

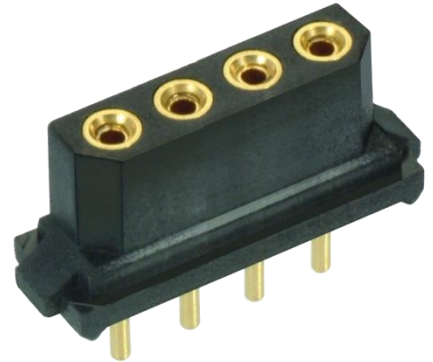
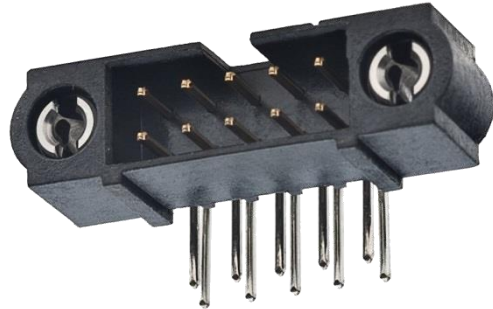
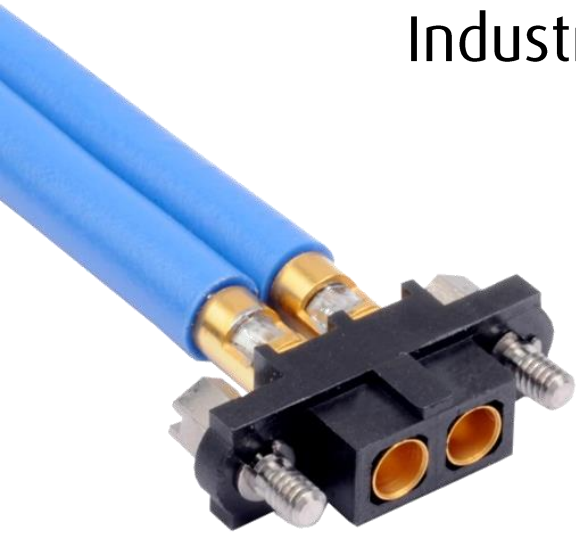
Datamate



HARWIN

Datamate High-Reliability Connectors

Industry recognised, **proven** performance



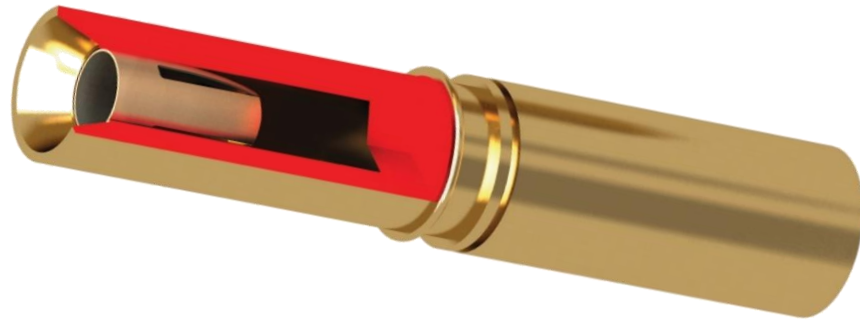
Datamate is the field-proven high-reliability range of choice for many industries.

- Complies with British Standard 9525-F0033 (1 & 2-row) and CECC 75101-008 (1, 2 & 3-row);
- Designed with aerospace, military and other “high-end” applications in mind;
- Proven in many years of successful service;
- Successfully and internationally utilised in COTS programs.



