Gecko

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Gecko Connectors Introduction

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

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

- 2A per contact (all electrically loaded; 2.8A per individual contact)
- 4-finger Patented* contact design to maintain electrical contact through high vibration and shock
- Beryllium Copper Contact for improved temperature range: -65°C to +150°C
- 1,000 Mating cycles durability

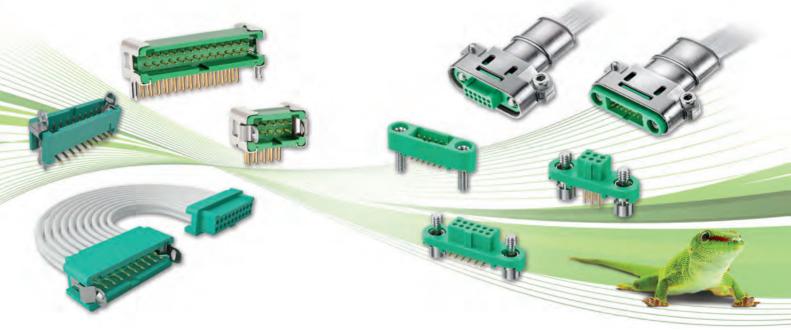
* Granted US9017089, Pending GB2501063, Pending EP2642604

- 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% CVCM, 0.26 WVR (Water Vapour Recovered)
- All PCB connectors available in Tape and Reel for automation

Gecko with Latches Gecko Screw-Lok

- 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

- 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 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.



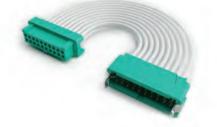
No. 1 Position identified, Potting Wall

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



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 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.



Keyway Polarisation Points

3 polarising points on each component prevent mis-mating.



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 Screw-Lok - Maximum strain relief

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



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Gecko Connectors Specifications

: Materials

Mouldings:

Female contacts:

Male contacts PCT/SMT: Crimp:

Finish:

Glass-filled High Temperature Thermoplastic UL94V-0 Beryllium Copper

Phosphor Bronze Brass 0.2 - 0.3µm (8 - 12µ") Gold, over 1.5 – 2.0µm (60 – 80µ") Nickel Copper Alloy

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/s² (20G) duration 2 hours
*Bump severity:	390m/s² (40G), 4000 ±10 bumps
*Shock severity:	981m/s² (100G) for 6ms in Z axis 490m/s² (50G) for 11ms in X & Y axes
*Acceleration severity:	490m/s² (50G)

* Tested with latched connectors.



: Electrical

Current

Individual contacts in isolation: All contacts simultaneously:

Working voltage At sea level 1006 mbar: At altitude 44 mbar:

Voltage proof At sea level 1013 mbar:

Contact resistance Initial: After conditioning:

Insulation resistance Initial: After conditioning:

2.8A max (At 25°C) 2.0A max (At 25°C)

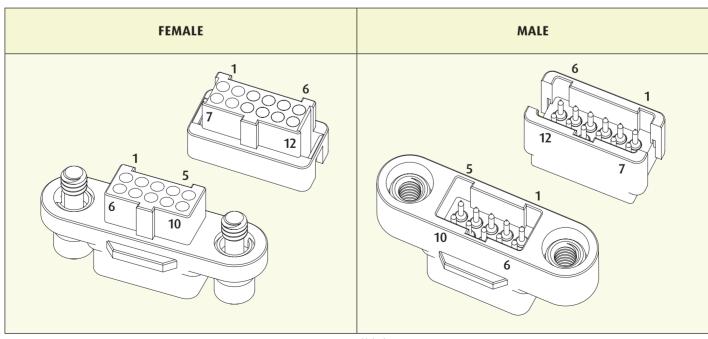
450V DC or AC peak 250V DC or AC peak

600V DC or AC peak

20mΩ max $25m\Omega$ max

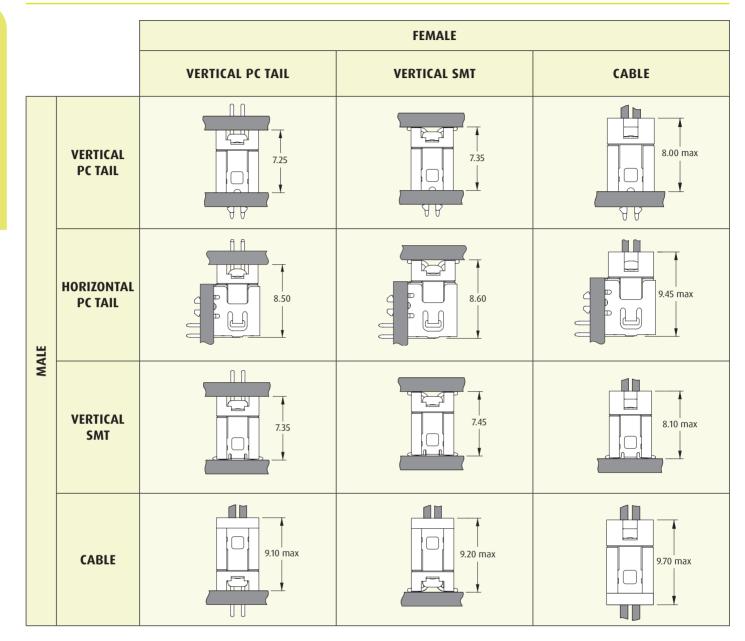
 $10G\Omega$ min at 500V DC >1G Ω min at 500V DC

Pin Numbering





Gecko Mating Profiles



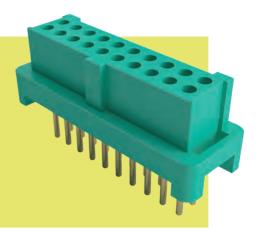
GECKO

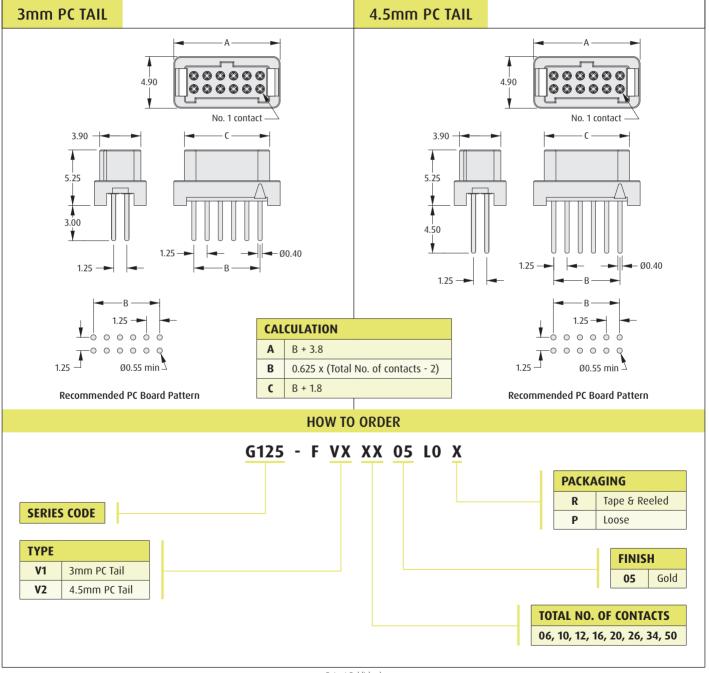
All dimensions in mm.



