Gecko

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Specifications Mating Profiles

Female PCB Connectors

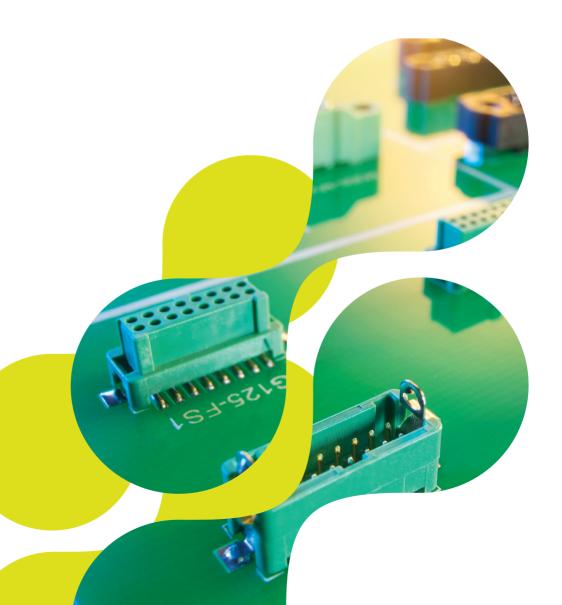
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Male Cable Assemblies

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Gecko Connectors Introduction

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

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

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

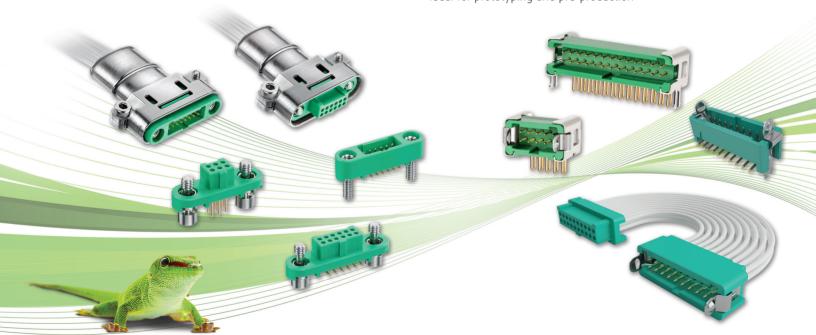
- Weight and Space-saving over Micro-D connector products
- Future-proofed Materials Halogen-free, PFOS-free, SVHC-free and RoHS compliant
- Low outgassing properties 0.68% TML, 0.01% CVCM, 0.26 WVR (Water Vapour Recovered)
- ► All PCB connectors available in Tape and Reel for automation

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





^{*} Granted US9017089, Pending GB2501063, Pending EP2642604

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.





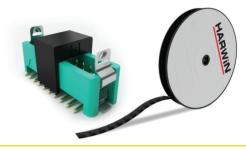
No. 1 Position identified, Potting Wall

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.



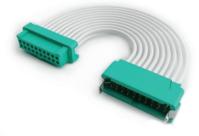
Gecko Screw-Lok - Robust Metal Backshells

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 Mating forces (per contact pair)

Female contacts: Beryllium Copper

Male contacts

PCT/SMT: Phosphor Bronze

Crimp: Brass

Finish: 0.2 - 0.3um (8 - 12u") 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: 25m0 max

Insulation resistance

10GΩ min at 500V DC Initial: After conditioning: >1GΩ min at 500V DC

⇒ Mechanical

Contact durability: 1000 operations

Insertion force: 2.8N max 0.2N min Withdrawal force: 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 6 hours 390m/s² (40G), 4000 ±10 bumps

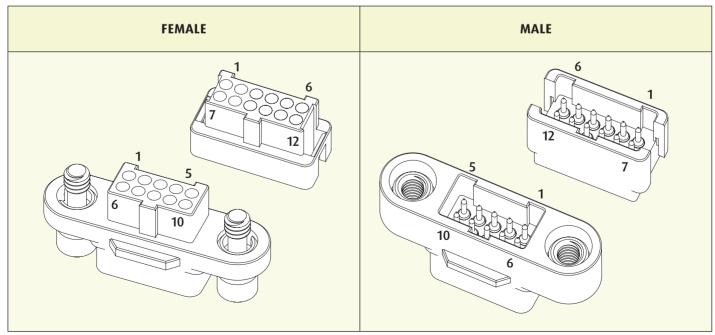
*Bump severity: *Shock severity: 981m/s² (100G) for 6ms in Z axis

490m/s² (50G) for 11ms in X & Y axes

*Acceleration severity: 490m/s² (50G)

* Tested with latched connectors.

Pin Numbering







Gecko Screw-Lok Mating Profiles

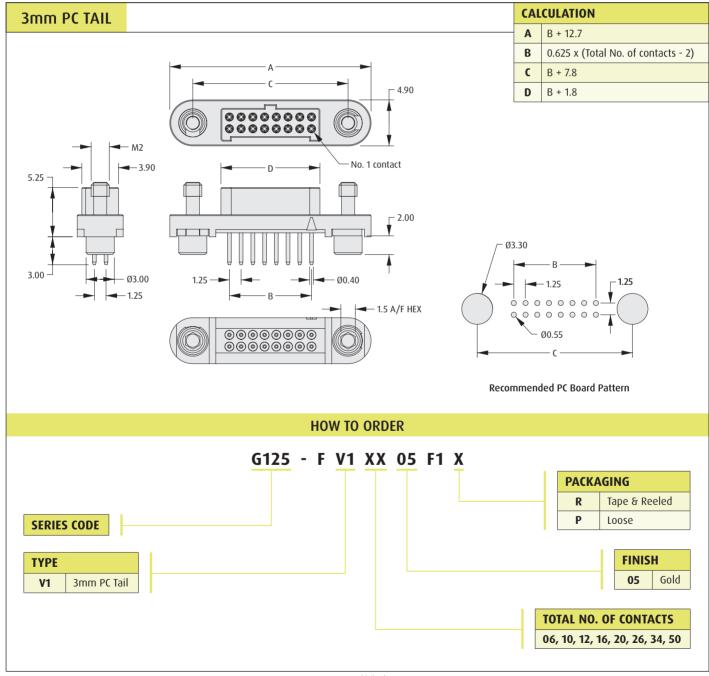
| | | FEMALE | | | |
|------|---------------------|------------------|--------------|-----------|--|
| | | VERTICAL PC TAIL | VERTICAL SMT | CABLE | |
| MALE | VERTICAL PC TAIL | 7.25 | 7.33 | 9.90 max | |
| | VERTICAL SMT | 7.33 | 7.40 | 10.05 max | |
| | CABLE | 11.00 max | 11.15 max | 13.48 max |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

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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.



