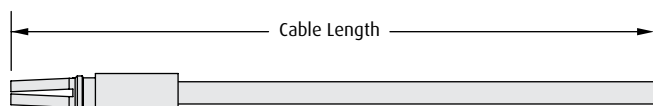
Gecko with Latches Connectors

Female Crimp Contacts – Pre-Crimped Wires

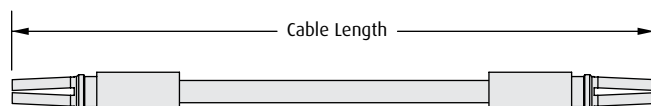
- ❖ 4-finger Beryllium Copper contact.
- ❖ Ready for assembling to housing.
- ❖ Crimp barrel meets all crimp guidelines and standards.
- ❖ 2A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +150°C.
- ❖ For non-standard cable lengths, please contact technical@harwin.com with your requirements.



FEMALE SINGLE ENDED



FEMALE – FEMALE



TOOLS

Contact Insertion/Removal Tool – Z125-902

- ❖ Female crimp housing and loose contacts shown on previous pages.
- ❖ Full Cable assemblies shown on following page.
- ❖ Instruction sheets available at www.harwin.com/instructions.

HOW TO ORDER

G125 – F WX XXXX X 94

SERIES CODE

GENDER - FIRST END

F Female

CABLE SIZE

W1	26 AWG
W2	28 AWG
W3	30 AWG
W4	32 AWG

CABLE COLOUR

94 White

TERMINATION - SECOND END

L	Loose cut end
F	Female

CABLE LENGTH

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

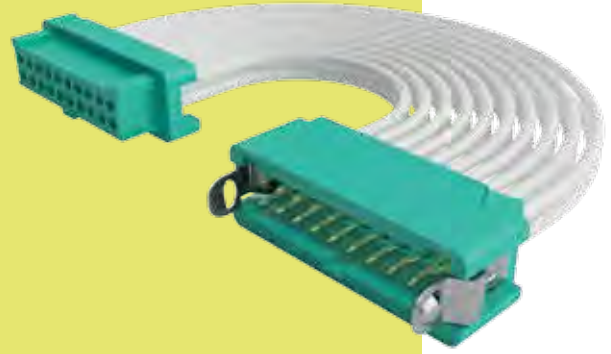
All dimensions in mm.

Patent Published

Gecko with Latches Connectors

Female Cable Assemblies

- ❖ 4-finger Beryllium Copper contact.
- ❖ No. 1 position identified on moulding.
- ❖ 2A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +150°C.
- ❖ Back potted for added strain relief.
- ❖ For non-standard cable lengths, please contact technical@harwin.com with your requirements.



GECKO WITH LATCHES

PART NUMBERING SYSTEM

G125 - F C X XX 05 L0 - XXXX X

SERIES CODE

GENDER - FIRST END

F Female

CABLE SIZE

1	26 AWG
2	28 AWG
3	30 AWG
4	32 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)

LATCHES

L0	No Latches
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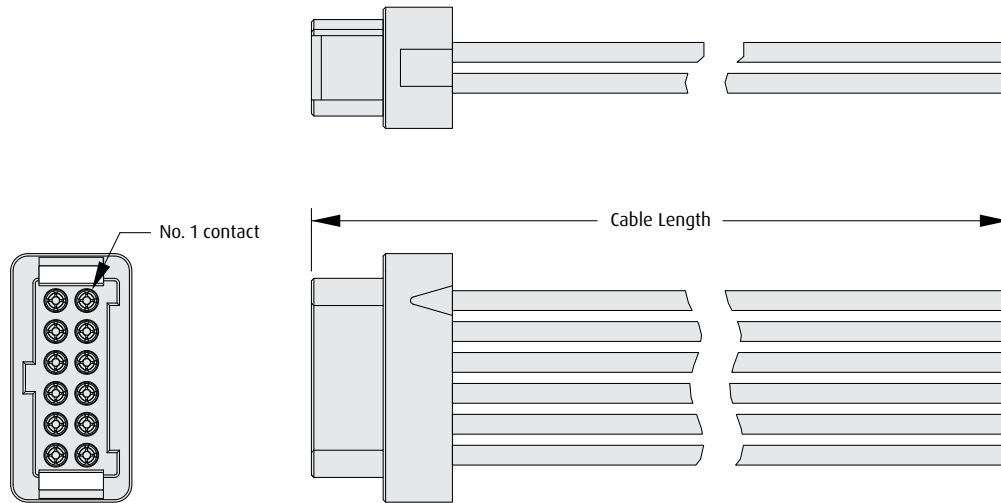
FINISH

05	Gold
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Female Cable Assemblies

- ❖ See previous page for cable length options.
- ❖ Cable assemblies are constructed with Contact 1 attached to Contact 1, Contact 2 to Contact 2, etc.

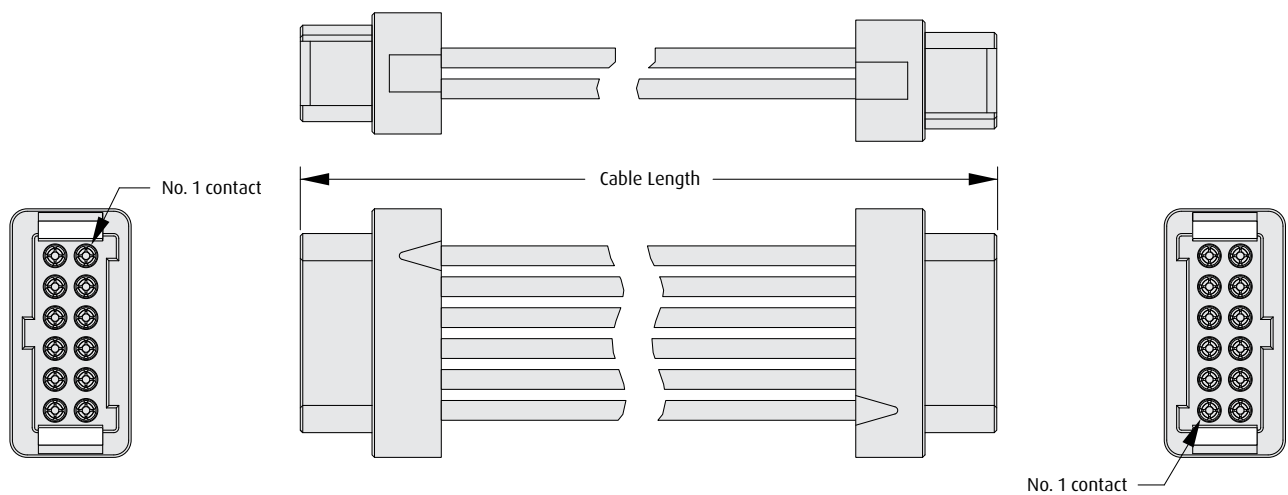
FEMALE SINGLE ENDED



ORDER CODE

G125-FCXXX05L0-XXXXL

FEMALE – FEMALE



ORDER CODE

G125-FCXXX05L0-XXXXF

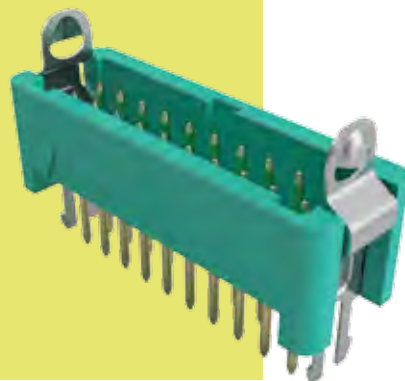
All dimensions in mm.

Patent Published

Gecko with Latches Connectors

Male Vertical PC Tail

- Secure fixing to the PCB via retention barbs 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.

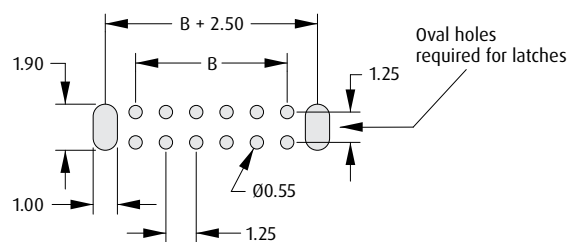
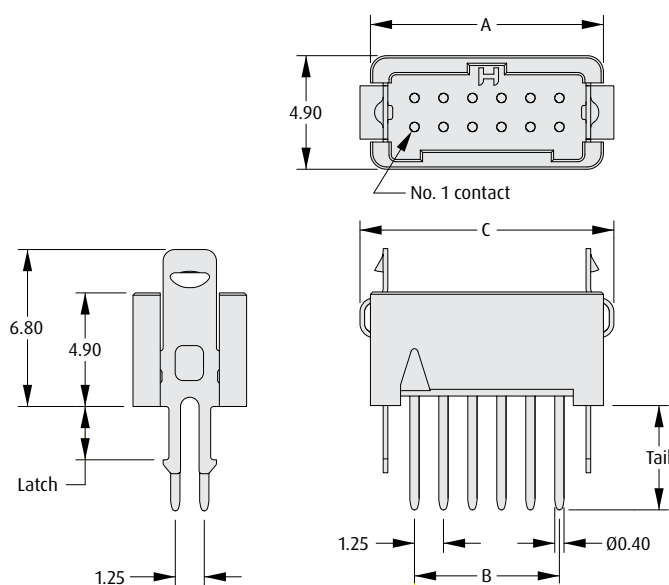


GECKO WITH LATCHES

PC TAIL

CALCULATION

A	$B + 3.8$
B	$0.625 \times (\text{Total No. of contacts} - 2)$
C	$B + 5.5$



Recommended PC Board Pattern

HOW TO ORDER

G125 - M VX XX 05 LX X

SERIES CODE

TYPE

V1	3mm PC Tail
V2	4.5mm PC Tail

TOTAL NO. OF CONTACTS

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

PACKAGING

R	Tape & Reeled
P	Loose

LATCH

L0	No Latch
L1	Latch for 1.6mm PCB (use with V1)
L2	Latch for 2.4mm PCB (use with V2)

FINISH

05 Gold

All dimensions in mm.

Patent Published

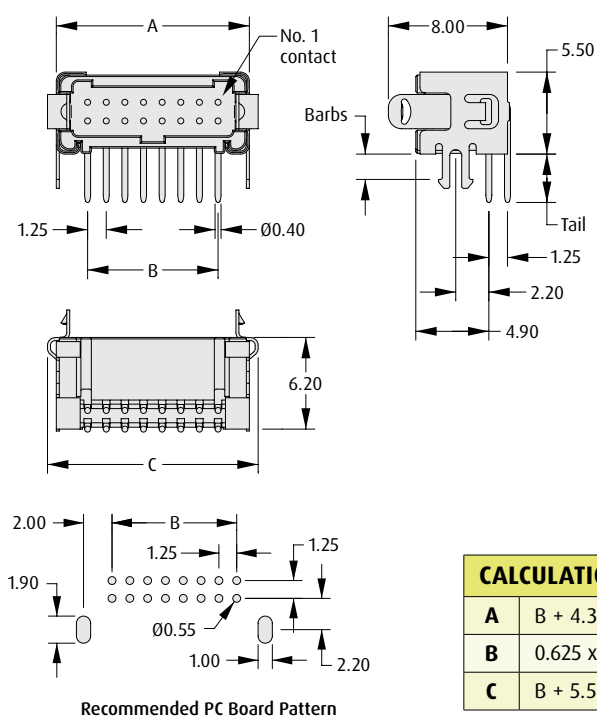
Gecko with Latches Connectors

Male Horizontal PC Tail – Latched

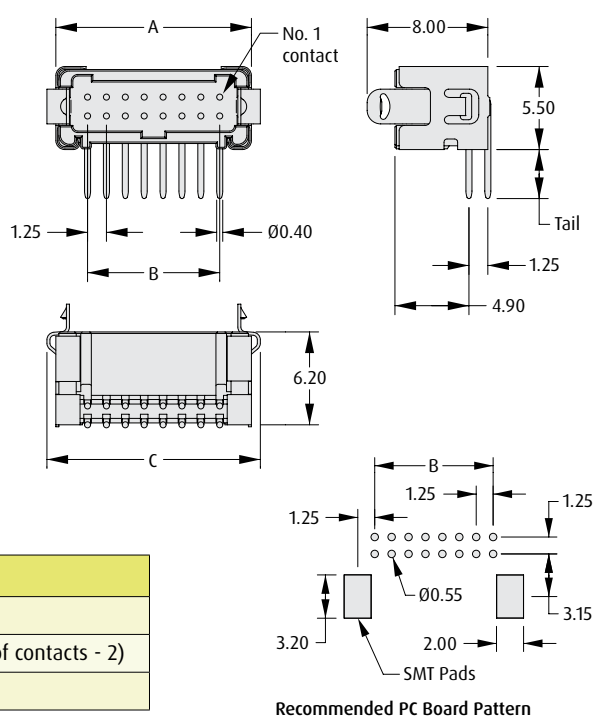
- ❖ Secure fixing to the PCB via retention bars for through hole.
- ❖ Surface mount option for automated assembly.
- ❖ Easy-to-release latches – tooling available for additional assistance with releasing latches – see part numbers **Z125-926xx00**.
- ❖ 2A current capacity, resists high vibration and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



PC TAIL LATCH



SURFACE MOUNT LATCH



CALCULATION

A	$B + 4.3$
B	$0.625 \times (\text{Total No. of contacts} - 2)$
C	$B + 5.5$

HOW TO ORDER

G125 - M HX XX 05 LX X

SERIES CODE

TYPE

H1	3.3mm PC Tail
H2	4.8mm PC Tail

TOTAL NO. OF CONTACTS

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

PACKAGING

R	Tape & Reeled
P	Loose

LATCH

L1	Barbs for 3.3mm PC Tail
L2	Barbs for 4.8mm PC Tail
L3	Surface Mount Latch

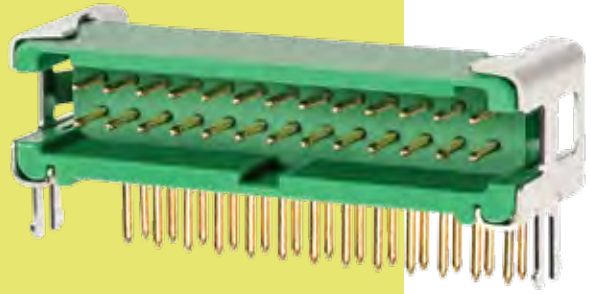
FINISH

05	Gold
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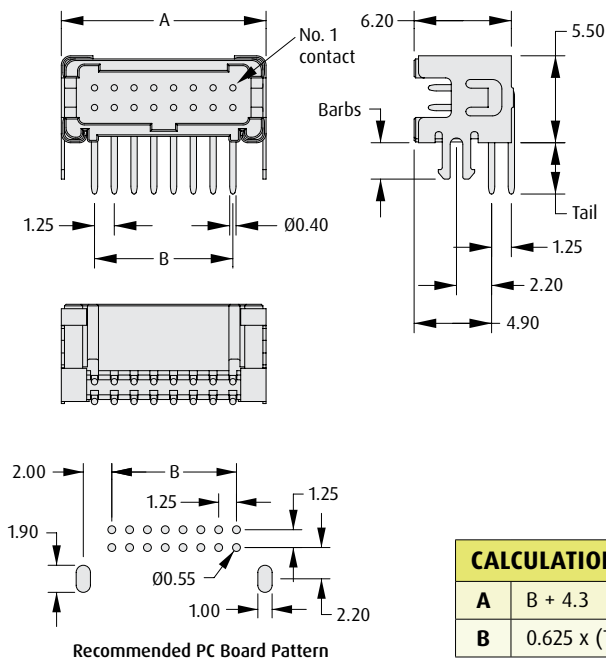
Gecko with Latches Connectors

Male Horizontal PC Tail – Without Latch

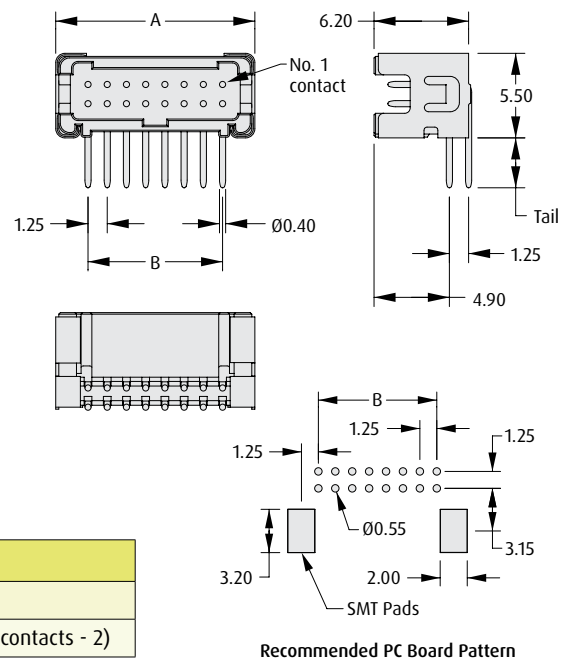
- Secure fixing to the PCB via retention barbs for through hole.
- Surface mount option for automated assembly.
- 2A current capacity.
- Withstands extremes of temperature: -65°C to +150°C.



PC TAIL FIXING



SURFACE MOUNT FIXING



CALCULATION

A	B + 4.3
B	0.625 x (Total No. of contacts - 2)

HOW TO ORDER

G125 - M HX XX 05 LX X

SERIES CODE

TYPE

H1	3.3mm PC Tail
H2	4.8mm PC Tail

TOTAL NO. OF CONTACTS

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

PACKAGING

R	Tape & Reeled
P	Loose

FIXING

L5	Barbs for 3.3mm PC Tail
L6	Barbs for 4.8mm PC Tail
L7	Surface Mount Fixing

FINISH

05	Gold
----	------

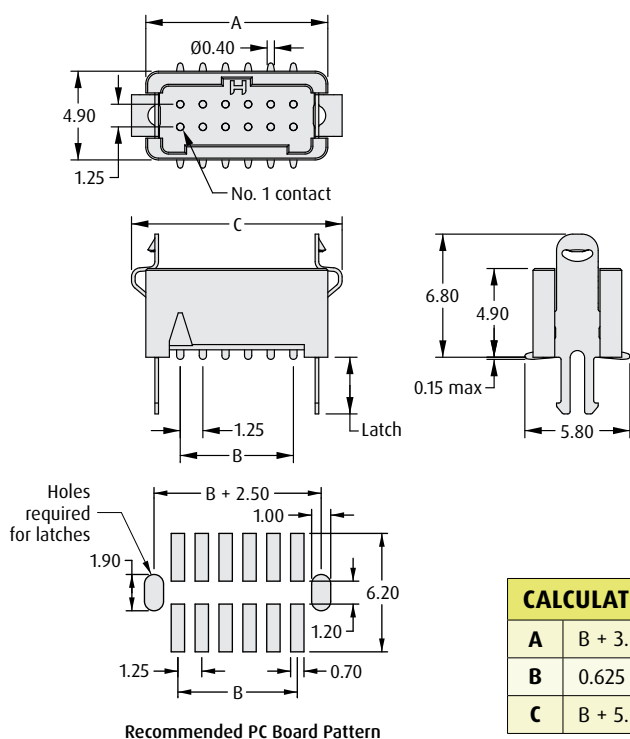
Gecko with Latches Connectors

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.



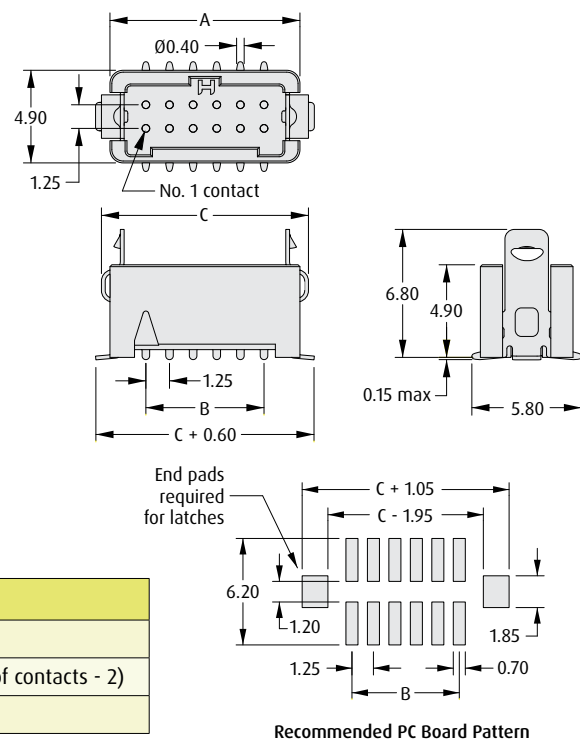
PC TAIL LATCH



CALCULATION

A	$B + 3.8$
B	$0.625 \times (\text{Total No. of contacts} - 2)$
C	$B + 5.5$

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

R	Tape & Reeled
P	Loose

LATCH

L0	No Latch
L1	Latch for 1.6mm PCB
L2	Latch for 2.4mm PCB
L3	Surface Mount Latch

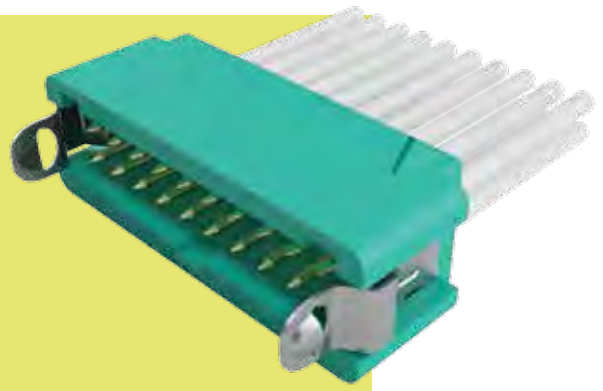
All dimensions in mm.

Patent Published

Gecko with Latches Connectors

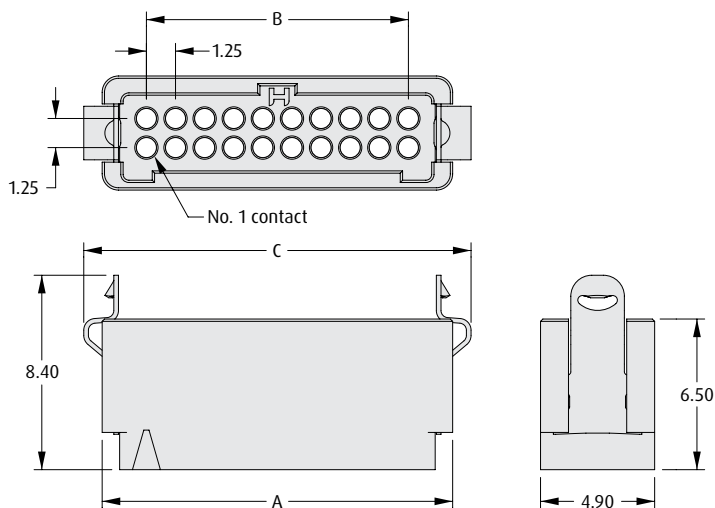
Male Crimp Housing

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



GECKO WITH LATCHES

MALE



CALCULATION

A	$B + 3.8$
B	$0.625 \times (\text{Total No. of contacts} - 2)$
C	$B + 5.5$

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.

HOW TO ORDER

G125 - 304 XX 96 LX

SERIES CODE

TYPE

304 Male Housing

LATCH

L0	No Latches
L4	Latches (Male Only)

FINISH

96 Housing

TOTAL NO. OF CONTACTS

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

All dimensions in mm.

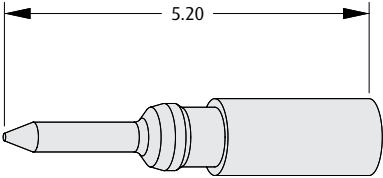
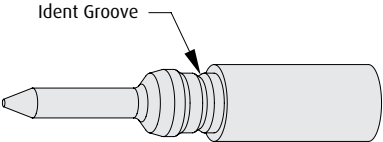
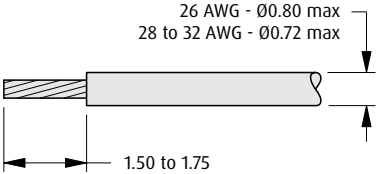
Patent Published

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.



CONTACTS		WIRE STRIPPING DETAILS				
26 AWG  28 - 32 AWG 						
TOOLS						
Recommended Crimp Tool - Z125-900 Positioner - Z125-901 Contact Insertion/Removal Tool - Z125-902		❖ Male crimp housing shown on previous page. ❖ Pre-cable contacts shown on following page. ❖ Instruction sheets available at www.harwin.com/instructions.				
HOW TO ORDER						
G125 - 10X 00 05						
SERIES CODE		FINISH <table><tr><td>05</td><td>Gold</td></tr></table>		05	Gold	
05	Gold					
<table><tr><th>TYPE</th></tr><tr><td>101 Male 26 AWG crimp contact</td></tr><tr><td>102 Male 28-32 AWG crimp contact</td></tr></table>		TYPE	101 Male 26 AWG crimp contact	102 Male 28-32 AWG crimp contact		
TYPE						
101 Male 26 AWG crimp contact						
102 Male 28-32 AWG crimp contact						

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.
- For non-standard cable lengths, please contact technical@harwin.com with your requirements.



MALE SINGLE ENDED	MALE – MALE
MALE – FEMALE	TOOLS
	Contact Insertion/Removal Tool – Z125-902 ➤ Male crimp housing and loose contacts shown on previous pages. ➤ Full Cable assemblies shown on following page. ➤ Instruction sheets available at www.harwin.com/instructions.

HOW TO ORDER

G125 – M WX XXXX X 94

SERIES CODE

GENDER – FIRST END

M Male

CABLE SIZE

W1	26 AWG
W2	28 AWG
W3	30 AWG
W4	32 AWG

CABLE COLOUR

94 White

TERMINATION – SECOND END

L	Loose cut end
F	Female
M	Male

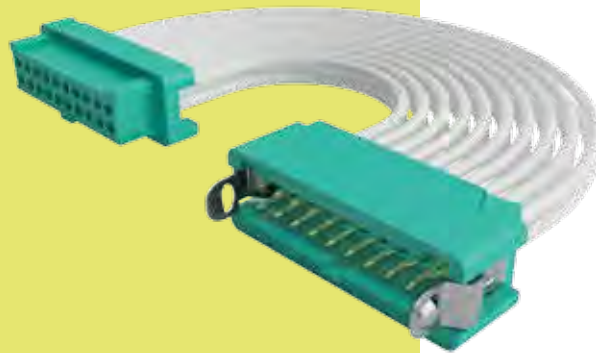
CABLE LENGTH

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

Gecko with Latches Connectors

Male Cable Assemblies

- ❖ No. 1 position identified on moulding.
- ❖ 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.
- ❖ For non-standard cable lengths, please contact technical@harwin.com with your requirements.



PART NUMBERING SYSTEM

G125 - M C X XX 05 LX - XXXX X

SERIES CODE

GENDER - FIRST END

M Male

CABLE SIZE

1	26 AWG
2	28 AWG
3	30 AWG
4	32 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)

LATCHES

L0	No Latches
L4	Latches (male connectors only)

FINISH

05 Gold

Male Cable Assemblies

- ❖ See previous page for cable length options.
- ❖ Cable assemblies are constructed with Contact 1 attached to Contact 1, Contact 2 to Contact 2, etc.

MALE SINGLE ENDED ORDER CODE G125-MCXXX05LX-XXXXL	
MALE – FEMALE ORDER CODE G125-MCXXX05LX-XXXXF	MALE – MALE ORDER CODE G125-MCXXX05LX-XXXXM

All dimensions in mm.

Patent Published

Gecko Connectors Tooling

- ❖ Instruction sheets can be accessed at www.harwin.com/instructions.
- ❖ A Gecko Crimping Instruction video is available at www.harwin.com/harwintv.

HAND CRIMP TOOL ❖ Precision tool with ratchet mechanism and 8-indent form. ❖ Must be used with positioner. ❖ Instruction sheet available.  ORDER CODE Z125-900	POSITIONER ❖ Must be used with hand crimp tool.  ORDER CODE Z125-901
INSERTION/REMOVAL TOOL ❖ For inserting and removing crimped contacts into the rear of mouldings. ❖ Instruction sheet available.  ORDER CODE Z125-902	DE-LATCH TOOL ❖ For assisting with unmating latched connectors.  ORDER CODE Z125-926xx00 Replace xx with No. of Contacts: 06, 10, 12, 16, 20, 26, 34 or 50

Gecko Connectors Tooling

❖ Instruction sheets can be accessed at www.harwin.com/instructions.

HEX DRIVE BIT	BALL HEX DRIVER
❖ 1.5mm A/F Hex end for Gecko Screw-Lok Hex Socket fixings. ❖ For use with torque tooling or similar equipment.  ORDER CODE Z9950-00	❖ 1.5mm A/F Hex end for Gecko Screw-Lok Hex Socket fixings. ❖ Ball-shaped end can be used at a wide range of angles.  ORDER CODE Z9952-00
SCREWDRIVER	
❖ For use with Gecko Screw-Lok board mount nuts. ❖ Board mount nuts to be tightened to a torque of $21 \pm 2\text{cmN}$.  ORDER CODE Z80-298	

M300

Contents

Introduction

Specifications

Mating Profiles

Jackscrew 3.00mm Pitch High-Reliability Connectors

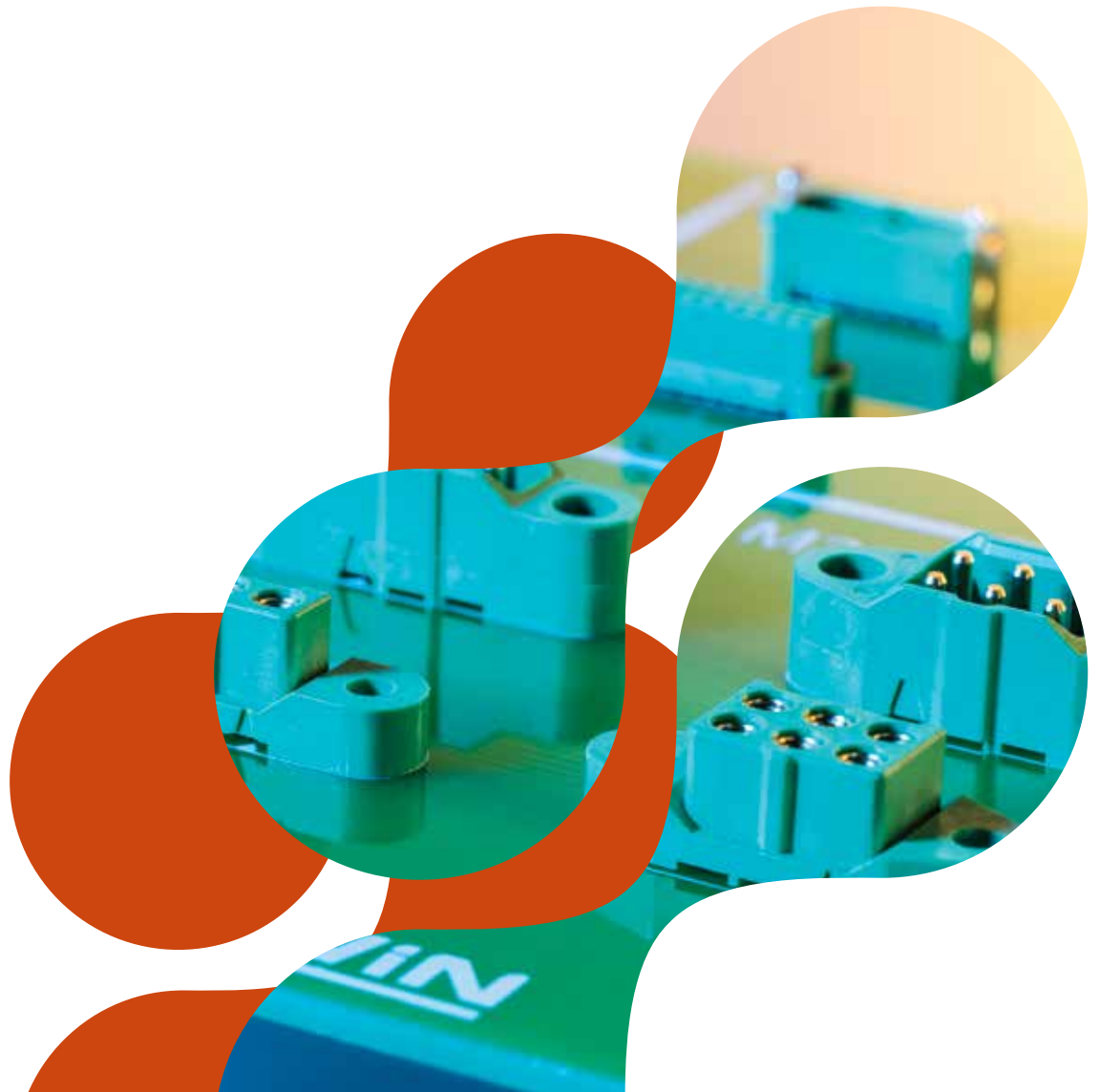
- Female PCB Connectors

- Female Cable Connectors

- Male PCB Connectors

- Male Cable Connectors

Tooling



M300 Connectors Introduction

Harwin M300 - 5 & 10A Power Connectors High Reliability Connectors for Power Applications

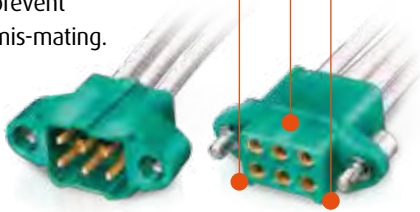
Harwin's M300 series is a 3.00mm pitch, high reliability / high performance connector system suited to aerospace, defense, industrial and other harsh environments. M300 provides a dual and single row cable-to-board and board-to-board solution for applications requiring up to 10A of power in a small space envelope. Featuring an extended rear potting wall for additional strain relief, the housings are clearly marked with a "position 1" identifier. Housings are manufactured from Halogen and Red Phosphorus-free glass-filled thermoplastic and all M300 connector assemblies are RoHS compliant.

Features

- Up to 5 and up to 10 Amp versions
- Extremes of temperature -65 to +175°C
- Scoop-proof female contacts help prevent damage in blind-mating conditions
- Up to 1,000 operations

Keyway polarization points

3 polarizing points on each component prevent mis-mating.



Jackscrew retention system

Optional Jackscrews for security of connection.



Potting Wall

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



Four Finger Beryllium Copper Contact

Unique high-reliability contact design ensures signal integrity under extremes of bump, vibration and shock.



No. 1 Position identified

Housings are clearly marked with identifier for fast visual inspection.



Environmentally Friendly Materials

Moldings are manufactured from halogen & Red Phosphorus free, glass-filled thermoplastic, an environmentally friendly material. All M300 connectors are RoHS compliant.



Pin Numbering

SINGLE ROW	DOUBLE ROW

M300 Connectors Specifications

Materials

Housings:	Glass Filled Thermoplastic UL94V-0
Female contacts:	Beryllium Copper Contact Clip, Brass Shell
Male contacts:	Brass
Contact finish	Gold
Male contacts:	Brass
Jackscrew hardware:	Stainless Steel

Electrical

Current

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)

Working voltage

(at sea level, 913/1050mb):	600V min DC or AC peak
(at altitude 21,336m/ 70,000ft, 44mb):	150V min DC or AC peak

Voltage proof

(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

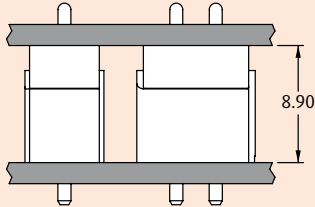
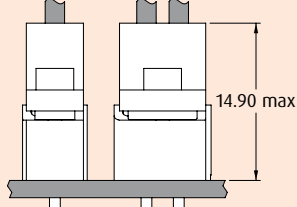
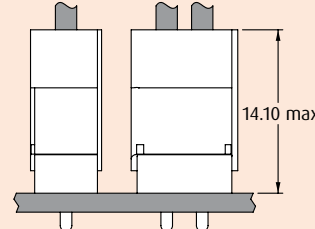
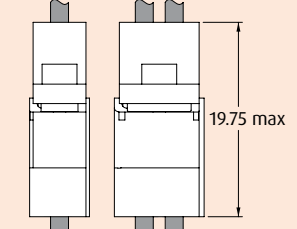
Mechanical

Durability:	1000 operations
Mating forces (per contact pair)	
Insertion force:	9N max
Withdrawal force:	1N min
Contact retention in housing	
Cable contact:	15N min
PC-Tail contact:	5N min
Signal crimp accommodation:	18 AWG to 22 AWG 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 ² (20G), 12 hours
Bump severity:	390m/s ² (40G), 4000 bumps
Shock severity:	981m/s ² (100G), 6ms
Acceleration severity:	490m/s ² (50G)

Mating Profiles

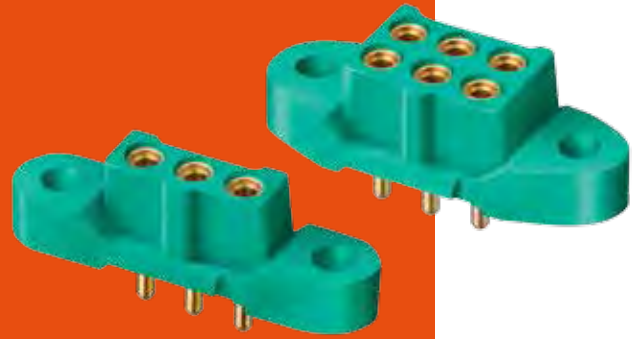
		FEMALE	
		VERTICAL PC TAIL	CABLE
MALE	VERTICAL PC TAIL		
	CABLE		

All dimensions in mm.

M300 Connectors

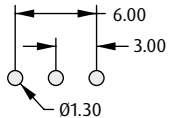
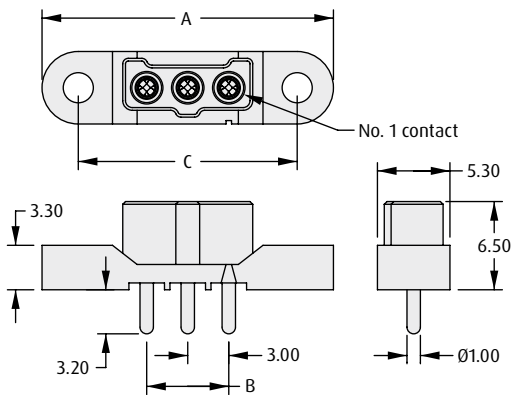
Female PC Tail

- ❖ 4-finger Beryllium Copper contact.
- ❖ Positive keyway polarisation 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.



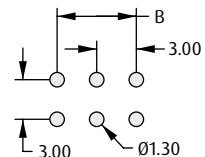
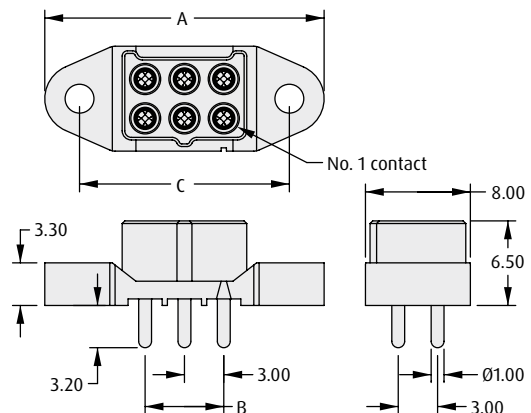
M300

SINGLE ROW



Recommended PC Board Pattern

DOUBLE ROW



Recommended PC Board Pattern

CALCULATION

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

HOW TO ORDER

M300 - F VX XX 45 00

SERIES CODE

GENDER

F Female

TYPE

V1 Single Row
V3 Double Row

TYPE

00 No Jackscrew

FINISH

45 Gold

TOTAL NO. OF CONTACTS

03 Single Row
06, 10 Double Row

All dimensions in mm.

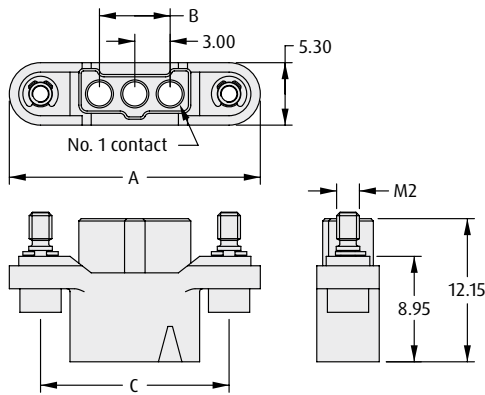
M300 Connectors

Female Cable Connector Housings

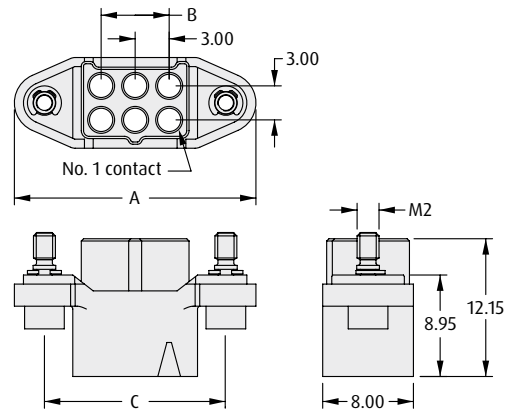
- ❖ 3 polarising points on each housing to prevent mis-mating.
- ❖ Features potting wall for extra security.
- ❖ No. 1 position identified on moulding.
- ❖ Scoop-proof contacts.
- ❖ 10A current capacity, resists high vibration and shock.
- ❖ Withstands extremes of temperature: -65°C to +175°C.



SINGLE ROW



DOUBLE ROW



CALCULATION

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

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.

HOW TO ORDER

M300 - 22X XX 96 F2

SERIES CODE

TYPE

224	Double Row
225	Single Row

TOTAL NO. OF CONTACTS

03	Single Row
06, 10	Double Row

FIXING

F2	Hex Socket Jackscrew
-----------	----------------------

FINISH

96	Housing
-----------	---------

All dimensions in mm.

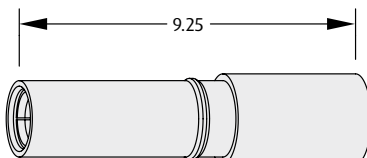
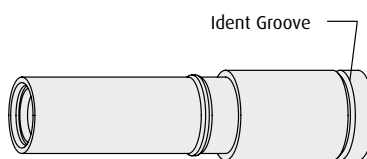
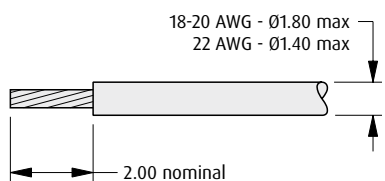
M300 Connectors

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.



M300

CONTACTS		WIRE STRIPPING DETAILS							
18-20 AWG  22 AWG 									
TOOLS									
Recommended Crimp Tool – M22520/2-01 Positioner – Z80-058 Contact Insertion/Removal Tool – Z300-902		❖ Female crimp housings shown on previous page. ❖ Instruction sheets available at www.harwin.com/instructions.							
HOW TO ORDER									
M300 - 00X 00 45									
SERIES CODE		FINISH							
TYPE <table><tr><td>001</td><td>18-20 AWG crimp contact</td></tr><tr><td>002</td><td>22 AWG crimp contact</td></tr></table>		001	18-20 AWG crimp contact	002	22 AWG crimp contact	<table><tr><td>45</td><td>Gold</td></tr></table>		45	Gold
001	18-20 AWG crimp contact								
002	22 AWG crimp contact								
45	Gold								

All dimensions in mm.

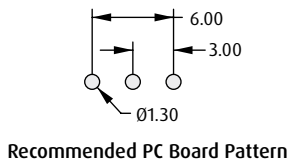
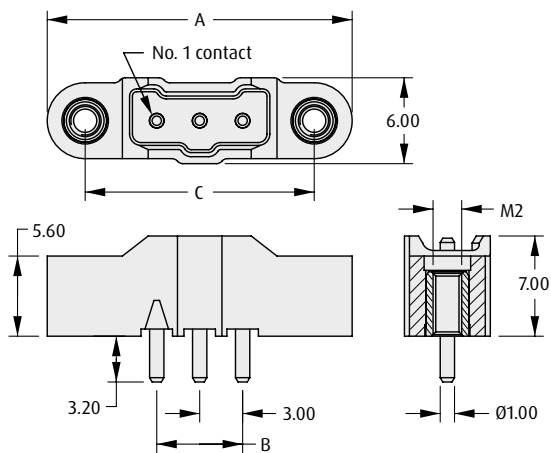
M300 Connectors

Male PC Tail

- 10A current capacity, resists high vibration and shock.
- Withstands extremes of temperature: -65°C to +175°C.



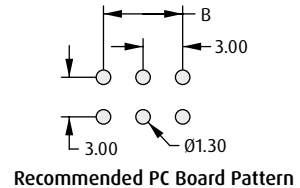
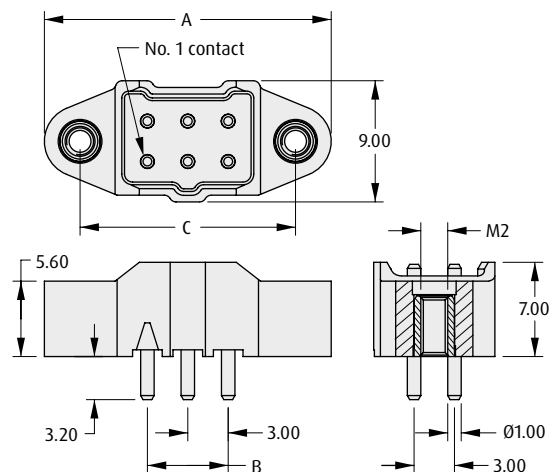
SINGLE ROW



CALCULATION

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

DOUBLE ROW



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

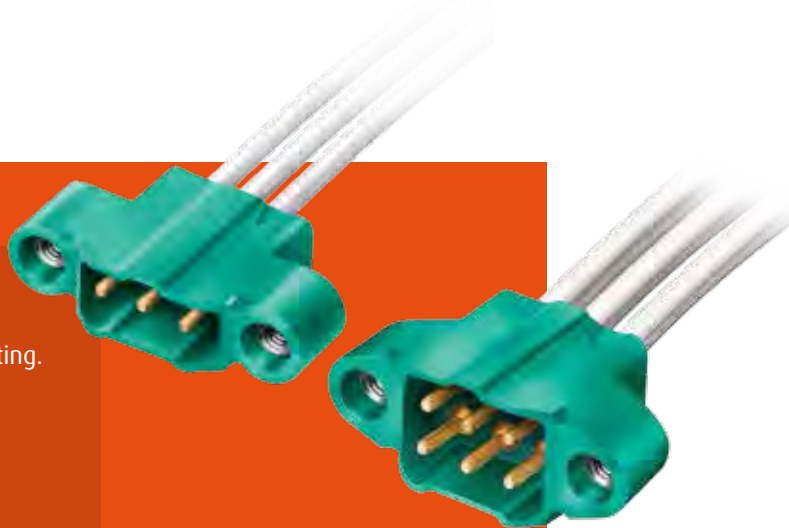
03 Single Row
06, 10 Double Row

All dimensions in mm.

M300 Connectors

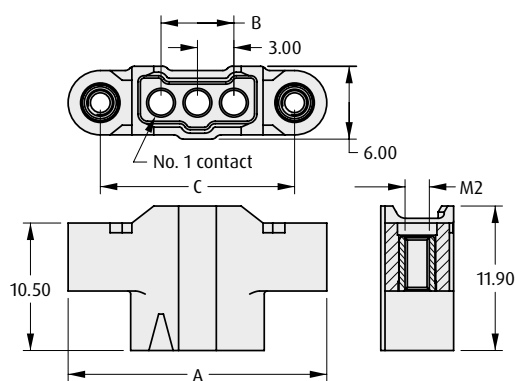
Male Cable Connector Housings

- ❖ Features potting wall for extra security.
- ❖ No. 1 position identified on moulding.
- ❖ 3 polarising 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.

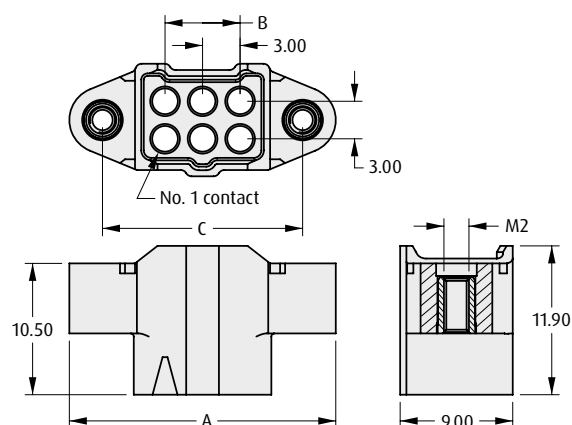


M300

SINGLE ROW



DOUBLE ROW



CALCULATION

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

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.

HOW TO ORDER

M300 - 32X XX 96 M1

SERIES CODE

TYPE

324	Double Row
325	Single Row

TOTAL NO. OF CONTACTS

03	Single Row
06, 10	Double Row

TYPE

M1	JackscREW
-----------	-----------

FINISH

96	Housing
-----------	---------

All dimensions in mm.

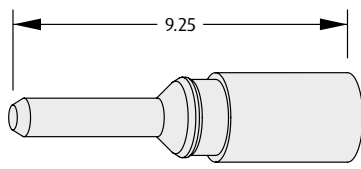
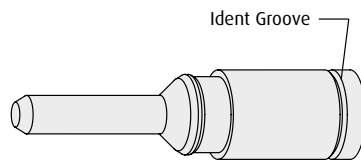
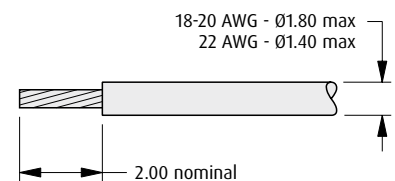
M300 Connectors

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	
18-20 AWG  22 AWG 			
TOOLS			
Recommended Crimp Tool - M22520/2-01 Positioner - Z80-058 Contact Insertion/Removal Tool - Z300-902		❖ Male crimp housings shown on previous page. ❖ Instruction sheets available at www.harwin.com/instructions.	
HOW TO ORDER			
		M300 - 10X 00 45	
SERIES CODE		FINISH	
TYPE 101 18-20 AWG crimp contact 102 22 AWG crimp contact		45 Gold	

All dimensions in mm.

M300 Connectors Tooling

❖ Instruction sheets can be accessed at 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.  <table> <tr> <th>ORDER CODE</th><th></th></tr> <tr> <td>Hand Crimp Tool</td><td>M22520/2-01</td></tr> <tr> <td>Positioner</td><td>Z80-058</td></tr> </table>	ORDER CODE		Hand Crimp Tool	M22520/2-01	Positioner	Z80-058	INSERTION/REMOVAL TOOL ❖ For inserting and removing crimped contacts into the rear of mouldings. ❖ Instruction sheet available.  <table> <tr> <th>ORDER CODE</th><th></th></tr> <tr> <td></td><td>Z300-902</td></tr> </table>	ORDER CODE			Z300-902
ORDER CODE											
Hand Crimp Tool	M22520/2-01										
Positioner	Z80-058										
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.  <table> <tr> <th>ORDER CODE</th><th></th></tr> <tr> <td></td><td>Z9951-00</td></tr> </table>	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.  <table> <tr> <th>ORDER CODE</th><th></th></tr> <tr> <td></td><td>Z9953-00</td></tr> </table>	ORDER CODE			Z9953-00		
ORDER CODE											
	Z9951-00										
ORDER CODE											
	Z9953-00										

All dimensions in mm.

Datamate

Contents

Introduction

Jackscrew 2.00/4.00mm pitch Mixed Technology Series

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- Specifications
- Mating Profiles
- Female PCB Connectors
- Female Cable Connectors
- Female Cable Assemblies
- Male PCB Connectors
- Male Cable Connectors

Tooling



Datamate Introduction

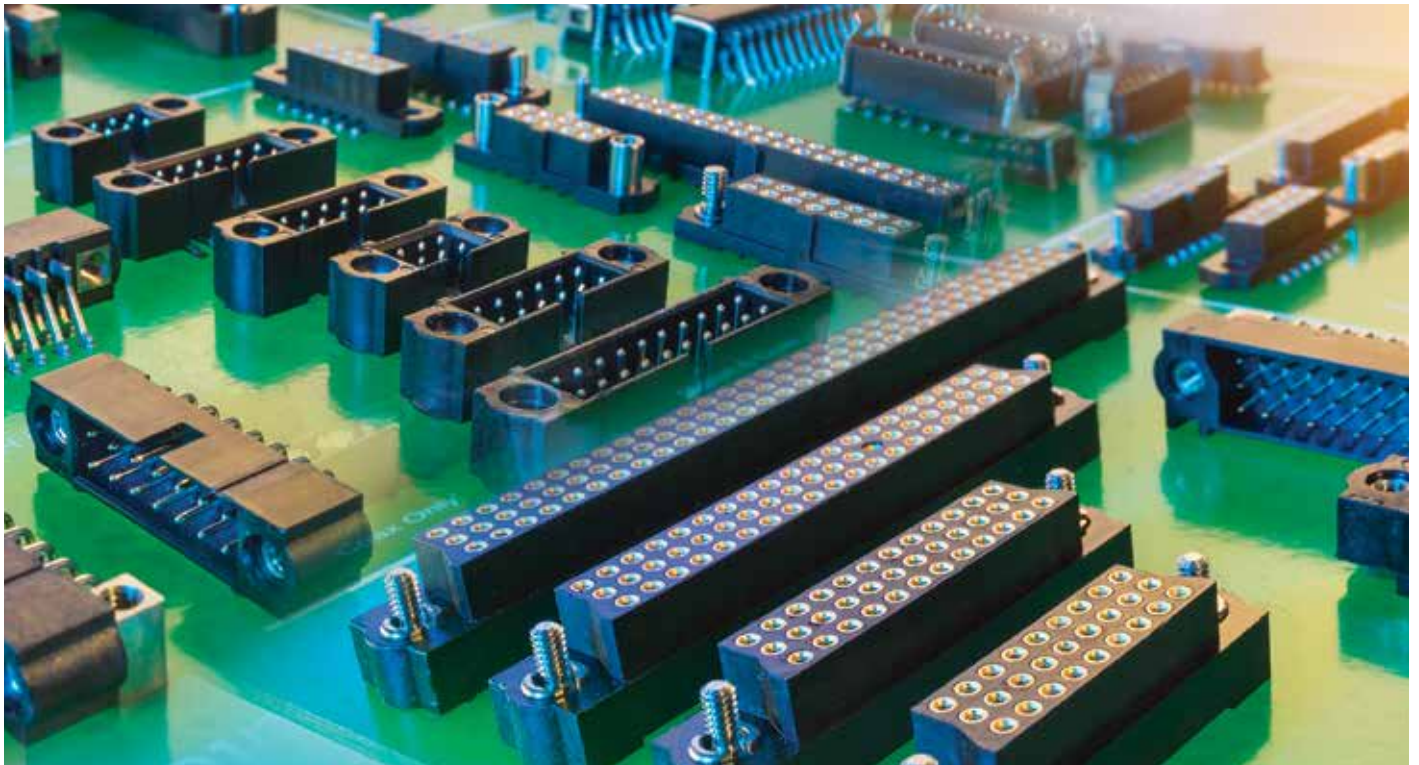
Performance without compromise

Datamate is a 2mm pitch High-Reliability, high performance connector range from Harwin. Approved to British Standard 9525-F0033, the range has a proven track record for performance under extreme conditions.

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 - 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.



Polarisation

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



Rugged construction

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



British Standard Specification connections

Approved to BS9525-F0033, complies with CECC 75101-008.



Field proven across the globe

Proven history in aerospace, industrial, defense, oil & gas, etc. Stocked in depth across a global distribution network.

Quality Customer Support

Live Help, 3D CAD models and evaluation samples all available - click on www.harwin.com/datamate.



Datamate - Product Families

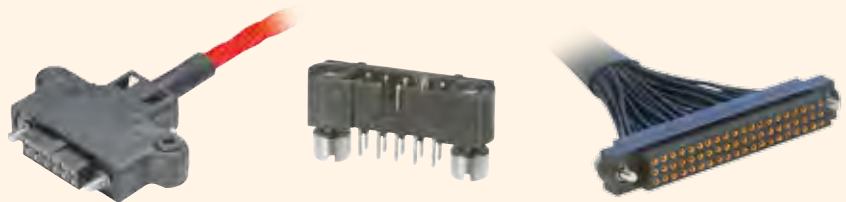
Datamate Mix-Tek

3 connector styles in one. Includes low frequency signal, power (20A), high power (40A) and coax (6GHz) options. A stocked range of coax-only, power-only, high power-only, or mixed power and signal connectors, ideal for COTS requirements.



Datamate J-Tek

Datamate low frequency connectors with a variety of optional Jackscrews for increased security of connection. Includes 2-row and 3-row configurations.



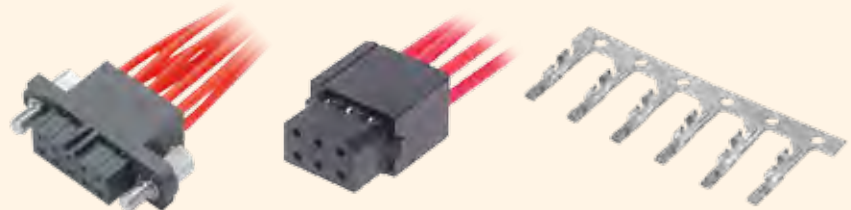
Datamate 101 Lok

101Lok hardware reduces assembly time by simplifying the mating process. The fast mate hardware requires 101-degree turn to securely mate and requires no special tooling.



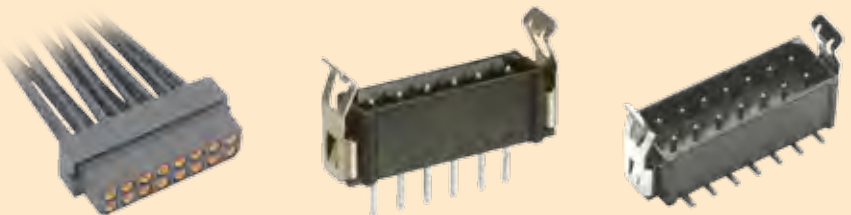
Datamate Trio-Tek

Performing to the same high-reliability standards as conventional Datamate, the Trio-Tek open barrel crimp contact automates the crimp process to significantly save on assembly time and reduce process costs.



Datamate L-Tek

Datamate low frequency connectors with 3 flexible mating options: friction latch, locking latch and no latch. Includes 1-row and 2-row configurations.



Datamate Mix-Tek Specification

✦ Materials

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

✦ Electrical

Current	
Individual contacts in isolation:	3.3A max (at 25°C) 2.6A max (at 85°C)
All contacts simultaneously:	3.0A max (at 25°C) 2.2A max (at 85°C)
Working voltage	
At sea level 1013 mbar:	800V DC or AC _{rms}
Voltage proof	
At sea level 1013 mbar:	1,200V DC or AC _{rms}
Contact resistance	
Initial:	20mΩ max
After conditioning:	25mΩ max
Insulation resistance	
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 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 ² (10G), duration 6h
*Bump severity:	390m/s ² (40G), 4000 ±10 bumps
*Shock severity:	981m/s ² (100G) for 6ms
*Acceleration severity:	490m/s ² (50G)

* Tested with connectors with Jackscrews.

Power Contacts

✦ Materials

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

✦ Electrical

Current (in isolation)	
32x, 33x:	20A max
PFX, PMx:	40A nominal, up to 80A max
Contact resistance:	6mΩ max

✦ Mechanical

Insertion force (max)	
32x, 33x:	8N
PFX, PMx:	15N
Withdrawal force (min):	0.5N
Contact replacement in connector:	
	5 times
Power contact accommodation	
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

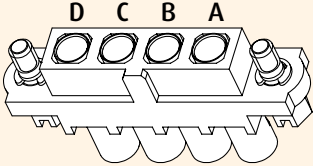
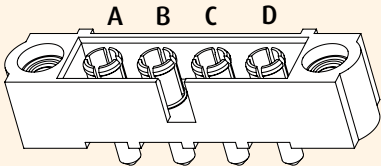
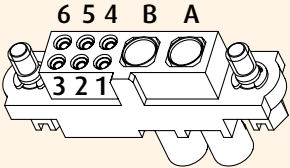
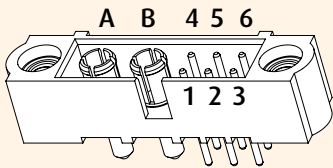
✦ Electrical

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 _{rms}
Contact resistance:	6mΩ max
Insulation resistance:	10 ⁶ MΩ at 250V AC _{rms}

✦ Mechanical

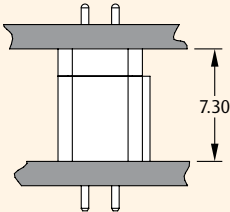
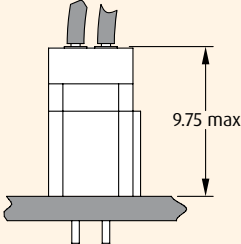
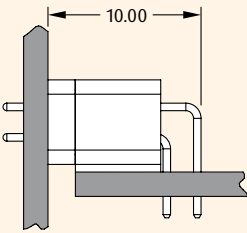
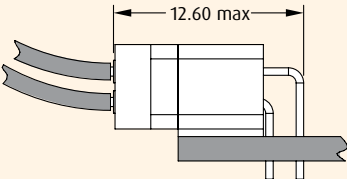
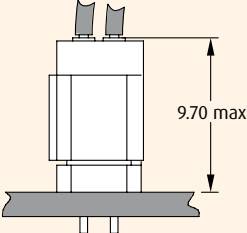
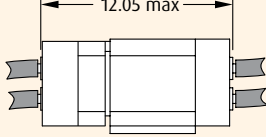
Insertion force (max):	8N
Withdrawal force (min):	0.5N
Contact replacement in connector:	
	5 times

Datamate Mix-Tek Pin Numbering

	FEMALE	MALE
POWER OR COAX ONLY		
SIGNAL AND POWER		

DATAMATE MIX-TEK

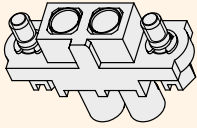
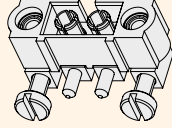
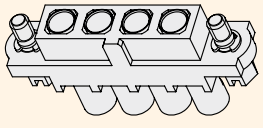
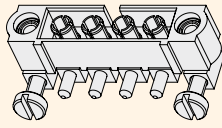
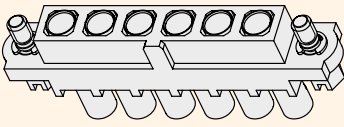
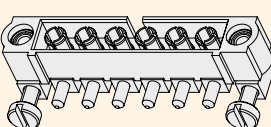
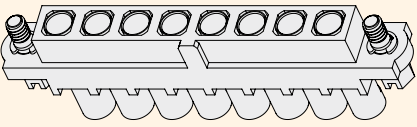
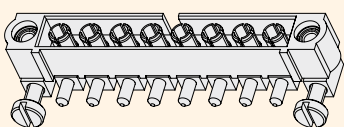
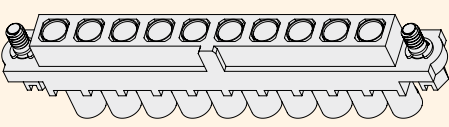
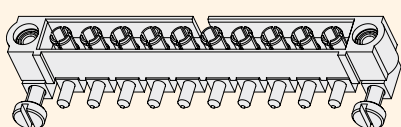
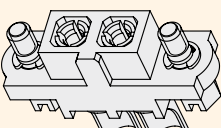
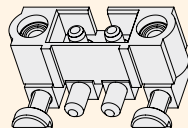
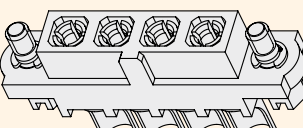
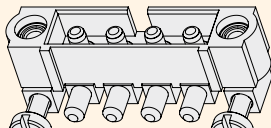
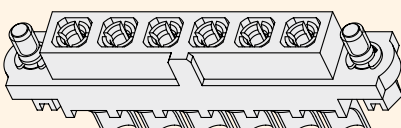
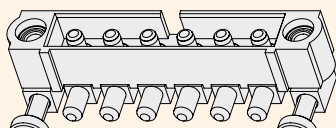
Mating Profiles

		FEMALE	
		VERTICAL PC TAIL	CRIMP
MALE	VERTICAL PC TAIL		
	HORIZONTAL PC TAIL		
	CRIMP		

All dimensions in mm.

Datamate Power Connectors

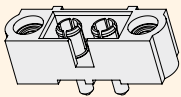
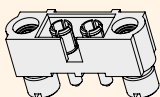
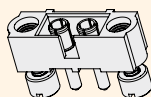
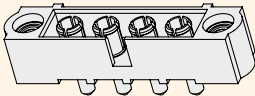
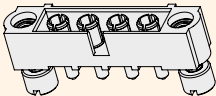
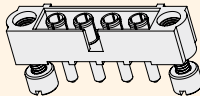
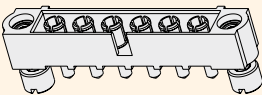
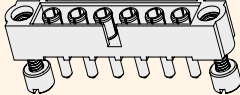
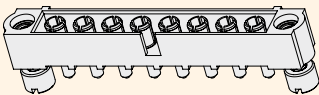
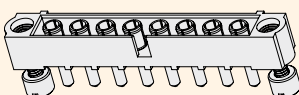
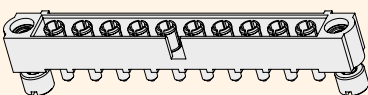
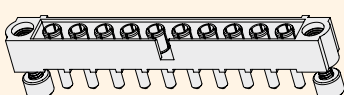
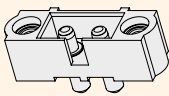
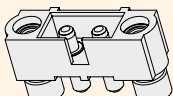
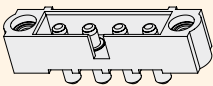
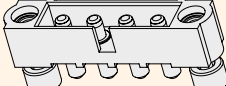
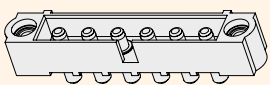
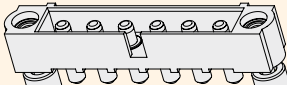
- Standard high-reliability connectors fitted with power contacts on 4mm pitch.

		TYPE	
		Female Cable - Hex Slotted Jackscrews	Male Horizontal 3.5mm PC Tail - 5mm Board Mount Jackcrew
TOTAL NO. OF CONTACTS	2 Power	 M80-4000000F1-02-325-00-000	 M80-5000000M5-02-333-00-000
	4 Power	 M80-4000000F1-04-325-00-000	 M80-5000000M5-04-333-00-000
	6 Power	 M80-4000000F1-06-325-00-000	 M80-5000000M5-06-333-00-000
	8 Power	 M80-4000000F1-08-325-00-000	 M80-5000000M5-08-333-00-000
	10 Power	 M80-4000000F1-10-325-00-000	 M80-5000000M5-10-333-00-000
	2 High Power	 M80-4000000F1-02-PF5-00-000	 M80-5000000M5-02-PM3-00-000
	4 High Power	 M80-4000000F1-04-PF5-00-000	 M80-5000000M5-04-PM3-00-000
	6 High Power	 M80-4000000F1-06-PF5-00-000	 M80-5000000M5-06-PM3-00-000

All dimensions in mm.

Datamate Power Connectors

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

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

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.
- ❖ Polarised mouldings.
- ❖ Standard Power contacts rated to 20A, High Power to 40A.



POWER CONTACTS ONLY		CALCULATION		SPARE SOLDER CONTACTS	
Standard Power (12 AWG)		A	B + 14		Standard Power (12 AWG)
		B	(No. of Power contacts - 1) x 4		
		C	B + 9		
High Power (10 AWG)				High Power (10 AWG)	
TOOLS		WIRE STRIPPING DETAILS			
Contact Removal Tool – Z80-290 ❖ 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				JACKSCREW	
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

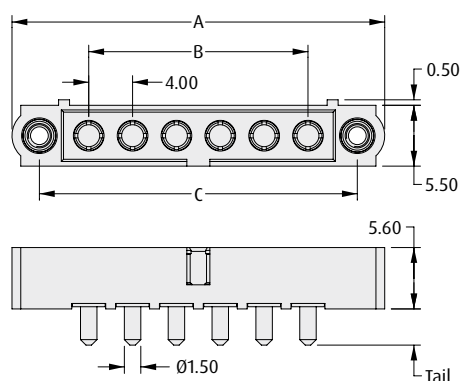
Male Vertical PC Tail

- ❖ 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.

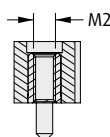


DATAMATE POWER

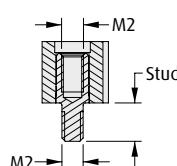
STANDARD POWER



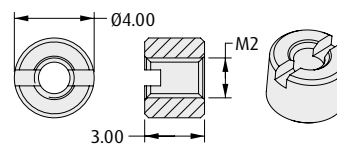
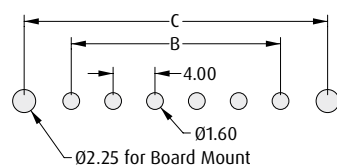
Jack screw fixing



Jack screw with Board Mount



Recommended PC Board Pattern

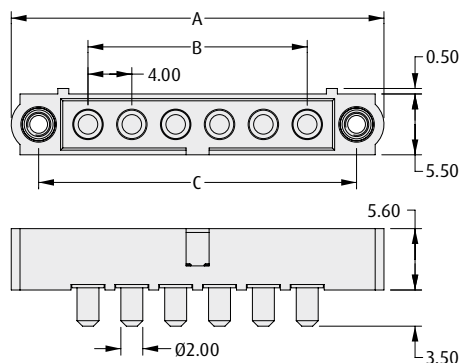


Board Mount Nut, 2 per connector

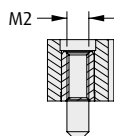
CALCULATION

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

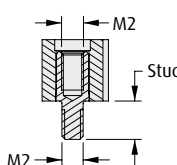
HIGH POWER



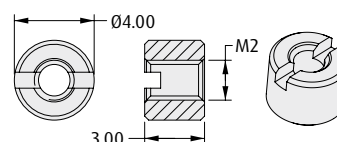
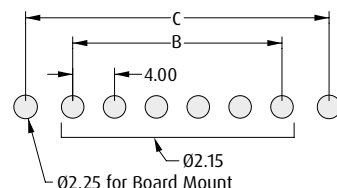
Jack screw fixing



Jack screw with Board Mount



Recommended PC Board Pattern



Board Mount Nut, 2 per connector

HOW TO ORDER

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

JACKSCREW

M1	Jack screw only
M2	With 3.5mm Board Mount stud
M3	With 5mm Board Mount stud

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

NO. OF POWER CONTACTS

02, 04	Standard Power (M1 Jack screws)
02, 04, 06, 08, 10	Standard Power (M2/M3 Jack screws)
02, 04, 06	High Power (M1/M2 Jack screws)

POWER CONTACTS PART NO.

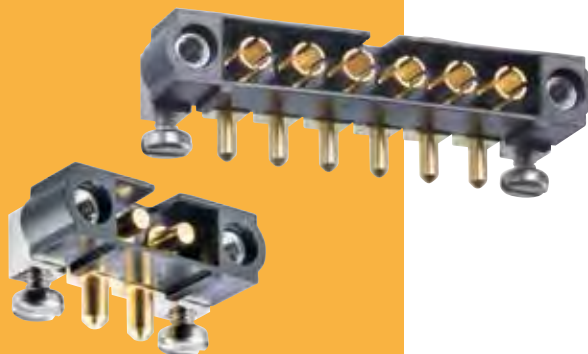
331	3.5mm Tail Standard Power
332	5mm Tail Standard Power
PM1	3.5mm Tail High Power

All dimensions in mm.

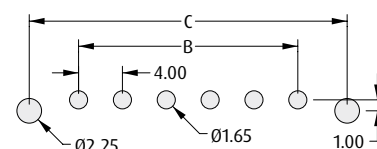
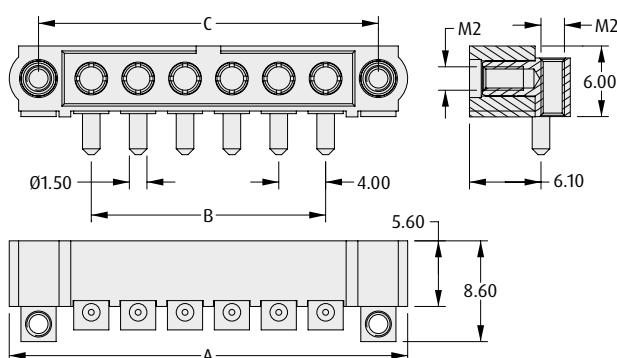
Datamate Power Connectors

Male Horizontal PC Tail

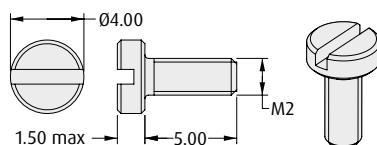
- Choice to suit two PCB thicknesses and two stud lengths.
- Standard Power contacts rated to 20A.
- High Power rated to 40A nominal, up to 80A max.



STANDARD POWER



Recommended PC Board Pattern

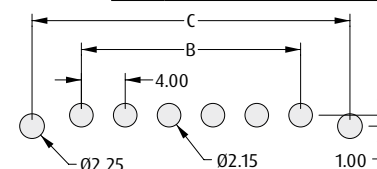
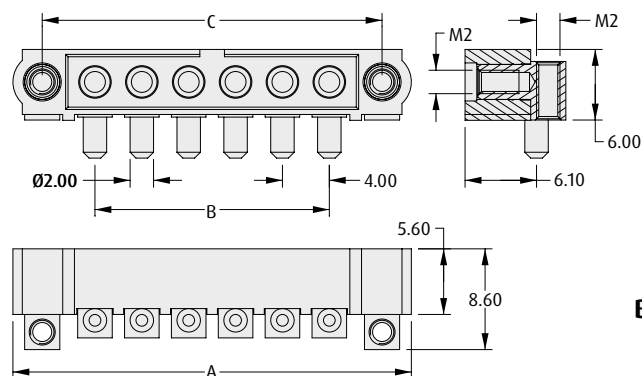


Board Mount Bolt,
2 per connector

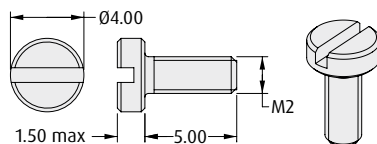
CALCULATION

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

HIGH POWER



Recommended PC Board Pattern



Board Mount Bolt,
2 per connector

HOW TO ORDER

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

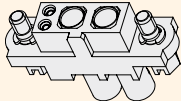
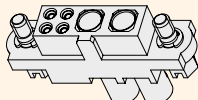
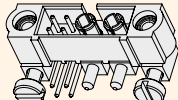
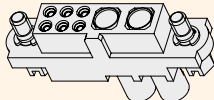
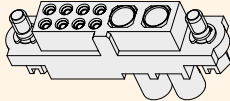
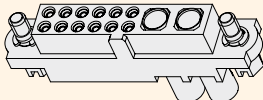
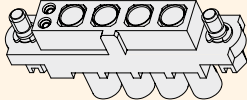
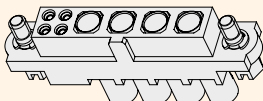
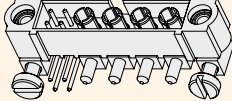
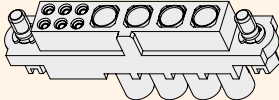
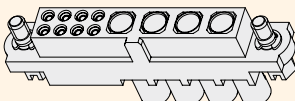
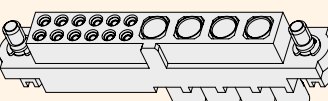
NO. OF POWER CONTACTS	
02, 04, 06, 08, 10	Standard Power
02, 04, 06,	High Power

POWER CONTACTS PART NO.	
333	3.5mm Tail Standard Power
PM3	3.5mm Tail High Power

All dimensions in mm.