Datamate High-Reliability Connectors

The **heart** of the connector system

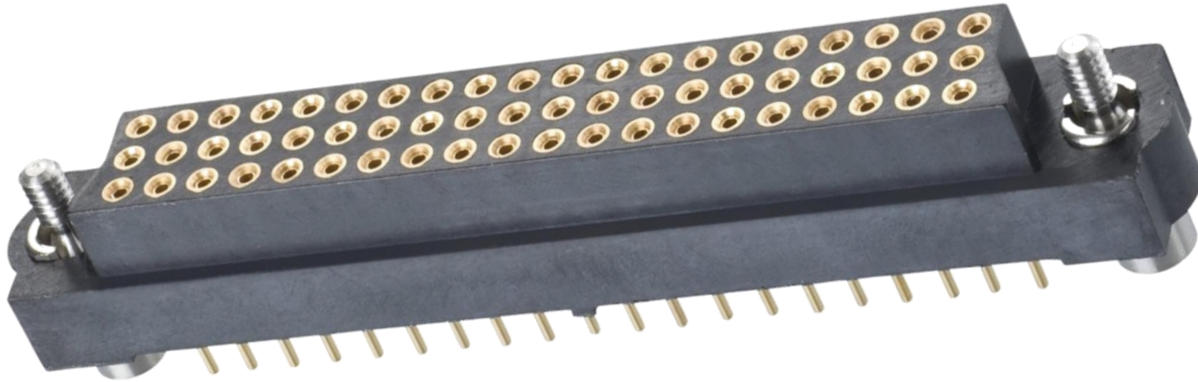


A 4-fingered Beryllium Copper female contact gives superb performance, for both electrical and mechanical specifications. This inner "contact clip" is stamped and plated with a durable gold finish at our UK headquarters. The spring performance of the contact gives the environmental resistance to shock and vibration, with a temperature range up to 125 degrees C.



Datamate High-Reliability Connectors

2mm pitch for **compact** ruggedness



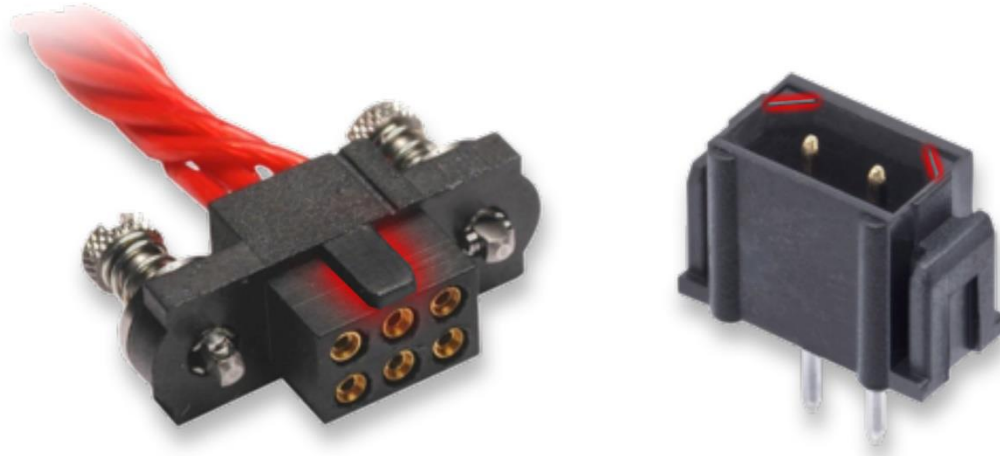
Datamate connectors are all based on a 2mm pitch system, with contact counts from 2 to 96. This compact system gives improved current rating over classic 2mm pitch pin header and socket systems, as well as meeting the high-reliability requirements with the vibration and temperature specifications.

The Datamate range is a professional connector system aimed at Commercial or COTS prices.



Datamate High-Reliability Connectors

Features – Shrouding and Polarisation

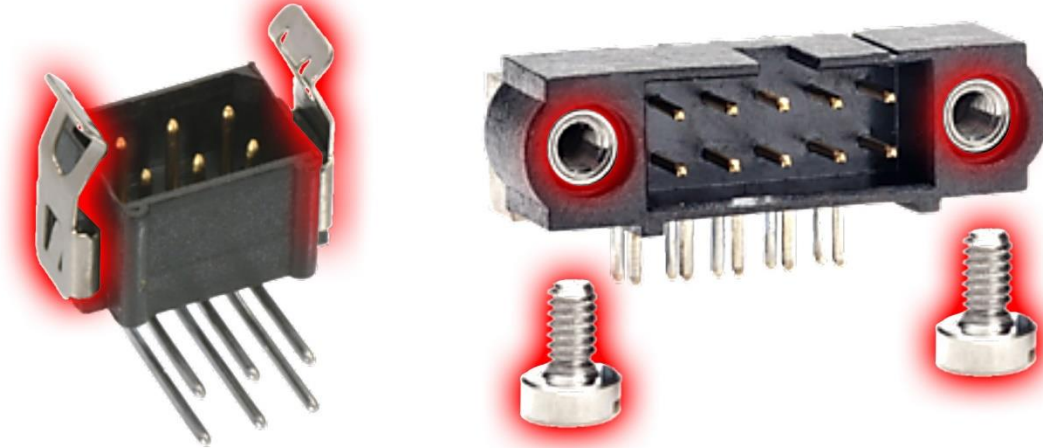


All Datamate styles feature shrouded male and female connectors, to prevent accidental damage to the miniature contacts. As the connector housings have shrouding, they can also incorporate Polarisation. This prevents connectors being mated upside-down.



