

HARWIN

CONNECT TECHNOLOGY
WITH CONFIDENCE



HIGH RELIABILITY
WITH SUPREME
PERFORMANCE



INNOVATIVE
DESIGNS FOR
EASY ASSEMBLY



DEPENDABLE
CONNECTIVITY
ACROSS THE BOARD

HRI
RANGE

EZi
RANGE

BBI
RANGE

PRODUCTS IN ACTION - HRI

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PRODUCTS IN ACTION

OPTRONIC MAST SYSTEM

Application:

Multi-spectral camera integrated into a submarine mast.

Background:

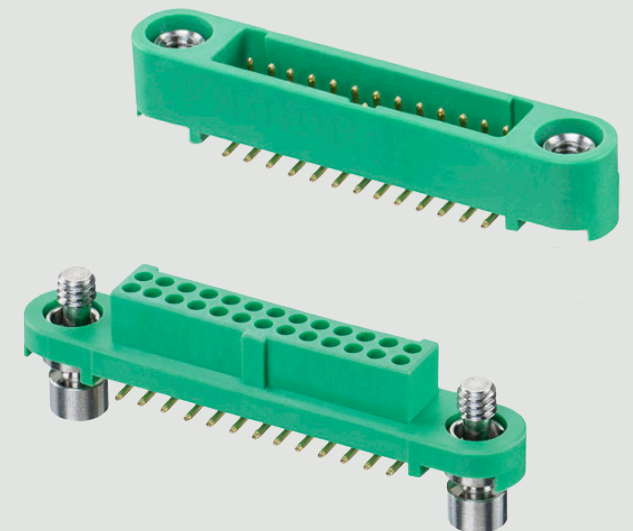
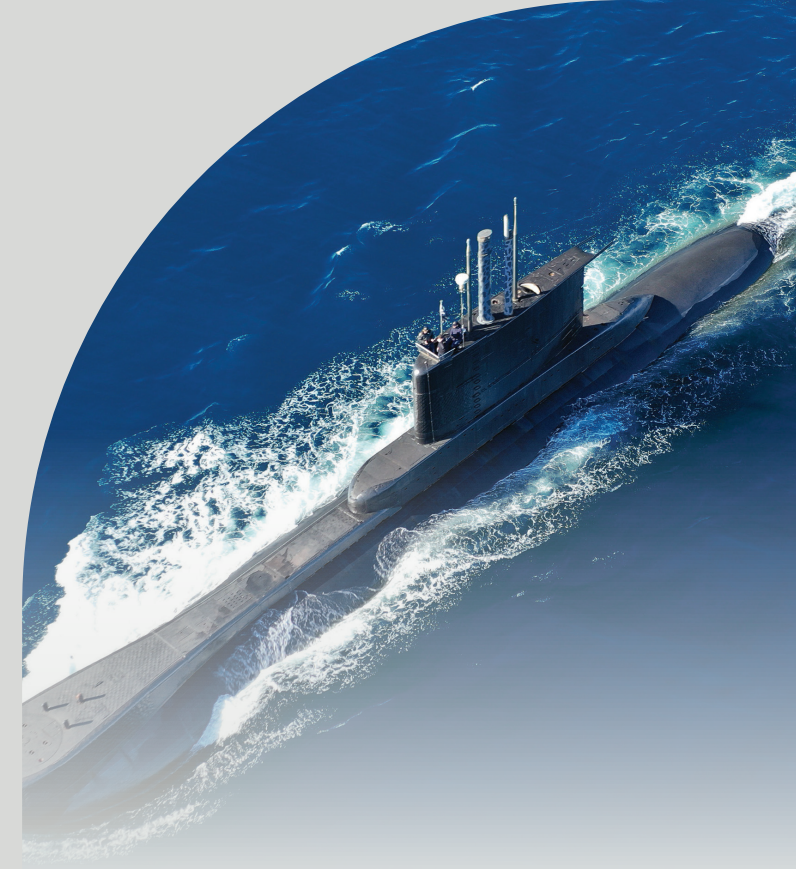
The customer has been using Harwin connectors for many years, trusting the high-reliability connectors in the defense environment and their long-term availability.