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.



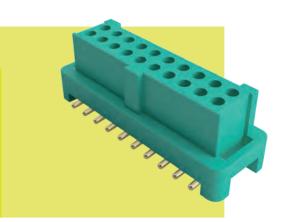




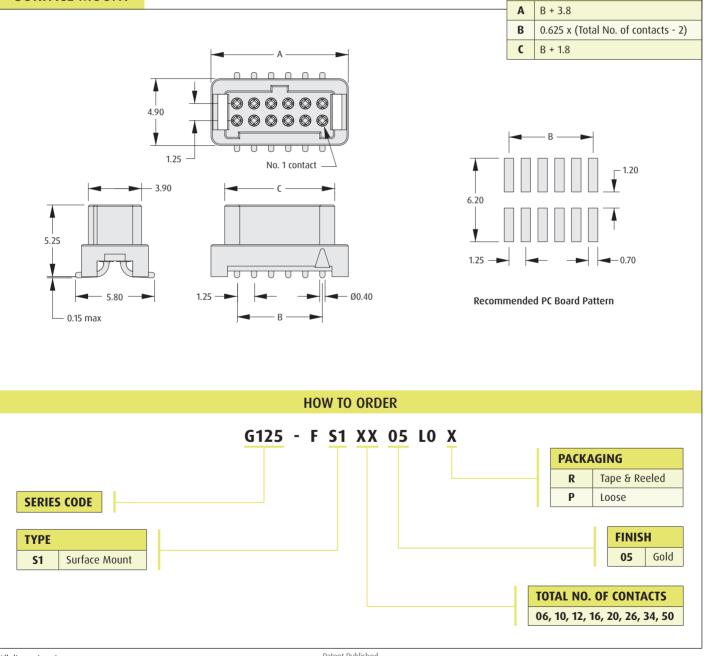
Female Surface Mount

- 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.

SURFACE MOUNT



CALCULATION



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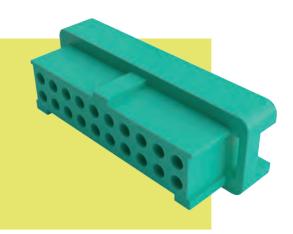
Patent Published

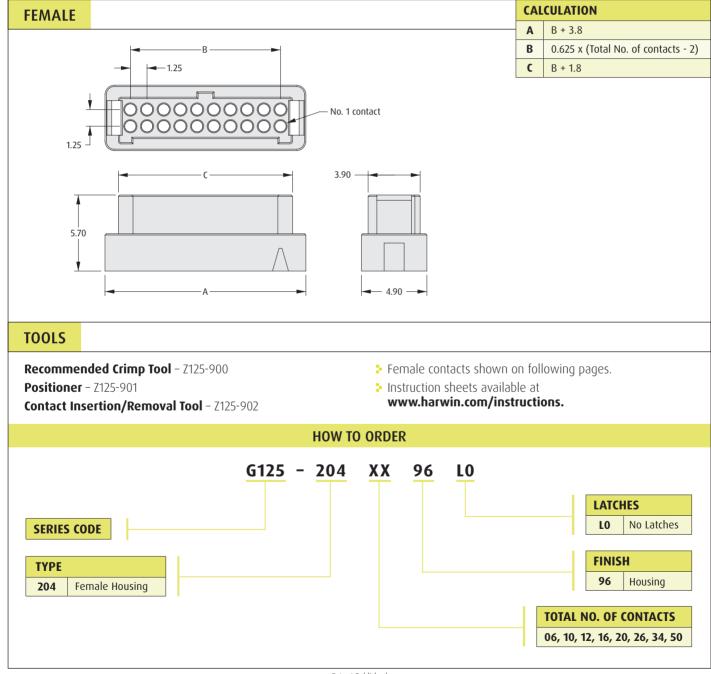
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Female Crimp Housings

- 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.



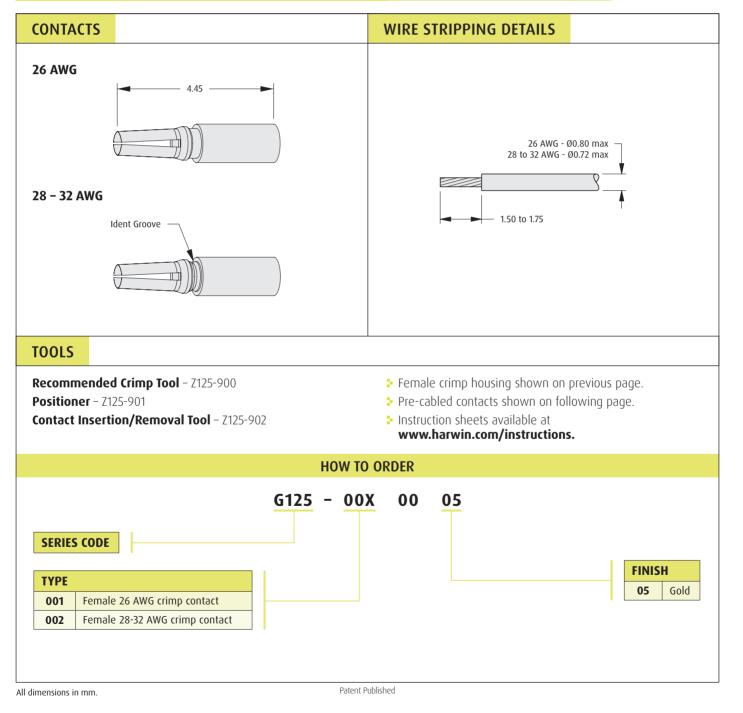




Female Crimp Contacts

- 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.







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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			
Cable Length	Cable Length			
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			
SERIES CODE GENDER - FIRST END F Female CABLE SIZE W1 26 AWG W2 28 AWG W3 30 AWG	CABLE COLOUR 94 White TERMINATION - SECOND END L Loose cut end F Female CABLE LENGTH 0150 150mm 02000 200mm (double coded)			
W4 32 AWG	0300 300mm (double-ended) 0450 450mm (single-ended)			