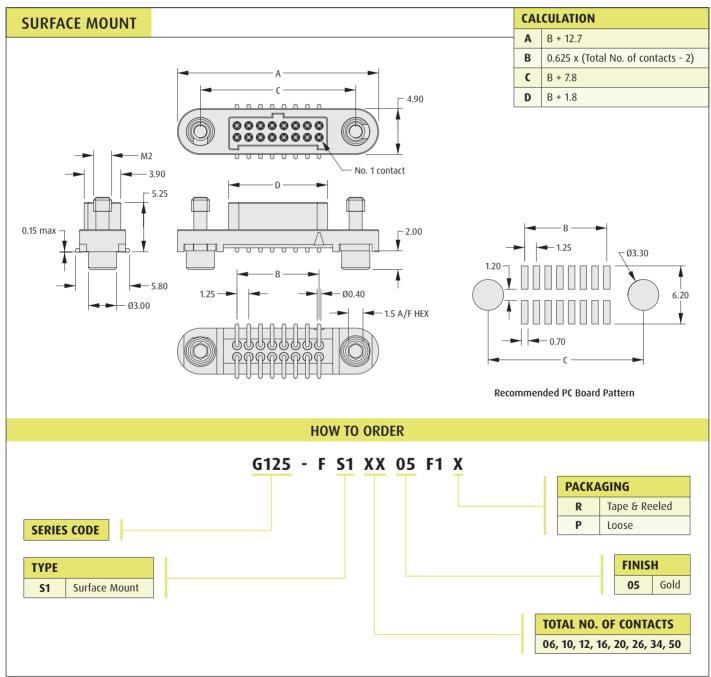




Female Surface Mount

- ♣ 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.



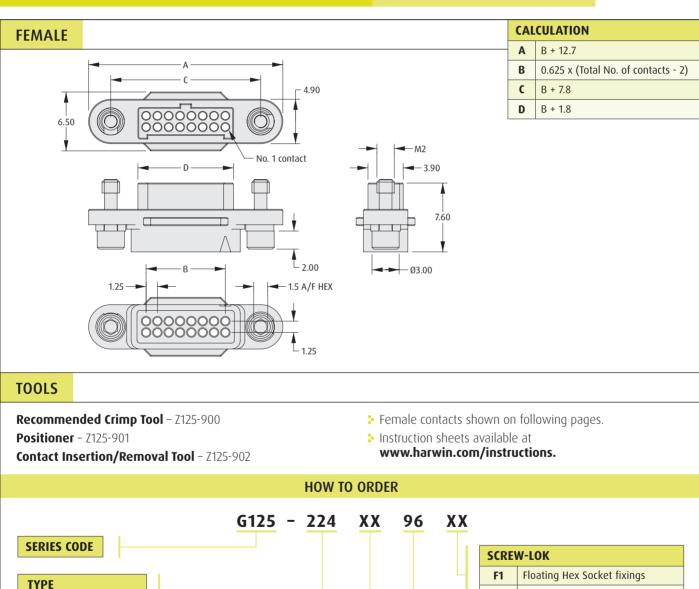




Female Crimp Housings

- 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.





All dimensions in mm. Patent Published

No fixings (use with Metal Hoods)

FINISH

Housing

224

Female Housing

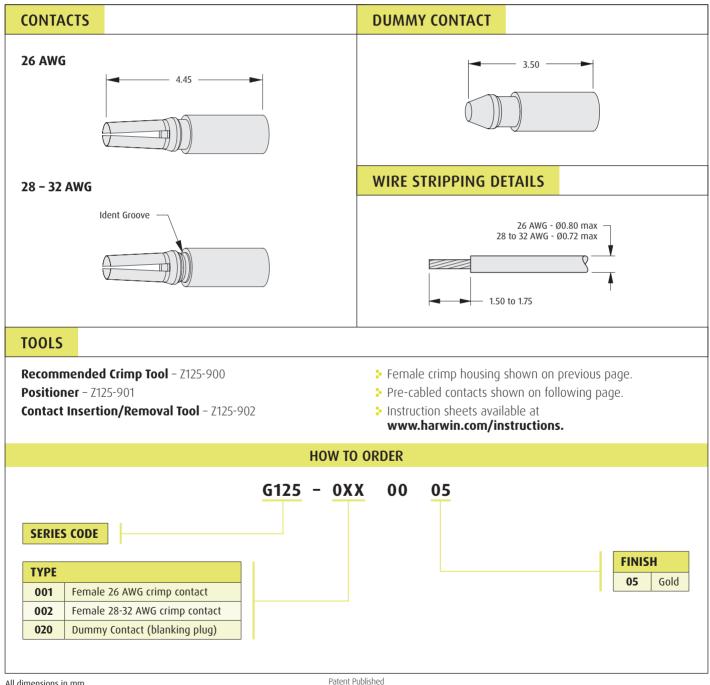
TOTAL NO. OF CONTACTS

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

Female Crimp Contacts, Dummy Contact

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



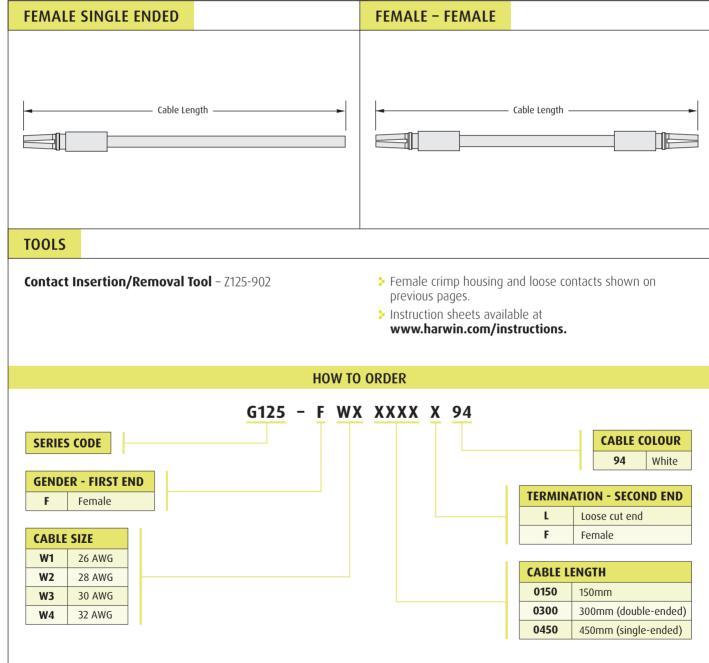


All dimensions in mm.

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 visit harwin.com/cable-assemblies and fill in your requirements.