Datamate High-Reliability Connectors

Features – Secure mating connections



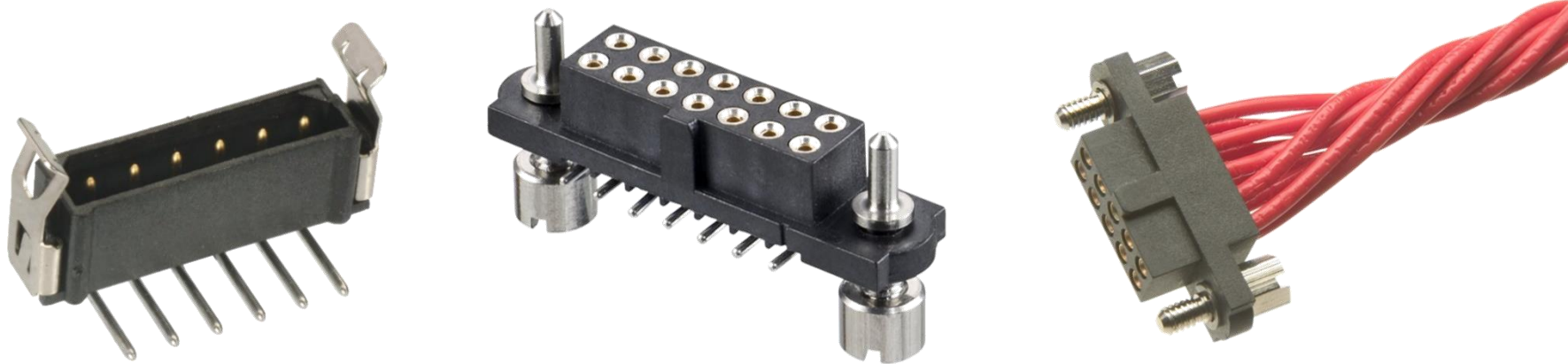
Another common feature through all the different Datamate styles is the ability to lock the two mating halves together, to achieve the maximum vibration, shock, bump and acceleration figures. Some styles also have additional board-mounting fixings, for added strain relief.

Details will follow in the next few pages on the styles of fixings among the different sub-ranges.



Datamate High-Reliability Connectors

Board-to-Board, Cable-to-Board, Cable-to-Cable

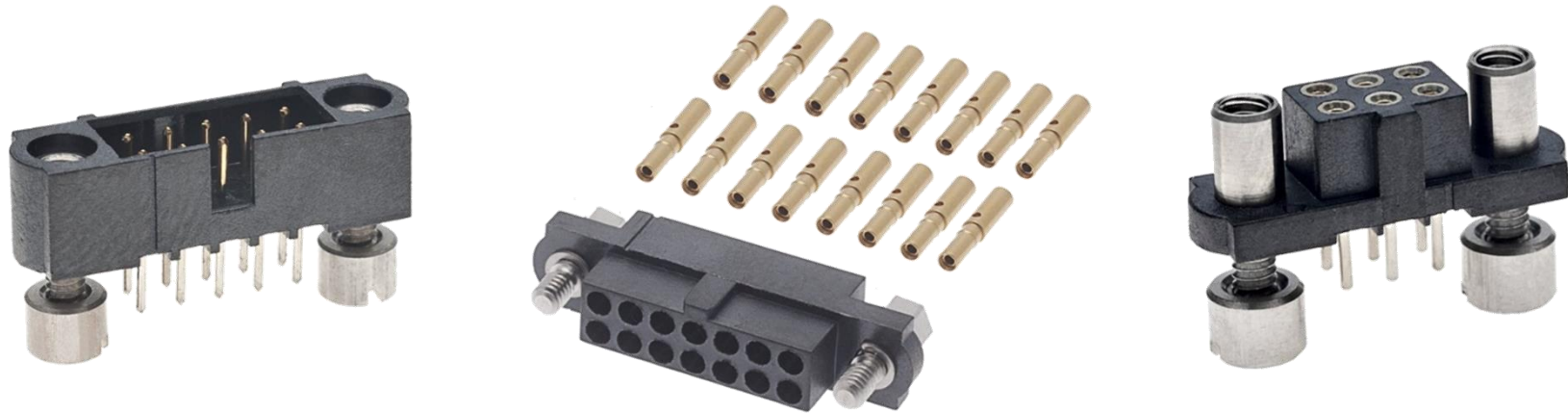


The number of styles available in Datamate has grown since its origin. Now, it is possible to choose male and female connectors for board mounting or cable mounting, in all different styles and pin counts. The versatility and sheer volume of choices can be hard to navigate - but the Harwin [Experts](#) are always happy to help talk you through your design requirements.