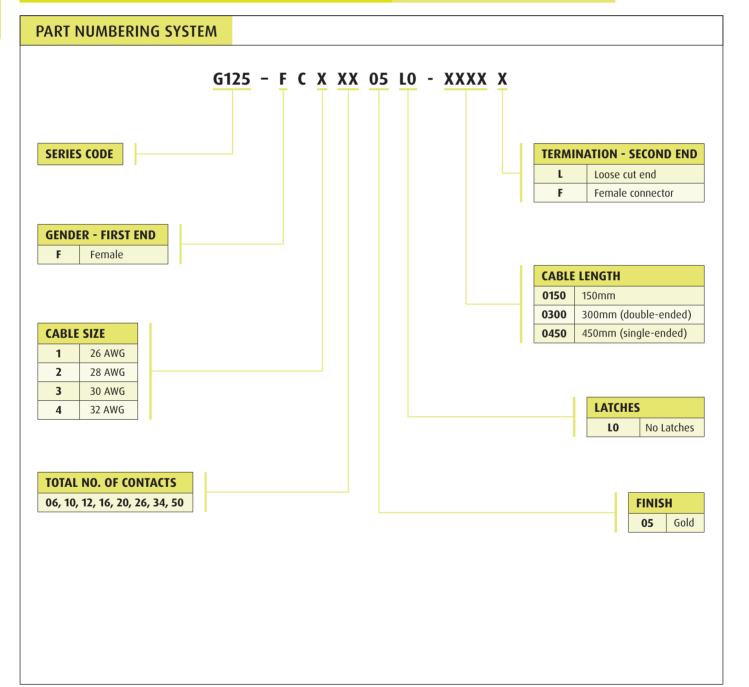
www.harwin.com

Patent Published

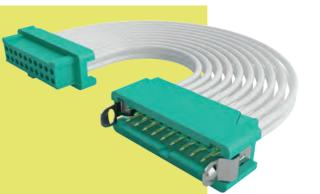


Female Cable Assemblies

- 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.



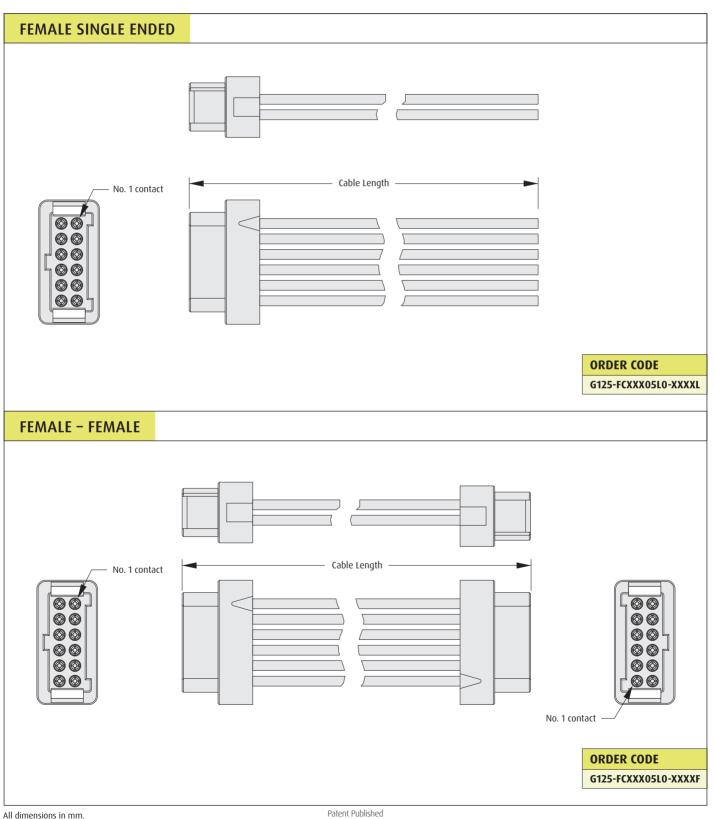




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Female Cable Assemblies

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

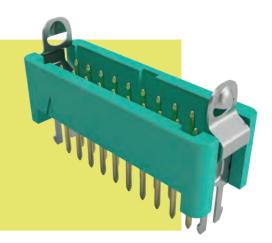


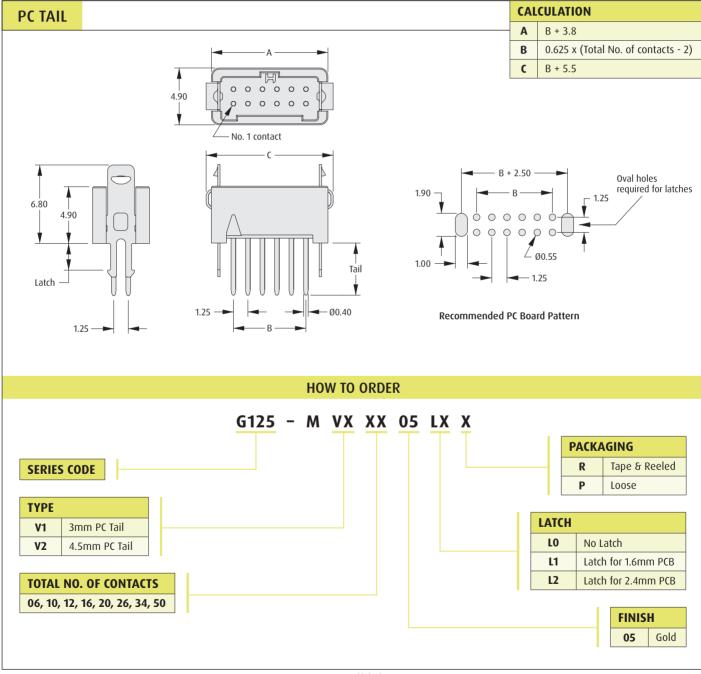
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Male Vertical PC Tail

- 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.

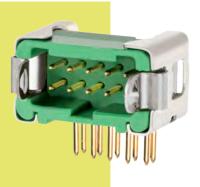


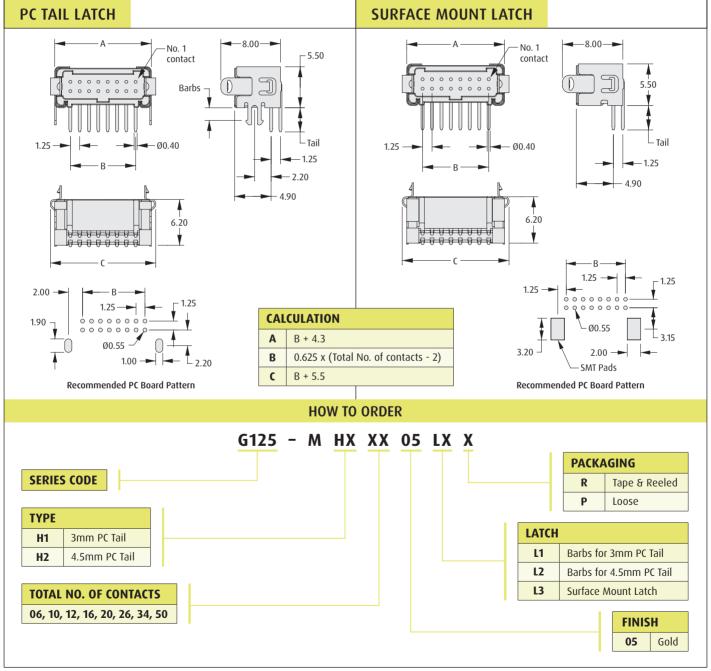




Male Horizontal PC Tail – Latched

- Secure fixing to the PCB via retention barbs 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.