The Challenge:

The new optronic system was an upgrade from a single HD camera to a 4k visible and short-wave infra-red camera with multiple sensors for all-light/all-weather conditions. The mast had to stay the same size, but the camera required more connections, so space was a major issue.

Harwin Solution:

Gecko-SL met the smaller size requirements, while still delivering the high-reliability performance expected for the environmental conditions.



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PRODUCTS IN ACTION

DEFENSE & SECURITY UAV

Application:

Battery Power connection.

Background:

UAV platform with cameras and sensors for surveillance and security applications: threat detection, tracking ground assets, disaster management, search and rescue, crowd control. Operates up to 4,500 meters and carries temperature and humidity certification.

The Challenge:

Power required from the battery to a high current payload application, needing continuous 60A current through a cable-to-board connection. Connection must be high-reliability with solder cups on the cable connector.

Harwin Solution:

The Kona 2-contact female cable connector mated to the male PCB connector supplies the high-reliability connection required, with the 60A current-carrying capacity. The PCB connector is on the battery side, making the battery easy to disconnect and replace when required.



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PRODUCTS IN ACTION

MOTOR ENCODERS

Application:

Location and Temperature reporting from Servo Motors.

Background:

Encoders are an important part of modern servo motors, ensuring that the control system obtains high resolution feedback from the motor operation. This includes positioning and health status.

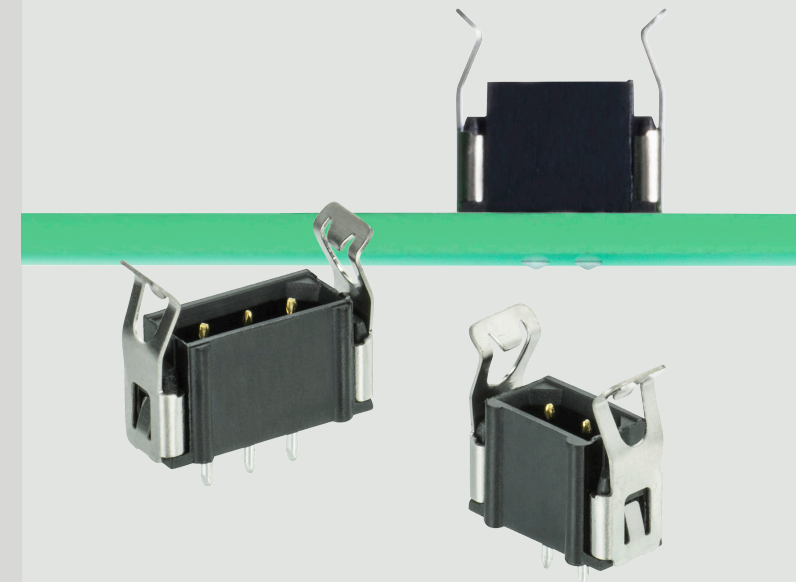
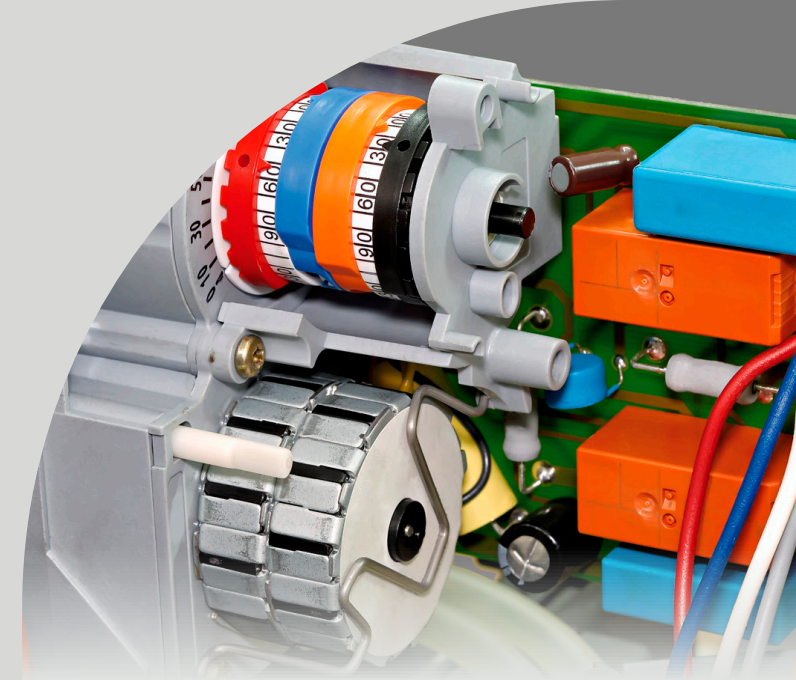
The Challenge:

