## 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

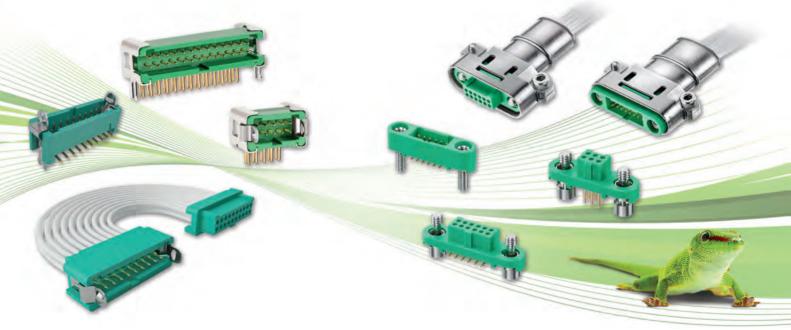
\* Granted US9017089, Pending GB2501063, Pending EP2642604

- 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.



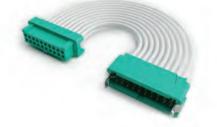
#### No. 1 Position identified, Potting Wall

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)

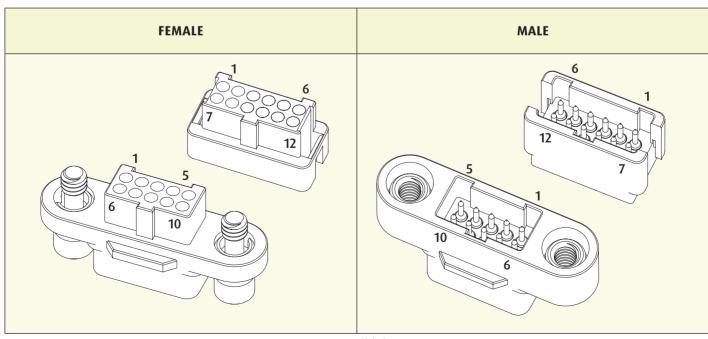
450V DC or AC peak 250V DC or AC peak

600V DC or AC peak

20mΩ max  $25m\Omega$  max

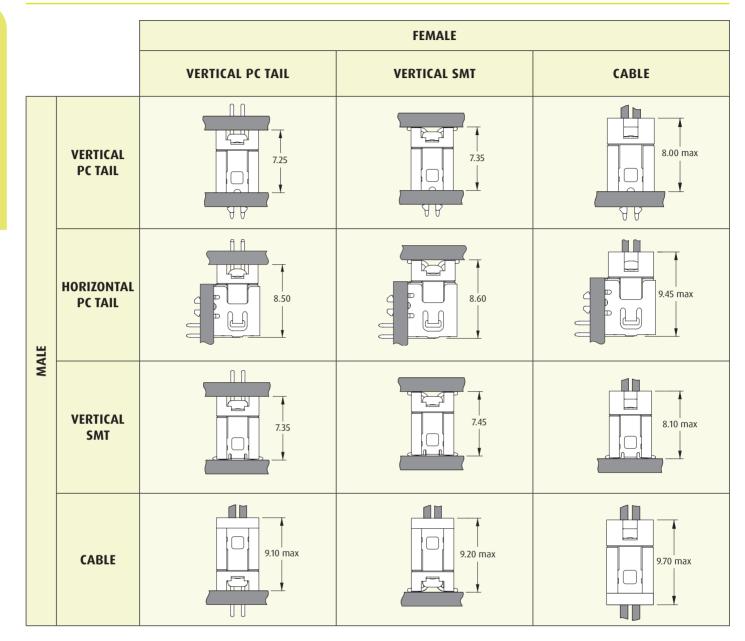
 $10G\Omega$  min at 500V DC >1G $\Omega$  min at 500V DC

### **Pin Numbering**





### **Gecko Mating Profiles**



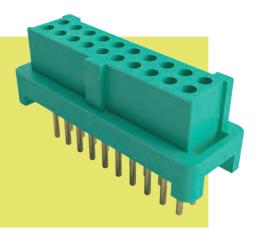
GECKO

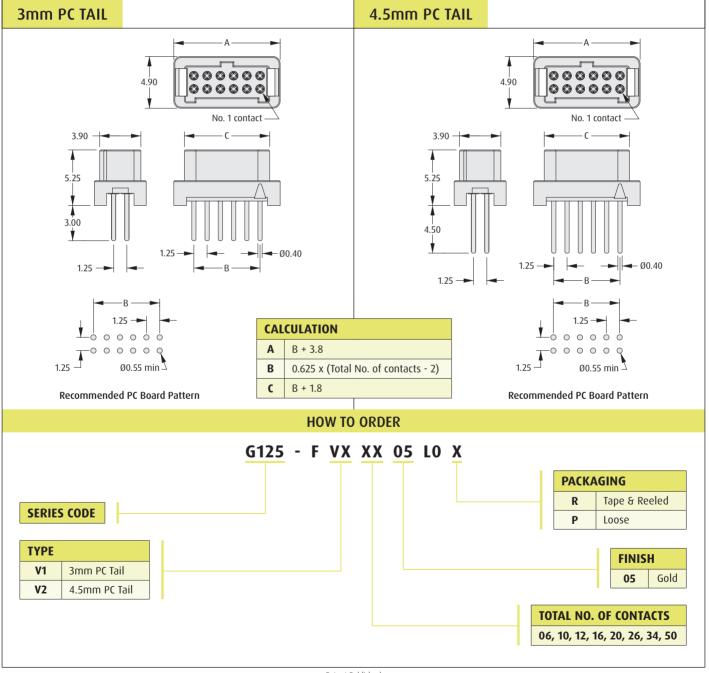
All dimensions in mm.