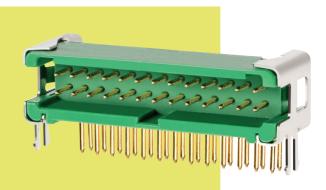


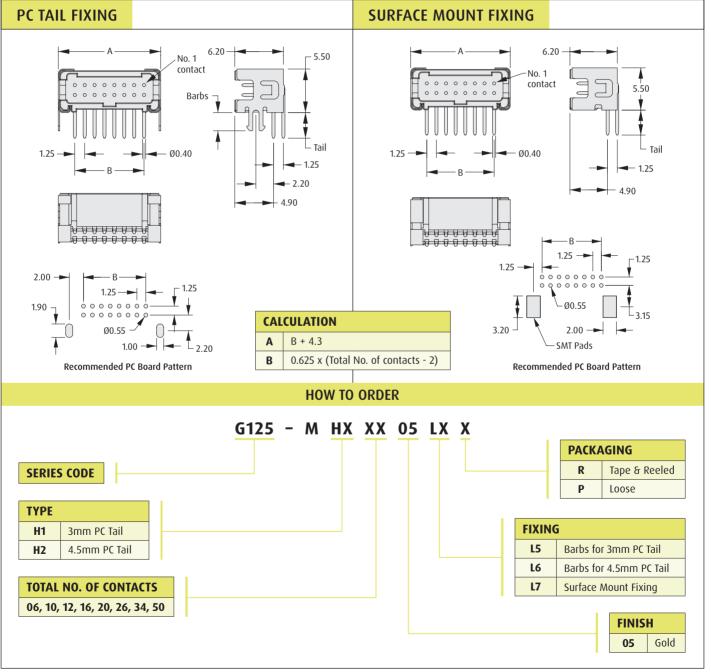




Male Horizontal PC Tail – Without Latch

- 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.

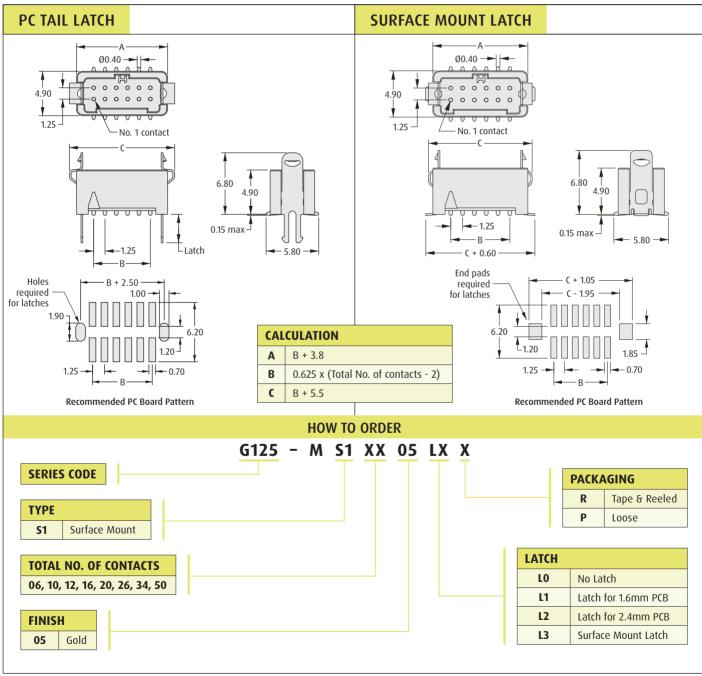






Male Vertical Surface Mount

- 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.



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HULLING OF

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All dimensions in mm.

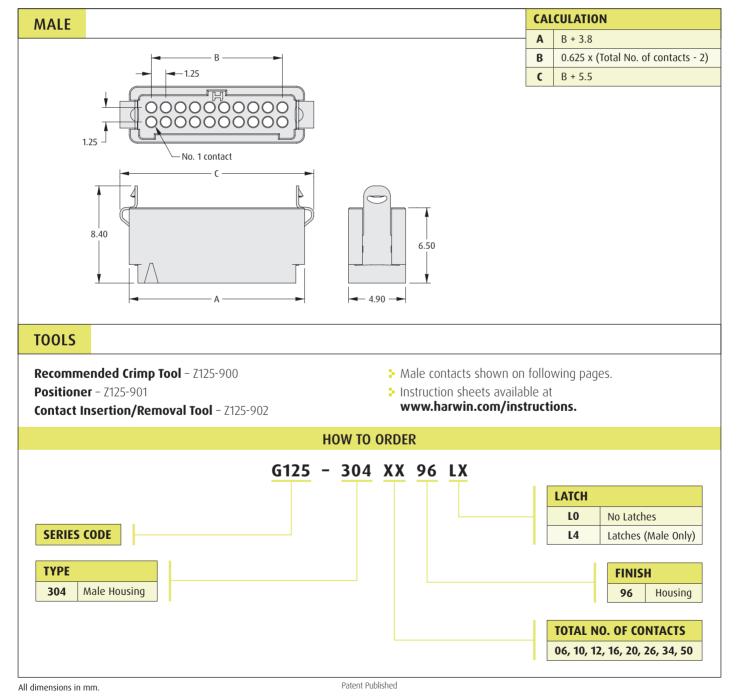


Male Crimp Housing

- 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.



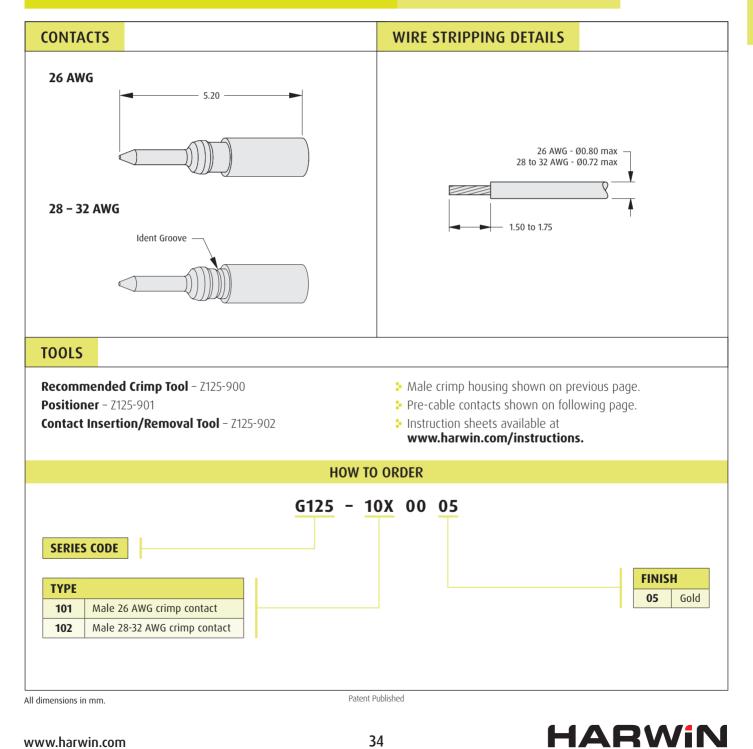
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Male Crimp Contacts