With the reducing size of space envelopes for motors, the encoder must also be minimized. The internal connectors must be robust to

withstand a variety of demanding environments. For improvements in automated manufacture, the terminations need to be shorter for use with in-In-Hole reflow (PIHR) solder processes and delivered in tape-and-reel packaging.

Harwin Solution:

The Datamate L-Tek range now includes 2- and 3-contact male PCB connectors with 2mm terminations, suitable for PIHR processing. These connectors are packaged in tape-and-reel. By using the Datamate L-Tek design as a base, these connectors are already compact, robust, and proven in challenging applications.



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PRODUCTS IN ACTION

AUTOSPORT DATA ACQUISITION SHUNT

Application:

Formula student car data-logging system.

Background:

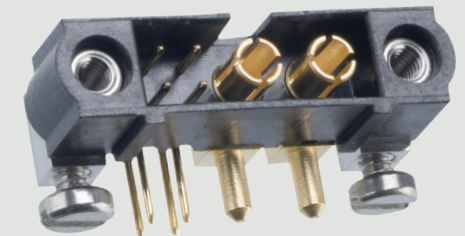
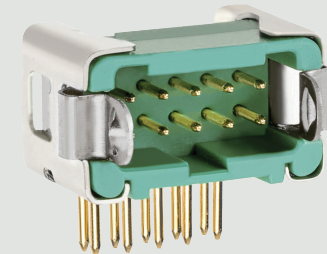
Student team cooperation to build the fastest formula student car. The team focused on several elements on car (steering wheel, ECU, gearbox) and off-car (data logging) to achieve best performance.

The Challenge:

Minimise weight. Components needed to be available off the shelf and offer good performance per size.

Harwin Solution:

Gecko for signal pins and Datamate Mix-Tek for Power pins. Met the vibration requirements.



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PRODUCTS IN ACTION

ACTIVE ELECTRONICALLY SCANNED ARRAY RADAR

Application:

Compact power supply for AESA Radar system used in large naval vessels for threat tracking.

Background:

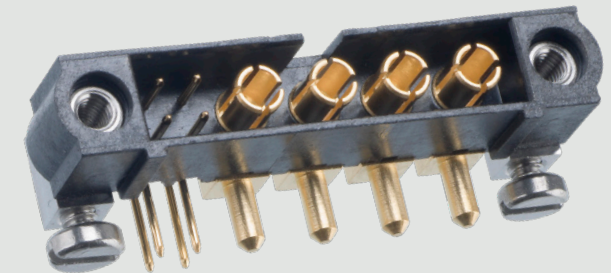
Customer contacted Harwin to find a drop in replacement for panel mount hybrid connectors.

The Challenge:

Competitor was originally designed-in but customer sought more stable supply chain and better lead-times.

Harwin Solution:

Datamate Mix-Tek SMT power and signal connectors up to 20A reduced the stack height while delivering good power performance.



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PRODUCTS IN ACTION

VTOL DRONE

Application:

Battery Management System.

Background:

New design for civil UAV to scan industrial areas – Perimeter security, Thermal mapping, leak detection, emergency response and structural inspection.

The Challenge:

Size Weight and Power from commercially available (CoTS) technology. Reliability was also key as this formed part of a Safety Critical System (SCS).

Harwin Solution:

Datamate Mix-Tek with high power contacts – up to 40A.



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PRODUCTS IN ACTION

PANORAMIC VISION SYSTEM

Application:

Control unit for panoramic vision system for Military vehicle.

