

HARWIN

AVNET ABACUS



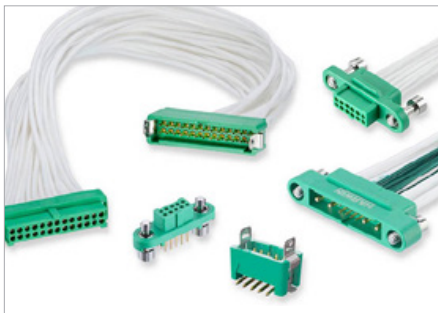
Harwin aerospace and
defence solutions

Harwin aerospace and defence solutions

When failure is not an option, connect with confidence

Whether your product is flying the skies with hundreds of passengers, or providing surveillance for troops in the middle of the desert, performance and reliability can't be compromised. Harwin connectors provide a confidence of connection designed to optimise your COTS options for a SWaP-C solution. High-reliability connector ranges from Harwin have a proven record for performance under the most extreme environmental conditions from vibration and shock severity to high temperature and humidity. Harwin is certified to EN9100D/AS9100D and has been supplying major manufacturers in the aerospace and defence sector for many years.

GECKO 1.25MM PITCH CONNECTORSS



[MORE INFORMATION](#) 

High-reliability connections in a miniature package for an ideal SWaP-C solution. For applications that must not fail, Gecko offers a high-reliability connection at a miniature 1.25mm pitch. Capable of withstanding extremes of shock, vibration and temperature, the series features cable-to-board, board-to-board and cable-to-cable in pin counts up to 50. Beryllium copper, gold plated 4-finger contacts offer excellent current capacity for a miniature connector achieving 2A per contact (electrically loaded). Specify finger-release locking latches for a minimal PCB footprint or Mate-Before-Lok screw-lok hardware for maximum strain relief. The compact design offers significant space saving over Micro-D connectors making it an ideal solution for aerospace applications, with up to 45% smaller and 75% lighter over existing equivalent industry standards.

FEATURES

- 2A per 4-finger beryllium copper, gold plated contact
- Mate-before-lok stainless steel screw-lok hardware for strain relief and ease of mating
- Reverse-fix options for female PCB mounting
- Metal backshells available for EMI/RFI protection and enhanced electrical continuity
- Operating temperature range: -65°C to +150°C
- 1000 mating cycles durability

APPLICATIONS

- Radar and tracking
- Avionics controls
- Guidance systems
- Engine controls
- UAVS
- Radio communications
- Handheld portable equipment
- Vehicle electronics
- Satellites and CubeSats
- Launch systems

GECKO-MT MIXED LAYOUT CONNECTORS



[MORE INFORMATION](#) 

The Gecko-MT range combines the 1.25mm pitch Gecko signal connector system with mixed technology layouts, adding 10A power contacts to the range. Stainless steel mate-before-lock screw-loks are available in both standard or reverse-fix ensuring secure connection. Lightweight metal hoods are available for additional cable protection and shielding. By encompassing both data and power in a single compact and lightweight solution, Gecko-MT connectors are highly optimised for avionics, space and defence applications.

FEATURES

- Mixed current capacity of 10A and 2A per contact (electrically loaded)
- 4-finger beryllium copper, gold plated contact design to maintain electrical continuity
- Withstands 100G shock for 6ms and 20G vibration for 6hrs
- Operating temperature range: -65°C to +150°C
- 1000 mating cycles durability
- Fully shrouded and polarised to prevent mis-mating
- Working voltage: 450V AC-DC
- UL94V-0 rated
- Ideal for COTS applications

APPLICATIONS

- Radar and tracking
- Avionics controls
- Guidance systems
- Engine controls
- UAVS
- Radio communications
- Handheld portable equipment
- Vehicle electronics
- Satellites and CubeSats
- Launch systems

GECKO METAL BACKSHELLS



MORE INFORMATION 

Gecko metal backshells enhance the Gecko-SL and Gecko-MT 1.25mm pitch connector ranges by providing EMI/RFI screening and mechanical strength. The metal backshells for cables are a 2-part design, which can be easily fitted after the cable assembly construction – even as an additional design improvement after manufacture. The design is compatible with both male and female cable connector housings, with the addition of long screw-loks for use with the female connectors. There is also an additional PCB backshell, compatible with board-mount or panel-mount male connectors. Overall screen termination by stainless steel micro-band ensures electrical and mechanical longevity and security. These fully machined metal backshells are made from aluminium alloy with electroless nickel plating. The lightweight design makes them ideal for aerospace applications and they provide a significant cost savings over comparable Micro-D options. Gecko metal backshells enhance the Gecko-SL and Gecko-MT 1.25mm pitch connector ranges by providing EMI/RFI screening and mechanical strength.

