



# G125 Series: 1.25mm Pitch High Reliability Connectors Component Specification

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## 1. DESCRIPTION OF CONNECTOR

The G125 series of connectors (branded "Gecko") comprises of: barrel crimp contacts and crimp housings available in Male and Female genders; Vertical and Horizontal PC-Tail Connectors and Vertical Surface Mount Connectors; all on a 1.25mm pitch. Connectors are fully shrouded, unsealed connectors for interconnecting cable-to-cable, cable-to-board and board-to-board applications.

The Gecko Crimp variants are fully shrouded, unsealed connectors with replaceable contacts. They are designed for interconnecting cable-to-cable and cable-to-board. The housings have a low profile potting wall to allow back potting for additional strain relief and improved sealing where required. All pre-made cable assemblies are supplied back-potted for customer convenience, and individually crimped contacts are also available.

There are three variants of the range, the ranges are not intermateable:

- Gecko-SL – Screw-Lok version. Female connectors have floating screws for secure, robust interconnection to the male counterpart. Male Screw-Loks can also have board-mount studs for secure PCB connection.
- Gecko with Latches (original design). Male variants can be equipped with locking latches for secure interconnection with easy to release features. Latches can be specified with through board locking features or surface mount pads for additional security.
- Gecko-MT. Connectors are equipped with both signal and power contacts and are available in crimped or through-board configurations. Screw-Lok technology is used to secure the connectors, and board-mount studs for PCB fastening are available.

All contacts are gold plated all over for high performance and long service life; the contact plating is hard acid gold of 98% purity.

The Gecko-SL and latched ranges cover 06, 10, 12, 16, 20, 26, 34 and 50 total number of contacts in a dual row configuration. Connector housings are polarised to prevent mis-matching and have contact position one indicated on the outside of the housings. Metal backshells are available for sizes 06, 10, 12 and 16 cable variants in the Gecko-SL range, to provide mechanical, RF and EMC protection. Gecko-MT connectors are available in '01-08-01' and '02-08-02' configurations, with 2 power contacts and 8 signal contacts or 4 power contacts and 8 signal contacts respectively.

## 2. RATINGS

### 2.1. MATERIALS

*All materials are also listed on individual drawings.*

All Power Contacts.....	Beryllium Copper
All Female Signal Contacts.....	Beryllium Copper
Male PCB Signal contacts.....	Phosphor Bronze
Male Crimp Signal Contacts.....	Brass
Contact plating finish.....	Hard Gold over Nickel
Housing.....	30% Glass Filled Thermoplastic UL94 V-0
Latches.....	Copper-Nickel-Tin alloy, Tin over Nickel finish
Screw-Lok fixings.....	Stainless Steel
Metal Backshells.....	Aluminium 6061-T6, High Phosphorus Nickel finish
Potting Compound.....	Stycast 2651MM with Catalyst 9

### 2.2. ELECTRICAL CHARACTERISTICS

**EIA-364-70A: 1998** – Current – per individual signal contact, 25°C ambient..... 2.8A max  
(When only one contact per connector is electrically loaded)

**EIA-364-70A: 1998** – Current – per signal contact through all contacts, 25°C amb..... 2.0A max

**EIA-364-70A: 1998** – Current – per power contact through all contacts..... 10.0A max

**EIA-364-20C: 2004** – Voltage Proof (at 1013mbar, sea level) ..... 600V DC or AC peak

## 2.2. ELECTRICAL CHARACTERISTICS – CONT.

EIA-364-20C: 2004 – Voltage Proof (at 44mbar, 21,336m/70,000ft).....	350V DC or AC peak
Working Voltage (at 44mbar, 21,336m/70,000ft).....	250V DC or AC peak
Working Voltage (at 1006mbar, sea level).....	450V DC or AC peak
EIA-364-06C: 2006 – Contact Resistance (initial) .....	20mΩ max
EIA-364-06C: 2006 – Contact Resistance (after conditioning) .....	25mΩ max
EIA-364-21C: 2000 – Insulation Resistance (initial) .....	10GΩ min at 500V DC
EIA-364-21C: 2000 – Insulation Resistance (after conditioning*) .....	>1GΩ min at 500V DC
Creepage Distance (contact-to-contact).....	0.15mm min
Clearance Distance (contact-to-contact) .....	0.15mm min