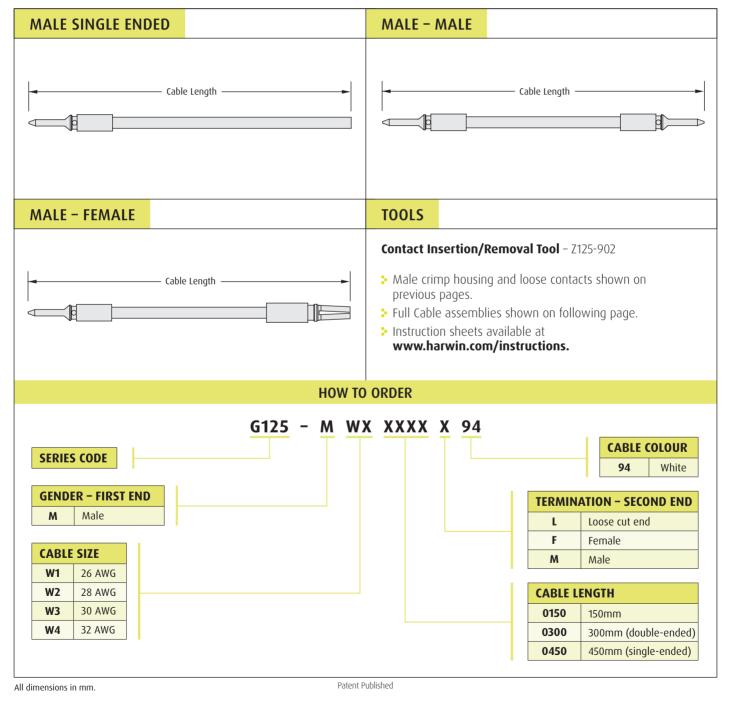
- Crimp barrel meets all crimp guidelines and standards.
- 2A current capacity, resists high vibration and shock.
- ▶ Withstands extremes of temperature: -65°C to +150°C.
- Instruction video online at www.harwin.com/harwintv.





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.



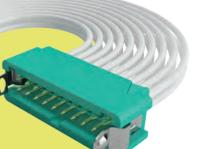


35

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.

G125 - M C X XX 05 LX - XXXX X **SERIES CODE TERMINATION - SECOND END** L Loose cut end F Female connector Male connector Μ **GENDER - FIRST END** Μ Male **CABLE LENGTH** 0150 150mm **CABLE SIZE** 0300 300mm (double-ended) 1 26 AWG 450mm (single-ended) 0450 2 28 AWG 30 AWG 3 4 32 AWG LATCHES LO No Latches L4 Latches (male connectors only) **TOTAL NO. OF CONTACTS** 06, 10, 12, 16, 20, 26, 34, 50 FINISH 05 Gold



GECKO

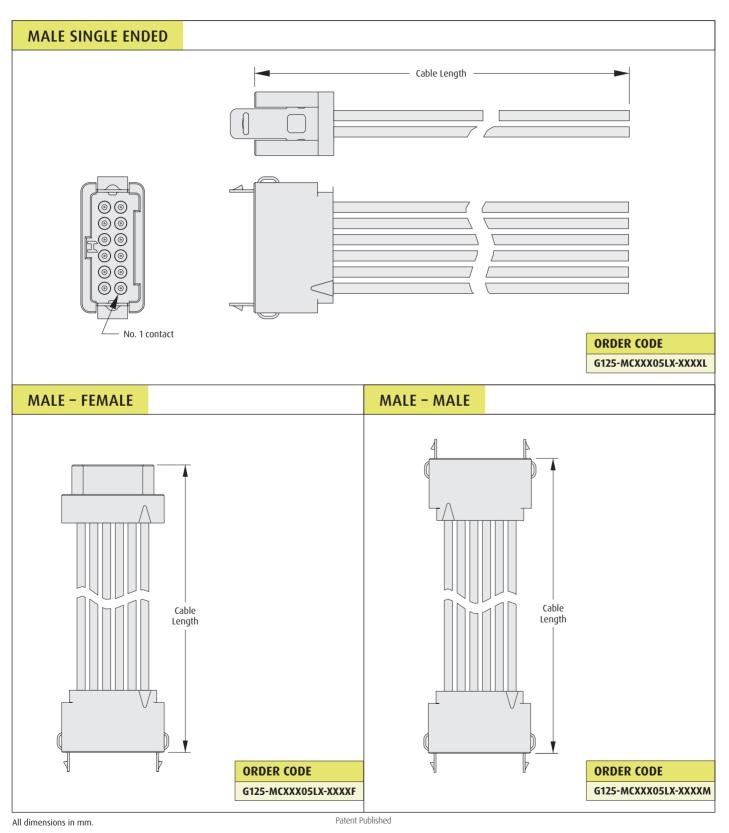
PART NUMBERING SYSTEM

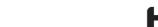
All dimensions in mm.



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.

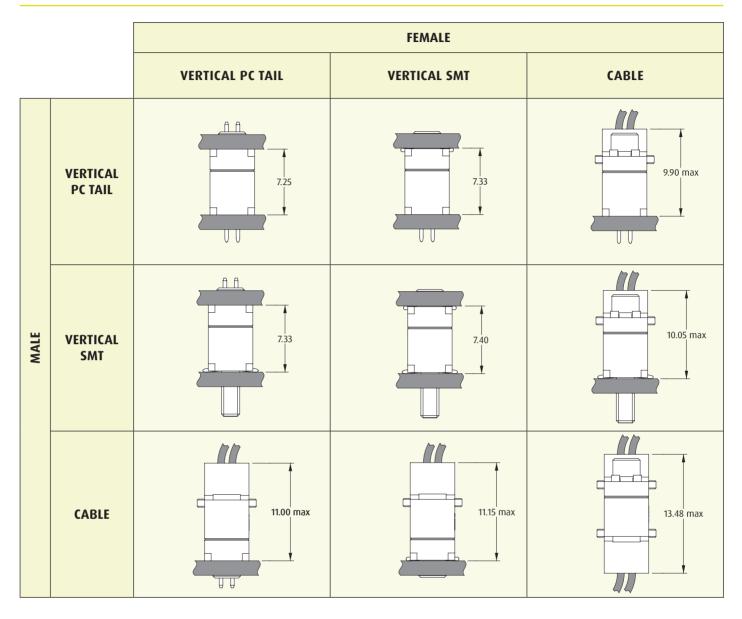




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Gecko Screw-Lok Mating Profiles



All dimensions in mm.