FEATURES

- 2-piece cable backshell construction to ensure reliability, strength and performance
- Compatible with Gecko-SL and Gecko-MT connector ranges for a signal and power solution
- Machined from aluminium for strength and shielding integrity
- Nickel plating for corrosion resistance
- Stainless steel screw-loks for female configurations
- Stainless steel micro-band to affix metal braid to rear of backshell for full shielded assemblies (sold separately)
- Braid retention feature at cable entrance is suitable for metallic and non-metallic conductive braids

APPLICATIONS

- Radar and tracking
- Avionics controls
- Guidance systems
- UAVS
- Engine controls
- Radio communications
- Vehicle electronics
- Satellites and cubesats
- Launch systems
- Handheld portable equipment

DATAMATE 2.00MM PITCH CONNECTORS



MORE INFORMATION 

Achieve high-reliability performance in extreme conditions with the Datamate 2.00mm pitch connector range. Ensure continuous signal integrity under vibration and shock with Datamate's patented four-finger beryllium copper, gold-plated contact. Increase security by specifying your choice of jackscrew hardware for maximum strain relief or locking latches for a minimal PCB footprint. The compact design is available in a wide array of configurations that allow for a low-profile connection. The Datamate range provides an ideal COTS solution for proven reliability in demanding applications.

FEATURES

- 3A per contact (electrically loaded), beryllium copper and gold-plated
- four-finger contact design to maintain electrical continuity
- Withstands 100G shock for 6ms and 10G vibration for 6hrs
- Operating temperature range: -55°C to +125°C
- 500 mating cycles durability
- Fully shrouded and polarised to prevent mis-mating
- Working Voltage: 800V AC-DC
- UL94V-0 rated
- Proven history in military and aerospace applications
- Ideal for COTS applications
- Low outgassing properties meet ESA requirements

APPLICATIONS

- Radar and tracking
- Avionics controls
- Guidance systems
- UAVS
- Radio communications
- Vehicle electronics
- Satellites and cubesats
- Launch systems
- Routers

DATAMATE T-CONTACT



MORE INFORMATION 

Harwin combines the field proven 2.00mm pitch Datamate J-Tek connector range with the T-Contact to extend the boundaries of power capacity with signal connector technology. Recognising a distinct trend towards increased power, the T-Contact uses a patented, 6-finger design to deliver up to 8.5A per contact. It is machined from a single piece of beryllium copper, and gold-plated to provide reliable performance in demanding applications. Cable housings are stocked in depth in selected sizes from 4 to 50 position, to provide fast delivery and greater flexibility. The T-Contact offers increased mating cycles, 60% more contact wipe and thicker gold plating than traditional datamate signal contacts. Compatible with all male J-Tek connectors, with no increase in size over 3A signal connectors.

FEATURES

- Up to 8.5A per contact, beryllium copper and gold plated, 6-finger contact design to maintain electrical continuity
- 30 μ to 40 μ " of gold plating
- 60% more contact wipe improves contact self-cleaning action and helps reduce surface contamination
- Withstands 100G shock for 6ms and 40G vibration for 6hrs
- Operating temperature range: -55°C to +125°C
- 1000 mating cycles durability
- Fully shrouded and polarised to prevent mis-mating
- Working voltage: 800V AC-DC
- UL94V-0 rated

- Low outgassing properties meet ESA requirements
- Ideal for COTS applications
- Insulation resistance: 106M Ω min.
- Contact resistance: 25m Ω max.