\*excluding Salt Mist conditioning

## 2.3. ENVIRONMENTAL CHARACTERISTICS

EIA-364-31B: 2000 - Humidity .....	65/150/56 days at 93% RH
EIA-364-32C: 2000 – Temperature Range .....	Test Condition IV, Dwell 30mins, 5 cycles at -65°C to +150°C
EIA-364-17B: 1999 – Temperature Life .....	Test Condition X, 150°C±5°C, Method A, without load
EIA-364-26B: 1999 – Salt Mist .....	Test Condition B, 48 hours continuous exposure
EIA-364-28D: 1999 – Vibration Severity ♦● .....	Test Condition IV: 10Hz to 2000Hz, 1.5mm, 198m/s <sup>2</sup> (20G) Duration = 2 Hours
EIA-364-27B: 1996 – Shock Severity ♦❖● .....	Test Condition E: 981m/s <sup>2</sup> (100G) for 6ms in Z axis, 490m/s <sup>2</sup> (50G) for 11ms in X & Y axes
Bump Severity ♦.....	390m/s <sup>2</sup> (40G), 4,000±10 Bumps
EIA-364-01A: 2000 – Acceleration Severity .....	490m/s <sup>2</sup> (50G)
♦ Latches or Screw-Loks fully utilized	
❖ X&Y tested at lower levels due to shaker limitations	
● It is recommended that back-potting compound is applied to crimp assemblies for vibration at higher frequencies	

## 2.4. MECHANICAL CHARACTERISTICS

Durability.....	1000 operations
Durability (Latches) .....	100 operations
<i>By hand or with Z125-926XX00 tools. Minimum added retention of 20N</i>	
Screw-Lok Torque .....	16 to 18 cmN
Scew-Lok Retention in Housing.....	20.0N min
Contact Retention in Housing (all contact types) .....	6.0N min
Signal Insertion Force (per contact, using mating contact).....	2.8N max
Signal Withdrawal Force (per contact, using mating contact) .....	0.2N min
Power Insertion Force (per contact, using mating contact).....	7.0N max
Power Withdrawal Force (per contact, using mating contact).....	0.2N min
Latch Retention in Housing.....	4.0N min

**2.5 WIRE TERMINATION INFORMATION – SIGNAL CRIMP PRODUCTS**

Wire Type (recommended).....	BS 3G 210 type A, MIL-W-16878/6 type ET or NEMA HP3 type ET
Maximum Insulation Diameter.....	Ø0.80mm
Insulation Strip Length.....	1.50-1.75mm
Recommended Hand Crimp Tooling.....	Hand Crimp Tool Z125-900, Positioner Z125-901, Insertion/Removal Tool Z125-902

Recommended potting compound is Stycast 2651MM with Catalyst 9.

Wire Size (AWG)	Stranding (No. x Ømm)	Diameter (mm)	Area (mm <sup>2</sup> )	Circular MIL Area (CMA)	Crimp Tool Setting	Crimp Height (mm)	Min. pull-off force (N)
26	7 x 0.15	Ø0.533	0.128	253	6	0.95-1.10	18
28	7 x 0.13	Ø0.381	0.072	159	5		13
30	7 x 0.10	Ø0.305	0.057	100	5		12
32	7 x 0.08	Ø0.203	0.035	62	5		6

For information on crimping Gecko signal contacts refer to [Tooling Instruction Sheet IS-37](#). For information on insertion/removal of Gecko signal cable contacts refer to [Tooling Instruction Sheet IS-38](#). There is also a Video on crimping and inserting Gecko contacts: <https://www.harwin.com/harwintv>

**2.6 WIRE TERMINATION INFORMATION – POWER CRIMP PRODUCTS**

Wire Type (recommended).....	M22759/11-18 PTFE (MIL-W-22759/11)
Maximum Insulation Diameter.....	Ø1.35mm
Insulation Strip Length.....	1.90-2.30mm
Recommended Hand Crimp Tooling.....	Hand Crimp Tool Z125-903, Positioner Z125-904, Insertion/Removal Tool Z125-905

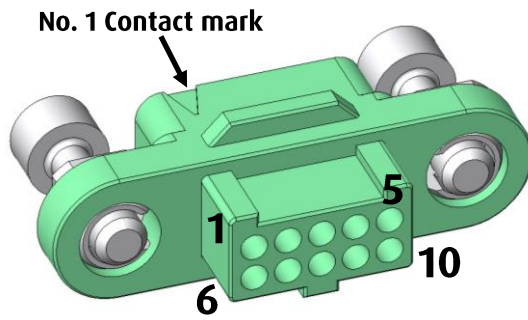
Recommended potting compound is Stycast 2651MM with Catalyst 9.