#### 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.



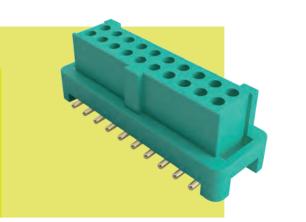




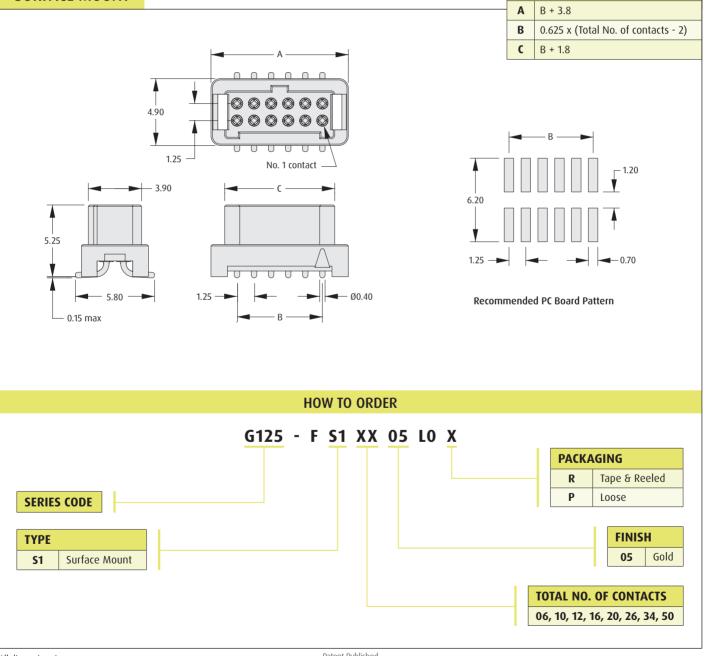
#### **Female Surface Mount**

- 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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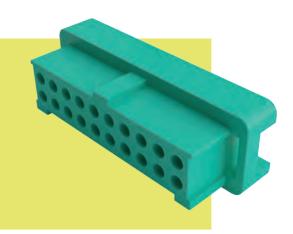
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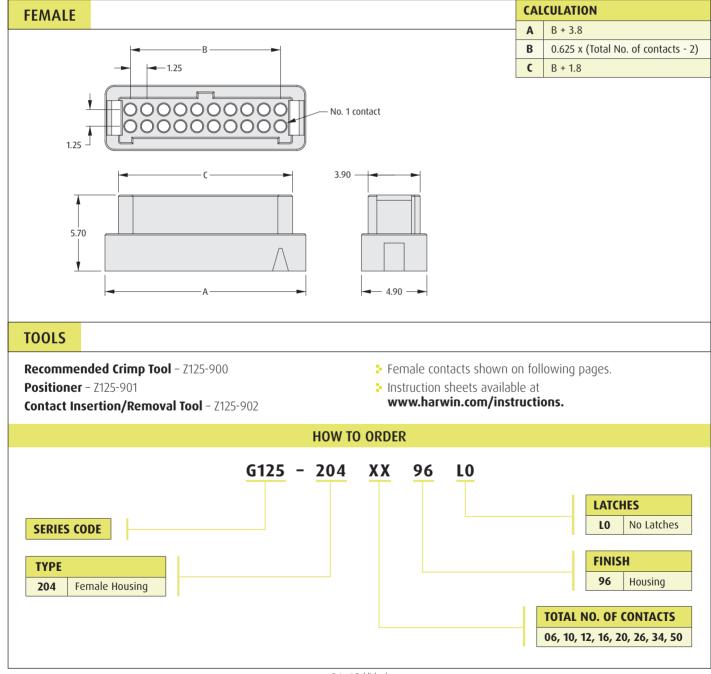
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### Female Crimp Housings

- 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.



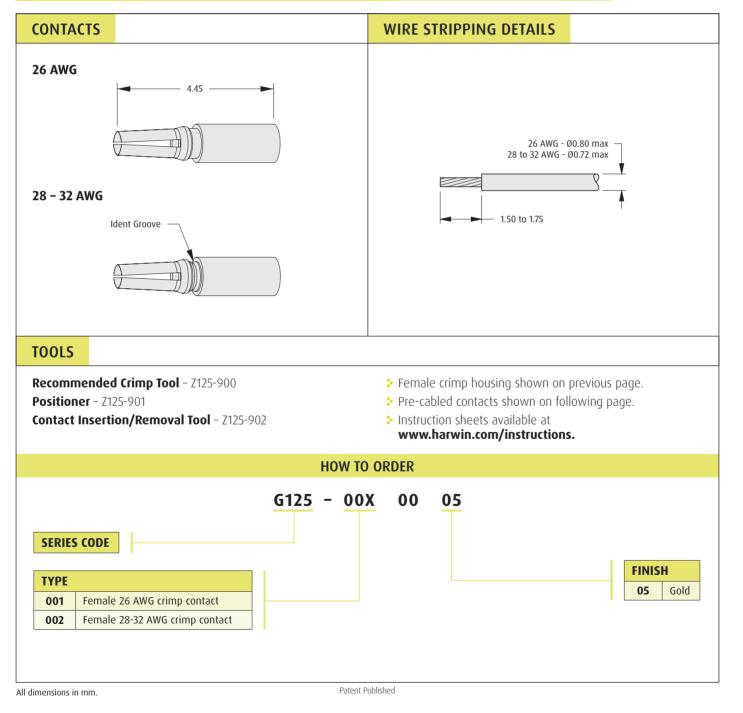




### Female Crimp Contacts

- 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				
<ul> <li>Contact Insertion/Removal Tool – Z125-902</li> <li>Female crimp housing and loose contacts shown on previous pages.</li> <li>Full Cable assemblies shown on following page.</li> <li>Instruction sheets available at www.harwin.com/instructions.</li> </ul>				
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)			
<b>W4</b> 32 AWG	0300         300mm (double-ended)           0450         450mm (single-ended)			



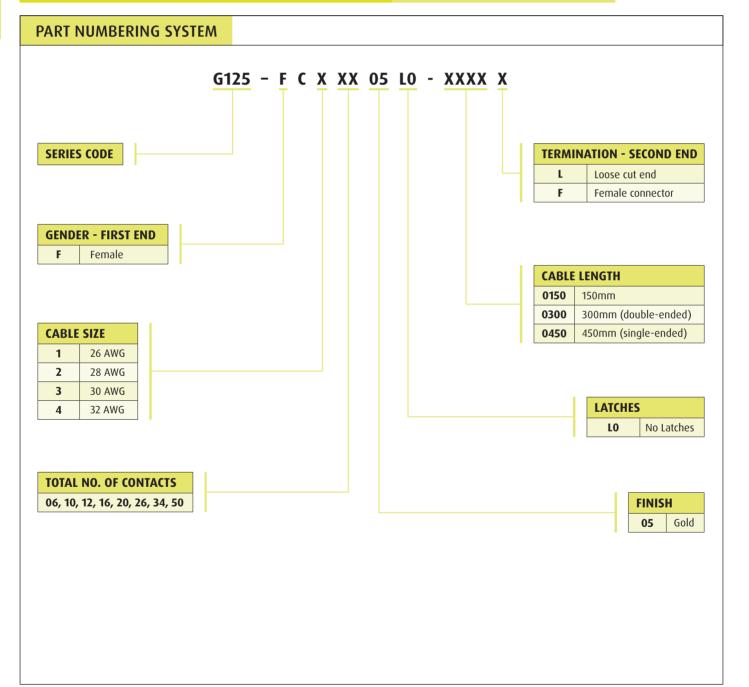
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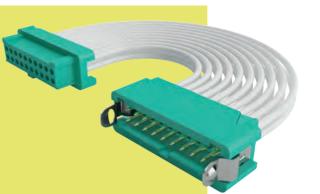


#### **Female Cable Assemblies**

- 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.