Datamate Power/Signal Connectors

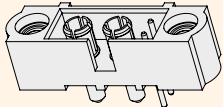
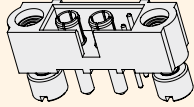
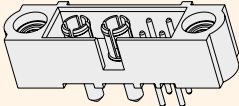
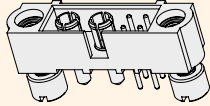
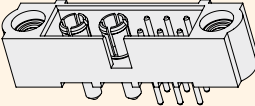
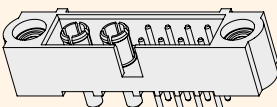
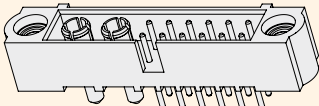
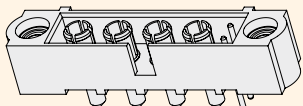
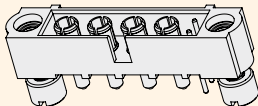
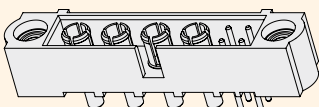
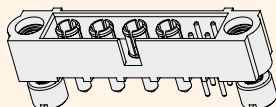
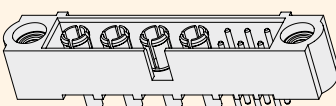
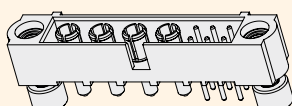
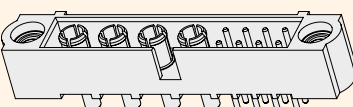
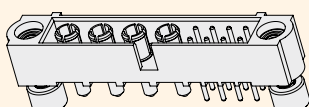
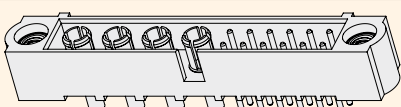
- Standard high-reliability connectors fitted with a combination of signal and 20A power contacts.

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

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

All dimensions in mm.

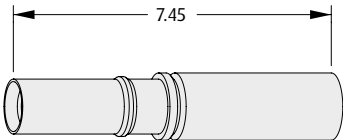
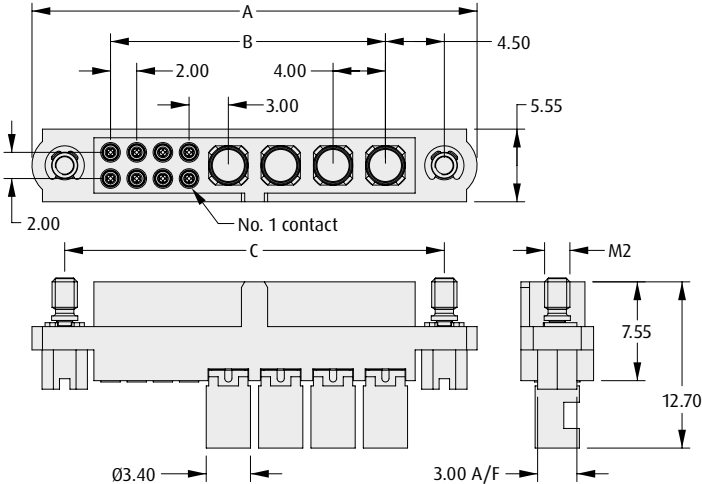
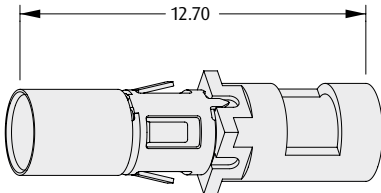
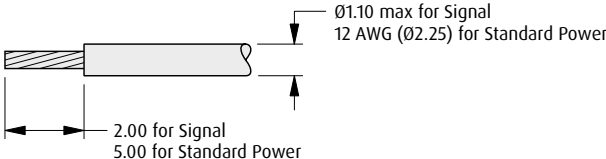
Datamate Power/Signal Connectors

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.
- ❖ Polarised mouldings.
- ❖ Standard Power contacts rated to 20A, signal to 3A.



DATAMATE POWER/SIGNAL

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

All dimensions in mm.

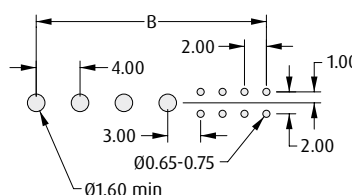
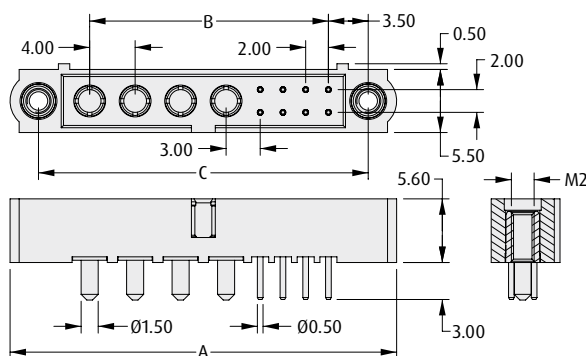
Datamate Power/Signal Connectors

Male Power/Signal Vertical PC Tail

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



JACKSCREW ONLY

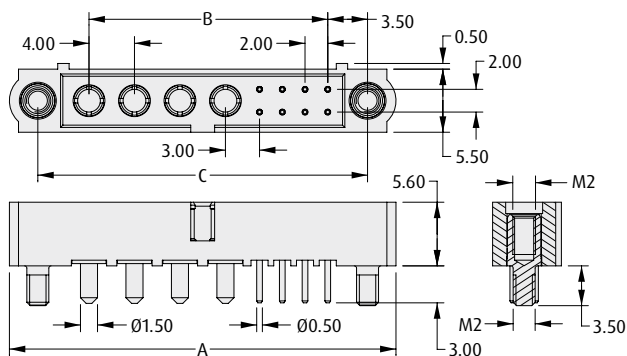


Recommended PC Board Pattern

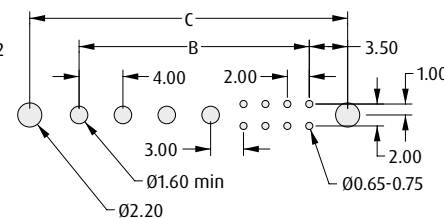
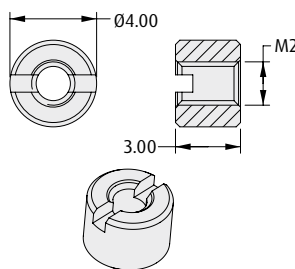
CALCULATION

A	$B + 13$
B	(No. of Power contacts - 1) x 4 + Total no. of Signal contacts + 1
C	$B + 8$

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

M1	Jackscrew only
M2	With 3.5mm Board Mount stud

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

All dimensions in mm.

Datamate Power/Signal Connectors

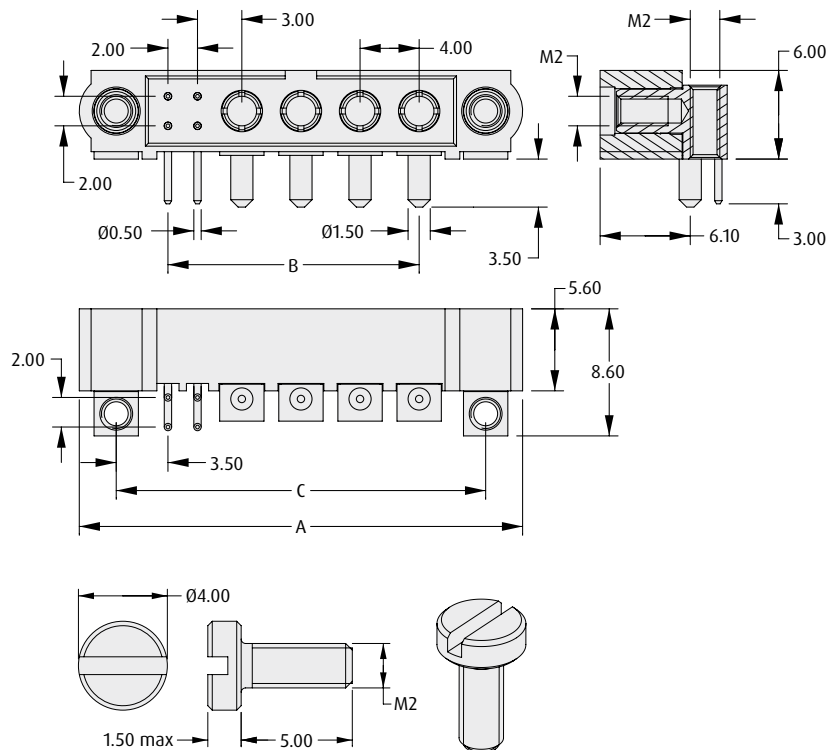
Male Power/Signal Horizontal PC Tail

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



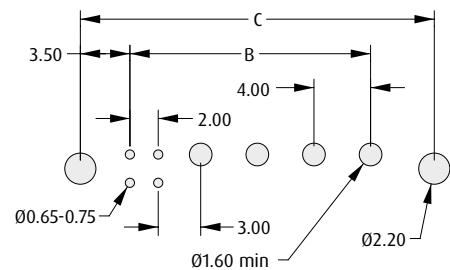
DATAMATE POWER/SIGNAL

SIGNAL AND POWER



CALCULATION

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



Recommended PC Board Pattern

Board Mount Bolt, 2 per connector

HOW TO ORDER

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

NO. OF SIGNAL CONTACTS

04

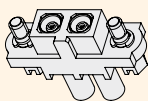
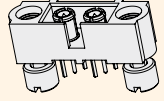
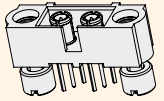
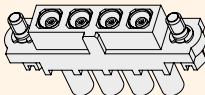
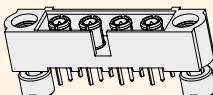
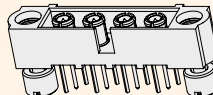
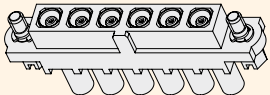
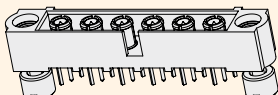
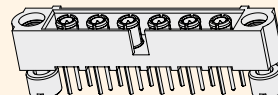
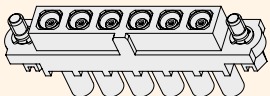
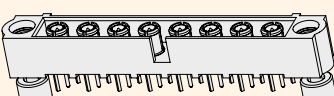
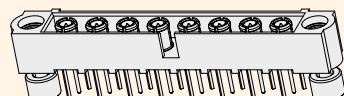
NO. OF POWER CONTACTS

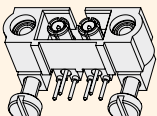
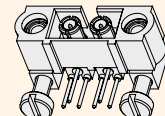
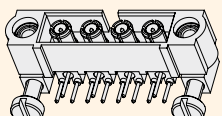
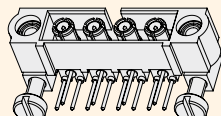
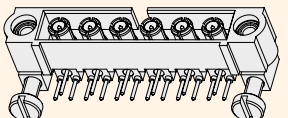
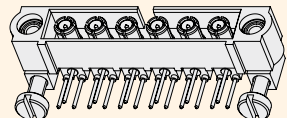
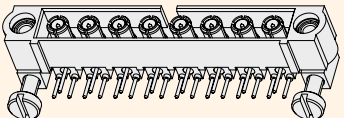
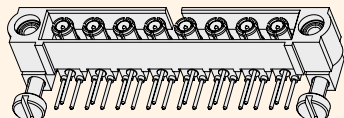
02, 04

All dimensions in mm.

Datamate Coax Connectors

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

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

		TYPE	
		Male Horizontal 3mm PC Tail - 5mm Board Mount Jackcrew	Male Horizontal 4.5mm PC Tail - 5mm Board Mount Jackcrew
TOTAL NO. OF CONTACTS	2 Coax	 M80-MH313M5-02	 M80-MH314M5-02
	4 Coax	 M80-MH313M5-04	 M80-MH314M5-04
	6 Coax	 M80-MH313M5-06	 M80-MH314M5-06
	8 Coax	 M80-MH313M5-08	 M80-MH314M5-08

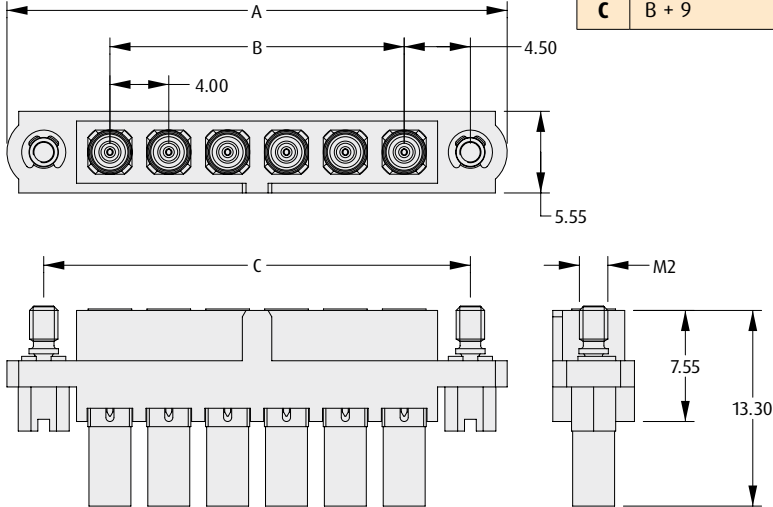
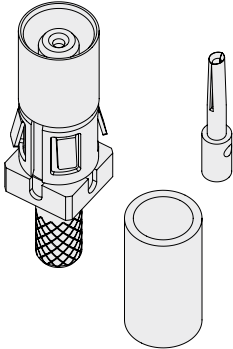
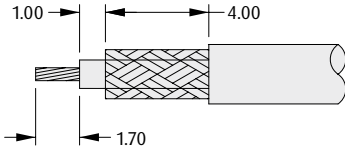
Datamate Coax Connectors

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.
- ❖ Polarised mouldings.
- ❖ Hexagonal slotted jackscrew style.



DATAMATE COAX

CABLE		CALCULATION		SPARE COAX CONTACTS	
		A	B + 14		
		B	(No. of Coax contacts - 1) x 4		
		C	B + 9		
				ORDER CODE M80-305	
TOOLS		WIRE STRIPPING DETAILS			
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.					
HOW TO ORDER					
M80 - FC 305 F1 - XX					
COAX CONTACT TYPE 305Ø2.00mm cable				NO. OF COAX CONTACTS 02, 04, 06, 08	

All dimensions in mm.

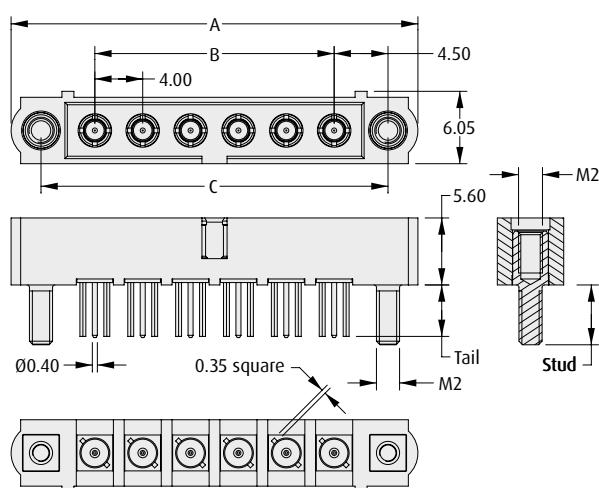
Datamate Coax Connectors

Plug (Male) Vertical PC Tail

- ❑ 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.

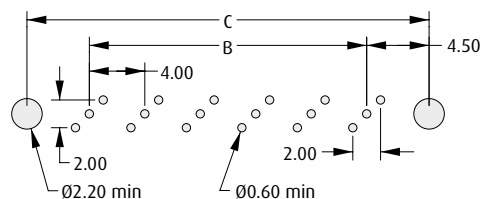


VERTICAL



CALCULATION

A	B + 14
B	(No. of Coax contacts - 1) x 4
C	B + 9



Recommended PCB Board Pattern

HOW TO ORDER

M80 - MV 3XX MX - XX

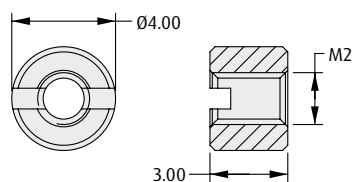
TYPE	
311M2	3mm Tail with 3.5mm Board Mount Stud
312M3	4.5mm Tail with 5mm Board Mount Stud

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

REQUIRED HARDWARE

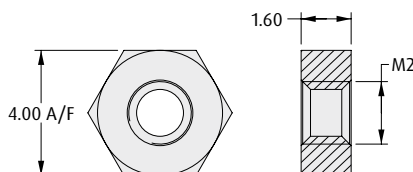
Order separately from connector

Slotted Board Mount Nut



ORDER CODE
M80-2130000B

Hexagonal Board Mount Nut



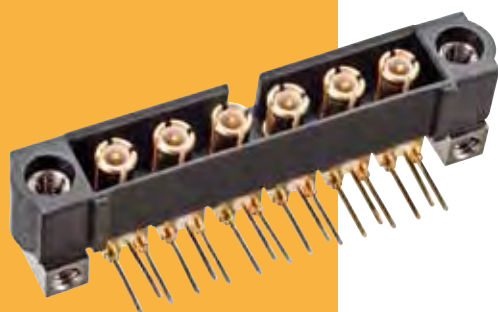
ORDER CODE
M80-2430000B

All dimensions in mm.

Datamate Coax Connectors

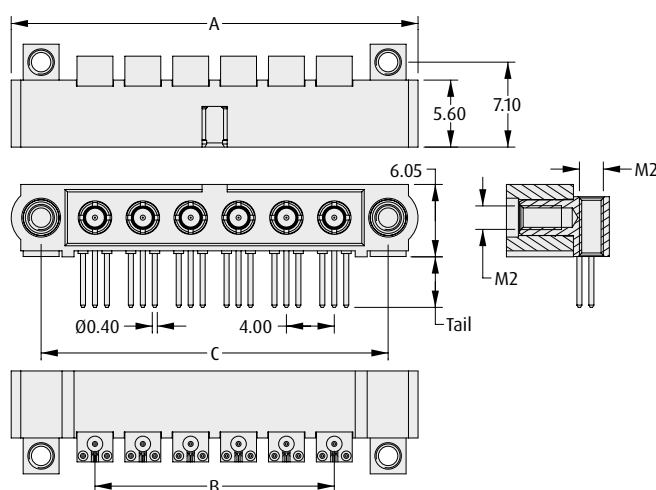
Plug (Male) Horizontal PC Tail

- ❖ 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.



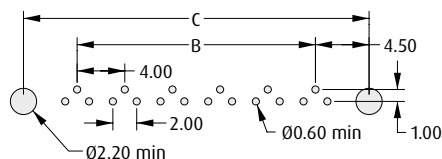
DATAMATE COAX

HORIZONTAL



CALCULATION

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



Recommended PCB Board Pattern

HOW TO ORDER

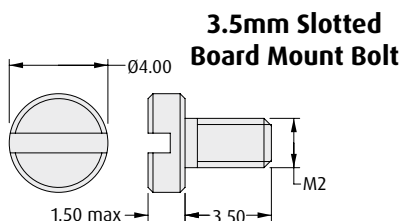
M80 - MH 3XX M5 - XX

TYPE	
313	3mm PC Tail
314	4.5mm PC Tail

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

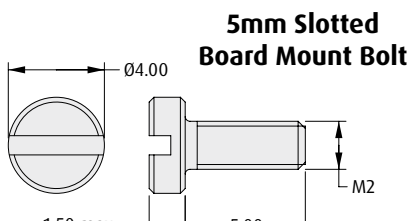
REQUIRED HARDWARE

Order separately from connector



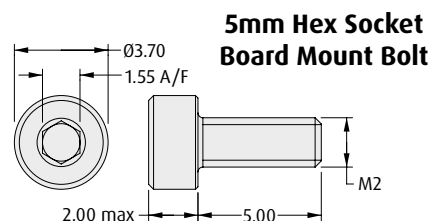
ORDER CODE

M80-2260000B



ORDER CODE

M80-2270000B



ORDER CODE

M80-2320000B

All dimensions in mm.

Datamate J-Tek Specification

Materials

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

Electrical

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

Mechanical

Durability	
Standard J-Tek:	500 operations
Trio-Tek:	400 operations
Insertion force (max):	2.8N
Withdrawal force (min):	0.2N
Signal crimp accommodation:	22 AWG to 32 AWG 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 ² (10G), duration 6h
*Bump severity:	390m/s ² (40G), 4000 ±10 bumps
*Shock severity:	981m/s ² (100G) for 6ms
*Acceleration severity:	490m/s ² (50G)

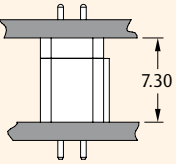
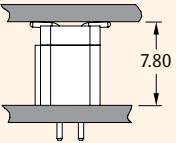
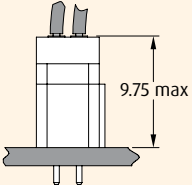
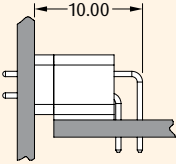
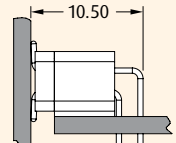
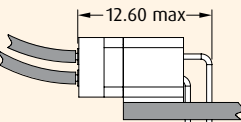
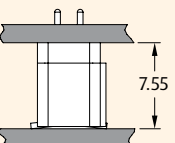
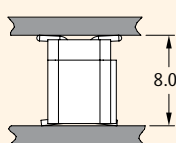
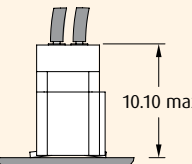
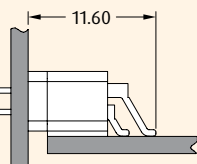
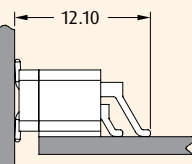
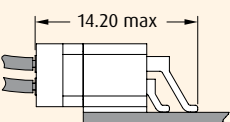
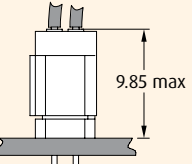
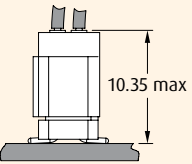
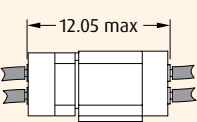
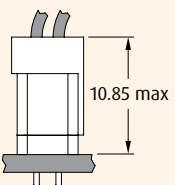
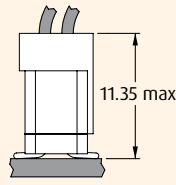
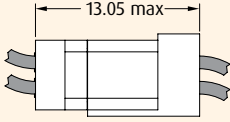
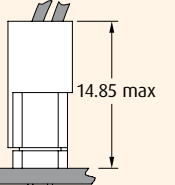
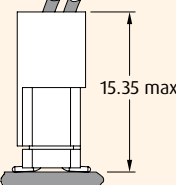
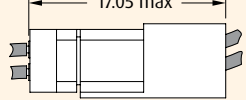
* Tested with connectors with Jackscrews.

Pin Numbering

FEMALE	MALE

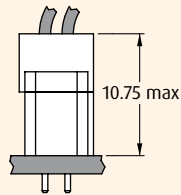
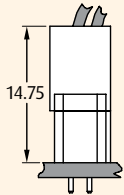
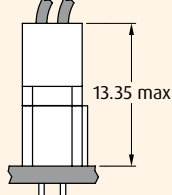
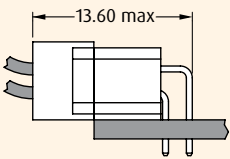
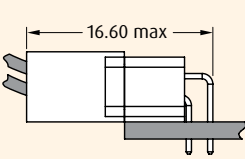
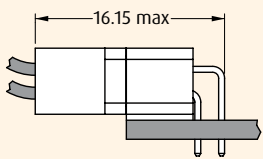
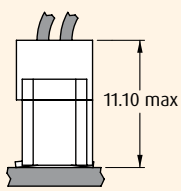
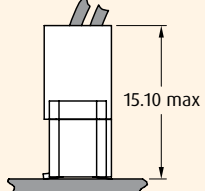
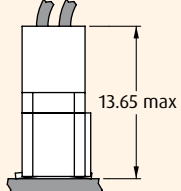
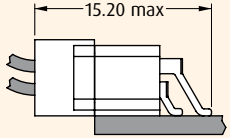
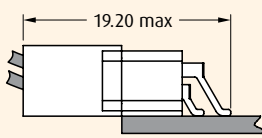
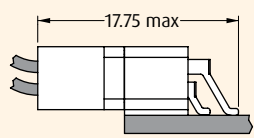
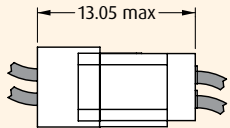
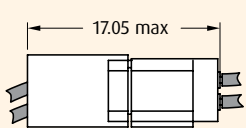
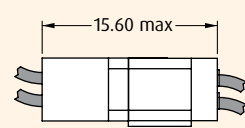
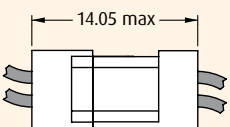
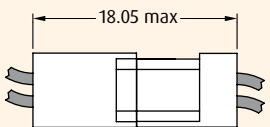
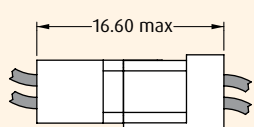
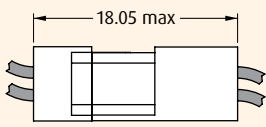
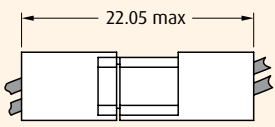
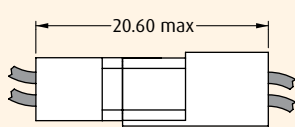
All dimensions in mm.

Datamate J-Tek Mating Profiles

		FEMALE		
		VERTICAL PC TAIL	VERTICAL SMT	CRIMP
MALE	VERTICAL PC TAIL			
	HORIZONTAL PC TAIL			
	VERTICAL SMT			
	HORIZONTAL SMT			
	CRIMP			
	CRIMP 1mm EXTENDED WALL			
	CRIMP 5mm EXTENDED WALL			

All dimensions in mm.

Mating Profiles

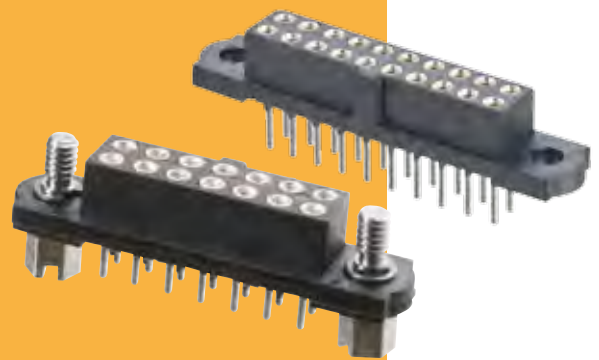
		FEMALE		
		CRIMP 1mm EXTENDED WALL	CRIMP 5mm EXTENDED WALL	CRIMP TRIO-TEK
MALE	VERTICAL PC TAIL			
	HORIZONTAL PC TAIL			
	VERTICAL SMT			
	HORIZONTAL SMT			
	CRIMP			
	CRIMP 1mm EXTENDED WALL			
	CRIMP 5mm EXTENDED WALL			

All dimensions in mm.

Datamate J-Tek Connectors

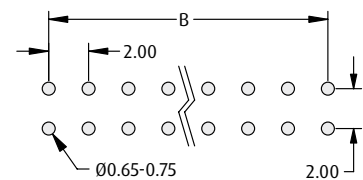
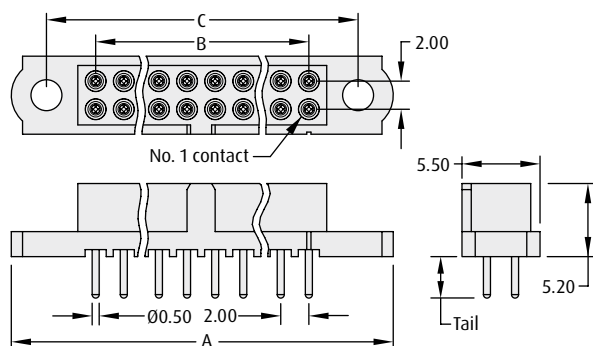
Female Vertical PC Tail

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



DATAMATE J-TEK

WITHOUT JACKSCREWS

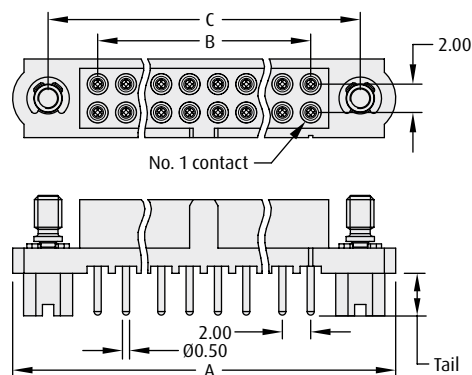


Recommended PC Board Pattern

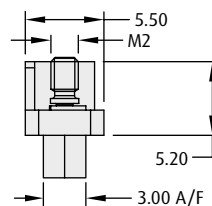
CALCULATION

A	B + 12
B	Total no. of contacts - 2
C	B + 7

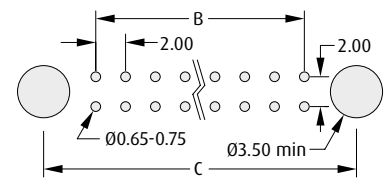
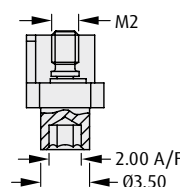
WITH JACKSCREWS



Hex Slotted Jackscrew



Hex Socket Jackscrew



Recommended PC Board Pattern

HOW TO ORDER

M80 - 4 X X XX XX

SERIES CODE

0	With Hex Slotted Jackscrews
1	Without Jackscrews
2	With Hex Socket Jackscrews

0	3mm Tails
1	4.5mm Tails

FINISH

05	Gold
42	Gold + Tin

TOTAL NO. OF CONTACTS

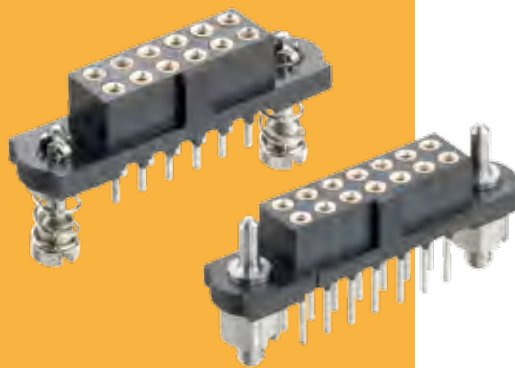
04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50

All dimensions in mm.

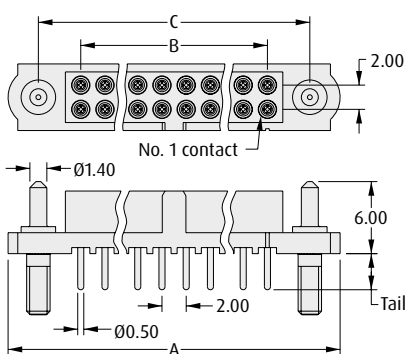
Datamate J-Tek Connectors

Female Vertical PC Tail Guide Pin, 101Lok

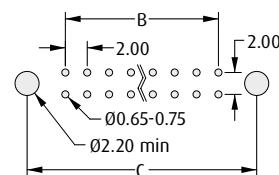
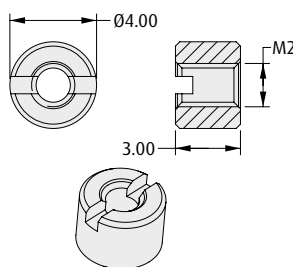
- Guide pin style includes board mount fixing, and mates with Datamate J-Tek male connectors with compatible jackscrows.
- 101Lok fixing gives secure, fast and simple mating; no special tooling required. Just a simple 101-degree turn is required to fix the connectors together.
- 101Lok style mates with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



GUIDE PIN JACKSCREWS



Board Mount Nut, 2 per connector

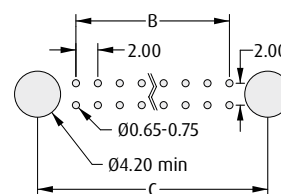
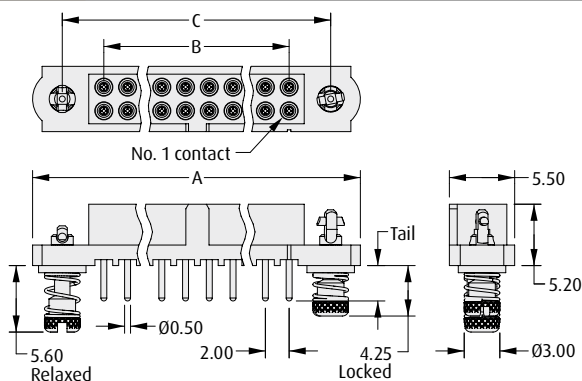


Recommended PC Board Pattern

CALCULATION

A	B + 12
B	Total no. of contacts - 2
C	B + 7

101LOK



Recommended PC Board Pattern

HOW TO ORDER

M80 - 4 TX XX XX FX

SERIES CODE

TYPE

T1	3mm Tails
T2	4.5mm Tails

TOTAL NO. OF CONTACTS

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

JACKSCREW

F3	Guide Pin
FC	101Lok

FINISH

05	Gold
42	Gold + Tin

All dimensions in mm.

Datamate J-Tek Connectors

Female Vertical PC Tail Reverse Fix

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

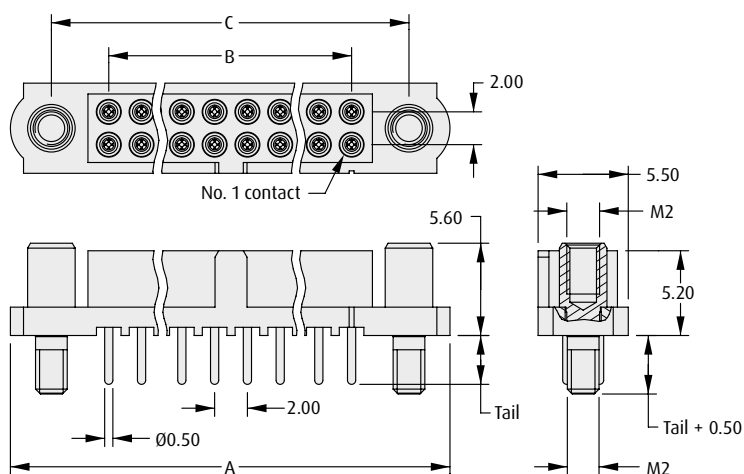


DATAMATE J-TEK

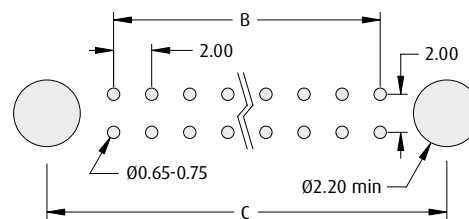
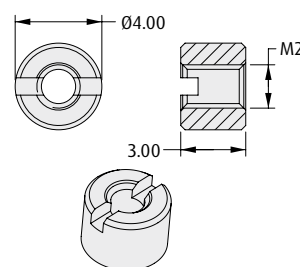
REVERSE FIX

CALCULATION

A	$B + 12$
B	Total no. of contacts - 2
C	$B + 7$



Board Mount Nut, 2 per connector



Recommended PC Board Pattern

HOW TO ORDER

M80 - 40 X XX XX

SERIES CODE

TYPE

5	3mm Tails
6	4.5mm Tails

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.

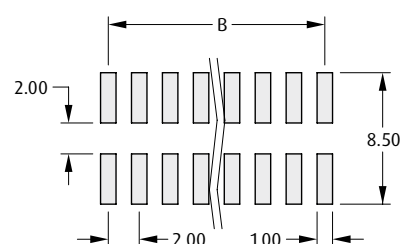
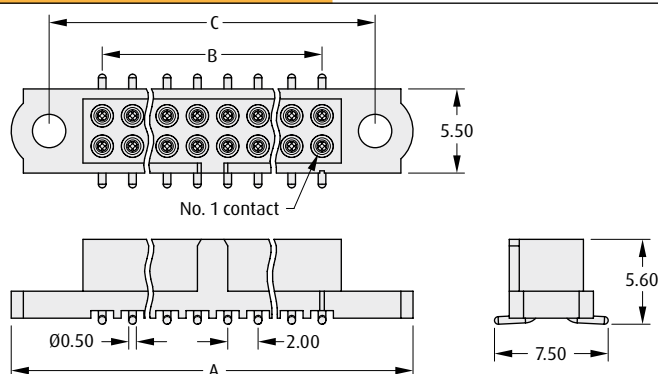
Datamate J-Tek Connectors

Female Vertical Surface Mount

- ❏ Mates with all Datamate J-Tek male connectors with compatible jackscrews.
- ❏ Gull wing SMT tails simplify inspection process.
- ❏ Optional pick and place cap.
- ❏ Contact datamate@harwin.com for tape and reel options.



WITHOUT JACKSCREWS

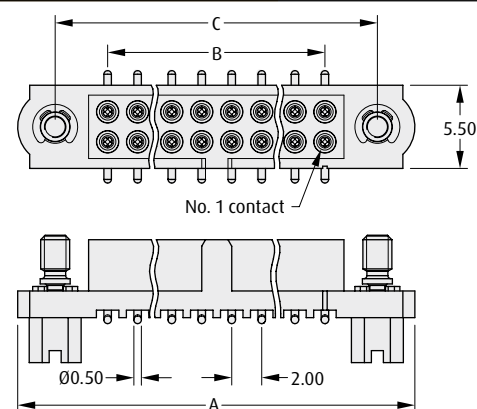


Recommended PC Board Pattern

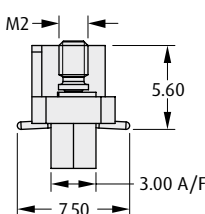
CALCULATION

A	$B + 12$
B	Total no. of contacts - 2
C	$B + 7$

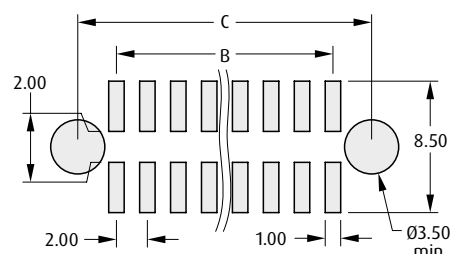
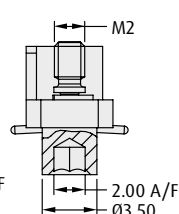
WITH JACKSCREWS



Hex Slotted Jackscrew



Hex Socket Jackscrew



Recommended PC Board Pattern

HOW TO ORDER

M80 - 4 X 2 XX XX P

SERIES CODE

TYPE

0	With Hex Slotted Jackscrews
1	Without Jackscrews
2	With Hex Socket Jackscrews

TOTAL NO. OF CONTACTS

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

PICK AND PLACE CAP

BLANK	No cap
P	Pick and place cap

FINISH

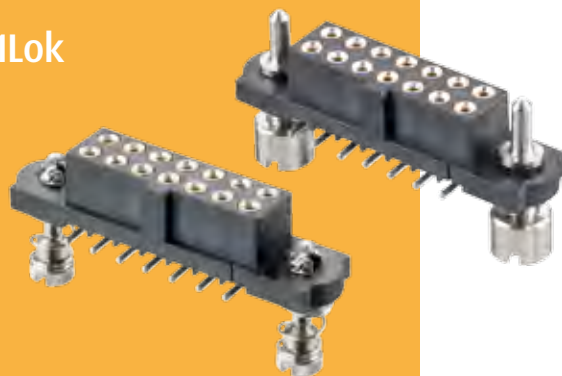
05	Gold
42	Gold + Tin

All dimensions in mm.

Datamate J-Tek Connectors

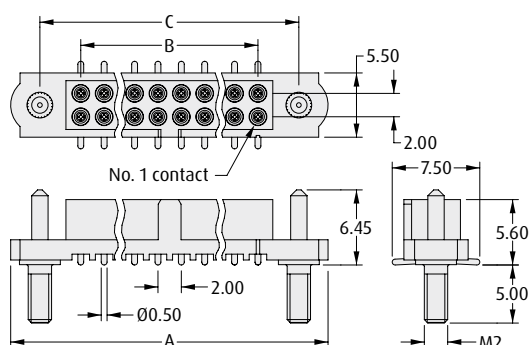
Female Vertical Surface Mount Guide Pin, 101Lok

- ❖ 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.

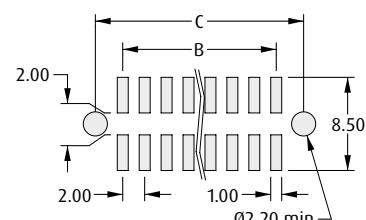
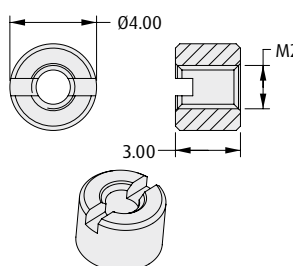


DATAMATE J-TEK

GUIDE PIN JACKSCREWS



Board Mount Nut, 2 per connector

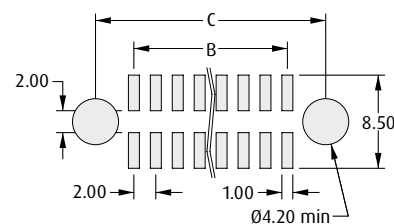
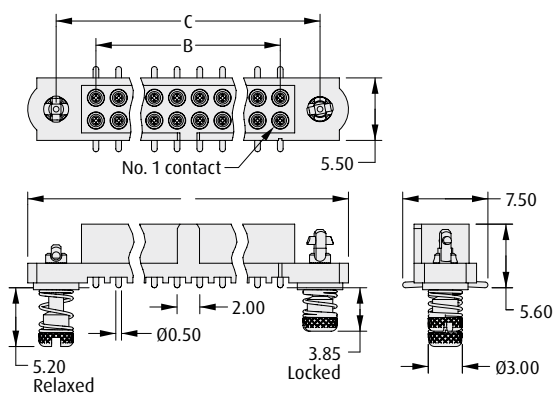


Recommended PC Board Pattern

CALCULATION

A	$B + 12$
B	Total no. of contacts - 2
C	$B + 7$

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

F3	Guide Pin
FC	101Lok

FINISH

05	Gold
42	Gold + Tin

All dimensions in mm.

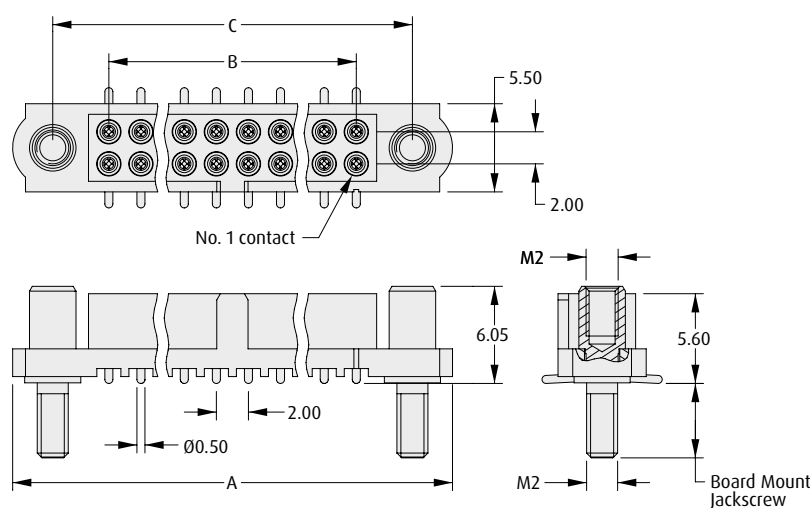
Datamate J-Tek Connectors

Female Vertical Surface Mount Reverse Fix

- Fully shrouded contacts.
- Polarised mouldings.
- Includes Board Mount fixing.
- Mates with male Datamate J-Tek connectors with compatible Reverse Fix jackscrews.



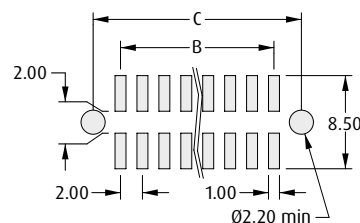
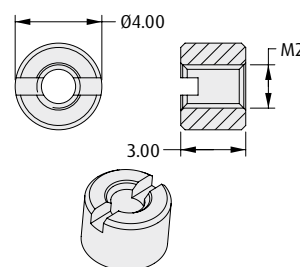
REVERSE FIX



CALCULATION

A	$B + 12$
B	Total no. of contacts - 2
C	$B + 7$

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

F8	3.5mm Board Mount Jackscrew
F9	5mm Board Mount Jackscrew

FINISH

05	Gold
42	Gold + Tin

All dimensions in mm.

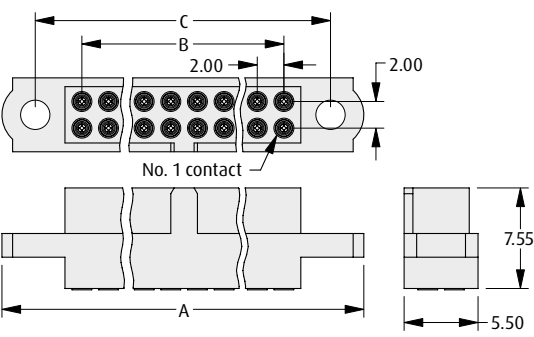
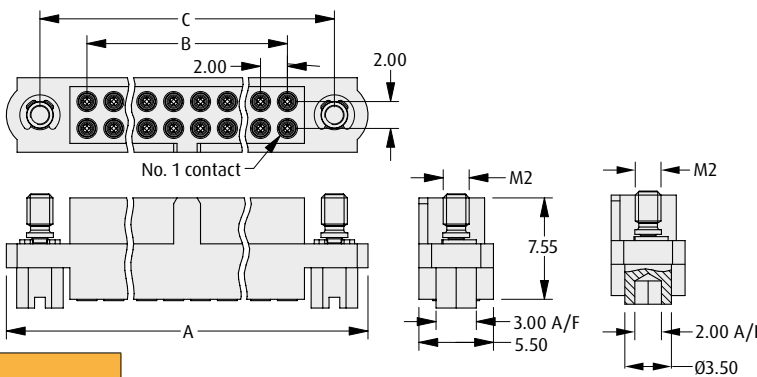
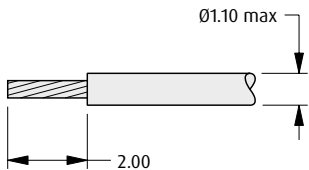
Datamate J-Tek Connectors

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																							
																									
<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																
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TOOLS		WIRE STRIPPING DETAILS																							
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.																									
HOW TO ORDER																									
SERIES CODE <table><tr><th>LARGE BORE (22 AWG)</th><th>SMALL BORE (24-28 AWG)</th><th></th></tr><tr><td>470</td><td>471</td><td>Without Jackscrews</td></tr><tr><td>460</td><td>461</td><td>With Hex Slotted Jackscrews</td></tr><tr><td>480</td><td>481</td><td>With Hex Socket Jackscrews</td></tr></table>		LARGE BORE (22 AWG)	SMALL BORE (24-28 AWG)		470	471	Without Jackscrews	460	461	With Hex Slotted Jackscrews	480	481	With Hex Socket Jackscrews	M80 - 4XX XX XX <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> <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>		FINISH		05	Gold	42	Gold + Tin	TOTAL NO. OF CONTACTS		04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50	
LARGE BORE (22 AWG)	SMALL BORE (24-28 AWG)																								
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All dimensions in mm.

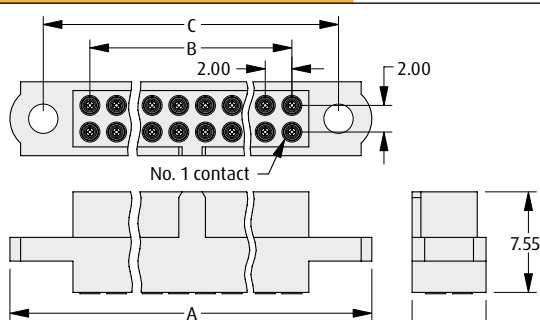
Datamate J-Tek Connectors

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.



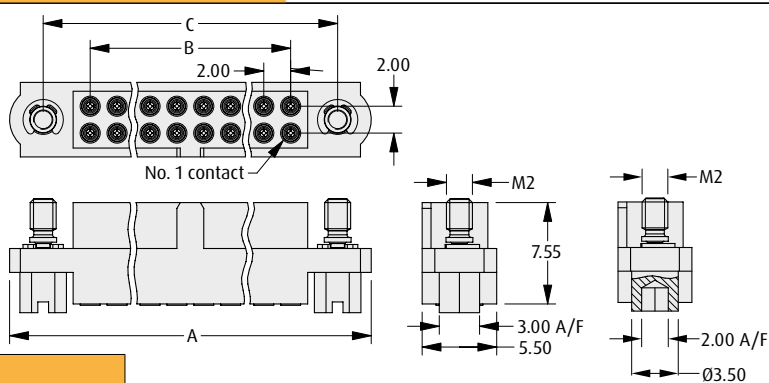
WITHOUT JACKSCREWS



CALCULATION

A	$B + 12$
B	Total no. of contacts - 2
C	$B + 7$

WITH JACKSCREWS



Hex Slotted Jackscrew

Hex Socket Jackscrew

TOOLS

Recommended Crimp Tool - M22520/2-01

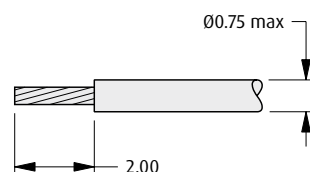
Positioner - T5747

Contact Insertion/Removal Tool - Z80-280

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

❖ Instruction sheets available at www.harwin.com/instructions.

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

00	Without Jackscrews
F1	With Hex Slotted Jackscrews
F2	With Hex Socket Jackscrews

FINISH

05	Gold
42	Gold + Tin

All dimensions in mm.

Datamate J-Tek Connectors

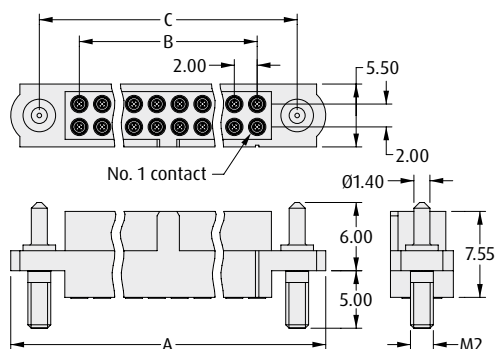
Female Crimp Kit - Guide Pin, 101Lok

- 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.

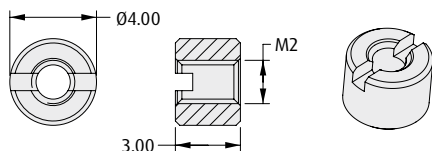


DATAMATE J-TEK

GUIDE PIN JACKSCREWS



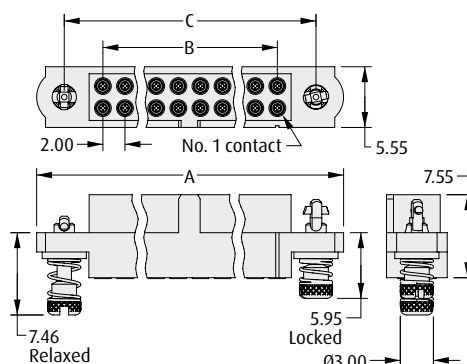
Board Mount Nut, 2 per connector



CALCULATION

A	$B + 12$
B	Total no. of contacts - 2
C	$B + 7$

101LOK



TOOLS

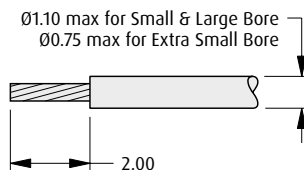
Recommended Crimp Tool - M22520/2-01

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.

WIRE STRIPPING DETAILS



HOW TO ORDER

M80 - 4 X1 XX XX FX

SERIES CODE

TYPE

C1	Small Bore (24-28 AWG)
D1	Large Bore (22 AWG)
E1	Extra Small Bore (28-32 AWG)

TOTAL NO. OF CONTACTS

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

JACKSCREW

F3	Guide Pin
FC	101Lok

FINISH

05	Gold
42	Gold + Tin

All dimensions in mm.

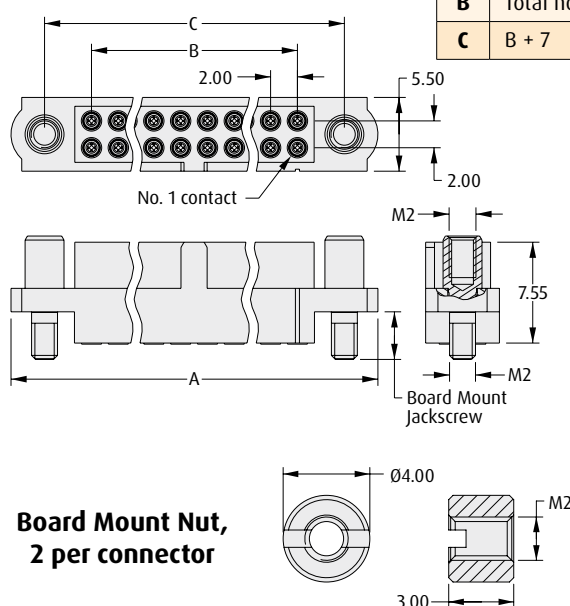
Datamate J-Tek Connectors

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.



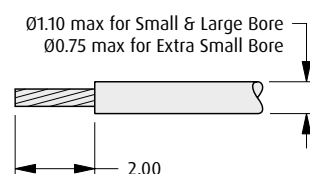
WITH JACKSCREWS



CALCULATION

A	$B + 12$
B	Total no. of contacts - 2
C	$B + 7$

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.

HOW TO ORDER

M80 - 4XX XX XX

SERIES CODE

TYPE

462	Large Bore (22 AWG)
463	Small Bore (24-28 AWG)

TOTAL NO. OF CONTACTS

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

FINISH

05	Gold
42	Gold + Tin

3.5mm Board Mount Jackscrews only

M80 - 4 X1 XX XX FX

SERIES CODE

TYPE

C1	Small Bore (24-28 AWG)
D1	Large Bore (22 AWG)
E1	Extra Small Bore (28-32 AWG)

TOTAL NO. OF CONTACTS

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

FINISH

05	Gold
42	Gold + Tin

JACKSCREW

F8	3.5mm Board Mount
F9	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.
- ❖ Polarised mouldings.
- ❖ 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																																																			
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<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

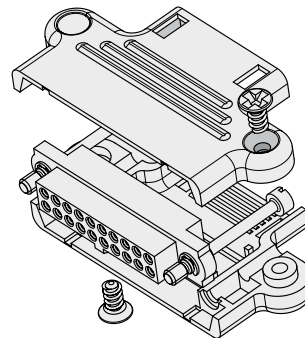
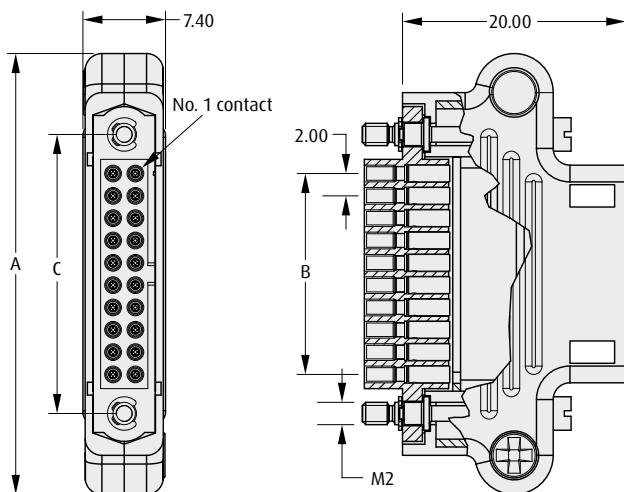
- ❖ Supplied as a complete kit: jackscrews assembled to housing; hood, contacts and assembly screws supplied loose.
- ❖ Provides strain relief by preventing cable bending at the rear of the connector, and also has the option of inserting a cable tie to reduce pull strain.



FEMALE

CALCULATION

A	$B + 21.5$
B	Total no. of contacts - 2
C	$B + 7$



TOOLS

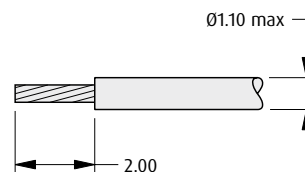
Recommended Crimp Tool - M22520/2-01

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.

WIRE STRIPPING DETAILS



HOW TO ORDER

M80 - 94 X XX XX

SERIES CODE

TYPE

0	Small Bore (24-28 AWG)
1	Large Bore (22 AWG)

FINISH

05	Gold
42	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

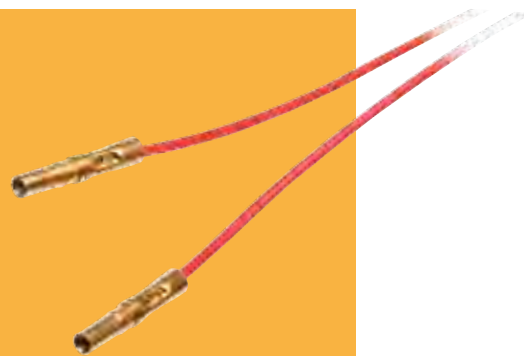
CRIMP CONTACTS		WIRE STRIPPING DETAILS															
Large Bore (22 AWG) Small Bore (24 to 28 AWG) Extra Small Bore (28 to 32 AWG)																	
TOOLS																	
Recommended Crimp Tool - M22520/2-01 Positioner - T5747 Contact Insertion/Removal Tool - Z80-280 ❖ Pre-cabled contacts shown on following page. ❖ Instruction sheets available at www.harwin.com/instructions.																	
HOW TO ORDER																	
M80 - OXX 00 XX SERIES CODE <table><tr><th colspan="2">TYPE</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> <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>				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
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																

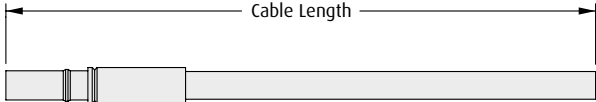
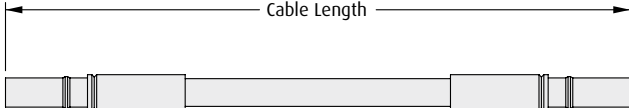
All dimensions in mm.

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																													
Contact Insertion/Removal Tool – Z80-Z80		- Full crimp connector kits and spare crimp contacts shown on previous pages. - Instruction sheets available at www.harwin.com/instructions.																											
HOW TO ORDER																													
M80 - 9XX 00 99		<table><tr><th colspan="2">CABLE COLOUR</th></tr><tr><td>99</td><td>Red</td></tr></table>		CABLE COLOUR		99	Red																						
CABLE COLOUR																													
99	Red																												
SERIES CODE	<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																												
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22 AWG Cable, 150mm length																													
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26 AWG Cable, 300mm length																													
28 AWG Cable, 300mm length																													

All dimensions in mm.

Datamate J-Tek Connectors

Female Crimp Trio-Tek Housings

- ❖ Part numbers are for housings only, see following page for Trio-Tek contacts.
- ❖ Contacts are rear insertable.
- ❖ Crimp inspection window in housing.
- ❖ Mates with all standard Datamate J-Tek male connectors.
- ❖ Ideal for volume applications.



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													
Recommended Hand Crimp Tool – Z80-255 Contact Removal Tool – Z80-258 ❖ Open crimp contacts shown on following page. ❖ Instruction sheets available at www.harwin.com/instructions.															
HOW TO ORDER															
M80 - 45X XX 98															
<table><tr><th colspan="2">SERIES CODE</th></tr><tr><td>454</td><td>Without Jackscrews</td></tr><tr><td>455</td><td>With Hex Slotted Jackscrews</td></tr><tr><td>456</td><td>With Hex Socket Jackscrews</td></tr></table>		SERIES CODE		454	Without Jackscrews	455	With Hex Slotted Jackscrews	456	With Hex Socket Jackscrews	<table><tr><th colspan="2">FINISH</th></tr><tr><td>98</td><td>Housings</td></tr></table>		FINISH		98	Housings
SERIES CODE															
454	Without Jackscrews														
455	With Hex Slotted Jackscrews														
456	With Hex Socket Jackscrews														
FINISH															
98	Housings														
		<table><tr><th>TOTAL NO. OF CONTACTS</th></tr><tr><td>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.

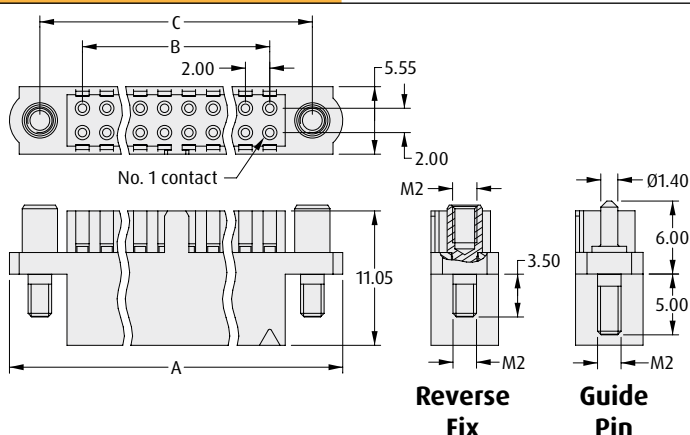
Datamate J-Tek Connectors

Female Crimp Trio-Tek - Reverse Fix, Guide Pin, 101Lok

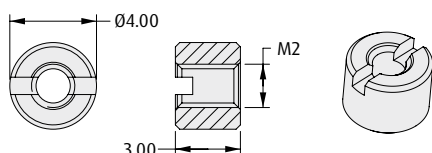
- Part numbers are for housings only, see following page for Trio-Tek contacts.
- Ideal for volume applications.
- 101Lok fixing gives secure, fast and simple mating; no special tooling required. Just a simple 101-degree turn is required to fix the connectors together.
- Connectors mate with Datamate J-Tek male connectors with applicable jackscrews or 101Lok fixings.



REVERSE FIX, GUIDE PIN



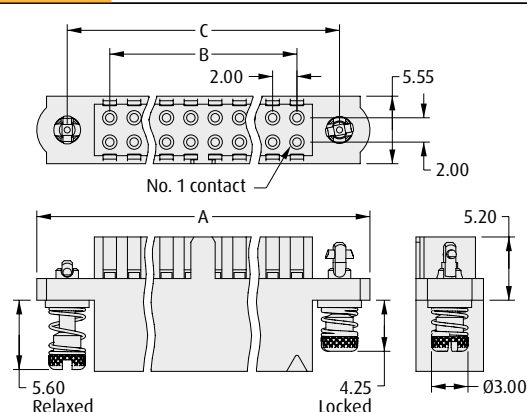
Board Mount Nut, 2 per connector



CALCULATION

A	$B + 12$
B	Total no. of contacts - 2
C	$B + 7$

101LOK



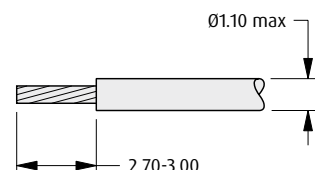
TOOLS

Recommended Hand Crimp Tool - Z80-255

Contact Removal Tool - Z80-258

- Open crimp contacts shown on following page.
- Instruction sheets available at www.harwin.com/instructions.

WIRE STRIPPING DETAILS



HOW TO ORDER

M80 - 45X XX 98

SERIES CODE

TYPE

457	Reverse Fix with Panel Mount
458	Guide Pin with Panel Mount
459	101Lok

FINISH

98	Housings
-----------	----------

TOTAL NO. OF CONTACTS

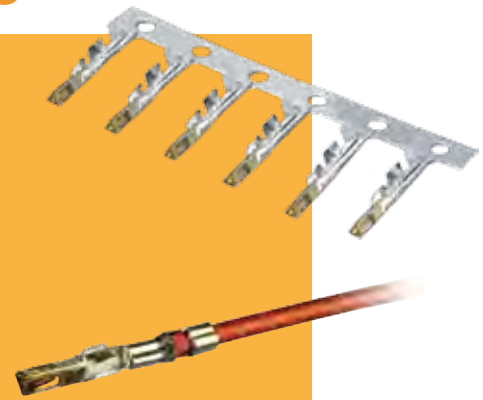
04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50

All dimensions in mm.

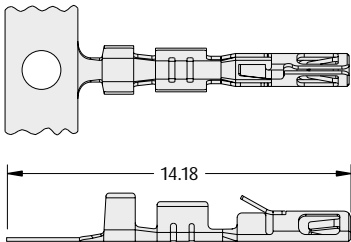
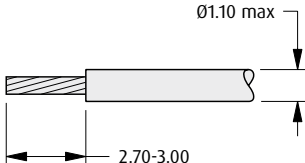
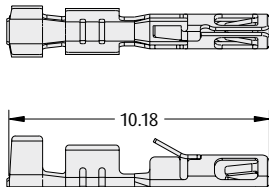
Datamate J-Tek Connectors

Female Crimp Contacts Trio-Tek

- ❖ Trio-Tek contacts must be ordered separately, see previous pages for applicable housings.
- ❖ Crimp contacts are available loose, or in continuous reeled format for automated crimping.



DATAMATE J-TEK

CRIMP CONTACTS		WIRE STRIPPING DETAILS															
Reeled 																	
Loose 		TOOLS Recommended Hand Crimp Tool – Z80-255 ❖ Crimp housings shown on previous page. ❖ Instruction sheets available at www.harwin.com/instructions.															
HOW TO ORDER																	
M80 - XXX 00 XX																	
SERIES CODE <table><tr><th>TYPE</th><th></th></tr><tr><td>253</td><td>Trio-Tek Crimp 22-24 AWG, Reeled</td></tr><tr><td>254</td><td>Trio-Tek Crimp 26-28 AWG, Reeled</td></tr><tr><td>283</td><td>Trio-Tek Crimp 22-24 AWG, Loose</td></tr><tr><td>284</td><td>Trio-Tek Crimp 26-28 AWG, Loose</td></tr></table>		TYPE		253	Trio-Tek Crimp 22-24 AWG, Reeled	254	Trio-Tek Crimp 26-28 AWG, Reeled	283	Trio-Tek Crimp 22-24 AWG, Loose	284	Trio-Tek Crimp 26-28 AWG, Loose	FINISH <table><tr><td>42</td><td>Gold + Tin</td></tr><tr><td>45</td><td>Gold</td></tr></table>		42	Gold + Tin	45	Gold
TYPE																	
253	Trio-Tek Crimp 22-24 AWG, Reeled																
254	Trio-Tek Crimp 26-28 AWG, Reeled																
283	Trio-Tek Crimp 22-24 AWG, Loose																
284	Trio-Tek Crimp 26-28 AWG, Loose																
42	Gold + Tin																
45	Gold																

All dimensions in mm.

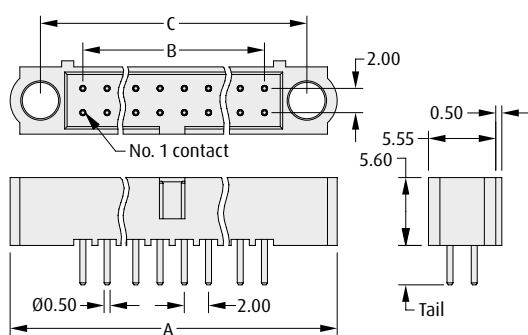
Datamate J-Tek Connectors

Male Vertical PC Tail

- Polarised mouldings.
- Fully shrouded contacts.
- Jackscrews are assembled where specified.
- Choice of PC tail length.
- Board Mount provides PCB strain relief.
- Mates with female Datamate J-Tek connectors with compatible jackscrews.

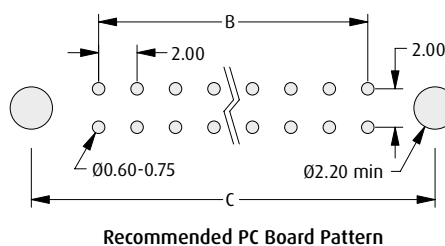


WITHOUT JACKSCREWS

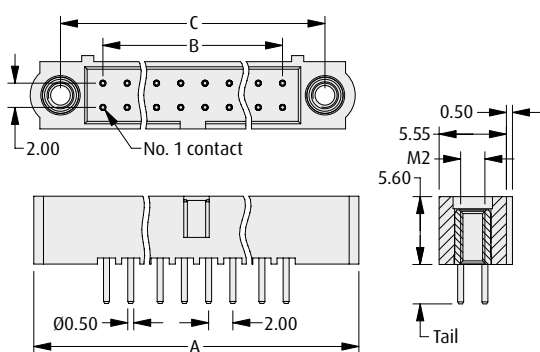


CALCULATION

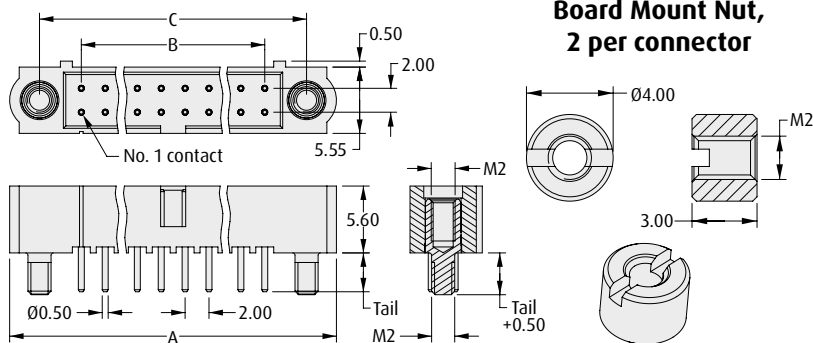
A	$B + 12$
B	Total no. of contacts - 2
C	$B + 7$



WITH JACKSCREWS



WITH BOARD MOUNT



HOW TO ORDER

M80 - 5 X X XX XX

SERIES CODE

0	With Jackscrews
1	With Board Mount
2	Without Jackscrews

0	3mm Tails
1	4.5mm Tails

FINISH

05	Gold
42	Gold + Tin

TOTAL NO. OF CONTACTS

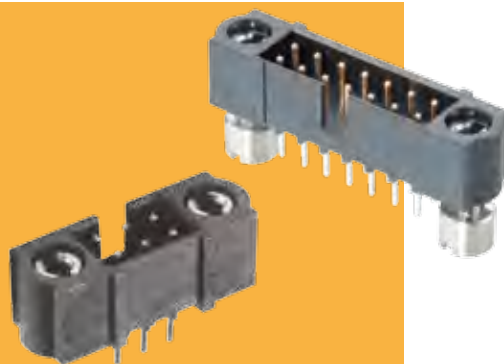
04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50

All dimensions in mm.

Datamate J-Tek Connectors

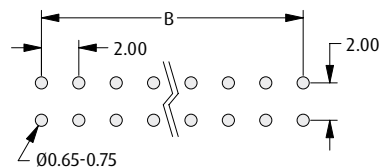
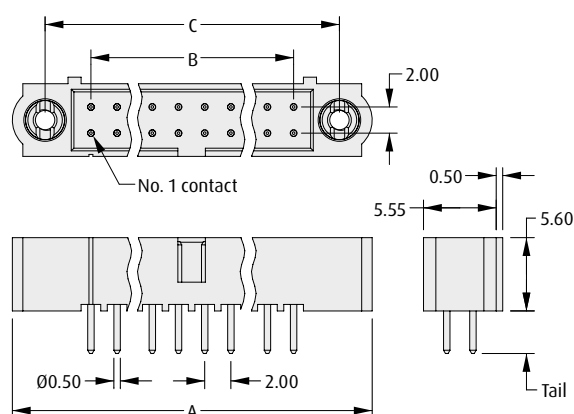
Male Vertical PC Tail 101Lok

- ❖ 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 PC tail length.



DATAMATE J-TEK

101LOK

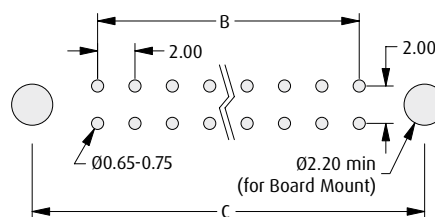
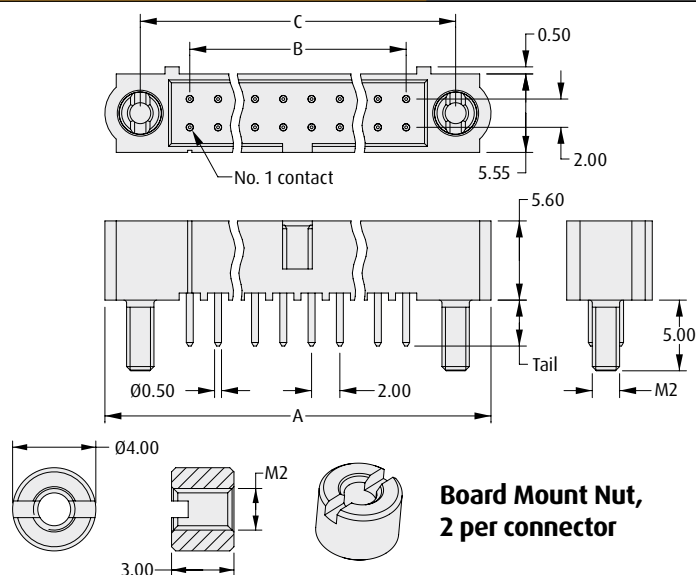


Recommended PC Board Pattern

CALCULATION

A	$B + 12$
B	Total no. of contacts - 2
C	$B + 7$

101LOK WITH BOARD MOUNT



Recommended PC Board Pattern

HOW TO ORDER

M80 - 5 TX XX XX MX

SERIES CODE

TYPE

T1	3mm Tails
T2	4.5mm Tails

TOTAL NO. OF CONTACTS

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

JACKSCREW

MC	101Lok
ME	101Lok with Board Mount

FINISH

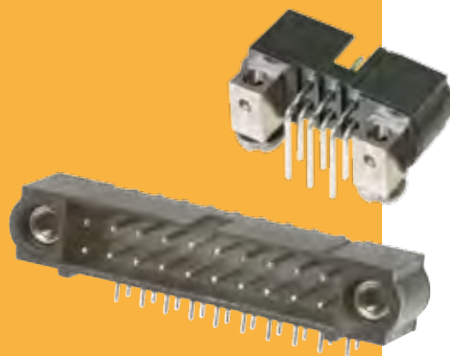
05	Gold
42	Gold + Tin

All dimensions in mm.

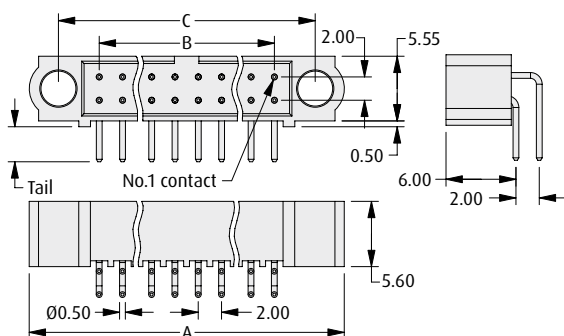
Datamate J-Tek Connectors

Male Horizontal PC Tail

- Polarised mouldings.
- Fully shrouded contacts.
- Jackscrews are assembled where specified.
- Choice of PC tail length.
- Board Mount provides PCB strain relief.
- Mates with female Datamate J-Tek connectors with compatible jackscrews.

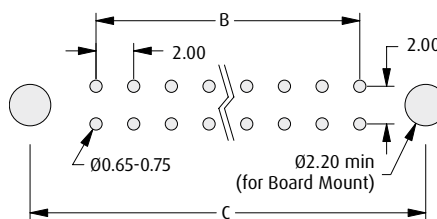


WITHOUT JACKSCREWS



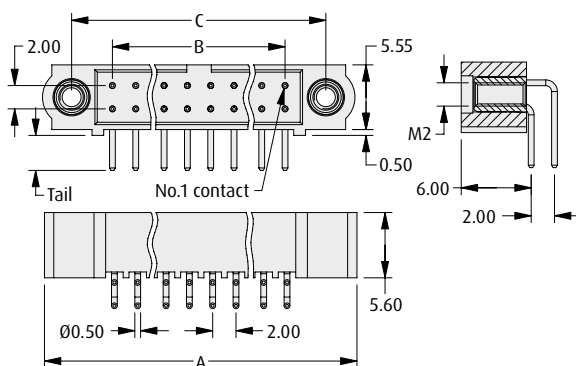
CALCULATION

A	$B + 12$
B	Total no. of contacts - 2
C	$B + 7$

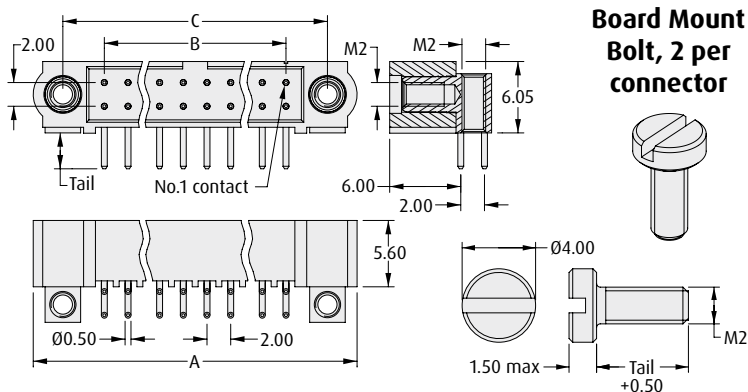


Recommended PC Board Pattern

WITH JACKSCREWS



WITH BOARD MOUNT



Board Mount Bolt, 2 per connector

HOW TO ORDER

M80 - 5 X X XX XX

SERIES CODE

3	With Jackscrews
4	With Board Mount
5	Without Jackscrews

0	3mm Tails
1	4.5mm Tails

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

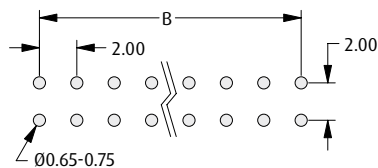
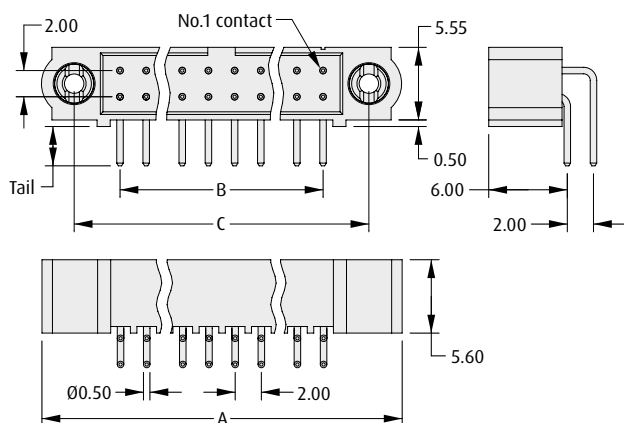
Male Horizontal PC Tail 101Lok

- ❖ 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 PC tail length.