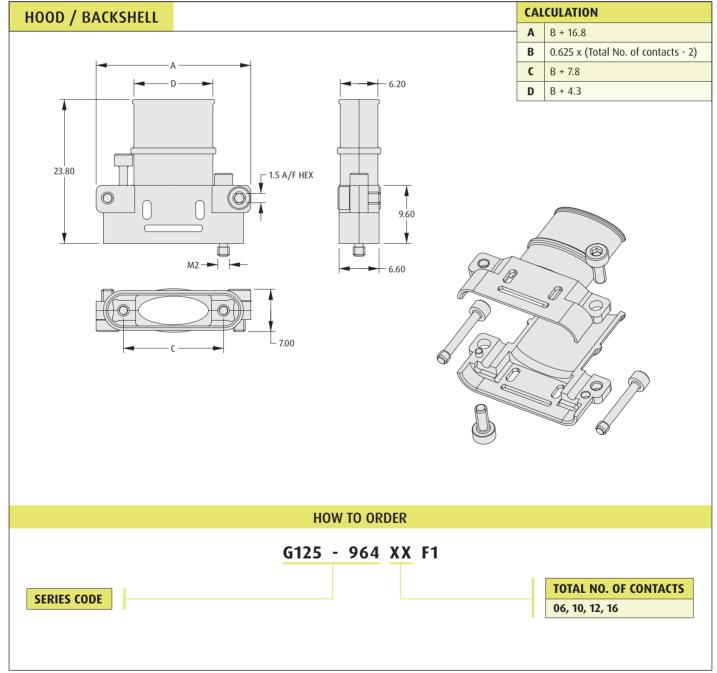




Female Metal Hood / Backshell

- ➤ 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.

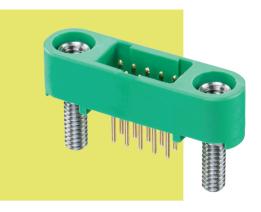


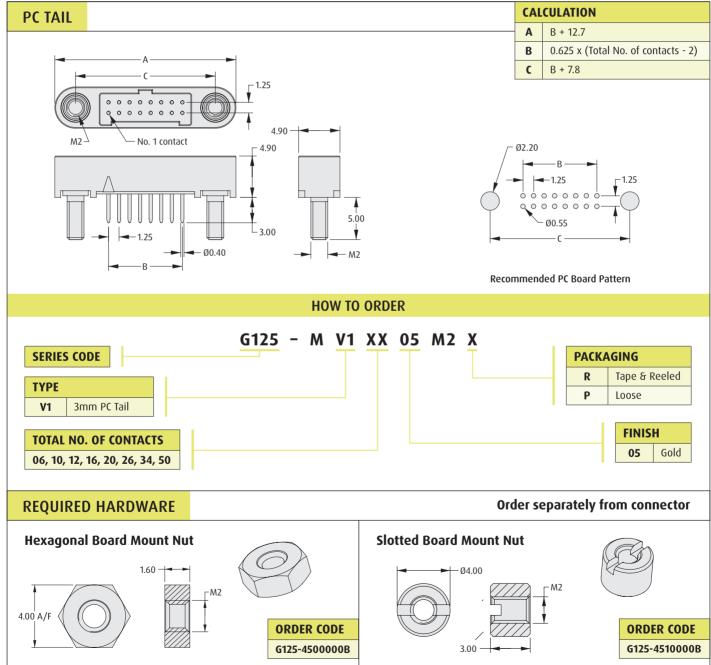




Male Vertical PC Tail

- 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.



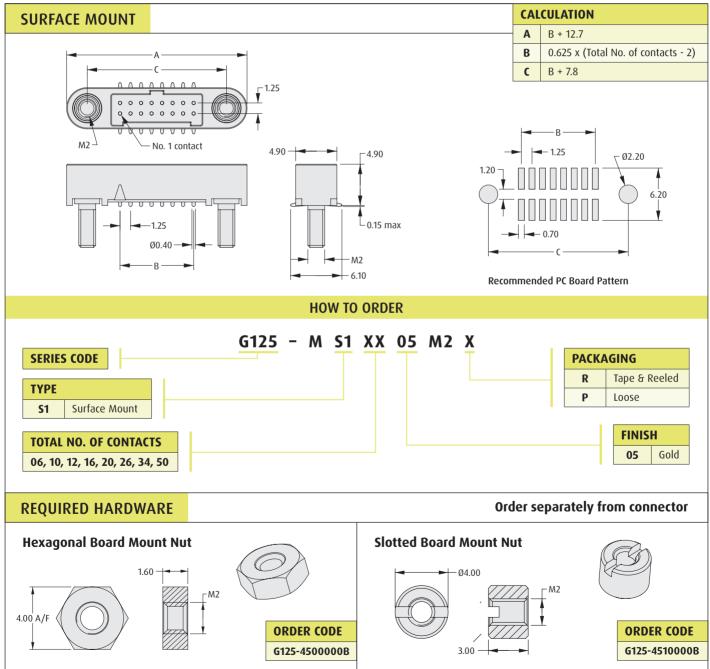




Male Vertical Surface Mount

- 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.

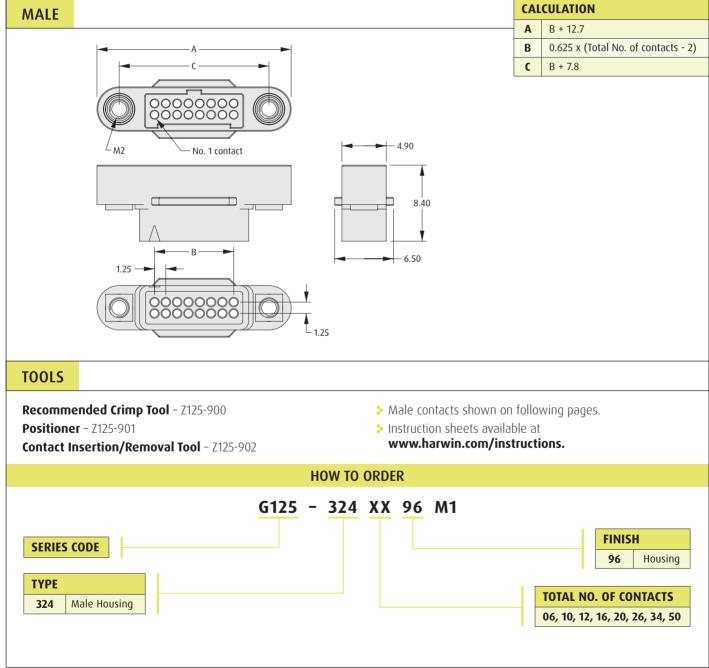




Male Crimp Housing

- 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.