APPLICATIONS

- Radar and tracking
- Avionics controls
- In-flight systems
- UAVS
- Radio communications
- Actuators
- Satellites and CubeSats
- Launch systems
- Power control modules

DATAMATE MIX-TEK CONNECTORS



MORE INFORMATION 

Datamate Mix-Tek is a 2mm pitch (signal) and 4mm pitch (power/coaxial) high-reliability connector range with a proven track record for performance under extreme conditions. Male and female cable connector housings can be specified in combination with 3A signal contacts or with 4mm pitch only for a true mixed technology connector. Housings are compatible with any of the following power/coax contact options: Standard Power (20A), High Power (40A), Coax (50 Ω). Ideal for Commercial Off-The-Shelf (COTS) specification requirements, the range is offered in the most popular cable housings sizes, compatible with each other for cable-to-cable, or with PCB connectors for cable-to-board combinations. To meet the demanding requirements of vibration, shock and strain relief, added security is provided by jackscrews, offered in a choice of different styles for added flexibility. By stocking housings and cable contacts separately, a much wider variety of combinations is possible off-the shelf with no manufacturing lead-time – the equivalent to 1,034 connector kits.

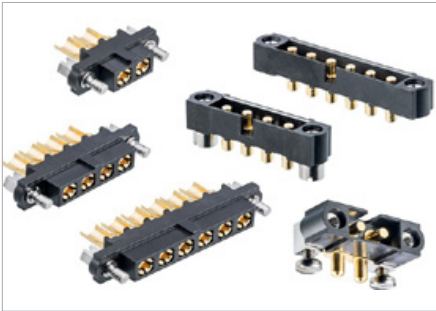
FEATURES

- Multiple current capacity options: 3A signal, 20A power, 40A high power
- Multiple 50 Ω , 6GHz coaxial ganged contacts
- Thousands of combinations available off-the-shelf
- Stainless steel jackscrew for strain relief and vibration/shock resistance
- Withstands 100G shock for 6ms and 10G vibration for 6hrs
- Operating temperature range: -55°C to +125°C
- 500 mating cycles durability
- Low outgassing properties meet ESA requirements
- Working voltage: 800V AC-DC

APPLICATIONS

- Radar and tracking
- Avionics controls
- In-flight systems
- UAVS
- Radio communications
- Actuators
- Satellites and CubeSats
- Launch systems
- Power control modules
- Routers

DATAMATE 4.00MM PITCH POWER CONNECTORS



[MORE INFORMATION](#) 

Optimise SWaP with Harwin's range of Datamate power connectors for high-reliability applications. This range offers a robust beryllium copper contact connection with 20A or 40A options in a compact 4mm pitch package. The contacts are plated with 30 micro-inches (0.76µm) to meet military and aerospace requirements. Contacts are compact and operate over a wide temperature range. Guard against vibration and shock with fitted stainless steel jackscrews.

FEATURES

- 20A power or 40A high power contacts available
- Stainless steel jackscrew for strain relief and vibration/shock resistance
- Withstands 100G shock for 6ms and 10G vibration for 6hrs
- Operating temperature range: -55°C to +125°C
- 500 mating cycles durability
- Fully shrouded and polarised to prevent mis-mating
- Working voltage: 800V AC-DC
- UL94V-0 rated
- Proven history in military and aerospace applications
- Ideal for COTS applications
- Low outgassing properties meet ESA requirements

APPLICATIONS

- Radar and tracking
- Avionics controls
- In-flight systems
- UAVS
- Radio communications
- Actuators
- Satellites and CubeSats
- Launch systems
- Power control modules
- Routers

DATAMATE GANGED 50Ω COAX WIRE-TO-BOARD CONNECTORS



[MORE INFORMATION](#) 

These lightweight assemblies use high-grade, lightweight RG178 coaxial cable for a flexible, space-saving solution. Specify single-ended or double-ended female assemblies in lengths of 150mm, 300mm or 450mm. All coax cable assemblies are quality assured, with full visual inspection and electrical continuity testing. The Datamate coax range requires just one connection which decreases production build time and increases assembly speed. The high-quality, high reliability 50Ω gold plated coaxial contacts are ideally suited for high vibration environments and multiple insertions. Cable housings for customisable cable assemblies and board mount configurations also available.

FEATURES

- Gold plated 50Ω coax contacts
- Frequency range of up to 6GHz
- Compact design on a 4.00mm pitch to reduce space and weight requirements
- Stainless steel jackscrew for security and vibration/shock resistance
- Ganged for fast mating and ease of assembly
- Withstands 100G shock for 6ms and 10G vibration for 6hrs
- Operating temperature range: -55°C to +125°C
- 500 mating cycles durability
- Fully shrouded and polarised to prevent mis-mating
- Working Voltage: 180VAC @ 500mA
- Ideal for COTS applications
- Low outgassing properties meet ESA requirements