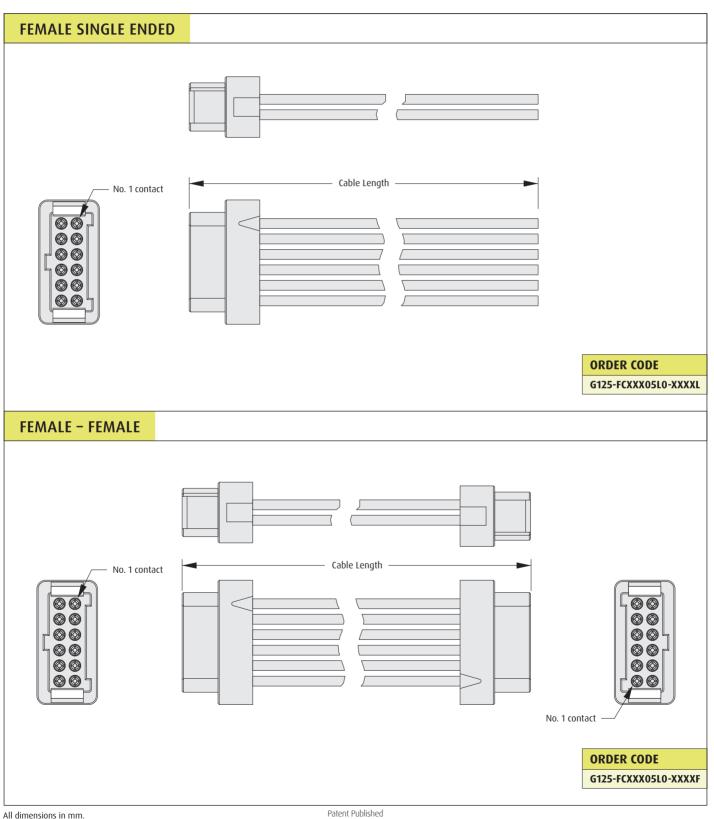




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### **Female Cable Assemblies**

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

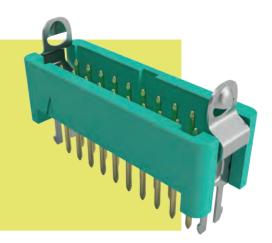


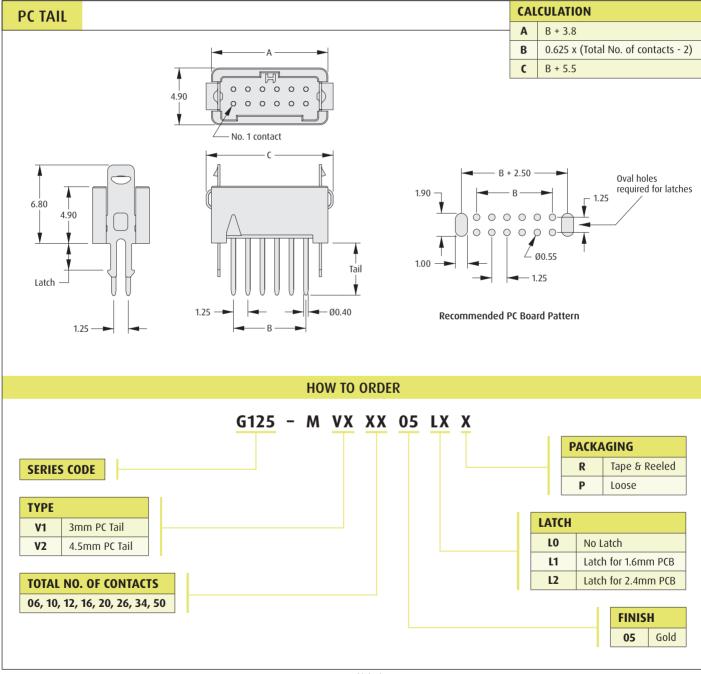
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#### Male Vertical PC Tail

- 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.

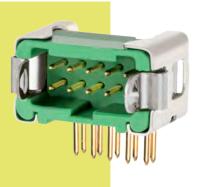


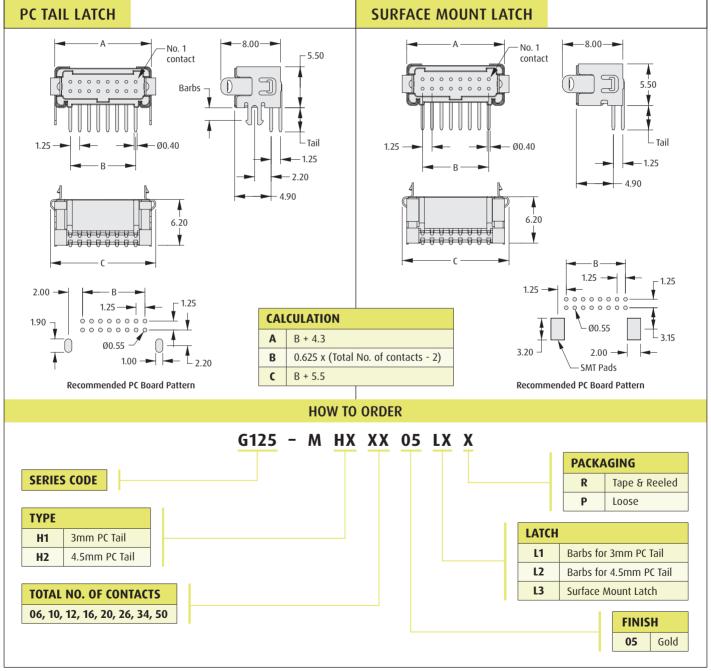




### Male Horizontal PC Tail – Latched

- 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.