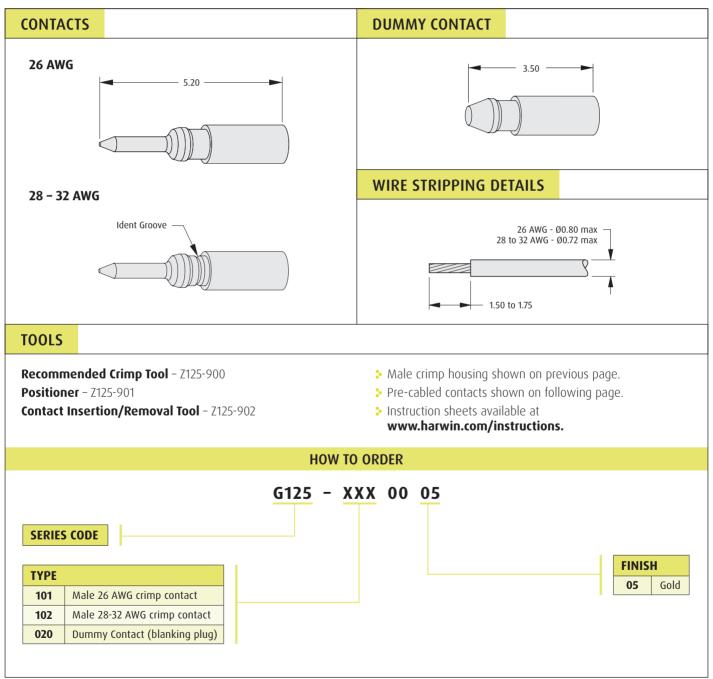




Male Crimp Contacts, Dummy Contact

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



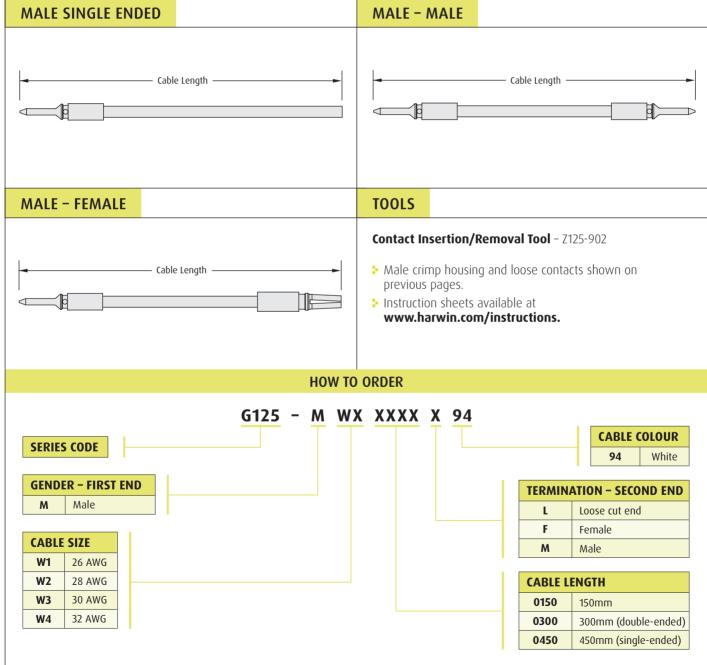


All dimensions in mm.

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 visit harwin.com/cable-assemblies and fill in your requirements.





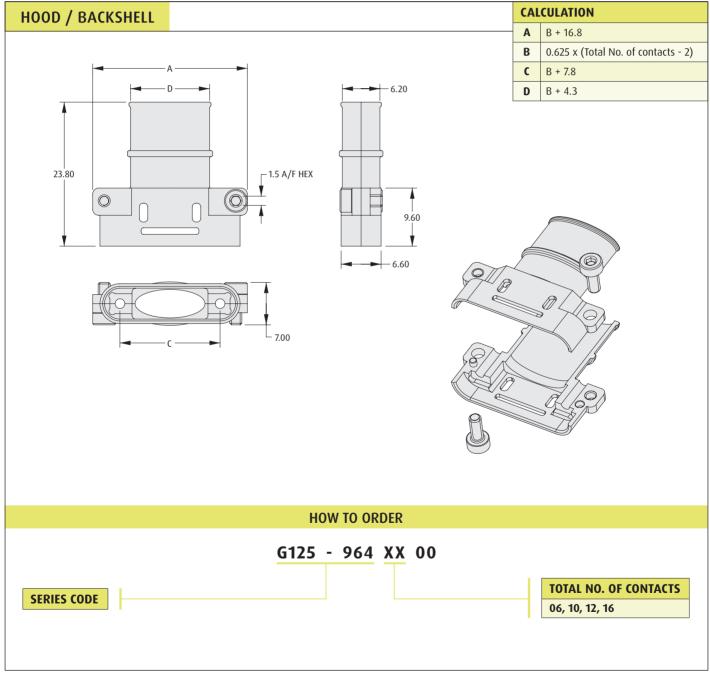
All dimensions in mm.



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.





All dimensions in mm. Patent Published

www.harwin.com



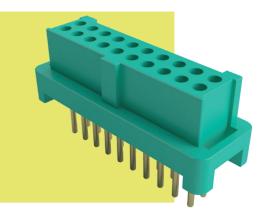
Gecko with Latches Mating Profiles

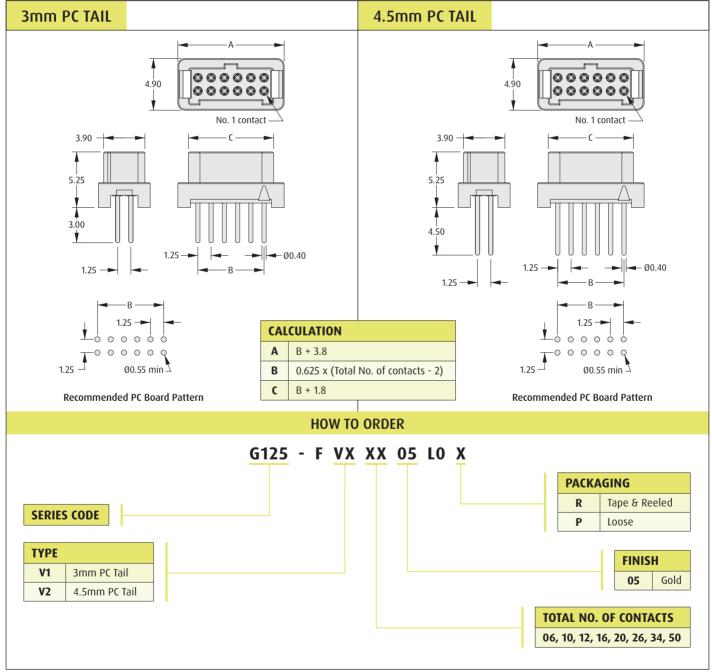
| | | FEMALE | | | |
|------|-----------------------|------------------|--------------|----------|--|
| | | VERTICAL PC TAIL | VERTICAL SMT | CABLE | |
| | VERTICAL PC TAIL | 7.25 | 7.35 | 8.00 max | |
| MALE | HORIZONTAL PC TAIL | 8.50 | 8.60 | 9.45 max | |
| W | VERTICAL SMT | 7.35 | 7.45 | 8.10 max | |
| | CABLE | 9.10 max | 9.20 max | 9.70 max | |

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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.