DATAMATE J-TEK

101LOK

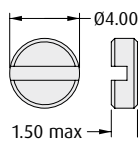
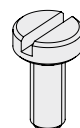
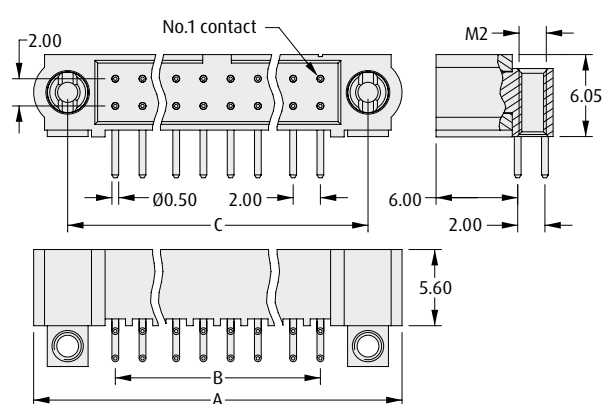


Recommended PC Board Pattern

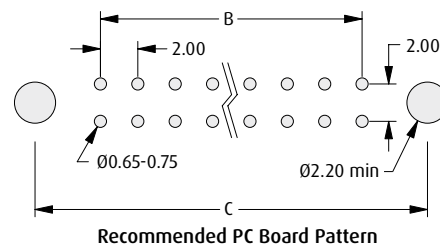
CALCULATION

A	$B + 12$
B	Total no. of contacts - 2
C	$B + 7$

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

L1	3mm Tails
L2	4.5mm Tails

TOTAL NO. OF CONTACTS

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

JACKSCREW

MC	101Lok
MD	101Lok with Board Mount

FINISH

05	Gold
42	Gold + Tin

All dimensions in mm.

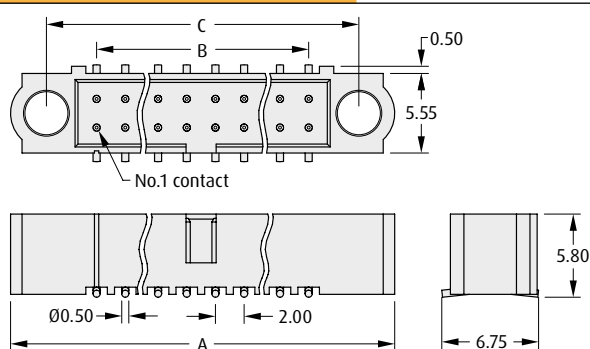
Datamate J-Tek Connectors

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.
- Contact datamate@harwin.com for tape and reel options.

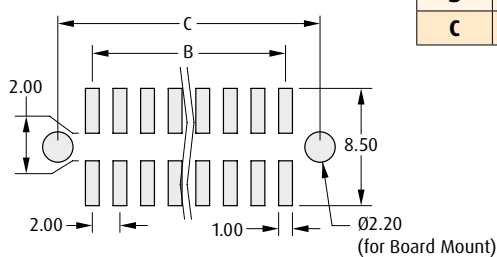


WITHOUT JACKSCREWS



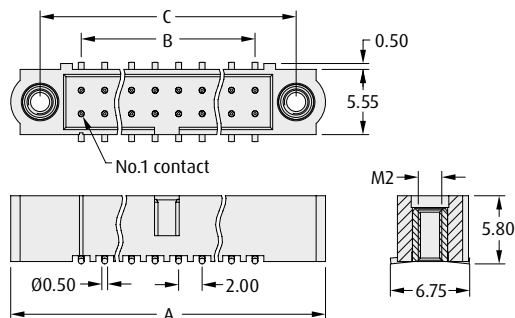
CALCULATION

A	$B + 12$
B	Total no. of contacts - 2
C	$B + 7$

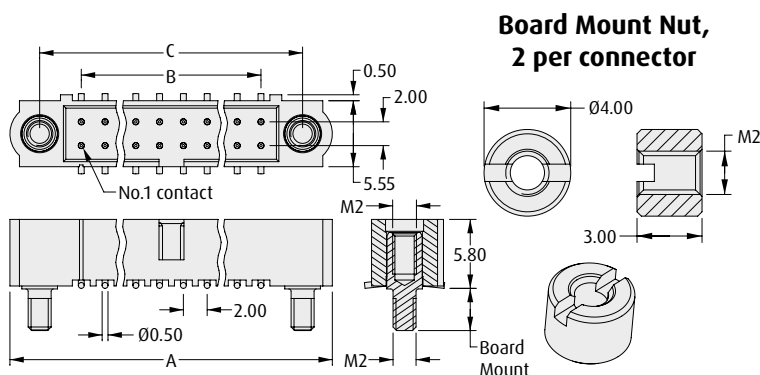


Recommended PC Board Pattern

WITH JACKSCREWS



WITH BOARD MOUNT



HOW TO ORDER

M80 - 5 XX XX XX P

SERIES CODE

TYPE

02	With Jackscrews
12	With 3.5mm Board Mount
13	With 5mm Board Mount
22	Without Jackscrews

PICK AND PLACE CAP

BLANK	No Cap
P	Pick & Place Cap

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

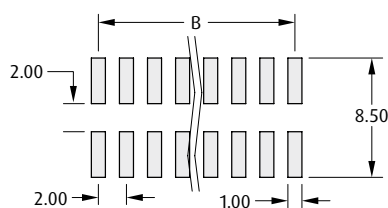
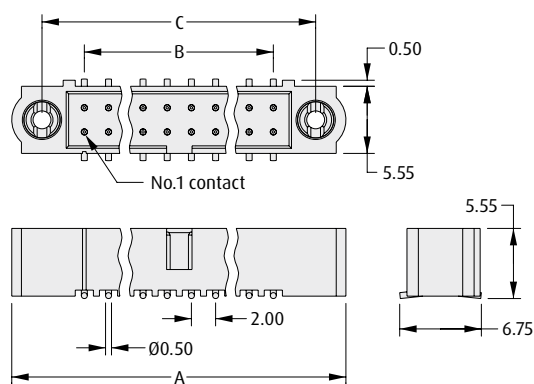
Male Vertical Surface Mount 101Lok

- ❖ 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.
- ❖ Contact datamate@harwin.com for tape and reel options.



DATAMATE J-TEK

101LOK

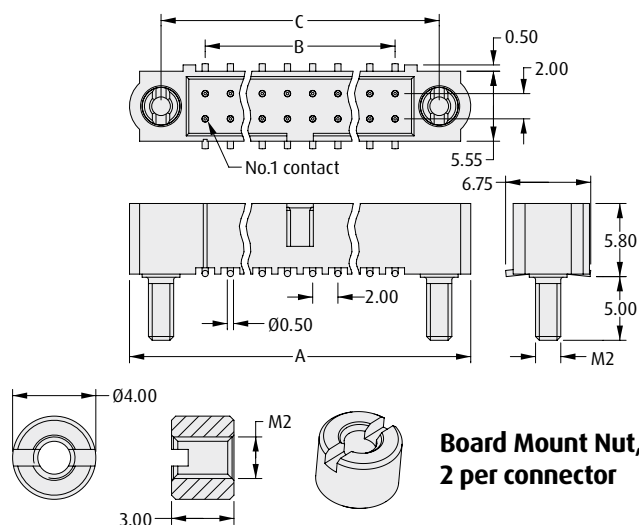


Recommended PC Board Pattern

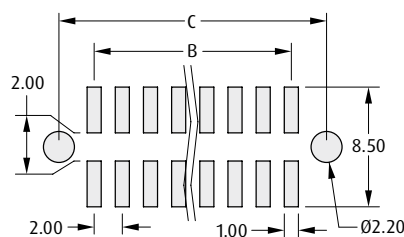
CALCULATION

A	$B + 12$
B	Total no. of contacts - 2
C	$B + 7$

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

MC	101Lok
ME	101Lok with 5mm Board Mount

FINISH

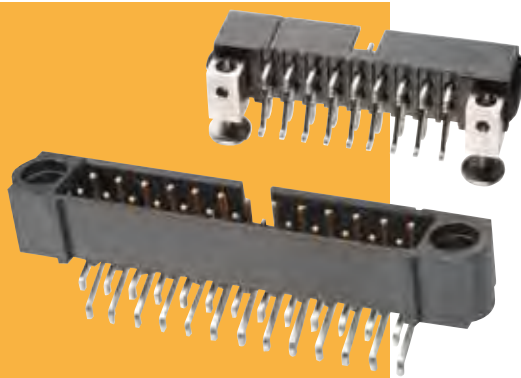
05	Gold
42	Gold + Tin

All dimensions in mm.

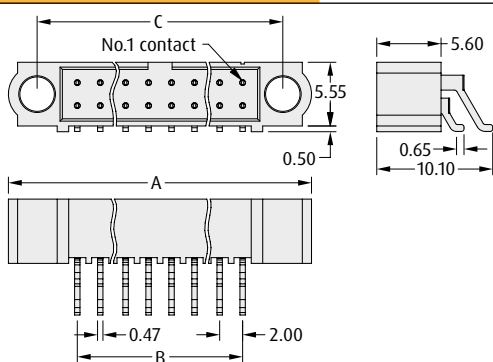
Datamate J-Tek Connectors

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.
- Contact datamate@harwin.com for tape and reel options.

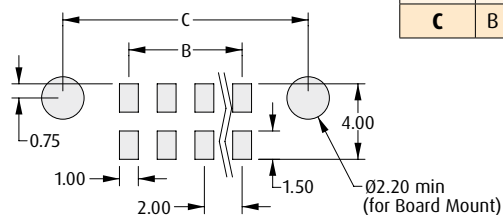


WITHOUT JACKSCREWS



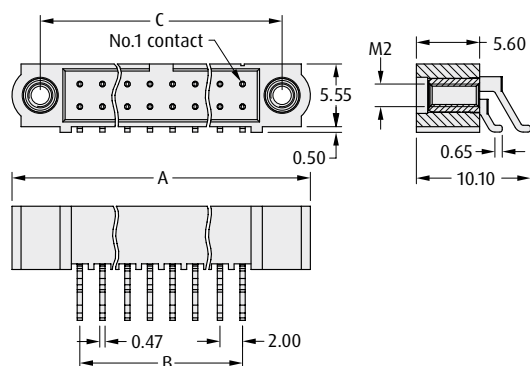
CALCULATION

A	$B + 12$
B	Total no. of contacts - 2
C	$B + 7$

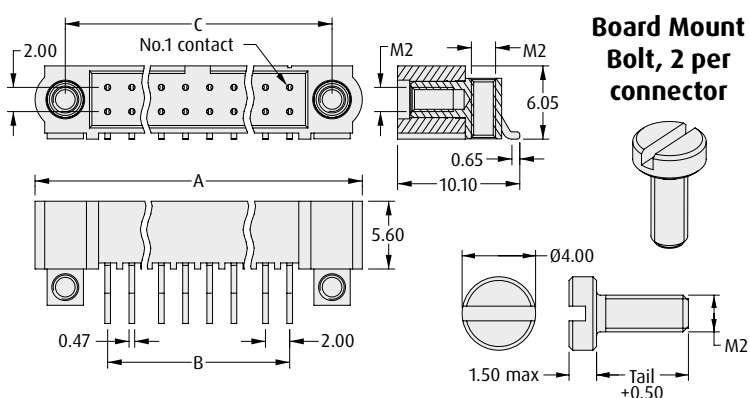


Recommended PC Board Pattern

WITH JACKSCREWS



WITH BOARD MOUNT



Board Mount Bolt, 2 per connector

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

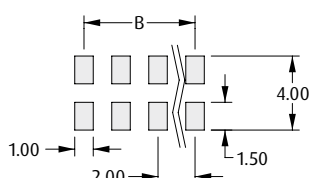
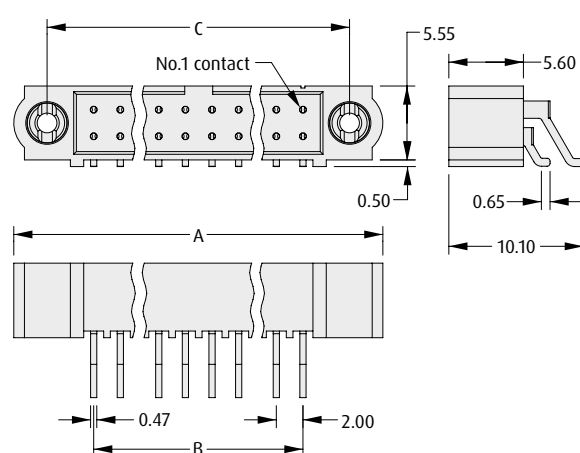
Male Horizontal Surface Mount 101Lok

- ❖ 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.
- ❖ Contact datamate@harwin.com for tape and reel options.



DATAMATE J-TEK

101LOK

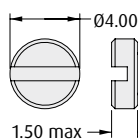
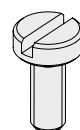
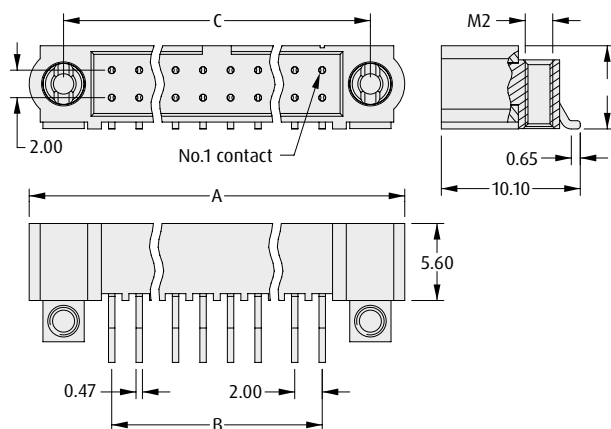


Recommended PC Board Pattern

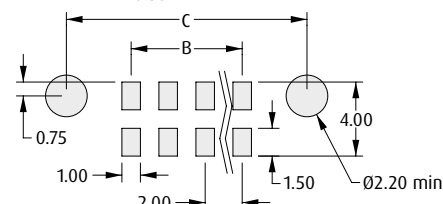
CALCULATION

A	$B + 12$
B	Total no. of contacts - 2
C	$B + 7$

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

MC	101Lok
MD	101Lok with Board Mount

FINISH

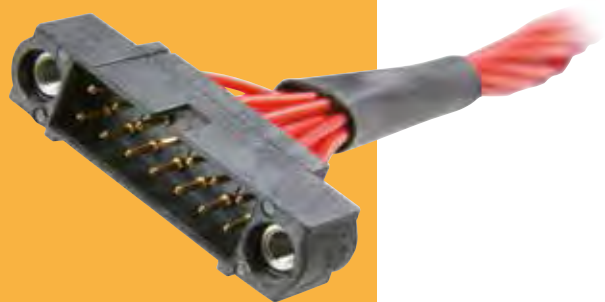
05	Gold
42	Gold + Tin

All dimensions in mm.

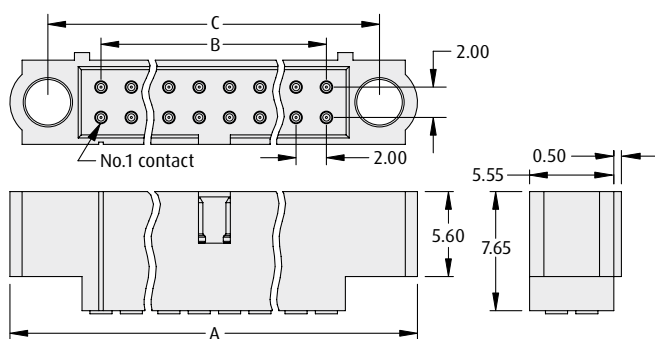
Datamate J-Tek Connectors

Male Crimp Kit

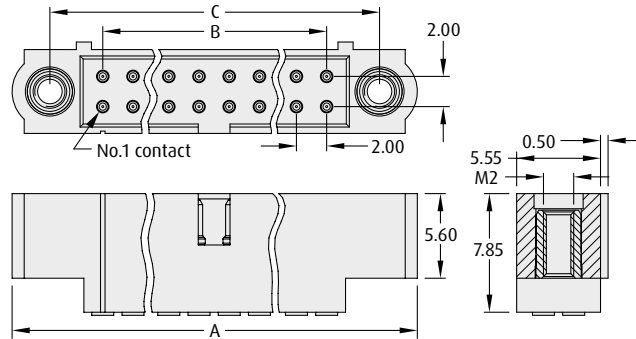
- ❖ Part numbers are for a complete kit of a housing and the applicable number of contacts.
- ❖ Jackscrews are assembled where specified.
- ❖ Crimp contacts supplied loose.
- ❖ Crimp contacts are rear insertable and replaceable.
- ❖ Spare contacts are available.



WITHOUT JACKSCREWS



WITH JACKSCREWS



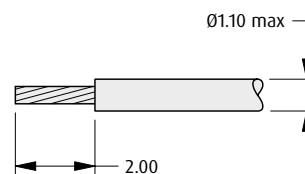
CALCULATION

A	$B + 12$
B	Total no. of contacts - 2
C	$B + 7$

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.

WIRE STRIPPING DETAILS



HOW TO ORDER

M80 - 5XX XX 05

SERIES CODE

TYPE

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
-----------	------

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.



DATAMATE J-TEK

101LOK		CALCULATION	
		A	B + 12
		B	Total no. of contacts - 2
		C	B + 7
TOOLS		WIRE STRIPPING DETAILS	
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.			
HOW TO ORDER			
		M80 - 5 X1 XX 05 MC	
SERIES CODE		JACKSCREW	
TYPE		MC 101Lok	
C1 Small Bore (24-28 AWG)		FINISH	
D1 Large Bore (22 AWG)		05 Gold	
TOTAL NO. OF CONTACTS			
04, 06, 08, 10, 12, 14, 20, 26, 34, 42, 50			

All dimensions in mm.

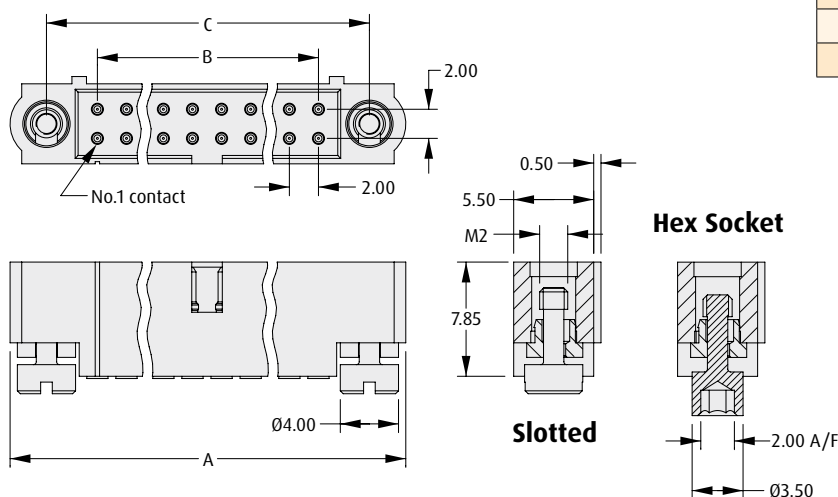
Datamate J-Tek Connectors

Male Crimp Kit 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.



REVERSE FIX



CALCULATION

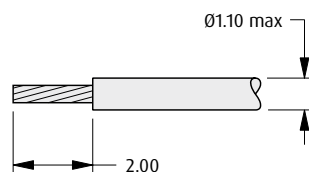
A	B + 12
B	Total no. of contacts - 2
C	B + 7

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.

WIRE STRIPPING DETAILS



HOW TO ORDER

M80 - 5XX XX 05

SERIES CODE

TYPE	
562	Large Bore (22 AWG), Slotted Jackscrew
563	Small Bore (24-28 AWG), Slotted Jackscrew
582	Large Bore (22 AWG), Hex Socket Jackscrew
583	Small Bore (24-28 AWG), Hex Socket Jackscrew

FINISH

05 Gold

TOTAL NO. OF CONTACTS

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

All dimensions in mm.

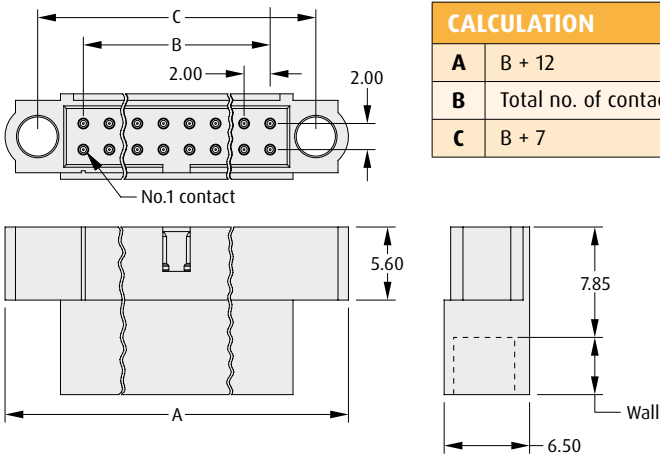
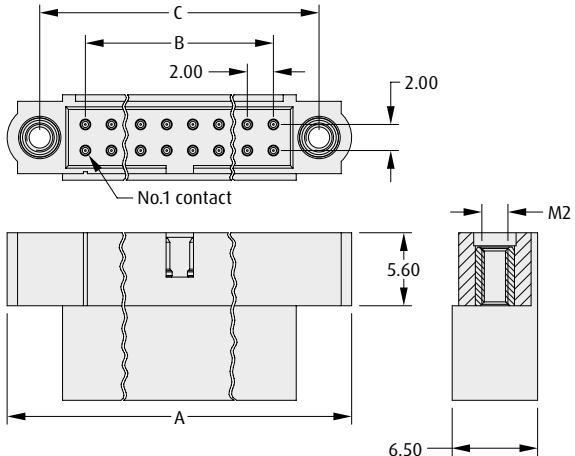
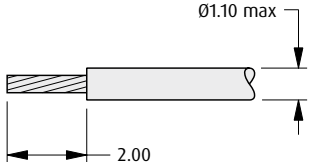
Datamate J-Tek Connectors

Male Crimp Kit 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.



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 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 .		WIRE STRIPPING DETAILS 																									
HOW TO ORDER																											
<table><tr><th colspan="2">TYPE</th></tr><tr><td>575</td><td>Large Bore (22 AWG), without Jackscrews</td></tr><tr><td>576</td><td>Small Bore (24-28 AWG), without Jackscrews</td></tr><tr><td>565</td><td>Large Bore (22 AWG), with Jackscrews</td></tr><tr><td>566</td><td>Small Bore (24-28 AWG), with Jackscrews</td></tr></table>		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	<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> <table><tr><th colspan="2">FINISH</th></tr><tr><td>05</td><td>Gold</td></tr></table> <table><tr><th colspan="2">TOTAL NO. OF CONTACTS</th></tr><tr><td colspan="2">06, 10, 14, 20, 26, 34</td></tr></table>		WALL SIZE		BLANK	Wall = 5mm	A	Wall = 1mm	FINISH		05	Gold	TOTAL NO. OF CONTACTS		06, 10, 14, 20, 26, 34	
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

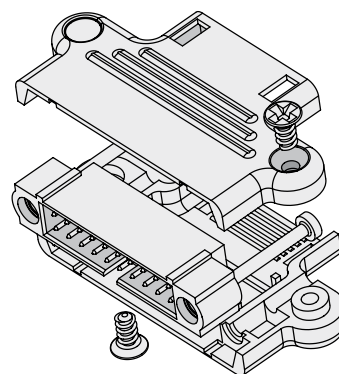
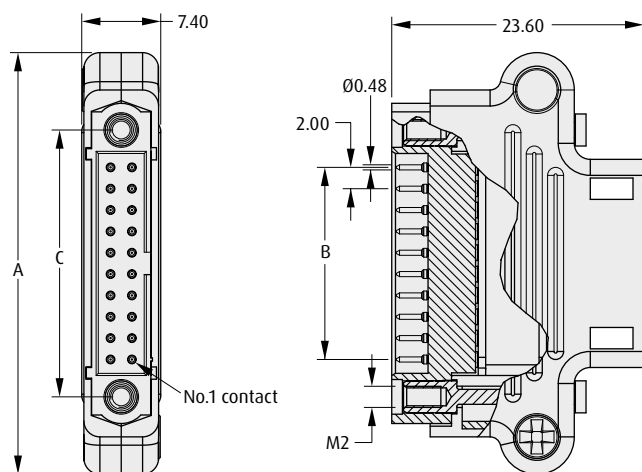
- ❖ Supplied as a complete kit: jackscrews assembled to housing; hood, contacts and assembly screws supplied loose.
- ❖ Provides strain relief by preventing cable bending at the rear of the connector, and also the option of inserting a cable tie to reduce pull strain.



MALE

CALCULATION

A	$B + 21.5$
B	Total no. of contacts - 2
C	$B + 7$

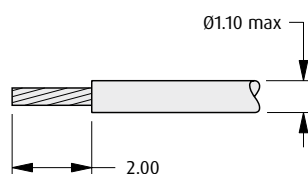


TOOLS

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.

WIRE STRIPPING DETAILS



HOW TO ORDER

M80 - 94 X XX 05

SERIES CODE

TYPE

2	Small Bore (24-28 AWG)
3	Large Bore (22 AWG)

FINISH

05	Gold
-----------	------

TOTAL NO. OF CONTACTS

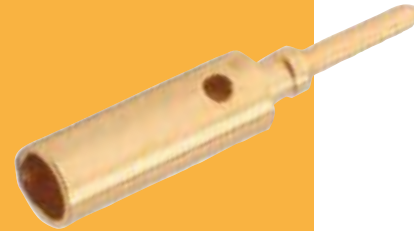
06, 08, 10, 12, 14, 20, 26, 34, 42, 50

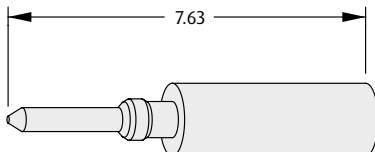
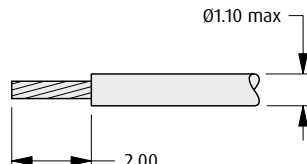
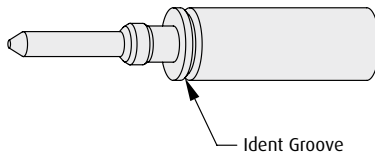
All dimensions in mm.

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		WIRE STRIPPING DETAILS									
Large Bore (22 AWG) 											
Small Bore (24 to 28 AWG) 		TOOLS Recommended Crimp Tool – M22520/2-01 Positioner – Z80-193 Contact Insertion/Removal Tool – Z80-280 ❖ Instruction sheets available at www.harwin.com/instructions.									
HOW TO ORDER											
SERIES CODE <table><tr><th>TYPE</th></tr><tr><td>4</td><td>Large Bore (22 AWG)</td></tr><tr><td>5</td><td>Small Bore (24-28 AWG)</td></tr></table>		TYPE	4	Large Bore (22 AWG)	5	Small Bore (24-28 AWG)	M80 - 19 X 00 05 <table><tr><th>FINISH</th></tr><tr><td>05</td><td>Gold</td></tr></table>		FINISH	05	Gold
TYPE											
4	Large Bore (22 AWG)										
5	Small Bore (24-28 AWG)										
FINISH											
05	Gold										

All dimensions in mm.

Datamate J-Tek 3-Row Specification

Materials

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

Electrical

Current

Individual contacts in isolation:	3.3A max (at 25°C)
	2.6A max (at 85°C)
All contacts simultaneously:	3.0A max (at 25°C)
	2.2A max (at 85°C)

Working voltage

At sea level 1013 mbar:	800V DC or AC _{rms}
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Voltage proof

At sea level 1013 mbar:	1200V DC or AC _{rms}
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Contact resistance

Initial:	20mΩ max
After conditioning:	25mΩ max

Insulation resistance

Initial:	1000MΩ min
After conditioning:	100MΩ min

Mechanical

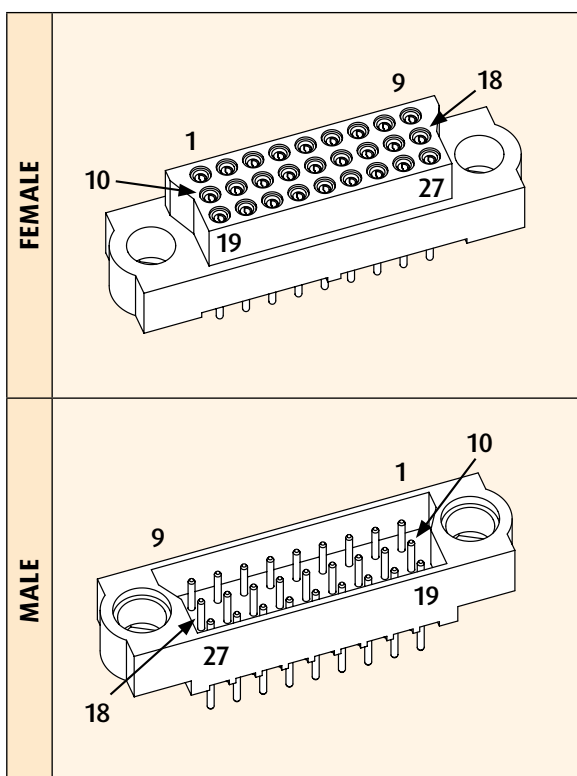
Durability:	500 operations
Insertion force (max):	1.0N
Withdrawal force (min):	0.2N
Signal crimp accommodation:	22 AWG to 28 AWG BS 3G 210 Type A or MIL-DTL-16878/6 Type ET

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 ² (10G), duration 6h
*Bump severity:	390m/s ² (40G), 4000 ±10 bumps
*Shock severity:	981m/s ² (100G) for 6ms
*Acceleration severity:	490m/s ² (50G)

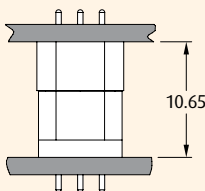
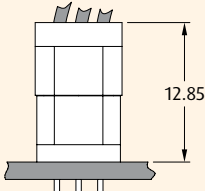
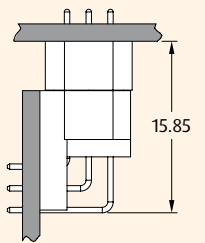
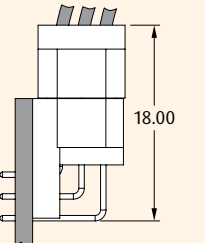
* Tested with connectors with Jackscrews.

Pin Numbering



All dimensions in mm.

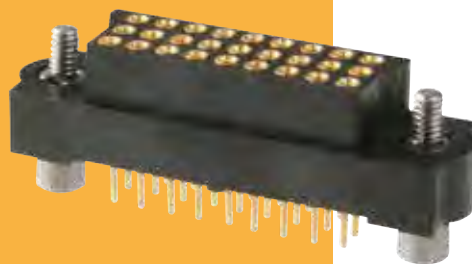
Mating Profiles

		FEMALE	
		VERTICAL PC TAIL	CRIMP
MALE	VERTICAL PC TAIL		
	HORIZONTAL PC TAIL		

Datamate J-Tek 3-Row Connectors

Female Vertical PC Tail

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

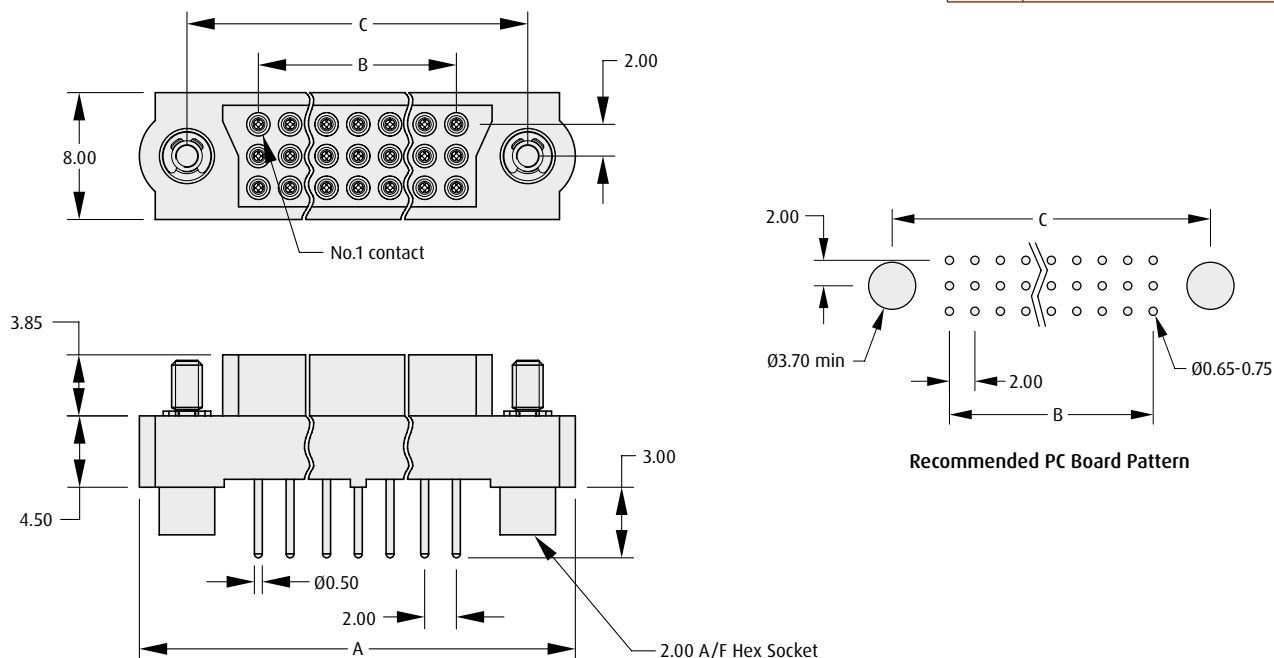


DATAMATE J-TEK 3-ROW

REVERSE FIX

CALCULATION

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



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

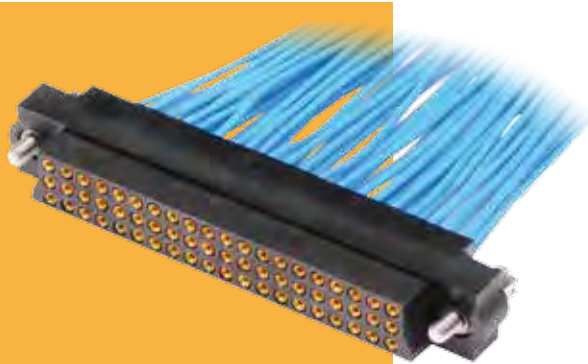
Hex Socket Jackscrew

All dimensions in mm.

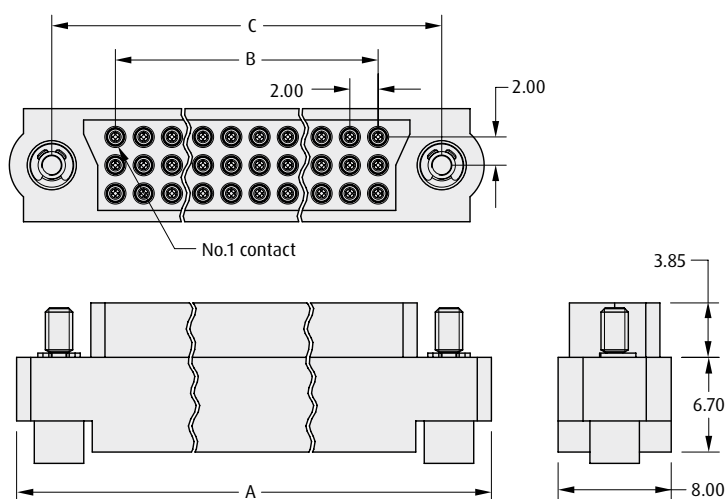
Datamate J-Tek 3-Row Connectors

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.



FEMALE CRIMP



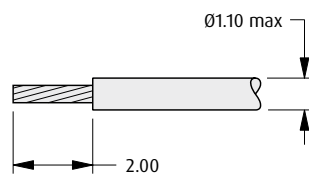
CALCULATION

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

TOOLS

Recommended Crimp Tool - M22520/2-01
Positioner - T5747
Contact Insertion/Removal Tool - Z80-Z80
 ❖ Spare contacts shown on following pages.
 ❖ Instruction sheets available at www.harwin.com/instructions.

WIRE STRIPPING DETAILS



HOW TO ORDER

M83 - LF X1 F2 N XX - 0000 - 000

SERIES CODE

TYPE

C1	Small Bore (24-28 AWG)
D1	Large Bore (22 AWG)

TOTAL NO. OF CONTACTS

18, 27, 36, 54, 60, 96

JACKSCREW

F2 Hex Socket Jackscrew

All dimensions in mm.

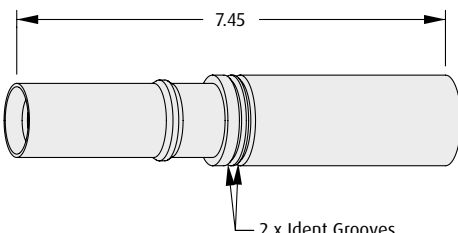
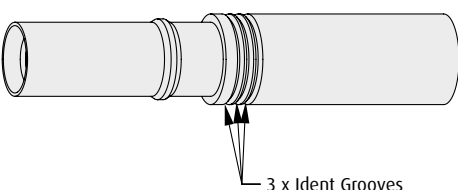
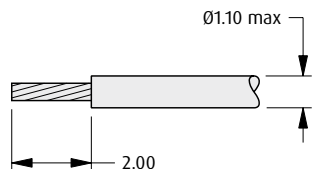
Datamate J-Tek 3-Row Connectors

Spare Female Crimp Contacts

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



DATAMATE J-TEK 3-ROW

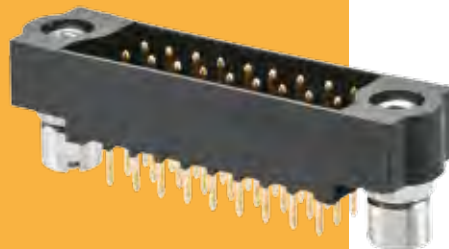
CRIMP CONTACTS	WIRE STRIPPING DETAILS								
Large Bore (22 AWG)  7.45 2 x Ident Grooves Small Bore (24 to 28 AWG)  3 x Ident Grooves	 Ø1.10 max 2.00 TOOLS Recommended Crimp Tool - M22520/2-01 Positioner - T5747 Contact Insertion/Removal Tool - Z80-280 ❖ Instruction sheets available at www.harwin.com/instructions.								
HOW TO ORDER									
SERIES CODE <table border="1" style="width: 100%;"> <thead> <tr> <th colspan="2">TYPE</th> </tr> </thead> <tbody> <tr> <td>011</td> <td>Large Bore (22 AWG)</td> </tr> <tr> <td>013</td> <td>Small Bore (24-28 AWG)</td> </tr> </tbody> </table> M83 - 01X 00 05 FINISH <table border="1" style="width: 100%;"> <tbody> <tr> <td>05</td> <td>Gold</td> </tr> </tbody> </table>		TYPE		011	Large Bore (22 AWG)	013	Small Bore (24-28 AWG)	05	Gold
TYPE									
011	Large Bore (22 AWG)								
013	Small Bore (24-28 AWG)								
05	Gold								

All dimensions in mm.

Datamate J-Tek 3-Row Connectors

Male Vertical PC Tail

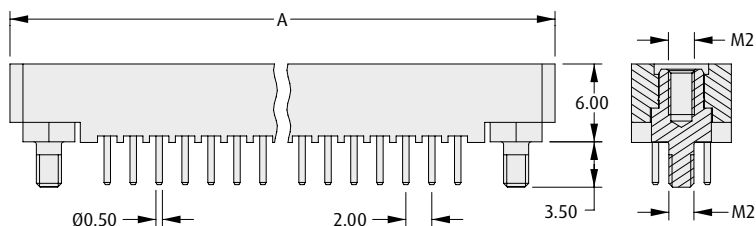
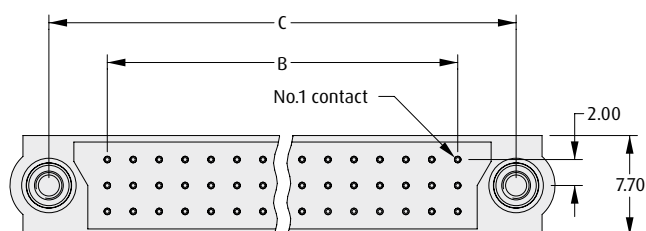
- Board Mount nuts to be tightened to a maximum torque of 23cmN.
- Fully shrouded contacts.
- Polarised mouldings.
- All contacts are gold finish for full RoHS compliance.
- Mates with all Datamate 3-Row female connectors with compatible jackscrews.



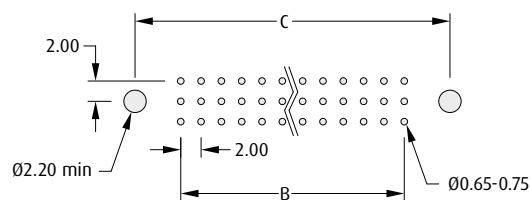
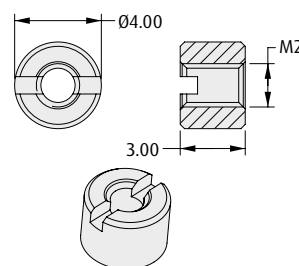
MALE VERTICAL

CALCULATION

A	B + 15
B	(Total no. of contacts - 3) x 2/3
C	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

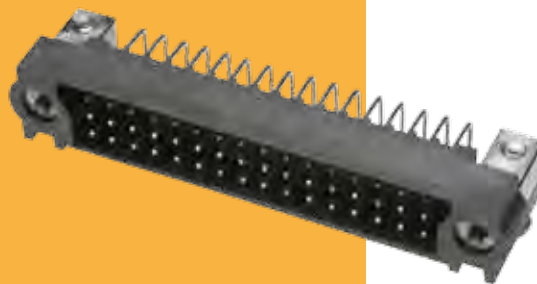
M2 Board Mount Jackscrew

All dimensions in mm.

Datamate J-Tek 3-Row Connectors

Male Horizontal PC Tail

- ❖ Board Mount screws to be tightened to a maximum torque of 23cmN.
- ❖ Suitable for motherboard/daughterboard configurations.
- ❖ Fully shrouded contacts, polarised mouldings.
- ❖ All contacts are gold finish for full RoHS compliance.
- ❖ Mates with all Datamate 3-Row female connectors with compatible jackscrews.

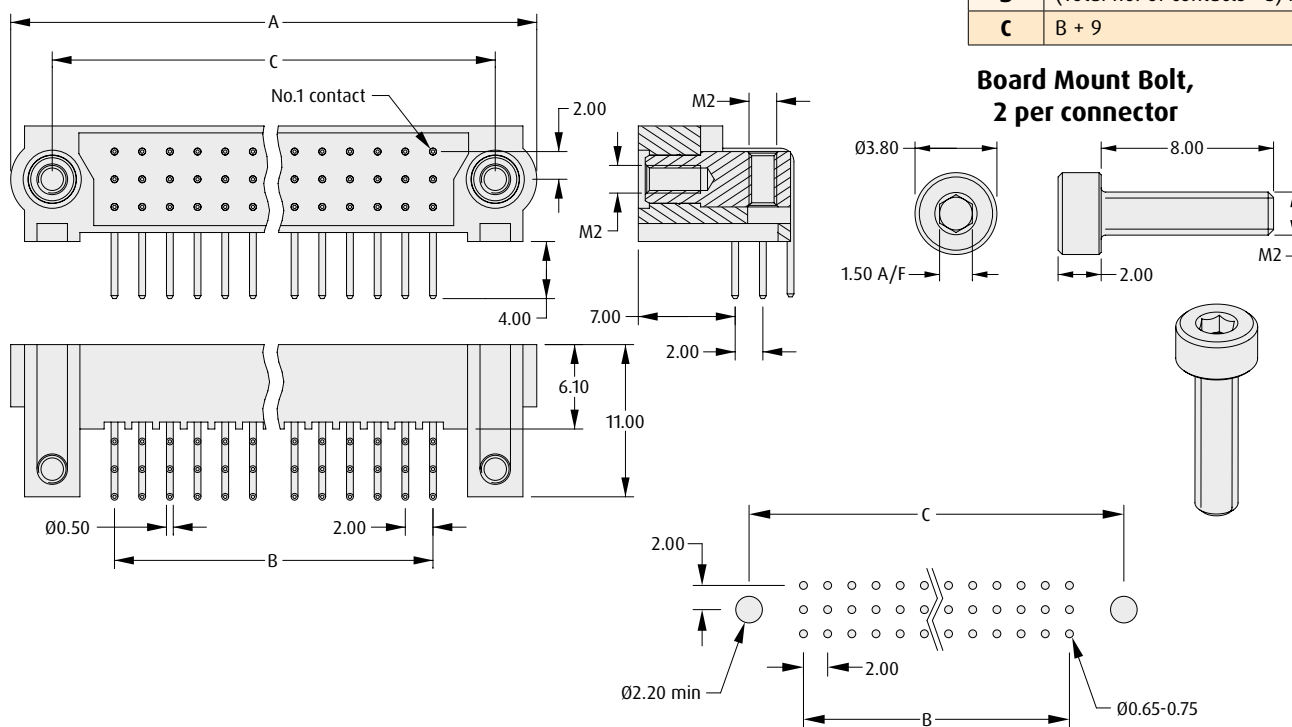


DATAMATE J-TEK 3-ROW

MALE HORIZONTAL

CALCULATION

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



**Board Mount Bolt,
2 per connector**

Recommended PC Board Pattern

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

4mm Tail

JACKSCREW

M7

Hex Socket Board Mount

All dimensions in mm.

Datamate L-Tek Specification

Materials

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

Electrical

Current	
Individual contacts in isolation:	3.3A max (at 25°C) 2.6A max (at 85°C)
All contacts simultaneously:	3.0A max (at 25°C) 2.2A max (at 85°C)

Working voltage	
At sea level 1013 mbar:	800V DC or AC _{rms}

Voltage proof	
At sea level 1013 mbar:	1,200V DC or AC _{rms}

Contact resistance	
Initial:	20mΩ max
After conditioning:	25mΩ max

Insulation resistance	
Initial:	1,000MΩ min
After conditioning:	100MΩ min

Mechanical

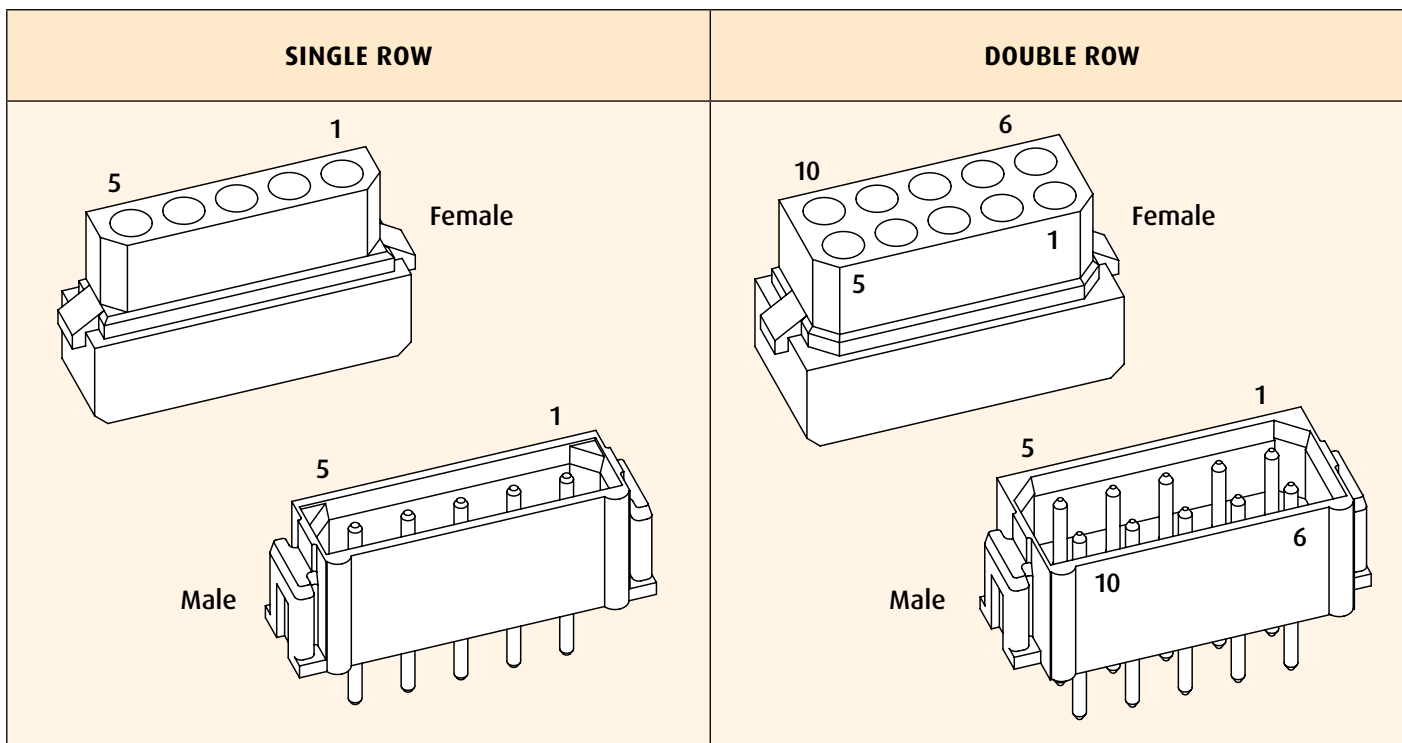
Durability	
Standard L-Tek:	500 operations
Trio-Tek:	400 operations
Insertion force (max):	2.8N
Withdrawal force (min):	0.2N
Signal crimp accommodation:	22 AWG to 32 AWG BS 3G 210 Type A, MIL-W-16878

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 ² (10G), duration 6h
*Bump severity:	390m/s ² (40G), 4000 ±10 bumps
*Shock severity:	981m/s ² (100G) for 6ms
*Acceleration severity:	490m/s ² (50G)

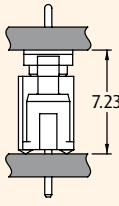
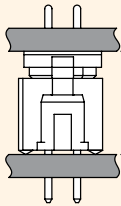
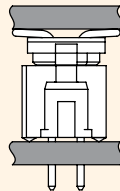
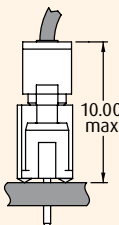
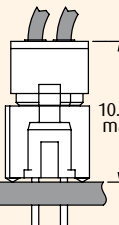
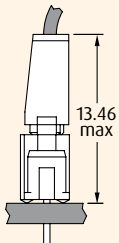
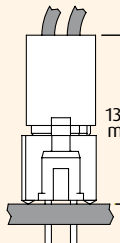
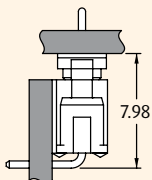
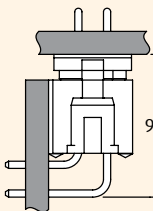
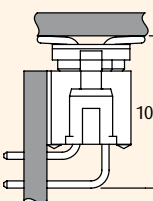
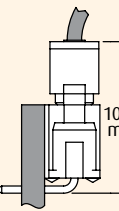
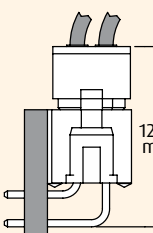
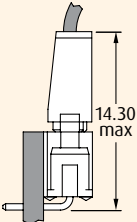
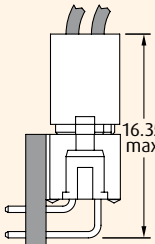
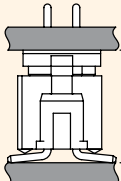
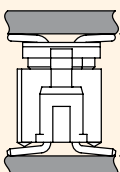
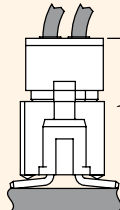
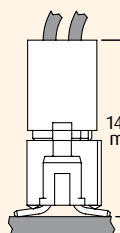
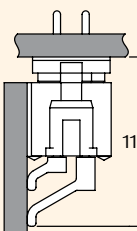
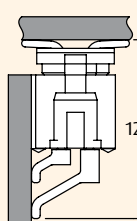
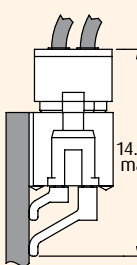
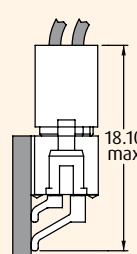
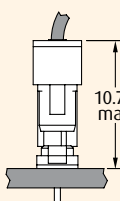
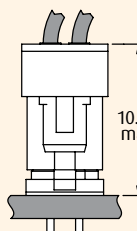
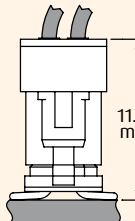
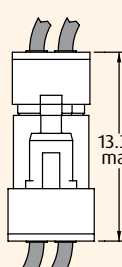
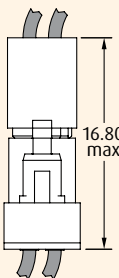
* Tested with latched connectors.

Pin Numbering



All dimensions in mm.

Datamate L-Tek Mating Profiles

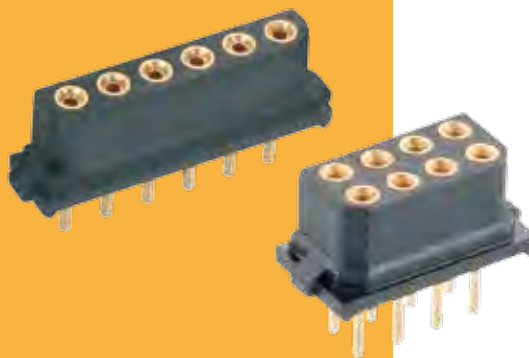
		FEMALE						
		VERTICAL PC TAIL		VERTICAL SMT	CRIMP		CRIMP (TRIO-TEK)	
		SIL	DIL	DIL	SIL	DIL	SIL	DIL
MALE	VERTICAL PC TAIL	 7.23	 7.23	 7.83	 10.00 max	 10.00 max	 13.46 max	 13.51 max
	HORIZONTAL PC TAIL	 7.98	 9.98	 10.58	 10.85 max	 12.95 max	 14.30 max	 16.35 max
	VERTICAL SMT		 7.93	 8.53		 10.75 max		 14.25 max
	HORIZONTAL SMT		 11.78	 12.38		 14.60 max		 18.10 max
	CRIMP	 10.79 max	 10.79 max	 11.39 max	 13.30 max	 13.30 max	 16.75 max	 16.80 max

All dimensions in mm.

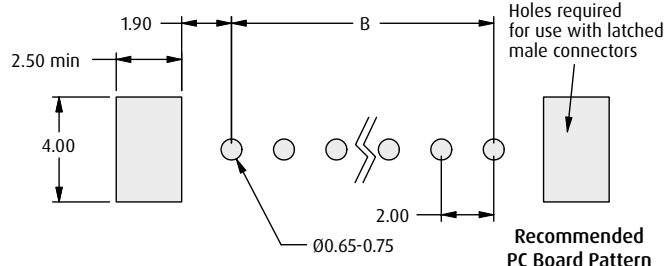
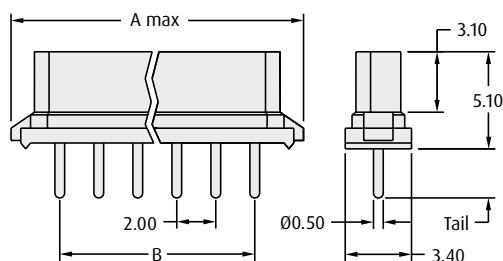
Datamate L-Tek Connectors

Female Vertical PC Tail

- Polarised mouldings.
- Dummy contacts are available for additional polarisation, use **order code M80-023**.



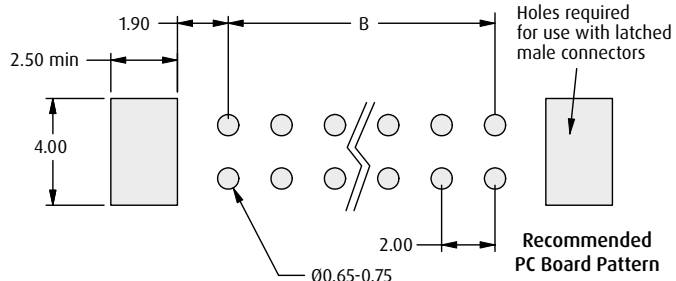
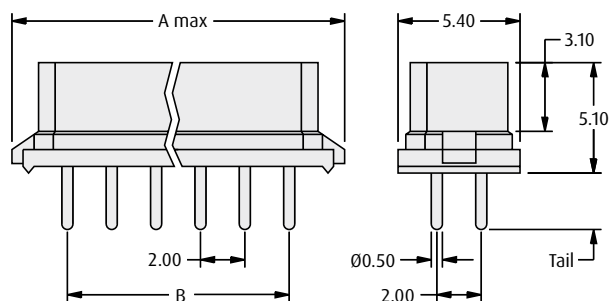
SINGLE ROW



CALCULATION

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

DOUBLE ROW



CALCULATION

A	$B + 5.15$
B	$\text{Total no. of contacts} - 2$

HOW TO ORDER

M80 - XXX XX XX

SERIES CODE

TYPE

840	Single Row (3mm tail)
850	Double Row (3mm tail)
790	Single Row (4.5mm tail)
770	Double Row (4.5mm tail)

FINISH

42	Gold + Tin
45	Gold

TOTAL NO. OF CONTACTS

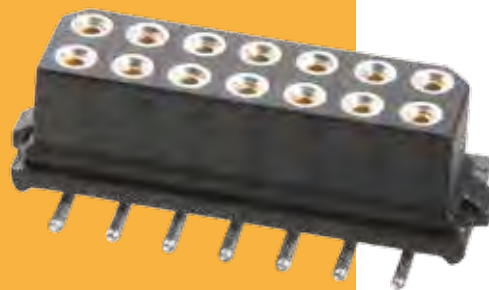
02 to 07, 17, 22	Single Row
04, 06, 08, 10, 12, 14, 16, 18, 20, 26, 34, 44	Double Row

All dimensions in mm.

Datamate L-Tek Connectors

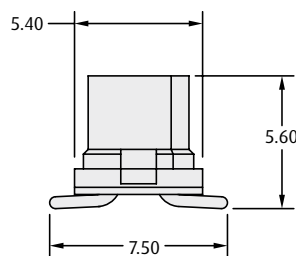
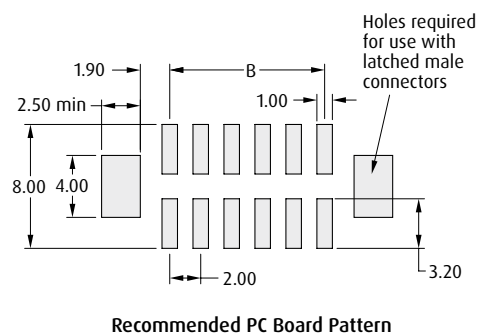
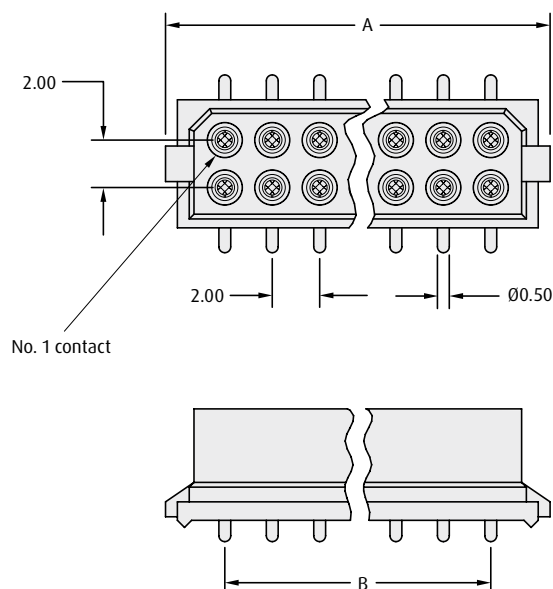
Female Vertical Surface Mount

- ❖ Optional pick and place cap.
- ❖ Contact datamate@harwin.com for tape & reel options.
- ❖ Gull wing SMT tails simplify inspection process.



DATAMATE L-TEK

DOUBLE ROW



CALCULATION

A	$B + 5.15$
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

BLANK	No cap
P	Pick and place cap

FINISH

42	Gold + Tin
45	Gold

All dimensions in mm.

Datamate L-Tek Connectors

Female Crimp Kit

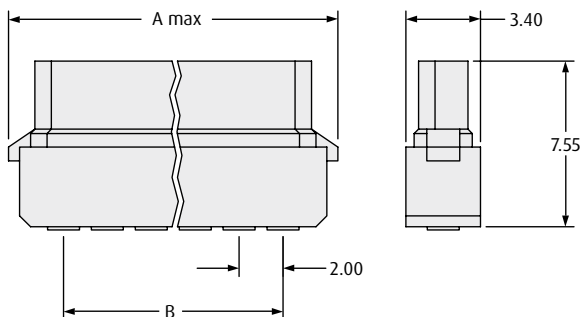
- Part numbers are for a complete kit of a housing and the applicable number of contacts.
- Contacts are rear insertable.
- Spare contacts are available – see the following page.



SINGLE ROW

CALCULATION

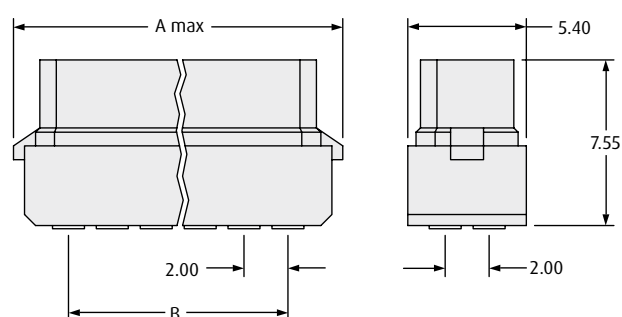
A	$B + 5.15$
B	$(\text{Total no. of contacts} - 1) \times 2$



DOUBLE ROW

CALCULATION

A	$B + 5.15$
B	$\text{Total no. of contacts} - 2$



TOOLS

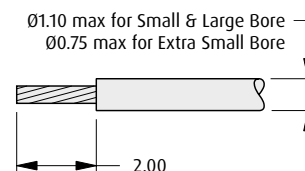
Recommended Crimp Tool – M22520/2-01

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.

WIRE STRIPPING DETAILS



HOW TO ORDER

M80 - XXX XX XX

SERIES CODE

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

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.

DATA-MATE L-TEK



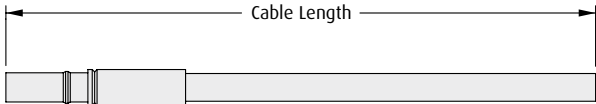
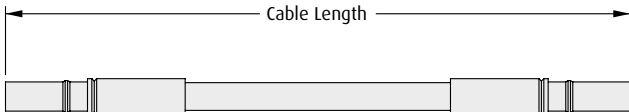
All dimensions in mm.

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																													
Contact Insertion/Removal Tool – Z80-Z80		- Full crimp connector kits and spare crimp contacts shown on previous pages. - Instruction sheets available at www.harwin.com/instructions.																											
HOW TO ORDER																													
M80 - 9XX 00 99		<table><tr><th colspan="2">CABLE COLOUR</th></tr><tr><td>99</td><td>Red</td></tr></table>		CABLE COLOUR		99	Red																						
CABLE COLOUR																													
99	Red																												
SERIES CODE	<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 L-Tek Connectors

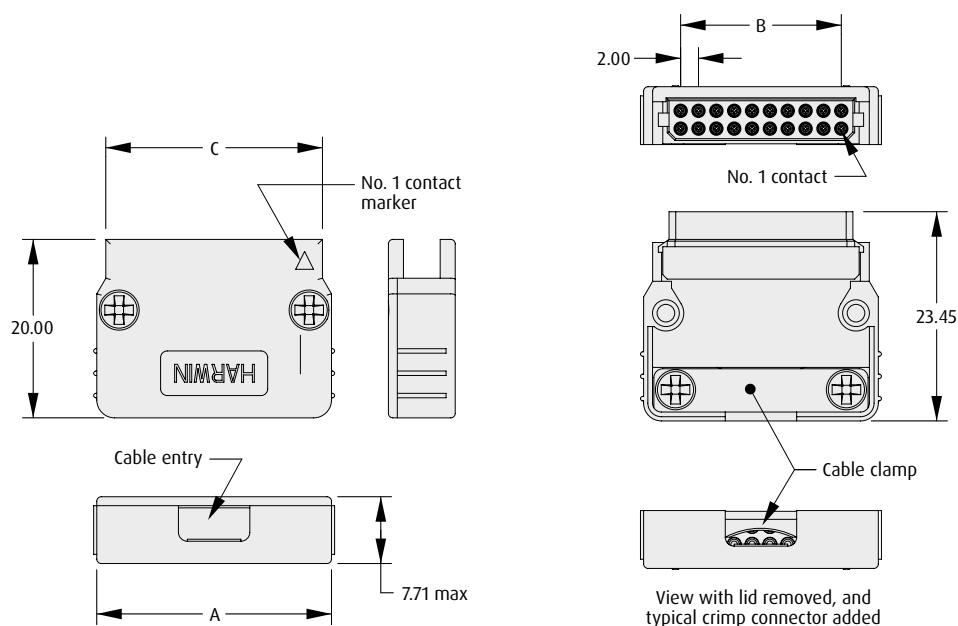
Female Accessories

- ❖ Crimp Hood is 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 or friction latch male connectors.
- ❖ Dummy contact can be used for additional polarisation or keying of multiple connectors.
- ❖ Fits both female PC Tail and Crimp housings.



DATAMATE L-TEK

CRIMP HOOD



CALCULATION

A	$B + 8.3$
B	Total no. of contacts - 2
C	$B + 6.3$

HOW TO ORDER

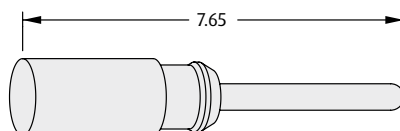
M80 - 880 XX 98

SERIES CODE

TOTAL NO. OF CONTACTS

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

DUMMY CONTACT



ORDER CODE

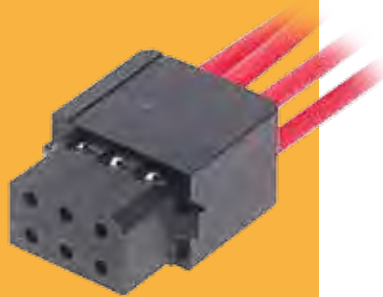
M80-023

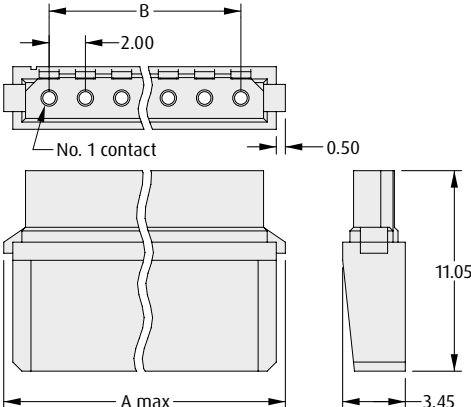
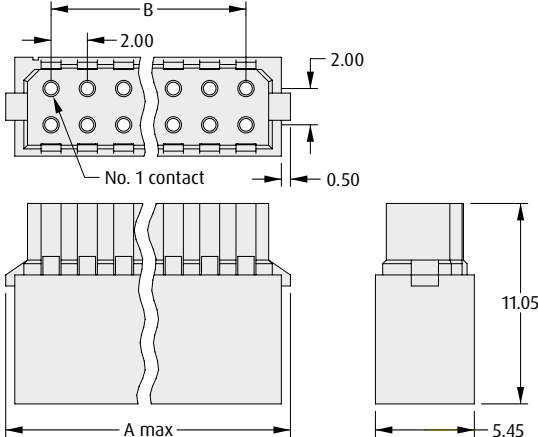
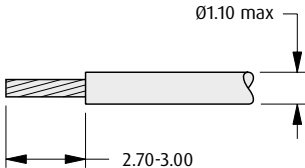
All dimensions in mm.

Datamate L-Tek Connectors

Female Crimp Housings Trio-Tek

- ❖ Part numbers are for housings only, see following page for Trio-Tek contacts.
- ❖ Contacts are rear-insertable.
- ❖ Crimp inspection window in housing.
- ❖ Mates with all standard Datamate L-Tek male connectors.
- ❖ Ideal for volume applications.



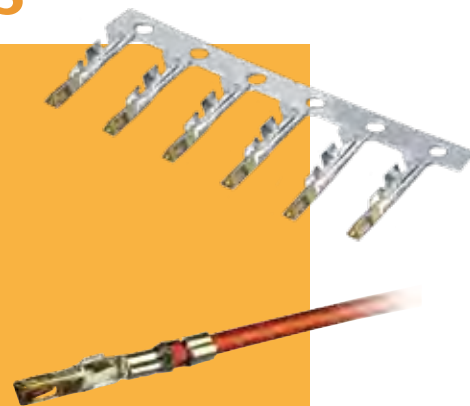
SINGLE ROW		CALCULATION		DOUBLE ROW		CALCULATION																	
		A	$B + 5.15$			A	$B + 5.15$																
		B	$(\text{Total no. of contacts} - 1) \times 2$			B	$\text{Total no. of contacts} - 2$																
TOOLS		WIRE STRIPPING DETAILS																					
Recommended Hand Crimp Tool – Z80-255 Contact Removal Tool – Z80-258 ❖ Open crimp contacts shown on following page. ❖ Instruction sheets available at www.harwin.com/instructions.																							
HOW TO ORDER																							
M80 - 69 X XX 98																							
<table><tr><th colspan="2">SERIES CODE</th></tr><tr><td>0</td><td>Single Row</td></tr><tr><td>1</td><td>Double Row</td></tr></table>		SERIES CODE		0	Single Row	1	Double Row	<table><tr><th colspan="2">FINISH</th></tr><tr><td>98</td><td>Housing</td></tr></table>				FINISH		98	Housing	<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, 44</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, 44	Double Row
SERIES CODE																							
0	Single Row																						
1	Double Row																						
FINISH																							
98	Housing																						
TOTAL NO. OF CONTACTS																							
02 to 07, 17	Single Row																						
04, 06, 08, 10, 12, 14, 16, 18, 20, 26, 34, 44	Double Row																						

All dimensions in mm.

Datamate L-Tek Connectors

Female Crimp Contacts Trio-Tek

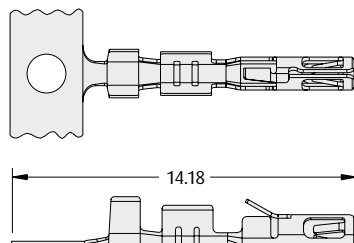
- ❖ Trio-Tek contacts must be ordered separately, see previous page for applicable housings.
- ❖ Crimp contacts are available loose, or in continuous reeled format for automated crimping.



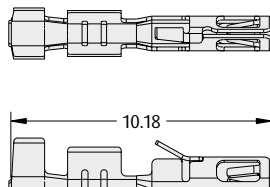
DATAMATE L-TEK

CRIMP CONTACTS

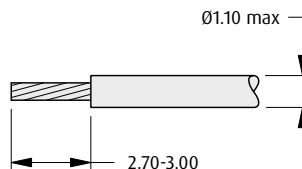
Reeled



Loose



WIRE STRIPPING DETAILS



TOOLS

Recommended Hand Crimp Tool – Z80-255

Contact Removal Tool – Z80-258

❖ Crimp housings shown on previous page.

❖ Instruction sheets available at www.harwin.com/instructions.

HOW TO ORDER

SERIES CODE

M80

-

2XX

00

XX

TYPE

253	Trio-Tek Crimp 22-24 AWG, Reeled
254	Trio-Tek Crimp 26-28 AWG, Reeled
283	Trio-Tek Crimp 22-24 AWG, Loose
284	Trio-Tek Crimp 26-28 AWG, Loose

FINISH

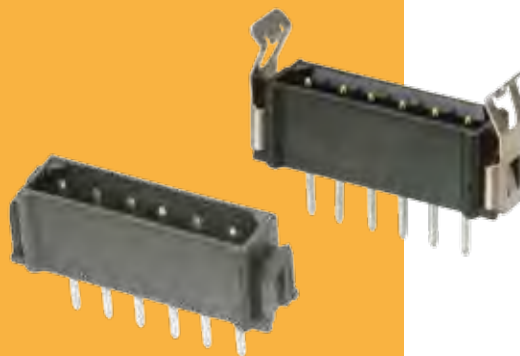
42	Gold + Tin
45	Gold

All dimensions in mm.

Datamate L-Tek Connectors

Male Single Row Vertical PC Tail

- Polarised mouldings.
- 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**.



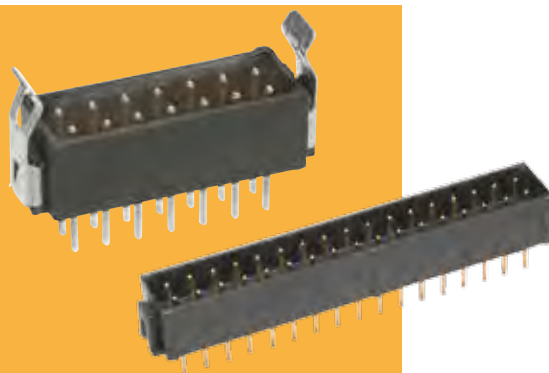
NO LATCHES		CALCULATION		Recommended PC Board Pattern		STRAIN RELIEF STRAP	
		A B + 5.6 B (Total no. of contacts - 1) x 2					
						ORDER CODE M80-0030006	
LOCKING LATCH				FRICTION LATCH			
				CALCULATION			
				A B + 6.1 B (Total no. of contacts - 1) x 2			
HOW TO ORDER							
M80 - XXX XX XX							
SERIES CODE				FINISH			
3mm TAIL		4.5mm TAIL		42 Gold + Tin 45 Gold			
852		752					
882		782		TOTAL NO. OF CONTACTS			
881		781		02 to 07, 17, 22			

All dimensions in mm.

Datamate L-Tek Connectors

Male Double Row Vertical PC Tail

- ❖ Polarised mouldings.
- ❖ 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		Recommended PC Board Pattern		STRAIN RELIEF STRAP	
		A	B + 5.6				
		B	Total no. of contacts - 2	ORDER CODE			
				M80-0030006			

LOCKING LATCH		FRICTION LATCH	

CALCULATION	
A	B + 6.1
B	Total no. of contacts - 2

HOW TO ORDER			
M80 - XXX XX XX			
SERIES CODE		FINISH	
3mm TAIL	4.5mm TAIL	42	Gold + Tin
854	754	45	Gold
853	753		
863	763		

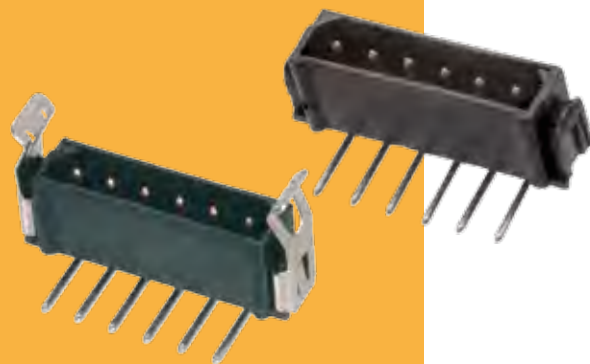
TOTAL NO. OF CONTACTS	
04, 06, 08, 10, 12, 14, 16, 18, 20, 26, 34, 44	

All dimensions in mm.