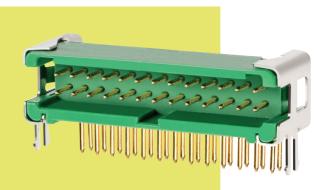


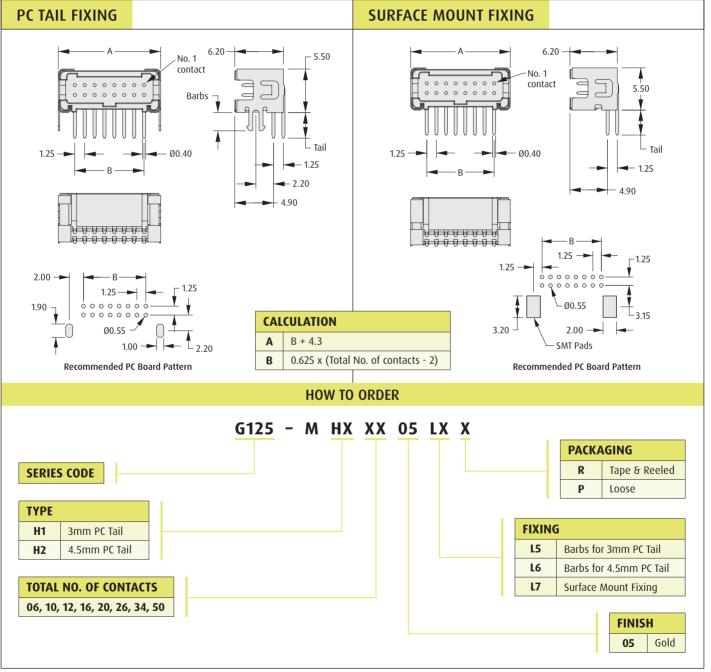




### Male Horizontal PC Tail – Without Latch

- 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.

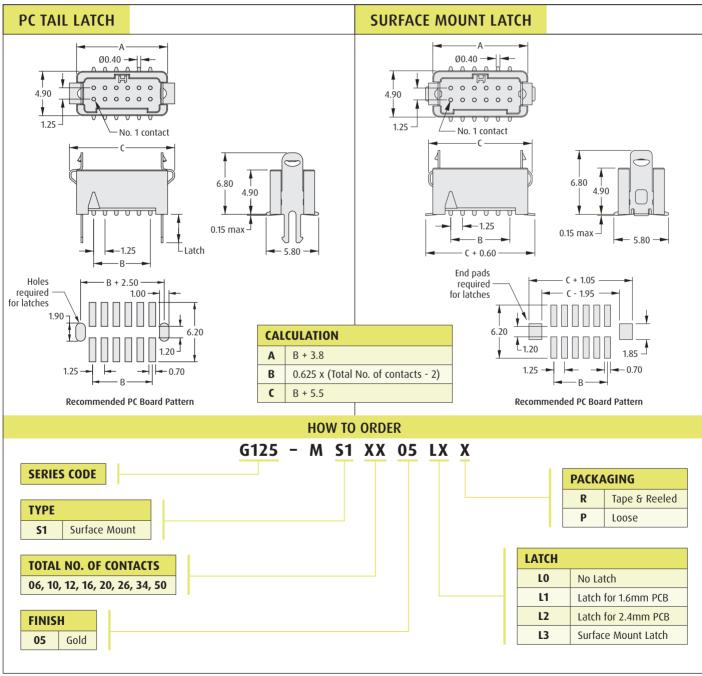






#### **Male Vertical Surface Mount**

- 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

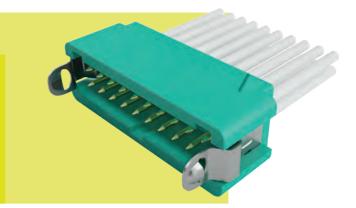
www.harwin.com

All dimensions in mm.

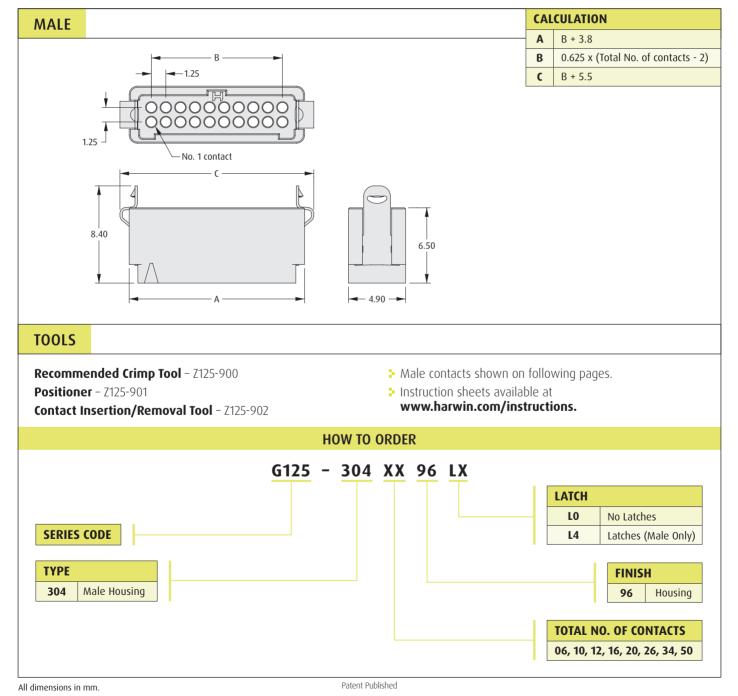


### Male Crimp Housing

- 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.



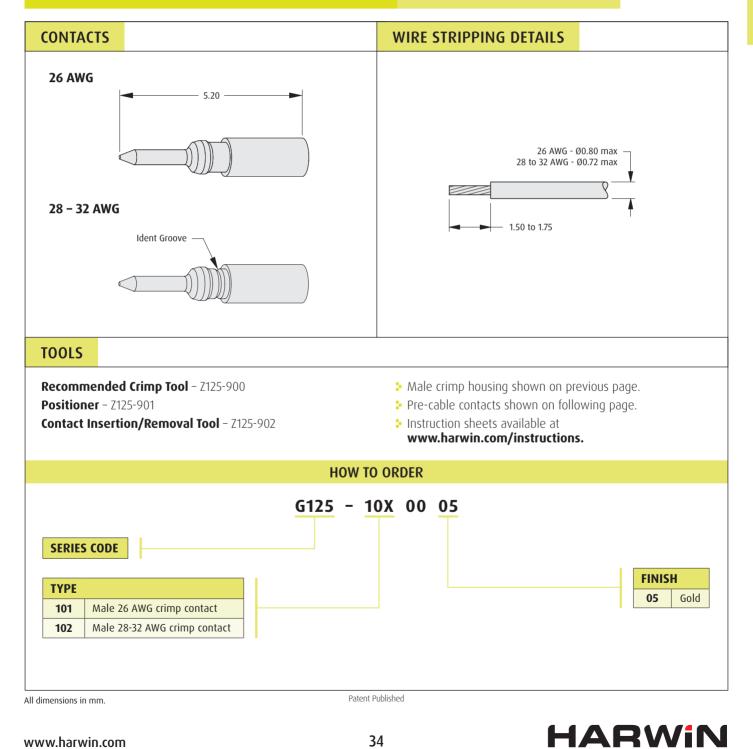
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### **Male Crimp Contacts**