Datamate High-Reliability Connectors

Jackscrew connectors, board mount



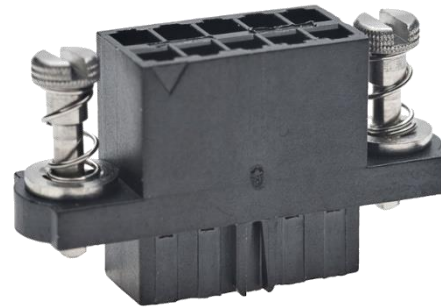
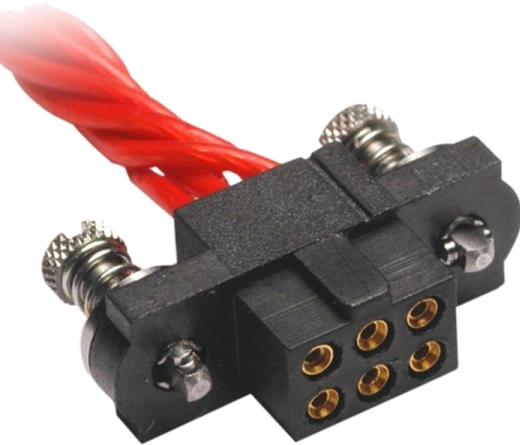
J-Tek gives the very secure connection of screwing the mating connectors together, by two jackscrews mounted at the end of the connector. This stainless steel fixing can also include board mount studs, to securely attach to the PCB.

This range is available in Double Row, with the pin count 4 to 50 (in even numbers). Although all pin counts are possible, we recommend 6, 10, 14, 20, 26, 34, 42 or 50.



Datamate High-Reliability Connectors

Fast mating Jackscrew connectors



[101Lok](#) is a sub-range of J-Tek, using the same housings, but with an innovative bayonet style fixing unique to Harwin. This gives a very fast [mating and un-mating sequence](#) – just plug the two halves together, then push each jackscrew forward and rotate by 101 degrees. No special tooling is required, and the reverse sequence is just as fast.

Datamate High-Reliability Connectors

Jackscrew connectors, **high pin count**



Datamate 3-Row part numbers start M83 (unlike the rest of Datamate, where part numbers start M80). These connectors are currently available in the following formats:

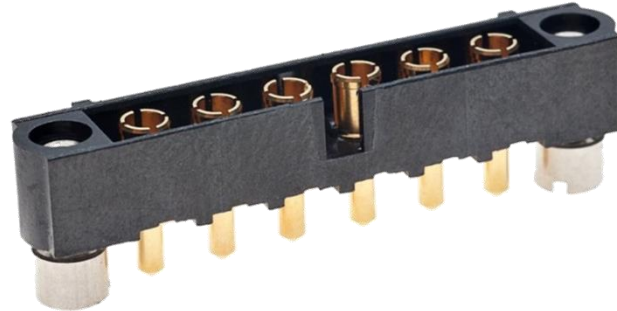
- Female – Cable and Vertical PCB mounting.
- Male – Vertical and Horizontal PCB mounting.

Pin counts for all styles are available in 18, 27, 36, 54, 60, 96 – additional sizes are available in some variants.