Wire Size (AWG)	Stranding (No. x Ømm)	Diameter (mm)	Area (mm <sup>2</sup> )	Circular MIL Area (CMA)	Crimp Tool Setting	Min. pull-off force (N)
18	19 x 0.25	Ø1.250	0.930	1624	8	85

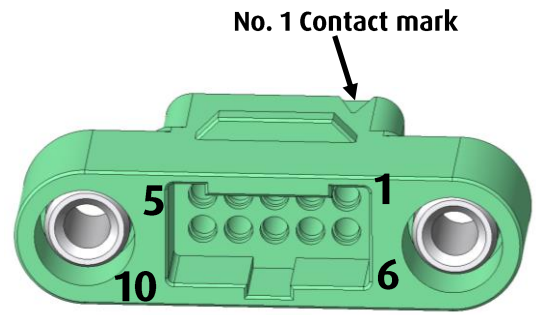
For information on crimping Gecko-MT power contacts refer to [Tooling Instruction Sheet IS-44](#). For information on insertion/removal of Gecko power contacts refer to [Tooling Instruction Sheet IS-47](#). There is also a Video on crimping and inserting Gecko contacts: <https://www.harwin.com/harwintv>

APPENDIX 1

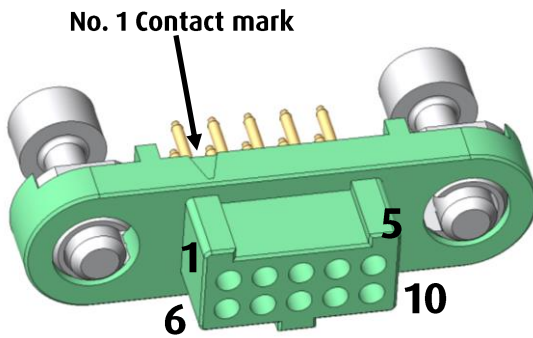
APPENDIX 1.1. – GECKO-SL CONTACT NUMBERING