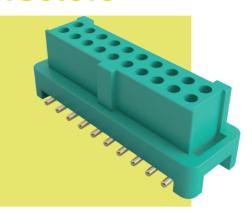


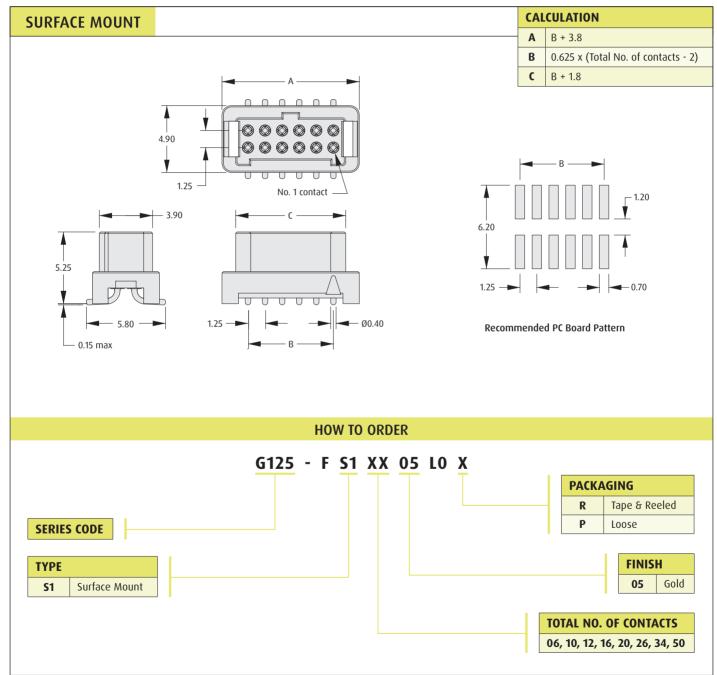




Female Surface Mount

- ♣ 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.

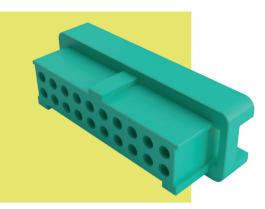


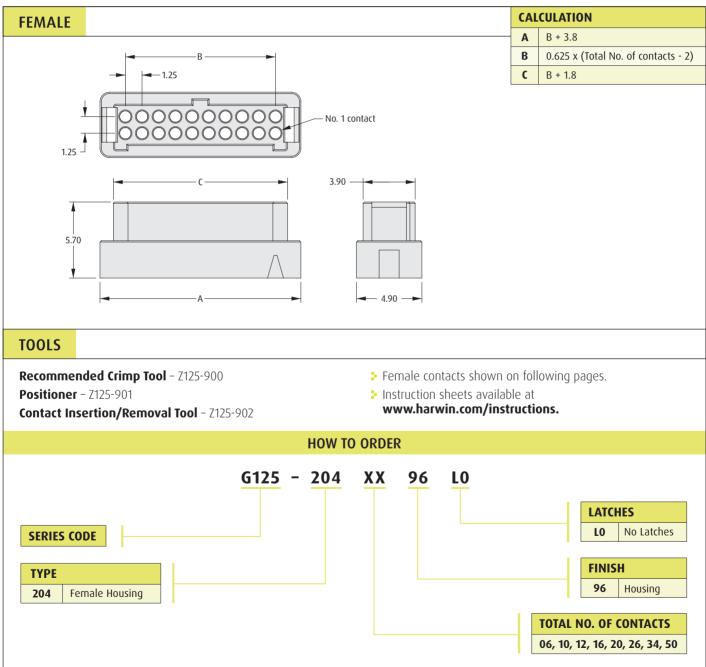




Female Crimp Housings

- ▶ 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.

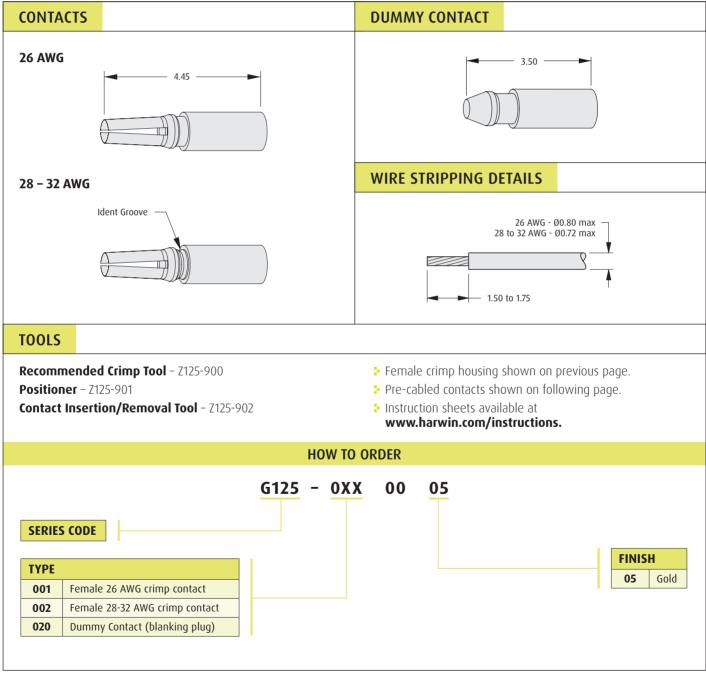




Female Crimp Contacts, Dummy Contact

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





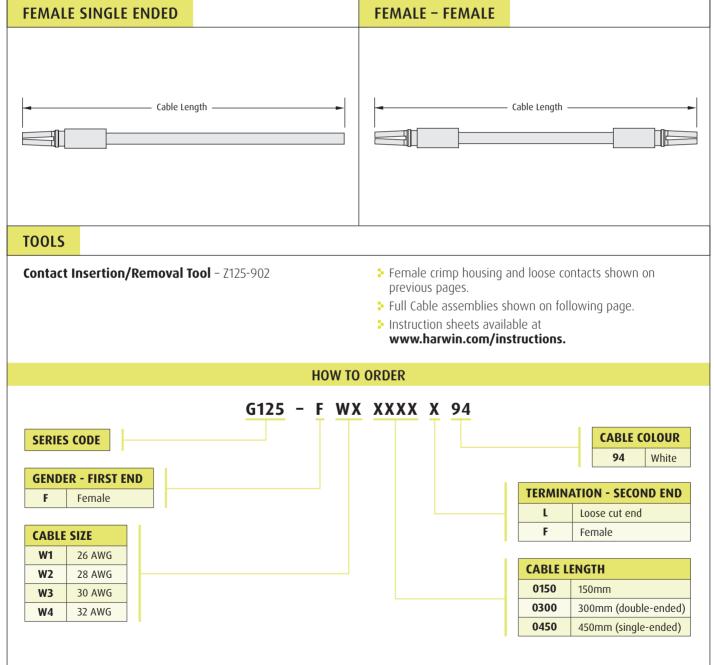
All dimensions in mm.

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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 visit harwin.com/cable-assemblies and fill in your requirements.