Datamate High-Reliability Connectors

Power-only or Power and Signal



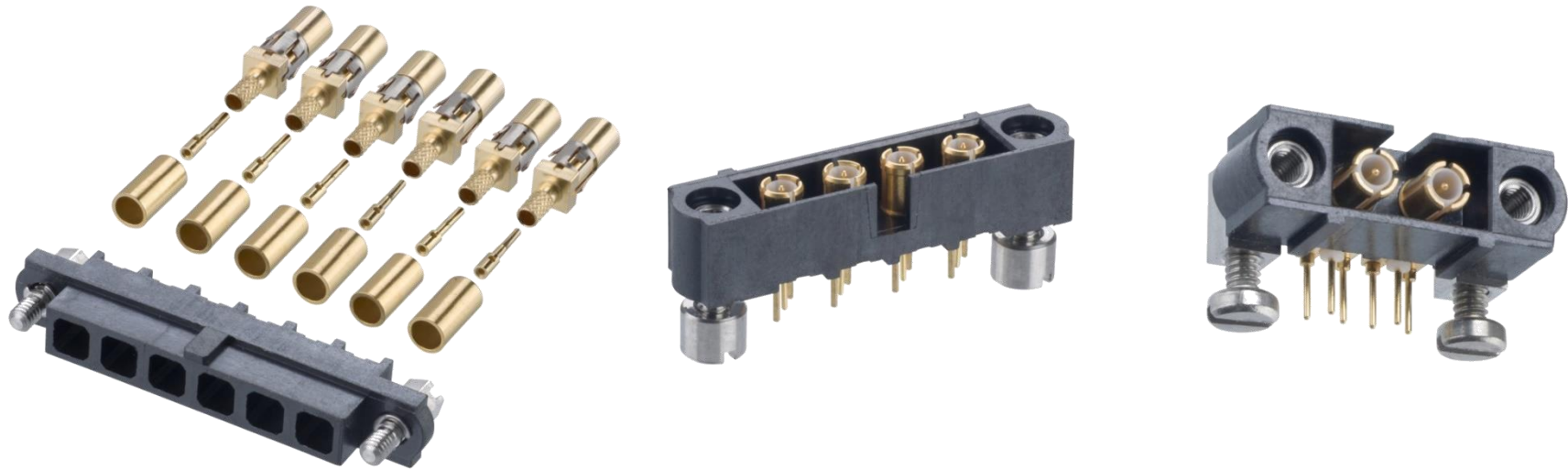
[Mix-Tek](#) uses the same outer housing design as J-Tek, with each power contact taking up the space of 4 signal contacts (giving 4mm pitch). The original power contacts are capable of up to 20A, and the latest [High Power](#) contacts will carry 40A each.

Power-only connectors have pin counts of 2, 4, 6 and 8 (with 10 available for 20A). Signal + Power have options of 2 or 4 power pins (20A), with 2, 4, 6, 8 or 12 signal pins. These variations are stocked in depth across the supply network.



Datamate High-Reliability Connectors

All-coax, 6GHz frequency with 50Ω impedance



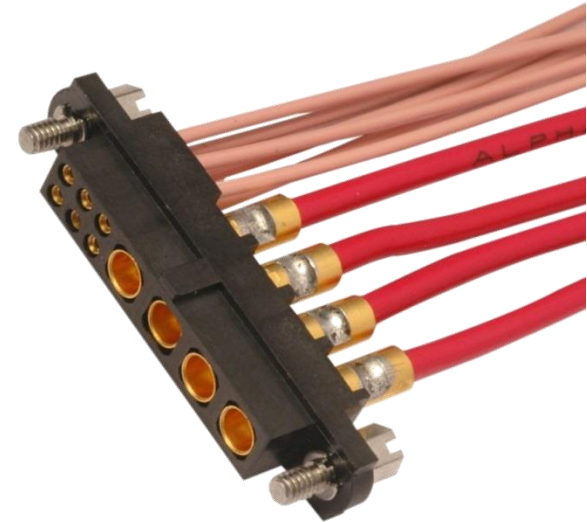
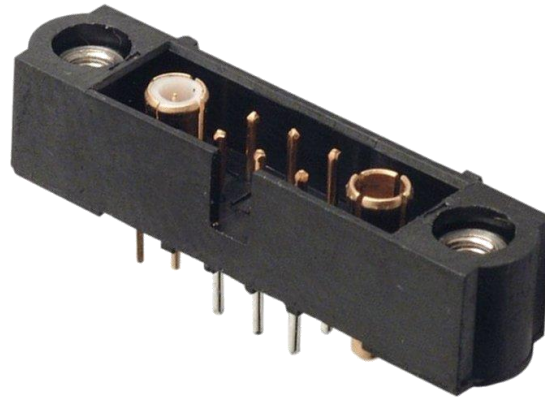
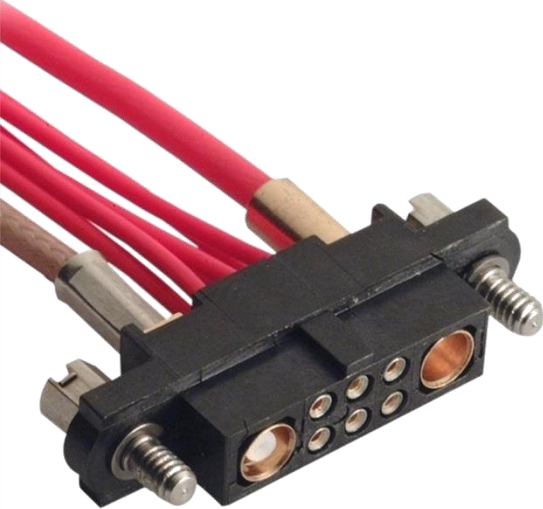
Using the Mix-Tek housings, the [Datamate Coax](#) range is a series of all-coax ganged connectors. Pin counts are available off-the-shelf in 2, 4, 6 or 8, for the following designs:

- Female – Cable connectors suitable for RG178 coax cable.
- Male – Vertical or horizontal PCB mounting connectors, with board mount fixings, and a choice of tail lengths.