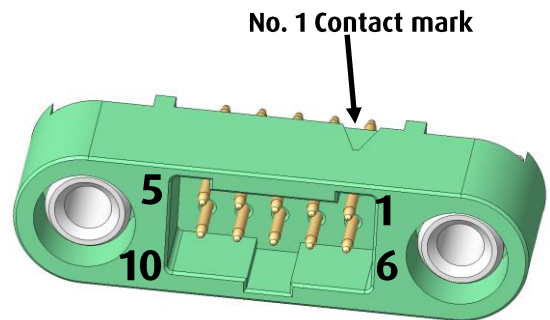
Female Crimp Housing



Male Crimp Housing

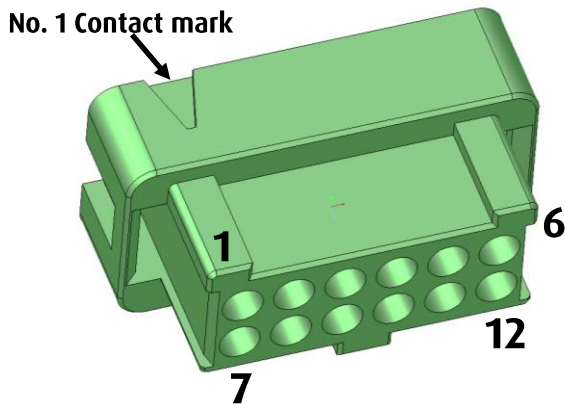


Female PCB mounted

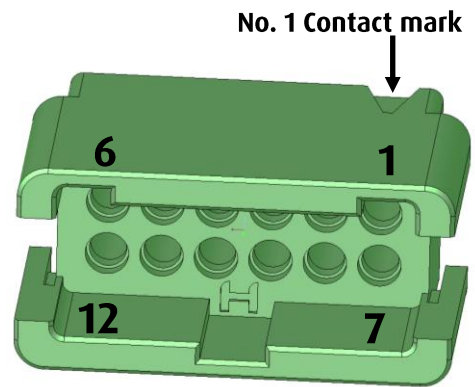


Male PCB mounted

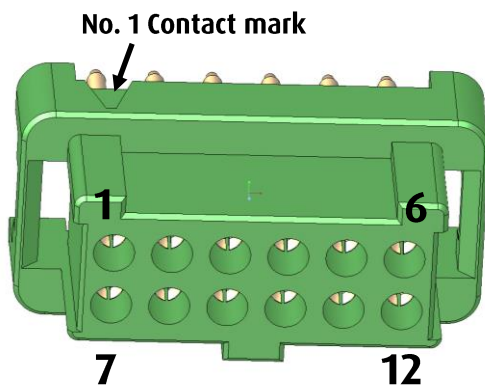
APPENDIX 1.2. – GECKO WITH LATCHES CONTACT NUMBERING



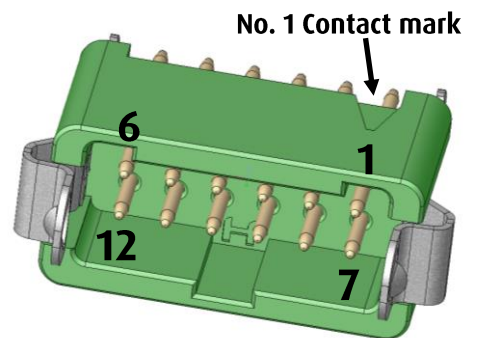
Female Crimp Housing



Male Crimp Housing

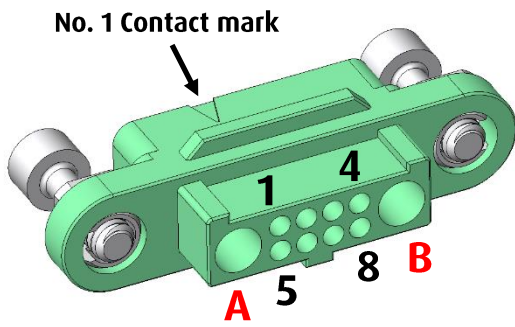


Female PCB mounted

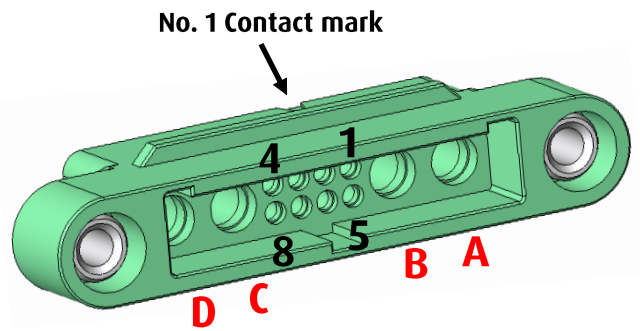


Male PCB mounted

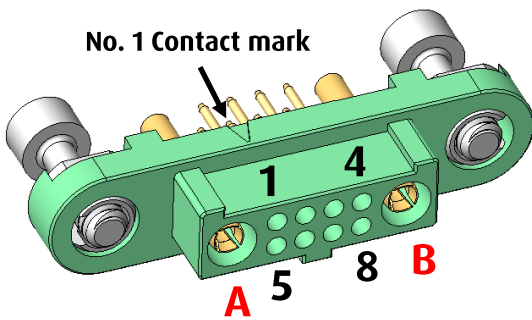
APPENDIX 1.3. – GECKO-MT CONTACT NUMBERING



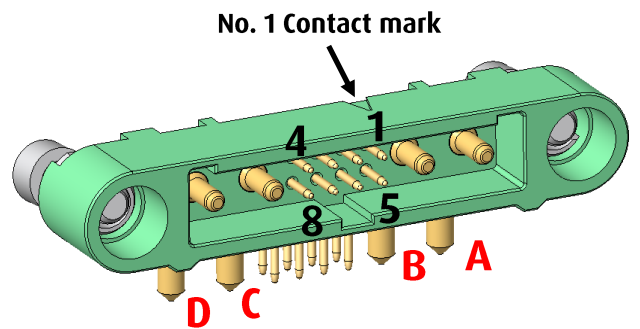
Female Crimp Housing  
(01-08-01)



Male Crimp Housing  
(02-08-02)



Female PCB mounted  
(01-08-01)



Male PCB mounted  
(02-08-02)