Datamate L-Tek Connectors

Male Single Row Horizontal PC Tail

- Polarised mouldings.
- 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**.



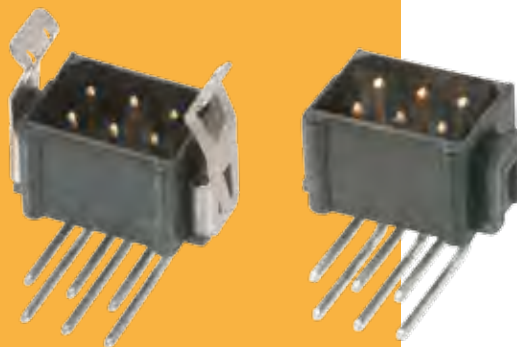
NO LATCHES		CALCULATION		Recommended PC Board Pattern	STRAIN RELIEF STRAP		
		A	B + 5.6				
		B	(Total no. of contacts - 1) x 2				
					View of Strain Relief strap in place		
LOCKING LATCH				FRICITION LATCH			
				CALCULATION			
				A B + 6.1			
				B (Total no. of contacts - 1) x 2			
HOW TO ORDER							
SERIES CODE		M80 - XXX XX XX				FINISH	
3mm TAIL		4.5mm TAIL				42 Gold + Tin	
843		793		No Latches		45 Gold	
842		792		Locking Latch		TOTAL NO. OF CONTACTS	
846		796		Friction Latch		02 to 07, 17, 22	

All dimensions in mm.

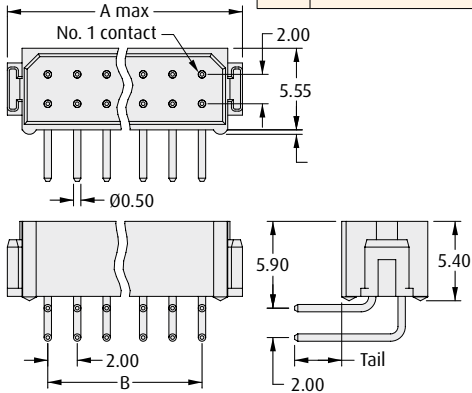
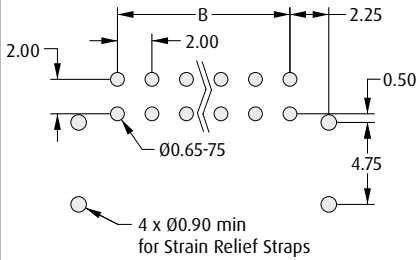
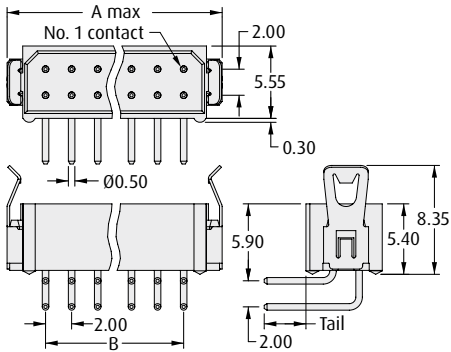
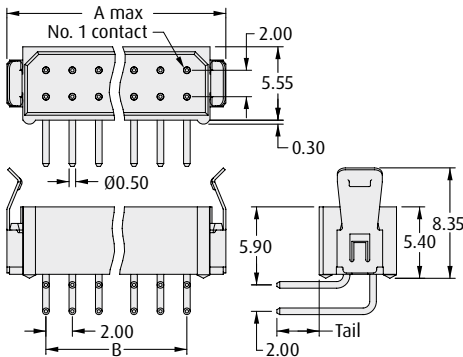
Datamate L-Tek Connectors

Male Double Row Horizontal PC Tail

- ❖ Polarised mouldings.
- ❖ 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		Recommended PC Board Pattern	STRAIN RELIEF STRAP		
		A	B + 5.6				
		B	Total no. of contacts - 2				
					 View of Strain Relief strap in place		
LOCKING LATCH		CALCULATION		Recommended PC Board Pattern	STRAIN RELIEF STRAP		
		A	B + 6.1				
		B	Total no. of contacts - 2				
							
HOW TO ORDER						STRAIN RELIEF STRAP	
M80 - XXX XX XX							
SERIES CODE						FINISH	
3mm TAIL		4.5mm TAIL				42 Gold + Tin	
841		791				45 Gold	
851		771					
839		789					
						TOTAL NO. OF CONTACTS	
						04, 06, 08, 10, 12, 14, 16, 18, 20, 26, 34, 44	

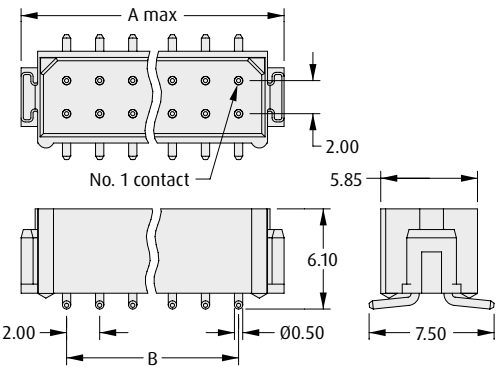
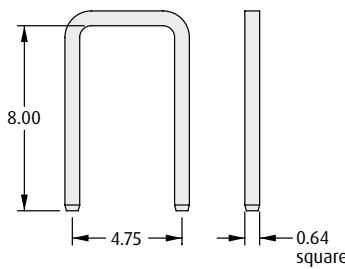
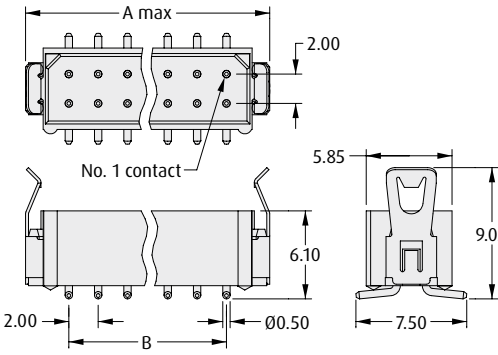
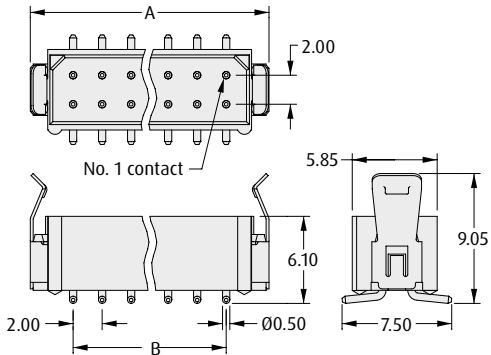
All dimensions in mm.

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**.
- Contact datamate@harwin.com for tape & reel options.
- Optional pick and place cap.
- Gull wing SMT tails simplify inspection process.



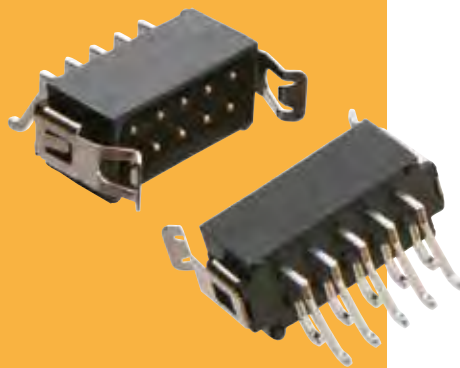
NO LATCHES		CALCULATION		Recommended PC Board Pattern	STRAIN RELIEF STRAP																			
		A	$B + 5.6$																					
		B	Total no. of contacts - 2			ORDER CODE M80-0030006																		
LOCKING LATCH				FRICTION LATCH																				
																								
<table><tr><th colspan="2">CALCULATION</th></tr><tr><td>A</td><td>$B + 6.1$</td></tr><tr><td>B</td><td>Total no. of contacts - 2</td></tr></table>				CALCULATION		A	$B + 6.1$	B	Total no. of contacts - 2															
CALCULATION																								
A	$B + 6.1$																							
B	Total no. of contacts - 2																							
HOW TO ORDER																								
M80 - 82X XX XX P																								
<table><tr><th colspan="2">TYPE</th></tr><tr><td>826</td><td>No Latches</td></tr><tr><td>827</td><td>Friction Latch</td></tr><tr><td>828</td><td>Locking Latch</td></tr></table>		TYPE		826	No Latches	827	Friction Latch	828	Locking Latch	<table><tr><th colspan="2">TOTAL NO. OF CONTACTS</th></tr><tr><td colspan="2">04, 06, 08, 10, 12, 14, 16, 18, 20, 26, 34</td></tr></table>			TOTAL NO. OF CONTACTS		04, 06, 08, 10, 12, 14, 16, 18, 20, 26, 34		<table><tr><th colspan="2">PICK AND PLACE CAP</th></tr><tr><td>BLANK</td><td>No cap</td></tr><tr><td>P</td><td>Pick and place cap</td></tr></table>		PICK AND PLACE CAP		BLANK	No cap	P	Pick and place cap
TYPE																								
826	No Latches																							
827	Friction Latch																							
828	Locking Latch																							
TOTAL NO. OF CONTACTS																								
04, 06, 08, 10, 12, 14, 16, 18, 20, 26, 34																								
PICK AND PLACE CAP																								
BLANK	No cap																							
P	Pick and place cap																							
		<table><tr><th colspan="2">FINISH</th></tr><tr><td>42</td><td>Gold + Tin</td></tr><tr><td>45</td><td>Gold</td></tr></table>			FINISH		42	Gold + Tin	45	Gold														
FINISH																								
42	Gold + Tin																							
45	Gold																							

All dimensions in mm.

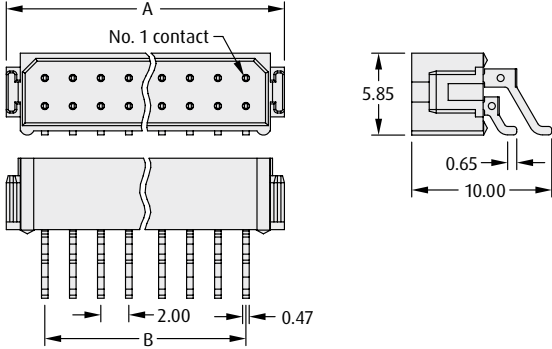
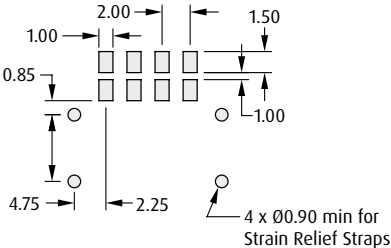
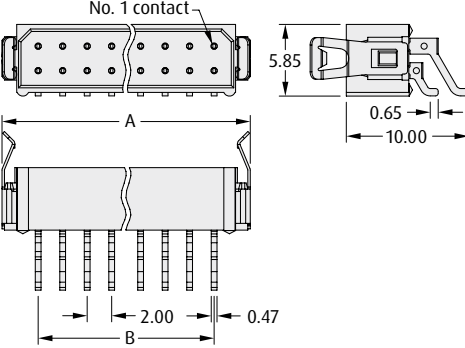
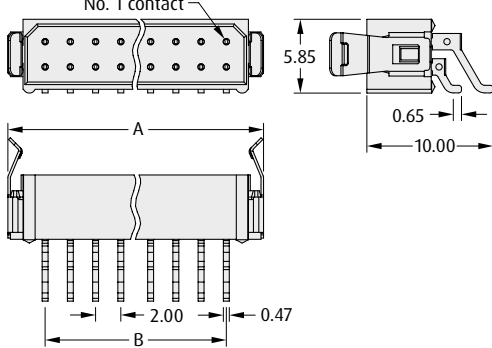
Datamate L-Tek Connectors

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.
- ❖ Contact datamate@harwin.com for tape & reel options.



DATAMATE L-TEK

NO LATCHES		CALCULATION		STRAIN RELIEF STRAP	
		A	$B + 5.6$	Recommended PC Board Pattern 	
		B	Total no. of contacts - 2		
				 View of Strain Relief strap in place	
LOCKING LATCH		FRICTION LATCH			
					
		CALCULATION			
		A	$B + 6.1$		
		B	Total no. of contacts - 2		
HOW TO ORDER					
M80 - 66X XX 42					
SERIES CODE				FINISH	
TYPE				42 Gold + Tin	
665 No Latches					
666 Locking Latch					
667 Friction Latch					
				TOTAL NO. OF CONTACTS	
				04, 06, 08, 10, 12, 14, 16, 18, 20, 26, 34, 44	

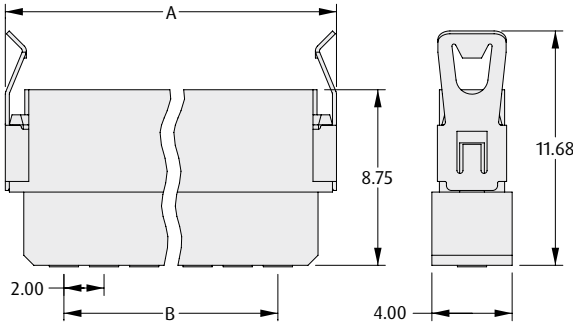
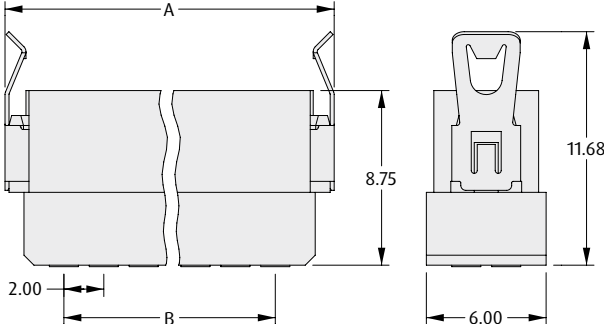
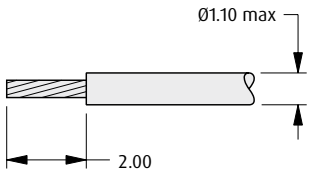
All dimensions in mm.

Datamate L-Tek Connectors

Male 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.
- Back potting & cable assembly service available, contact cables@harwin.com.



SINGLE ROW		CALCULATION		DOUBLE ROW		CALCULATION																																
Latches (when fitted) add 0.5mm to overall length 'A'		A	B + 5.6	Latches (when fitted) add 0.5mm to overall length 'A'		A	B + 5.6																															
		B	(Total no. of contacts - 1) x 2			B	Total no. of contacts - 2																															
																																						
TOOLS		WIRE STRIPPING DETAILS																																				
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.																																						
HOW TO ORDER																																						
SERIES CODE		M80 - 8XX XX 05																																				
<table><tr><th>SINGLE ROW</th><th>DOUBLE ROW</th><th></th></tr><tr><td>806</td><td>810</td><td>Small Bore (24-28 AWG), No Latches</td></tr><tr><td>807</td><td>811</td><td>Large Bore (22 AWG), No Latches</td></tr><tr><td>808</td><td>812</td><td>Small Bore (24-28 AWG), Locking Latch</td></tr><tr><td>809</td><td>813</td><td>Large Bore (22 AWG), Locking Latch</td></tr><tr><td>883</td><td>816</td><td>Small Bore (24-28 AWG), Friction Latch</td></tr><tr><td>884</td><td>817</td><td>Large Bore (22 AWG), Friction Latch</td></tr></table>		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	883	816	Small Bore (24-28 AWG), Friction Latch	884	817	Large Bore (22 AWG), Friction Latch	<table><tr><th colspan="2">FINISH</th></tr><tr><td>05</td><td>Gold</td></tr></table>		FINISH		05	Gold	<table><tr><th colspan="2">TOTAL NO. OF CONTACTS</th></tr><tr><td>02, 03, 04, 05, 06, 07</td><td>Single Row</td></tr><tr><td>04, 06, 08, 10, 12</td><td>Double Row</td></tr></table>				TOTAL NO. OF CONTACTS		02, 03, 04, 05, 06, 07	Single Row	04, 06, 08, 10, 12	Double Row
SINGLE ROW	DOUBLE ROW																																					
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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.

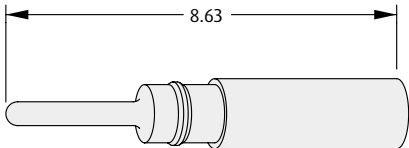
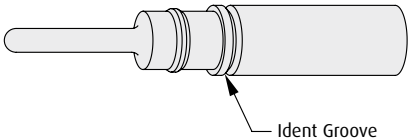
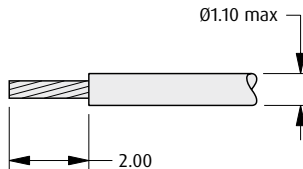
Datamate L-Tek Connectors

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								
Large Bore (22 AWG)  Small Bore (24 to 28 AWG) 	 TOOLS Recommended Crimp Tool - M22520/2-01 Positioner - T5747 Contact Insertion/Removal Tool - Z80-280 ❖ Instruction sheets available at www.harwin.com/instructions.								
HOW TO ORDER									
SERIES CODE <table border="1"> <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> M80 - 04X 00 05 FINISH <table border="1"> <tbody> <tr> <td>05</td> <td>Gold</td> </tr> </tbody> </table>		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.
- ❖ A Datamate Crimping Instruction video is available at 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.  <table border="1" data-bbox="430 1003 808 1108"> <thead> <tr> <th colspan="2">ORDER CODE</th> </tr> </thead> <tbody> <tr> <td>Signal contacts, L-Tek, J-Tek & Mix-Tek</td> <td>M22520/2-01</td> </tr> </tbody> </table>	ORDER CODE		Signal contacts, L-Tek, J-Tek & Mix-Tek	M22520/2-01	HAND CRIMP TOOL ❖ Standard circular crimp tool. ❖ Precision tool with ratchet mechanism and 8-indent form. ❖ Must be used with applicable positioner shown below. ❖ Instruction sheet available.  <table border="1" data-bbox="1166 1003 1502 1108"> <thead> <tr> <th colspan="2">ORDER CODE</th> </tr> </thead> <tbody> <tr> <td>Inner contact of Mix-Tek coax contacts</td> <td>Z80-292</td> </tr> </tbody> </table>	ORDER CODE		Inner contact of Mix-Tek coax contacts	Z80-292				
ORDER CODE													
Signal contacts, L-Tek, J-Tek & Mix-Tek	M22520/2-01												
ORDER CODE													
Inner contact of Mix-Tek coax contacts	Z80-292												
HAND CRIMP TOOL ❖ Standard coax crimp tool for crimping the outer sleeve of Mix-Tek coax contacts. ❖ Instruction sheet available.  <table border="1" data-bbox="467 1795 808 1900"> <thead> <tr> <th colspan="2">ORDER CODE</th> </tr> </thead> <tbody> <tr> <td>Outer sleeve of Mix-Tek coax contacts</td> <td>Z80-293</td> </tr> </tbody> </table>	ORDER CODE		Outer sleeve of Mix-Tek coax contacts	Z80-293	POSITIONER ❖ Used with applicable hand crimp tool.  <table border="1" data-bbox="1075 1696 1502 1900"> <thead> <tr> <th colspan="2">ORDER CODE</th> </tr> </thead> <tbody> <tr> <td>Female Signal Barrel Crimp, Male L-Tek Crimp</td> <td>T5747</td> </tr> <tr> <td>Male J-Tek, Mix-Tek Signal Crimp</td> <td>Z80-193</td> </tr> <tr> <td>Inner contact of Mix-Tek coax contacts</td> <td>Z80-291</td> </tr> </tbody> </table>	ORDER CODE		Female Signal Barrel Crimp, Male L-Tek Crimp	T5747	Male J-Tek, Mix-Tek Signal Crimp	Z80-193	Inner contact of Mix-Tek coax contacts	Z80-291
ORDER CODE													
Outer sleeve of Mix-Tek coax contacts	Z80-293												
ORDER CODE													
Female Signal Barrel Crimp, Male L-Tek Crimp	T5747												
Male J-Tek, Mix-Tek Signal Crimp	Z80-193												
Inner contact of Mix-Tek coax contacts	Z80-291												

Datamate Tooling

- ❖ Instruction sheets can be accessed at www.harwin.com/instructions.
- ❖ A Datamate Crimping Instruction video is available at www.harwin.com/harwintv.

INSERTION/REMOVAL TOOL ❖ For inserting crimped contacts into the rear of mouldings. ❖ Instruction sheet available. ❖ Suitable for all Datamate signal Barrel crimp contacts.  ORDER CODE Barrel Signal crimps for L-Tek, J-Tek & Mix-Tek Z80-280	REMOVAL TOOL ❖ To aid removal of special cable contacts from Mix-Tek connectors.  ORDER CODE Mix-Tek special cable connectors Z80-290
SEPARATOR TOOL ❖ Recommended for unplugging L-Tek latched connectors (tool releases the latches prior to disengagement). ❖ Can also be used with unlatched and friction latched connectors. ❖ Suitable for all sizes.  ORDER CODE L-Tek Z80-299	SCREWDRIVER ❖ Recommended for use on J-Tek board mount nuts. ❖ Board mount nuts and bolts to be tightened to a torque of 21 ±2cmN.  ORDER CODE J-Tek screwdriver Z80-298

Datamate Tooling

❖ Technical drawings can be accessed from the individual product pages at www.harwin.com - just search for the part number.

HEX DRIVE BIT ❖ 1.5mm A/F Hex end for board mount Hex Socket bolts. ❖ For use with torque tooling or similar equipment.  ORDER CODE Z9950-00	HEX DRIVE BIT ❖ 2mm A/F Hex end for Hex Socket floating jackscrews (Female jackscrews or Male Reverse fix jackscrews). ❖ For use with torque tooling or similar equipment.  ORDER CODE Z9951-00
BALL HEX DRIVER ❖ 1.5mm A/F Hex end for board mount Hex Socket bolts. ❖ Ball-shaped end can be used at a wide range of angles.  ORDER CODE Z9952-00	BALL HEX DRIVER ❖ 2mm A/F Hex end for Hex Socket floating jackscrews (Female jackscrews or Male Reverse fix jackscrews). ❖ Ball-shaped end can be used at a wide range of angles.  ORDER CODE Z9953-00

Datamate Tooling

- ❖ Tooling suitable for Datamate Trio-Tek contacts and housings.
- ❖ Instruction sheets can be accessed at www.harwin.com/instructions.

HAND CRIMP TOOL ❖ ‘Rigidus’ crimp tool design. ❖ Precision parallel action crimp tool with ratchet mechanism. ❖ Supplied with locator and die-set – spares available. ❖ Instruction sheet available.  ORDER CODE Z80-255	REMOVAL TOOL ❖ For removal of crimped contacts from mouldings. ❖ Instruction sheet available.  ORDER CODE Z80-258
SPARE DIE-SET ❖ Spare die-set for use with hand crimp tool shown above.  ORDER CODE Z80-244	SPARE LOCATOR ❖ Used with hand crimp tool shown above.  ORDER CODE Z80-259

Connectors

Contents

1.00mm Pitch Industry Standard Connectors

1.25mm Pitch Industry Standard Connectors

Archer - 1.27mm Pitch Industry Standard Connectors

- Specifications

- Mating Profiles

- Female PCB Connectors

- Jumper Sockets

- Male PCB Connectors

- Polarised Female PCB Connectors

- Polarised Male PCB Connectors

- IDC Female Cable Connectors

- IDC-Mating Male PCB Connectors

- IDC Male Cable Connectors

- IDC Cable Assemblies

- 2.54mm Row Pitch Female PCB Connectors

- 2.54mm Row Pitch Male PCB Connectors

M22 - 2.00mm Pitch Industry Standard Connectors

- Specifications

- Mating Profiles

- Female PCB Connectors

- Female Cable Connectors

- Jumper Sockets

- Male PCB Connectors

M20 - 2.54mm Pitch Industry Standard Connectors

- Specifications

- Mating Profiles

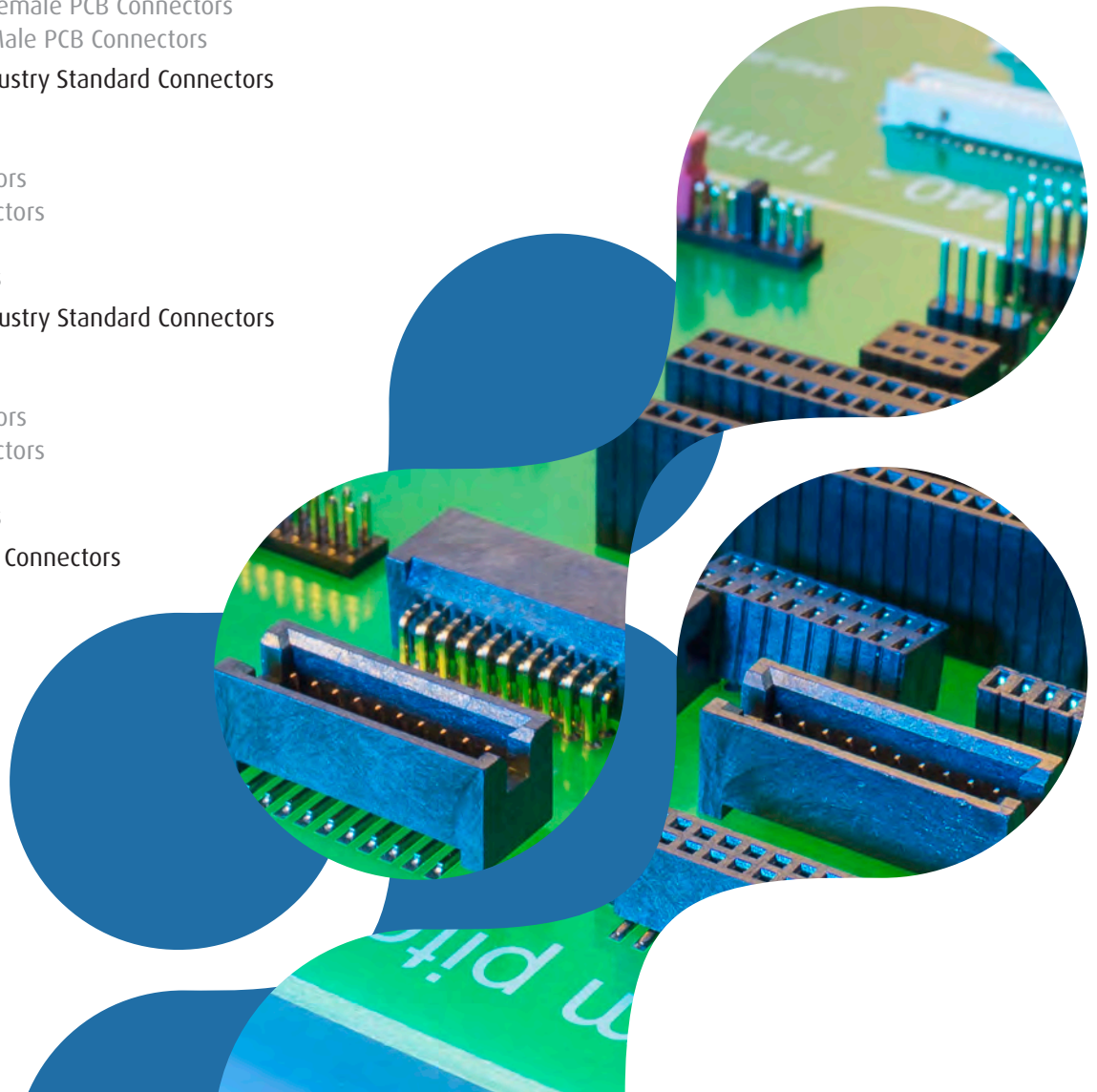
- Female PCB Connectors

- Female Cable Connectors

- Jumper Sockets

- Male PCB Connectors

PC/104 and PC/104-Plus Connectors



M40-600/620 Connectors Specification

❖ A range of double row 1.00mm pitch SMT male and female connectors for board-to-board stacking.

❖ Materials

Mouldings:	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

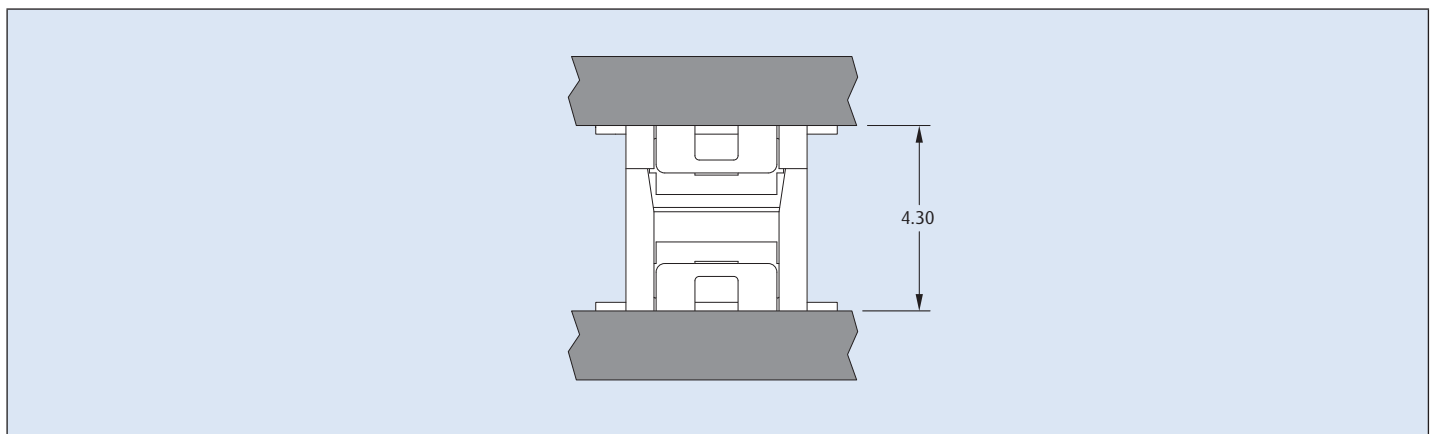
Durability:	30 operations
Insertion force (max):	2.7N per contact
Withdrawal force (min):	0.4N per contact

❖ Environmental

Operating temperature:	-20°C to +125°C
Solderability:	210°C for 5 seconds
Soldering heat resistance:	260°C for 10 seconds

1mm (.039") PITCH

Mating Profile

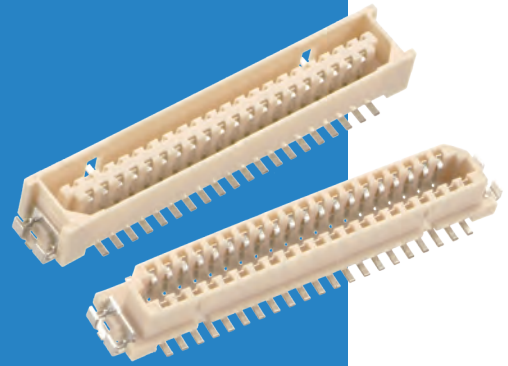


All dimensions in mm.

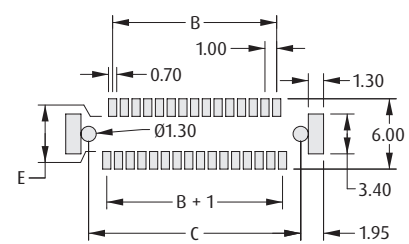
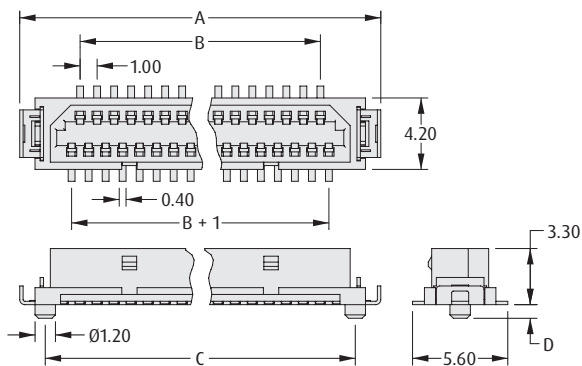
M40 Connectors

Vertical Surface Mount

- ❏ Locating pegs to ensure correct positioning onto the board.
- ❏ Polarised to prevent mis-mating.
- ❏ Staggered pin-out to help board layout.



FEMALE

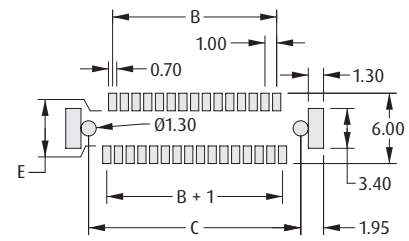
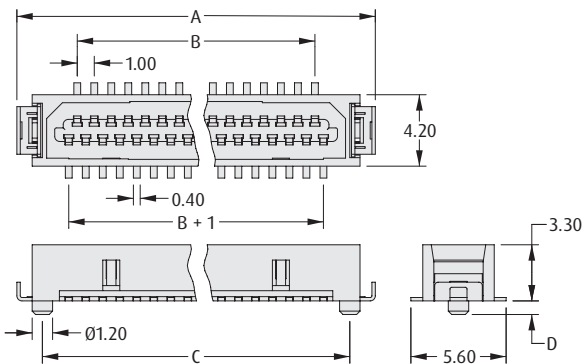


Recommended PC Board Pattern

CALCULATION

A	$B + 7.1$
B	$(\text{Total No. Of Contacts} - 3) / 2$
C	$B + 4.1$
D	1.00mm for 9, 15, 21, 25 way; otherwise 0.80mm
E	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

0	Male
2	Female

PACKAGING

Blank	Loose
R	Tape & Reeled

FINISH

46	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

Mouldings:	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

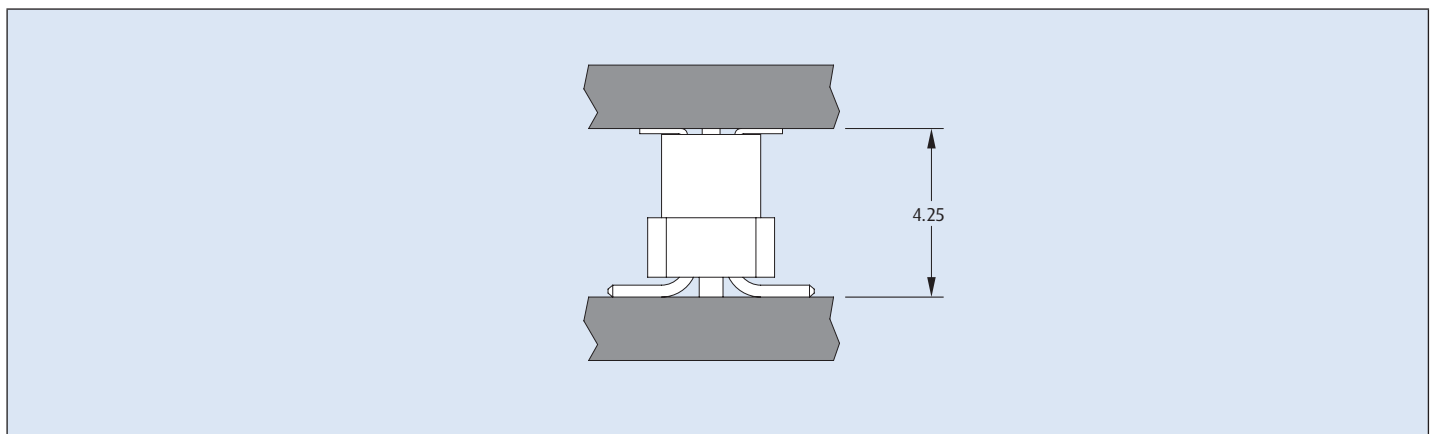
Durability:	300 operations
Insertion force (max):	1.5N per contact
Withdrawal force (min):	0.1N per contact
Vibration sensitivity:	50 – 2000Hz, 45 minutes duration
Shock severity:	294m/s ² (30G) for 11ms

❖ Environmental

Operating temperature:	-40°C to +105°C
Solderability:	245°C for 5 seconds
Soldering heat resistance:	260°C for 10 seconds

1mm (.039") PITCH

Mating Profile

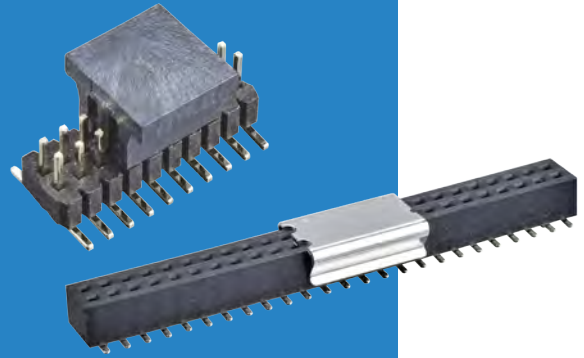


All dimensions in mm.

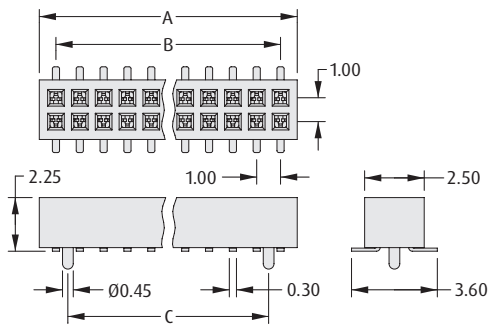
M40 Connectors

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.

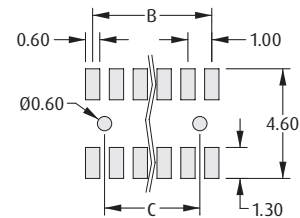


FEMALE



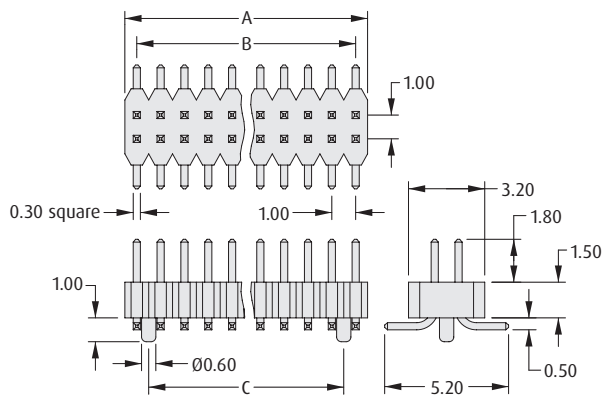
CALCULATION

A	$B + 1.4$
B	No. of contacts per row - 1
C	No. of contacts per row - 2



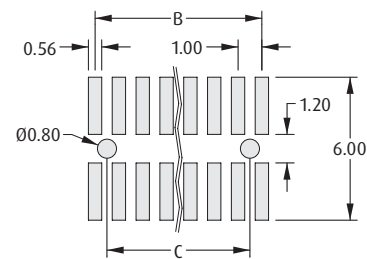
Recommended PC Board Pattern

MALE



CALCULATION

A	No. of contacts per row
B	No. of contacts per row - 1
C	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.

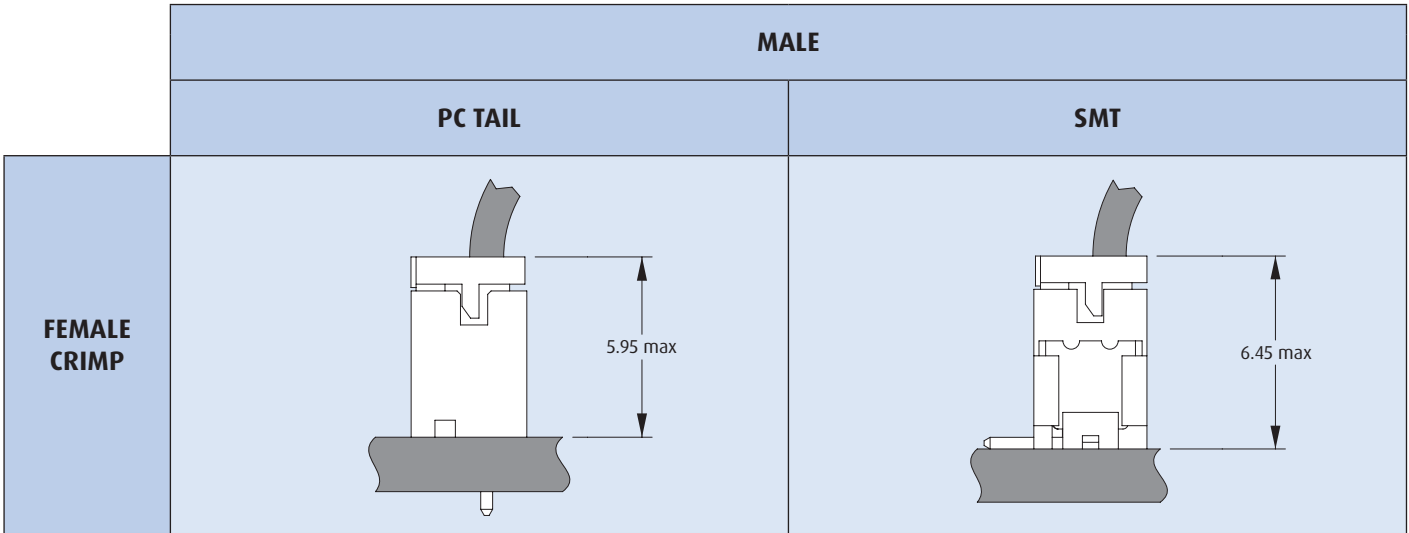
M30 Connectors Specification

➤ A range of 1.25mm pitch male and female connectors, for cable-to-board applications.

➤ Material		➤ Mechanical	
Mouldings		Durability:	50 operations
SMT:	Nylon 6T, UL94V-0	Insertion force (max):	4.9N per contact
Others:	Nylon 66, UL94V-0	Withdrawal force (min):	0.5N per contact
Contacts		Crimp retention (min):	4.9N per contact
Male:	Brass	Crimped wire retention (min)	
Female:	Phosphor Bronze	26 AWG wire:	19.6N
Finish:	Tin	28 AWG wire:	9.8N
		30 AWG wire:	7.8N
➤ Electrical		Vibration sensitivity:	10 – 55Hz, 1.5mm, 6 hours duration
Current:	1A per contact	Shock severity:	490m/s2 (50G) for 11ms
Working voltage:	150V AC		
Voltage proof:	500V AC/DC		
Contact resistance:	30mΩ max		
Insulation resistance:	500MΩ min		
		➤ 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

1.25mm (.049") PITCH

Mating Profiles

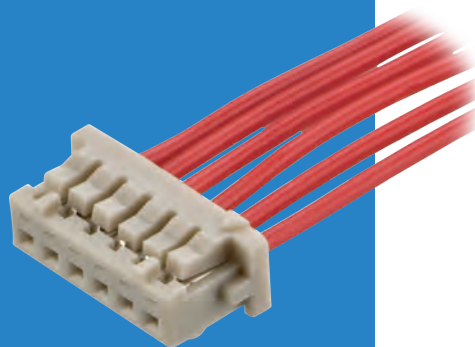


All dimensions in mm.

M30 Connectors

Female Crimp Housing

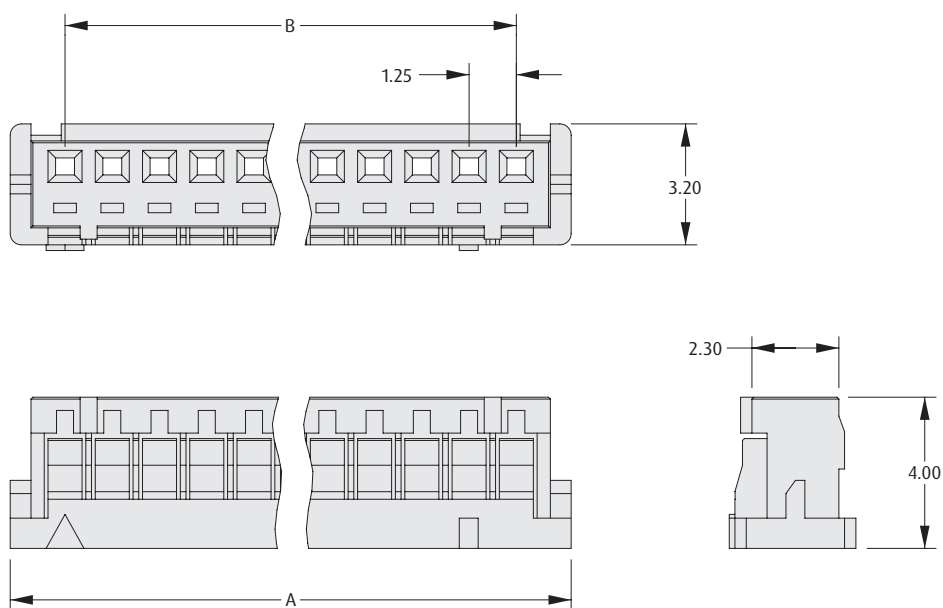
- ❏ Loose or reeled contacts.
- ❏ Crimp contacts or pre-cabled contacts are ordered separately - see the following pages.



HOUSING

CALCULATION

A	$B + 2.9$
B	$1.25 \times (\text{No. of contacts per row} - 1)$



HOW TO ORDER

M30 - 110 XX 00

SERIES CODE

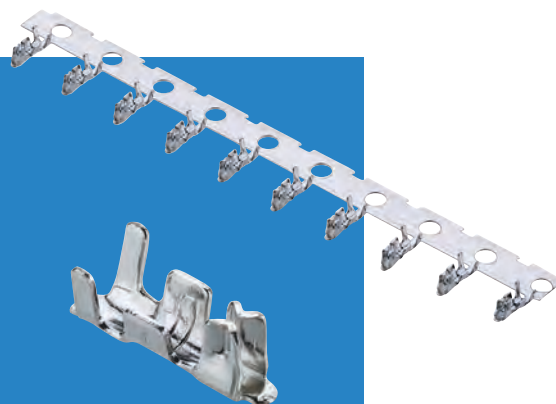
NO. OF CONTACTS PER ROW
02 to 15

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.

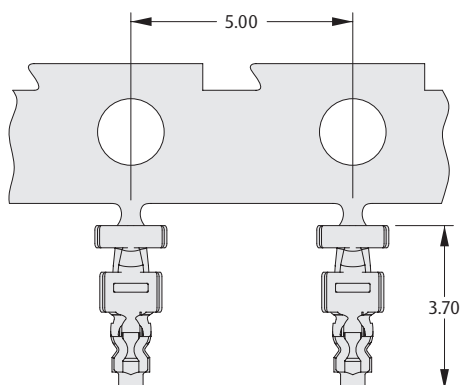


1.25mm (.049") PITCH

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

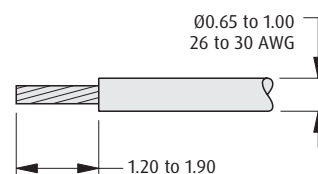
- ❖ Instruction sheet is available at www.harwin.com/instructions.
- ❖ For use with loose contacts.



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

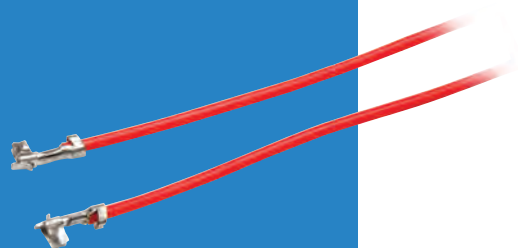
46 Tin

All dimensions in mm.

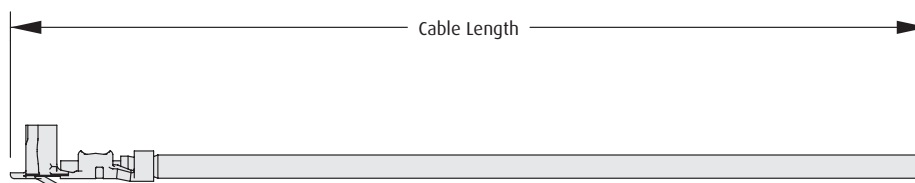
M30 Connectors

Female Crimp Contacts – Pre-Crimped Wires

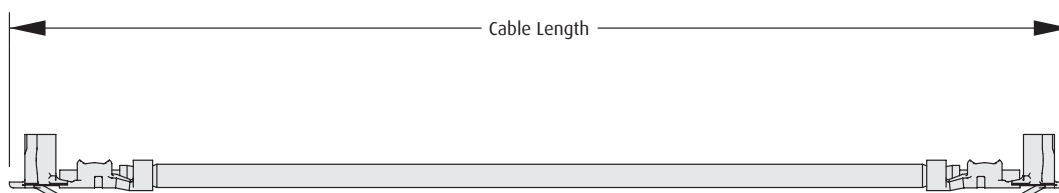
- ❖ Female crimp contacts pre-assembled with a choice of wire sizes and lengths.
- ❖ PTFE-insulated, multi-strand silver-plated copper conductor equipment wire.
- ❖ Use with female crimp housings shown on previous page.
- ❖ Ideal for prototype and pre-production applications.
- ❖ Individual contacts without wire shown on previous page.



FEMALE SINGLE ENDED



FEMALE - FEMALE



HOW TO ORDER

M30 - 9XX 00 99

SERIES CODE

CABLE COLOUR

99 Red

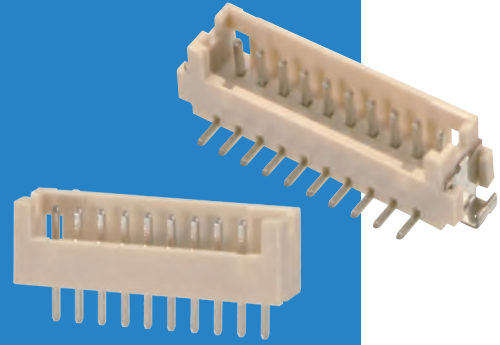
SINGLE ENDED	FEMALE - FEMALE	
900	904	26 AWG cable, 150mm length
901	905	30 AWG cable, 150mm length
902	906	26 AWG cable, 300mm length
903	907	30 AWG cable, 150mm length

All dimensions in mm.

M30 Connectors

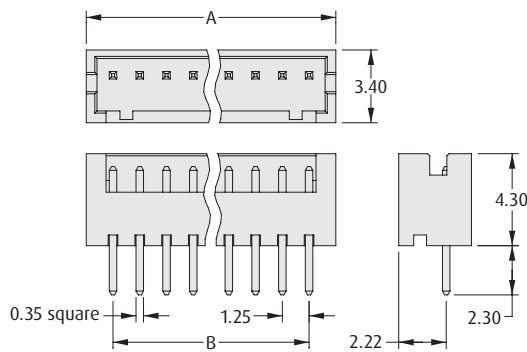
Male Vertical

- ❖ 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, contact technical@harwin.com for availability.



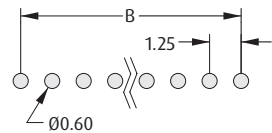
1.25mm (.049") PITCH

PC TAIL



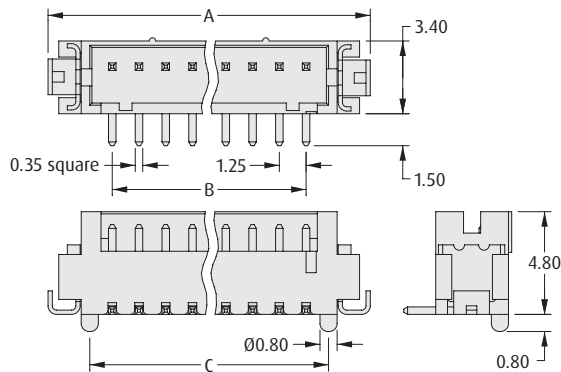
CALCULATION

A	$1.25 \times (\text{No. of contacts per row} + 1)$
B	$1.25 \times (\text{No. of contacts per row} - 1)$



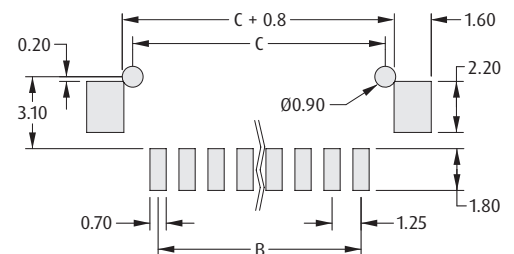
Recommended PC Board Pattern

SURFACE MOUNT



CALCULATION

A	$B + 6$
B	$1.25 \times (\text{No. of contacts per row} - 1)$
C	$B + 2.1$



Recommended PC Board Pattern

HOW TO ORDER

M30 - 6 X 0 XX XX X

SERIES CODE

TYPE

0	Surface Mount
1	PC Tail

PACKAGING

Blank	Loose
R	Tape & Reeled (M30-600)

FINISH

46 Tin

NO. OF CONTACTS PER ROW

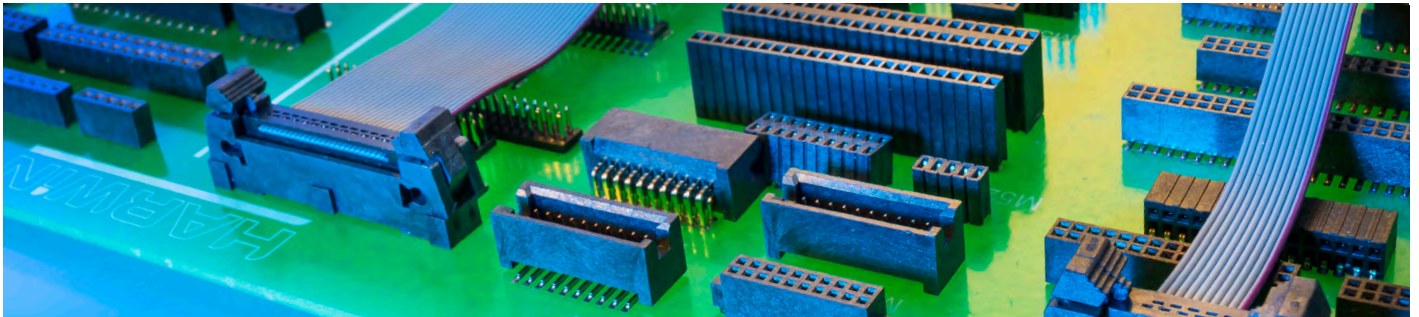
02 to 15

All dimensions in mm.

Archer Connectors

The Archer range from Harwin is a series of 1.27mm (0.05") pitch connectors, offering single and double row options at half the PCB footprint of a 2.54mm (0.1") pitch connector. These Industry Standard connectors are backed by Harwin's outstanding service, quality and distribution network, and are an ideal choice for a miniature alternative to larger pin header and socket connections.

- ❖ M50 – Single and Double row pin headers and sockets, in vertical and horizontal orientations, for board-to-board connections. 1.27mm (0.05") pitch in both directions, with 0.4mm square male pins. Jumper Sockets and Pin Header Variants also available.
- ❖ M50 Polarised – Double row connectors for board-to-board, with added shrouding and a polarisation feature.
- ❖ M50 IDC – Cable connectors for 0.635mm pitch ribbon cable, and associated board connectors with securing latches and polarisation, for cable-to-board connection. Complete cable assemblies also supplied as standard.
- ❖ M52 – Single and Double row pin headers and sockets, in vertical and horizontal orientations, for board-to-board connections. 1.27mm (0.05") pitch along the connector, 2.54mm (0.1") between connector rows using 0.46mm square male pins. Pin Header Variants also available.



Archer Connectors - M50 Specification

- ❖ 1.27mm pitch male pin headers (with 0.4mm square pins) and female sockets, for board-to-board connection.

❖ Materials

Mouldings:	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 (see individual drawings)
Contact resistance:	30mΩ max
Insulation resistance:	500MΩ min

❖ Mechanical

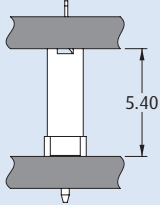
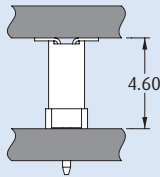
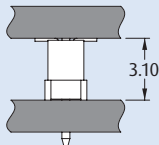
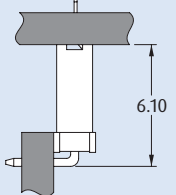
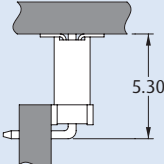
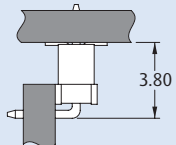
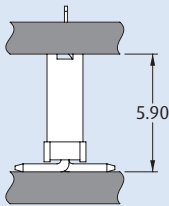
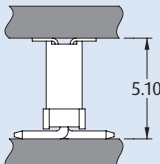
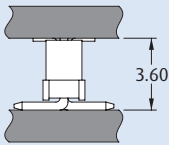
Durability	
M50-310, 312, 491:	100 operations
M50-311:	600 operations
M50-315:	25 operations
M50-353, 363, 393:	500 operations
Others:	300 operations
Insertion force (max)	
M50-303, 313, 314:	1.17N per contact
Jumper sockets:	10.0N
Others:	2.0N per contact
Withdrawal force (min)	
Jumper sockets:	1.3N
Others:	0.1N per contact
Vibration sensitivity:	10 – 55Hz, 1.5mm, 6 hours duration
Shock severity:	294m/s ² (30G) for 11ms

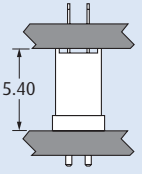
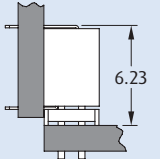
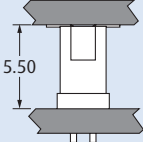
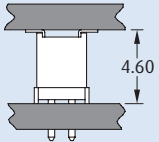
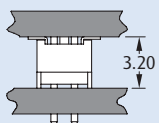
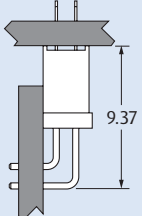
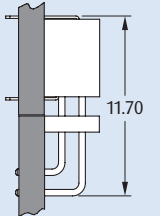
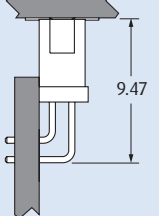
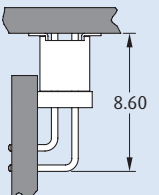
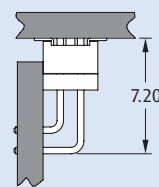
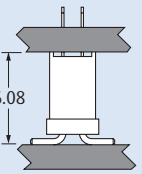
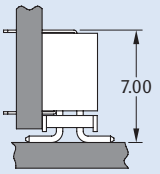
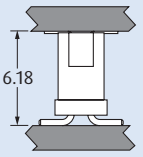
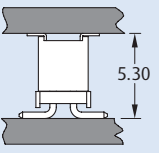
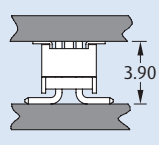
❖ Environmental

Operating temperature:	-40°C to +105°C
Solderability:	245°C for 5 seconds
Soldering heat resistance:	260°C for 5 seconds

Mating Profiles

1.27mm (.050") PITCH

SINGLE ROW		FEMALE		
		VERTICAL PC TAIL	VERTICAL SMT	VERTICAL SMT Low Profile
MALE	VERTICAL PC TAIL	 5.40	 4.60	 3.10
	HORIZONTAL PC TAIL	 6.10	 5.30	 3.80
	VERTICAL SMT	 5.90	 5.10	 3.60

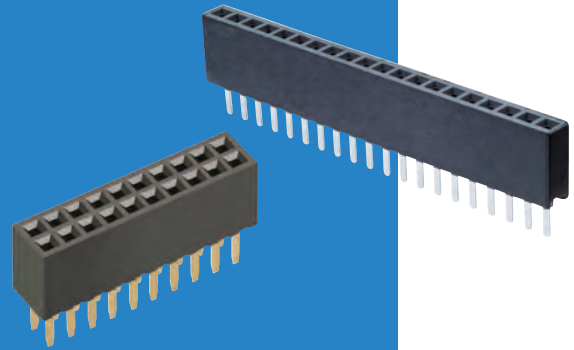
DOUBLE ROW		FEMALE				
		VERTICAL PC TAIL	HORIZONTAL PC TAIL	VERTICAL SMT	VERTICAL SMT Low Profile	
MALE	VERTICAL PC TAIL	 5.40	 6.23	 5.50	 4.60	 3.20
	HORIZONTAL PC TAIL	 9.37	 11.70	 9.47	 8.60	 7.20
	VERTICAL SMT	 6.08	 7.00	 6.18	 5.30	 3.90

All dimensions in mm.

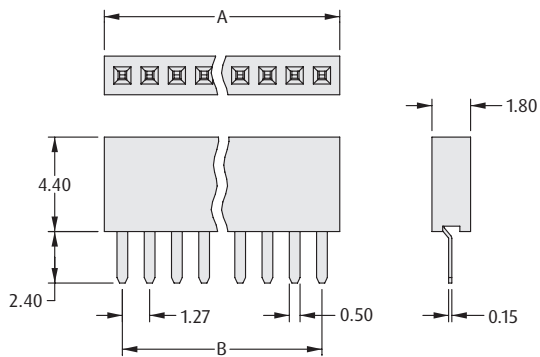
Archer Connectors – M50

Female PC Tail Vertical

- ▣ Twin beam connector for higher durability.

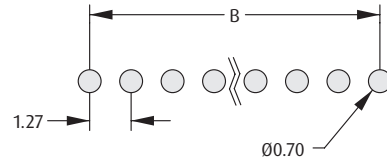


SINGLE ROW



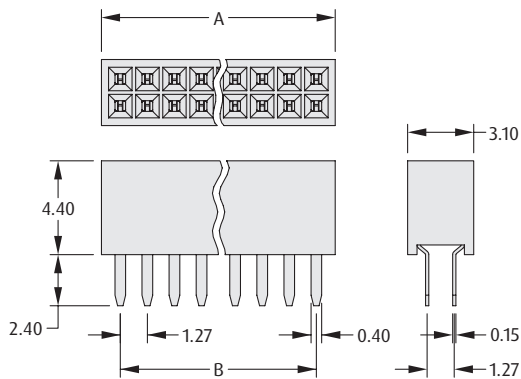
CALCULATION

A	$B + 1.67$
B	$1.27 \times (\text{No. of contacts per row} - 1)$



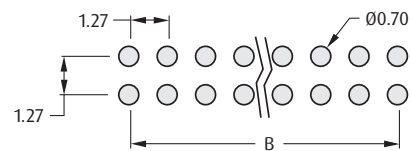
Recommended PC Board Pattern

DOUBLE ROW



CALCULATION

A	$B + 1.77$
B	$1.27 \times (\text{No. of contacts per row} - 1)$



Recommended PC Board Pattern

HOW TO ORDER

M50 - 3 0 X XX XX

SERIES CODE

TYPE

0	Double Row
3	Single Row

FINISH

42	Gold + Tin (Single Row)
45	Gold (Double Row)

NO. OF CONTACTS PER ROW

02 to 06, 08, 10, 20	Single Row
03 to 50	Double Row

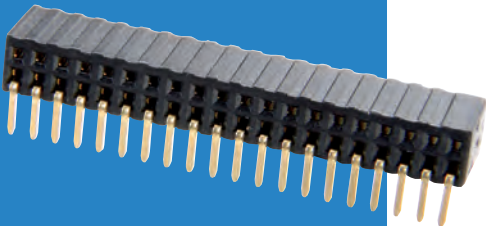
All dimensions in mm.

Archer Connectors – M50

1.27mm (.050") PITCH

Female PC Tail Horizontal

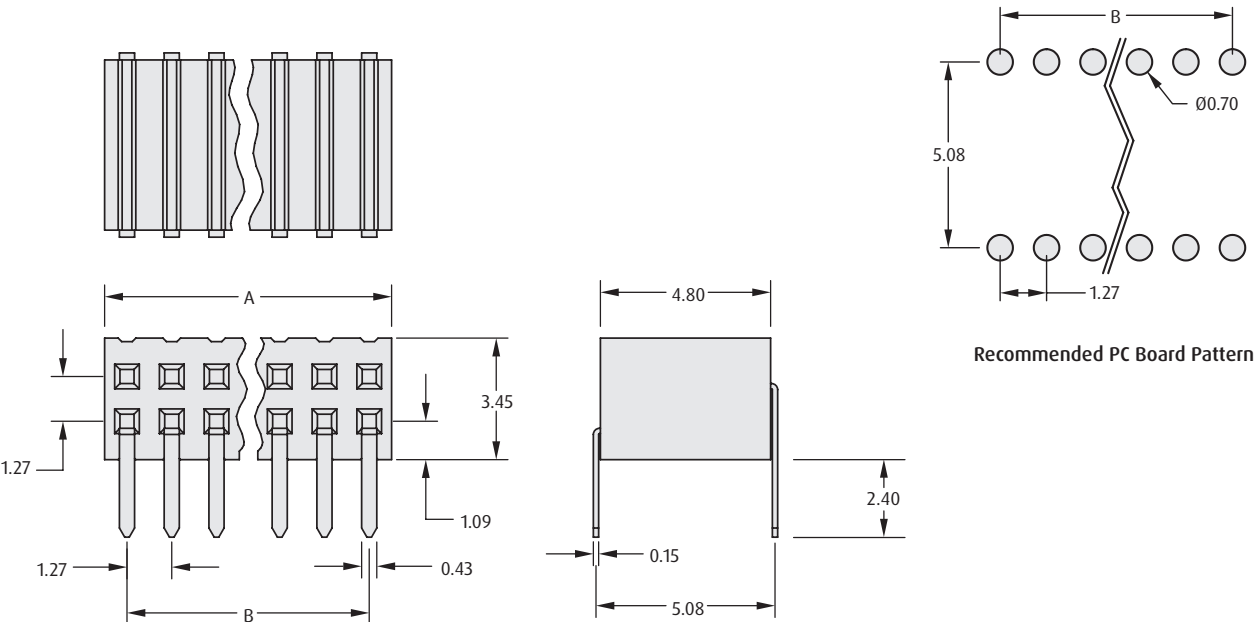
- Horizontal connector has two point solder fixing for connector rigidity.
- Twin beam connector for higher durability.



HORIZONTAL

CALCULATION

A	B + 1.77
B	1.27 x (No. of contacts per row - 1)



HOW TO ORDER

M50 - 320 XX 45

SERIES CODE

FINISH

45 Gold

NO. OF CONTACTS PER ROW

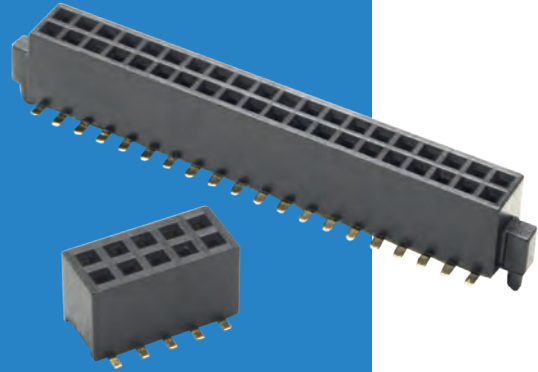
02 to 50

All dimensions in mm.

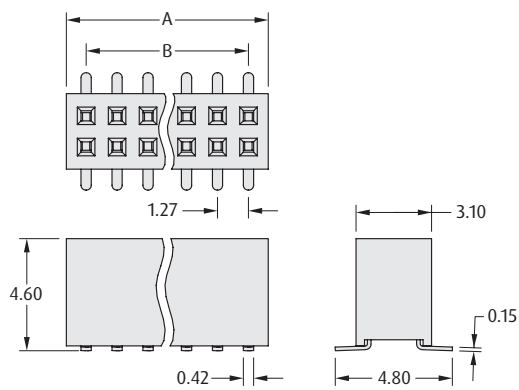
Archer Connectors – M50

Female Vertical Surface Mount

- ❖ Locating pegs (posts) available to ensure correct positioning on the board.
- ❖ Alternative height connectors available on the following page.
- ❖ Contact technical@harwin.com for Tape and Reel options.
- ❖ Dual entry connector can be used as either top or bottom entry.

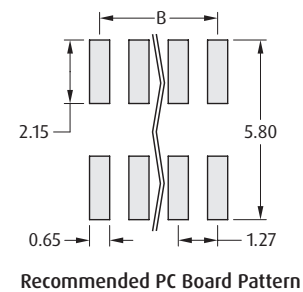


WITHOUT POST

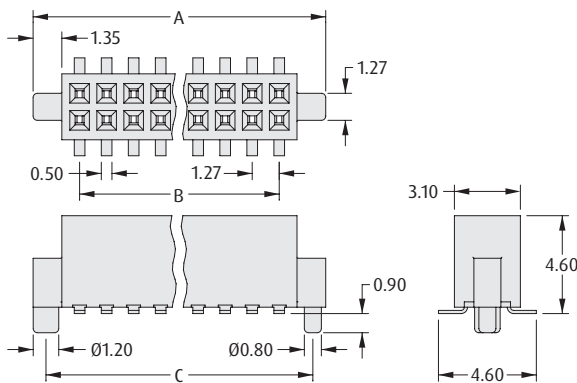


CALCULATION

A	$B + 1.62$
B	$1.27 \times (\text{No. of contacts per row} - 1)$

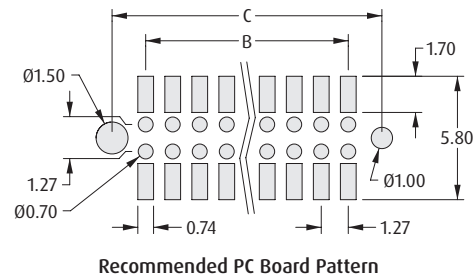


WITH POST, DUAL ENTRY



CALCULATION

A	$B + 4.37$
B	$1.27 \times (\text{No. of contacts per row} - 1)$
C	$B + 3.16$



HOW TO ORDER

M50 - 31 X XX XX

SERIES CODE

TYPE

0	Without Posts
1	With Posts

FINISH

42	Gold + Tin (With Posts)
45	Gold (Without Posts)

NO. OF CONTACTS PER ROW

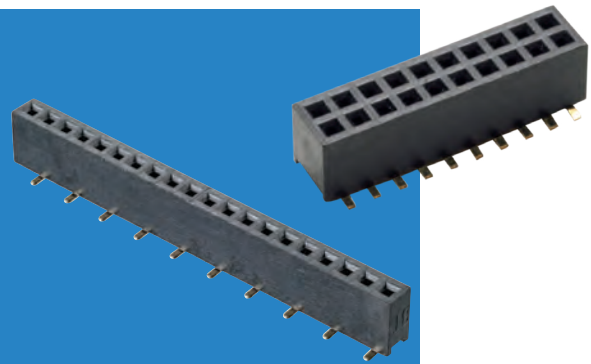
03 to 50	Without Posts
05 to 12, 15, 20, 25, 30, 35, 40, 45, 50	With Posts

All dimensions in mm.

Archer Connectors – M50

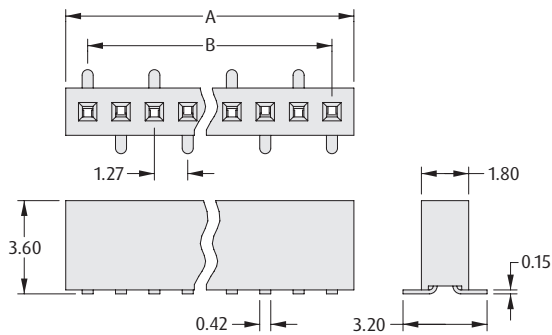
Female Vertical Surface Mount, Low Profile

- ❖ Lower profile surface mount connector with twin beam contacts for additional board-to-board height options.
- ❖ Contact technical@harwin.com for Tape and Reel options.



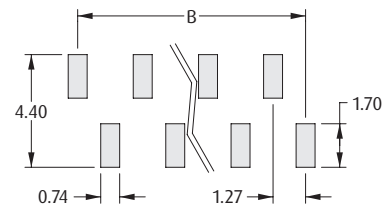
1.27mm (.050") PITCH

SINGLE ROW



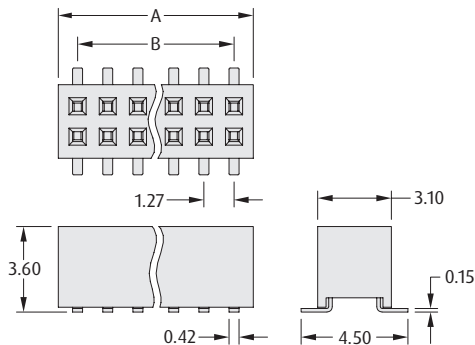
CALCULATION

A	$B + 1.67$
B	$1.27 \times (\text{No. of contacts per row} - 1)$



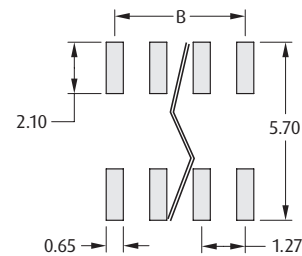
Recommended PC Board Pattern

DOUBLE ROW



CALCULATION

A	$B + 1.73$
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

2	Double Row
4	Single Row

PACKAGING

R	Tape & Reeled (Single Row)
Blank	Loose

FINISH

45	Gold
-----------	------

NO. OF CONTACTS PER ROW

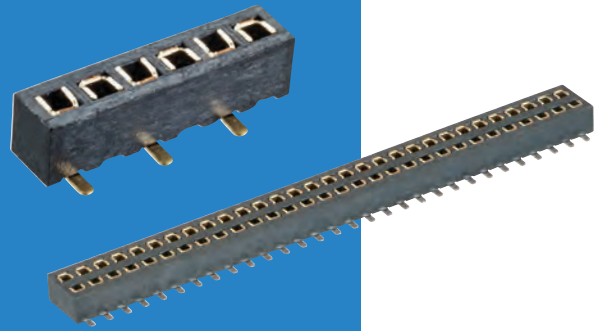
03 to 50	Double Row
02 to 06, 08, 10, 20	Single Row

All dimensions in mm.

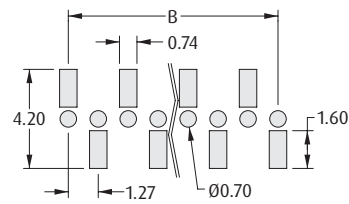
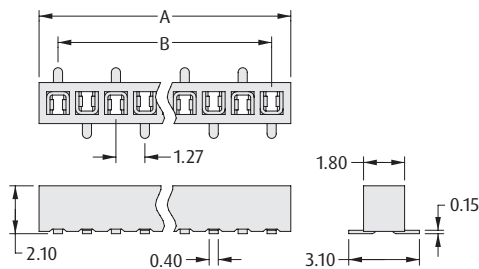
Archer Connectors – M50

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.
- ❑ Contact technical@harwin.com for Tape and Reel options on double row.



SINGLE ROW

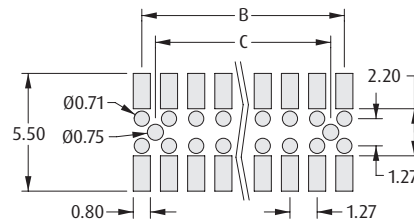
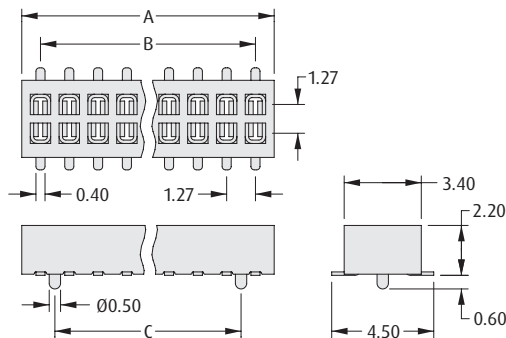


Recommended PC Board Pattern

CALCULATION

A	$B + 1.67$
B	$1.27 \times (\text{No. of contacts per row} - 1)$

DOUBLE ROW WITH POSTS



Recommended PC Board Pattern

CALCULATION

A	$B + 1.67$
B	$1.27 \times (\text{No. of contacts per row} - 1)$
C	$B + 1.27$

HOW TO ORDER

M50 - 31 X XX XX X

SERIES CODE

TYPE

3	Single Row (without posts)
5	Double Row with posts

PACKAGING

R	Tape & Reeled (Single Row)
Blank	Loose

FINISH

42	Gold + Tin (Double Row)
45	Gold (Single Row)

NO. OF CONTACTS PER ROW

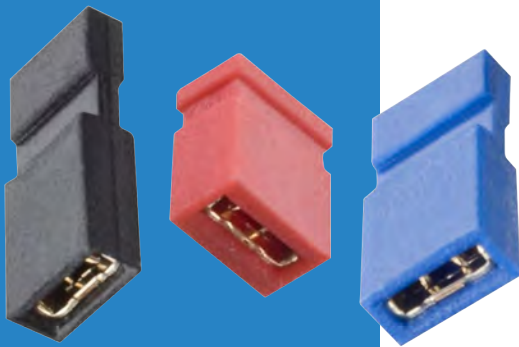
02 to 06, 08, 10, 20	Single Row
03 to 40	Double Row

All dimensions in mm.