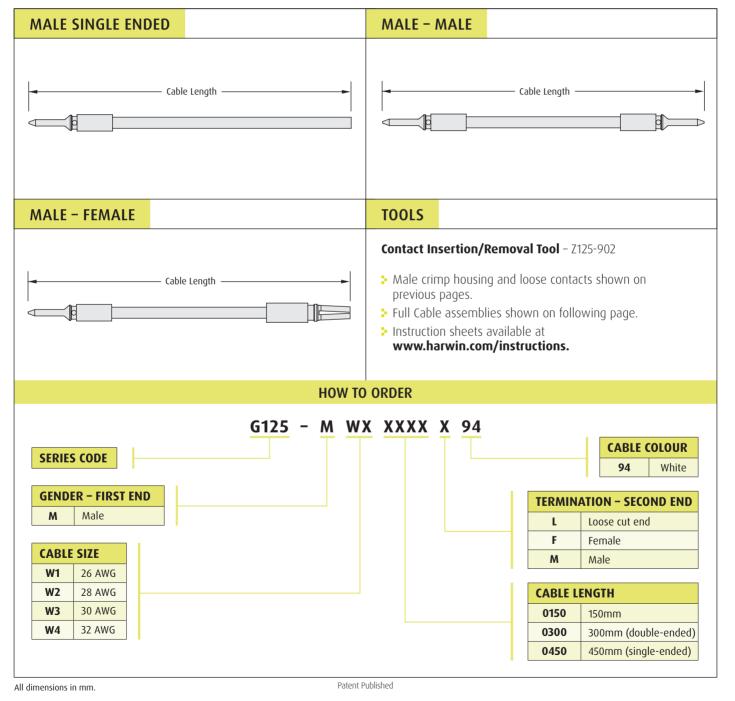
- Crimp barrel meets all crimp guidelines and standards.
- 2A current capacity, resists high vibration and shock.
- ▶ Withstands extremes of temperature: -65°C to +150°C.
- Instruction video online at www.harwin.com/harwintv.





#### 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.



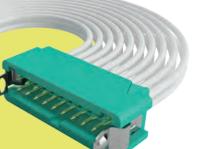


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#### Male Cable Assemblies

- 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



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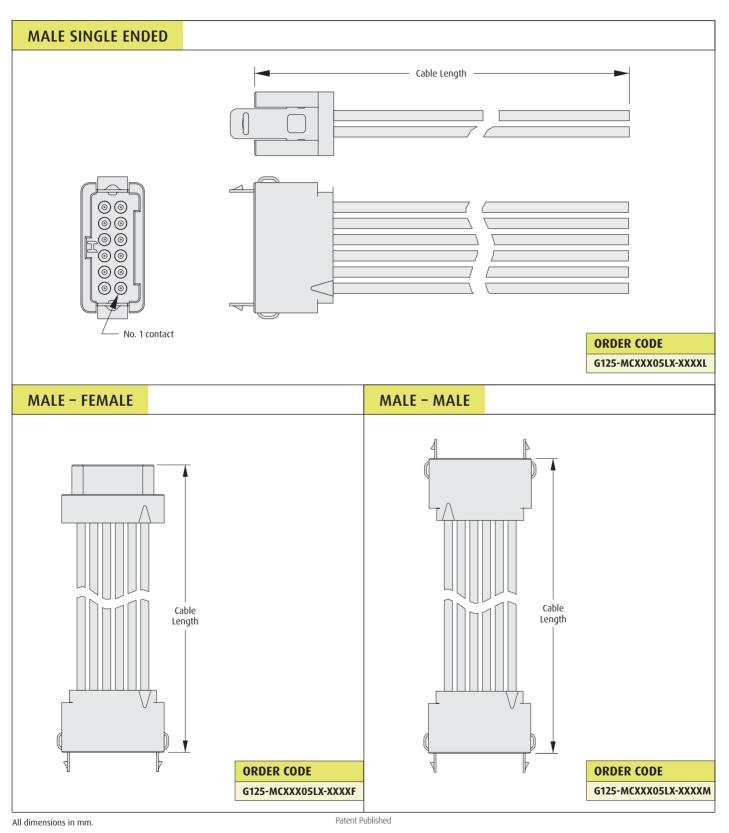
#### PART NUMBERING SYSTEM

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.

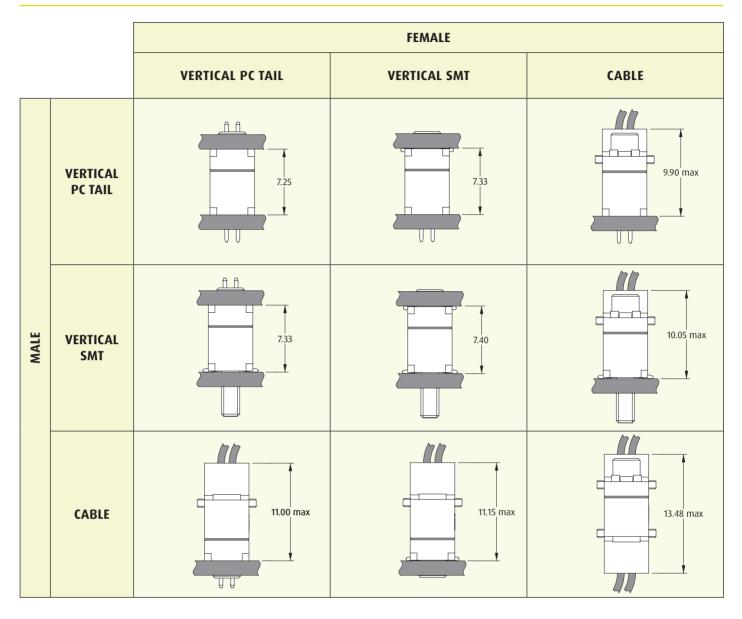




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### **Gecko Screw-Lok Mating Profiles**



All dimensions in mm.