Datamate High-Reliability Connectors

Variations on request



If there is no Off-The-Shelf or Datamate Coax that meets your requirements, Harwin may be able to offer Mix-Tek in a non-standard variant (please note, MOQ and lead-times will apply, contact [Harwin](#) for assistance):

- Cable, Vertical PCB mounting, Horizontal PCB mounting (male only);
- Power contacts from 10 to 20AWG, signal contacts from 22 to 32 AWG.
- Coax contacts for 6GHz, 50 Ohm, suitable for RG178, RG174, RG179 or RG316.



Datamate High-Reliability Connectors

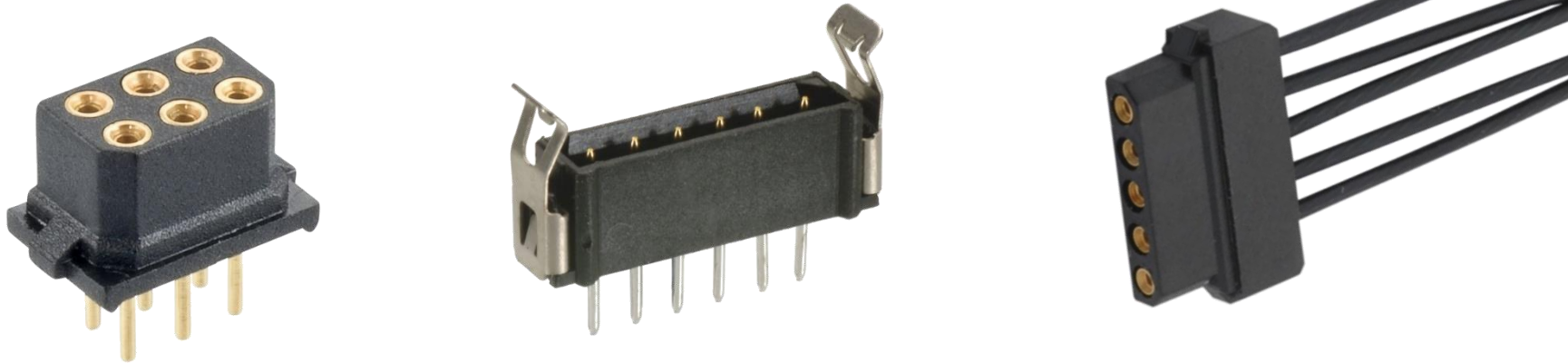
Improving the heart – Power at 2mm pitch



The T-contact is an advanced design, based on the research around the Gecko connector system. By using a single piece of Beryllium Copper in a turned design, the current-carrying capacity of the contact is greatly improved, due to the additional mass of metal. Beryllium Copper is used as the base metal to ensure the spring qualities of the contact area are maintained. This design enables a current rating of 8.5A max individually, or 3.5A max when all contacts are electrically loaded. Mating durability is also improved, as is vibration sensitivity. See the specifications on the following pages.

Datamate High-Reliability Connectors

Latched connectors, minimum footprint



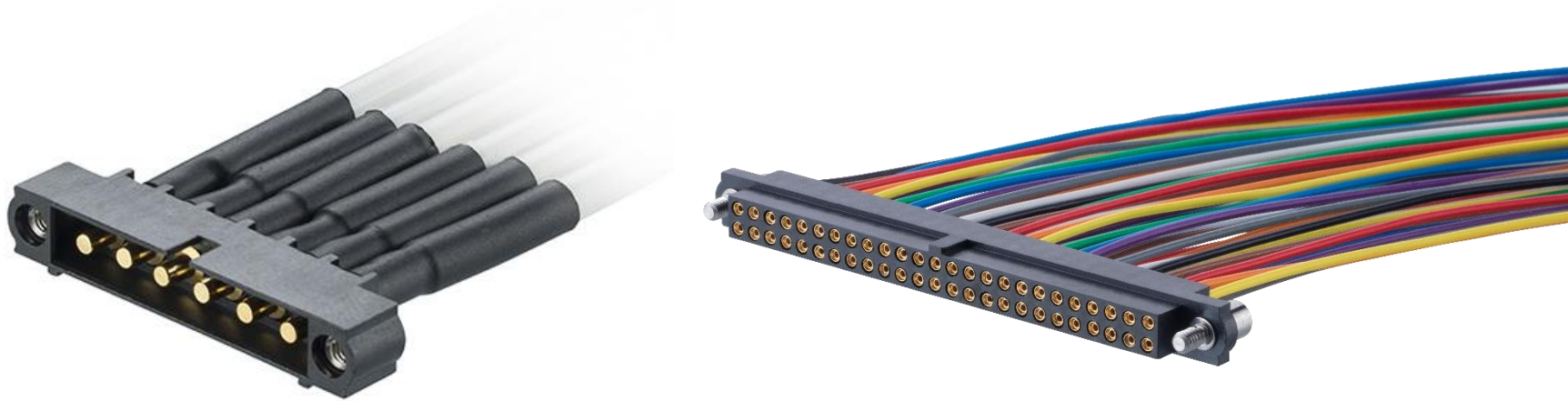
L-Tek is the original Datamate, and still very popular due to the Single Row option and minimal footprint. The latch design takes up very little additional board space, and male connectors can be supplied with or without Locking Latches.