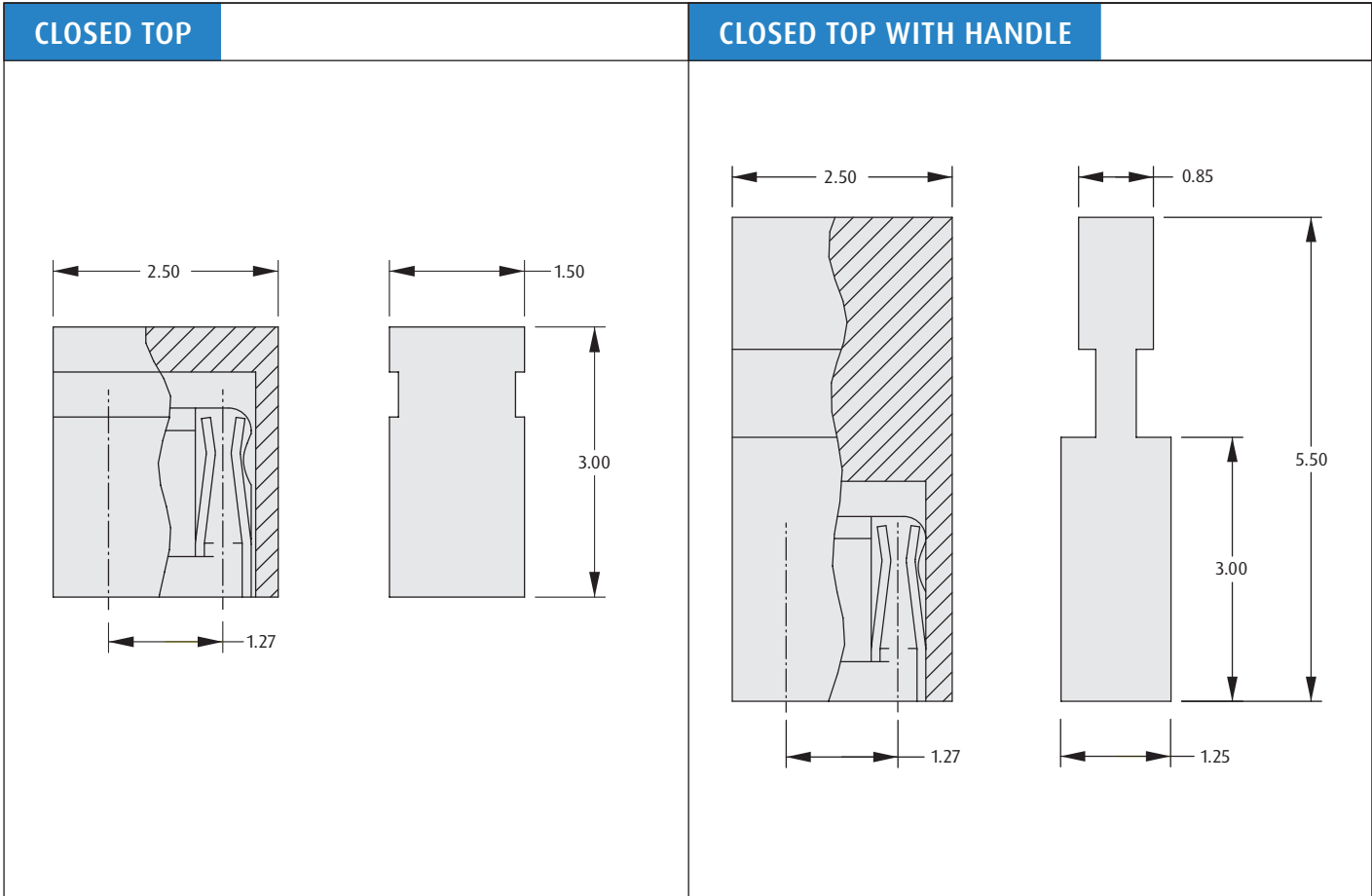
Archer Connectors – M50

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 colours available.
- ❖ Closed top with handle available for easier handling, placing and removing.



1.27mm (.050") PITCH



HOW TO ORDER

SERIES CODE

M50

XXX

00

05

TYPE			
Closed Top	Closed Top with Handle		
190	Black	200	Black
192	Red	202	Red
193	Blue	203	Blue

FINISH

05

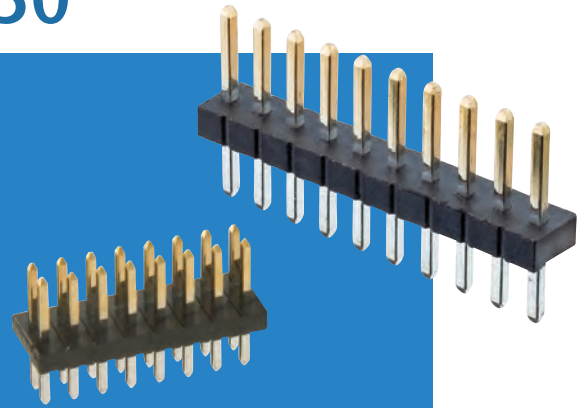
Gold

All dimensions in mm.

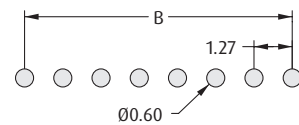
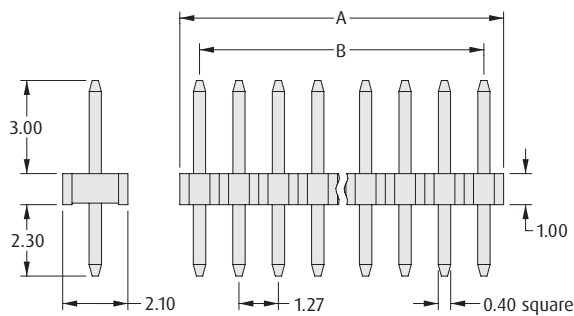
Archer Connectors – M50

Male PC Tail Vertical

- Suitable for use with female connectors and jumper sockets.
- Also available with variable dimensions.



SINGLE ROW

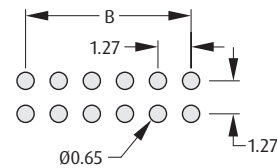
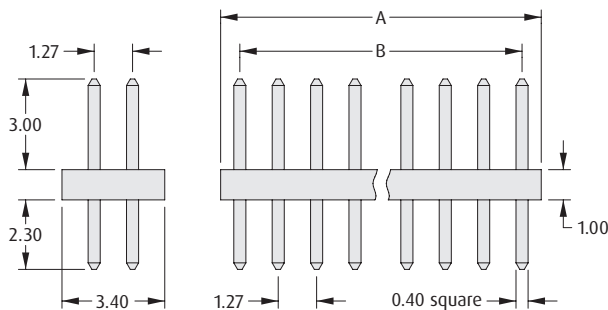


Recommended PC Board Pattern

CALCULATION

A	1.27 x No. of contacts per row
B	1.27 x (No. of contacts per row - 1)

DOUBLE ROW



Recommended PC Board Pattern

HOW TO ORDER

SERIES CODE

M50 - 35 X XX 42

TYPE

0	Double Row
3	Single Row

FINISH

42	Gold + Tin
-----------	------------

NO. OF CONTACTS PER ROW

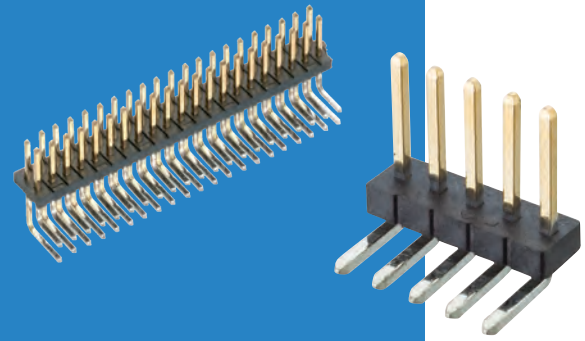
02 to 50	Double Row
02 to 06, 08, 10, 20	Single Row

All dimensions in mm.

Archer Connectors – M50

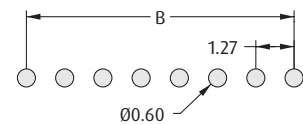
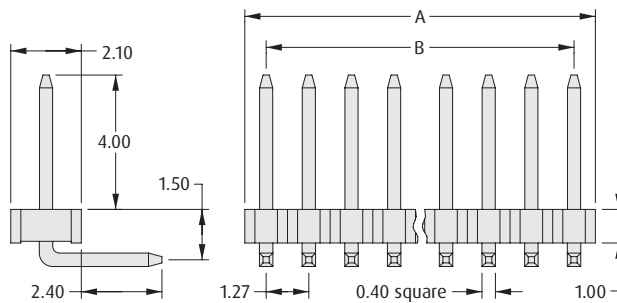
Male PC Tail Horizontal

- Suitable for use with female connectors and jumper sockets.
- Also available with variable dimensions.



1.27mm (.050") PITCH

SINGLE ROW

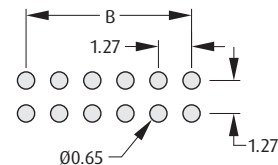
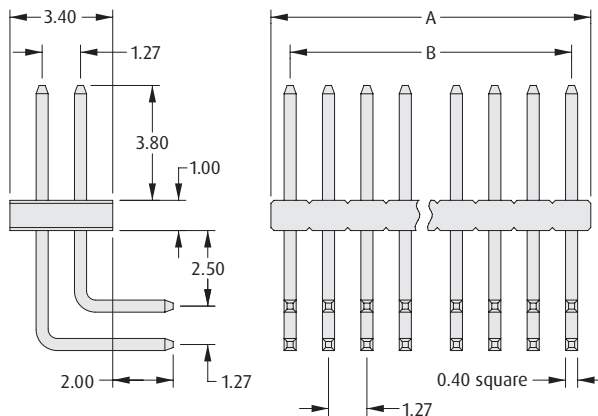


Recommended PC Board Pattern

CALCULATION

A	1.27 x No. of contacts per row
B	1.27 x (No. of contacts per row - 1)

DOUBLE ROW



Recommended PC Board Pattern

HOW TO ORDER

SERIES CODE

M50 - 39 X XX 42

TYPE

0	Double Row
3	Single Row

FINISH

42	Gold + Tin
-----------	------------

NO. OF CONTACTS PER ROW

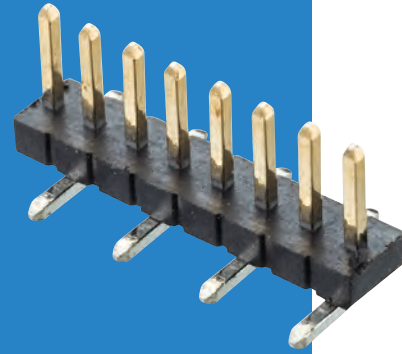
02 to 50	Double Row
02 to 06, 08, 10, 20	Single Row

All dimensions in mm.

Archer Connectors – M50

Male Vertical Surface Mount Single Row

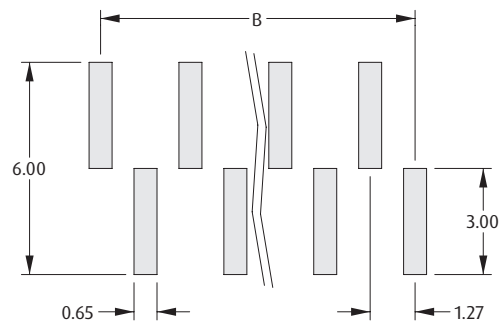
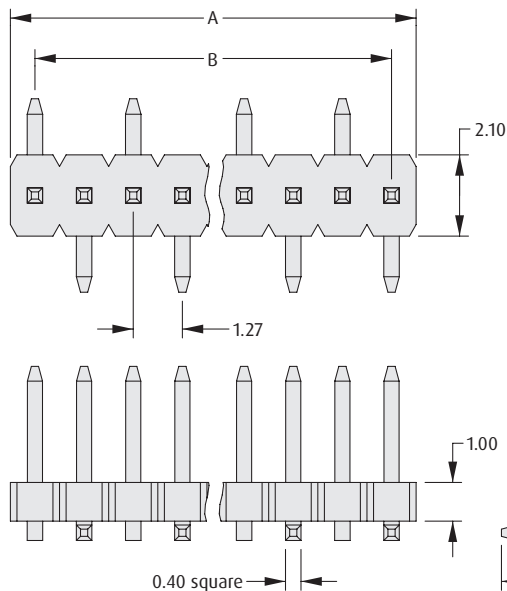
- Suitable for use with female connectors and jumper sockets.
- Tape and Reel packaging option includes Pick and Place cap for automated assembly.



SINGLE ROW

CALCULATION

A	1.27 x No. of contacts per row
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

Blank	Loose
R	Tape & Reeled

FINISH

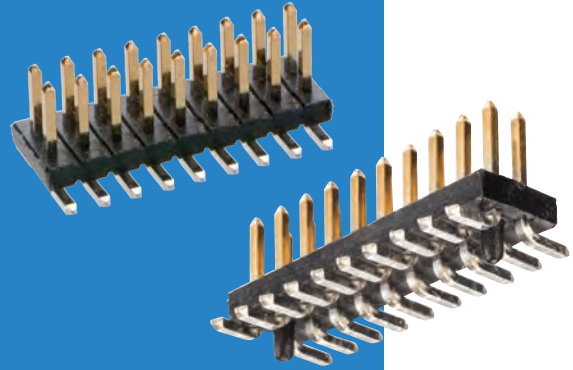
42	Gold + Tin
-----------	------------

All dimensions in mm.

Archer Connectors – M50

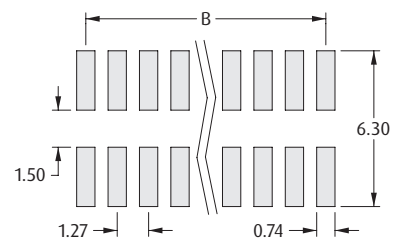
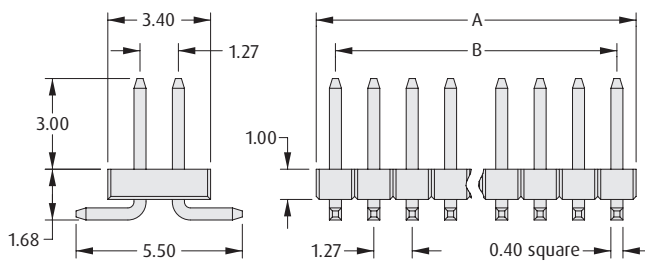
Male Vertical Surface Mount Double Row

- ❖ Suitable for use with female connectors and jumper sockets.
- ❖ Also available with variable dimensions.
- ❖ Available with or without location posts.
- ❖ Tape and Reel packaging option includes Pick and Place cap for automated assembly.



1.27mm (.050") PITCH

WITHOUT POSTS

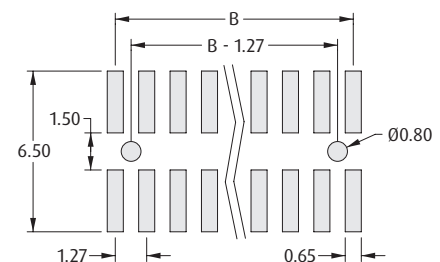
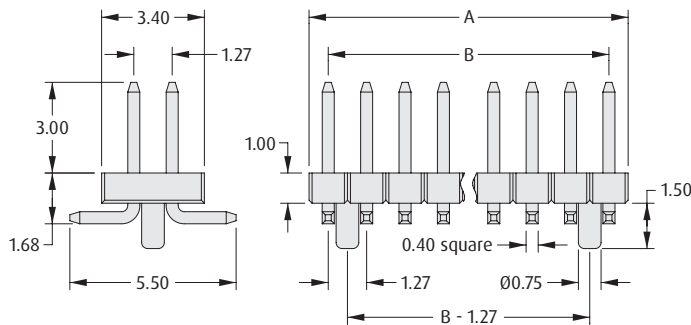


Recommended PC Board Pattern

CALCULATION

A	1.27 x No. of contacts per row
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

0	Without Posts
1	With Posts

NO. OF CONTACTS PER ROW

02 to 50	Without Posts
05 to 08, 10, 12, 15, 20, 25	With Posts

PACKAGING

Blank	Loose
R	Tape & Reeled (check website for available sizes)

FINISH

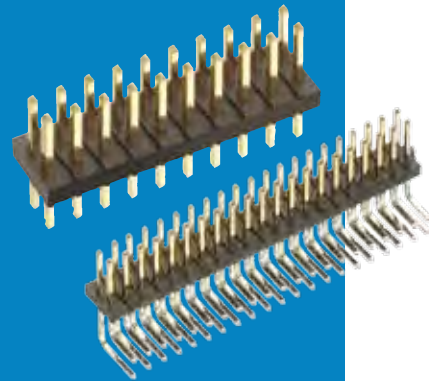
42	Gold + Tin
-----------	------------

All dimensions in mm.

Archer Connectors – M50

Pin Header Variants

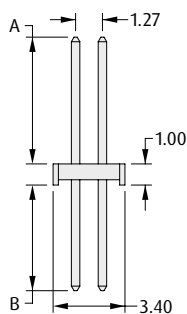
- ❖ If you are unable to specify the connector you require from our standard range of Archer M50 connectors, use the order code below to create an application-specific connector.
- ❖ Contact technical@harwin.com for further information, or search online for M50-XXX.
- ❖ Suitable for use with female connectors and jumper sockets.



TERMINATION STYLES

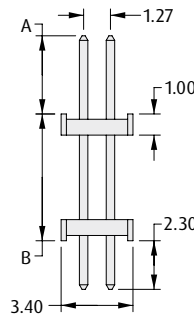
Vertical PC Tail W Series

- ❖ Pin section is 0.40mm square.
- ❖ PCB mounting hole is Ø0.65mm.



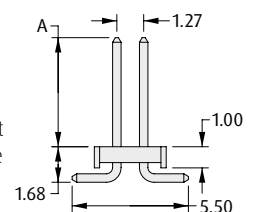
Extended PC Tail F Series

- ❖ Pin section is 0.40mm square.
- ❖ PCB mounting hole is Ø0.65mm.



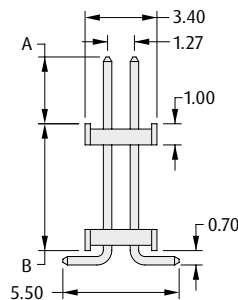
Vertical SMT S Series

- ❖ Pin section is 0.40mm square.
- ❖ For PCB pad layout see standard Male SMT pin header.
- ❖ B dimension is 000.



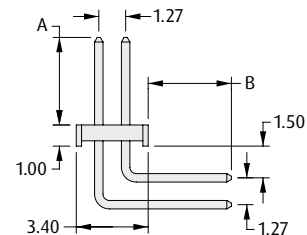
Extended SMT T Series

- ❖ Pin section is 0.40mm square.
- ❖ For PCB pad layout see standard Male SMT pin header.
- ❖ A+B+0.68 not to exceed 24.3mm.



Horizontal PC Tail J Series

- ❖ Pin section is 0.40mm square.
- ❖ PCB mounting hole is Ø0.65mm.



HOW TO ORDER

M50 - XXX XXX X XX 45

SERIES CODE

DIMENSION A

Example: 7.8mm = 078

DIMENSION B

Example: 5.0mm = 050

FINISH

45

Gold

NO. OF CONTACTS PER ROW

01 to 50

TYPE

W	Vertical PC Tail
F	Extended PC Tail
S	Vertical SMT
T	Extended SMT
J	Horizontal PC Tail

All dimensions in mm.

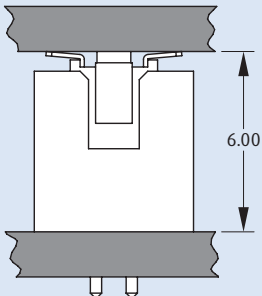
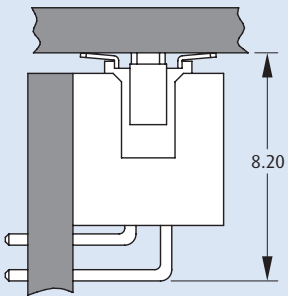
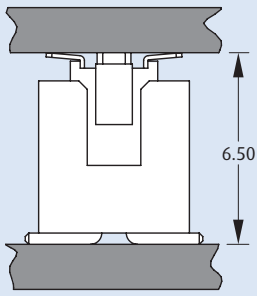
Archer Connectors – Polarised Specification

➤ 1.27mm pitch male and female connectors, for board-to-board connection with polarisation.

➤ Materials		➤ Mechanical	
Mouldings:	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

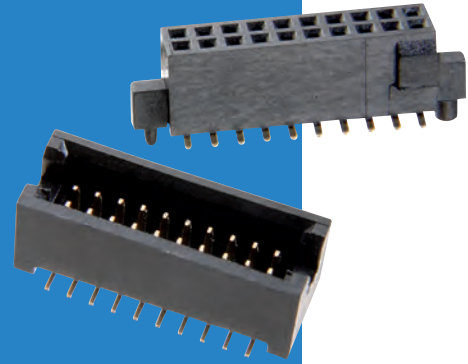
	MALE		
	VERTICAL PC TAIL	HORIZONTAL PC TAIL	VERTICAL SMT
FEMALE VERTICAL SMT			

All dimensions in mm.

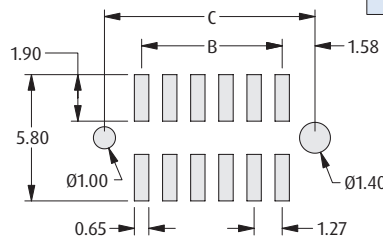
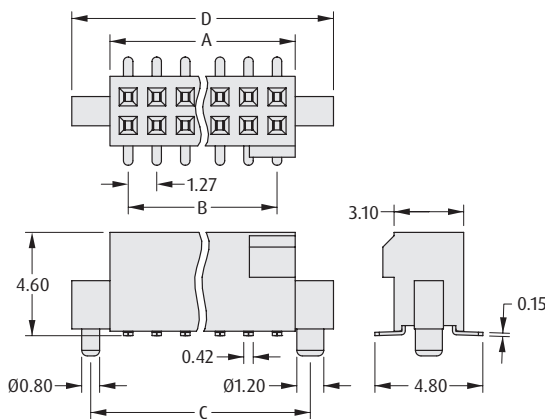
Archer Connectors – Polarised

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.
- ❖ Polarisation to prevent mis-mating.
- ❖ Locating pegs of different sizes ensure correct orientation and positioning on the board.
- ❖ Shrouded for additional pin protection.



FEMALE

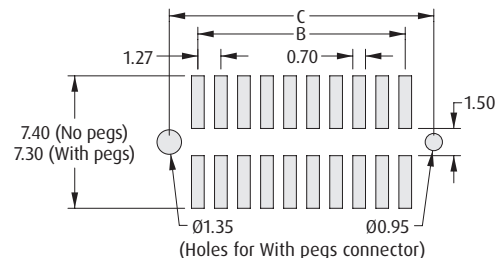
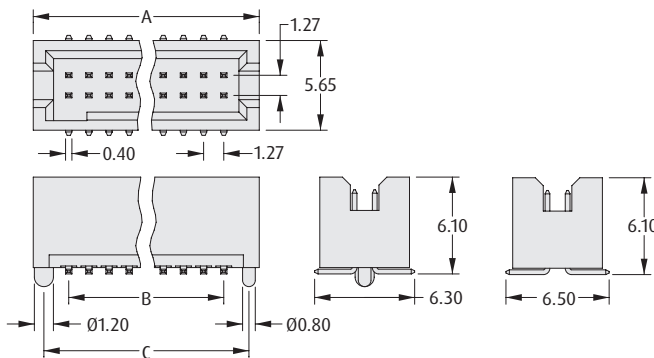


Recommended PC Board Pattern

CALCULATION

A	$B + 1.62$
B	$1.27 \times (\text{No. of contacts per row} - 1)$
C	$B + 3.15$
D	$B + 5.02$

MALE



Recommended PC Board Pattern

CALCULATION

A	$B + 4.47$
B	$1.27 \times (\text{No. of contacts per row} - 1)$
C	$B + 3.15$

HOW TO ORDER

SERIES CODE

TYPE

430	Female
490	Male without pegs
491	Male with pegs

NO. OF CONTACTS PER ROW

03 to 50	Female
05 to 50	Male without pegs
05 to 08, 10, 12, 15, 20, 25	Male with pegs

PACKAGING

Blank	Loose
R	Tape & Reeled (check website for available sizes)

FINISH

45	Gold
-----------	------

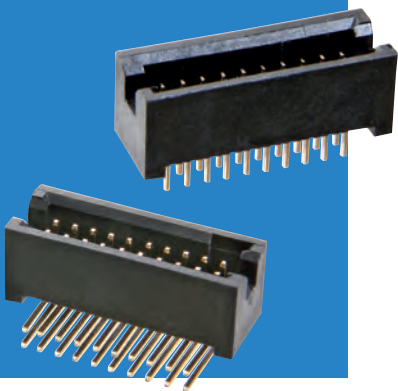
All dimensions in mm.

Archer Connectors – Polarised

1.27mm (.050") PITCH

Male PC Tail

- ❖ PC Tail male connectors suitable for use with female connector M50-430 Series, shown on previous page.
- ❖ Polarisation to prevent mis-mating.
- ❖ Shrouded for additional pin protection.



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

SERIES CODE

M50

-

4

X

0

XX

45

TYPE

7	Vertical
8	Horizontal

FINISH

45	Gold
----	------

NO. OF CONTACTS PER ROW

05 to 40

All dimensions in mm.

Archer Connectors – M50 IDC Specification

- 1.27mm pitch cable-to-board connectors, with latching and polarisation.

Materials

Mouldings	
PC Tail, SMT:	LCP, UL94V-0
IDC Cable Connectors:	PBT, UL94V-0
Contacts:	Copper Alloy
Finish	
M50-380:	Gold on contact area
Others:	Gold on contact area, Tin on tails

Electrical

Current	
M50-330, 91X:	1A per contact
M50-355, 365:	1.75A per contact
M50-380, 90X:	0.5A per contact
Voltage proof	
M50-90X/91X:	300V DC for 1 minute
Others:	1,000V AC for 1 minute
Contact resistance:	30mΩ max
Insulation resistance	
M50-90X, 91X:	5MΩ min
Others:	1,000MΩ min

Mechanical

Durability:	100 operations
Insertion force (max):	1.0N per contact
Withdrawal force (min):	0.15N per contact

Environmental

Operating temperature	
PC Tail, SMT:	-55°C to +125°C
IDC Cable Connectors:	-40°C to +105°C
Cable Assembly:	-20°C to +105°C
Solderability:	245°C for 5 seconds
Soldering heat resistance:	260°C for 10 seconds

Mating Profiles

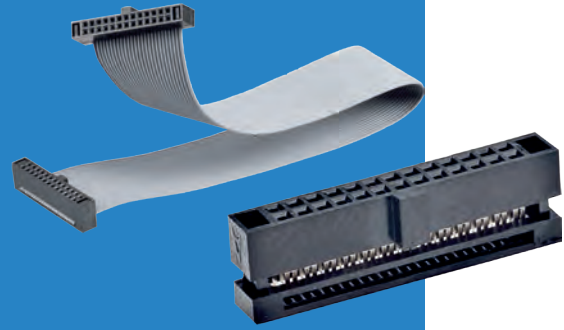
MALE			
	VERTICAL PC TAIL	VERTICAL SMT	CABLE
FEMALE CABLE			

All dimensions in mm.

Archer Connectors – M50 IDC

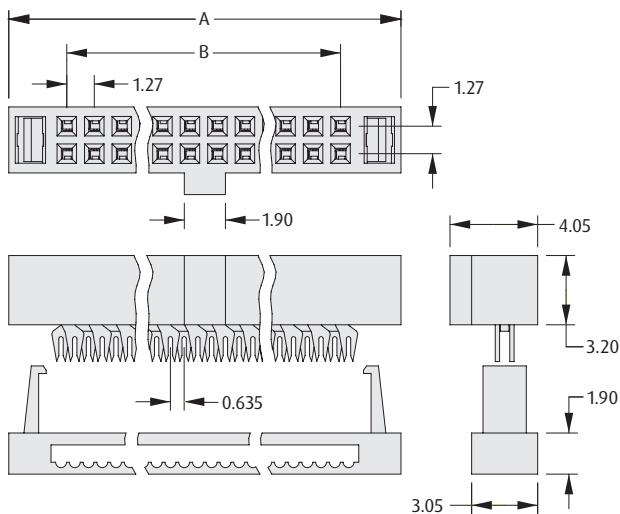
Female Cable Connector & Cable Assembly

- ❖ Suitable for use with male vertical latching connectors shown on the following page.
- ❖ IDC connection for fast termination of multiple contacts.
- ❖ Polarised 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.



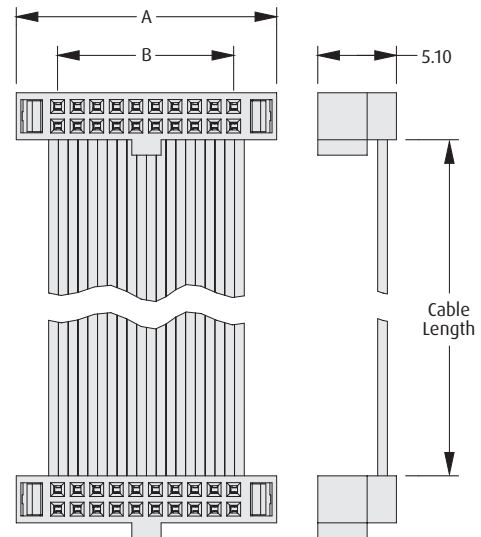
1.27mm (.050") PITCH

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

A	$B + 5.47$
B	$1.27 \times (\text{No. of contacts per row} - 1)$

HOW TO ORDER

M50 - XXX XX 42

SERIES CODE

TYPE

330	Female IDC Connector
910	150mm Cable Assembly
911	300mm Cable Assembly

FINISH

42	Gold + Tin
-----------	------------

NO. OF CONTACTS PER ROW

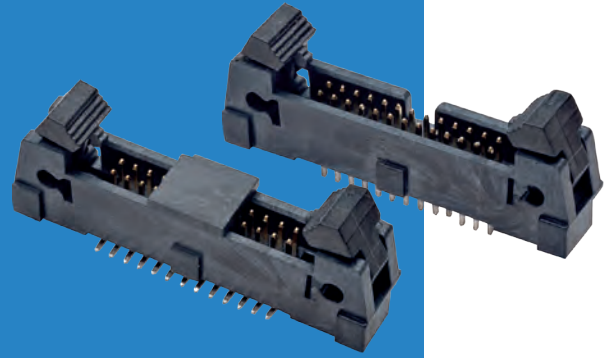
05, 10, 13, 17, 20, 25	All
06, 07, 08	M50-330 only

All dimensions in mm.

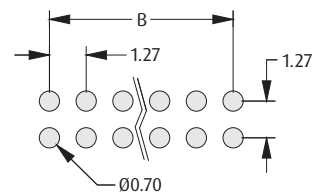
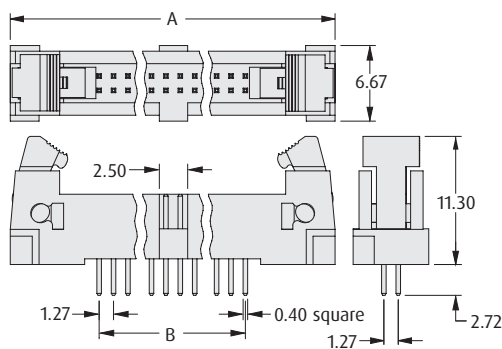
Archer Connectors – M50 IDC

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.
- ❑ Polarised to prevent mis-mating.
- ❑ Secure, positive latch & ejection system.
- ❑ Tape and Reel packaging option includes Pick and Place cap for automated assembly.



PC TAIL

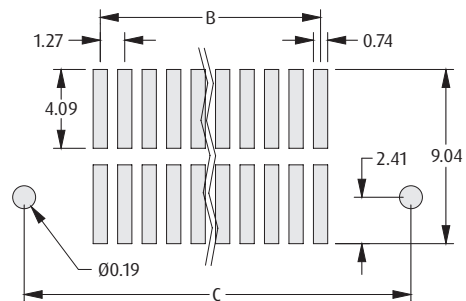
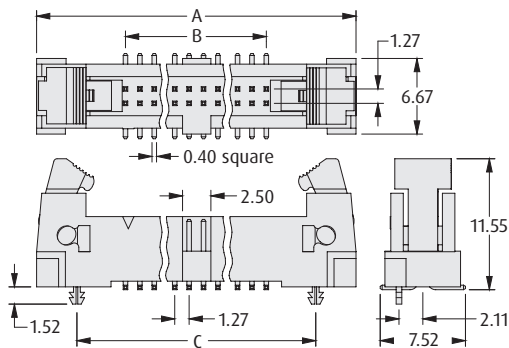


Recommended PC Board Pattern

CALCULATION

A	$B + 15.75$
B	$1.27 \times (\text{No. of contacts per row} - 1)$
C	$B + 8.64$

SURFACE MOUNT



Recommended PC Board Pattern

HOW TO ORDER

M50 - 3 X 5 XX 42 X

SERIES CODE

TYPE

5	PC Tail
6	Surface Mount

NO. OF CONTACTS PER ROW

05, 06, 07, 08, 10, 13, 17, 20, 25

PACKAGING

R	Tape & Reeled (M50-365)
Blank	Loose (M50-355)

FINISH

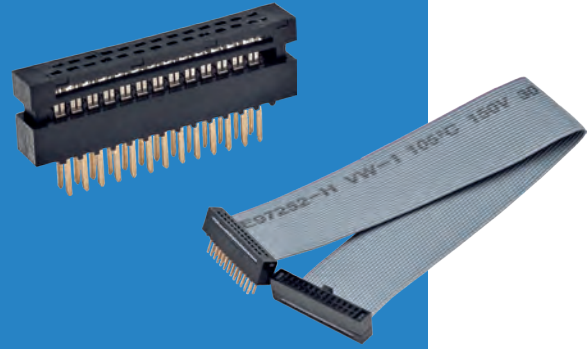
42	Gold + Tin
-----------	------------

All dimensions in mm.

Archer Connectors – M50 IDC

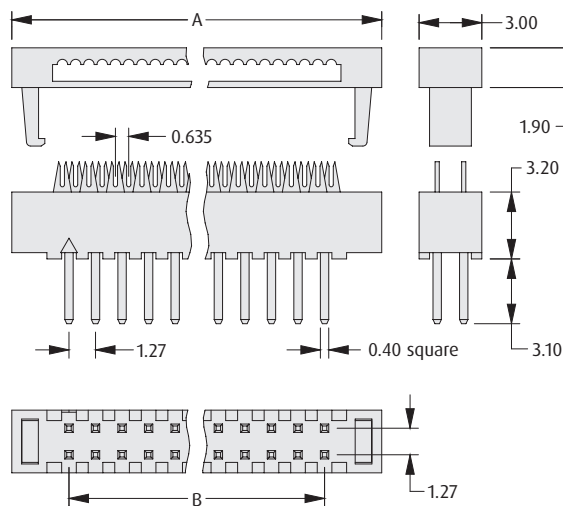
Male Cable Connectors & Cable Assembly

- 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.



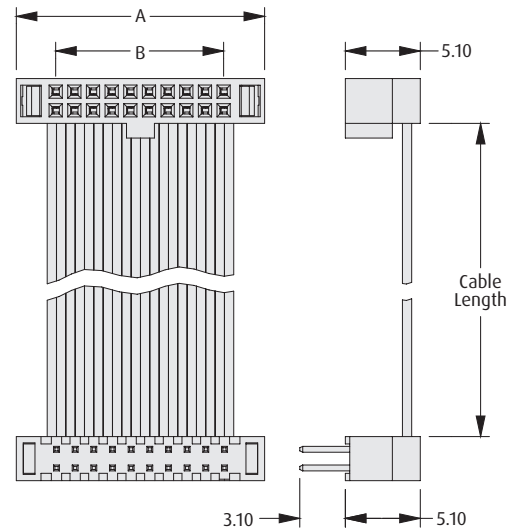
1.27mm (.050") PITCH

MALE IDC



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.



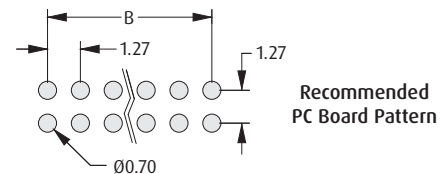
HAND TOOL



ORDER CODE
Z50-020

CALCULATION

A	$B + 5.47$
B	$1.27 \times (\text{No. of contacts per row} - 1)$



Recommended
PC Board Pattern

HOW TO ORDER

SERIES CODE

TYPE

380	Male IDC Connector
901	150mm Cable Assembly
902	300mm Cable Assembly

M50 - XXX XX 42

FINISH

42	Gold + Tin
-----------	------------

NO. OF CONTACTS PER ROW

05, 10, 13, 17, 20, 25	All
06, 07, 08	M50-380 only

All dimensions in mm.

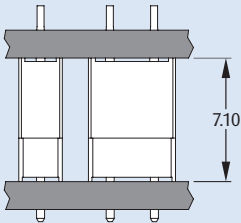
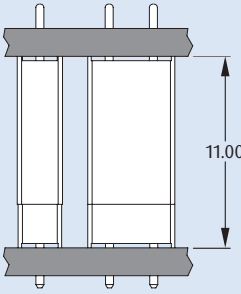
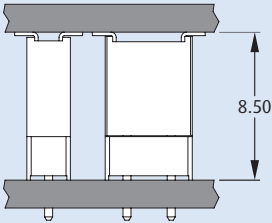
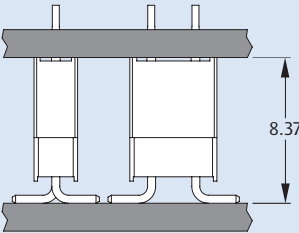
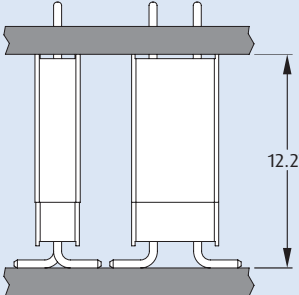
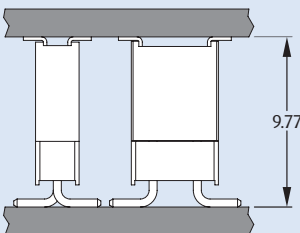
Archer Connectors – M52 Specification

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	
Mouldings:	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 ² (30G) for 11ms
❖ Electrical		❖ Environmental	
Current:	1A per contact	Operating temperature:	-40°C to +105°C
Voltage proof:	500V AC, 1,000V DC for 1 minute	Solderability:	245°C for 5 seconds
Contact resistance:	30mΩ max	Soldering heat resistance:	260°C for 5 seconds
Insulation resistance	1,000MΩ min		

Mating Profiles

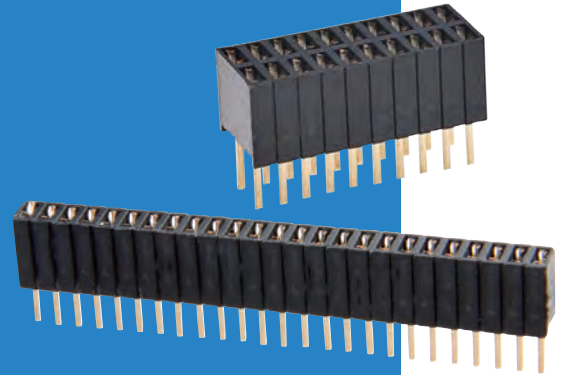
		FEMALE		
		VERTICAL PC TAIL (4.6mm Height)	VERTICAL PC TAIL (8.5mm Height)	VERTICAL SMT
MALE	VERTICAL PC TAIL			
	VERTICAL SMT			

All dimensions in mm.

Archer Connectors – M52

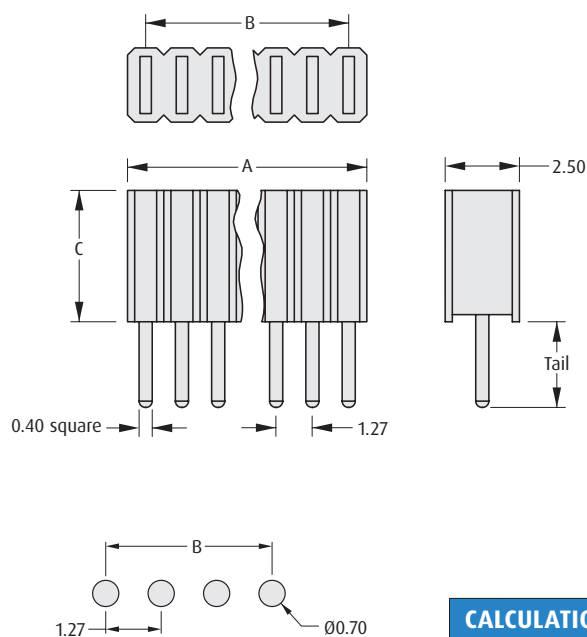
Female Vertical PC Tail

- ❖ Choice of connector height.
- ❖ Suitable for use with male connectors with 0.46mm square pins.



1.27mm (.050") PITCH

SINGLE ROW

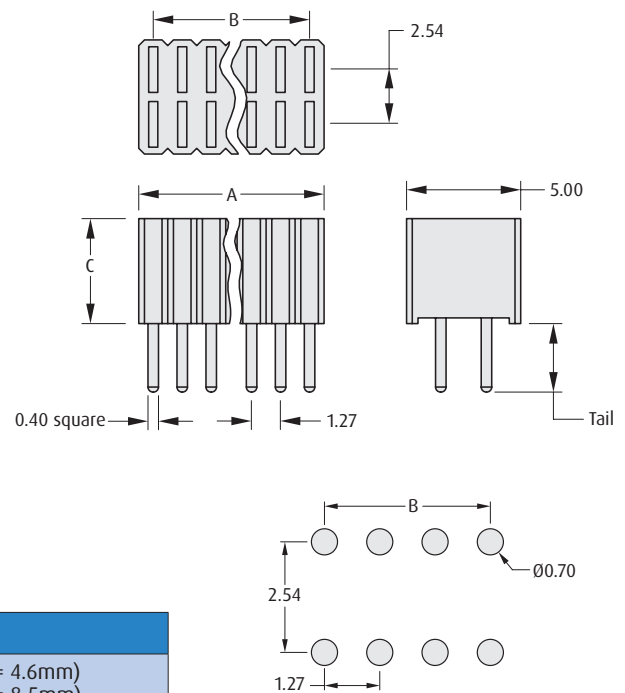


Recommended PC Board Pattern

CALCULATION

A	$B + 1.67$ (when $C = 4.6\text{mm}$) $B + 1.27$ (when $C = 8.5\text{mm}$)
B	$1.27 \times (\text{No. of contacts per row} - 1)$

DOUBLE ROW



Recommended PC Board Pattern

HOW TO ORDER

M52 - 5 X X XX 45

SERIES CODE

NO. OF ROWS

0	Single Row
1	Double Row

HEIGHT

0	$C = 4.6\text{mm}$, Tail = 3.00mm
1	$C = 8.5\text{mm}$, Tail = 2.80mm

FINISH

45	Gold
-----------	------

NO. OF CONTACTS PER ROW

02 to 40

All dimensions in mm.

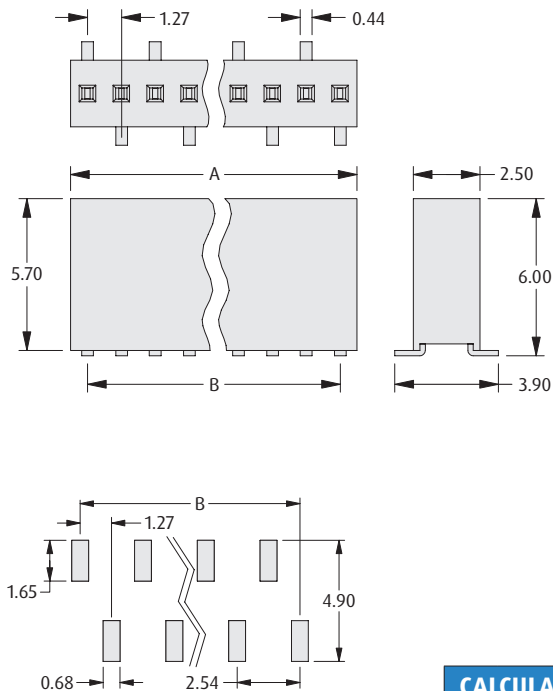
Archer Connectors – M52

Female Vertical Surface Mount

- Suitable for use with male pin headers with 0.46mm square pins.
- Twin beam contact for cost-effective reliability.
- Contact technical@harwin.com for Tape and Reel options.



SINGLE ROW

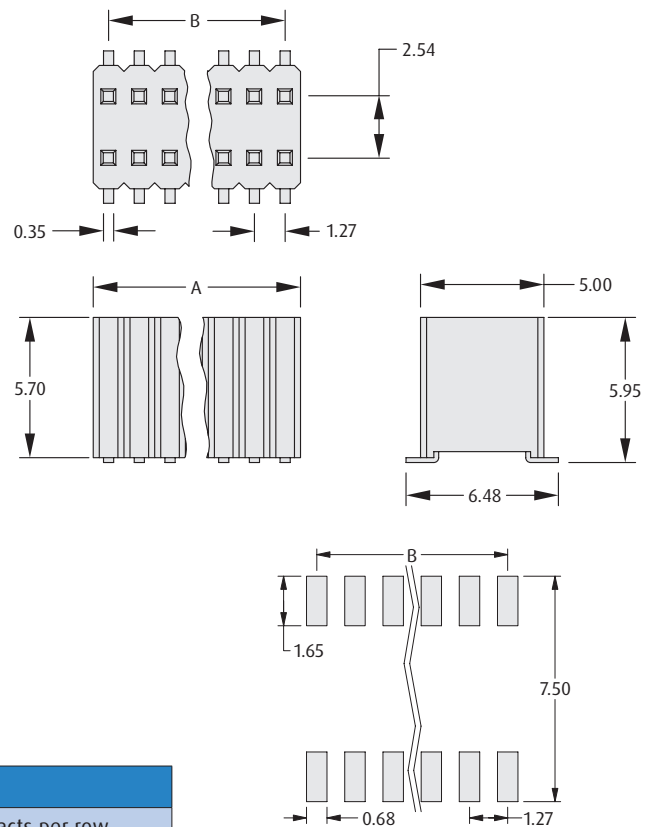


Recommended PC Board Pattern

CALCULATION

A	1.27 x No. of contacts per row
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

0	Single Row
1	Double Row

FINISH

45 Gold

NO. OF CONTACTS PER ROW

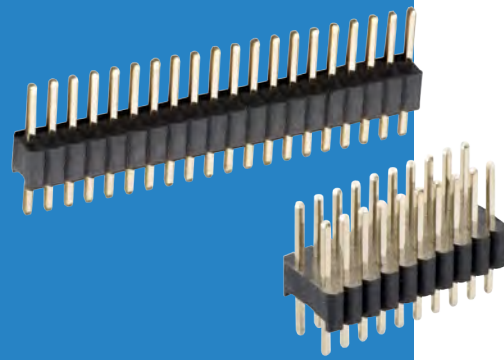
03 to 50

All dimensions in mm.

Archer Connectors – M52

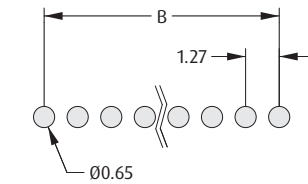
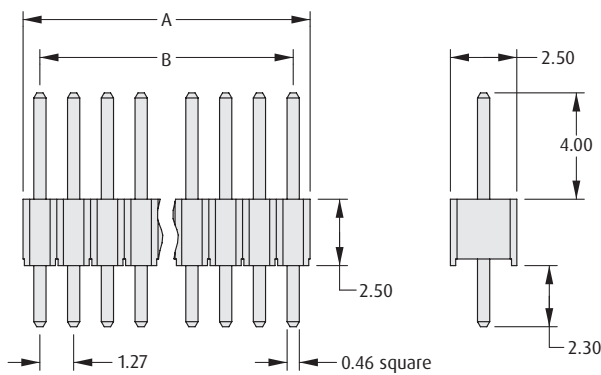
Male Vertical PC Tail

- ❖ Suitable for use with female connectors shown on previous page.
- ❖ For alternative pin lengths, see pin header variants on following pages.



1.27mm (.050") PITCH

SINGLE ROW

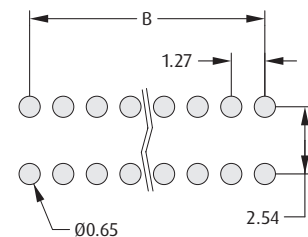
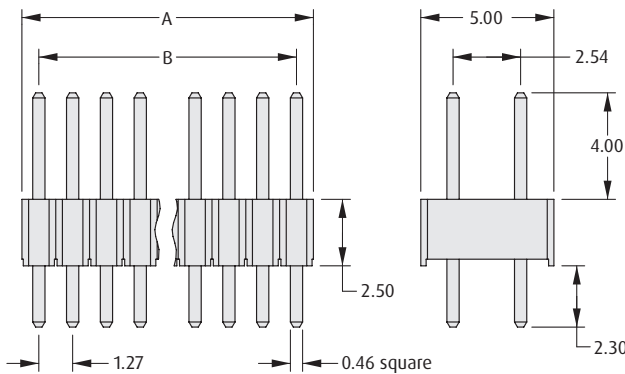


Recommended PC Board Pattern

CALCULATION

A	1.27 x No. of contacts per row
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

V	Single Row
W	Double Row

FINISH

45 Gold

NO. OF CONTACTS PER ROW

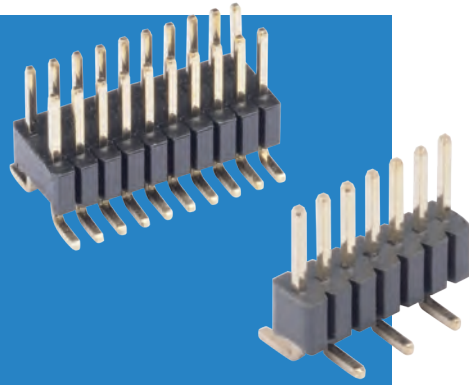
05, 10, 20, 25

All dimensions in mm.

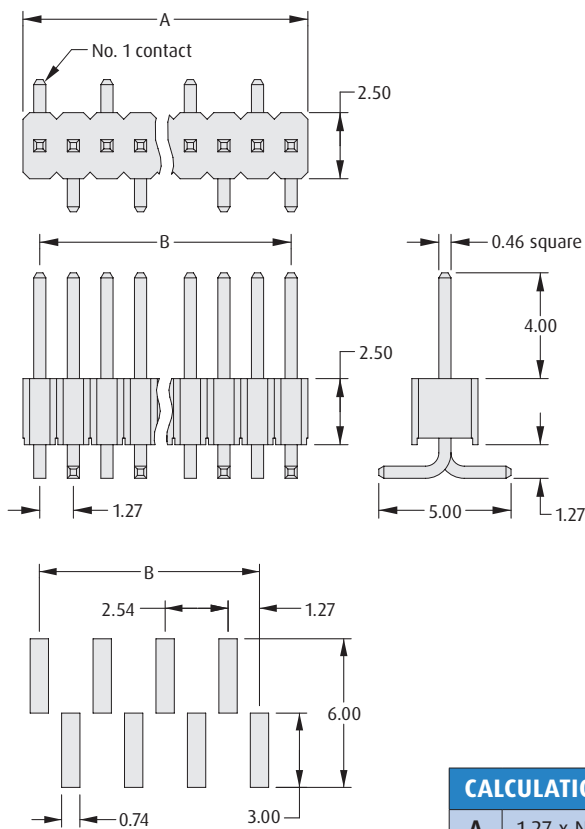
Archer Connectors – M52

Male Vertical Surface Mount

- Suitable for use with female connectors shown on previous page.
- For alternative pin lengths, see pin header variants on following pages.
- Contact technical@harwin.com for Tape and Reel options.



SINGLE ROW

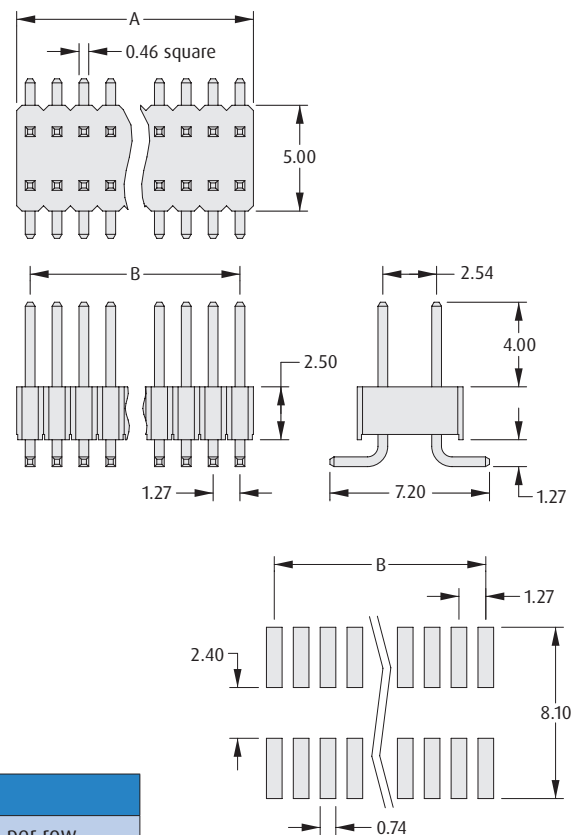


Recommended PC Board Pattern

CALCULATION

A	1.27 x No. of contacts per row
B	1.27 x (No. of contacts per row - 1)

DOUBLE ROW



Recommended PC Board Pattern

HOW TO ORDER

M52 - 040000 X XX 45

SERIES CODE

TYPE

P	Single Row
S	Double Row

FINISH

45	Gold
-----------	------

NO. OF CONTACTS PER ROW

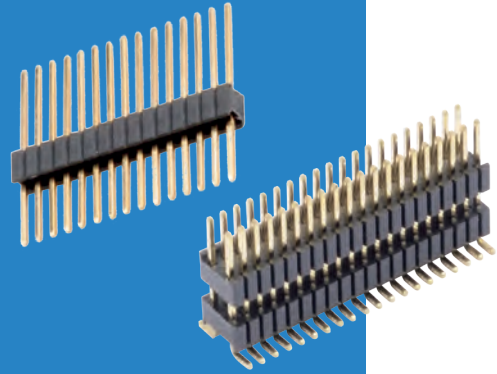
05, 10, 20, 25

All dimensions in mm.

Archer Connectors – M52

Pin Header Variants

- ❖ If you are unable to specify the connector you require from our standard range of Archer M52 connectors, use the order code below to create an application-specific connector.
- ❖ Contact technical@harwin.com for further information, or search online for M52-XXX.
- ❖ Suitable for use with female connectors shown on previous pages.



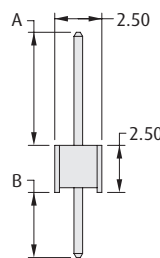
1.27mm (.050") PITCH

TERMINATION STYLES

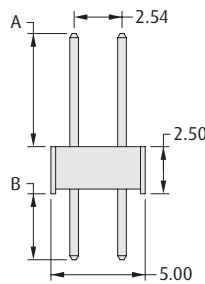
Vertical PC Tail

- ❖ Pin section is 0.46mm square.
- ❖ PCB mounting hole is Ø0.65mm.

V Series



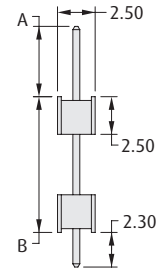
W Series



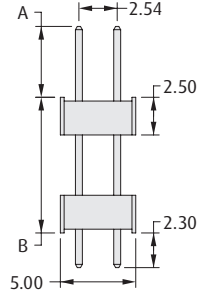
Extended PC Tail

- ❖ Pin section is 0.46mm square.
- ❖ PCB mounting hole is Ø0.65mm.

E Series



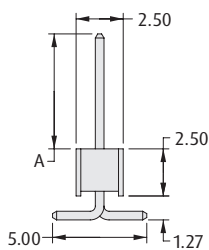
F Series



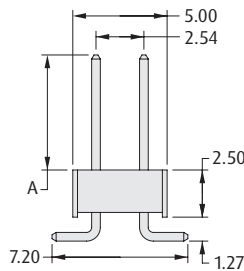
Vertical SMT

- ❖ Pin section is 0.46mm square.
- ❖ For PCB pad layout see standard Male SMT pin header.
- ❖ B dimension is 000.

P Series



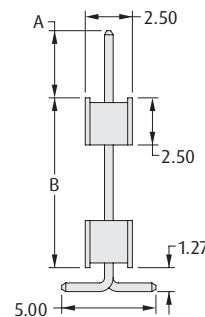
S Series



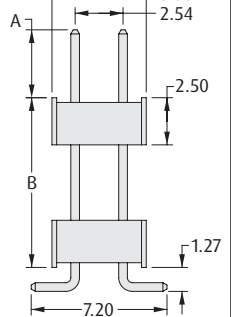
Extended SMT

- ❖ Pin section is 0.46mm square.
- ❖ For PCB pad layout see standard Male SMT pin header.

R Series



T Series



HOW TO ORDER

M52 - XXX XXX X XX 45

SERIES CODE

DIMENSION A

Example: 7.8mm = 078

DIMENSION B

Example: 5.0mm = 050

FINISH

45

Gold

NO. OF CONTACTS PER ROW

02 to 50

SINGLE ROW	DOUBLE ROW	
V	W	Vertical
E	F	Extended
P	S	SMT
R	T	Extended SMT

All dimensions in mm.

M22 Connectors Specification

- ❖ 2mm pitch, with 0.5mm square male pin connection system.
- ❖ Board-to-Board and Cable-to-Board application options.

❖ Materials

Mouldings:	Standard or High Temperature Plastic, UL94V-0
Contacts	
Female:	Phosphor Bronze
Jumper socket:	Beryllium Copper
Male:	Copper Alloy
Finish:	See individual pages

❖ Electrical

Current:	1A or 2A per contact (see individual drawings)
Voltage proof:	500V AC for 1 minute
Contact resistance:	30mΩ max
Insulation resistance:	500MΩ min

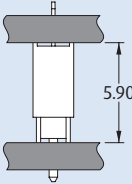
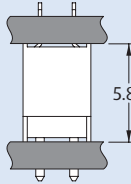
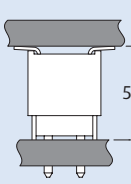
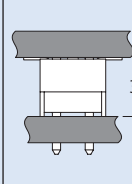
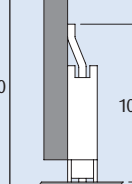
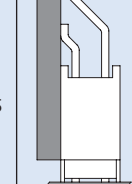
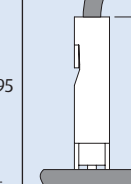
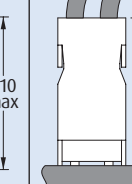
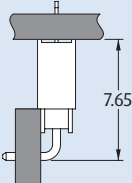
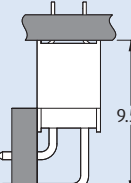
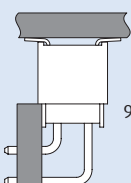
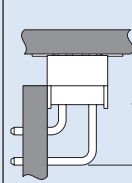
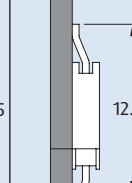
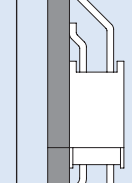
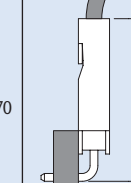
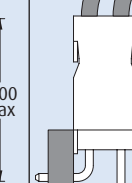
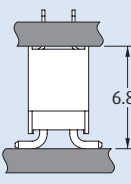
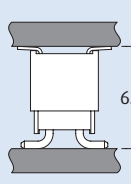
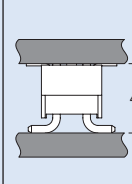
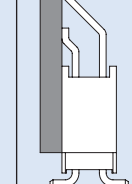
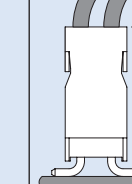
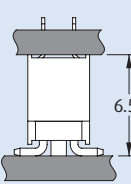
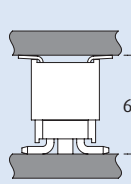
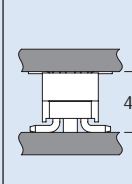
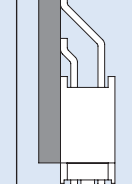
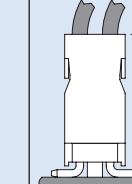
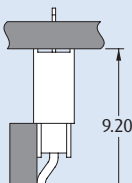
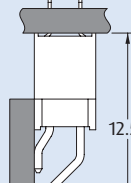
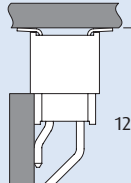
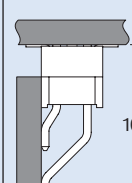
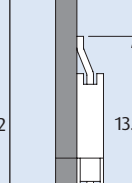
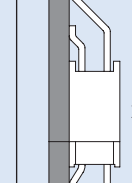
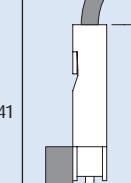
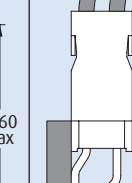
❖ Mechanical

Durability	
M22-30X:	25 operations
Others:	300 operations
Insertion force (max)	
Jumper sockets:	10N total
M22-30X:	2.9N per contact
Others:	2.0N per contact
Withdrawal force (min)	
Jumper sockets:	1N total
M22-30X:	1.0N per contact
Others:	0.2N per contact
Vibration sensitivity	
M22-654, 655:	50 – 2,000Hz, 3.13G, 45 minutes duration
Others:	10 – 55Hz, 1.5mm, 6 hours duration
Shock severity:	294m/s ² (30G) for 11ms

❖ Environmental

Operating temperature	
M22-30X:	-25°C to +85°C
Others:	-40°C to +105°C
Solderability	
M22-636, 713, 714:	250°C for 3 seconds
Others:	245°C for 5 seconds
Soldering heat resistance:	260°C for 10 seconds

M22 Connectors Mating Profiles

		FEMALE							
		VERTICAL PC TAIL		VERTICAL SMT	VERTICAL SMT Low Profile	HORIZONTAL SMT		CRIMP	
		SIL	DIL	DIL	DIL	SIL	DIL	SIL	DIL
MALE	VERTICAL PC TAIL	 5.90	 5.80	 5.80	 3.60	 10.65	 13.95	 9.10 max	 9.10 max
	HORIZONTAL PC TAIL	 7.65	 9.55	 9.55	 7.35	 12.40	 17.70	 11.00 max	 13.10 max
	VERTICAL SMT		 6.80	 6.80	 4.60		 14.95		 10.40 max
	VERTICAL SMT With Pegs		 6.55	 6.55	 4.35		 14.70		 10.00 max
	HORIZONTAL SMT	 9.20	 12.52	 12.52	 10.32	 13.69	 20.41	 12.60 max	 16.02 max

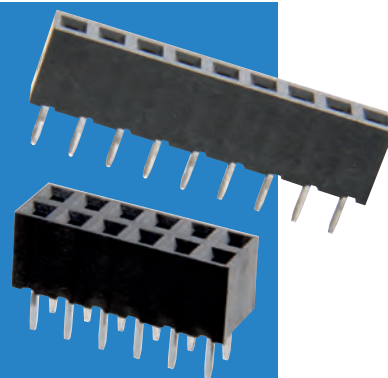
All dimensions in mm.

2mm (.079") PITCH

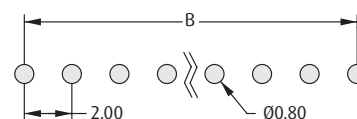
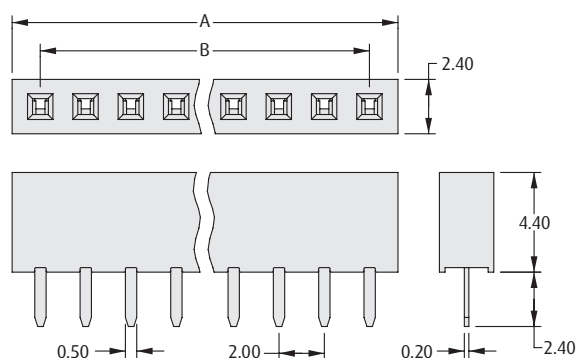
M22 Connectors

Female Vertical PC Tail

- ❖ Twin beam phosphor bronze contacts.
- ❖ Suitable for use with mating M22 male pin headers, with 0.5mm square pins.
- ❖ For polarising key use **order code M22-0340000**.



SINGLE ROW

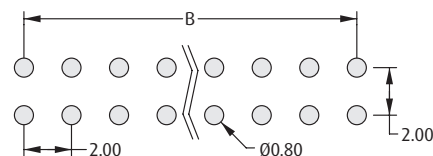
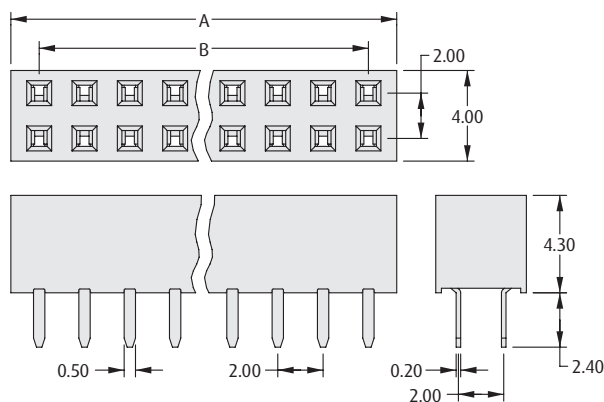


Recommended PC Board Pattern

CALCULATION

A	$B + 2.5$
B	$2 \times (\text{No. of contacts per row} - 1)$

DOUBLE ROW



Recommended PC Board Pattern

HOW TO ORDER

M22 - 71 X XX XX

SERIES CODE

NO. OF ROWS

3	Single Row
4	Double Row

FINISH

42	Gold + Tin
----	------------

NO. OF CONTACTS PER ROW

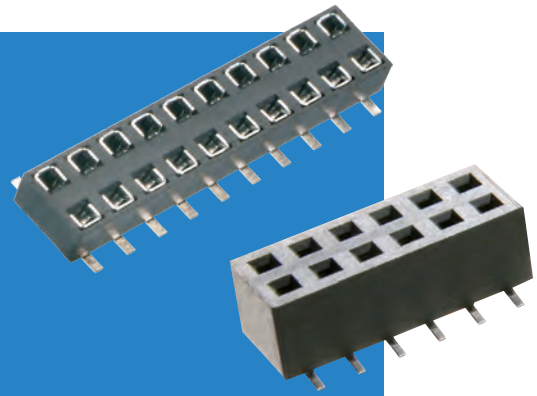
03 to 20, 25	Single Row
03 to 25	Double Row

All dimensions in mm.

M22 Connectors

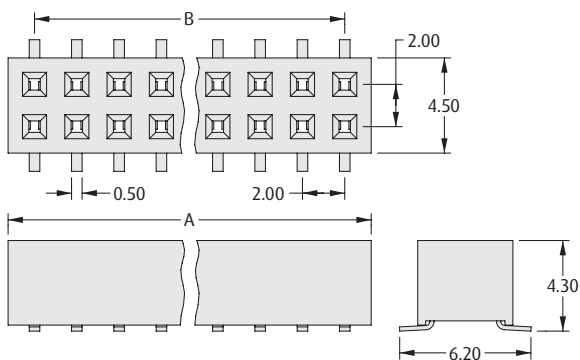
Female Vertical Surface Mount, Dual Entry

- ❖ Dual entry sockets - can be used as either a top entry or bottom entry configuration.
- ❖ The low profile socket has locating pegs, to assist with correct positioning and minimised movement during soldering.
- ❖ Twin beam contact for cost-effective reliability.
- ❖ Contact technical@harwin.com for Tape and Reel options.



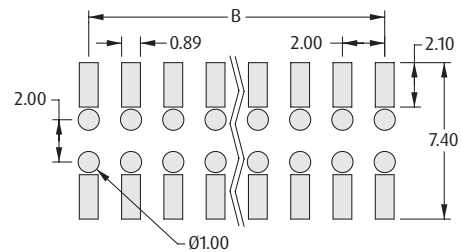
2mm (.079") PITCH

4.30mm HIGH



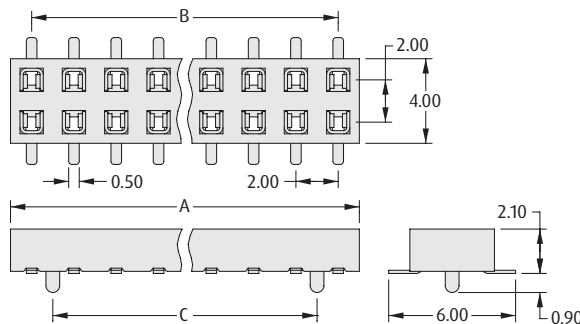
CALCULATION

A	$B + 2.5$
B	$2 \times (\text{No. of contacts per row} - 1)$



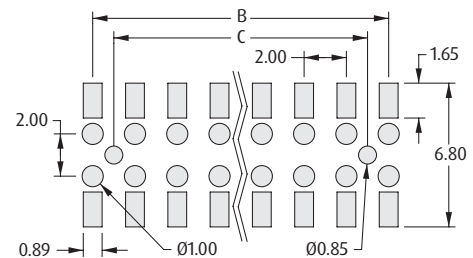
Recommended PC Board Pattern

2.10mm HIGH



CALCULATION

A	$2 \times \text{No. of contacts per row}$
B	$2 \times (\text{No. of contacts per row} - 1)$
C	$B - 2$



Recommended PC Board Pattern

HOW TO ORDER

M22 - 63 X XX XX

SERIES CODE

TYPE

4	4.30mm high
6	2.10mm high

FINISH

42	Gold + Tin
46	Tin (2.10mm high only)

NO. OF CONTACTS PER ROW

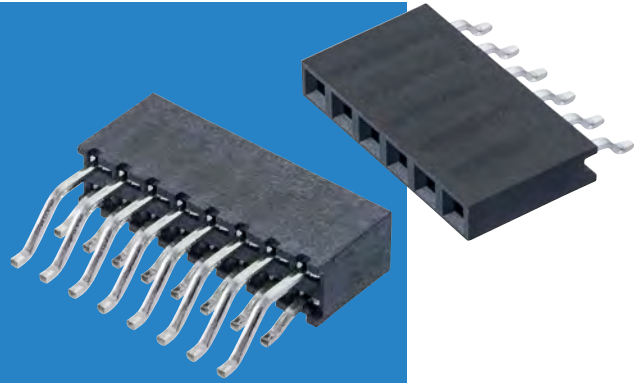
03 to 20	4.30mm high
02 to 20	2.10mm high

All dimensions in mm.

M22 Connectors

Female Horizontal Surface Mount

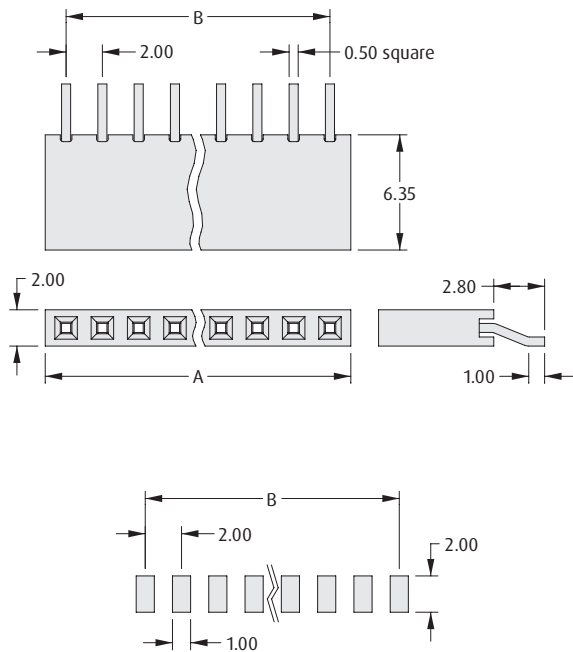
- Rear tail configuration, to allow mounting right up to the edge of the PCB.
- Supplied in Tape and Reel packaging as standard for use in automated assembly systems.



SINGLE ROW

CALCULATION

A	$B + 2.3$
B	$2 \times (\text{No. of contacts per row} - 1)$

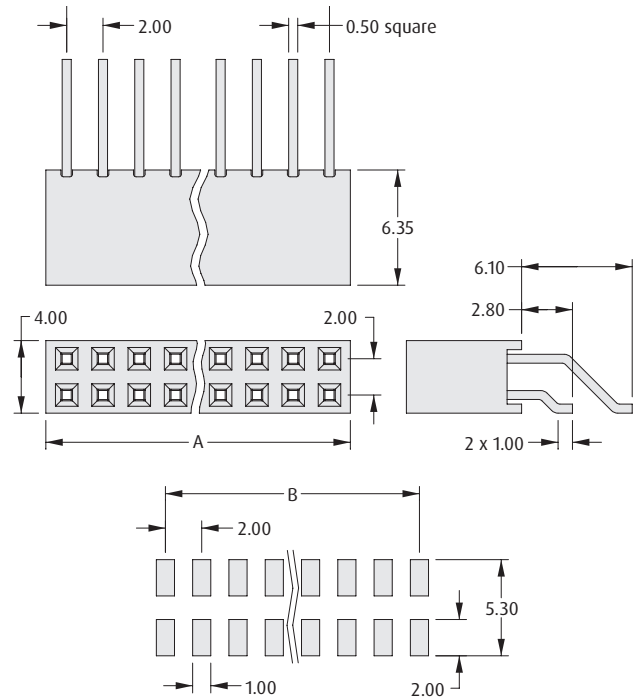


Recommended PC Board Pattern

DOUBLE ROW

CALCULATION

A	$B + 2.3$
B	$2 \times (\text{No. of contacts per row} - 1)$



Recommended PC Board Pattern

HOW TO ORDER

M22 - 65 X XX XX R

SERIES CODE

TYPE

4	Single Row
5	Double Row

PACKAGING

R	Tape & Reeled
----------	---------------

FINISH

42	Gold + Tin
-----------	------------

NO. OF CONTACTS PER ROW

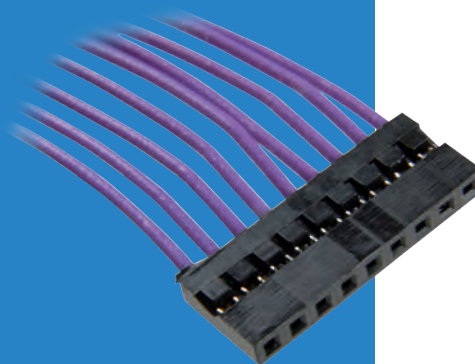
02 to 06, 08, 10

All dimensions in mm.

M22 Connectors

Female Crimp Housings

- Female crimp housing - contacts are ordered separately (shown on following page).
- For polarising key use **order code M22-0340000**.



2mm (.079") PITCH

SINGLE ROW		CALCULATION		DOUBLE ROW		CALCULATION	
		A	$B + 2.3$			A	$B + 2.2$
		B	$2 \times (\text{No. of contacts per row} - 1)$			B	$2 \times (\text{No. of contacts per row} - 1)$

HOW TO ORDER

M22 - 30 X XX 00

SERIES CODE

TYPE

1	Single Row
2	Double Row

NO. OF CONTACTS PER ROW

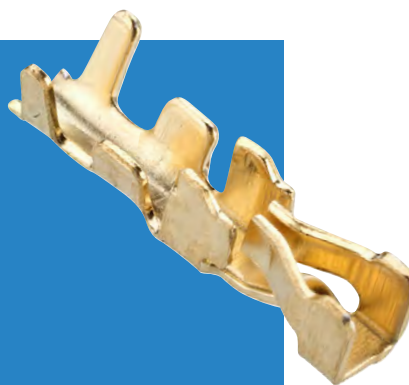
02 to 20

All dimensions in mm.

M22 Connectors

Female Crimp Contacts

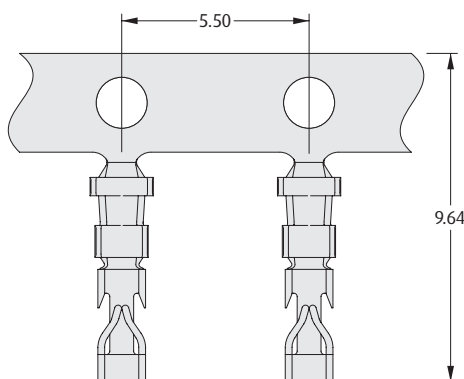
- ❖ Loose or reeled contacts.
- ❖ Open crimp design, ideal for automation.
- ❖ Use with female crimp housings shown on previous page.
- ❖ Suitable for connection with male pin headers with a mating length of 4.00mm or longer.