Background:

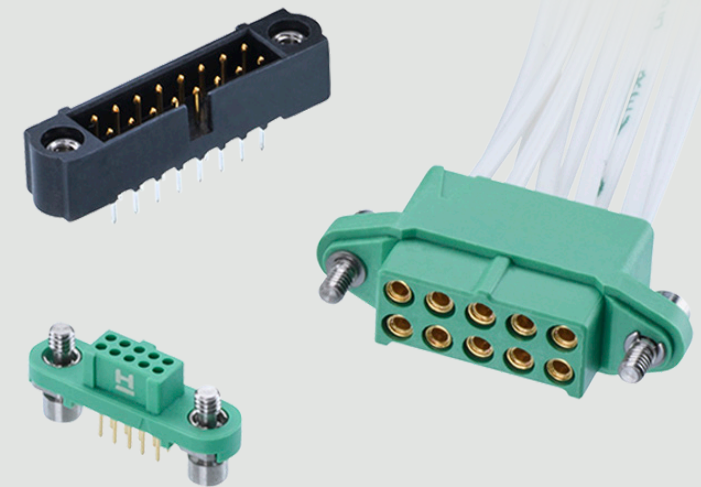
Customer looking to provide power & data to actuators on next-generation camera controls for a defence application.

The Challenge:

Stabilised camera to be used in operations under severe shock and vibrations.

Harwin Solution:

Datamate, Gecko and M300 products provided rugged connections, while pre-made cable assemblies eased the production process.



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PRODUCTS IN ACTION

COCKPIT LIGHTING CONTROL

Application:

Lighting control unit for Jet fighter aircraft.

Background:

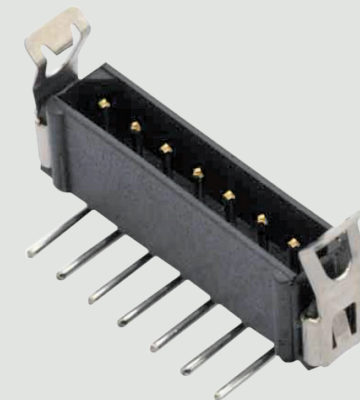
Unit dedicated to control interior lighting system on-board fighter aircraft.

The Challenge:

Densely packed unit resulted in very little space between boards. Components had to be low profile to allow assembly and avoid damage.

Harwin Solution:

Small size latched SMT connector for 90 degree orientation, with mating cable connector.



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PRODUCTS IN ACTION

PASSENGER SERVICE UNIT

Application:

Commercial Aviation Cabins.

Background:

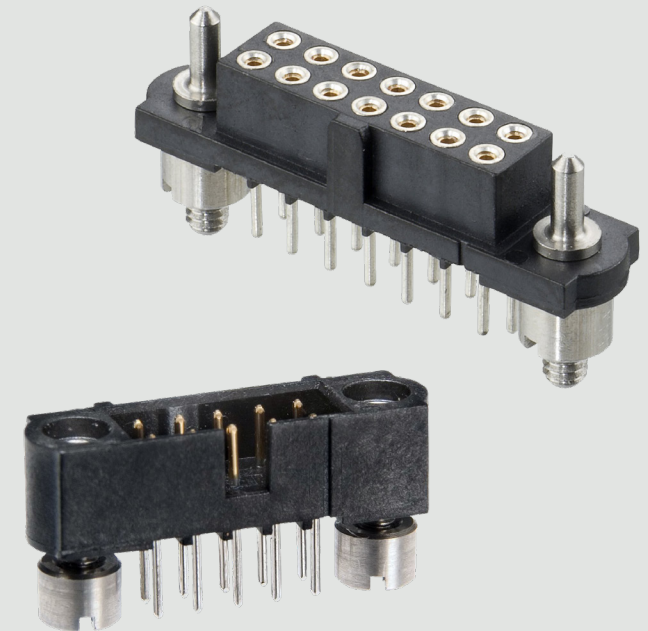
The customer needs cost-effective vibration-proof connections, capable of long-term endurance with many hours in-service, maintaining reliability.

The Challenge:

With long-term vibration and multiple years of service, a high-reliability connection was required with durable board fixings and easy assembly.

Harwin Solution:

Datamate J-Tek connectors fitted with board mount studs for additional strength on the PCBs. Guide pins were chosen for the mating interface to facilitate simple and fast connection at assembly.



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PRODUCTS IN ACTION

C BAND ANTENNA

Application:

Satellite communications system.