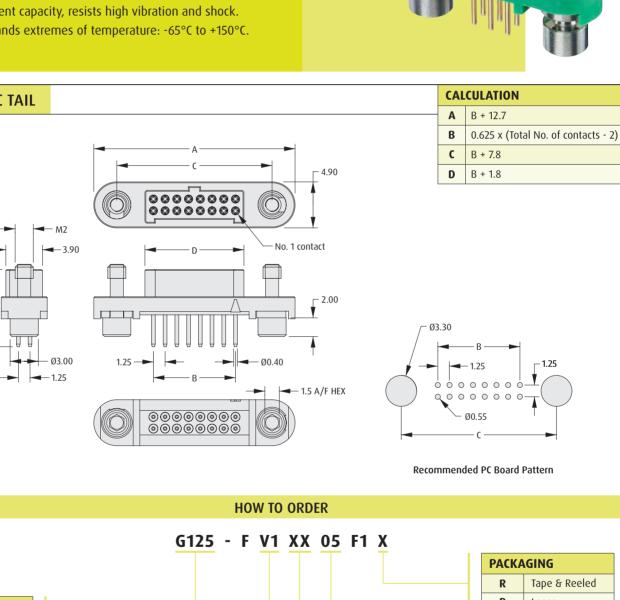
### Female PC Tail

- 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.



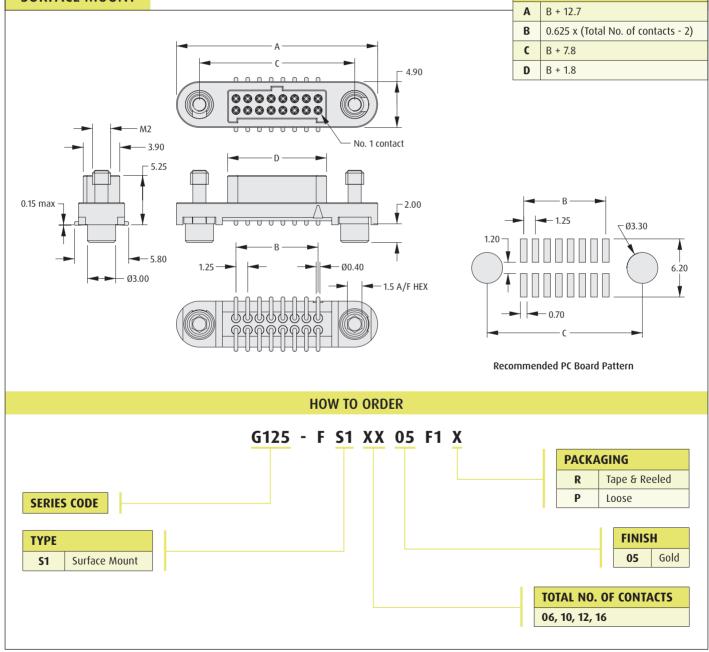
# **GECKO SCREW-LOK**

### **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

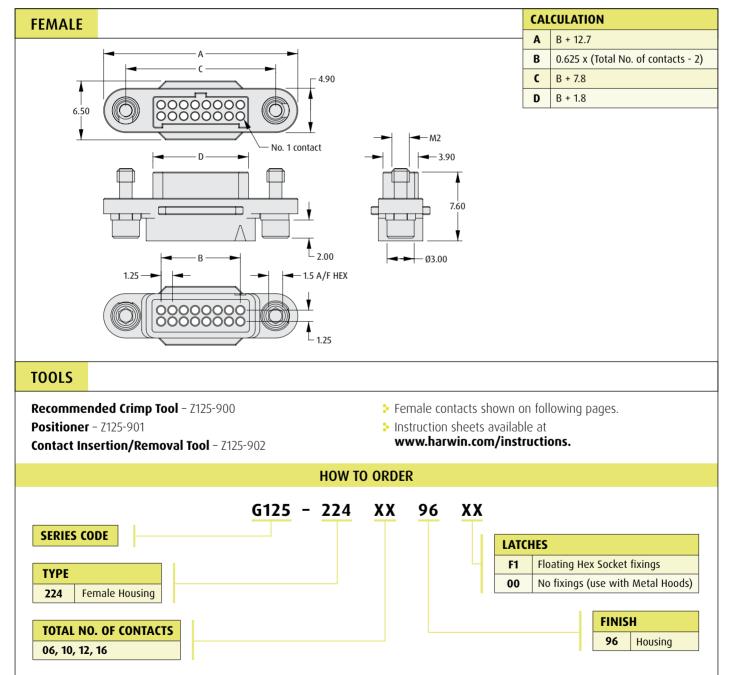


**CALCULATION** 

### 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.

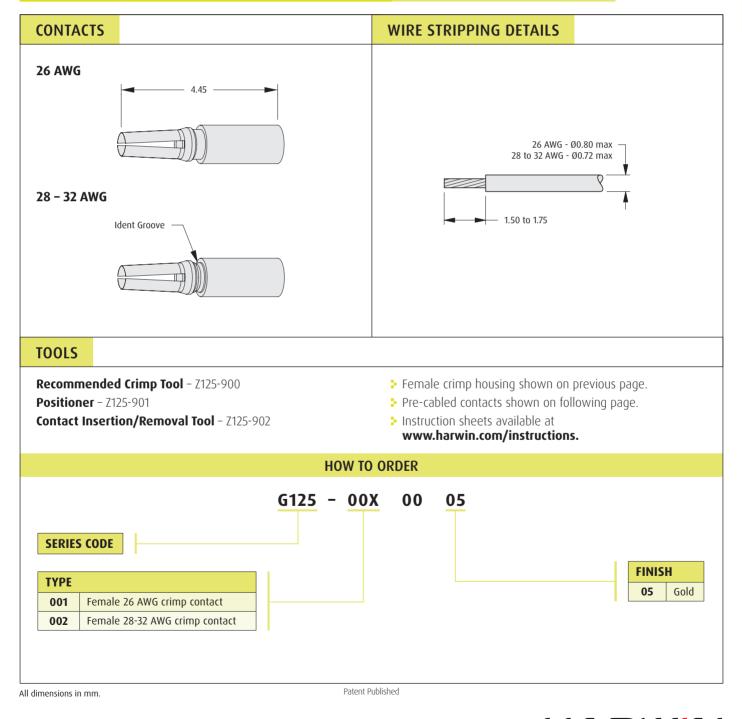


### Female Crimp Contacts

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

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All dimensions in mm.