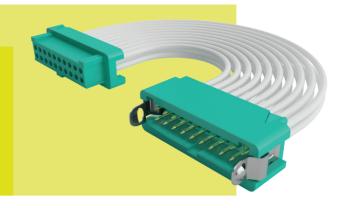


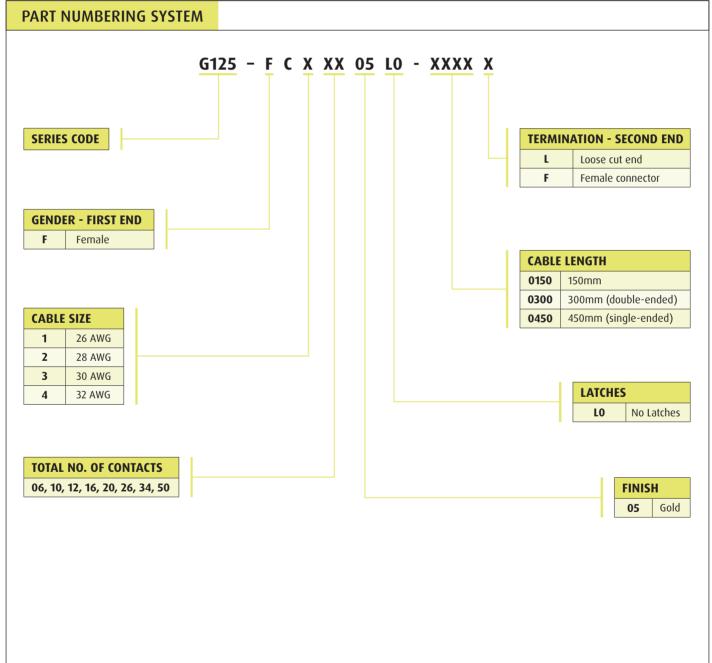
All dimensions in mm.



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 visit harwin.com/cable-assemblies and fill in your requirements.

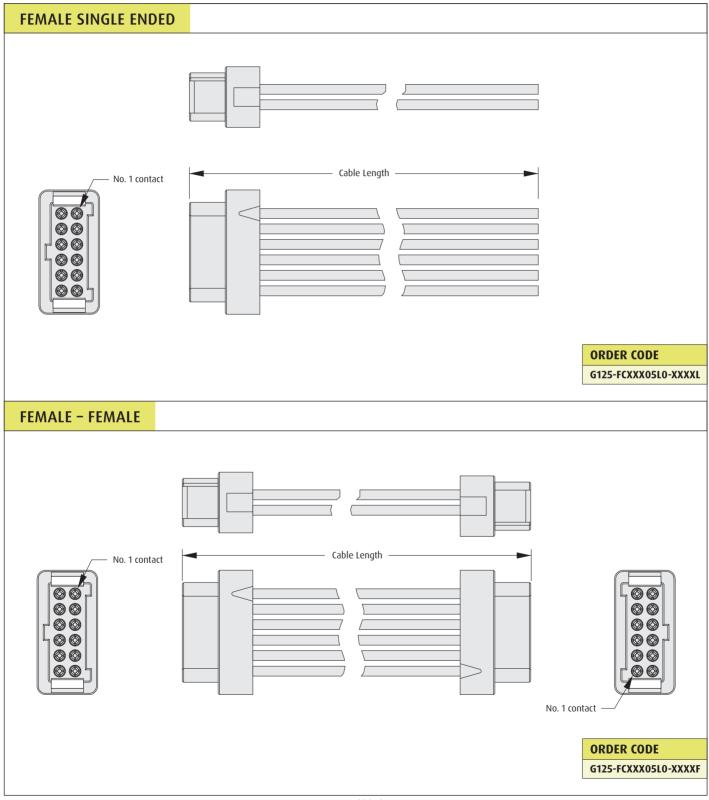






Female Cable Assemblies

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

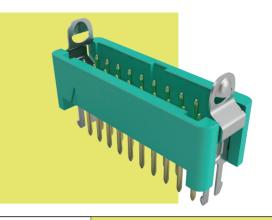


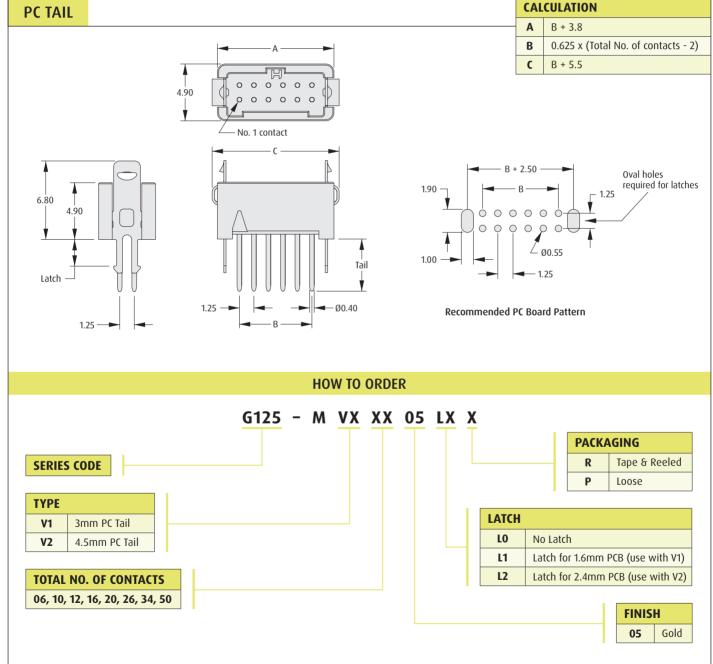
All dimensions in mm.



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.

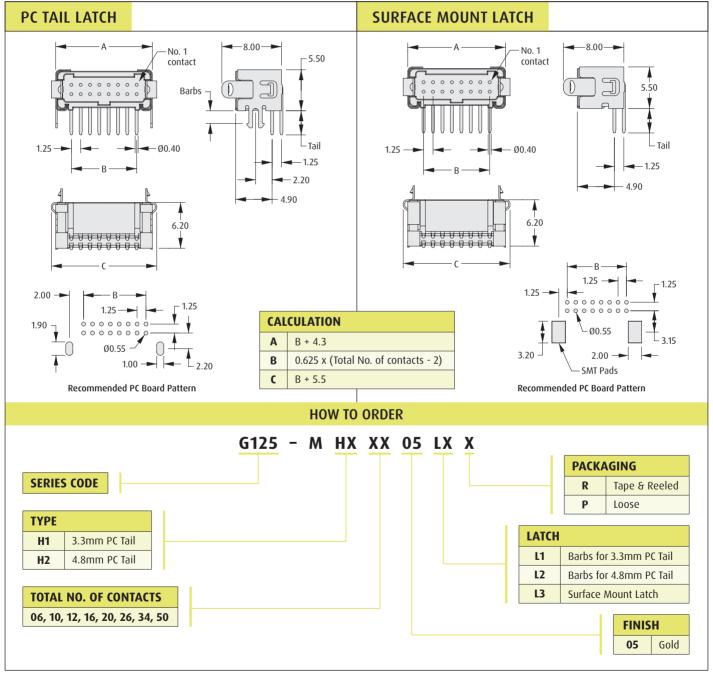




Male Horizontal PC Tail - Latched

- Secure fixing to the PCB via retention barbs for through hole.
- Surface mount option for automated assembly.
- - see part numbers Z125-926xx00.
- **▶** 2A current capacity, resists high vibration and shock.
- ▶ Withstands extremes of temperature: -65°C to +150°C.