CONTACTS

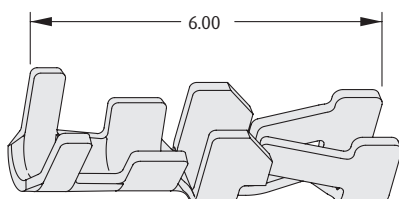
Reeled (continuous strip)

- ❖ Order code is for one reel of 10,000 contacts.



Loose (cropped)

- ❖ Order code is for one pack of 100 contacts.



HAND CRIMP TOOL

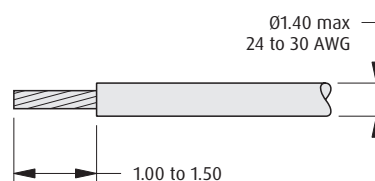
- ❖ Instruction sheet is available at www.harwin.com/instructions.
- ❖ For use with loose contacts.



ORDER CODE

Z22-020

WIRE STRIPPING DETAILS



HOW TO ORDER

M22 - 30 X 00 XX

SERIES CODE

TYPE	
4	Reeled Contacts
5	Loose Contacts

FINISH

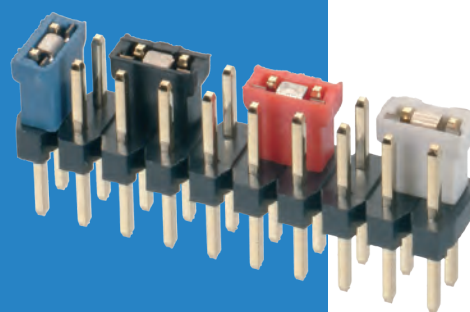
42	Gold
46	Tin

All dimensions in mm.

M22 Connectors

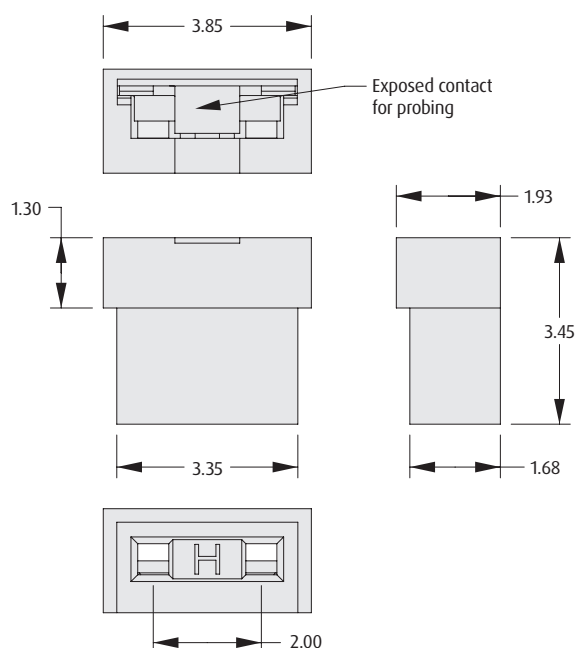
Jumper Sockets, Polarising Key

- ❖ Can be fitted and removed by hand.
- ❖ Used with male pin headers, Jumper Sockets give an alternative on-board programming method to DIP switches.
- ❖ Jumper Sockets have an open top for use with test probes.



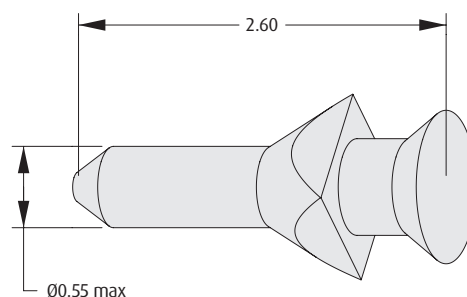
2mm (.079") PITCH

JUMPER SOCKET



POLARISING KEY

- ❖ For use with Female Vertical PC Tail connectors, M22-713 and M22-714 series.
- ❖ For use with Female Cable Housings, M22-301 and M22-302 series.



HOW TO ORDER

M22 - 19 X 00 XX

SERIES CODE

COLOUR

0	Black
1	Blue
2	Red
3	Grey

FINISH

05	Gold
46	Tin

ORDER CODE

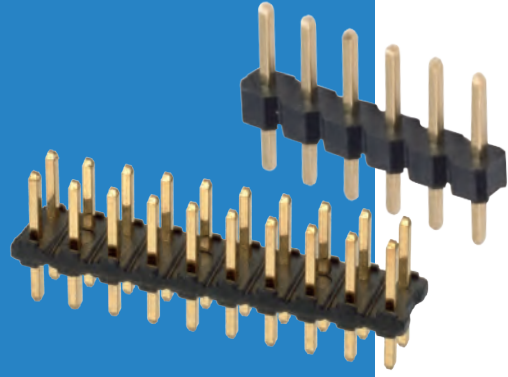
M22-0340000

All dimensions in mm.

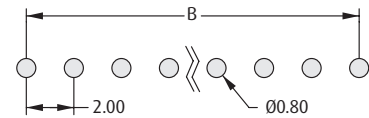
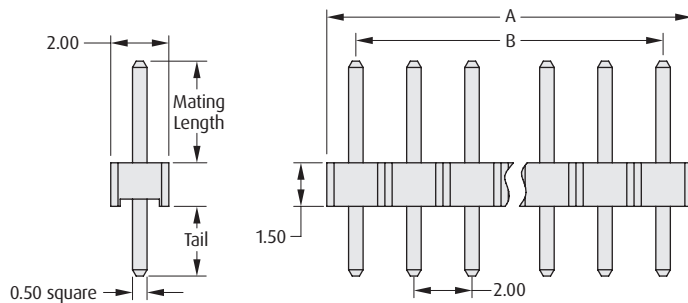
M22 Connectors

Male Vertical PC Tail

- ❖ Suitable for use with female PCB connectors and jumper sockets.
- ❖ 4.2mm mating pin length recommended for use with female cable connections.
- ❖ Pin headers can be cut into smaller sizes.
- ❖ Also available with variable dimensions.



SINGLE ROW

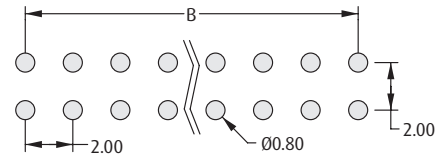
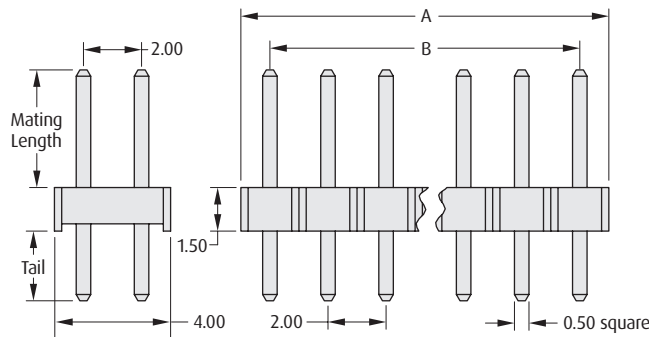


Recommended PC Board Pattern

CALCULATION

A	2 x No. of contacts per row
B	2 x (No. of contacts per row - 1)

DOUBLE ROW



Recommended PC Board Pattern

HOW TO ORDER

M22 - 2XX XX XX

SERIES CODE

TYPE			
SINGLE ROW	DOUBLE ROW	MATING LENGTH	TAIL
201	202	3.50mm	3.40mm
251	252	3.50mm	2.30mm
271	272	4.20mm	2.30mm

FINISH

05	Gold
46	Tin

NO. OF CONTACTS PER ROW

02 to 25, 50	M22-201, M22-202
02 to 20, 25, 40, 50	M22-251
02 to 20, 25, 40	M22-252
02 to 20	M22-271, M22-272

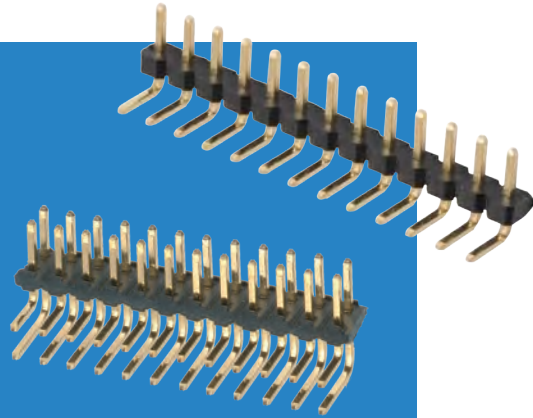
All dimensions in mm.

M22 Connectors

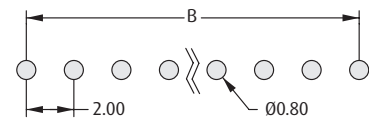
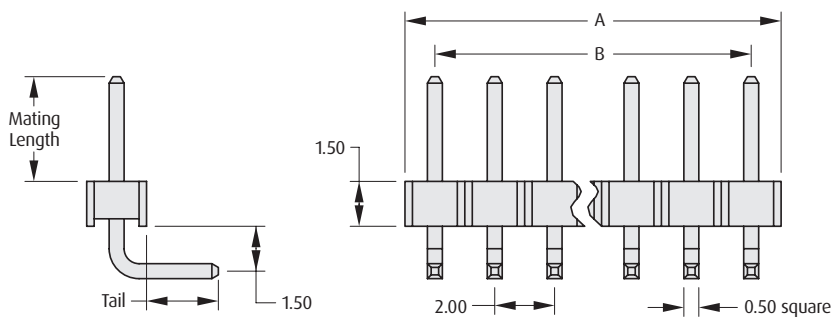
2mm (.079") PITCH

Male Horizontal PC Tail

- ❖ Suitable for use with female PCB connectors and jumper sockets.
- ❖ 4.2mm mating pin length recommended for use with female cable connectors.
- ❖ Pin headers can be cut into smaller sizes.
- ❖ Also available with variable dimensions.



SINGLE ROW

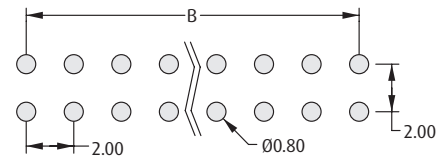
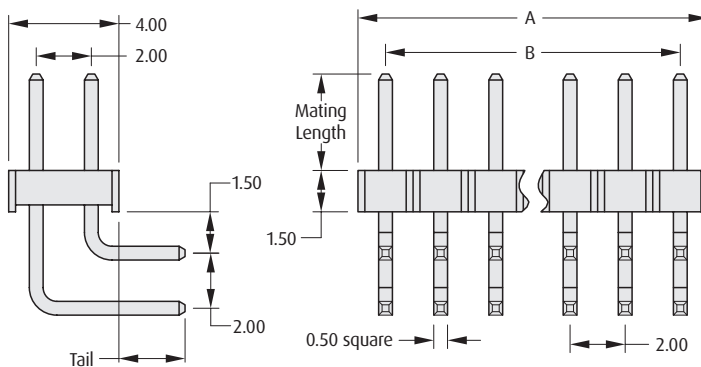


Recommended PC Board Pattern

CALCULATION

A	2 x No. of contacts per row
B	2 x (No. of contacts per row - 1)

DOUBLE ROW



Recommended PC Board Pattern

HOW TO ORDER

M22 - 2XX XX XX

SERIES CODE

TYPE			
SINGLE ROW	DOUBLE ROW	MATING LENGTH	TAIL
203	204	3.50mm	3.00mm
253	254	3.50mm	2.40mm
273	274	4.20mm	2.40mm

FINISH

05	Gold
46	Tin

NO. OF CONTACTS PER ROW

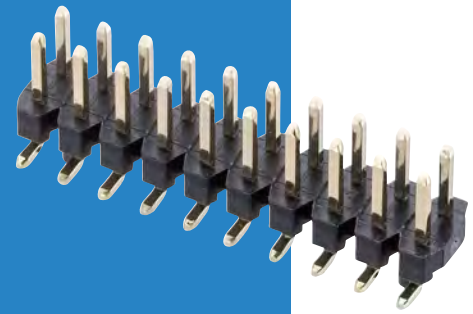
02 to 25, 50	M22-203, M22-204
02 to 20	Others

All dimensions in mm.

M22 Connectors

Male Vertical Surface Mount

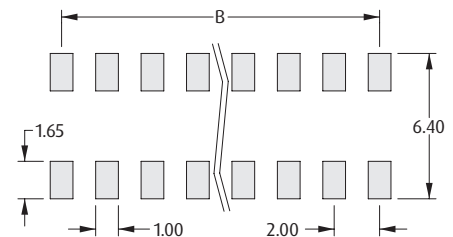
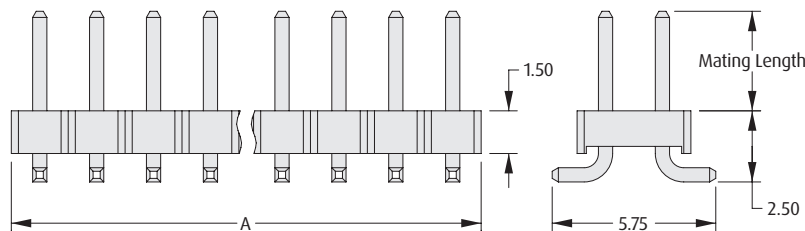
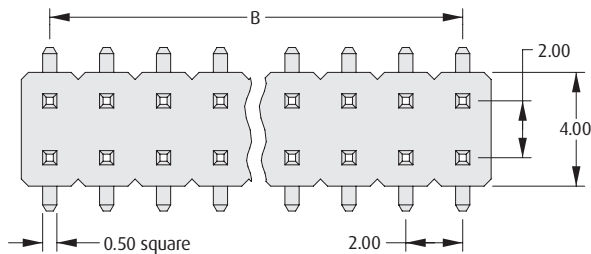
- ❖ Suitable for use with female PCB connectors and jumper sockets.
- ❖ 4.2mm mating pin length recommended for use with female cable connectors.
- ❖ Pin headers can be cut into smaller sizes.
- ❖ Also available with variable dimensions.
- ❖ Tape and Reel option supplied fitted with Pick and Place cap, contact technical@harwin.com for availability.



DOUBLE ROW

CALCULATION

A	2 x No. of contacts per row
B	2 x (No. of contacts per row - 1)



Recommended PC Board Pattern

HOW TO ORDER

M22 - 5 X 2 XX XX X

SERIES CODE

TYPE

3	3.50mm Mating Length
5	4.20mm Mating Length

NO. OF CONTACTS PER ROW

02 to 25	3.50mm Mating Length
02 to 20	4.20mm Mating Length

PACKAGING

Blank	Loose
P	Pick and Place cap, tube
R	Tape & Reeled

FINISH

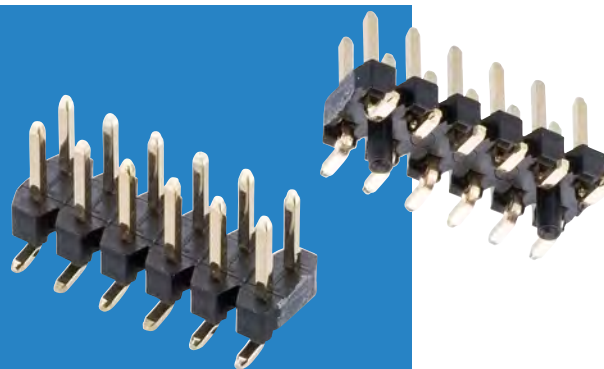
05	Gold
46	Tin

All dimensions in mm.

M22 Connectors

Male Vertical Surface Mount

- ❖ Suitable for use with female PCB connectors and jumper sockets.
- ❖ Supplied with location pegs for additional placement accuracy.
- ❖ Tape and Reel option supplied fitted with Pick and Place cap.

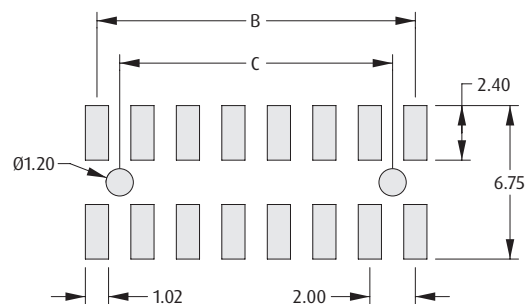
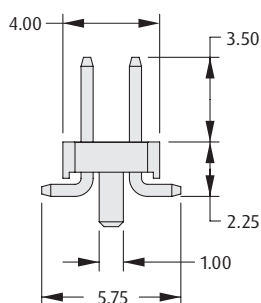
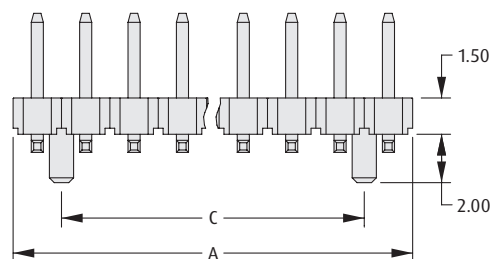
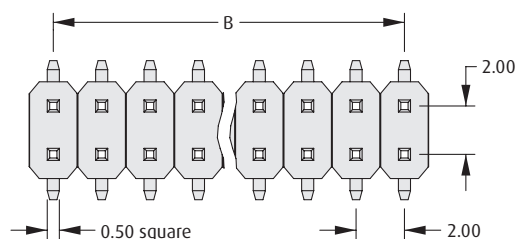


2mm (.079") PITCH

DOUBLE ROW

CALCULATION

A	2 x No. of contacts per row
B	2 x (No. of contacts per row - 1)
C	B - 2



Recommended PC Board Pattern

HOW TO ORDER

M22 - 530 XX 05 X

SERIES CODE

NO. OF CONTACTS PER ROW

02 to 06, 10	Loose
02, 03, 05	Tape & Reeled

PACKAGING

Blank	Loose
R	Tape & Reeled

FINISH

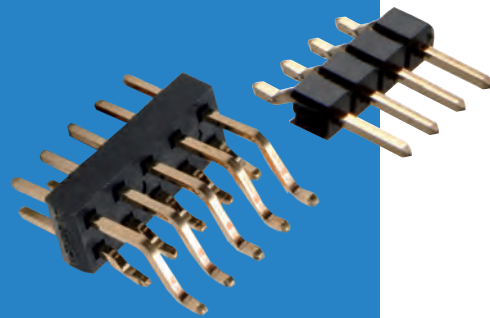
05	Gold
-----------	------

All dimensions in mm.

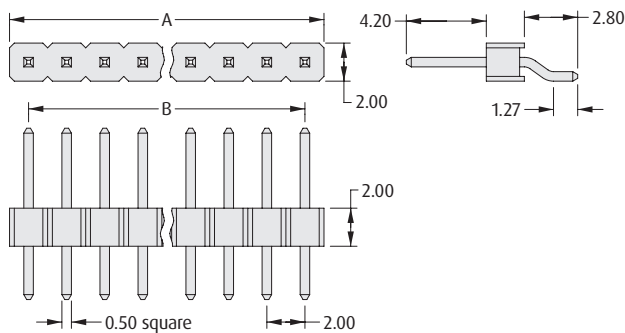
M22 Connectors

Male Horizontal Surface Mount

- Suitable for use with female PCB connectors and jumper sockets.
- 4.2mm mating pin length recommended for use with female cable connectors.
- Single row pin headers can be cut into smaller sizes.
- Locating pegs on double row, to assist with correct positioning and minimised movement during soldering.
- Contact technical@harwin.com for Tape and Reel options.

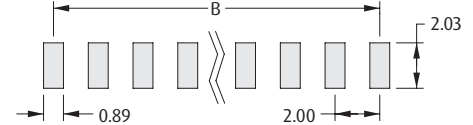


SINGLE ROW



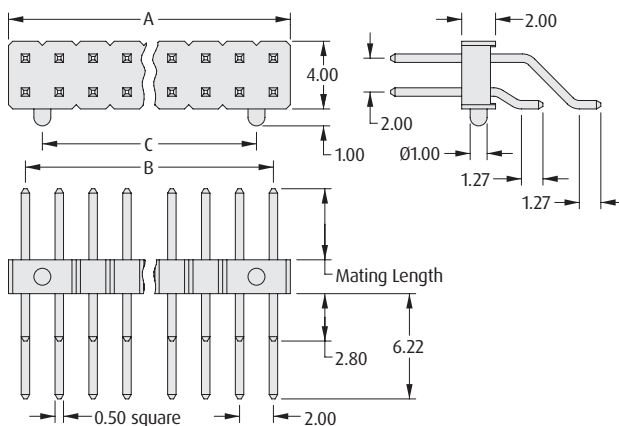
CALCULATION

A	2 x No. of contacts per row
B	2 x (No. of contacts per row - 1)



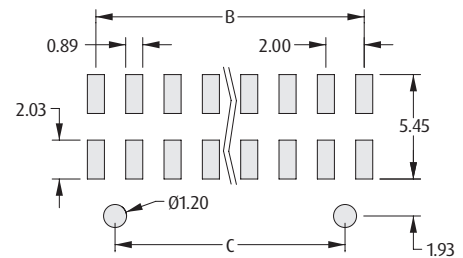
Recommended PC Board Pattern

DOUBLE ROW



CALCULATION

A	2 x No. of contacts per row
B	2 x (No. of contacts per row - 1)
C	B - 2



Recommended PC Board Pattern

HOW TO ORDER

M22 - 5 X 3 XX 05

SERIES CODE

TYPE

3	Single Row
4	Double Row, 3.2mm Mating Length
6	Double Row, 4.2mm Mating Length

FINISH

05 Gold

NO. OF CONTACTS PER ROW

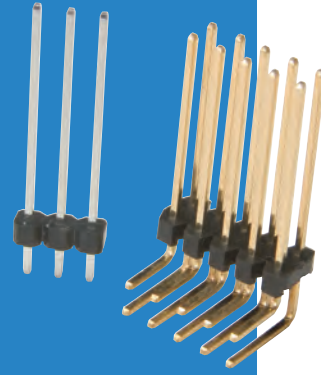
02 to 15	M22-533
03 to 15, 20	M22-543
03 to 20	M22-563

All dimensions in mm.

M22 Connectors

Pin Header Variants

- ❖ If you are unable to specify the connector you require from our standard range of M22 connectors, use the order code below to create an application-specific connector.
- ❖ Contact technical@harwin.com for further information, or search online for M22-XXX.
- ❖ Suitable for use with female connectors shown on previous pages.



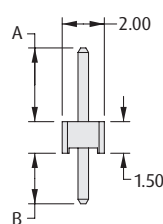
2mm (.079") PITCH

TERMINATION STYLES

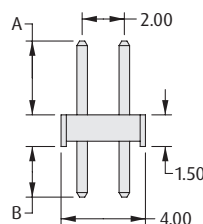
Vertical PC Tail

- ❖ Pin section is 0.50mm square.
- ❖ PCB mounting hole is Ø0.80mm.

V Series



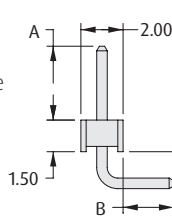
W Series



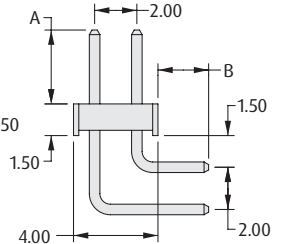
Horizontal PC Tail

- ❖ Pin section is 0.50mm square.
- ❖ PCB mounting hole is Ø0.80mm.
- ❖ Maximum B dimension is 6.00mm.

H Series



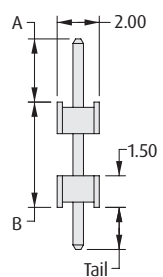
J Series



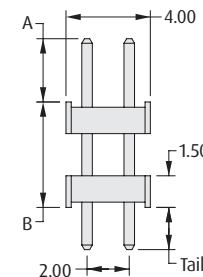
Extended PC Tail

- ❖ Pin section is 0.50mm square.
- ❖ PCB mounting hole is Ø0.80mm.

E Series (3mm Tail) K Series (2.4mm Tail)



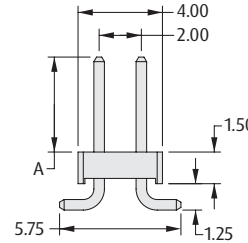
F Series (3mm Tail) L Series (2.4mm Tail)



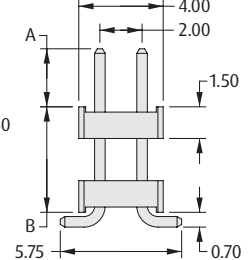
Vertical SMT Extended SMT

- ❖ Pin section is 0.50mm square.
- ❖ For PCB pad layout see standard Male SMT pin header.
- ❖ B dimension is 000 on S series.

S Series



T Series



HOW TO ORDER

M22 - XXX XXX X XX XX

SERIES CODE

DIMENSION A

Example: 7.8mm = 078

DIMENSION B

Example: 5.0mm = 050

FINISH

05	Gold
46	Tin

NO. OF CONTACTS PER ROW

02 to 50

SINGLE ROW	DOUBLE ROW	
V	W	Vertical
H	J	Horizontal
E	F	Extended
K	L	Extended (2.4mm Tail)
-	S	Surface Mount
-	T	Extended Surface Mount

All dimensions in mm.

M20 Connectors Specification

- ❖ 2.54mm pitch, with 0.64mm square male pin connection system.
- ❖ Board-to-Board and Cable-to-Board application options.

❖ Materials

Mouldings:	Standard or High Temperature Plastic, UL94V-0
Contacts	
Female:	Phosphor Bronze
Male:	Copper Alloy
Finish:	See individual pages

❖ Electrical

Current:	3A per contact
Voltage proof:	800V AC, 500V DC for 1 minute
Contact resistance:	30mΩ max
Insulation resistance:	1,000MΩ min

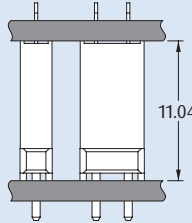
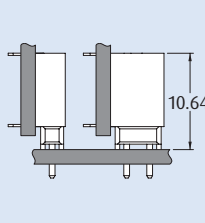
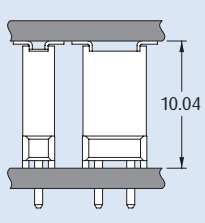
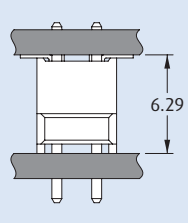
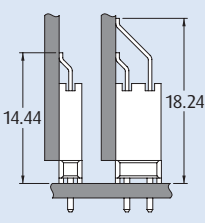
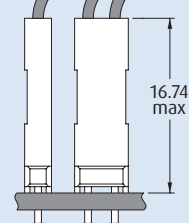
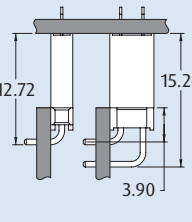
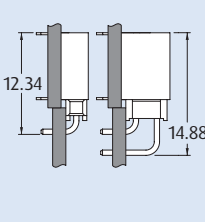
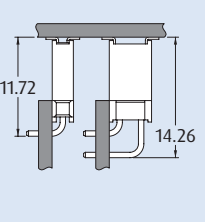
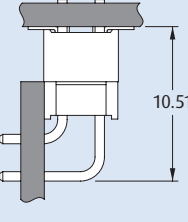
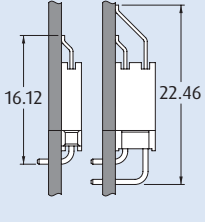
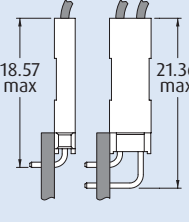
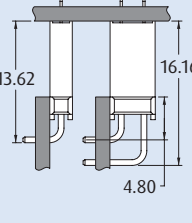
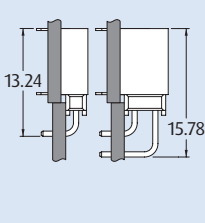
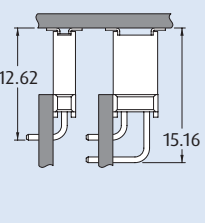
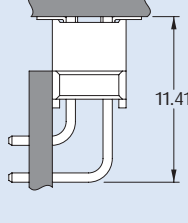
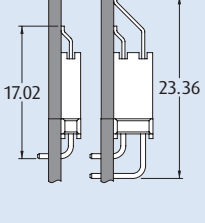
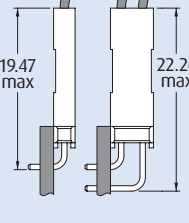
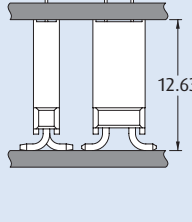
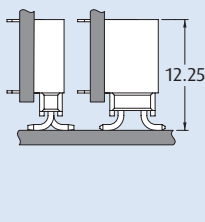
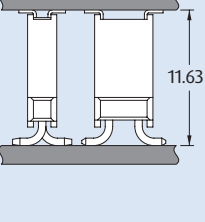
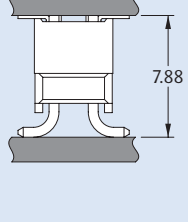
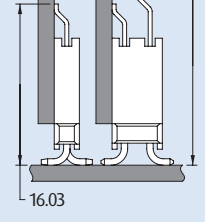
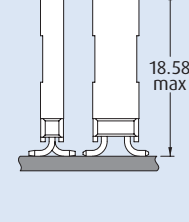
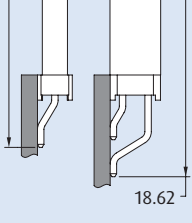
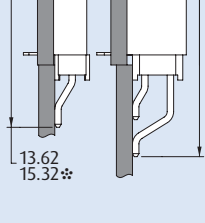
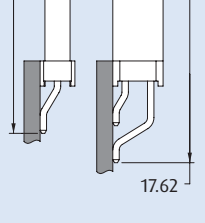
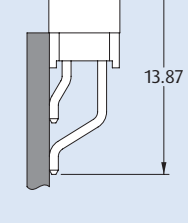
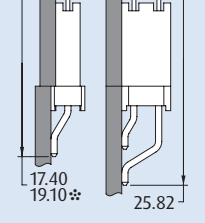
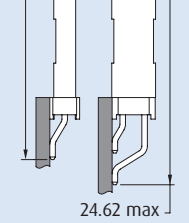
❖ Mechanical

Durability	
Gold finish:	300 operations
Tin finish:	50 operations
Insertion force (max)	
Female:	2.0N per contact
Jumper sockets:	12.5N total
Withdrawal force (min)	
Female:	0.3N per contact
Jumper sockets:	1.0N total
Vibration sensitivity:	50 – 2,000Hz, 3.13G, 45 minutes duration
Shock severity:	294m/s ² (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

M20 Connectors Mating Profiles

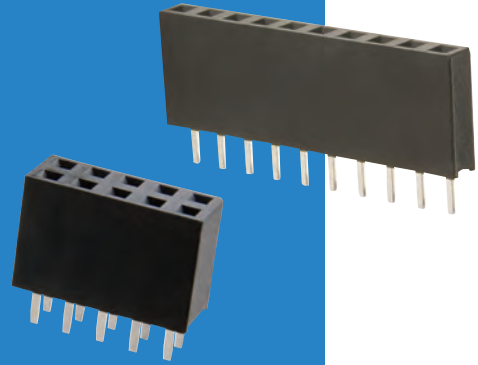
		FEMALE					
		VERTICAL PC TAIL	HORIZONTAL PC TAIL	VERTICAL SMT	VERTICAL SMT Low Profile	HORIZONTAL SMT	CRIMP
MALE	VERTICAL PC TAIL	 11.04	 10.64	 10.04	 6.29	 14.44 18.24	 16.74 max
	HORIZONTAL PC TAIL 3.9mm Tail	 12.72 15.26 3.90	 12.34 14.88	 11.72 14.26	 10.51	 16.12 22.46	 18.57 max 21.36 max
	HORIZONTAL PC TAIL 4.8mm Tail	 13.62 16.16 4.80	 13.24 15.78	 12.62 15.16	 11.41	 17.02 23.36	 19.47 max 22.26 max
	VERTICAL SMT	 12.63	 12.25	 11.63	 7.88	 16.03 19.83	 18.58 max
	HORIZONTAL SMT *High Profile Single Row	 14.00 15.70* 18.62	 13.62 15.32* 18.24	 13.00 14.70* 17.62	 13.87	 17.40 19.10* 25.82	 20.00 max 21.70 max* 24.62 max

All dimensions in mm.

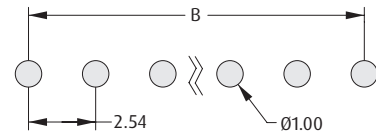
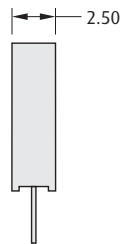
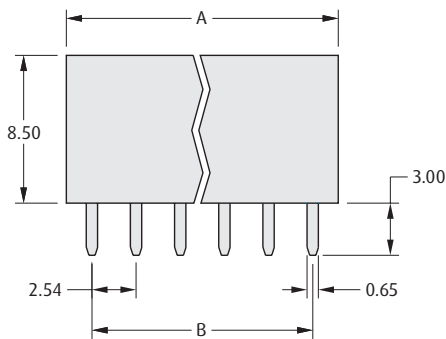
M20 Connectors

Female Vertical PC Tail

- ❖ Twin beam phosphor bronze contacts.
- ❖ Suitable for use with mating M20 male pin headers, with 0.64mm square pins.



SINGLE ROW

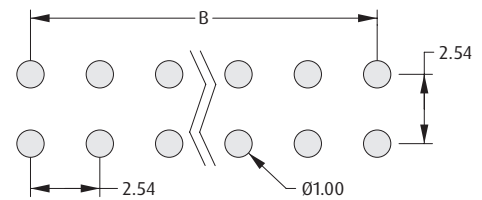
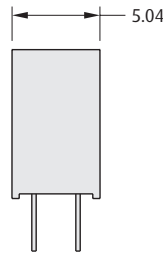
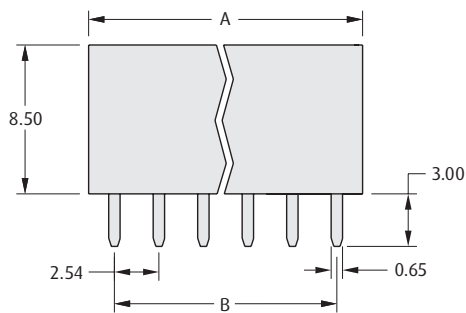


Recommended PC Board Pattern

CALCULATION

A	$B + 2.94$
B	$2.54 \times (\text{No. of contacts per row} - 1)$

DOUBLE ROW



Recommended PC Board Pattern

HOW TO ORDER

SERIES CODE

M20 - 78 X XX XX

TYPE

2	Single Row
3	Double Row

FINISH

42	Gold + Tin
46	Tin

NO. OF CONTACTS PER ROW

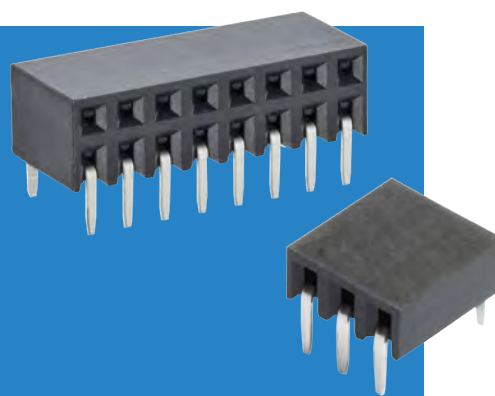
02 to 40

All dimensions in mm.

M20 Connectors

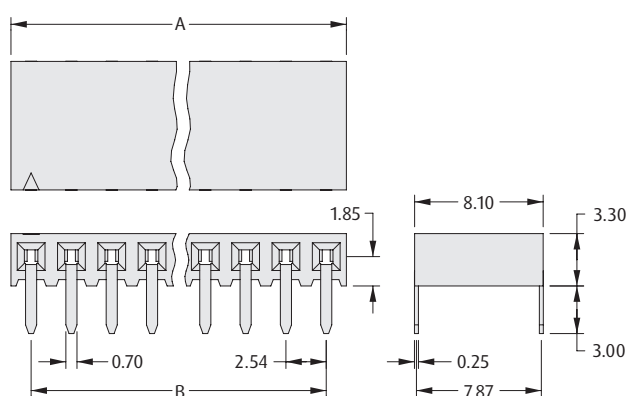
Female Horizontal PC Tail

- ❖ Two point solder fixing for connector rigidity.
- ❖ Twin beam contact for cost-effective reliability.
- ❖ Suitable for use with mating M20 male pin headers, with 0.64mm square pins.



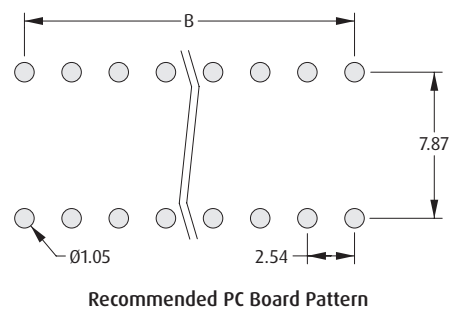
2.54mm (.100") PITCH

SINGLE ROW

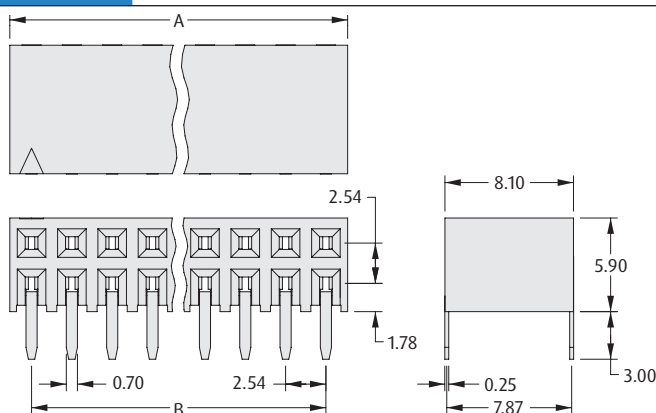


CALCULATION

A	$2.54 \times \text{No. of contacts per row}$
B	$2.54 \times (\text{No. of contacts per row} - 1)$

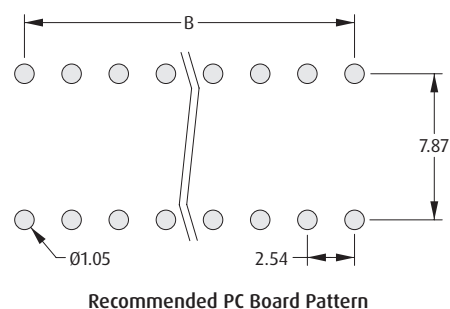


DOUBLE ROW



CALCULATION

A	$B + 2.74$
B	$2.54 \times (\text{No. of contacts per row} - 1)$



HOW TO ORDER

SERIES CODE

TYPE

8	Double Row
9	Single Row

M20 - 78 X XX XX

FINISH

42	Gold + Tin
46	Tin

NO. OF CONTACTS PER ROW

02 to 40

All dimensions in mm.

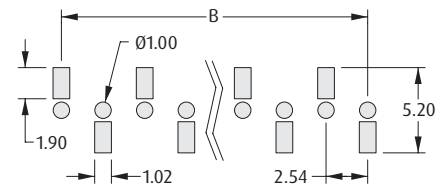
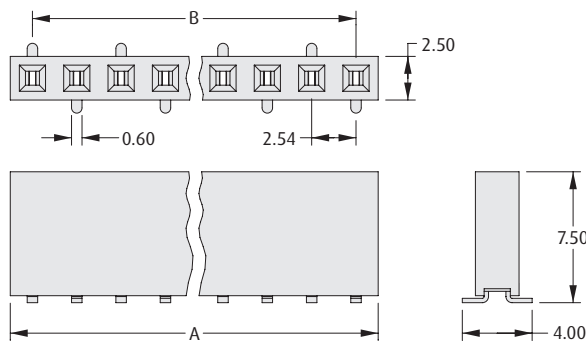
M20 Connectors

Female Vertical Surface Mount, Dual Entry

- ❖ Dual Entry sockets - can be used as either a top entry or bottom entry configuration.
- ❖ Twin beam contact for cost-effective reliability.
- ❖ Contact technical@harwin.com for Tape and Reel options.
- ❖ Suitable for use with mating M20 male pin headers, with 0.64mm square pins.

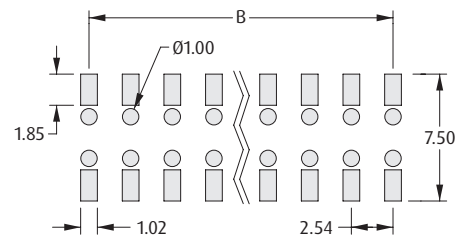
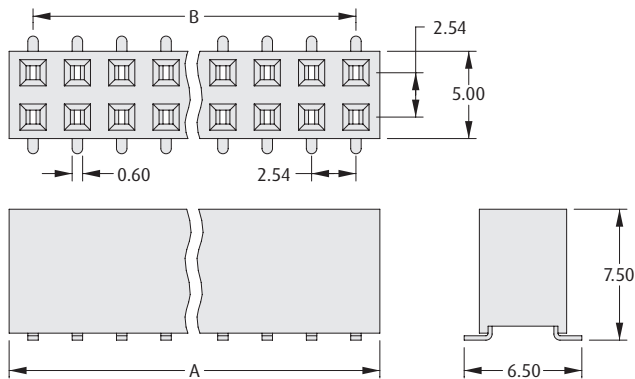


SINGLE ROW



Recommended PC Board Pattern

DOUBLE ROW



Recommended PC Board Pattern

CALCULATION

A	$B + 2.74$
B	$2.54 \times (\text{No. of contacts per row} - 1)$

HOW TO ORDER

SERIES CODE

M20 - 78 X XX XX

TYPE

6	Single Row
7	Double Row

FINISH

42	Gold + Tin
46	Tin

NO. OF CONTACTS PER ROW

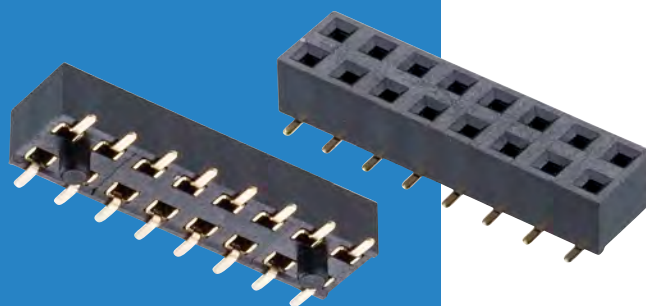
02 to 40

All dimensions in mm.

M20 Connectors

Female Vertical Surface Mount, Dual Entry

- ❖ Dual Entry socket - can be used as either a top entry or bottom entry configuration.
- ❖ Twin beam contact for cost-effective reliability.
- ❖ Tape and Reel option supplied fitted with Pick and Place cap.
- ❖ Suitable for use with mating M20 male pin headers, with 0.64mm square pins.

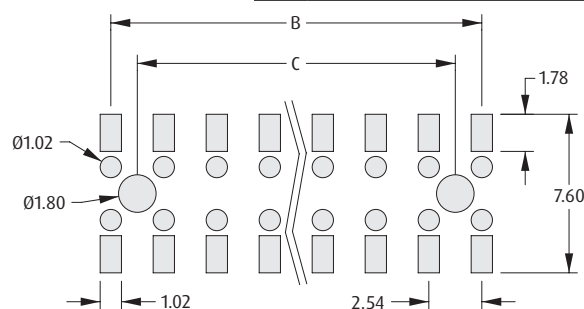
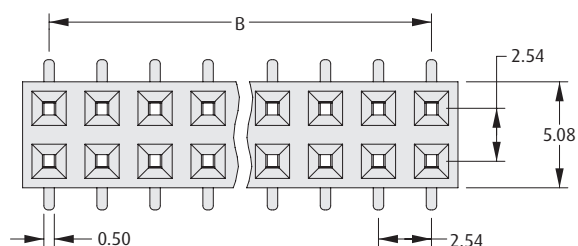


2.54mm (.100") PITCH

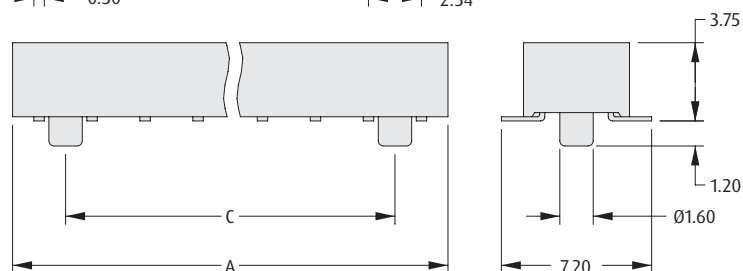
DOUBLE ROW

CALCULATION

A	2.54 x No. of contacts per row
B	2.54 x (No. of contacts per row - 1)
C	B - 2.54



Recommended PC Board Pattern



HOW TO ORDER

M20 - 781 XX 45 X

SERIES CODE

NO. OF CONTACTS PER ROW

02 to 10, 12, 15, 20

PACKAGING

Blank	Loose
R	Tape & Reeled

FINISH

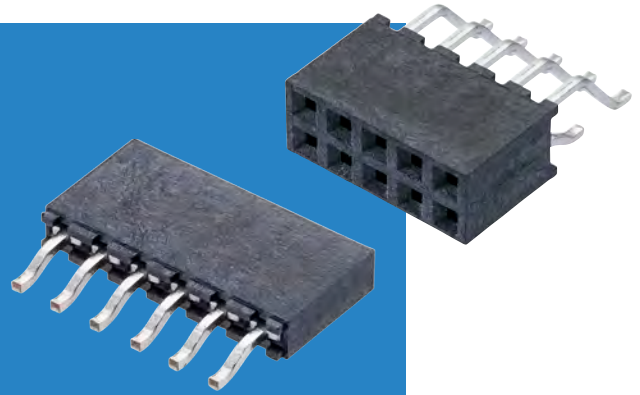
45	Gold
-----------	------

All dimensions in mm.

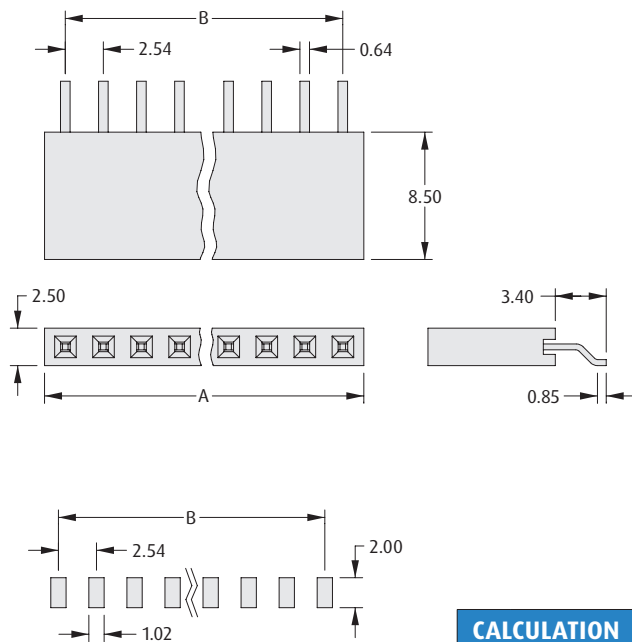
M20 Connectors

Female Horizontal Surface Mount

- Rear tail configuration, to allow mounting right up to the edge of the PCB.
- Supplied in Tape and Reel packaging as standard for use in automated assembly systems.

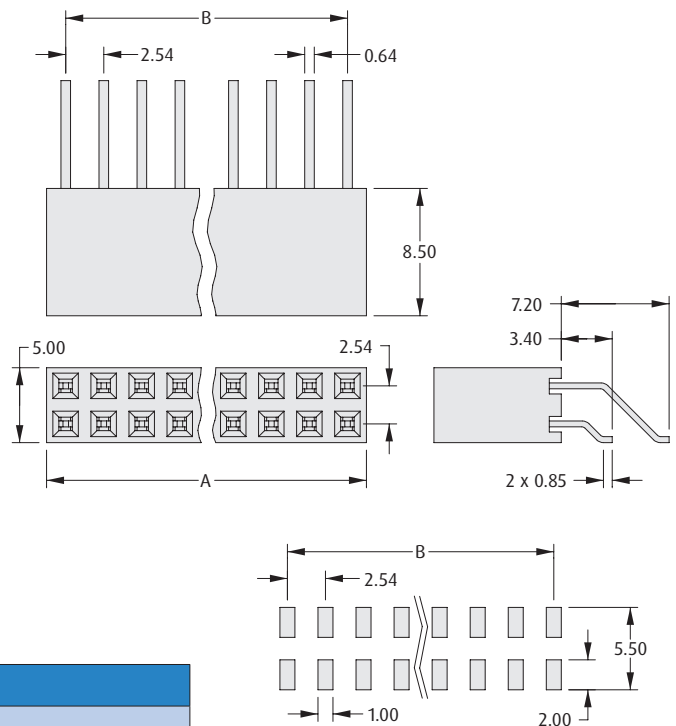


SINGLE ROW



Recommended PC Board Pattern

DOUBLE ROW



Recommended PC Board Pattern

CALCULATION

A	$B + 2.79$
B	$2.54 \times (\text{No. of contacts per row} - 1)$

HOW TO ORDER

SERIES CODE

NO. OF ROWS

1	Single Row
2	Double Row

M20 - 79 X XX 42 R

PACKAGING

R Tape & Reeled

FINISH

42 Gold + Tin

NO. OF CONTACTS PER ROW

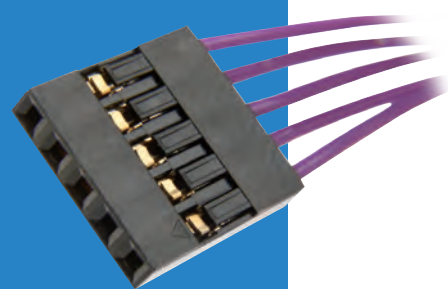
02 to 06, 08, 10

All dimensions in mm.

M20 Connectors

Female Crimp Housings

- ❖ Female crimp housing - contacts are ordered separately (shown on following page).
- ❖ For polarising key use **order code M20-003**



2.54mm (.100") PITCH

SINGLE ROW		CALCULATION		DOUBLE ROW		CALCULATION	
		A	$B + 2.74$			A	$2.54 \times \text{No. of contacts per row}$
		B	$2.54 \times (\text{No. of contacts per row} - 1)$			B	$2.54 \times (\text{No. of contacts per row} - 1)$

HOW TO ORDER

M20 - 10 X XX 00

SERIES CODE

TYPE

6	Single Row
7	Double Row

NO. OF CONTACTS PER ROW

02 to 12

All dimensions in mm.

M20 Connectors

Female Crimp Contacts, Polarising Key

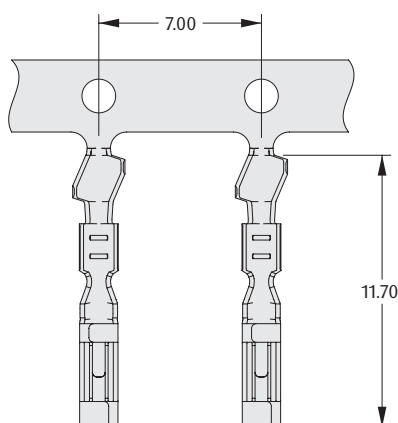
- ❖ Loose or reeled contacts.
- ❖ Open crimp design, ideal for automation.
- ❖ Use with female crimp housings shown on previous page.



CONTACTS

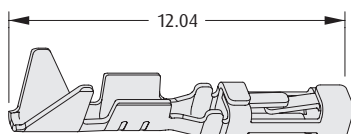
Reeled (continuous strip)

- ❖ Order code is for one reel of 10,000 contacts.



Loose (cropped)

- ❖ Order code is for one pack of 100 contacts.



HAND CRIMP TOOL

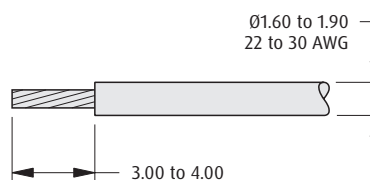
- ❖ Instruction sheet is available at www.harwin.com/instructions.
- ❖ For use with loose contacts.



ORDER CODE

Z20-320

WIRE STRIPPING DETAILS



HOW TO ORDER

M20 - 11 X 00 XX

SERIES CODE

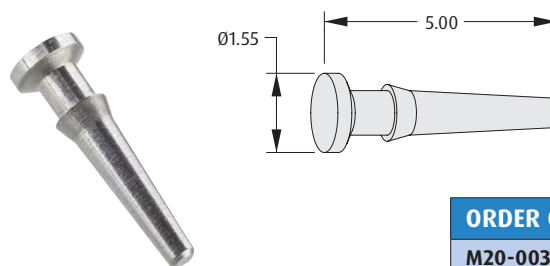
TYPE

6	Reeled Contacts
8	Loose Contacts

FINISH

42	Gold + Tin
46	Tin

POLARISING KEY



ORDER CODE

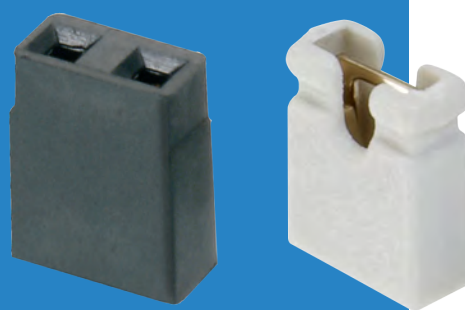
M20-003

All dimensions in mm.

M20 Connectors

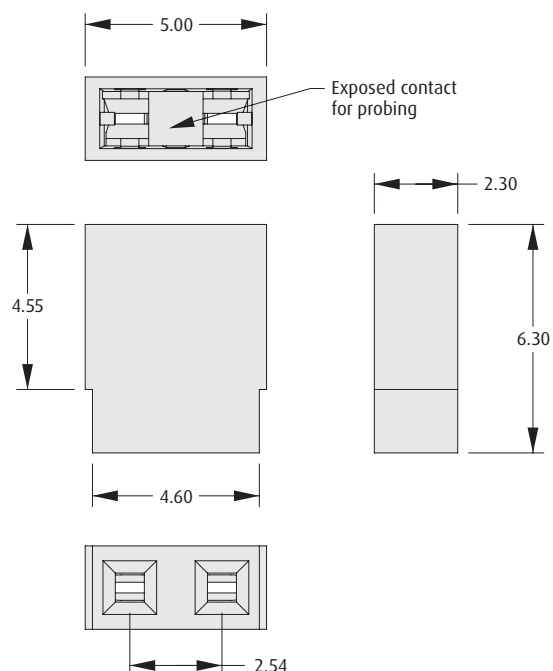
Jumper Sockets - Open Top

- ❖ Can be fitted by hand, giving an alternative on-board programming method to DIP switches.
- ❖ Open top for use with test probes.
- ❖ Choice of colours available.
- ❖ Multi-use socket provides up to 300 operations (Gold).
- ❖ Twin beam contact for cost-effective reliability.
- ❖ Suitable for use with mating M20 male pin headers, with 0.64mm square pins.

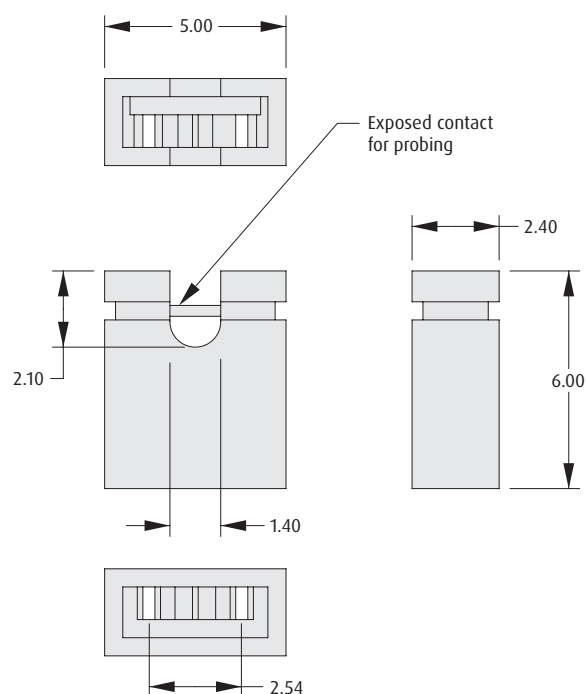


2.54mm (.100") PITCH

MULTI-USE



HIGH FORCE, SINGLE OPERATION



HOW TO ORDER

SERIES CODE

MULTI-USE	SINGLE OPERATION	
65		Grey
66	81	Red
67	82	Black
71	83	Blue

M75 XX - XX

FINISH

05	Gold
46	Tin

All dimensions in mm.

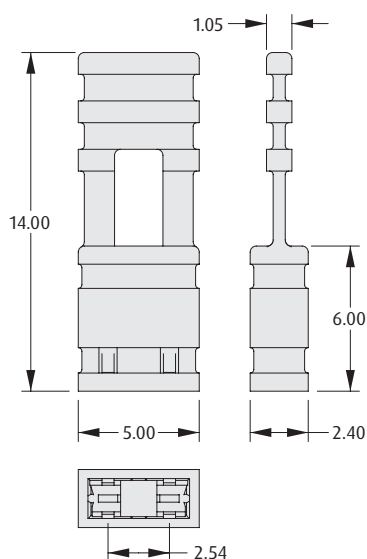
M20 Connectors

Jumper Sockets - Closed Top

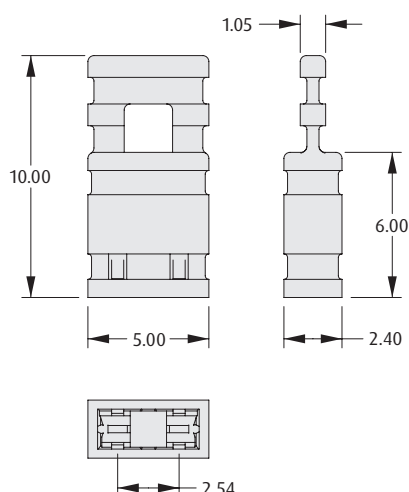
- ❖ Can be fitted by hand, giving an alternative on-board programming method to DIP switches.
- ❖ Twin beam contact for cost-effective reliability.
- ❖ Suitable for use with mating M20 male pin headers, with 0.64mm square pins.
- ❖ Choice of colours available.
- ❖ Flexible handle for ease of location and withdrawal.



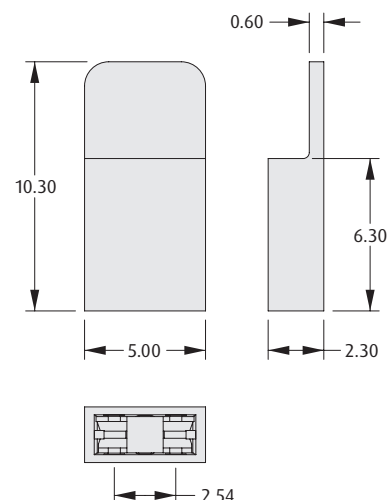
14mm FLEXIBLE HANDLE



10mm FLEXIBLE HANDLE



SOLID HANDLE



HOW TO ORDER

SERIES CODE

14mm HANDLE	10mm HANDLE	SOLID HANDLE	
680	684	965	Grey
681	685	966	Red
682	686	967	Black
683	687		Blue

M7 XXX - XX

FINISH

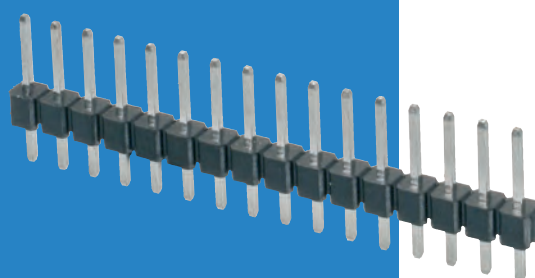
05	Gold
46	Tin

All dimensions in mm.

M20 Connectors

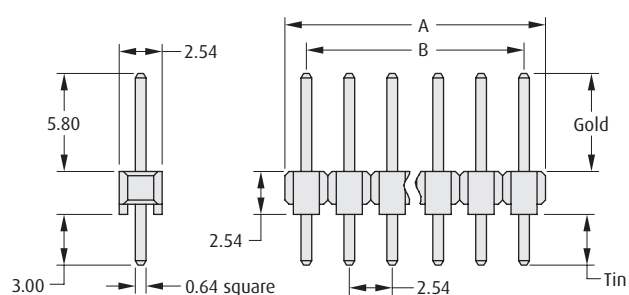
Male Vertical Single Row PC Tail

- ❖ Suitable for use with female connectors and jumper sockets shown on previous pages.
- ❖ Choice of mating pin lengths.
- ❖ Pin headers can be cut into smaller sizes.
- ❖ Also available with variable dimensions.

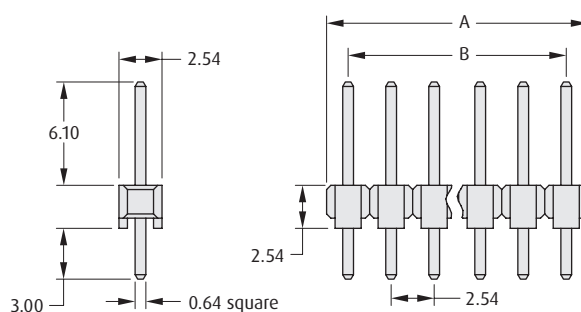


2.54mm (.100") PITCH

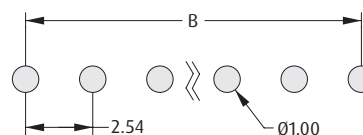
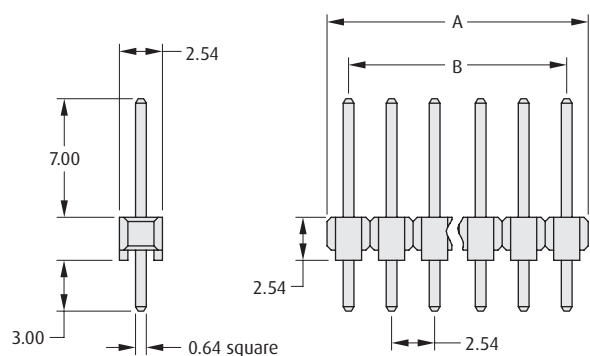
5.8mm



6.1mm



7.0mm



Recommended PC Board Pattern

CALCULATION

A	2.54 x No. of contacts per row
B	2.54 x (No. of contacts per row - 1)

HOW TO ORDER

M20 - 9 XX XX XX

SERIES CODE

TYPE

73	7.0mm Mating Height
77	5.8mm Mating Height
99	6.1mm Mating Height

FINISH

42	Gold + Tin (M20-977)
45	Gold (M20-973, 999)
46	Tin

NO. OF CONTACTS PER ROW

02 to 40

All dimensions in mm.

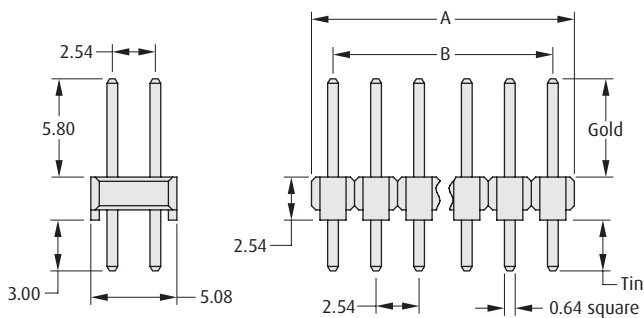
M20 Connectors

Male Vertical Double Row PC Tail

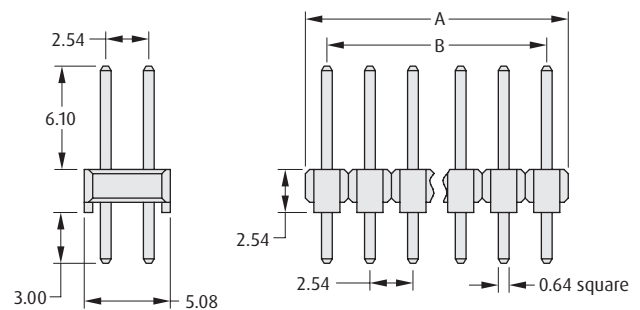
- ❖ Suitable for use with female connectors and jumper sockets shown on previous pages.
- ❖ Choice of mating pin lengths.
- ❖ Pin headers can be cut into smaller sizes.
- ❖ Also available with variable dimensions.



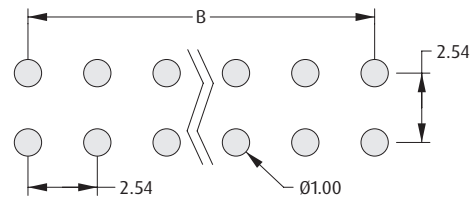
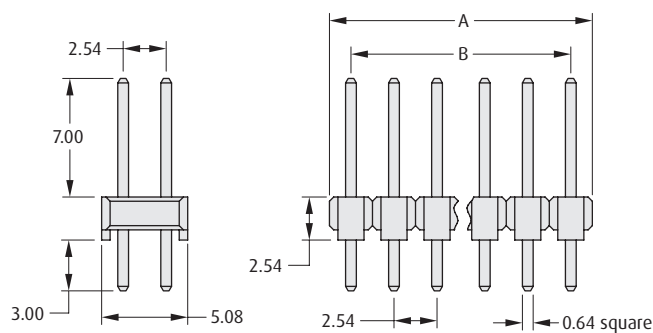
5.8mm



6.1mm



7.0mm



Recommended PC Board Pattern

CALCULATION

A	2.54 x No. of contacts per row
B	2.54 x (No. of contacts per row - 1)

HOW TO ORDER

M20 - 9 XX XX XX

SERIES CODE

TYPE

72	7.0mm Mating Height
76	5.8mm Mating Height
98	6.1mm Mating Height

FINISH

42	Gold + Tin (M20-976)
45	Gold (M20-972, 998)
46	Tin

NO. OF CONTACTS PER ROW

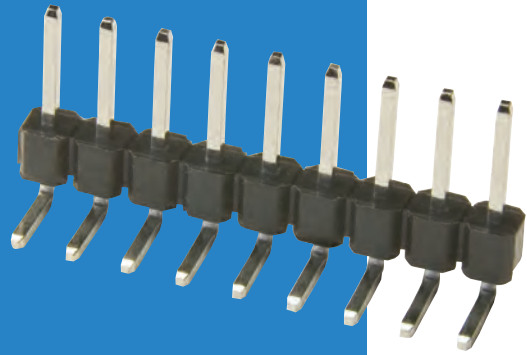
02 to 40

All dimensions in mm.

M20 Connectors

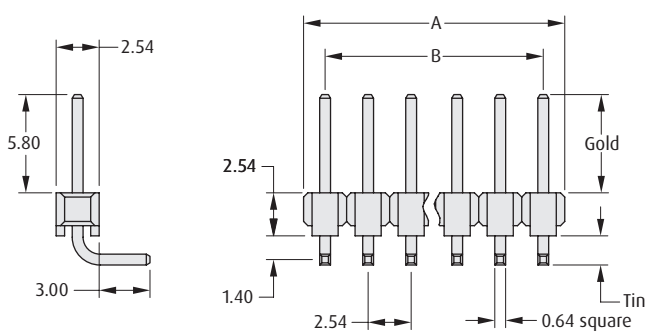
Male Horizontal Single Row PC Tail

- ❖ Horizontal orientation for 90° board-to-board applications.
- ❖ Suitable for use with female connectors and jumper sockets shown on previous pages.
- ❖ Choice of mating pin lengths.
- ❖ Pin headers can be cut into smaller sizes.
- ❖ Also available with variable dimensions.

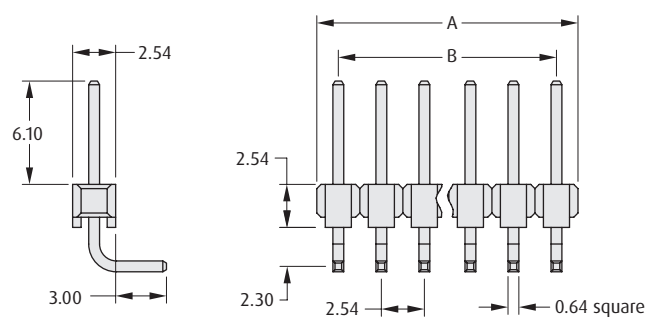


2.54mm (.100") PITCH

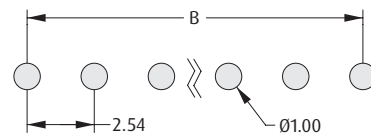
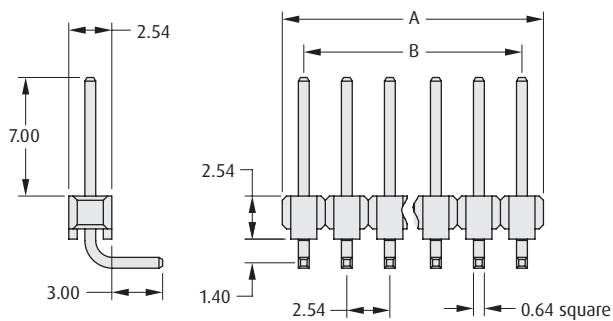
5.8mm



6.1mm



7.0mm



Recommended PC Board Pattern

CALCULATION

A	2.54 x No. of contacts per row
B	2.54 x (No. of contacts per row - 1)

HOW TO ORDER

M20 - 9 XX XX XX

SERIES CODE

TYPE

71	7.0mm Mating Height
75	5.8mm Mating Height
96	6.1mm Mating Height

FINISH

42	Gold + Tin (M20-975)
45	Gold (M20-971, 996)
46	Tin

NO. OF CONTACTS PER ROW

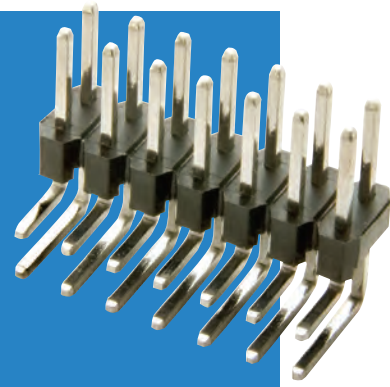
02 to 40

All dimensions in mm.

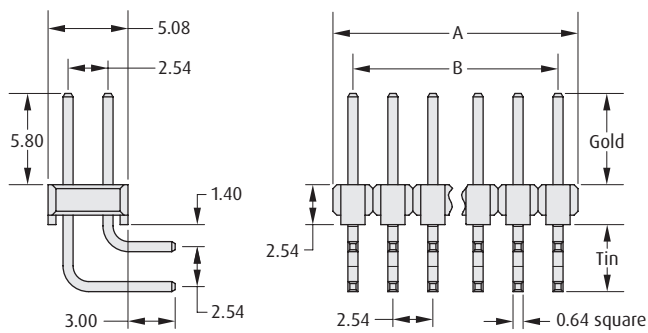
M20 Connectors

Male Horizontal Double Row PC Tail

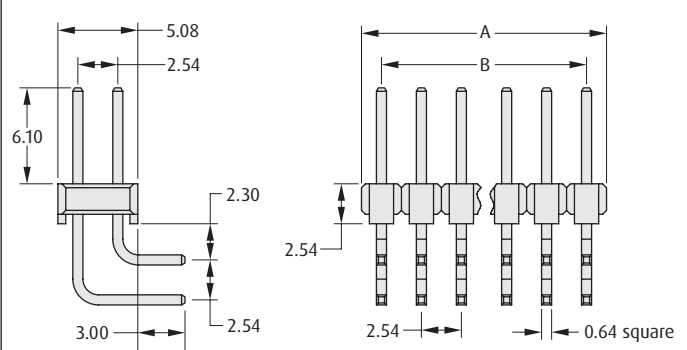
- ❖ Horizontal orientation for 90° board-to-board applications.
- ❖ Suitable for use with female connectors and jumper sockets shown on previous pages.
- ❖ Choice of mating pin lengths.
- ❖ Pin headers can be cut into smaller sizes.
- ❖ Also available with variable dimensions.



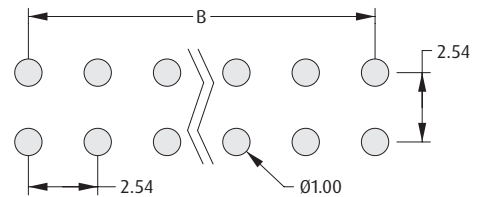
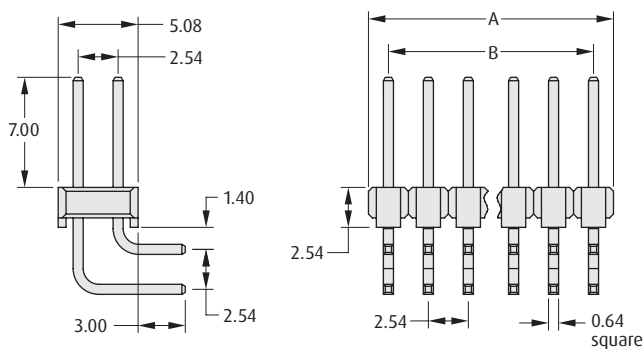
5.8mm



6.1mm



7.0mm



Recommended PC Board Pattern

CALCULATION

A	2.54 x No. of contacts per row
B	2.54 x (No. of contacts per row - 1)

HOW TO ORDER

M20 - 9 XX XX XX

SERIES CODE

TYPE

70	7.0mm Mating Height
74	5.8mm Mating Height
95	6.1mm Mating Height

FINISH

42	Gold + Tin (M20-974)
45	Gold (M20-970, 995)
46	Tin

NO. OF CONTACTS PER ROW

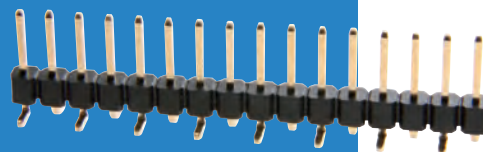
02 to 40

All dimensions in mm.

M20 Connectors

Male Vertical Surface Mount Single Row

- ❖ Pin headers can be cut into smaller sizes.
- ❖ Also available with variable dimensions.
- ❖ Tape and Reel option supplied fitted with Pick and Place cap, contact technical@harwin.com for availability.
- ❖ Suitable for use with female connectors and jumper sockets shown on previous pages.

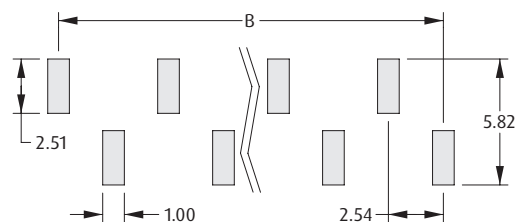
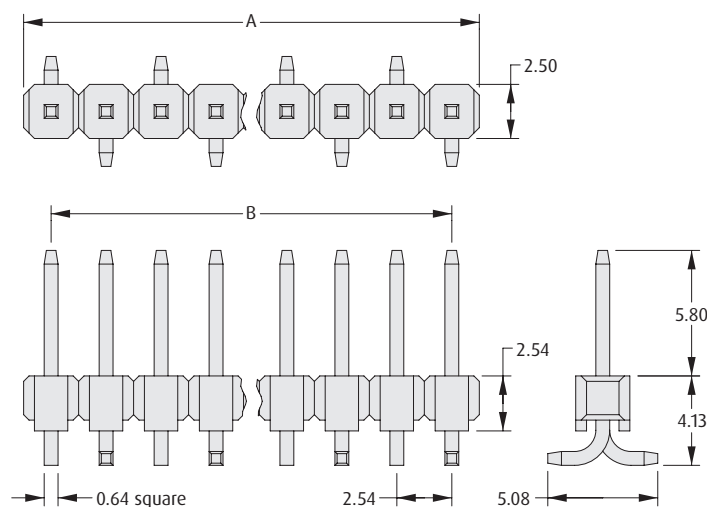


2.54mm (.100") PITCH

SINGLE ROW

CALCULATION

A	2.54 x No. of contacts per row
B	2.54 x (No. of contacts per row - 1)



Recommended PC Board Pattern

HOW TO ORDER

M20 - 877 XX XX X

SERIES CODE

NO. OF CONTACTS PER ROW

02 to 36

PACKAGING

Blank	Loose
P	Pick and Place cap, tube
R	Tape & Reeled

FINISH

42	Gold + Tin
46	Tin

All dimensions in mm.