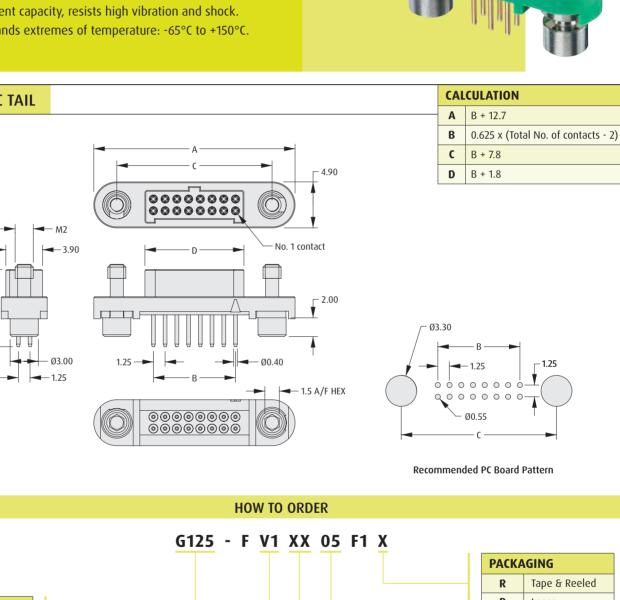
Female PC Tail

- 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.

3mm PC TAIL

5.25

3.00 -



Ρ Loose **SERIES CODE FINISH** TYPE Gold 05 V1 3mm PC Tail TOTAL NO. OF CONTACTS 06, 10, 12, 16

All dimensions in mm.



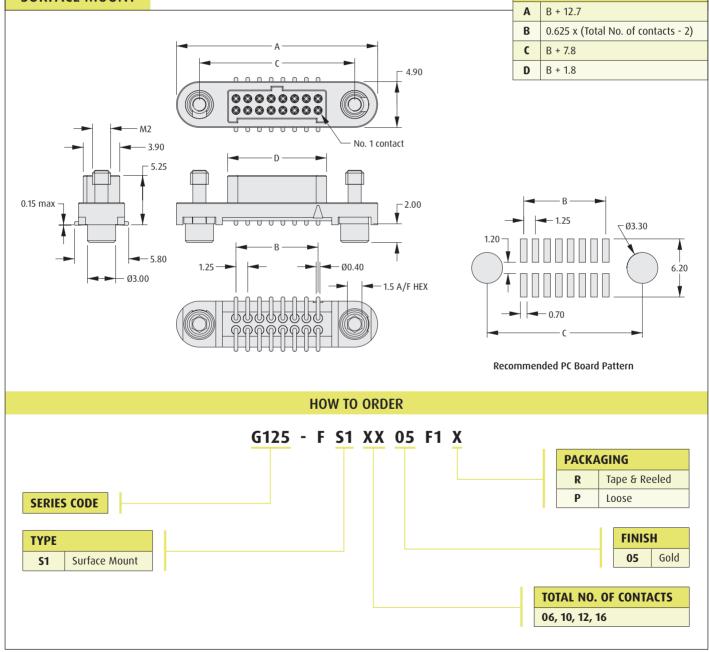
GECKO SCREW-LOK

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



All dimensions in mm.

Patent Published

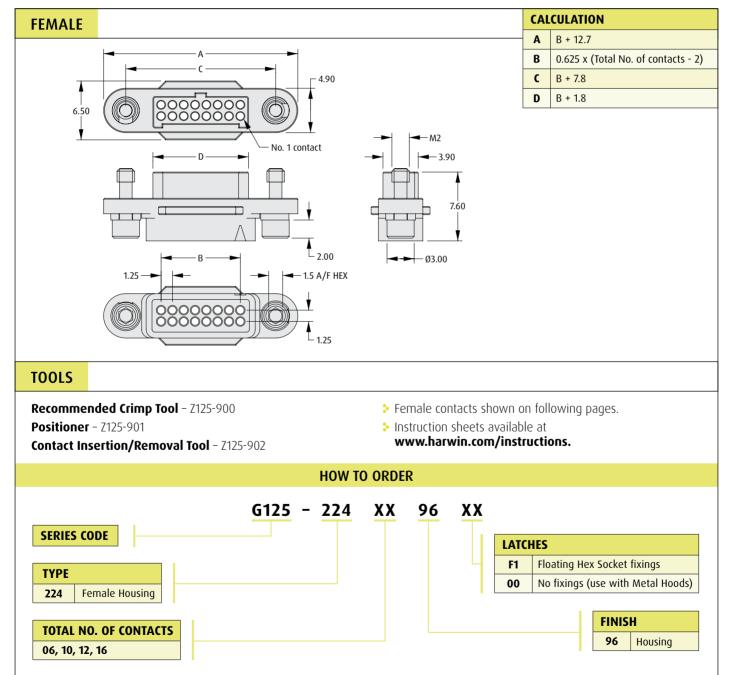


CALCULATION

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

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All dimensions in mm.

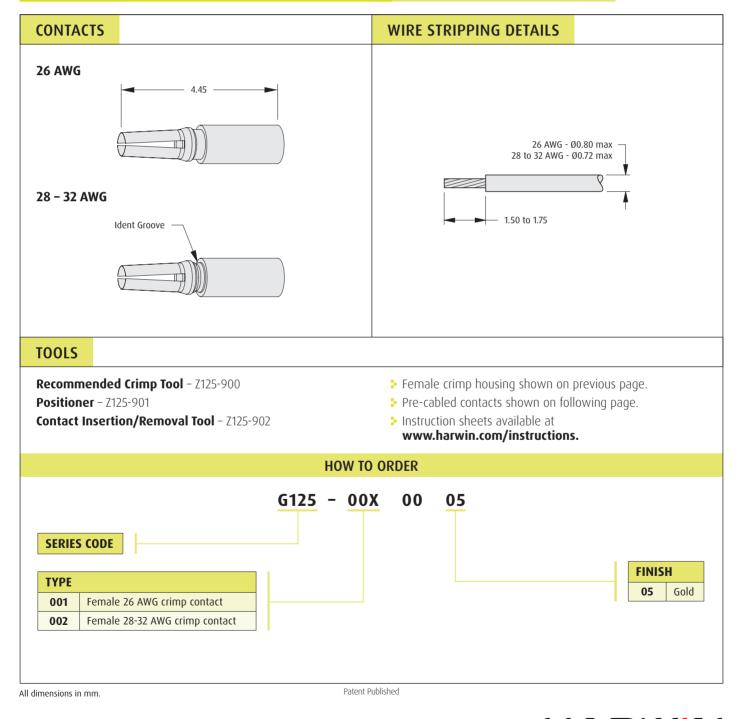


Female Crimp Contacts

- 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.



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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.

FEMALE SINGLE ENDED	FEMALE – FEMALE			
Cable Length	Cable Length			
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			
G125 - F WX SERIES CODE	CABLE COLOUR 94 White			
F Female	TERMINATION - SECOND END			
	L Loose cut end			
CABLE SIZE	F Female			
W1 26 AWG W2 28 AWG				
W2 28 AWG W3 30 AWG	0150 150mm			
W4 32 AWG	0300 300mm (double-ended)			
	0450 450mm (single-ended)			

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All dimensions in mm.