APPLICATIONS

- Radar and tracking
- Avionics controls
- In-flight systems
- UAVS
- Radio communications
- Actuators
- Satellites and CubeSats
- Launch systems
- Power control modules
- Routers

DATAMATE METAL BACKSHELLS



[MORE INFORMATION](#) 

Datamate metal backshells are designed to provide EMI/RFI screening and are constructed to ensure reliability, strength and performance. These wire-to-board accessories are compatible with the Datamate J-Tek range and Mix-Tek range for signal, power and coax connector solutions. The female cable versions include attachment features for screening braid, providing strain relief and mechanical protection for additional performance improvements. Male backshells are designed for panel mount applications and are compatible with cable or vertical PCB connector styles. Full 360-degree EMI/RFI shielding is delivered once the male/female mating process has been completed. These fully machined metal backshells are made from aluminium alloy with electroless nickel plating. Overall screen termination by stainless steel micro-band ensures electrical and mechanical longevity and security. The lightweight design makes them ideal for aerospace applications and they provide a significant cost savings over comparable Micro-D options.

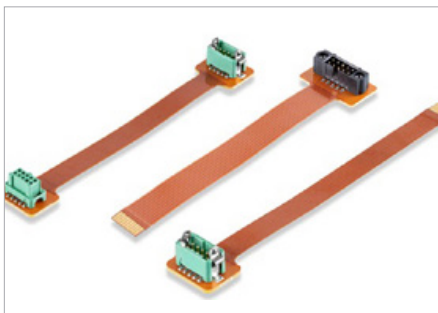
FEATURES

- Machined single-piece aluminium for strength and shielding integrity
- Nickel plating for corrosion resistance
- Stainless steel jackscrews, circlips and band-it tie
- Braid retention feature at cable entrance is suitable for metallic and non-metallic conductive braids
- Accepts signal, coax and power (up to 12AWE PTFE wires)
- RF attenuation: 10kHz to 400MHz @ >30dBs mated

APPLICATIONS

- Radar and tracking
- Avionics controls
- In-flight systems
- UAVS
- Radio communications
- Actuators
- Satellites and CubeSats
- Launch systems
- Power control modules
- Routers

HI-REL FLEX CIRCUIT CABLE ASSEMBLIES



[MORE INFORMATION](#) 

Discover the added versatility of Flexible Printed Circuits (FPC) from Harwin for high-reliability applications. These low-profile designs combine the go-anywhere routing of cables with the reduced vertical space required by SMT connectors. When you replace standard cable connectors with these flex-mounted SMT connections, you'll be able to stack your PCBs closer. The FPC design allows for a right-angled connection. Choose between Datamate J-Tek for 2mm pitch connectors and 1mm pitch FPC, or Gecko for 1.25mm pitch connectors and 0.5mm pitch FPC. Stainless steel jackscrews are fitted to the Datamate connectors and latches to the Gecko, ensuring secure connection under duress.

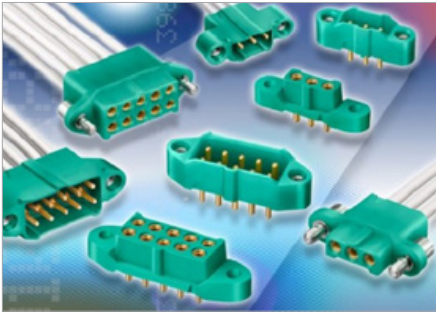
FEATURES

- 1A per track for Datamate J-Tek and 0.4A per track for Gecko
- 10 position double row configurations with single and double end options
- Available in lengths of 100mm for Datamate J-Tek and 75mm for Gecko
- Tighter bend radius under static and dynamic conditions
- 4-finger contact design to maintain electrical continuity
- Withstands 100G shock for 6ms and up to 20G vibration
- Operates at temperatures of -65°C to +150°C
- Compatible with standard FPC/FFC connectors
- Fully shrouded and polarised to prevent mis-mating
- Flexible Printed Cable – polyamide base, copper clad with bonded overlay

APPLICATIONS

- Flight control systems
- Gimble cameras
- Radar and tracking
- Flight surface controls
- Radar and communications
- Vehicle electronics
- Satellites and CubeSats
- Launch systems
- UAVs
- Handheld portable equipment

M300 3.00MM PITCH POWER CONNECTORS



[MORE INFORMATION](#) 

Specify Harwin's M300 range of 3.00mm pitch connectors for high reliability and performance in aerospace and defence applications. Board mount connectors, crimp cable connectors and ready-made cable assemblies save space and weight on the PCB while maximising power. Achieve a compact power connection with up to 10A per contact, giving you a lightweight robust solution with a proven track record under extreme conditions. Future-proof your designs with halogen-free, RoHS compliant materials and low outgassing levels. Guard against vibration and shock with fitted stainless steel jackscrews. Attain the highest operating temperature of Harwin's connector offering with the M300 range which withstands -65°C to +175°C.