M20 Connectors

Male Vertical Surface Mount Double Row

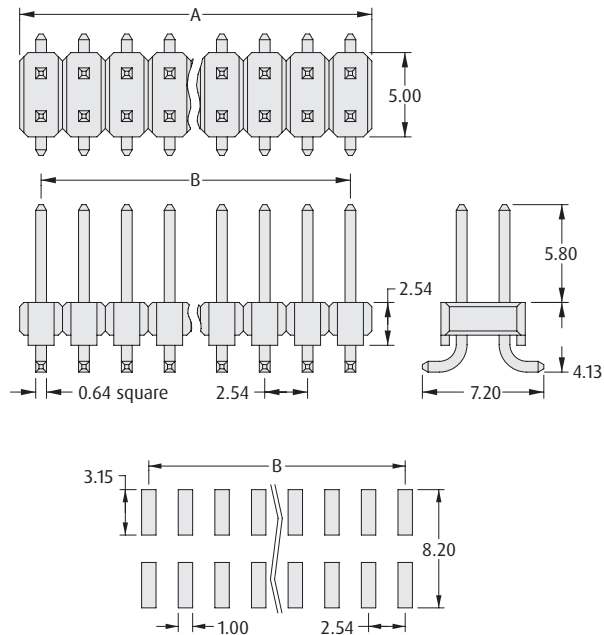
- Pin headers without pegs can be cut into smaller sizes.
- Peg option to assist with location during surface mount process.
- Also available with variable dimensions.
- Tape and Reel option supplied fitted with Pick and Place cap, contact technical@harwin.com for availability.
- Suitable for use with female connectors and jumper sockets shown on previous pages.



WITHOUT PEGS

CALCULATION

A	2.54 x No. of contacts per row
B	2.54 x (No. of contacts per row - 1)

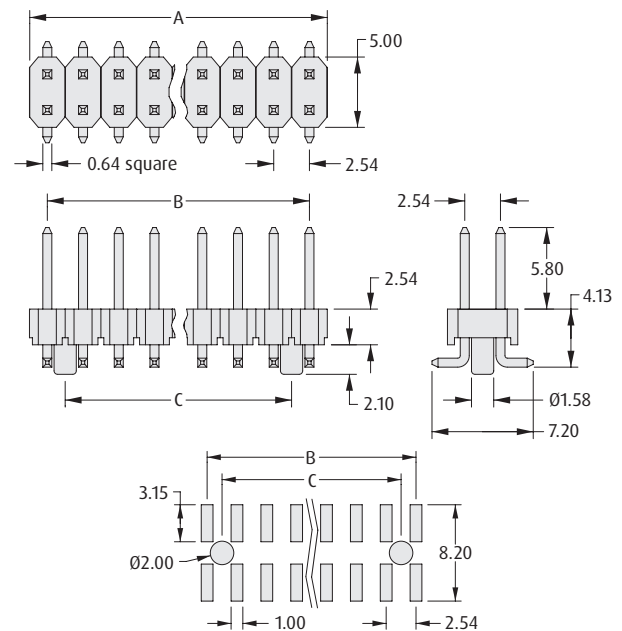


Recommended PC Board Pattern

WITH PEGS

CALCULATION

A	2.54 x No. of contacts per row
B	2.54 x (No. of contacts per row - 1)
C	B - 2.54



Recommended PC Board Pattern

HOW TO ORDER

SERIES CODE

TYPE

6	Without Pegs
5	With Pegs

NO. OF CONTACTS PER ROW

02 to 36	Without Pegs
02 to 08, 10	With Pegs (Loose)
02, 03, 05, 07, 08, 10	With Pegs (Reeled)

PACKAGING

Blank	Loose
P	Pick and Place cap, tube (Without Pegs)
R	Tape & Reeled

FINISH

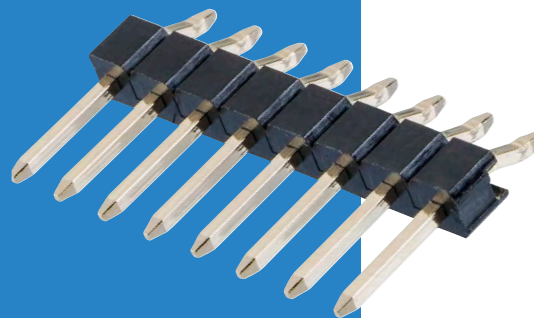
42	Gold + Tin
46	Tin (Without Pegs)

All dimensions in mm.

M20 Connectors

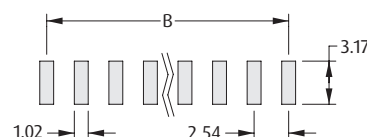
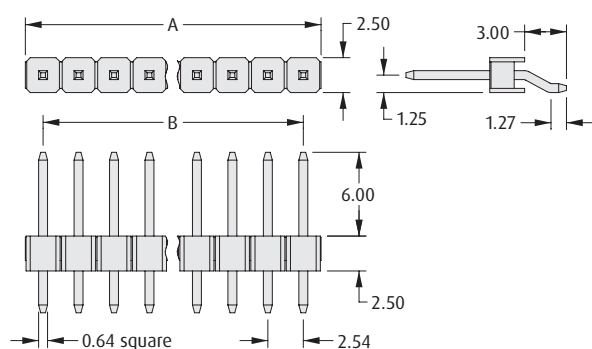
Male Horizontal Surface Mount Single Row

- Pin headers can be cut into smaller sizes.
- Contact technical@harwin.com for Tape and Reel options.
- Suitable for use with female connectors and jumper sockets shown on previous pages.
- Horizontal orientation for 90°C board-to-board applications.



2.54mm (.100") PITCH

STANDARD PROFILE

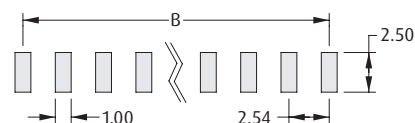
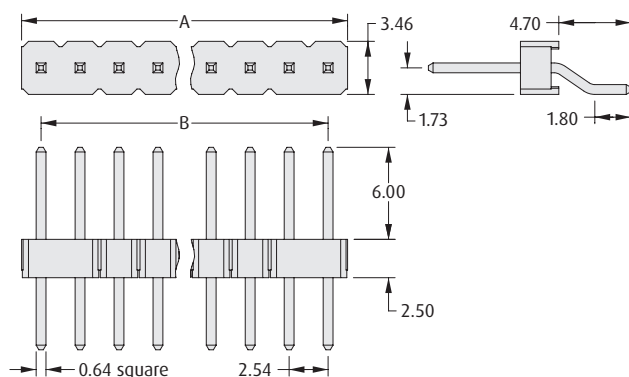


Recommended PC Board Pattern

CALCULATION

A	2.54 x No. of contacts per row
B	2.54 x (No. of contacts per row - 1)

HIGH PROFILE



Recommended PC Board Pattern

HOW TO ORDER

M20 - 8XX XX 05 X

SERIES CODE

TYPE

889	Standard Profile
890	High Profile

NO. OF CONTACTS PER ROW

02 to 06, 08, 10	Standard Profile
03 to 25	High Profile

PACKAGING

Blank	Loose
R	Tape & Reeled (Standard Profile)

FINISH

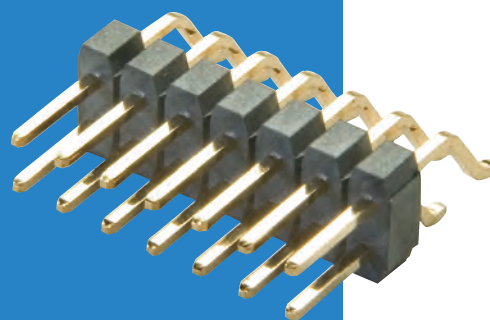
05	Gold (High Profile)
45	Gold (Standard Profile)

All dimensions in mm.

M20 Connectors

Male Horizontal Surface Mount Double Row

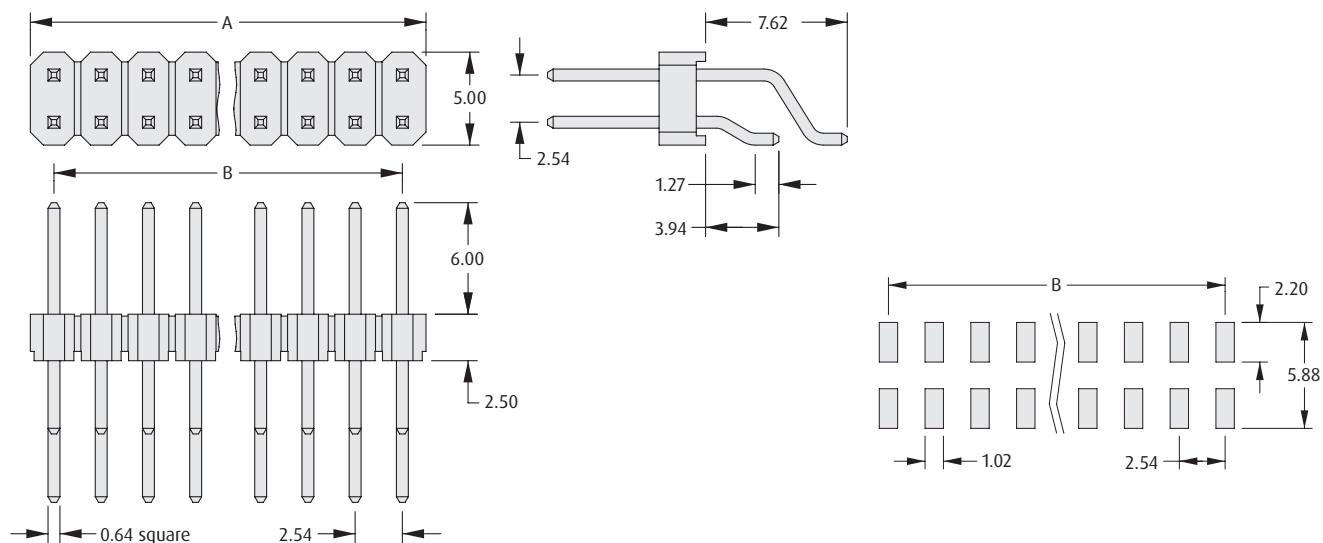
- Pin headers can be cut into smaller sizes.
- Contact technical@harwin.com for Tape and Reel options.
- Suitable for use with female connectors and jumper sockets shown on previous pages.
- Horizontal orientation for 90° board-to-board applications.



DOUBLE ROW

CALCULATION

A	2.54 x No. of contacts per row
B	2.54 x (No. of contacts per row - 1)



Recommended PC Board Pattern

HOW TO ORDER

M20 - 891 XX 05

SERIES CODE

FINISH

05 Gold

NO. OF CONTACTS PER ROW

02 to 36

All dimensions in mm.

M20 Connectors

Pin Header Variants

- ❖ If you are unable to specify the connector you require from our standard range of M20 connectors, use the order code below to create an application-specific connector.
- ❖ Contact technical@harwin.com for further information, or search online for M20-XXX.
- ❖ Suitable for use with female connectors shown on previous pages.



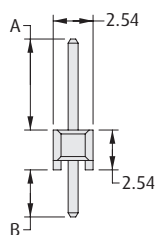
2.54mm (.100") PITCH

TERMINATION STYLES

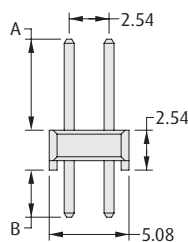
Vertical PC Tail

- ❖ Pin section is 0.64mm square.
- ❖ PCB mounting hole is Ø1.00mm.

V Series



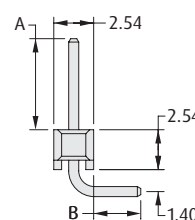
W Series



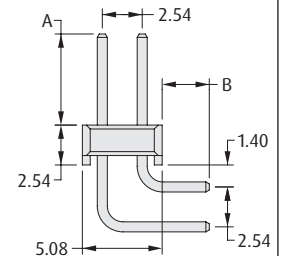
Horizontal PC Tail

- ❖ Pin section is 0.64mm square.
- ❖ PCB mounting hole is Ø1.00mm.
- ❖ Maximum B dimension is 6.00mm.

H Series



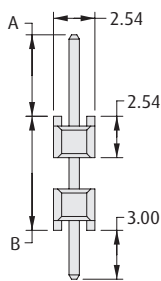
J Series



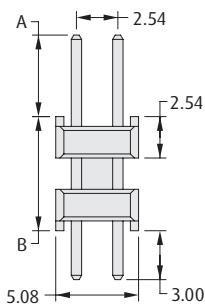
Extended PC Tail

- ❖ Pin section is 0.64mm square.
- ❖ PCB mounting hole is Ø1.00mm.

E Series



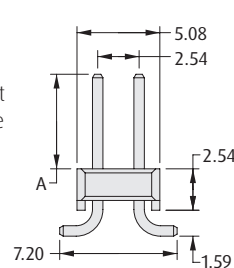
F Series



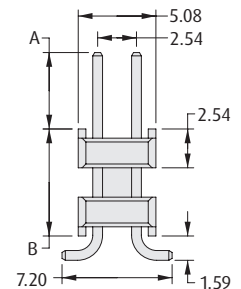
Vertical SMT Extended SMT

- ❖ Pin section is 0.64mm square.
- ❖ For PCB pad layout see standard Male SMT pin header.
- ❖ B dimension is 000 on S series.

S Series



T Series



HOW TO ORDER

M20 - XXX XXX X XX XX

SERIES CODE

DIMENSION A

Example: 7.8mm = 078

DIMENSION B

Example: 5.0mm = 050

FINISH

05	Gold
46	Tin

NO. OF CONTACTS PER ROW

02 to 40

SINGLE ROW	DOUBLE ROW	
V	W	Vertical
H	J	Horizontal
E	F	Extended
-	S	Surface Mount
-	T	Extended Surface Mount

All dimensions in mm.

PC/104, PC/104 Plus Specification

- ❖ Industry Standard bus connection systems, typically used on embedded PC applications.
- ❖ Designed for Board-To-Board stacking with a common bus.

PC/104 Connectors – 2.54mm pitch (M20)

❖ Materials

Mouldings:	High Temperature Plastic, UL94V-0
Contacts:	Phosphor Bronze
Finish:	Gold

❖ Electrical

Current	
Solder Tail:	3A max
Press-Fit Tail:	1A max
Working voltage:	12V DC
Voltage proof:	1,000V AC
Contact resistance:	30mΩ max
Insulation resistance:	5,000MΩ min

❖ Mechanical

Durability	
Mating:	10 operations
Press-fit:	3 operations
Insertion force (max):	2.0N per contact
Withdrawal force (min):	0.25N per contact
Insertion force to board (max)	
Press-Fit:	80N per contact

❖ Environmental

Temperature range:	-55°C to +105°C
--------------------	-----------------

PC/104 Plus – 2.00mm pitch (M22)

❖ Materials

Mouldings:	High Temperature Plastic, UL94V-0
Contacts	
M22-602:	Brass
Others:	Phosphor Bronze
Finish:	See order code

❖ Electrical

Current:	1A max
Working voltage:	12V DC
Voltage proof:	800V AC
Contact resistance:	30mΩ max
Insulation resistance:	5,000MΩ min

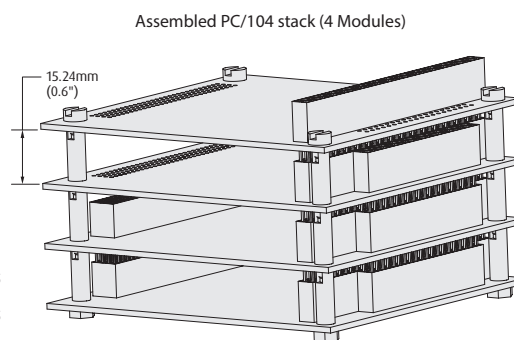
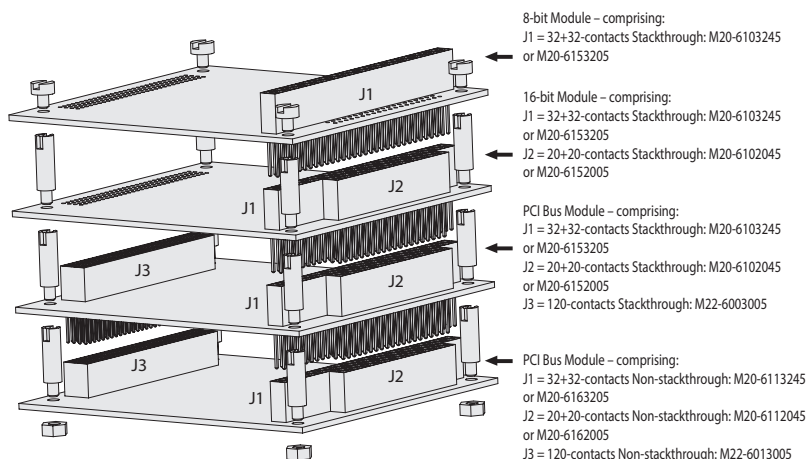
❖ Mechanical

Durability:	10 operations
Insertion force (max):	2.0N per contact
Withdrawal force (min):	0.3N per contact

❖ Environmental

Temperature range:	-55°C to +105°C
--------------------	-----------------

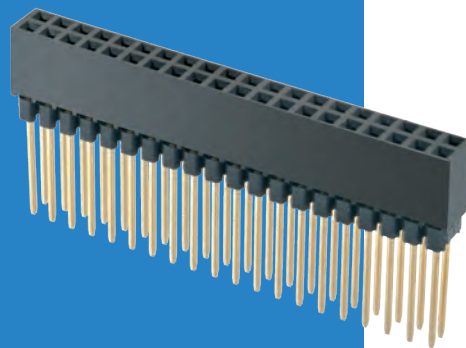
Typical PC/104 & PC/104-Plus Module Stack



PC/104 Connectors

2.54mm Pitch Vertical Bus Connectors

- ❖ 32+32 contacts supports an 8-bit system.
- ❖ 20+20 contacts combined with 32+32 contacts supports a 16-bit system.
- ❖ Press-fit connectors can be assembled direct to the PCB without soldering, using plated-through holes.
- ❖ Stackthrough connectors act as both male and female connectors.



PC/104, PC/104 PLUS

SOLDER TAIL		PRESS-FIT TAIL	
CALCULATION		CALCULATION	
A	$B + 3.2$	A	$B + 3.56$
B	$2.54 \times (\text{No. of contacts per row} - 1)$	B	$2.54 \times (\text{No. of contacts per row} - 1)$
		C	$2.54 \times \text{No. of contacts per row}$
Recommended PC Board Pattern		Press-Fit connector M20-615 supplied with spacer moulding Recommended PC Board Pattern	

HOW TO ORDER

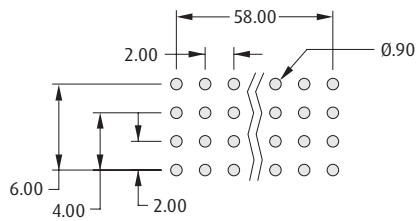
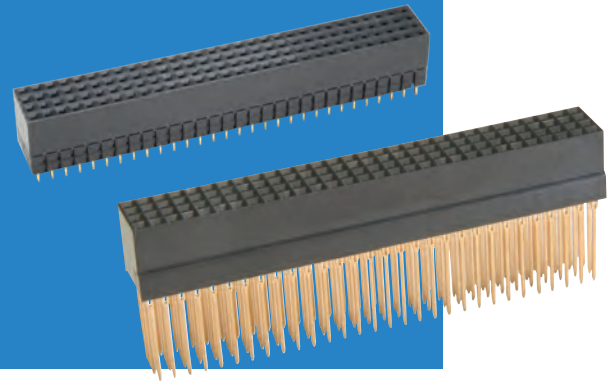
SERIES CODE		M20 - 61 X XX XX		FINISH		NO. OF CONTACTS PER ROW	
TYPE				05	Gold (M20-615, 616)	20, 32	
0	Stackthrough, 12.20mm Solder Tail			45	Gold (M20-610, 611)		
1	Non-Stackthrough, 2.30mm Solder Tail						
5	Stackthrough, 12.10mm Press-Fit Tail						
6	Non-Stackthrough, 3.40mm Press-Fit Tail						

All dimensions in mm.

PC/104 Plus Connectors

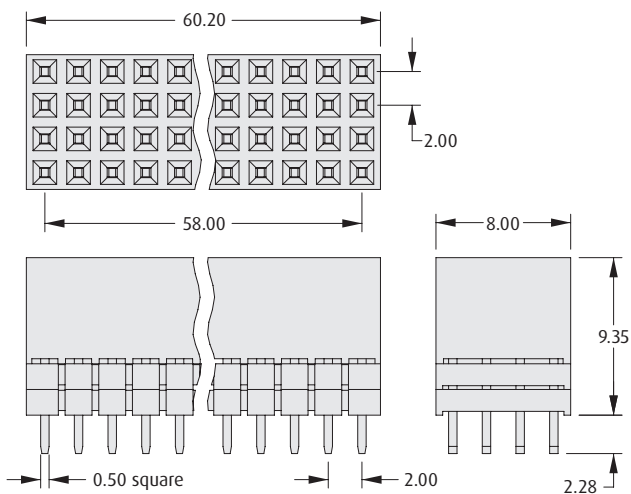
2mm Pitch Vertical Bus Connectors

- ❖ Supports PCI bus.
- ❖ Stackthrough connectors act as both male and female connectors.
- ❖ Available in Solder tail configuration.

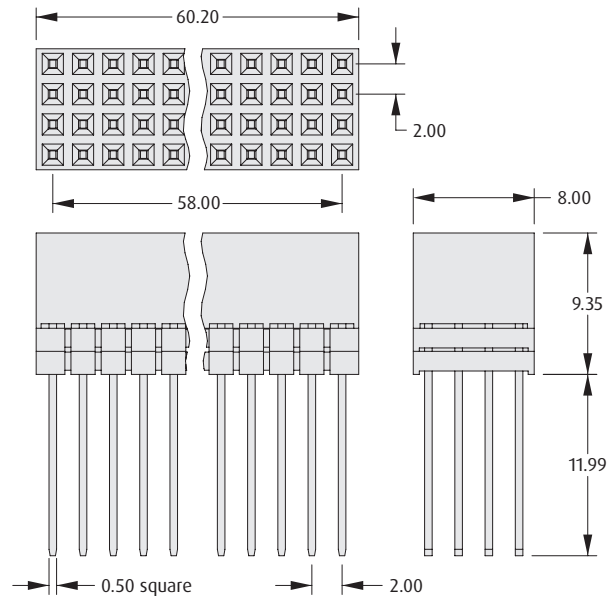


Recommended
PC Board Pattern

NON-STACKTHROUGH



STACKTHROUGH



HOW TO ORDER

SERIES CODE

M22 - 60 X 30 05

TYPE

0	Stackthrough
1	Non-Stackthrough

FINISH

05 Gold

NO. OF CONTACTS PER ROW

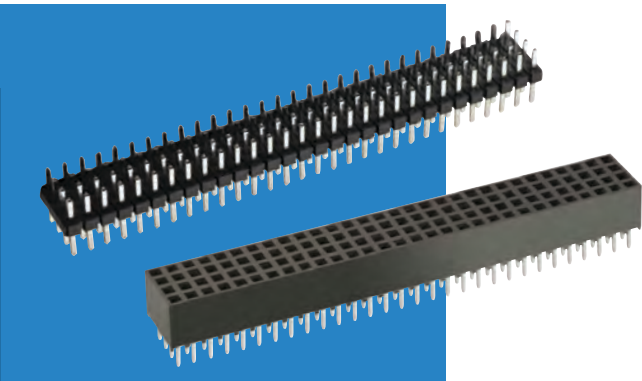
30

All dimensions in mm.

PC/104 Plus Connectors

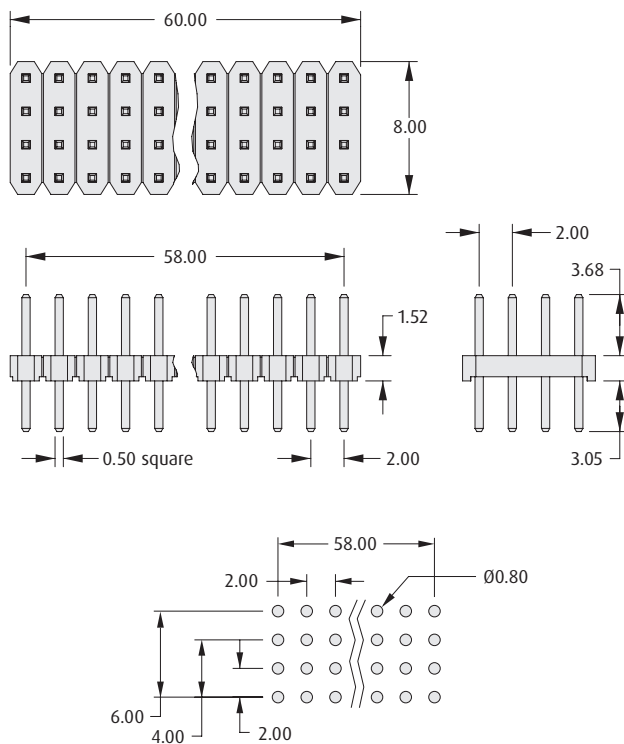
2mm Pitch Accessory Connectors

➤ Accessory connectors for use with the PC/104 Plus range.



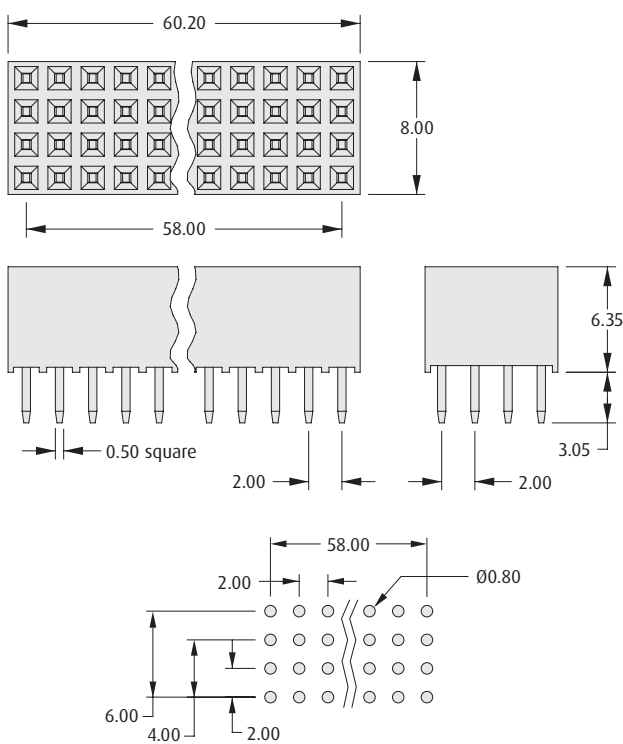
PC/104, PC/104 PLUS

PC/104 PLUS POST HEADER



Recommended PC Board Pattern

PC/104 PLUS POST HEADER RECEPTACLE



Recommended PC Board Pattern

HOW TO ORDER

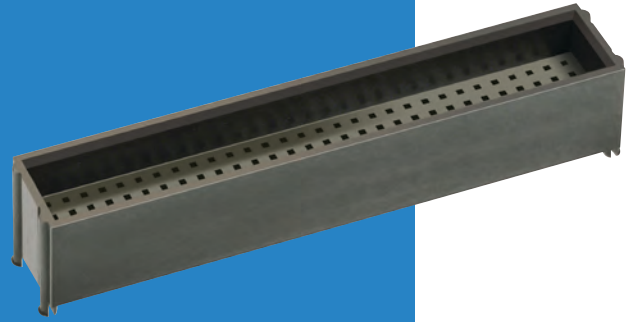
SERIES CODE	M22 - 60 X 30 42	FINISH	42 Gold + Tin
TYPE	2 Post Header	NO. OF CONTACTS PER ROW	30
	3 Post Receptacle		

All dimensions in mm.

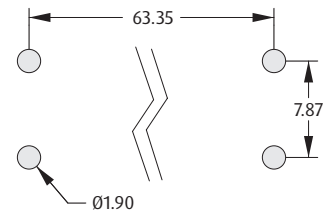
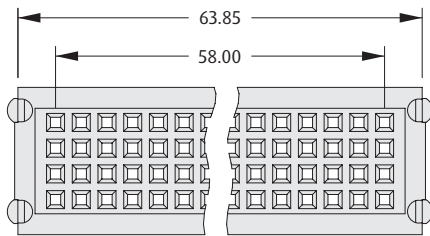
PC/104 Plus Connectors

Accessories

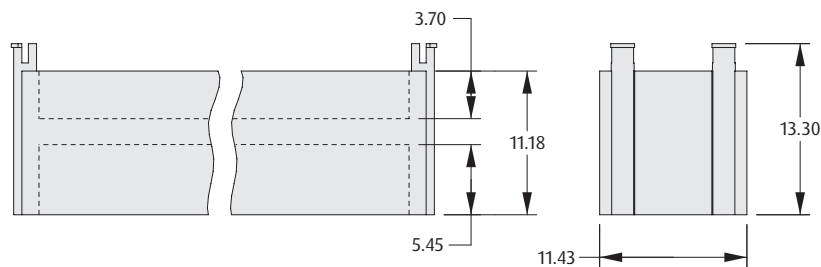
- ❖ Accessory components for use with the PC/104 Plus range.
- ❖ The shroud is used to protect the long tails of the Stackthrough connector from the previous page, and ensures alignment with a mating connector. It self retains on the underside of the PCB after the Stackthrough connector has been soldered to the PCB, by latching into the four mounting holes.



PC/104 PLUS SHROUD



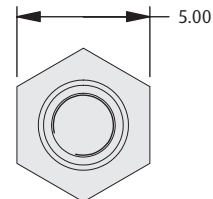
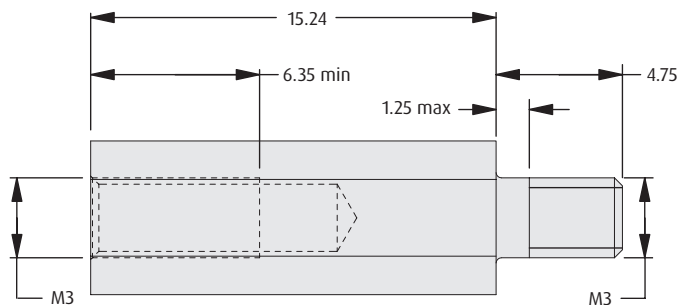
Recommended PC Board Pattern



ORDER CODE

M22-6043098

PC/104 SPACER



ORDER CODE

R6104-02

All dimensions in mm.

Notes

Circular Connectors

Contents

Introduction

Specifications

Cable Connectors

Panel Connectors

Accessories



Circular Connectors

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.

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 polarised coupling
- ❖ Zinc Cobalt alloy black shells, for RoHS compliance
- ❖ COTS applications where MIL spec is not mandatory



Circular Connectors Specification

Materials

Outer shell:	Aluminium Alloy base material, 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

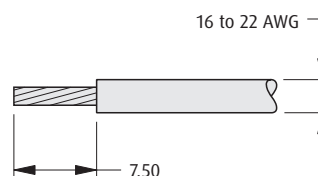
Mechanical

Durability:	500 operations
-------------	----------------

Environmental

Operating temperature:	-55°C to +125°C
Vibration sensitivity:	10Hz to 500Hz, 98m/s ² (10G)
Shock severity:	490m/s ² (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 (10SL-4)	3 CONTACT (10SL-3)	2 CONTACT (12S-3)	4 CONTACT (14S-2)	6 CONTACT (14S-6)
FEMALE					
MALE					

All dimensions in mm.

Circular Connectors

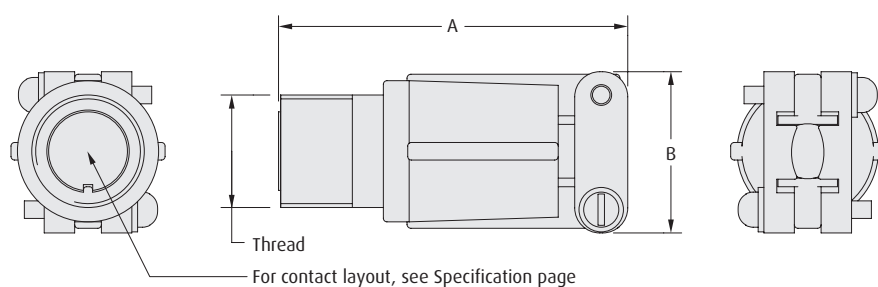
Cable Connector & Straight Plug

- Male & female circular connectors interchangeable with MIL-DTL-5015.
- Rugged connector system for harsh environments.
- Exceeds IP67.
- Recommended wire strip length is 7.5mm.



CIRCULAR

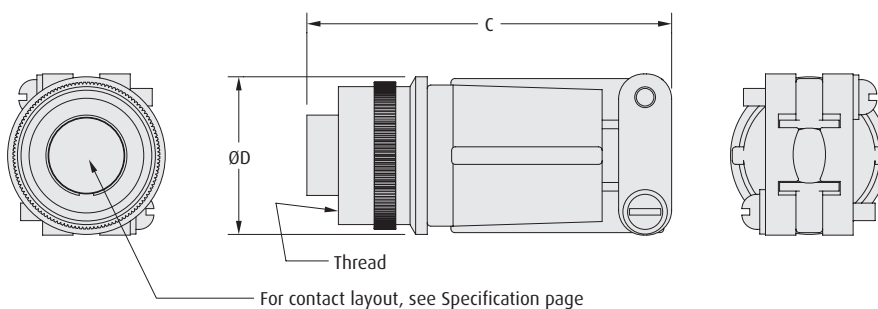
CABLE CONNECTOR



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	C max	ØD max
10SL-3	5/8-24UNEF	54.10	24.10
10SL-4	5/8-24UNEF	54.10	24.10
12S-3	3/4-20UNEF	54.10	25.30
14S-2	7/8-20UNEF	55.91	28.53
14S-6	7/8-20UNEF	55.91	28.53

- 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.

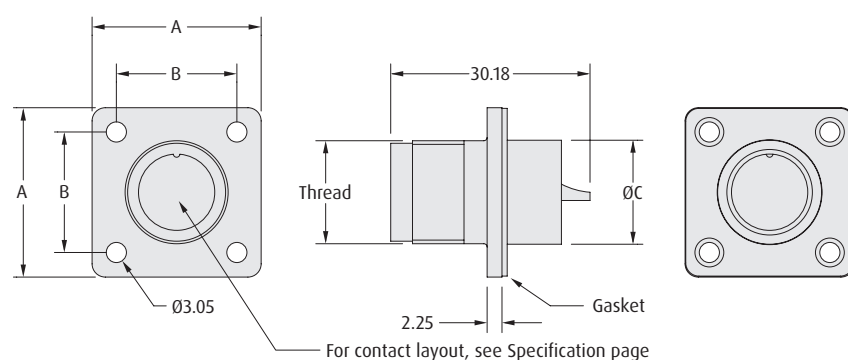
Circular Connectors

Panel Mount Connector, Receptacle Style

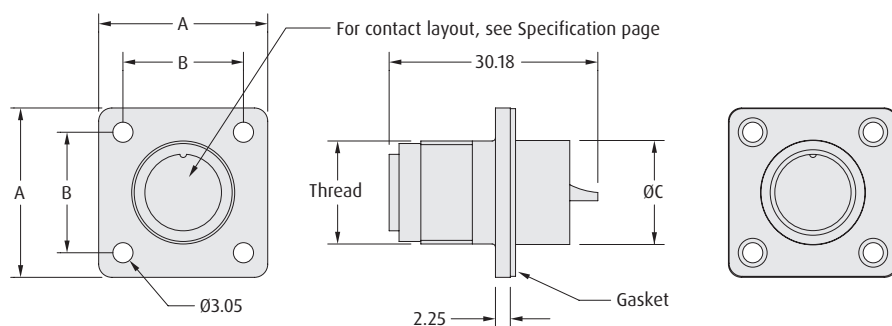
- Male & female circular connectors intermateable with MIL-DTL-5015.
- Features screw holes for panel mounting.
- Gaskets provide panel mount sealing, and can be used either side of the flange.
- Mates with C90-3106F Straight Plug connectors shown on previous page.



MALE CONTACT



FEMALE CONTACT



SHELL SIZE	THREAD	A	B	ØC
10SL-3	5/8-24UNEF	25.65	18.25	15.75
10SL-4	5/8-24UNEF	25.65	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

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

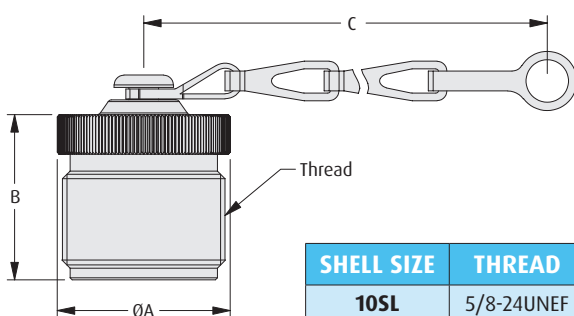
Dust Caps & Rubber Bushing

- ❖ 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).



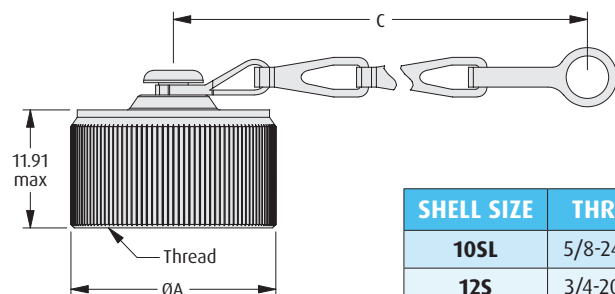
CIRCULAR

DUST CAP – EXTERNAL THREAD



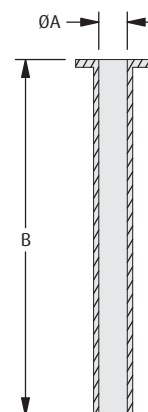
SHELL SIZE	THREAD	ØA max	B max	C
10SL	5/8-24UNEF	17.45	16.66	101.60
12S	3/4-20UNEF	20.62	21.44	114.30
14S	7/8-20UNEF	23.80	21.44	114.30

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

RUBBER BUSHING



TYPE	ØA	B
4	5.59	69.85
6	7.92	66.68

HOW TO ORDER

C90 - 2504X - 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

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.

Sockets

Contents

Specifications

SMT PCB Sockets

Sockets For Ø0.5mm Pin

Sockets For Ø0.8mm Pin

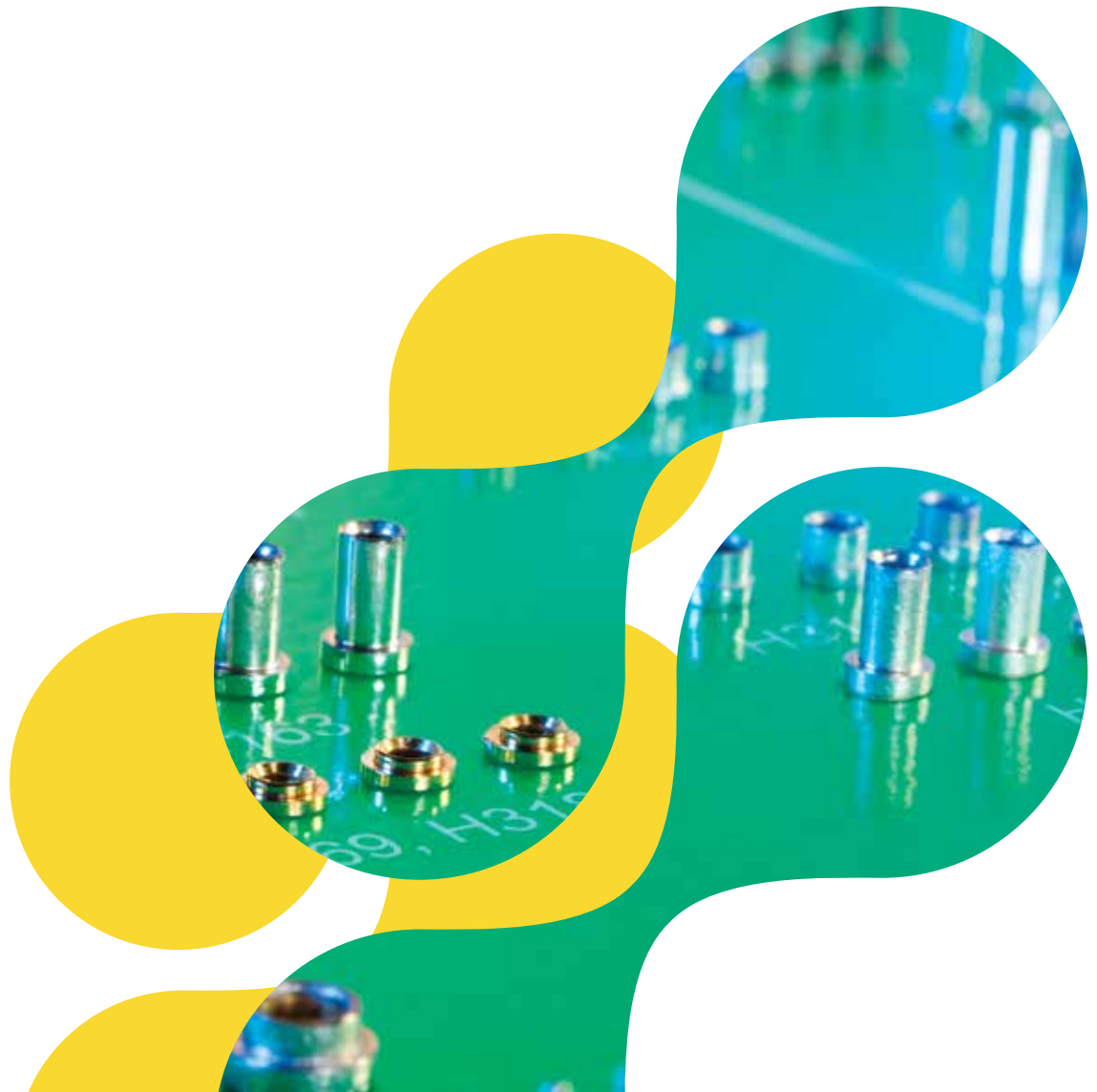
Sockets For Ø1mm Pin

Sockets For Ø2mm Pin

Test Sockets

IC Socket Strip

Dual Row IC Socket



PC Board Sockets

➤ Surface Mount, Single Piece construction

A choice of twin-beam or 3 contact beams, ultra low profile Surface Mount PCB Contacts, designed for automated assembly processes.

Single part construction, with flat upper surface for pick and place location to the PCB - supplied in Tape and Reel packaging.

Each contact type provides a wide range of mating pin sizes, for greater design flexibility.

- **Ultra-Low profile.**
- **Suitable for high volume applications with automated SMT systems.**
- **Reduces process costs with the elimination of secondary socket soldering operations.**

➤ Throughboard, Two Piece construction

A range of 4-beam and 6-beam (also known as fingers) sockets, designed for robustness and reliability, and based on the same design as the Datamate and M300 four finger Beryllium Copper contacts.

The socket design is a two-part construction comprising of a contact clip retained in a precision-turned outer shell.

Options for the shell include closed or open-ended, with or without a knurled section for added board retention.

- **High reliability contacts. Proven history in high end Industrial and Mil/Aero applications.**
- **Suited for use in environments where high vibration, shock and extremes of temperature are a consideration.**
- **Gives the added flexibility of custom board layouts.**

Specifications

➤ Materials

Base material	
Twin Beam:	Phosphor Bronze
3-Beam:	Beryllium Copper
Finish:	See individual pages

➤ Electrical

Current	
Twin Beam Ø0.8-1.5mm:	5A max
Twin Beam Ø1.1-1.8mm:	9A max
3-Beam:	6A max
Contact resistance:	20mΩ max

➤ Mechanical

Durability	
Twin Beam Ø0.8-1.5mm:	25 operations
Twin Beam Ø1.1-1.8mm:	100 operations
3-Beam:	500 operations
Insertion force (max)	
Twin Beam Ø0.8-1.5mm:	8.0N (Ø1mm), 17.0N (Ø1.5mm)
Twin Beam Ø1.1-1.8mm:	2.8N (Ø1.1mm), 4.5N (Ø1.8mm)
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)
Withdrawal force (min)	
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)
3-Beam Ø1.5-1.9mm:	0.5N (Ø1.5mm), 1.5N (Ø1.9mm)
3-Beam Ø0.8-1.3mm:	1.0N (Ø0.8mm), 2.0N (Ø1.3mm)

➤ Environmental

Operating temperature	
Twin Beam:	-40°C to +105°C
3-Beam:	-50°C to +125°C
Solderability:	235°C for 5 seconds
Soldering heat resistance:	260°C for 10 seconds

➤ 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 ² (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

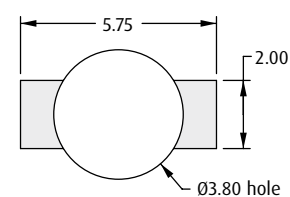
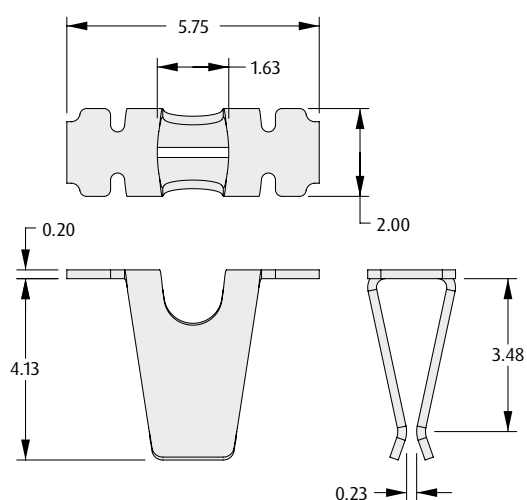
PC Board Sockets

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.

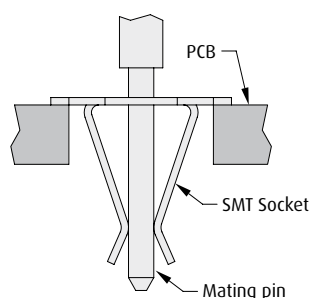


Ø0.8mm TO Ø1.5mm MATING PIN

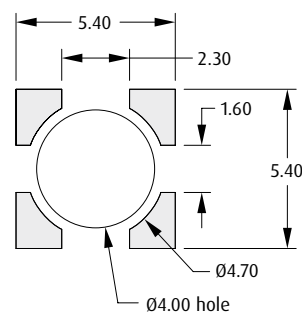
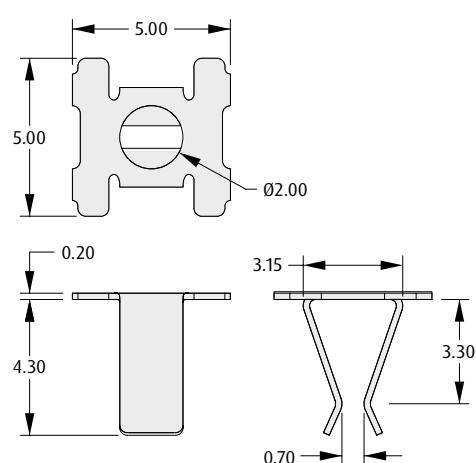


Recommended PC Board Pattern

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

S9091	Ø0.8 to Ø1.5mm Mating pin
S9101	Ø1.1 to Ø1.8mm Mating pin

PACKAGING

R	Tape & Reeled
----------	---------------

FINISH

46	Tin
-----------	-----

All dimensions in mm.

PC Board Sockets

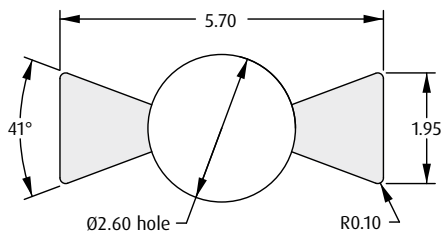
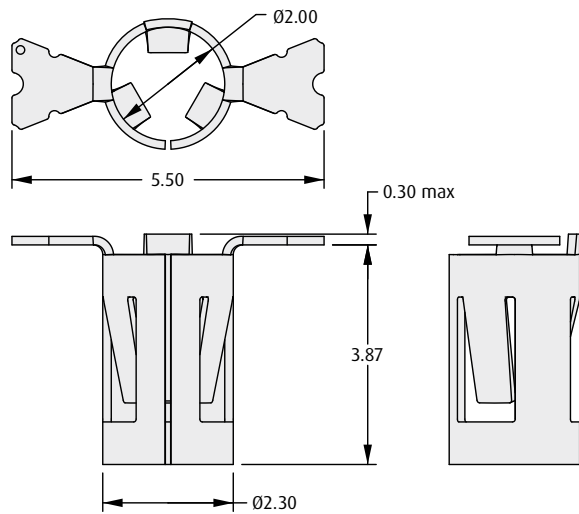
Surface Mount, Low Profile

- ❖ 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.



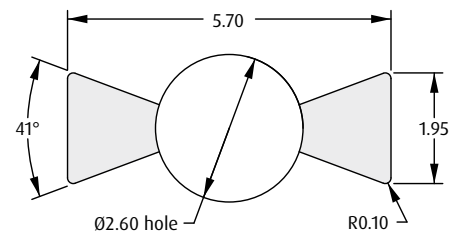
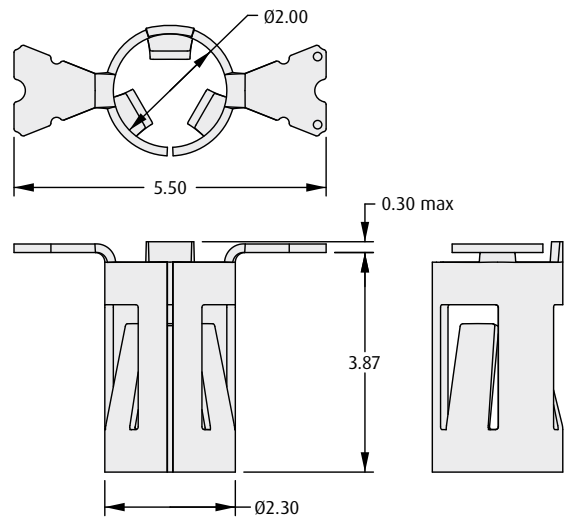
SOCKETS

TOP ENTRY



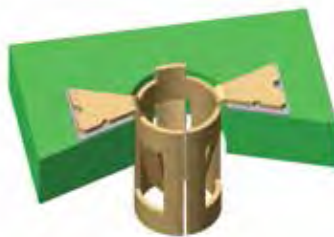
Recommended PC Board Pattern

BOTTOM ENTRY



Recommended PC Board Pattern

Orientation of SMT Socket in PCB



HOW TO ORDER

S91X1 - 45 R

SERIES CODE

S9111	Top Entry, Ø1.5 to Ø1.9mm Mating pin
S9121	Bottom Entry, Ø1.5 to Ø1.9mm Mating pin
S9131	Top Entry, Ø0.8 to Ø1.3mm Mating pin
S9141	Bottom Entry, Ø0.8 to Ø1.3mm Mating pin

PACKAGING

R	Tape & Reeled
----------	---------------

FINISH

45	Gold
-----------	------

All dimensions in mm.

PC Board Sockets

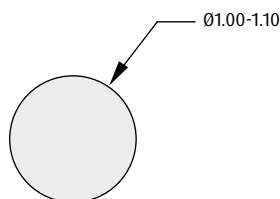
Sub-Miniature - Ø0.50mm Mating Pin

- ❖ Compatible with Ø0.50mm mating pins.
- ❖ Suitable for a variety of mating pin lengths.
- ❖ Utilises the Datamate four finger Beryllium Copper contact clip.
- ❖ See next page for alternative packing methods.



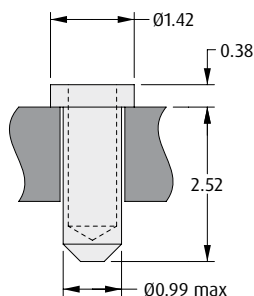
Specifications

Mating pin size: Ø0.46 - 0.51mm
 Contact depth: 2.30mm max
 Pin length: See individual sockets



Recommended PC Board Pattern

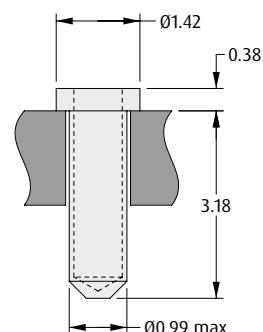
2.52mm BODY LENGTH



ORDER CODE	FINISH
H3190-01	Gold contact, Tin shell
H3190-05	Gold contact, Gold shell

Maximum Pin Length = 2.40mm

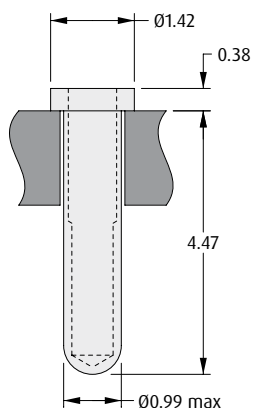
3.18mm BODY LENGTH



ORDER CODE	FINISH
H3153-01	Gold contact, Tin shell
H3153-05	Gold contact, Gold shell

Maximum Pin Length = 3.15mm

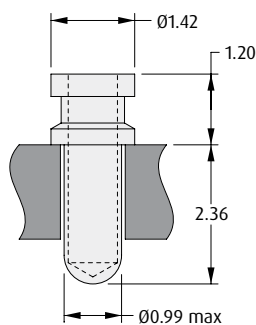
4.47mm BODY LENGTH



ORDER CODE	FINISH
H3191-01	Gold contact, Tin shell
H3191-05	Gold contact, Gold shell

Maximum Pin Length = 4.50mm

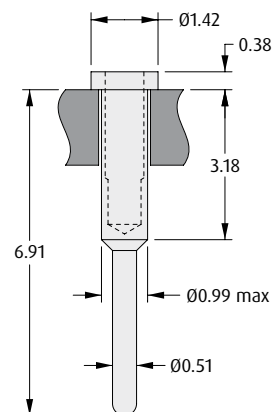
RAISED SHOULDER



ORDER CODE	FINISH
H3155-01	Gold contact, Tin shell
H3155-05	Gold contact, Gold shell

Maximum Pin Length = 3.15mm

EXTENDED TAIL



ORDER CODE	FINISH
H3192-01	Gold contact, Tin shell
H3192-05	Gold contact, Gold shell

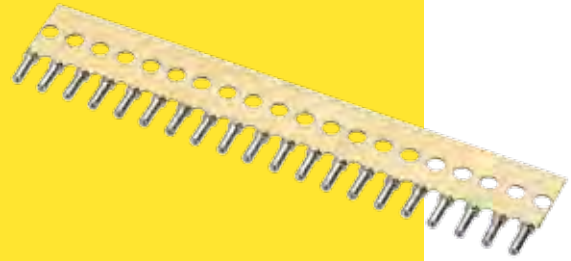
Maximum Pin Length = 3.15mm

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.

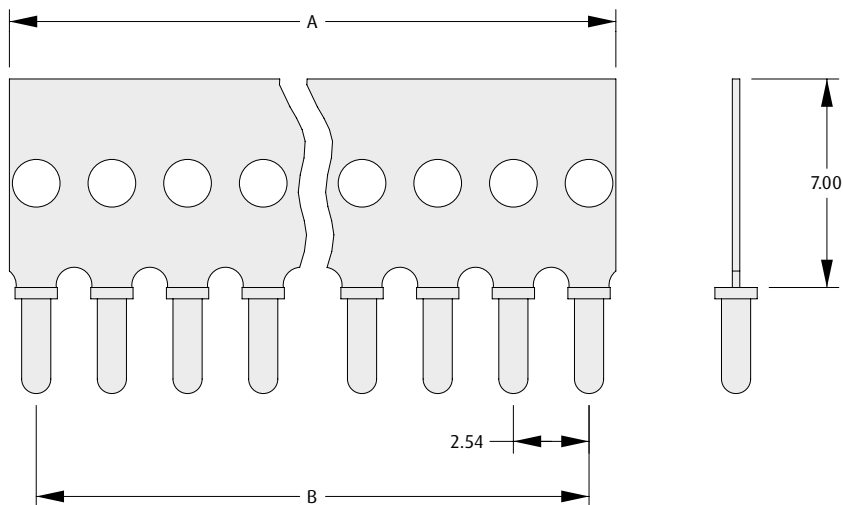


SINGLE-IN-LINE SOCKET CARRIERS

- ❖ Brass carriers are supplied fitted with the sub-miniature socket shown in the tables below.
- ❖ Supplied in standard lengths.

CALCULATION

A	$B + 1.8$
B	$2.54 \times (\text{No. of sockets} - 1)$



HOW TO ORDER

D01 - 9XX XX 01

SERIES CODE

TYPE

979	Single-in-line Socket Carrier with H3192-01
982	Single-in-line Socket Carrier with H3191-01
984	Single-in-line Socket Carrier with H3155-01
990	Single-in-line Socket Carrier with H3153-01

FINISH

01	Gold contact, Tin shell
-----------	-------------------------

NO. OF CONTACTS PER STRIP

04, 06 to 10, 12, 14, 16, 20, 32

All dimensions in mm.

PC Board Sockets

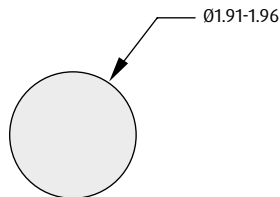
Ø0.80mm Mating Pin

- ❖ 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.

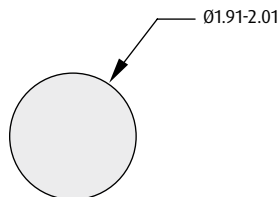


Specifications

Mating pin size: Ø0.60 - 0.85mm
 Contact depth: 3.30mm max
 Pin length: See individual sockets

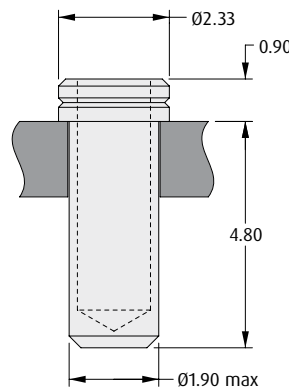


Recommended PC Board Pattern
with Retention Knurl



Recommended PC Board Pattern
without Retention Knurl

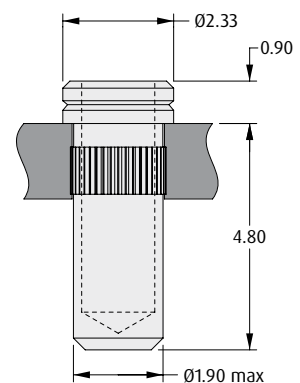
4.8mm BODY LENGTH



ORDER CODE	FINISH
H8504-01	Gold contact, Tin shell
H8504-05	Gold contact, Gold shell

Maximum Pin Length = 4.65mm

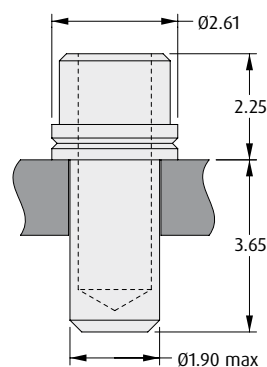
4.8mm BODY, KNURL



ORDER CODE	FINISH
H8501-01	Gold contact, Tin shell
H8501-05	Gold contact, Gold shell

Maximum Pin Length = 4.65mm

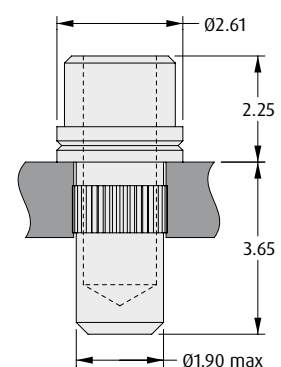
3.65mm BODY LENGTH



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

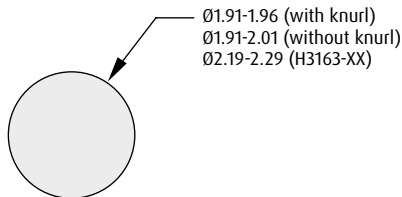
Ø1.00mm Mating Pin

- 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.



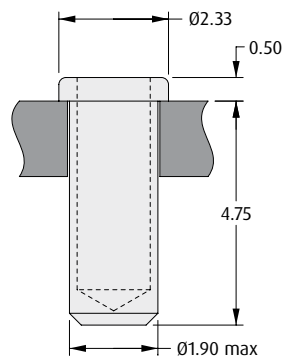
Specifications

Mating pin size: Ø0.90 - 1.05mm
 Contact depth: 3.55mm max
 Pin length: See individual sockets



Recommended PC Board Pattern

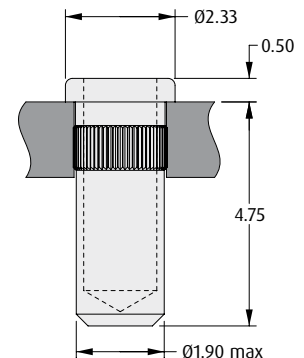
4.75mm BODY LENGTH



ORDER CODE	FINISH
H3183-01	Gold contact, Tin shell
H3183-05	Gold contact, Gold shell

Maximum Pin Length = 4.60mm

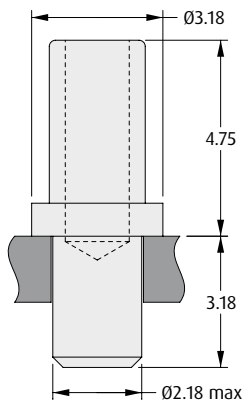
4.75mm BODY, KNURL



ORDER CODE	FINISH
H3161-01	Gold contact, Tin shell
H3161-05	Gold contact, Gold shell

Maximum Pin Length = 4.60mm

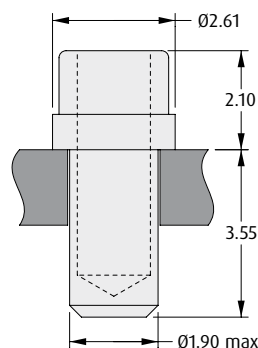
RAISED SHOULDER



ORDER CODE	FINISH
H3163-01	Gold contact, Tin shell
H3163-05	Gold contact, Gold shell

Maximum Pin Length = 5.00mm

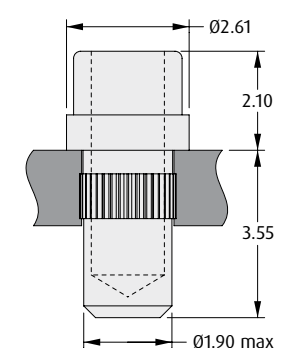
3.55mm BODY LENGTH



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

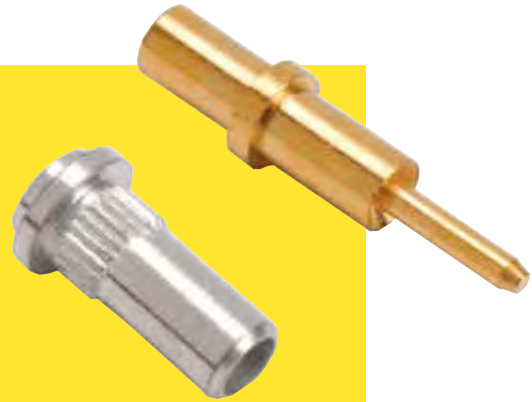
Maximum Pin Length = 4.85mm

All dimensions in mm.

PC Board Sockets

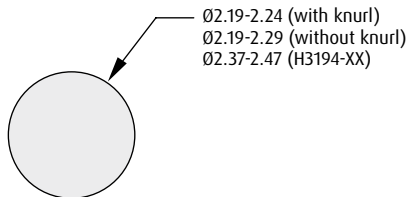
Ø1.00mm Mating Pin

- ❖ 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.



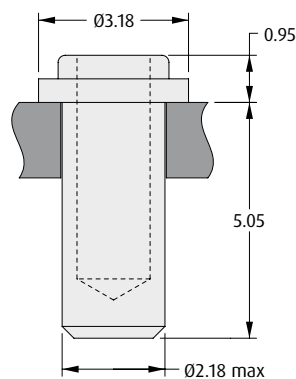
Specifications

Mating pin size: Ø0.90 - 1.05mm
 Contact depth: 3.55mm max
 Pin length: See individual sockets



Recommended PC Board Pattern

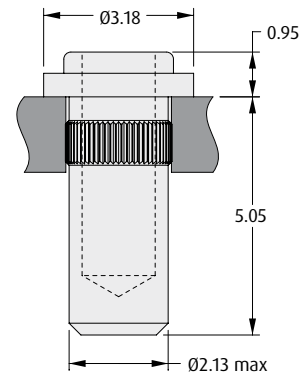
5.05mm BODY LENGTH



ORDER CODE	FINISH
H3184-01	Gold contact, Tin shell
H3184-05	Gold contact, Gold shell

Maximum Pin Length = 4.75mm

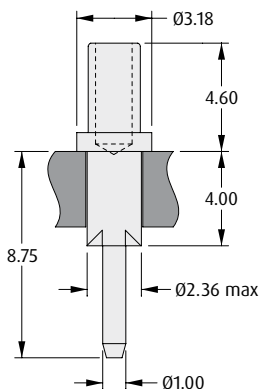
5.05mm BODY, KNURL



ORDER CODE	FINISH
H3167-01	Gold contact, Tin shell
H3167-05	Gold contact, Gold shell

Maximum Pin Length = 4.75mm

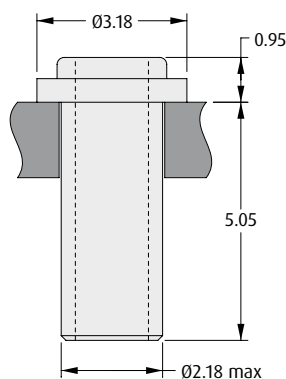
RAISED SHOULDER, TAIL



ORDER CODE	FINISH
H3194-01	Gold contact, Tin shell
H3194-05	Gold contact, Gold shell

Maximum Pin Length = 4.30mm

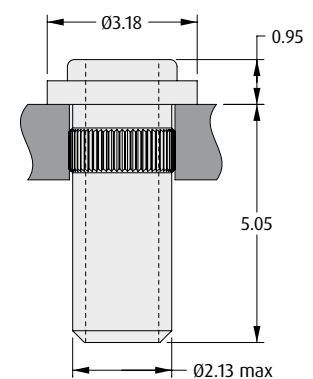
5.05mm BODY, OPEN END



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

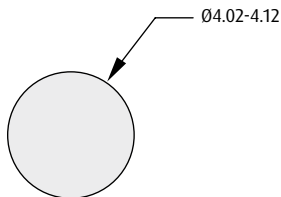
Ø2.00mm Mating Pin

- Compatible with Ø2.00mm mating pins.
- Uses six finger Beryllium Copper contact for high-reliability performance.

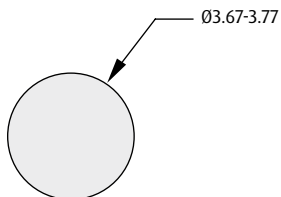


Specifications

Mating pin size: Ø2.00 - 2.30mm
 Contact depth: 4.10mm max
 Pin length: See individual sockets

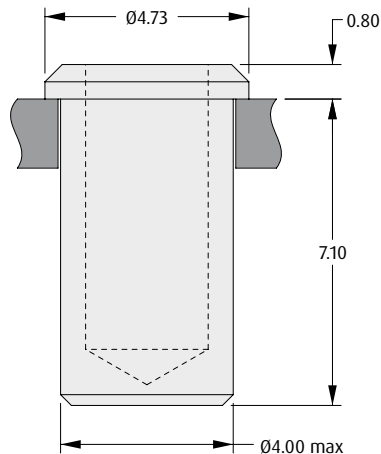


Recommended PC Board Pattern
for 7.1mm Body Length (H3492-XX)



Recommended PC Board Pattern
for 8mm Body Length (H3490-XX)

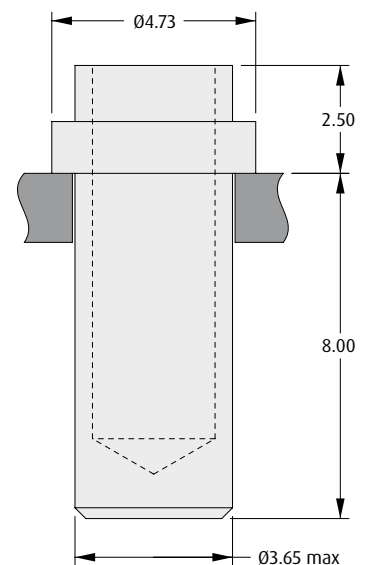
7.1mm BODY LENGTH



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

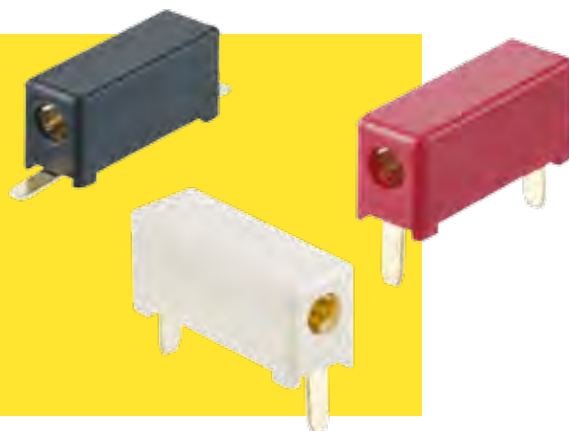
Maximum Pin Length = 8.50mm

All dimensions in mm.

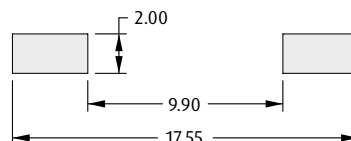
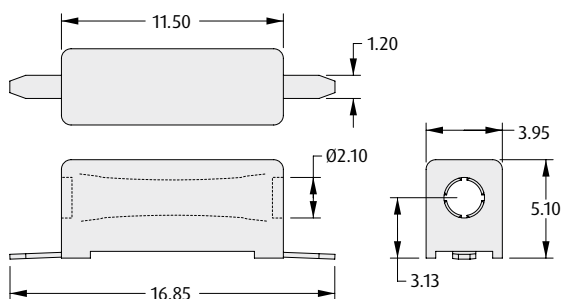
Test Sockets

Ø2.03mm Mating Probe

- ❖ Dual entry horizontal sockets with gold plated contacts.
- ❖ Colour 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.

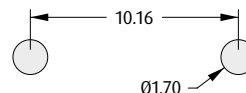
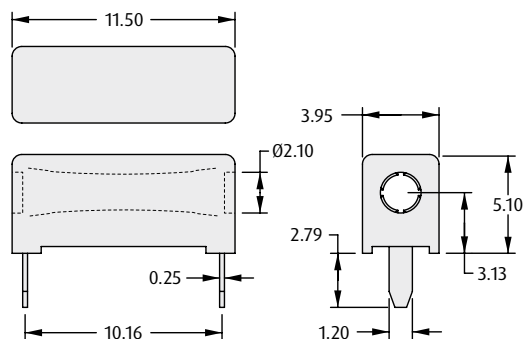


SURFACE MOUNT



Recommended PC Board Pattern

PC TAIL / THROUGHBOARD



Recommended PC Board Pattern

HOW TO ORDER

M349 X - XX X

SERIES CODE

TYPE

7	Surface Mount
8	PC Tail / Throughboard

PACKAGING

Blank	Loose
R	Tape & Reeled (M3497 only)

TYPE

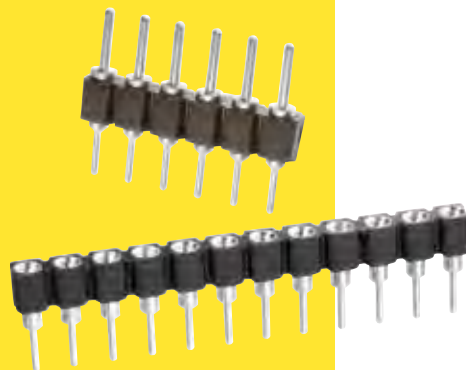
94	White (M3498 only)
98	Black
99	Red (M3498 only)

All dimensions in mm.

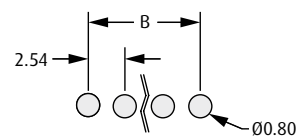
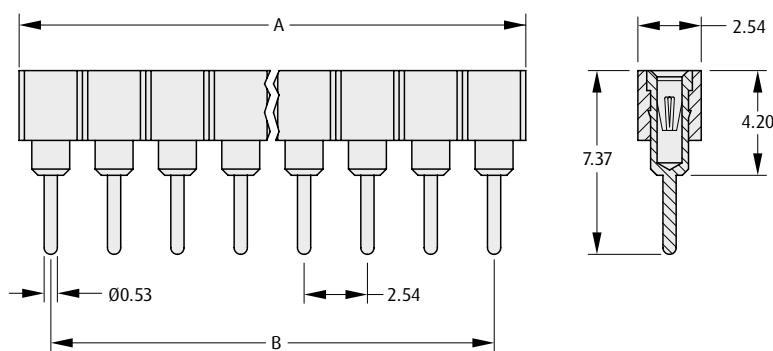
IC Sockets

Modular Single Row

- Connectors can be cut to smaller sizes.
- Socket accepts mating pin $\varnothing 0.40$ to 0.56mm , using four finger Beryllium Copper contact technology.
- Please consult Technical Drawings online for further specifications.



FEMALE

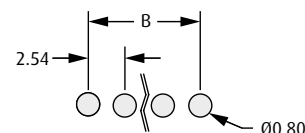
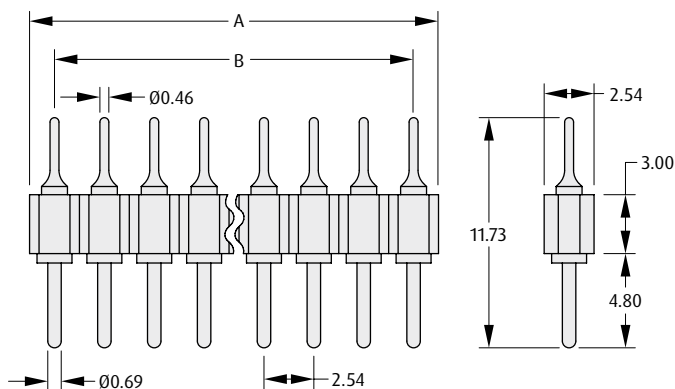


Recommended PC Board Pattern

CALCULATION

A	$2.54 \times \text{No. of contacts}$
B	$2.54 \times (\text{No. of contacts} - 1)$

MALE



Recommended PC Board Pattern

HOW TO ORDER

D01 - 99 X XX XX

SERIES CODE

TYPE

7	Female
2	Male

FINISH

42	Gold + Tin (Female)
46	Tin (Male)

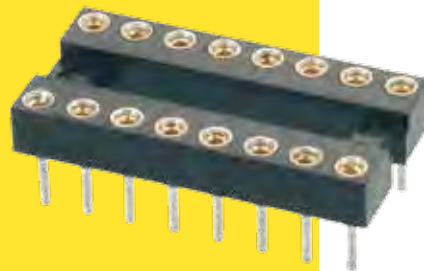
NO. OF CONTACTS

20, 32

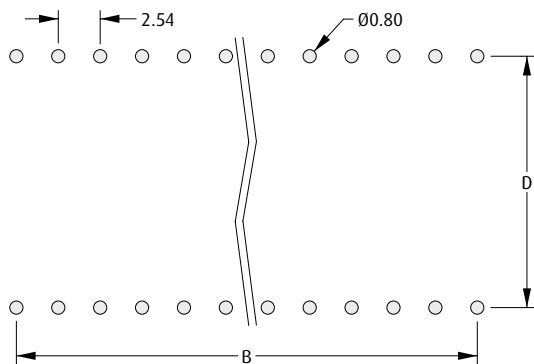
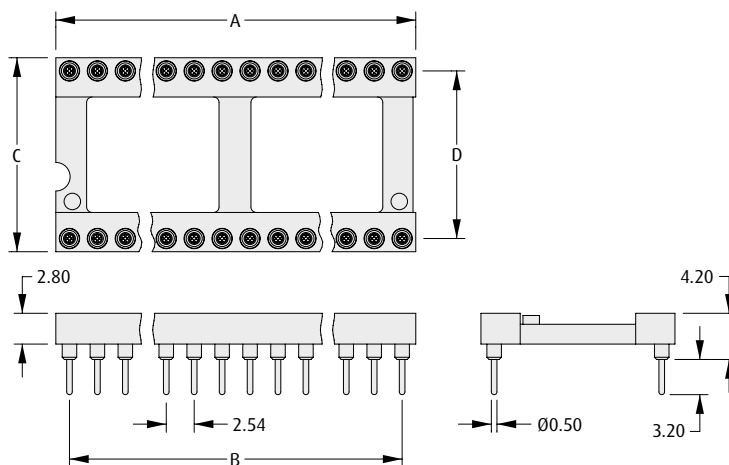
IC Sockets

Dual Row IC Socket

- ❖ Socket accepts IC leads Ø0.41 to 0.56mm.
- ❖ End and side stackable.
- ❖ Utilises 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.