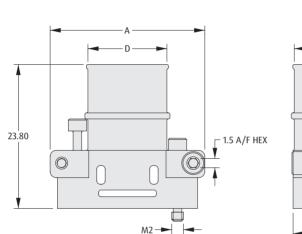
Patent Published

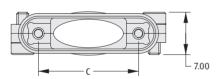


Female Metal Hood / Backshell

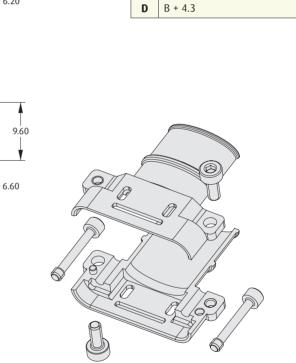
- Supplied as a kit, including 2 metal hood halves, tie-band (not shown), extended fixing screws for female connectors, and short screws to join the two hood halves together.
- Use with M80-224xx9600 female crimp housings without fixings - fixings are supplied with these hoods.
- Tie-band can be used to attached external braid, to construct a shielded cable assembly.

HOOD / BACKSHELL









CALCULATION

B + 16.8

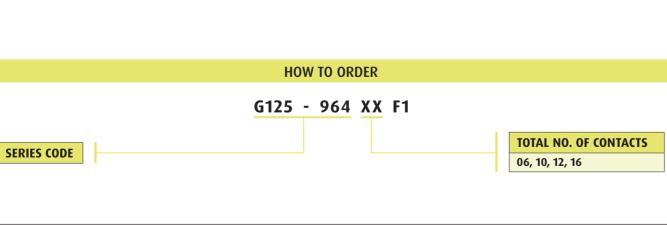
B + 7.8

0.625 x (Total No. of contacts - 2)

Α

В

C



6.20

GECKO SCREW-LOK

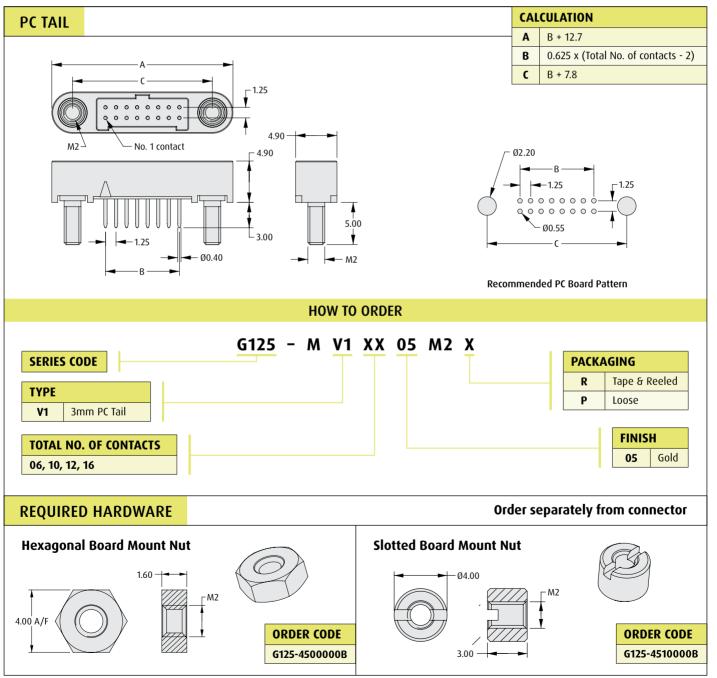
All dimensions in mm.



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.





All dimensions in mm.



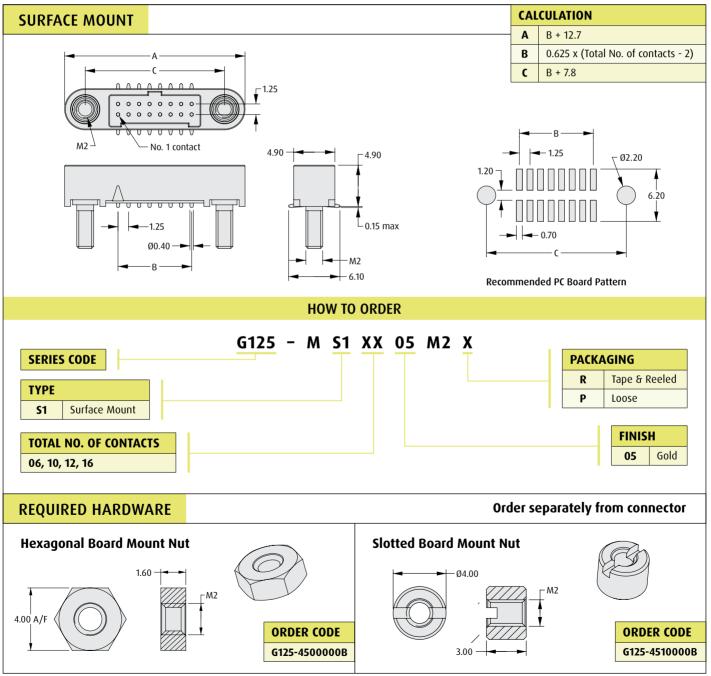
GECKO SCREW-LOK

and the

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.



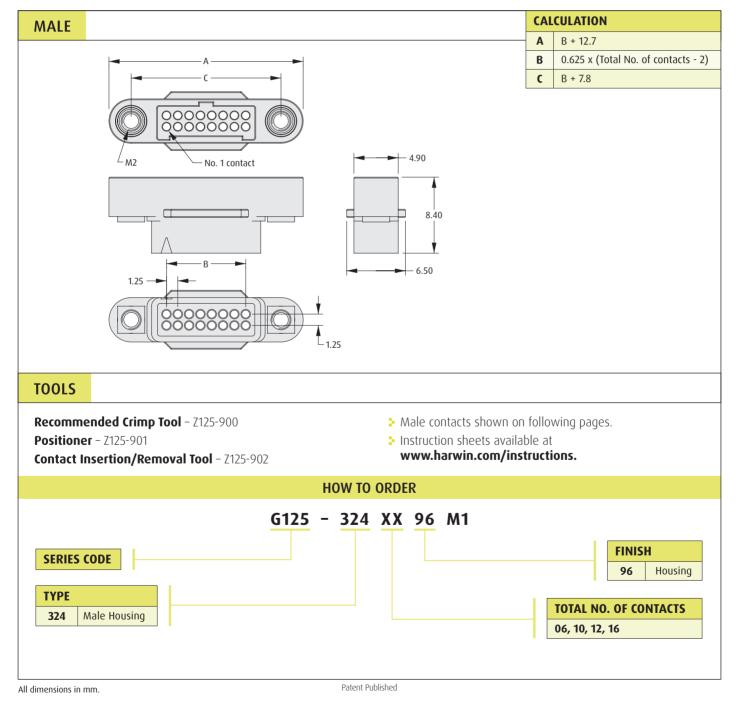
All dimensions in mm.



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.