FEATURES

- 10A per contact electrically loaded (5A with 22AWG)
- Beryllium copper and gold plated 4-finger contact design to maintain electrical continuity
- Withstands 100G shock for 6ms and 10G vibration for 9hrs
- Operating temperature range: -65°C to +175°C
- 1000 mating cycles durability
- Fully shrouded and polarised to prevent mis-mating
- Working Voltage: 600V AC-DC
- UL94V-0 rated
- Proven history in military and aerospace applications

APPLICATIONS

- Radar and tracking
- Avionics controls
- In-flight systems
- UAVS
- Radio communications
- Actuators
- Satellites and CubeSats
- Launch systems
- Power control modules
- Routers

KONA 8.5MM PITCH HIGH POWER CONNECTORS



[MORE INFORMATION](#) 

Specify high current and high quality for maximum power in extreme conditions with the 8.5mm pitch KONA connector series capable of achieving up to 60A and 3000V per contact. Individually shrouded contacts and the tough resilient housings protect the connections from physical knocks and damage. Vibration and shock resilience are built into the design, with 6-finger beryllium copper alloy contacts for electrical continuity and good spring force properties. Male pin connectors are through board PCB mount design with additional board fixings for strain relief. Female cable housings are supplied with stainless steel mate-before-lock thumbscrew hardware for a fast, easy and secure connection that doesn't require additional tooling. Female cable contacts are ready for 8AWG cables to be soldered before assembly to the housing.

FEATURES

- 60A and 3,000V per contact
- Beryllium copper and gold plated 6-finger contact design
- Withstands 100G shock and 20G vibration
- Operating temperature range: -65°C to +150°C
- 250 mating cycles durability
- Individually shrouded contacts on male and female connectors
- Stainless steel thumbscrews for easy fixing. Mate-before-lock with no additional tooling required
- UL94V-0 rated
- Ideal for COTS applications
- Contact resistance: 2mΩ max.
- Low outgassing properties meet ESA requirements

APPLICATIONS

- Power control systems
- In-flight infotainment and in-cabin services
- Navigation and flight systems
- UAVS
- Engine power management
- Vehicle electronics
- Remote robotics drives
- Servo controls
- Satellites and cubesats



ENGINEERING SERVICES - ASK AN EXPERT

Have a question?
Avnet Abacus' regional technical
specialists are on hand to help

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HOW TO CHOOSE CONNECTORS FOR SPACE

Learn about the key considerations
for connectors in your space
applications and how to make the
right choices

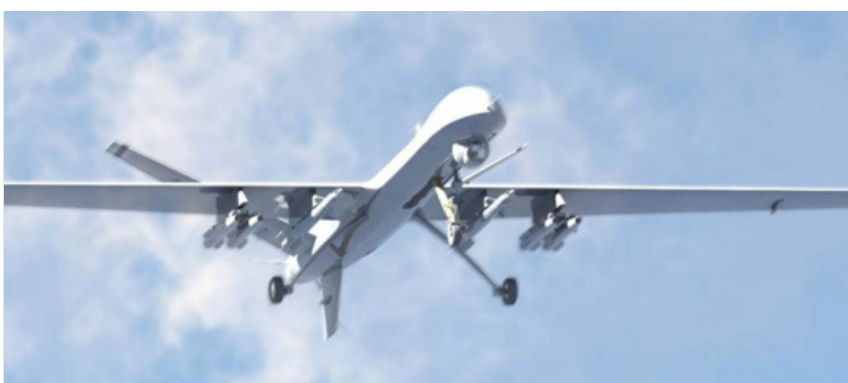
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POTENTIAL OF 'LPTA' TO DRIVE FURTHER INNOVATION

Learn how to leverage 'Lowest Price
Technically Acceptable' in your next
design

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DESIGNING UNMANNED MILITARY VEHICLES TO ENSURE SOLDIER SAFETY

Learn how connector selection can
ensure safety in unmanned vehicles

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