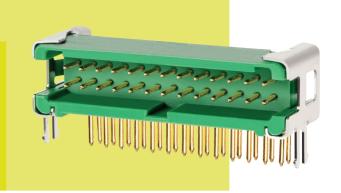


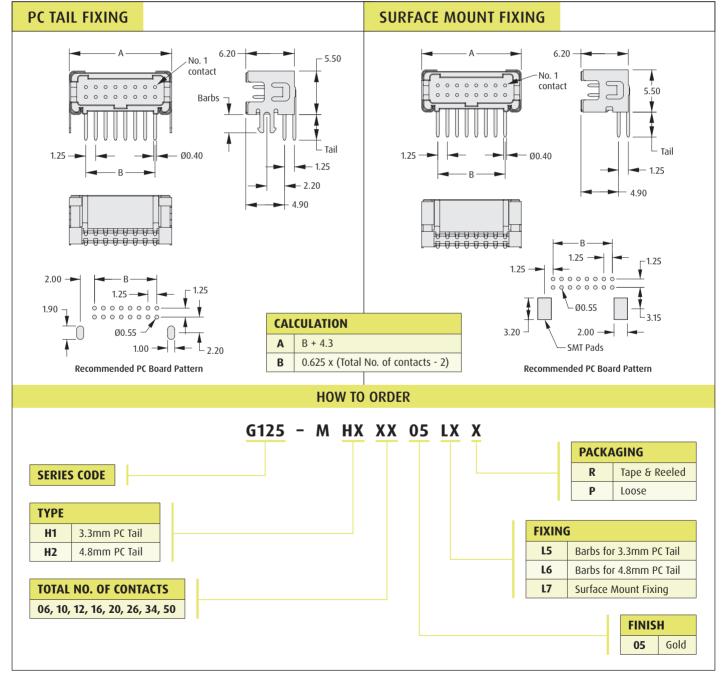
All dimensions in mm.



Male Horizontal PC Tail - Without Latch

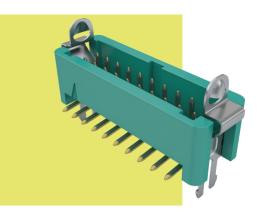
- Secure fixing to the PCB via retention barbs for through hole.
- Surface mount option for automated assembly.
- **⇒** 2A current capacity.
- ▶ Withstands extremes of temperature: -65°C to +150°C.

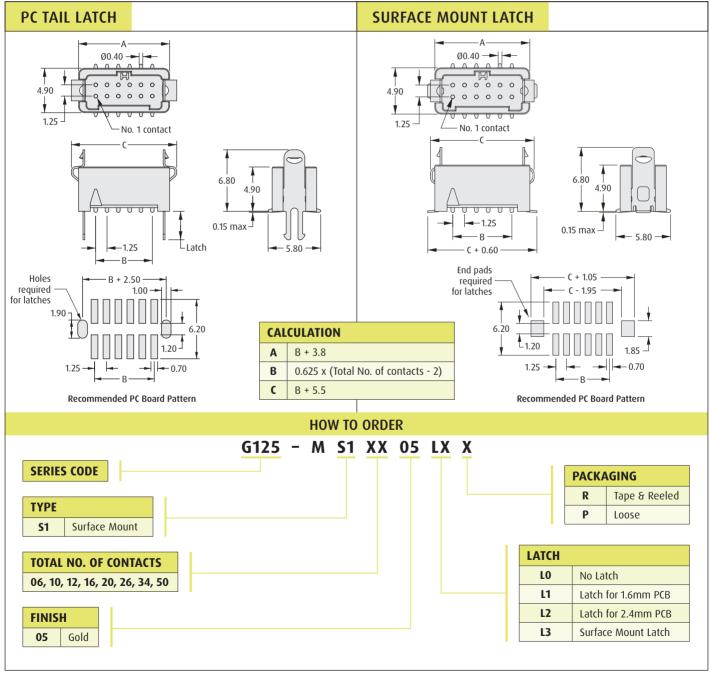




Male Vertical Surface Mount

- 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.





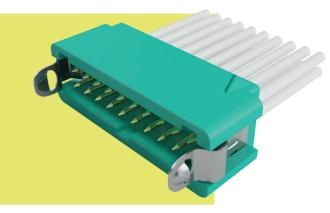
All dimensions in mm.

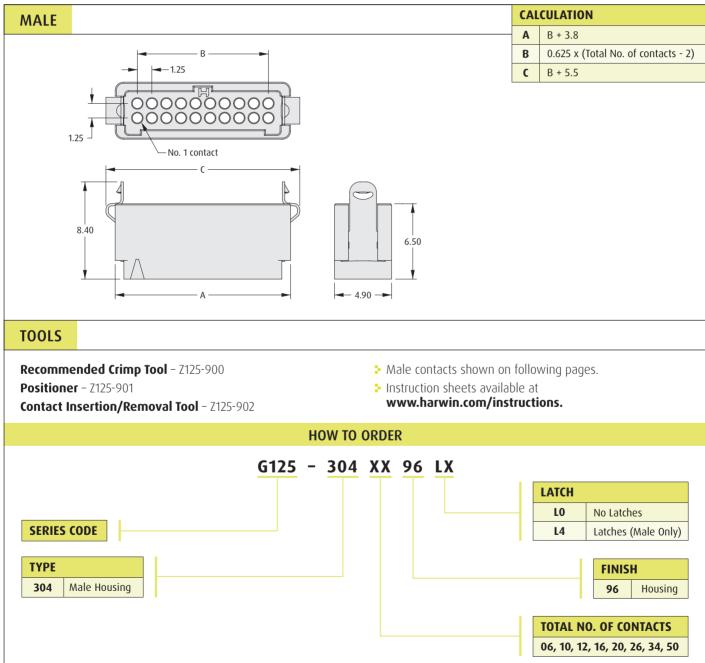
HARWIN

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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.

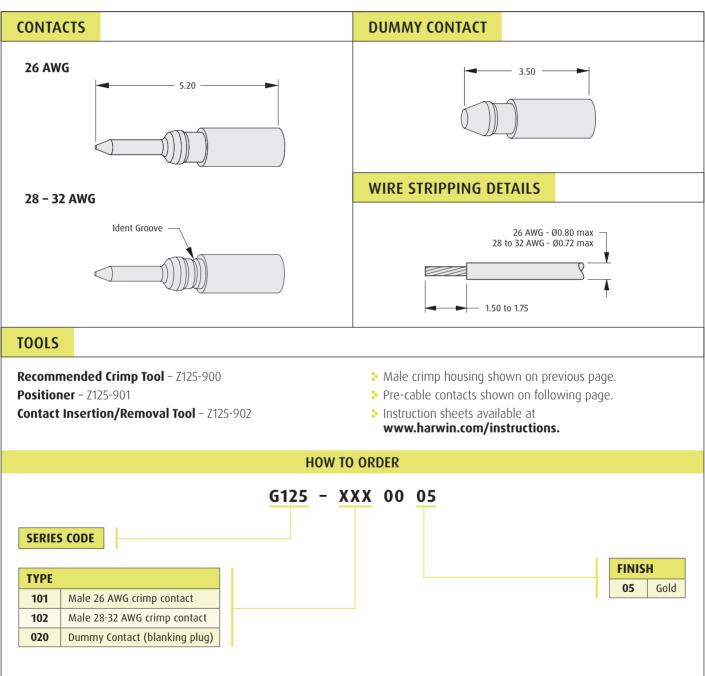




Male Crimp Contacts

- 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.
- ▶ Dummy Contact can be used for additional polarisation of keying of multiple connectors. Also called Blanking Plug.