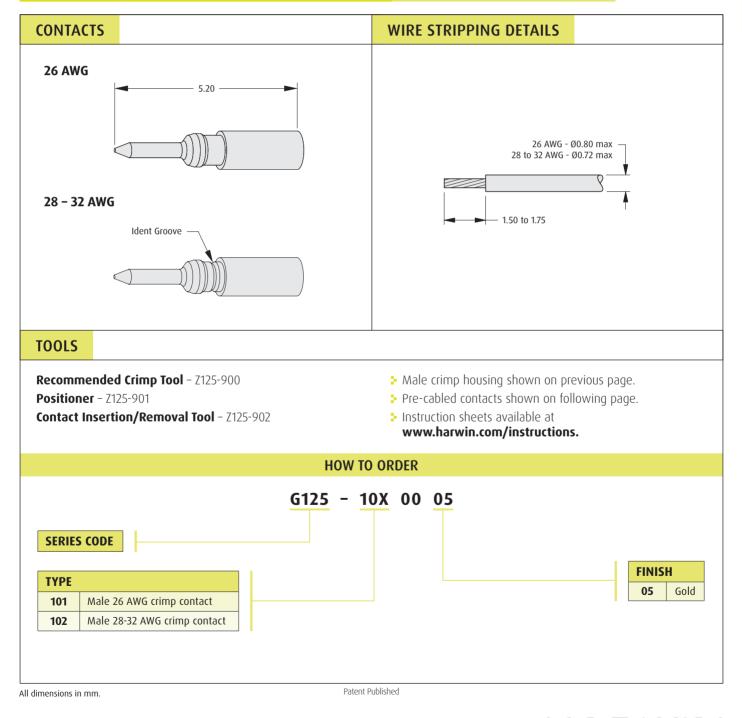
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Male Crimp Contacts

- 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.

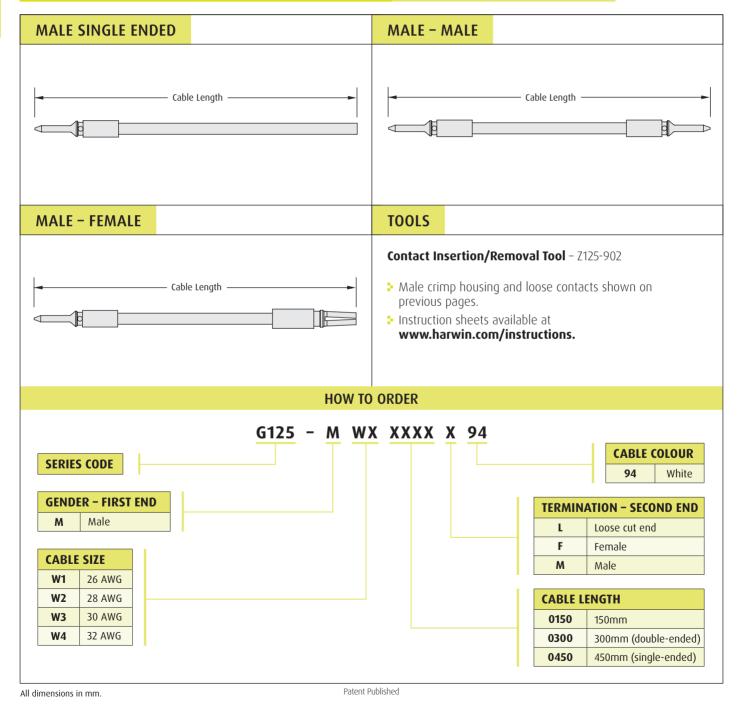


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Male Crimp Contacts – Pre-Crimped Wires

- 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.

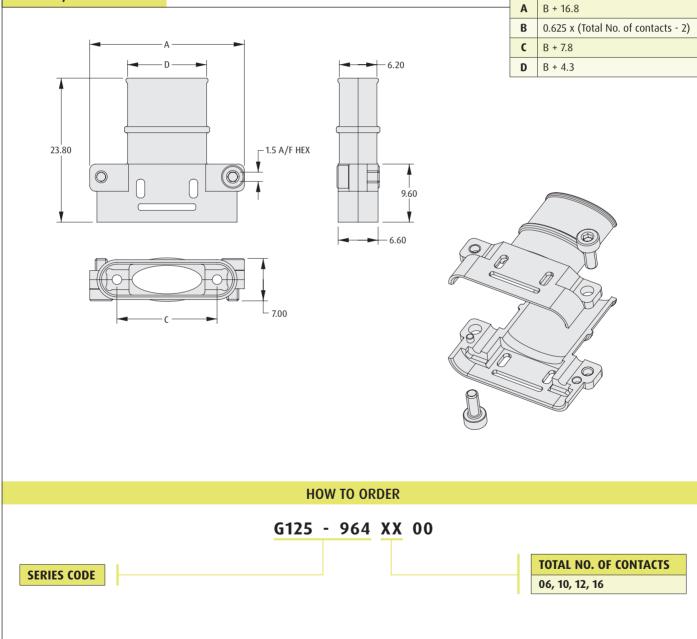




Male Metal Hood / Backshell

- 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 M80-324xx9600 male crimp housings.
- Tie-band can be used to attached external braid, to construct a shielded cable assembly.

HOOD / BACKSHELL



All dimensions in mm.

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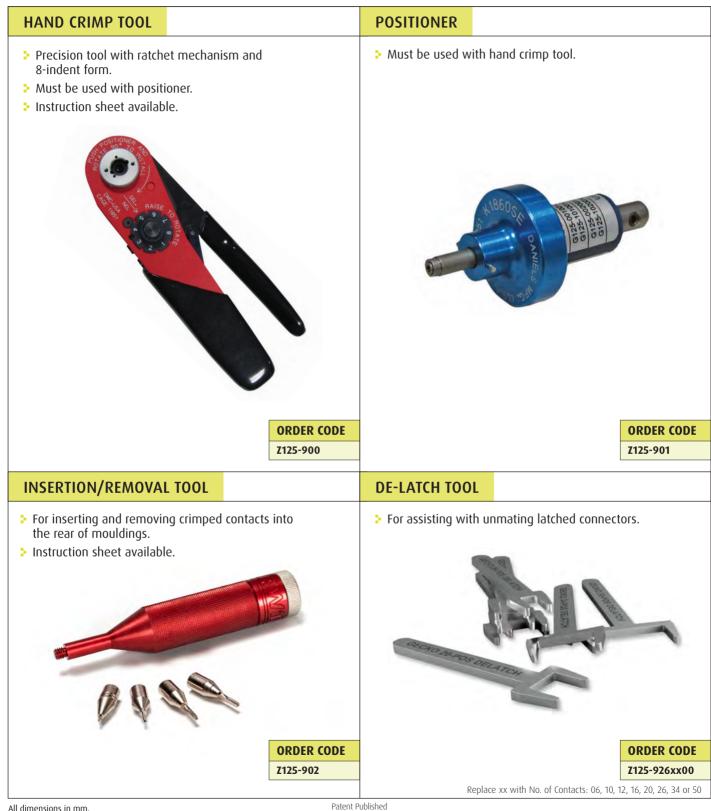
Patent Published



CALCULATION

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.



All dimensions in mm.



Notes