Single row pin counts are 2 to 7, and 17 (22 in some designs). Double row is 4 to 20 (even numbers), 26, 34 and 44 pin count.



Datamate High-Reliability Connectors

Ready-to-go, stocked in depth



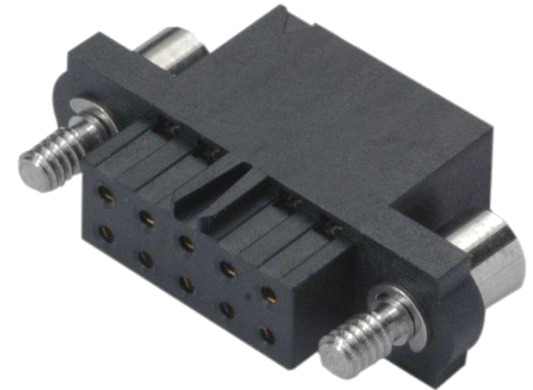
Ready-made cable assemblies, manufactured in the USA at Harwin's cable assembly facility. A variety of connector styles and sizes with 150mm cable, from the following product ranges:

- [Datamate J-Tek](#) - single- and double-ended with female connectors
- [Datamate Power](#) - female and male single-ended, both standard (20A) and high power (40A)
- [Datamate L-Tek](#) - single- and double-ended double row female, single-ended single row female



Datamate High-Reliability Connectors

Crimp designs suitable for full **automation**



The single issue with Datamate is the use of a barrel crimp – although this gives the best performance, there are very few crimp automation systems designed to handle barrel crimps. Trio-Tek solves this problem – by slightly reducing a couple of the [specification](#) levels, a female open crimp has been designed, with housings suitable for mating with both L-Tek and J-Tek standard male connectors. These crimps can easily be used in standard crimp automation systems, making savings on assembly time and process costs.



Datamate High-Reliability Connectors

Electrical Specification highlights

Current Rating	Standard Signal Contacts = 3.3A max T-Contact = 8.5A max Power Contacts = 20A max High-Power Contacts = 40A max
Impedance (coax)	50 ohms
Frequency range (coax)	6GHz max
Voltage Proof (Maximum Voltage)	Signal/Power = 1,200V DC or AC_{rms} Coax = 1,000V AC_{rms}

Datamate is field-proven in tough terrains and environments, from underground to outer space. The Current rating exceeds the levels normally expected from a 2mm pitch connector system.

The full [Datamate Component Specification](#) is available to download from the Harwin website.



Datamate High-Reliability Connectors

Mechanical & Environmental Specification highlights

Vibration	T-Contact = 40g for 6 hours Others = 10g for 6 hours
Shock	100g for 6ms
Durability	T-Contact = 1,000 mating cycles Others = 500 mating cycles
Temperature Range	-55°C to +125°C

The above specifications secure the reputation of the Datamate range as a High-Reliability connector. Multiple [Test Reports](#) for Datamate are available from the Technical Resource area at Harwin.com.



Datamate High-Reliability Connectors

Accessories and Tooling



- Plastic and Metal backshells for female cable connectors;
 - Hand Crimp tools and associated positioners for all crimp contacts, including signal, power, coax and Trio-Tek;
 - Insertion/Removal tools for inserting crimped contacts into housings (and removing them if rework is required);
 - [Slotted screwdriver](#) for use with the slotted board mount nuts, [Separator tool](#) for un-mating locking latches.
- [Instruction videos](#) are also available to illustrate the signal and coax crimping processes and assembly.