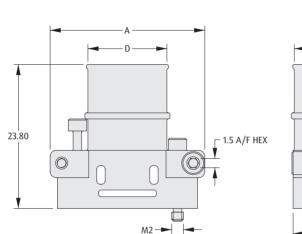
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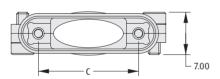


### Female Metal Hood / Backshell

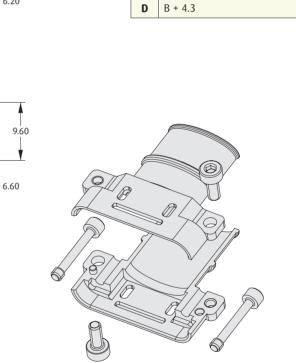
- Supplied as a kit, including 2 metal hood halves, tie-band (not shown), extended fixing screws for female connectors, and short screws to join the two hood halves together.
- Use with M80-224xx9600 female crimp housings without fixings - fixings are supplied with these hoods.
- Tie-band can be used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

#### HOOD / BACKSHELL









**CALCULATION** 

B + 16.8

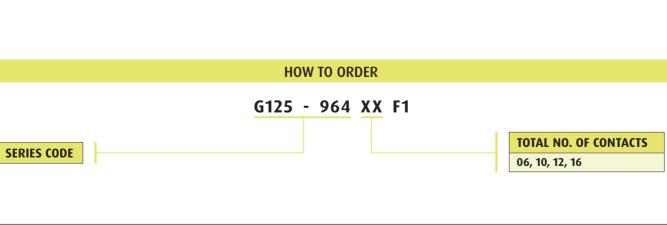
B + 7.8

0.625 x (Total No. of contacts - 2)

Α

В

C



6.20

**GECKO SCREW-LOK** 

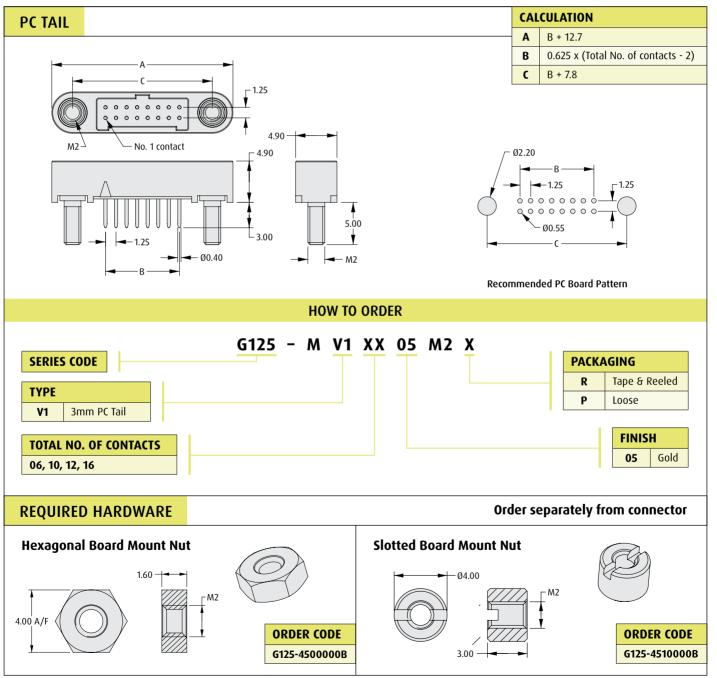
All dimensions in mm.



### 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.



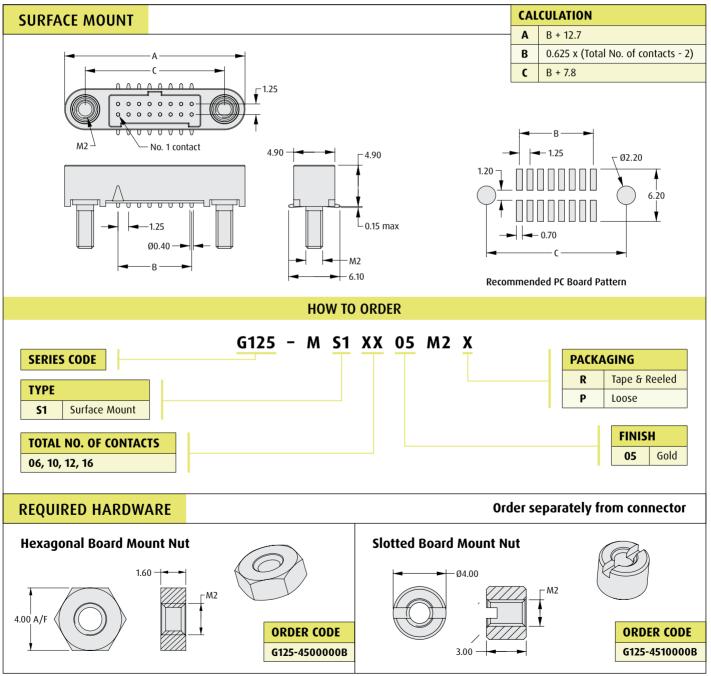
## **GECKO SCREW-LOK**

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.



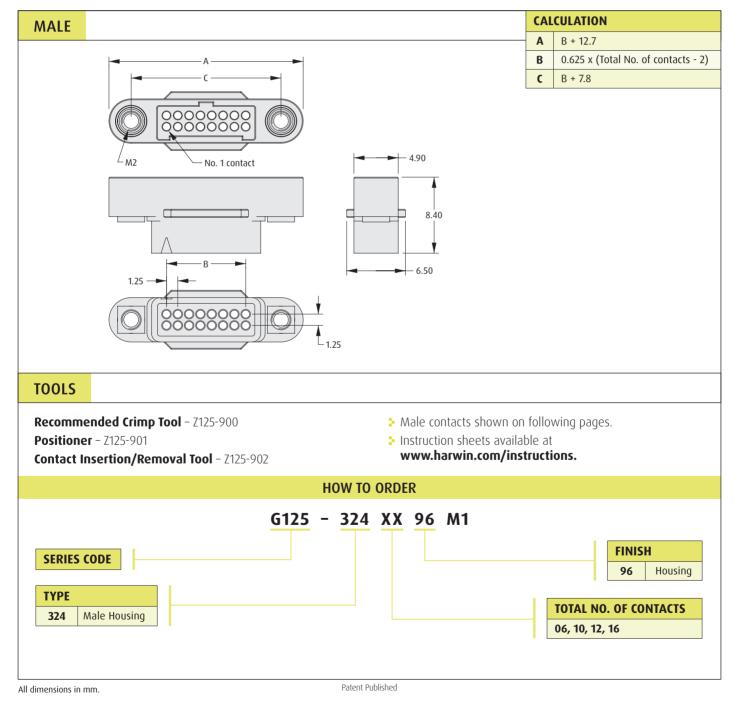
All dimensions in mm.