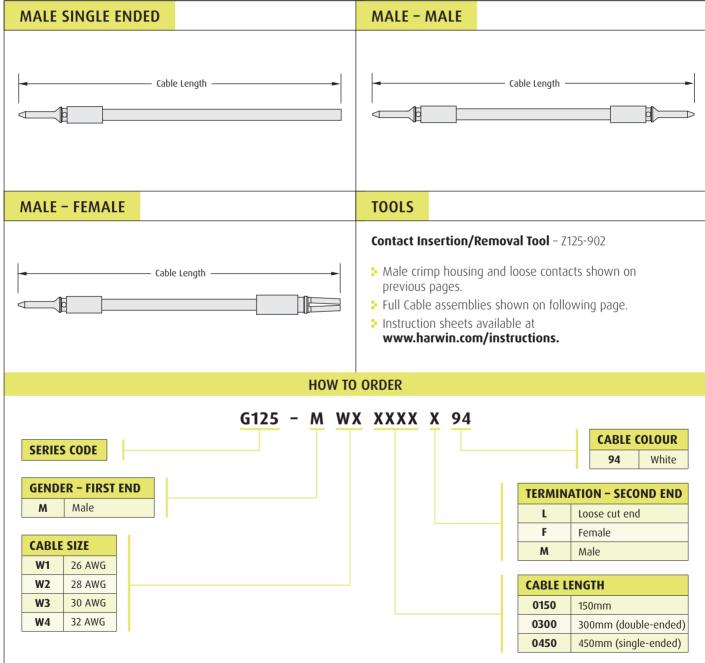


All dimensions in mm.

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 visit harwin.com/cable-assemblies and fill in your requirements.

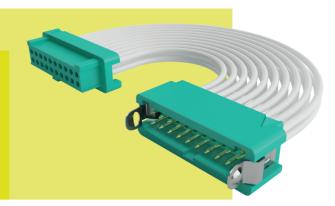


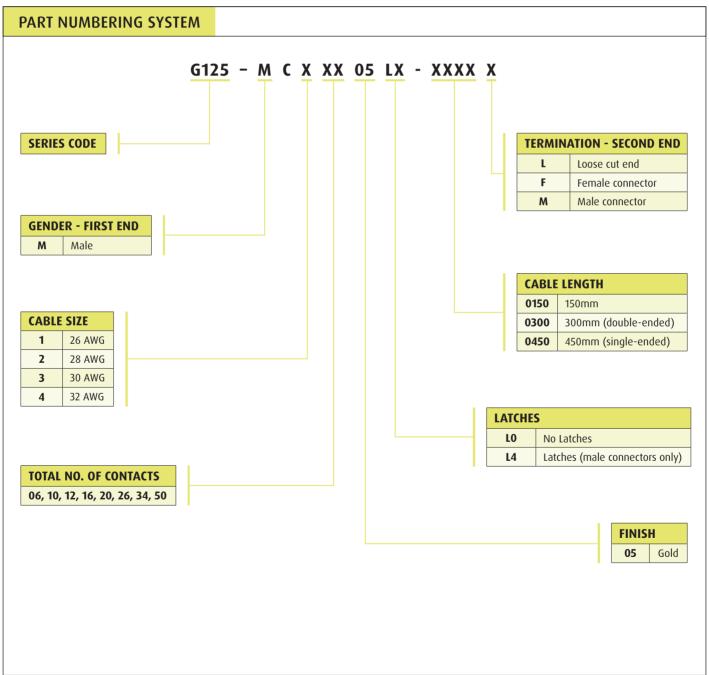


All dimensions in mm.

Male Cable Assemblies

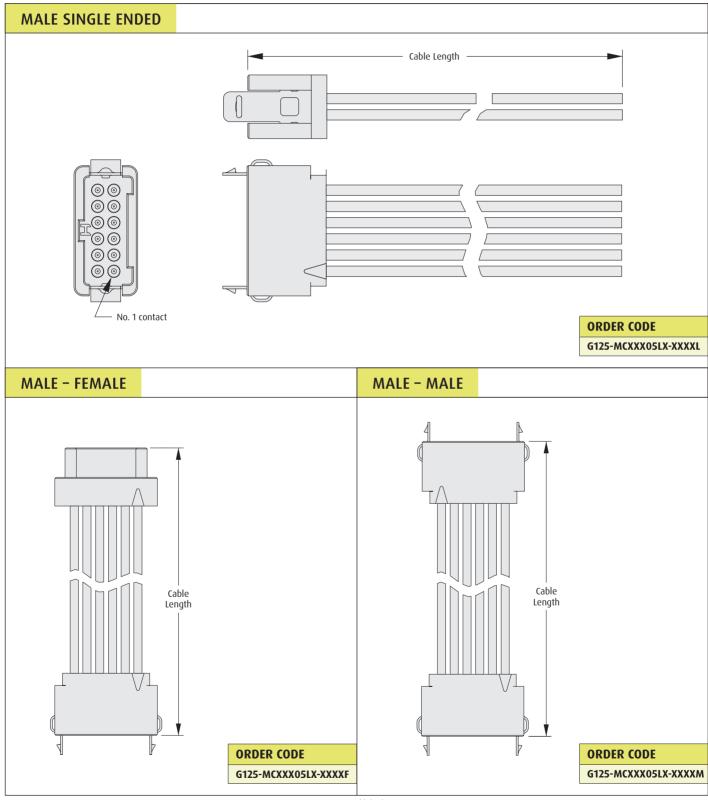
- No. 1 position identified on moulding.
- ▶ 2A current capacity, resists high vibration and shock.
- ▶ Withstands extremes of temperature: -65°C to +150°C.
- **▶** Back potted for added strain relief.
- ♣ 4-finger Beryllium Copper contact on the female connector.
- ➤ For non-standard cable lengths, please visit harwin.com/cable-assemblies and fill in your requirements.





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.



All dimensions in mm.

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 **POSITIONER** Must be used with hand crimp tool. Precision tool with ratchet mechanism and 8-indent form. Must be used with positioner. Instruction sheet available. **ORDER CODE ORDER CODE** Z125-900 Z125-901 **INSERTION/REMOVAL TOOL DE-LATCH TOOL** For inserting and removing crimped contacts into the rear For assisting with unmating latched connectors. of mouldings. Instruction sheet available. **ORDER CODE ORDER CODE** Z125-902 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. ▶ 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. For use with torque tooling or similar equipment. Mallacad **ORDER CODE** ORDER CODE Z9950-00 Z9952-00 **SCREWDRIVER** For use with Gecko Screw-Lok board mount nuts. ▶ Board mount nuts to be tightened to a torque of 21 ±2cmN. **ORDER CODE** Z80-298