Datamate High-Reliability Connectors

Markets



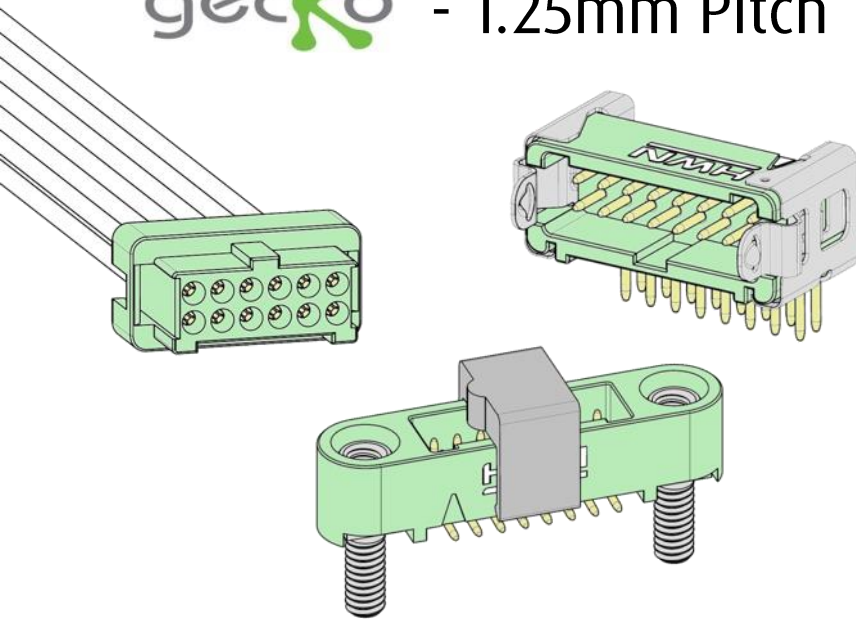
Rugged, high-reliability connectors continue to be in strong demand in many varied environments. Small enough to be used in handheld and portable applications, yet high-powered enough to meet the demands of large-scale equipment, Datamate continues to find new applications and new product uses in existing and new customers.

- Aerospace
- Autosport
- Military
- Robotics
- Oil & Gas



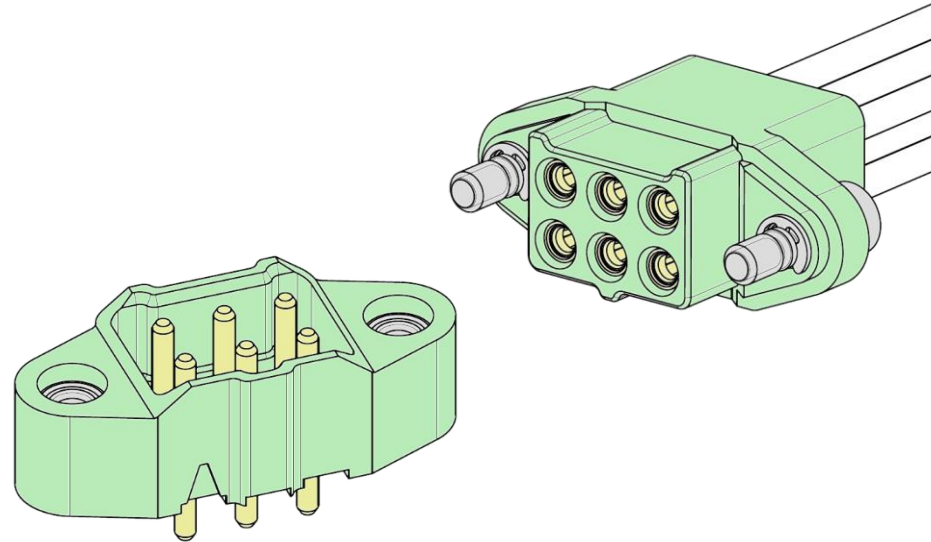
If you like this product, try...

gecko - 1.25mm Pitch



- 2A per contact
- Locking latch system for strain relief
- Resists Vibration to 20G and Shock to 50G
- Temperature range -65 deg C to +150 deg C
- Vertical, Horizontal and Cable options

M300 - 3.00mm Pitch



- Up to 10A per contact
- Jackscrew fixing system for strain relief
- Resists Vibration to 10G and Shock to 100G
- Temperature range -65 deg C to +175 deg C
- Vertical and Cable options



Get Help from a Harwin Expert

Our experts are specialists in their field with many years of experience in their respective roles and industries.

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