### 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.

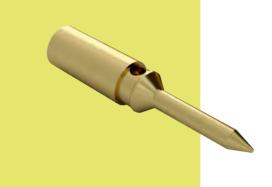




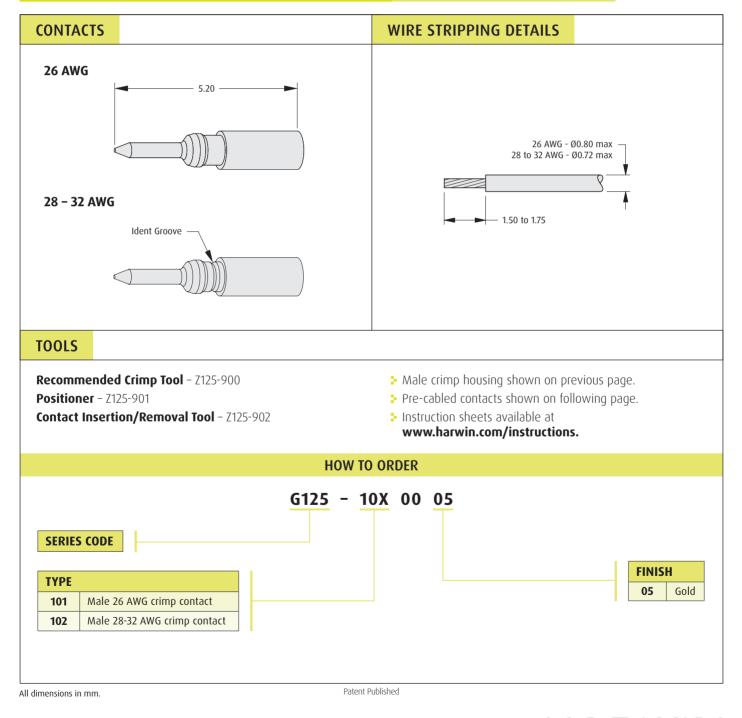
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#### Male Crimp Contacts

- 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.

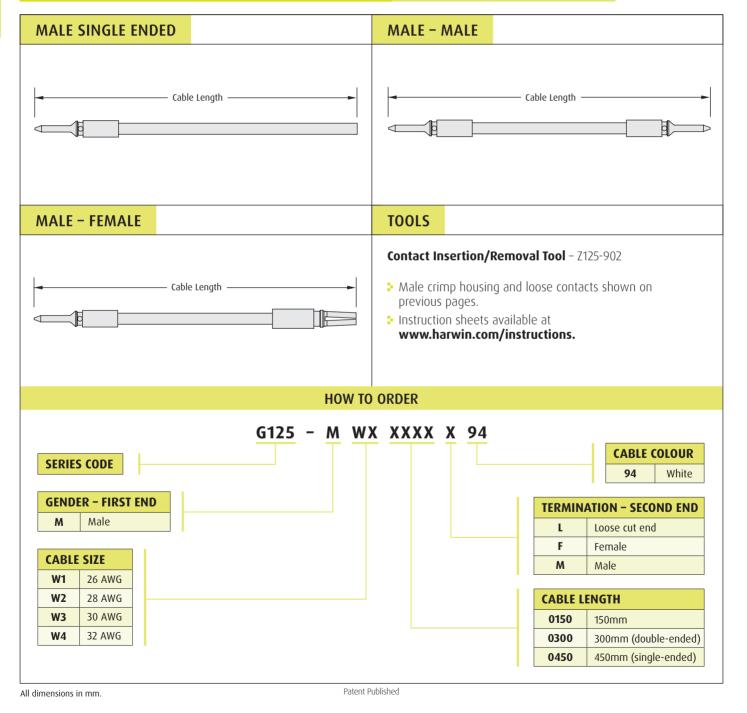


HARWin



#### 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.

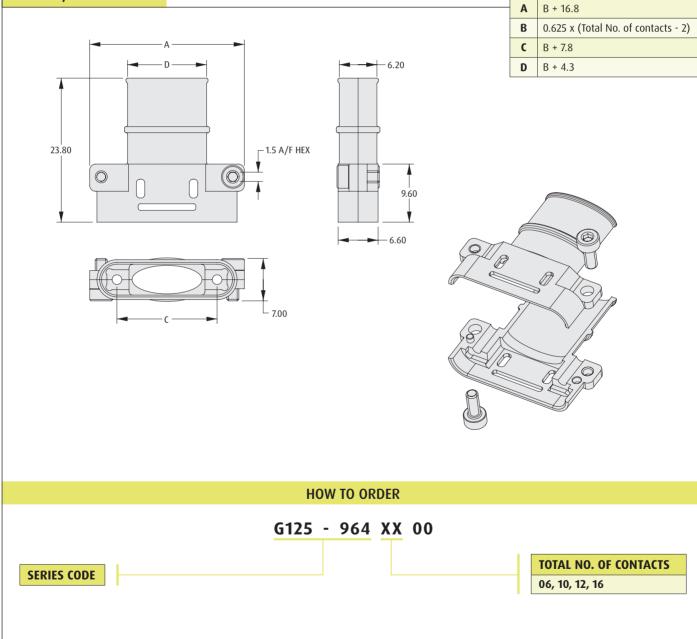




### Male Metal Hood / Backshell

- 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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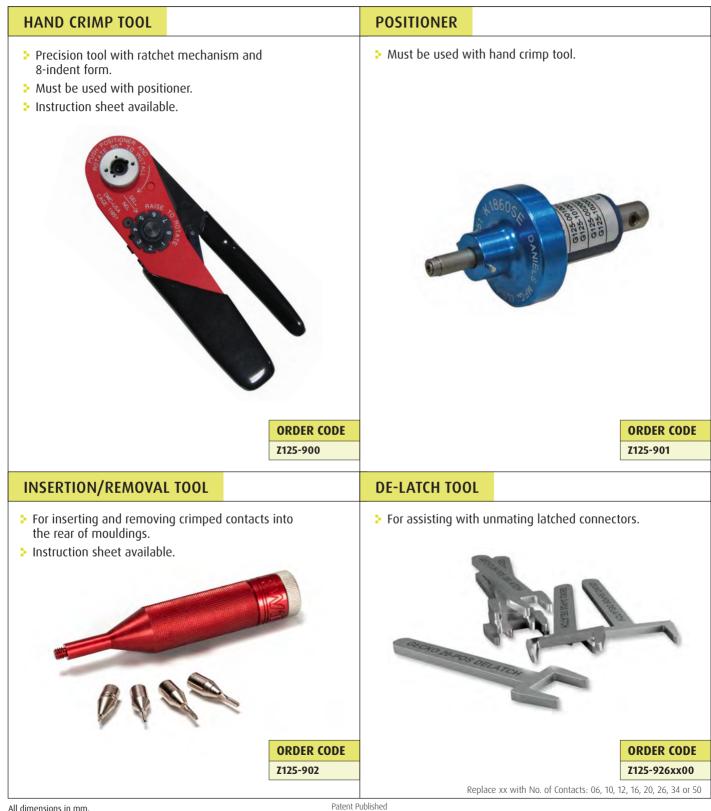
Patent Published



**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