Notes

Spring Loaded Contacts

Contents

ATE Spring Probes

- Specifications

- One Part Probes

- Two Part Probes

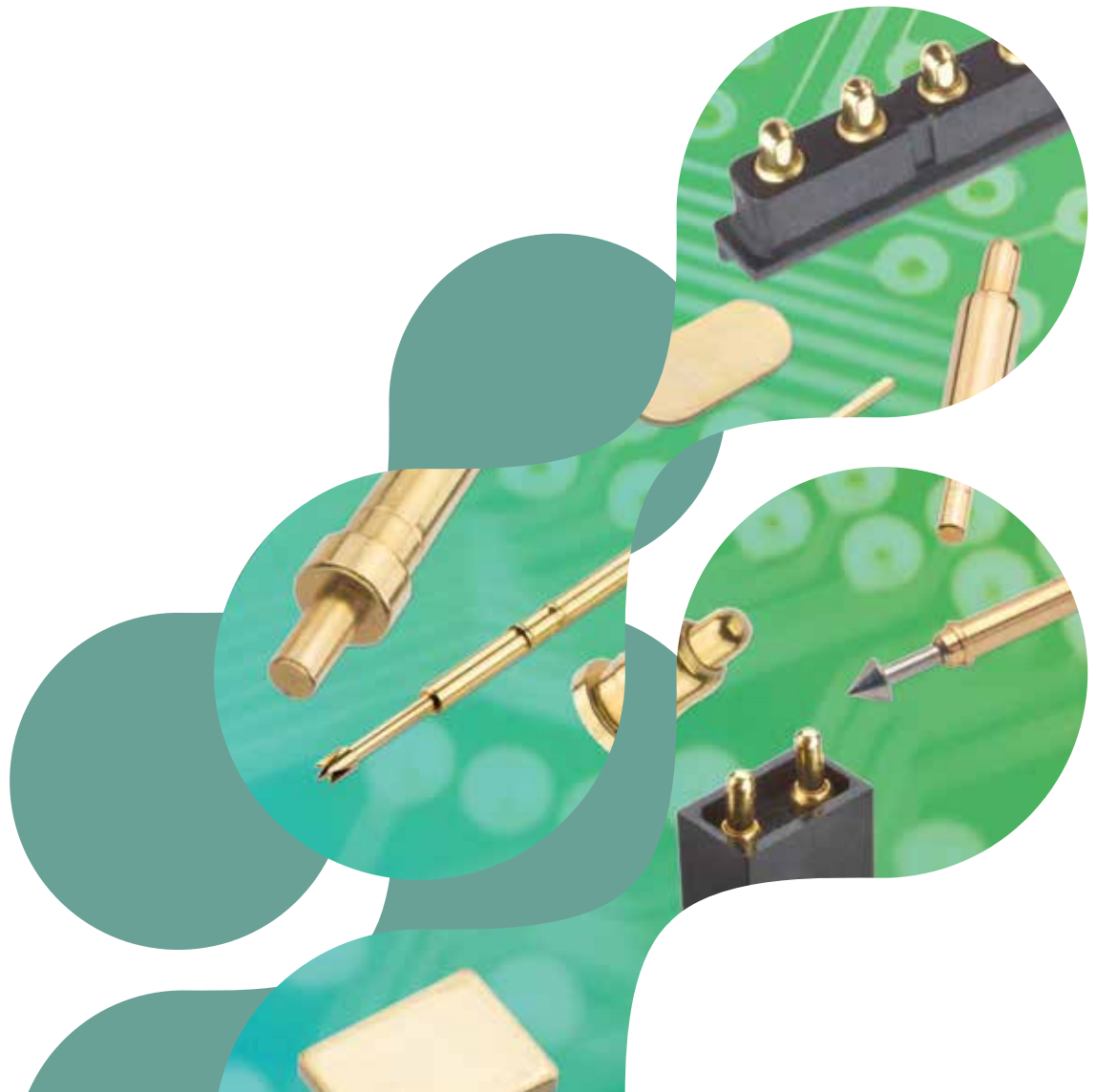
Spring Loaded Contacts

- Specifications

- Spring Loaded Contact Connectors

- Single Spring Loaded Contacts

SMT Contact Pads



ATE Spring Probes Specification

Materials

Plunger

P1113CA3, P1113CV3:	Brass, Gold Finish
P1113SS3:	High Carbon Steel, Nickel finish
Two-Part Spring Probes:	Beryllium Copper, Gold Finish

Barrel

One-Part Spring Probes:	Brass, Gold Finish
P25-XX26:	Brass, Gold Finish
Other Two-Part Spring Probes:	Phosphor Bronze, Gold Finish

Spring

One-Part Spring Probes:	Spring Steel, Gold Finish
P13 Series:	Music Wire, Gold Finish
P19 Series:	Stainless Steel
P25-4021, P25-0822:	Stainless Steel
P25-XX23:	Stainless Steel
P25-XX26:	Music Wire, Gold Finish

Sleeve

S13-503:	Phosphor Bronze, Gold Finish
Other:	Brass, Gold Finish

Packaging

Format:	Loose
---------	-------

Electrical

Current

One-Part Spring Probes:	2A max
Two-Part Spring Probes:	3A

Contact resistance

One-Part Spring Probes:	50mΩ max
P13 Series:	30mΩ max
P19 Series:	30mΩ max
P25-4021, P25-0822:	30mΩ max
P25-XX23:	50mΩ max at 2/3 Travel
P25-XX26:	30mΩ max

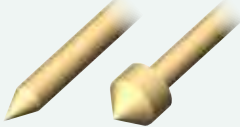
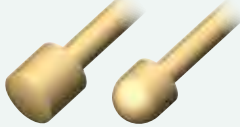
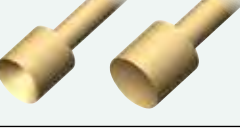
Mechanical

Durability:	1,000,000 operations
Full travel:	See individual pages
Spring force at full travel:	See individual pages

Environmental

Operating temperature:	-40°C to +85°C
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Plunger Head Styles

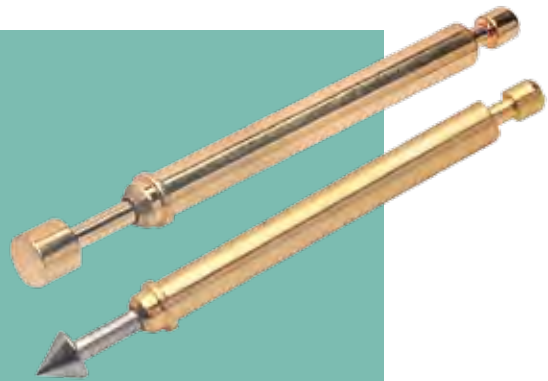
HEAD STYLE		TYPICAL USE
SPEAR, CONVEX		PCB lands and pads, clean plated through holes
CONVEX RADIUS, SPHERICAL RADIUS		Edge fingers, some connectors; positive contacts without marking or indentations
FLAT		Clean male pins, lands and pads
CONCAVE, CONCAVE RADIUS		Clean leads or clean terminal pins
HEAD STYLE		TYPICAL USE
SERRATED		Slightly contaminated leads, pin and blades; male connector pins
STAR		PCB plated through holes, connector testing; self-cleaning
TULIP		General purpose; 6 outer points, one central; self-cleaning
CROWN		Contaminated PCB leads and pads; self-cleaning

All dimensions in mm.

ATE Spring Probes

One-Part Test Probes

- ❖ Single piece spring test probe, with a selection of head styles for different probing surfaces.
- ❖ Can be assembled as either interference fit to a test jig, and wire attached to the rear groove, or clearance fit and soldered to a PCB for electrical connection.



❖ Mechanical

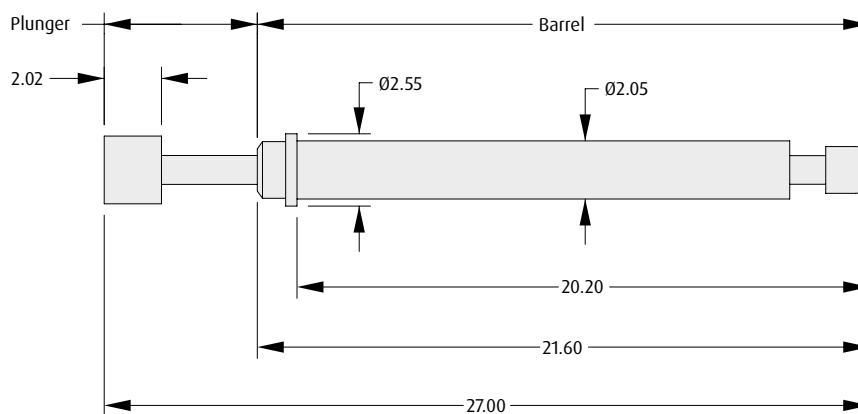
Full travel: 3.18mm

Spring force

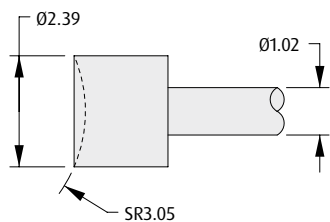
At full travel: 0.75N

At working length (2.20mm travel): 0.54N

- ❖ Suitable for a minimum pitch spacing of 3mm.
- ❖ Recommended PC Board Hole: Ø2.20mm (clearance fit) or Ø2.00mm (interference fit).



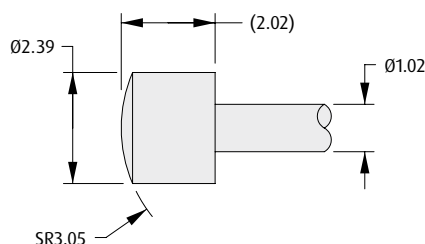
CONCAVE RADIUS HEAD



ORDER CODE

P1113CA3

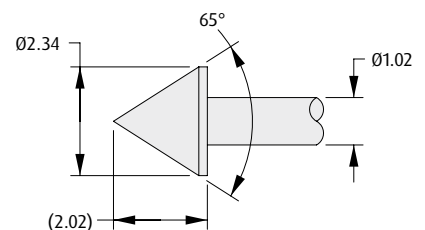
CONVEX RADIUS HEAD



ORDER CODE

P1113CV3

CONVEX HEAD



ORDER CODE

P1113SS3

All dimensions in mm.

ATE Spring Probes

Two-Part Test Probes for 1.27mm Pitch

- ❖ Two piece test probe – probe can be replaced when damaged or worn out, without re-soldering to test jig.
- ❖ Sleeve can be assembled as either interference fit to a test jig, and wire attached to the rear bore, or clearance fit and soldered to a PCB for electrical connection.
- ❖ Slim miniature probes, suitable for mounting at 1.27mm pitch between centres.



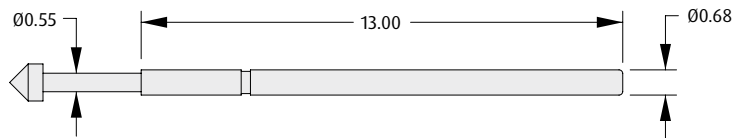
❖ Mechanical

Full travel: 2.65mm

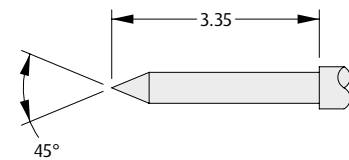
Spring force

At full travel: 1.18N

At 2/3 travel: 0.88N



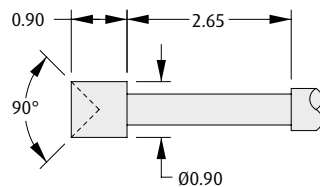
SPEAR HEAD



ORDER CODE

P13-0123

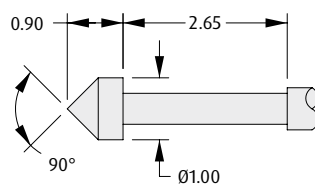
CONCAVE HEAD



ORDER CODE

P13-1123

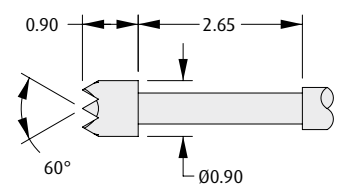
CONVEX HEAD



ORDER CODE

P13-2123

SERRATED HEAD

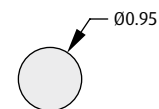
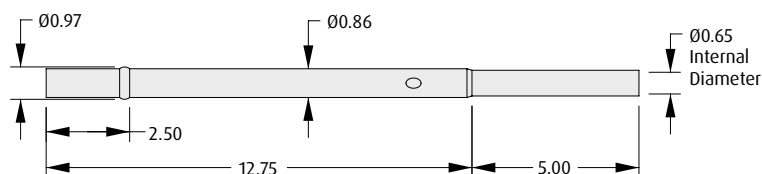


ORDER CODE

P13-4023

SLEEVE

- ❖ Suitable for use with 30AWG wire.



Recommended
PC Board Pattern

ORDER CODE

S13-503

All dimensions in mm.

ATE Spring Probes

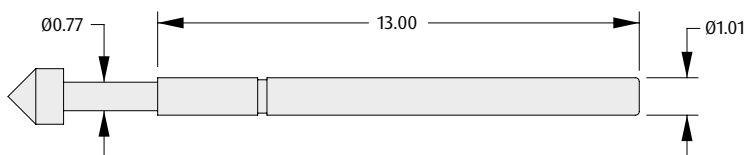
Two-Part Test Probes for 1.90mm Pitch

- ❖ Two piece test probe – probe can be replaced when damaged or worn out, without re-soldering to test jig.
- ❖ Sleeve can be assembled as either interference fit to a test jig, and wire attached to the rear bore, or clearance fit and soldered to a PCB for electrical connection.
- ❖ Slim miniature probes, suitable for mounting at 1.90mm pitch between centres.

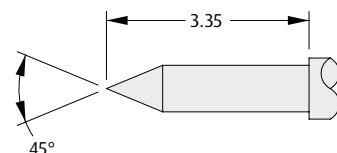


❖ Mechanical

Full travel: 2.54mm
 Spring force
 At full travel: 1.26N
 At 2/3 travel: 0.88N



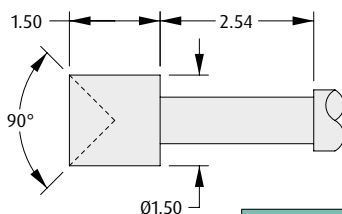
SPEAR HEAD



ORDER CODE

P19-0121

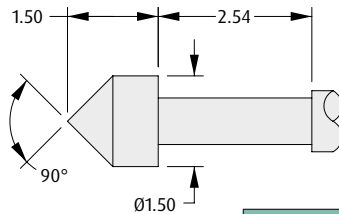
CONCAVE HEAD



ORDER CODE

P19-1121

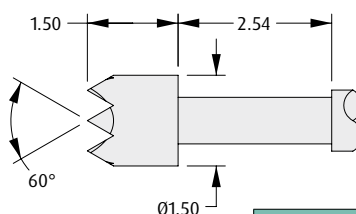
CONVEX HEAD



ORDER CODE

P19-2221

SERRATED HEAD

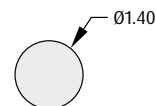
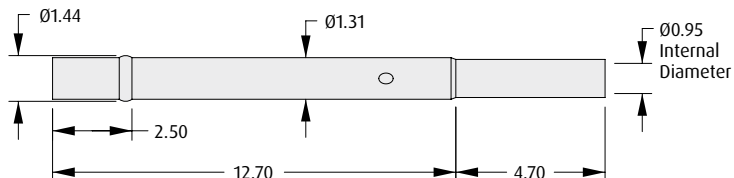


ORDER CODE

P19-4021

SLEEVE

- ❖ Suitable for use with 24 to 30AWG wire.



Recommended
PC Board Pattern

ORDER CODE

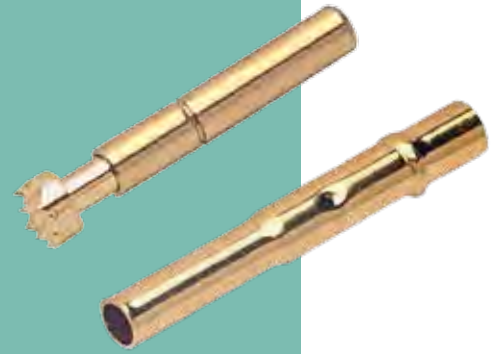
S19-501

All dimensions in mm.

ATE Spring Probes

Two-Part Test Probes for 2.54mm Pitch

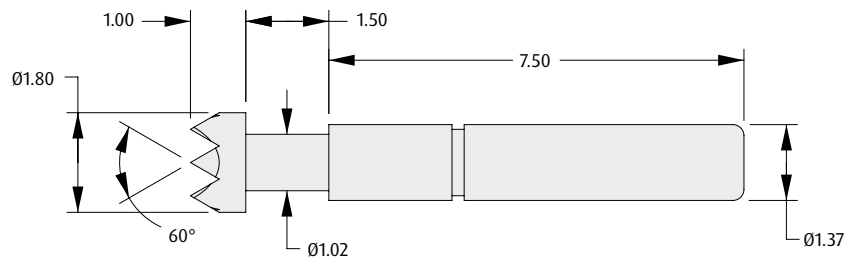
- ❖ Two piece short probe, for low-profile test jigs.
- ❖ Can be mounted at 2.54mm pitch between centres.
- ❖ Serrated Head style – see Introduction page for applications.



Mechanical

Full travel:	1.50mm
Spring force	
At full travel:	1.08N
At 2/3 travel:	0.78N

7.5mm BODY

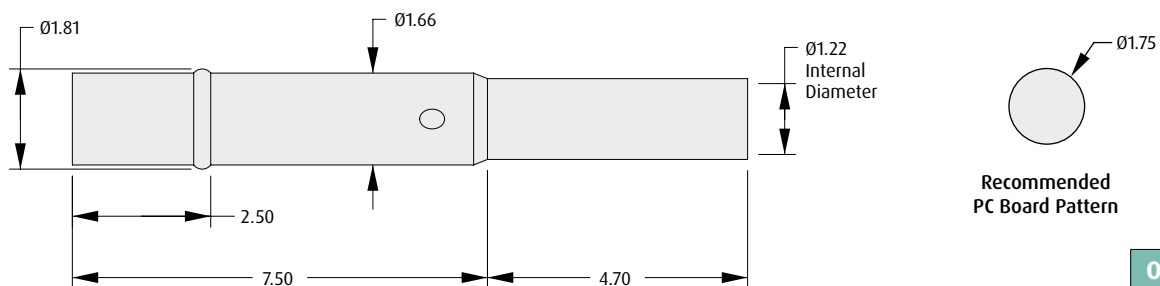


ORDER CODE

P25-4021

SLEEVE

- ❖ Suitable for use with 22 to 30AWG wire.



ORDER CODE

S25-501

All dimensions in mm.

ATE Spring Probes

Two-Part Test Probes for 2.54mm Pitch

- Two piece test probe – probe can be replaced when damaged or worn out, without re-soldering to test jig.
- Medium-length probes for 2.54mm minimum pitch, with 4.2mm travel.
- Applicable sleeves shown on following page.



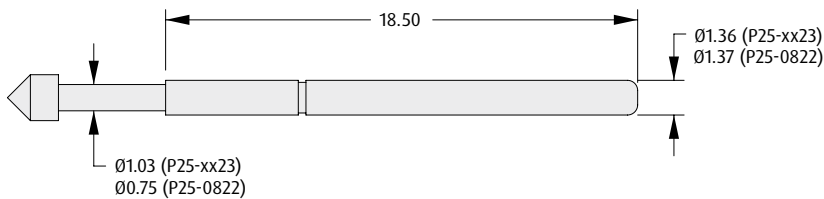
Mechanical

Full travel: 4.20mm

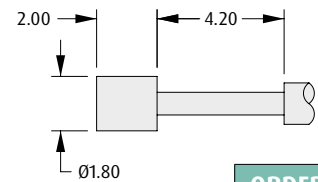
Spring force

At full travel: 1.47N

At 2/3 travel: 1.13N



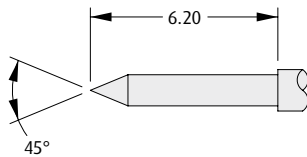
FLAT HEAD



ORDER CODE

P25-0822

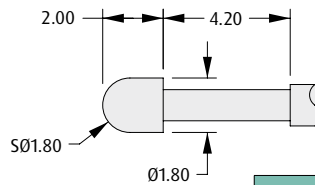
SPEAR HEAD



ORDER CODE

P25-0123

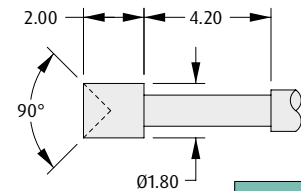
SPHERICAL RADIUS HEAD



ORDER CODE

P25-0423

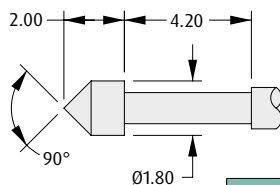
CONCAVE HEAD



ORDER CODE

P25-1223

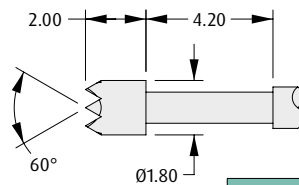
CONVEX HEAD



ORDER CODE

P25-2223

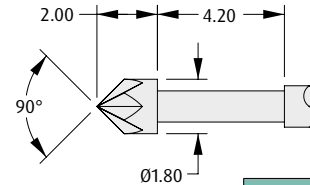
SERRATED HEAD



ORDER CODE

P25-4023

STAR HEAD



ORDER CODE

P25-5223

All dimensions in mm.

ATE Spring Probes

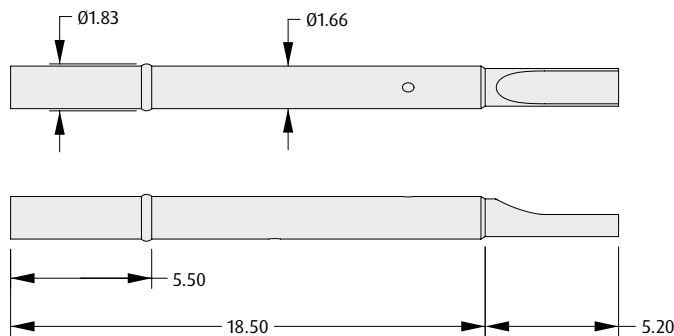
Two-Part Test Probes for 2.54mm Pitch

- ❖ For use with probes with 18.5mm body length, as shown on previous page.
- ❖ Sleeve can be assembled as either interference fit to a test jig, and wire attached to the rear bore, or clearance fit and soldered to a PCB for electrical connection.



SOLDER CUP SLEEVE

- ❖ Suitable for use with 22 to 30AWG wire.

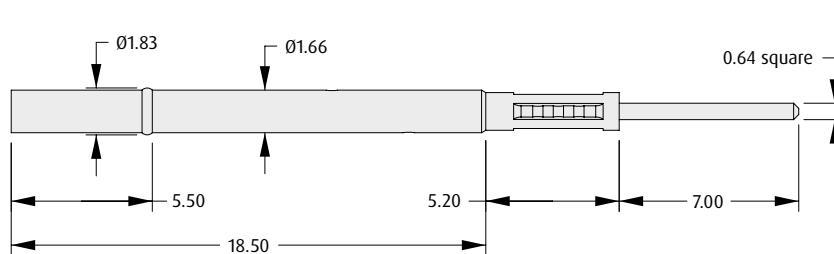


Recommended
PC Board Pattern

ORDER CODE

S25-022

WIRE-WRAP TAIL SLEEVE



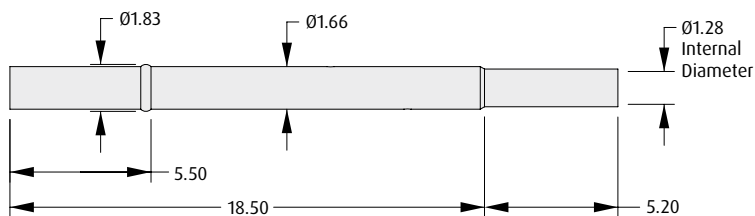
Recommended
PC Board Pattern

ORDER CODE

S25-212

SOLDER BARREL SLEEVE

- ❖ Suitable for use with 22 to 30AWG wire.



Recommended
PC Board Pattern

ORDER CODE

S25-512

All dimensions in mm.

ATE Spring Probes

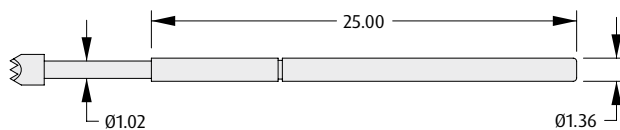
Two-Part Test Probes for 2.54mm Pitch

- Two piece test-probe – probe can be replaced when damaged or worn out, without re-soldering to test jig.
- Sleeve can be assembled as either interference fit to a test jig, and wire attached to the rear bore, or clearance fit and soldered to a PCB for electrical connection.
- Long length probe bodies with 6.3mm travel, for 2.54mm minimum pitch.

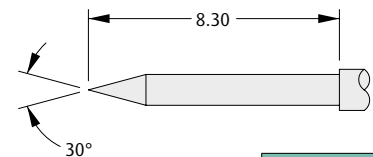


Mechanical

Full travel: 6.30mm
 Spring force
 At full travel: 3.43N
 At 2/3 travel: 2.26N

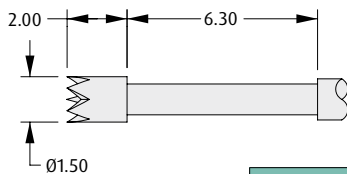


SPEAR HEAD



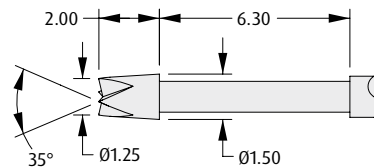
ORDER CODE
P25-0126

TULIP HEAD



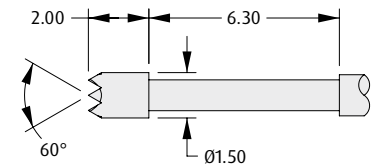
ORDER CODE
P25-1726

CROWN HEAD



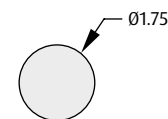
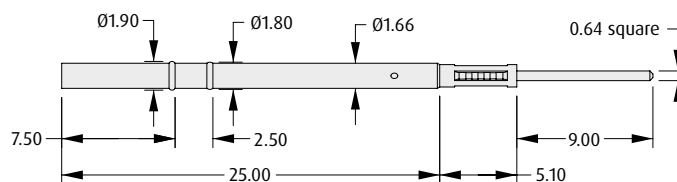
ORDER CODE
P25-3226

SERRATED HEAD



ORDER CODE
P25-4026

WIRE WRAP TAIL SLEEVE

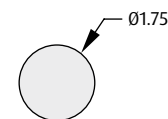
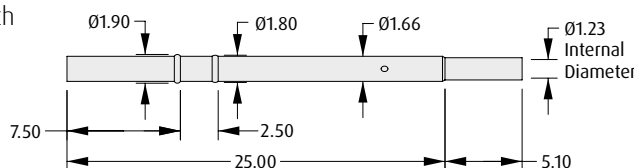


Recommended
PC Board Pattern

ORDER CODE
S25-346

SOLDER BARREL SLEEVE INSTEAD

- Suitable for use with 22 to 30AWG wire.



Recommended
PC Board Pattern

ORDER CODE
S25-546

All dimensions in mm.

Spring Loaded Contact Specification

✦ Materials

Mouldings:	High Temperature Plastic, UL94V-0
Contacts	
Plunger:	Brass
Barrel:	Brass
Spring:	Stainless Steel
Finish	
Plunger:	Gold
Barrel:	Gold

✦ Packaging

Format	
Connectors:	Tape and Reel
Single contacts:	See individual pages
Reel quantity	
2-contact, 5-contact:	1,000 on a Ø330mm reel
3-contact, 4-contact:	800 on a Ø330mm reel
Single contacts:	See individual pages

✦ Electrical

Current	
Connectors:	1A per contact
Single contacts:	2A or 1A (see individual pages)
Voltage	
Connectors:	50V DC
Contact resistance:	50mΩ max
Insulation resistance	
Connectors:	100MΩ min

✦ Mechanical

Durability:	10,000 operations
Spring force at working height	
2-contact:	1.1N ±20% at 3.9mm working height
3-contact, 4-contact:	1.2N ±20% at 3.4mm working height
5-contact:	0.8N ±20% at 4.5mm working height
Single contacts:	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

Spring Loaded Contact Connectors

Surface Mount Miniature Connectors

A range of spring loaded contact connectors for maintaining a positive force against a mating surface.

- ❑ Low mating force enables rapid and effortless connection for a user friendly system.
- ❑ Tolerates significant mating misalignment.
- ❑ Ideal for use in portable equipment where separate battery modules are used and for data transfer docking stations.



2 CONTACTS	3 CONTACTS
ORDER CODE P20-0245R	ORDER CODE P20-0345R
4 CONTACTS	5 CONTACTS
ORDER CODE P20-0445R	ORDER CODE P20-0545R

All dimensions in mm.

Spring Loaded Contact Connectors

Single Spring Loaded Contacts – PC Tail

- ❖ PC Tail Pogo pins can be soldered as surface mount, using the PC Tail for location or lateral strength.
- ❖ 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

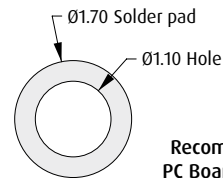
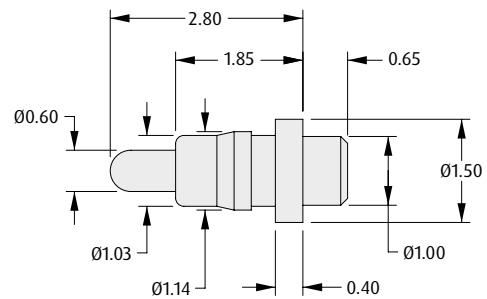
P70-6000045R:	1A
P70-2000045R:	2A
P70-2010045R:	2A

❖ 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

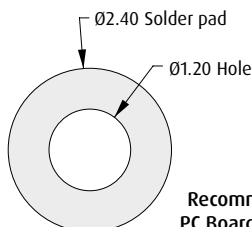
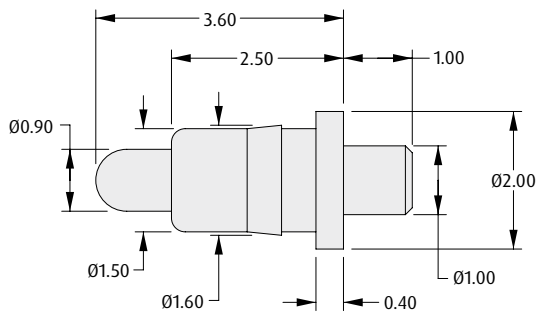
2.8mm FREE HEIGHT



Recommended
PC Board Pattern

ORDER CODE
P70-6000045R

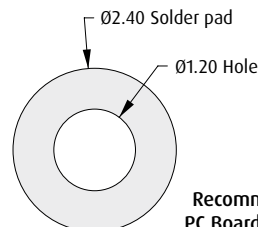
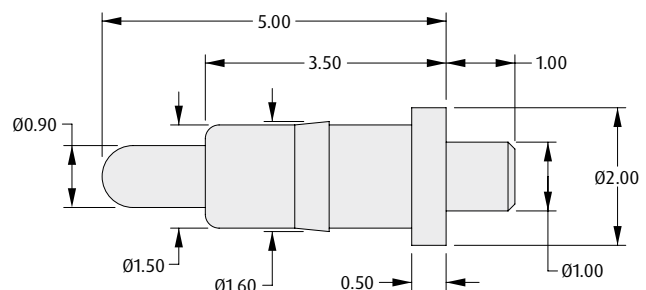
3.6mm FREE HEIGHT



Recommended
PC Board Pattern

ORDER CODE
P70-2000045R

5.0mm FREE HEIGHT



Recommended
PC Board Pattern

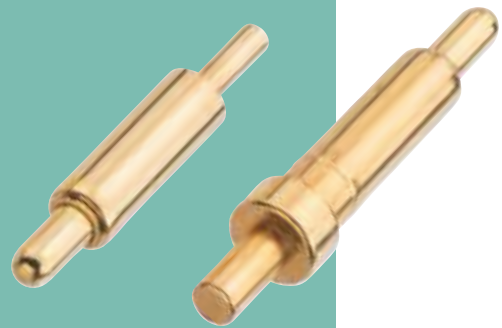
ORDER CODE
P70-2010045R

All dimensions in mm.

Spring Loaded Contact Connectors

Single Spring Loaded Contacts – PC Tail

- ❖ PC Tail Pogo pins can be soldered as surface mount, using the PC Tail for location or lateral strength.
- ❖ 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

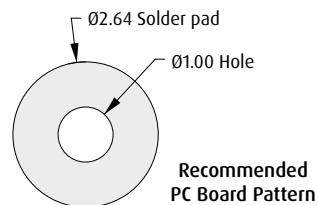
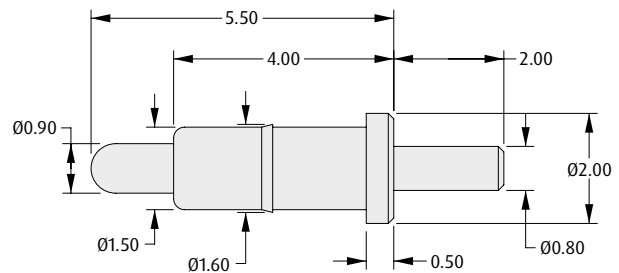
Current: 2A

❖ Mechanical

Spring force at working height

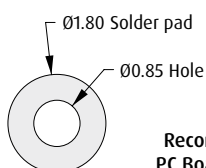
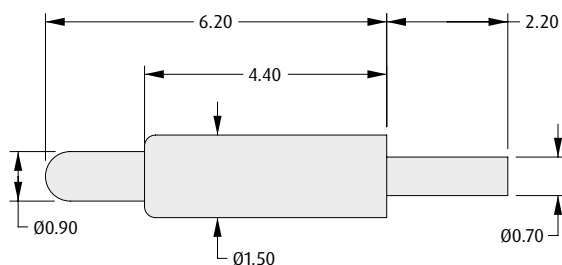
P70-2100045R:	0.68N ±0.24N at 4.50mm working height
P70-2300045R:	0.83N ±0.25N at 4.90mm working height
P70-2200045:	0.98 ±0.19N at 7.10mm working height

5.5mm FREE HEIGHT



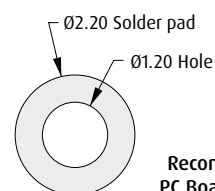
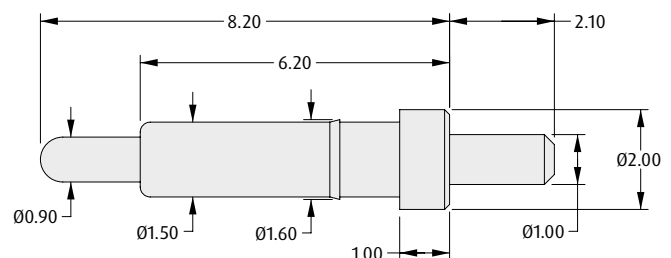
ORDER CODE
P70-2100045R

6.2mm FREE HEIGHT



ORDER CODE
P70-2300045R

8.2mm FREE HEIGHT



ORDER CODE
P70-2200045

All dimensions in mm.

Spring Loaded Contact Connectors

Single Spring Loaded Contacts – Surface Mount

- ❖ Also referred to as Pogo pins, 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

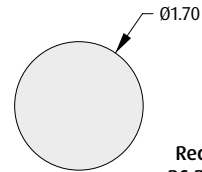
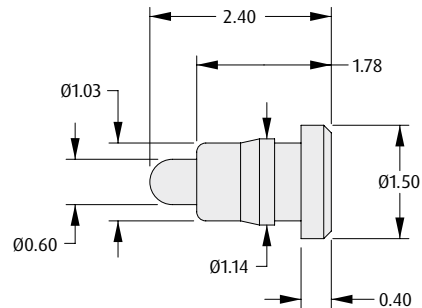
P70-5000045R:	1A
P70-7000045:	2A
P70-5100045:	2A

❖ 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

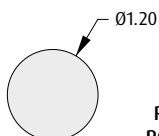
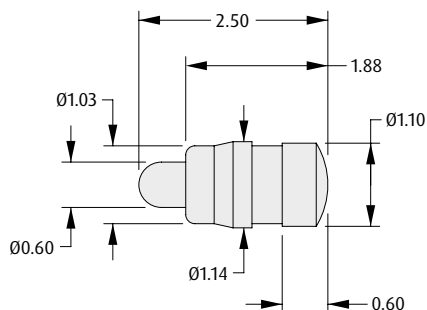
2.4mm FREE HEIGHT



Recommended
PC Board Pattern

ORDER CODE
P70-5000045R

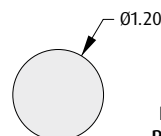
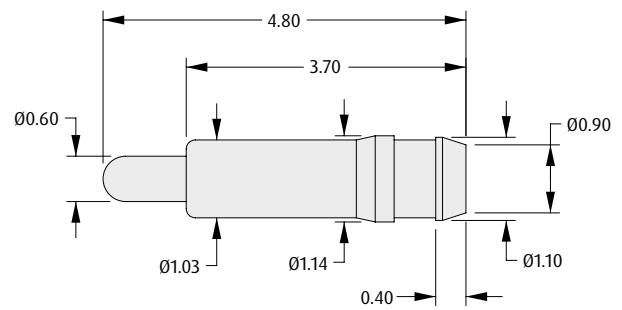
2.5mm FREE HEIGHT



Recommended
PC Board Pattern

ORDER CODE
P70-7000045

4.8mm FREE HEIGHT



Recommended
PC Board Pattern

ORDER CODE
P70-5100045

All dimensions in mm.

Spring Loaded Contact Connectors

Single Spring Loaded Contacts – Surface Mount

- Also referred to as Pogo pins, 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

P70-1100045R:	650 on a Ø330mm reel
P70-1030045R:	650 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

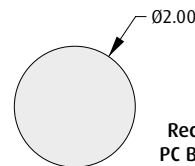
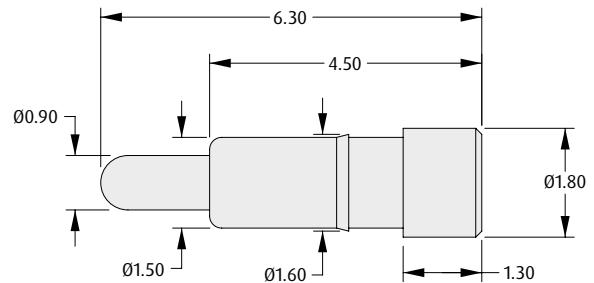
Current: 2A

➤ Mechanical

Spring force at working height

P70-1100045R:	1.23N $\pm$ 0.34N at 5.00mm working height
P70-1000045R:	0.88N $\pm$ 0.29N at 2.90mm working height
P70-1010045R:	1.17N $\pm$ 0.29N at 4.00mm working height
P70-1020045R:	1.17N $\pm$ 0.29N/-0.19N at 4.50mm working height
P70-1030045R:	1.29N $\pm$ 0.29N at 6.20mm working height

6.3mm FREE HEIGHT

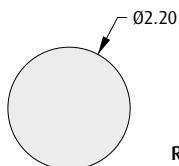
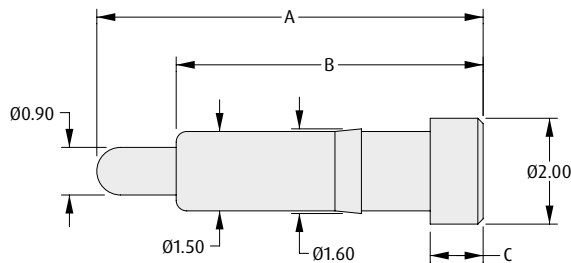


Recommended
PC Board Pattern

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, Spring Loaded Contacts and Spring Loaded Contact Connectors.
- ❖ Available 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

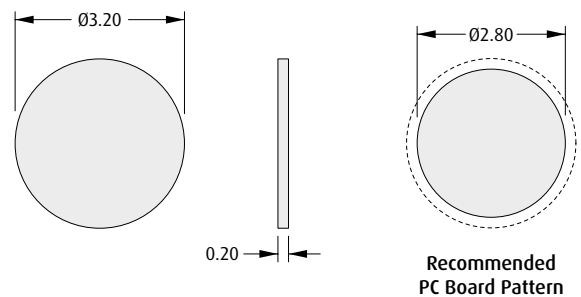
Electrical

Current: 0.5A
Contact resistance: 0.15mΩ max

Environmental

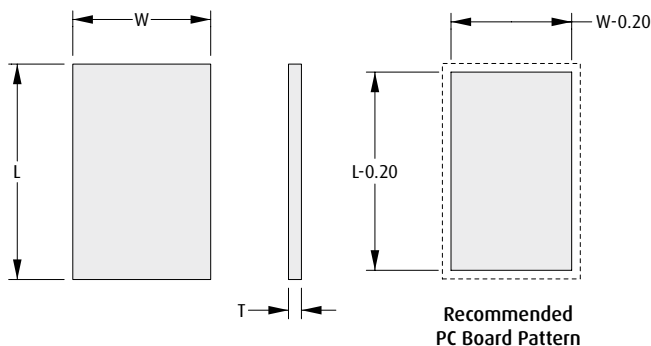
Operating temperature: -40°C to +85°C

CIRCULAR



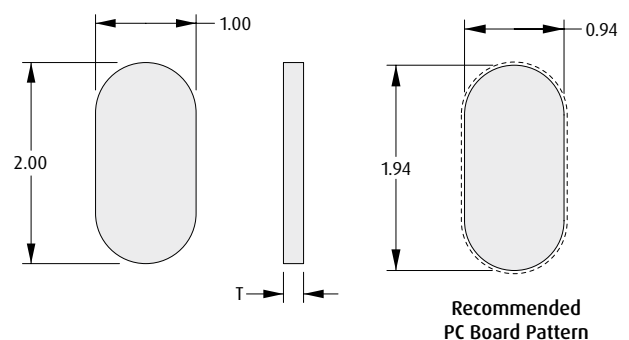
ORDER CODE	TAPE & REEL
S70-332002045R	2,000 on a Ø178 reel

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.

PCB Hardware

Contents

SMT Test Points

SMT Cable Clips

SMT Jumper Links

PCB Jumper Links

PCB Terminals, Turret Lugs

Spacers / Pillars / Standoffs



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.



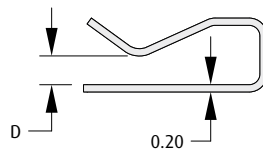
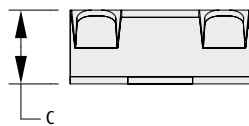
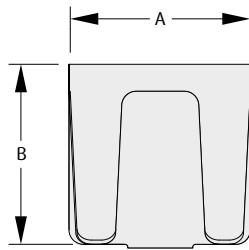
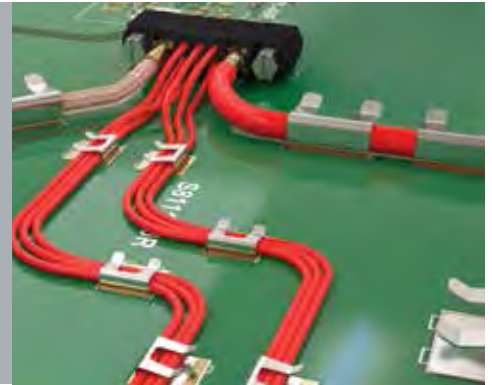
❖ Materials Material: Copper Alloy Finish: Tin ❖ Packaging Format: Tape & Reel Reel quantity S1751-46R: 2,500 on a Ø330mm reel S2751-46R: 2,500 on a Ø178mm reel S2761-46R: 3,000 on a Ø178mm reel	2.00mm HIGH Recommended PC Board Pattern ORDER CODE S1751-46R
1.40mm HIGH Recommended PC Board Pattern ORDER 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.

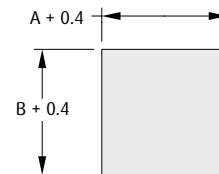


Materials

Material: Copper Alloy
Finish: Tin

Packaging

Format: Tape & Reel
Reel quantity: Ø330mm reel, see table



Recommended PC Board Pattern

HOW TO ORDER

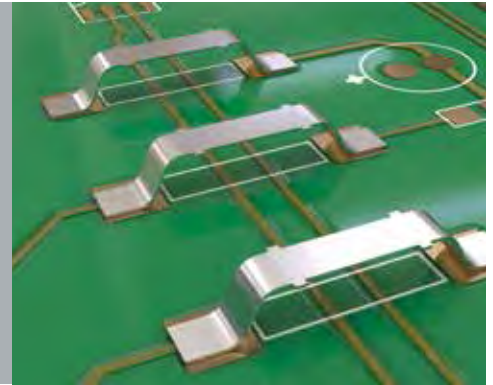
PART NO.	A	B	C	D	COAX GROUNDING	CABLE RETENTION	REEL QUANTITY
S8091-46R	5.00	4.00	1.35	0.70	Ø1.12mm	2 x Ø0.9mm	3,000
S8101-46R	5.00	4.00	1.50	0.80	RG178, RG179, RG316	2 x Ø1.0mm	3,000
S8111-46R	5.00	5.00	2.05	0.80	RG174, RG179, RG316	3 x Ø1.0mm, 2 x Ø1.5mm	1,500
S8121-46R	7.00	5.50	2.55	1.30	n/a	2 x Ø1.5mm, 1 x Ø2.0mm	1,300
S8131-46R	10.00	8.00	3.55	1.80	RG58	3 x Ø2.0mm, 1 x Ø3.0mm	800

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.



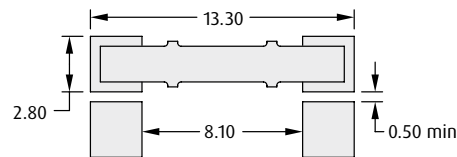
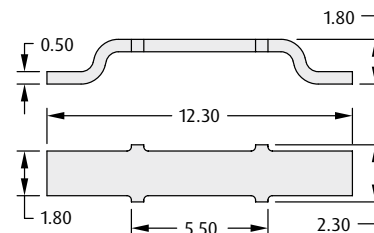
Materials

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

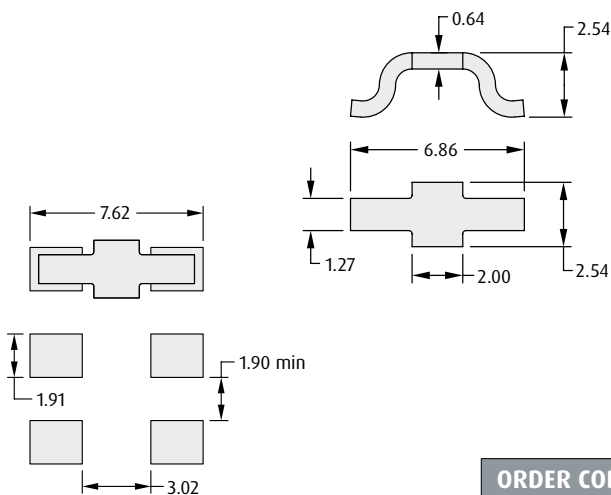
12.3mm LONG



Recommended PC Board Pattern

ORDER CODE
S1621-46R

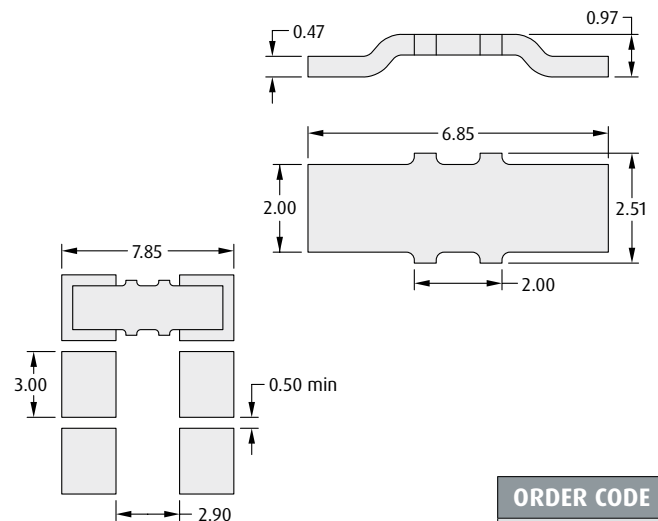
6.86mm LONG, 2.54mm HIGH



Recommended PC Board Pattern

ORDER CODE
S1731-46R

6.85mm LONG, 0.97mm HIGH



Recommended PC Board Pattern

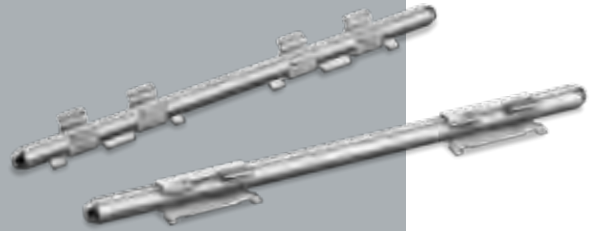
ORDER CODE
S1911-46R

All dimensions in mm.

SMT Hardware

Removable Jumper Link - SMT Clip and Bar

- ❖ Simple & effective method for connecting across LED arrays and PCBs.
- ❖ Vertical and horizontal configurations available.
- ❖ Connecting bars available in two lengths.
- ❖ SMT clips packaged in tape and reel to suit automated placement.
- ❖ Allows easy replacement of defective arrays and PCBs without the need to de-solder.
- ❖ SMT clips and bars ordered separately.



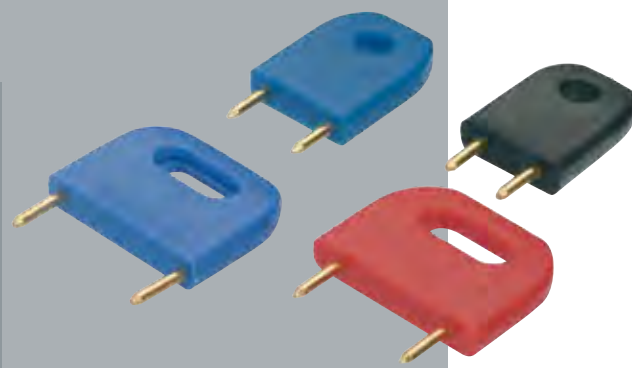
VERTICAL CLIP	HORIZONTAL CLIP
❖ Specification Material: Stainless Steel Finish: Tin Packaging format: Tape & Reel (10,000 on a Ø330mm reel) ORDER CODE S8071-46R Recommended PC Board Pattern	❖ Specification Material: Stainless Steel Finish: Tin Packaging format: Tape & Reel (10,000 on a Ø330mm reel) ORDER CODE S8081-46R Recommended PC Board Pattern
23mm LONG REMOVABLE BAR	15mm LONG REMOVABLE BAR
❖ Specification Material: Phosphor Bronze Finish: Tin Packaging format: Loose ORDER CODE S07-46	❖ Specification Material: Phosphor Bronze Finish: Tin Packaging format: Loose ORDER CODE S08-46

All dimensions in mm.

PCB Hardware

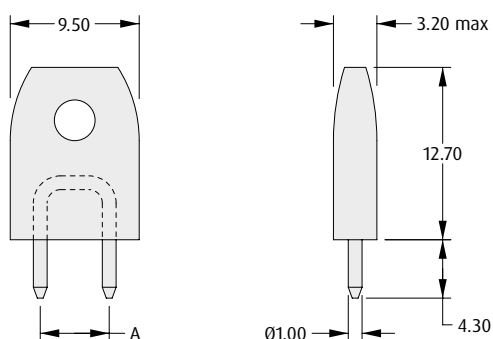
Ø1mm Shorting Link Plugs

- Choice of insulated or un-insulated links.
- Insulated links supplied in a variety of colours, 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.

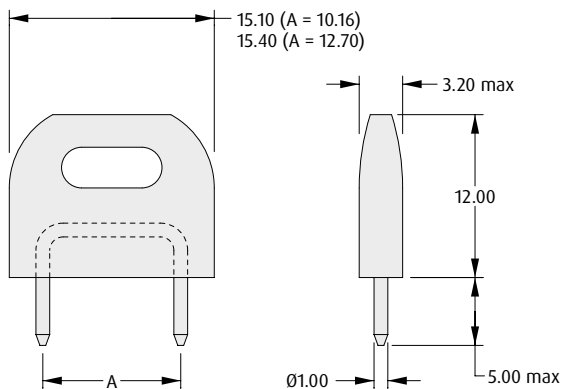


INSULATED

Style 1



Style 2



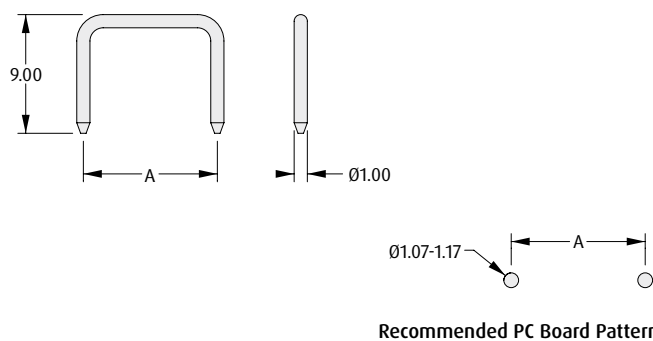
Materials

Moulding: PBT UL94V-0
Contact: Brass
Finish
Insulated: Gold
Un-insulated: See order code

Electrical

Current rating: 10A at 20°C

UN-INSULATED



Recommended PC Board Pattern

HOW TO ORDER

D308 X - XX

SERIES CODE

PITCH (A)	STYLE
6	5.08mm
7	6.35mm
8	10.16mm
9	12.70mm

COLOUR

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

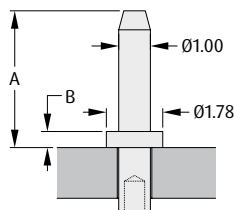
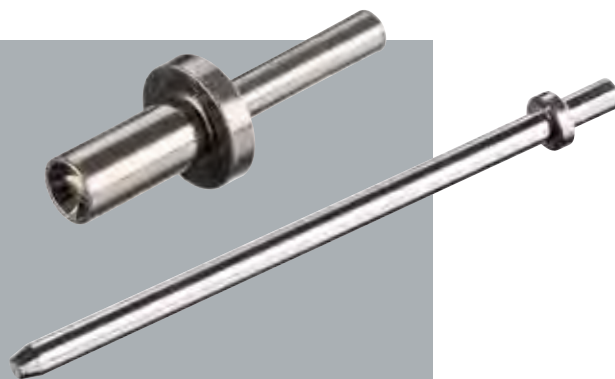
05	Gold
46	Tin

All dimensions in mm.

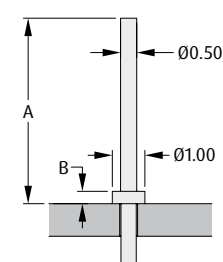
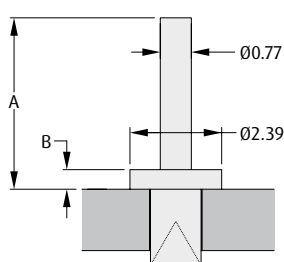
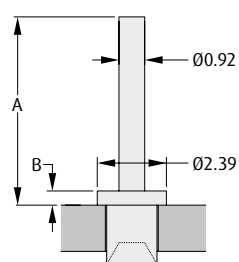
PCB Hardware

Turned Terminals

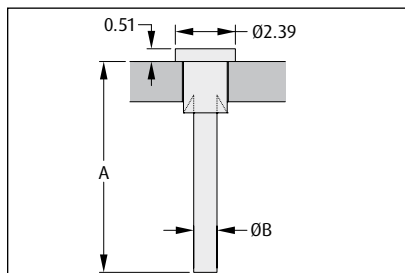
- Material: Brass with tin plating.
- Retention by swaging feature available.
- For swaging tool, change order code prefix to Z, and suffix to 00 (example Z2174-00).
- Suitable for a variety of PCB thicknesses from 1mm to 2.4mm.



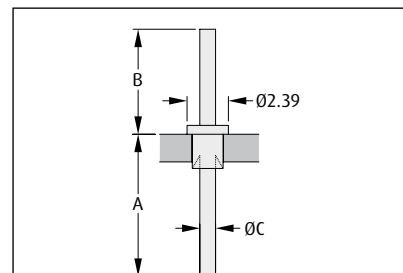
ORDER CODE	H2174-01	H2175-01	H2173-01	H2176-01	H2170-01
A	4.32mm	4.90mm	8.13mm	9.53mm	13.21mm
B	0.51mm	0.35mm	0.51mm	0.51mm	0.51mm
PANEL THICKNESS	1.60mm	1.60mm	1.60mm	1.60mm	1.60mm
MOUNTING HOLE	Ø1.04 - 1.14mm	Ø1.04 - 1.14mm	Ø1.04 - 1.14mm	Ø1.04 - 1.14mm	Ø1.04 - 1.14mm



ORDER CODE	H2101A01	H2105A01	H2106A01	H3108-01
A	6.47mm	4.47mm	4.47mm	5.70mm
B	0.51mm	0.51mm	0.51mm	0.38mm
PANEL THICKNESS	1.60mm	1.60mm	2.40mm	1.00mm
MOUNTING HOLE	Ø1.79 - 1.87mm	Ø1.33 - 1.41mm	Ø1.33 - 1.41mm	Ø0.50 - 0.55mm



ORDER CODE	H2101B01	H2105B01
A	8.39mm	6.37mm
B	Ø0.93mm	Ø0.77mm
PANEL THICKNESS	1.60mm	1.60mm
MOUNTING HOLE	Ø1.79 - 1.87mm	Ø1.33 - 1.41mm



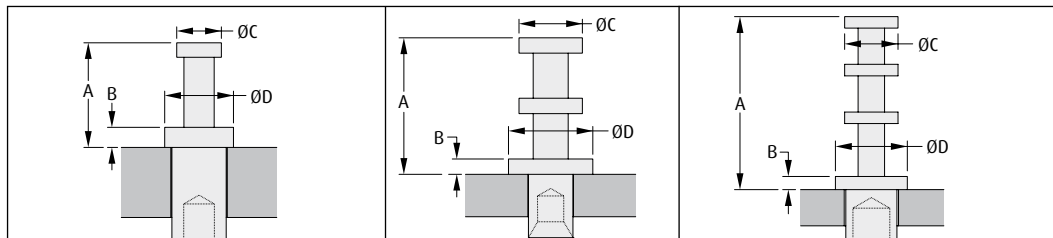
ORDER CODE	H2101-01	H2105-01
A	8.23mm	5.05mm
B	6.07mm	4.48mm
C	Ø0.87mm	Ø0.77mm
PANEL THICKNESS	1.60mm	1.60mm
MOUNTING HOLE	Ø1.79 - 1.87mm	Ø1.33 - 1.41mm

All dimensions in mm.

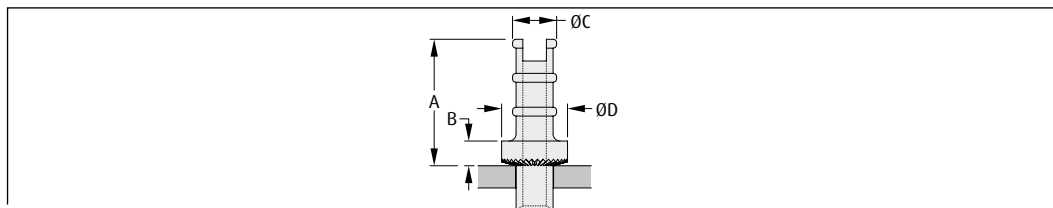
PCB Hardware

Turned Terminals

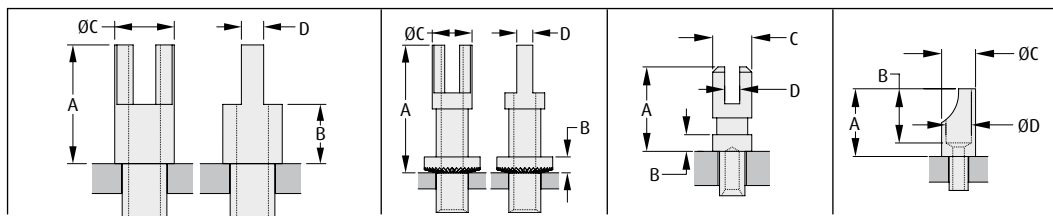
- ❖ Material: Brass with tin plating.
- ❖ Retention by swaging feature available.
- ❖ For swaging tool, change order code prefix to Z, and suffix to 00 (example Z9001-00).
- ❖ Suitable for a variety of PCB thicknesses from 1.6mm to 3.2mm.



ORDER CODE	H9001-01	H9004-01	H2121-01	H9020-01	H9021-01
A	2.39mm	4.74mm	5.15mm	7.65mm	7.65mm
B	0.46mm	1.19mm	0.58mm	0.58mm	0.58mm
C	Ø1.02mm	Ø1.91mm	Ø2.39mm	Ø2.36mm	Ø2.36mm
D	Ø1.57mm	Ø3.18mm	Ø3.18mm	Ø3.18mm	Ø3.18mm
PANEL THICKNESS	1.60mm	1.60mm	1.60mm	1.60mm	2.40mm
MOUNTING HOLE	Ø1.25 - 1.33mm	Ø2.01 - 2.09mm	Ø1.69 - 1.74mm	Ø2.35 - 2.45mm	Ø2.35 - 2.45mm



ORDER CODE	H2071Z01	H2072-01	H2072Z01	H2072ZL1	H2073Z01	H2074Z01
A	9.12mm	6.29mm	6.52mm	6.52mm	9.12mm	8.74mm
B	1.78mm	1.01mm	1.24mm	1.24mm	1.78mm	1.60mm
C	Ø3.18mm	Ø3.25mm	Ø2.54mm	Ø2.54mm	Ø3.18mm	Ø4.57mm
D	Ø4.75mm	Ø3.96mm	Ø3.96mm	Ø3.96mm	Ø4.75mm	Ø6.35mm
PANEL THICKNESS	2.40mm	1.60mm	1.60mm	2.40mm	3.20mm	3.20mm
MOUNTING HOLE	Ø2.68 - 2.78mm	Ø2.17 - 2.27mm	Ø2.01 - 2.11mm	Ø2.01 - 2.11mm	Ø2.68 - 2.78mm	Ø3.93 - 4.03mm



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	1.52mm	0.78mm	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	n/a	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.

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

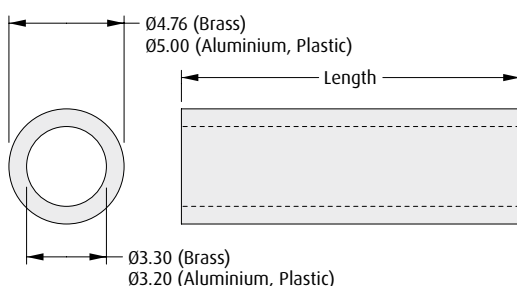
Materials

Base material: Brass, Aluminium or Plastic

Finish

Brass: Nickel

Aluminium: Clear Passivate



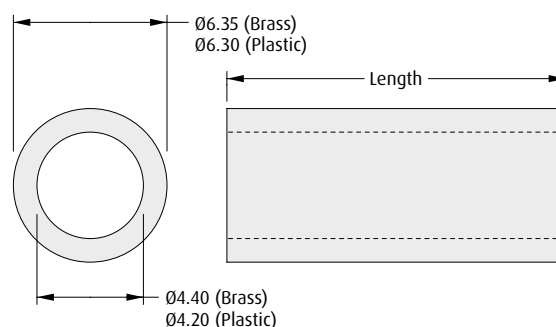
CLEARANCE FOR M4 THREAD

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

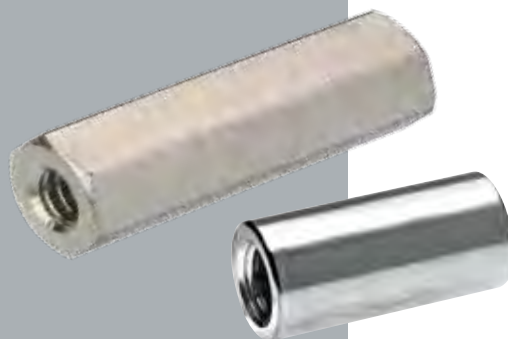
02	Nickel (Brass only)
94	White (Plastic only)

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	CIRCULAR
❖ Materials Base material: Brass or Plastic Finish: Nickel	❖ Materials Base material: Brass Finish: Nickel

HOW TO ORDER

RXX - XXX XX XX

SERIES CODE	
R25-100	Hexagonal, Brass, M2.5 Thread
R30-100	Hexagonal, Brass, M3 Thread
R30-101	Hexagonal, Brass, M3 Thread
R30-161	Hexagonal, Plastic, M3 Thread
R30-500	Circular, Brass, M3 Thread
R40-100	Hexagonal, Brass, M4 Thread

FINISH	
00	White (Plastic only)
02	Nickel (Brass only)

LENGTH (mm)	
06 to 16, 18, 20, 25	R30-161, R40-100
04 to 16, 18, 20, 25	Other

All dimensions in mm.

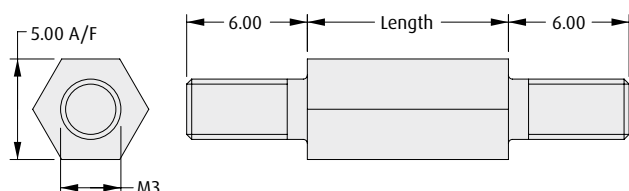
Metric Spacers

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.



MALE/MALE



HOW TO ORDER

R30 - 400 XX 02

SERIES CODE

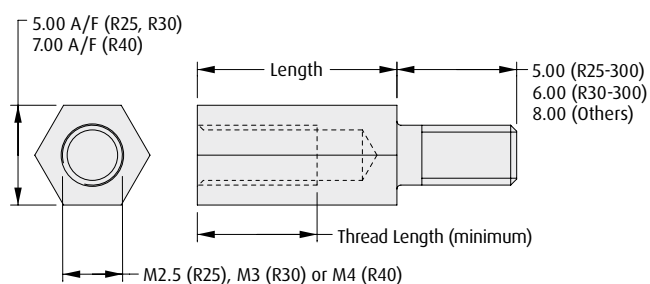
LENGTH (mm)

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

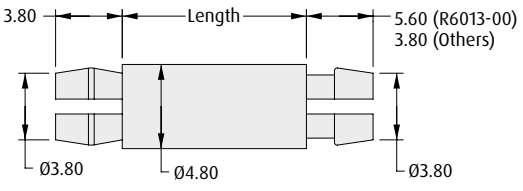
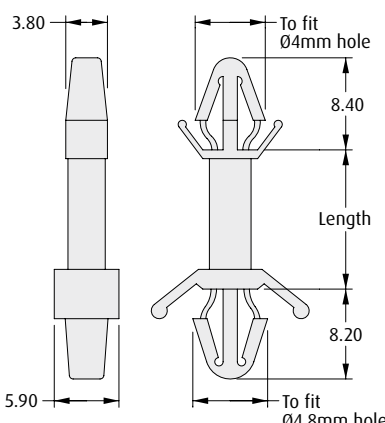
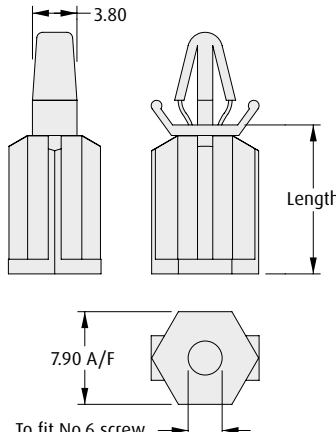
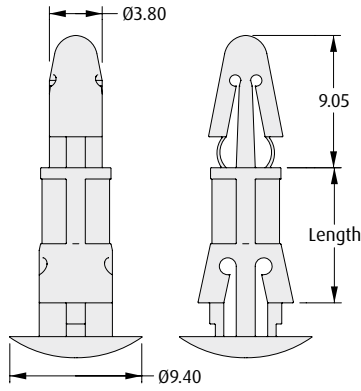
LENGTH (mm)

	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
	X	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
	X	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
	X	X	X	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	X	R40-300

All dimensions in mm.

Locking Spacers

❖ For further product information, please consult the applicable Technical Drawing online.

LOW PROFILE SELF-LOCK SPACERS	RIGID SELF-LOCK SPACERS																																				
❖ Material: Nylon 6/6 UL94V-2. ❖ Spacer design uses minimum board area. ❖ Recommended PC board thickness 1.60mm. ❖ Recommended hole size Ø4.00mm.  <table border="1" data-bbox="548 829 803 1092"> <thead> <tr> <th>ORDER CODE</th><th>LENGTH</th></tr> </thead> <tbody> <tr><td>R6003-00</td><td>3.2</td></tr> <tr><td>R6006-00</td><td>6.3</td></tr> <tr><td>R6008-00</td><td>8.0</td></tr> <tr><td>R6009-00</td><td>9.5</td></tr> <tr><td>R6010-00</td><td>10.5</td></tr> <tr><td>R6013-00</td><td>12.7</td></tr> </tbody> </table>	ORDER CODE	LENGTH	R6003-00	3.2	R6006-00	6.3	R6008-00	8.0	R6009-00	9.5	R6010-00	10.5	R6013-00	12.7	❖ Material: Nylon 6/6 UL94V-2. ❖ Spacers have wide ribs with locking fingers to provide a secure, rigid fit with extra stability. ❖ Recommended PC board thickness 1.60mm.  <table border="1" data-bbox="1247 682 1502 1092"> <thead> <tr> <th>ORDER CODE</th><th>LENGTH</th></tr> </thead> <tbody> <tr><td>R6405-00</td><td>4.8</td></tr> <tr><td>R6406-00</td><td>6.4</td></tr> <tr><td>R6410-00</td><td>9.6</td></tr> <tr><td>R6413-00</td><td>12.7</td></tr> <tr><td>R6416-00</td><td>15.9</td></tr> <tr><td>R6419-00</td><td>19.1</td></tr> <tr><td>R6422-00</td><td>22.2</td></tr> <tr><td>R6425-00</td><td>25.4</td></tr> <tr><td>R6428-00</td><td>28.5</td></tr> <tr><td>R6435-00</td><td>35.0</td></tr> </tbody> </table>	ORDER CODE	LENGTH	R6405-00	4.8	R6406-00	6.4	R6410-00	9.6	R6413-00	12.7	R6416-00	15.9	R6419-00	19.1	R6422-00	22.2	R6425-00	25.4	R6428-00	28.5	R6435-00	35.0
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SCREW FIXING SELF-LOCK SPACERS	REVERSE LOCK SPACERS																																				
❖ Material: Nylon 6/6 UL94V-2. ❖ Fit spacer to underside of upper board, then attach lower board to bottom of spacer with No. 6 (1/8") screw. ❖ Recommended hole sizes: Ø4.00mm (upper board), Ø3.60mm (lower board). ❖ Recommended PC board thickness 2.00mm (upper board).  <table border="1" data-bbox="548 1627 803 1890"> <thead> <tr> <th>ORDER CODE</th><th>LENGTH</th></tr> </thead> <tbody> <tr><td>R6505-00</td><td>4.9</td></tr> <tr><td>R6510-00</td><td>9.6</td></tr> <tr><td>R6513-00</td><td>12.7</td></tr> <tr><td>R6519-00</td><td>19.1</td></tr> <tr><td>R6528-00</td><td>28.5</td></tr> <tr><td>R6535-00</td><td>35.0</td></tr> </tbody> </table>	ORDER CODE	LENGTH	R6505-00	4.9	R6510-00	9.6	R6513-00	12.7	R6519-00	19.1	R6528-00	28.5	R6535-00	35.0	❖ Material: Nylon 6/6 UL94V-2. ❖ Fit spacers from underside of board. ❖ Recommended PC board thickness 0.50 – 1.80mm. ❖ Recommended hole sizes: Ø4.00mm (upper board), Ø5.50mm (lower board).  <table border="1" data-bbox="1247 1627 1502 1890"> <thead> <tr> <th>ORDER CODE</th><th>LENGTH</th></tr> </thead> <tbody> <tr><td>R6706-00</td><td>6.1</td></tr> <tr><td>R6708-00</td><td>8.0</td></tr> <tr><td>R6710-00</td><td>9.8</td></tr> <tr><td>R6712-00</td><td>12.0</td></tr> <tr><td>R6714-00</td><td>14.0</td></tr> <tr><td>R6718-00</td><td>18.0</td></tr> </tbody> </table>	ORDER CODE	LENGTH	R6706-00	6.1	R6708-00	8.0	R6710-00	9.8	R6712-00	12.0	R6714-00	14.0	R6718-00	18.0								
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All dimensions in mm.

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M80-807	139	P13-xx23	244	S0961	8	S8091	259
M80-808	139	P19-xx21	245	S0971	7	S8101	259
M80-809	139	P20-0245R	251	S0981	8	S8111	259
M80-810	139	P20-0345R	251	S0991	8	S8121	259
M80-811	139	P20-0445R	251	S1001	8	S8131	259
M80-812	139	P20-0545R	251	S13-503	244	S9091	229
M80-813	139	P25-0822	247	S1411	7	S9101	229
M80-816	139	P25-4021	246	S1621	260	S9111	230
M80-817	139	P25-xx23	247	S1711	7	S9121	230
M80-826	137	P25-xx26	249	S1721	7	S9131	230
M80-827	137	P70-1000045R	255	S1731	260	S9141	230
M80-828	137	P70-1010045R	255	S1741	12	T5747	141
M80-839	136	P70-1020045R	255	S1751	258	Z125-900	51
M80-840	125	P70-1030045R	255	S1761	12	Z125-901	51
M80-841	136	P70-1100045R	255	S1791	12	Z125-902	51
M80-842	135	P70-2000045R	252	S1911	260	Z125-926	51
M80-843	135	P70-2010045R	252	S1941	15	Z20-320	203
M80-846	135	P70-2100045R	253	S19-501	245	Z22-020	187
M80-850	125	P70-2200045	253	S1951	15	Z30-021	152
M80-851	136	P70-2300045R	253	S25-501	246	Z300-902	62
M80-852	133	P70-5000045R	254	S25-xx2	248	Z50-020	172
M80-853	134	P70-5100045	254	S25-xx6	249	Z80-058	62
M80-854	134	P70-6000045R	252	S2711	7	Z80-193	141
M80-863	134	P70-7000045	254	S2751	258	Z80-244	144
M80-880	130	R25-100	266	S2761	258	Z80-255	144
M80-881	133	R30-100	266	S70-125161545R	256	Z80-258	144
M80-882	133	R30-101	266	S70-138181045R	256	Z80-259	144
M80-883	139	R30-161	266	S70-138305045R	256	Z80-280	142
M80-884	139	R30-300	267	S70-220101045R	256	Z80-290	142
M80-888	127	R30-301	267	S70-220102045R	256	Z80-291	141
M80-889	127	R30-400	267	S70-332002045R	256	Z80-292	141
M80-898	127	R30-500	266	S7041	14	Z80-293	141
M80-899	127	R30-600	265	S7051	14	Z80-298	52
M80-91x	99	R30-601	265	S7061	12	Z80-298	142
M80-91x	129	R30-620	265	S7071	15	Z80-299	142
M80-92x	99	R30-670	265	S7081	15	Z9950-00	52
M80-92x	129	R30-671	265	S7091	12	Z9950-00	143
M80-940	97	R40-100	266	S7101	14	Z9951-00	62
M80-941	97	R40-300	267	S7111	14	Z9951-00	143
M80-942	115	R6003 to R6013	268	S7121	12	Z9952-00	52
M80-943	115	R6104-02	219	S7131	13	Z9952-00	143
M80-FC305F1-xx	80	R6405 to R6435	268	S7141	13	Z9953-00	62
M80-MH313M5-xx	82	R6505 to R6535	268	S7151	13	Z9953-00	143
M80-MH314M5-xx	82	R6706 to R6718	268	S7161	13		
M80-MV311M2-xx	81	S01-30200500	9	S7171	13		
M80-MV312M3-xx	81	S01-30300500	9	S7181	13		
M80-PF5	71	S01-50250500	9	S7191	13		
M83-011	120	S01-806005KIT	10	S7221	11		
M83-013	120	S02-20150300	9	S7231	11		
M83-LFC1F2Nxx-0000-000	119	S02-25200300	9	S7241	11		
M83-LFD1F2Nxx-0000-000	119	S02-30200250	9	S7251	11		
M83-LFT1F2Nxx-0000-000	118	S07-46	261	S7261	11		
M83-LML3M7Nxx-0000-000	122	S08-46	261	S7271	11		

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