Background:

This equipment has many cables, and a long BOM requirement for connectors to various parts of the equipment. The customer wanted to stick with a consistent connection type for the different cable-to-board connections.

The Challenge:

With multiple cable requirements with outdoor system exposure, the customer needed a rugged connector system with multiple size options and temperature/humidity resilience.

Harwin Solution:

Datamate J-Tek 2-row and 3-row connectors use the same cabling and connection system across a wide range of connector sizes – all capable of meeting the customer’s environmental concerns.



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PRODUCTS IN ACTION

VIDEO TRANSMISSION FROM SATELLITE

Application:

Satellite TV from Geostationary Orbit.

Background:

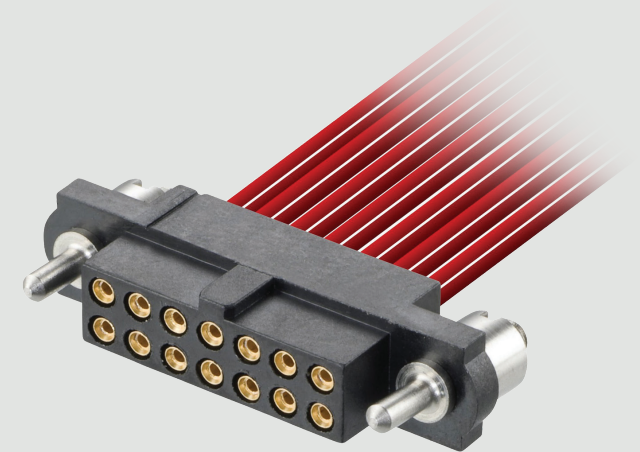
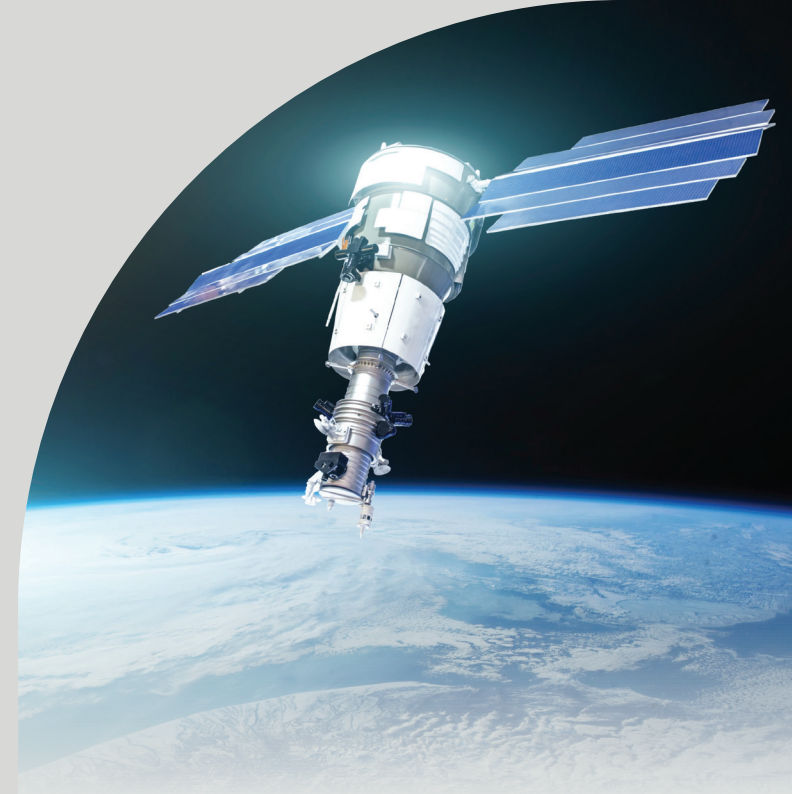
Customer manufactures enclosed server units for launch and operation in earth-orbit satellites. Two units are plugged together within the satellite body.

The Challenge:

Using Datamate J-Tek with a combination of female guide pins and male panel mount, both cable connections.

Harwin Solution:

Using Datamate J-Tek with a combination of female guide pins and male panel mount, both cable connections provide panel mounting with high-reliability performance.



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PRODUCTS IN ACTION

SONAR POWER AMPLIFIER

Application:

Defense sub-sea sonar power amplifier modules.

Background:

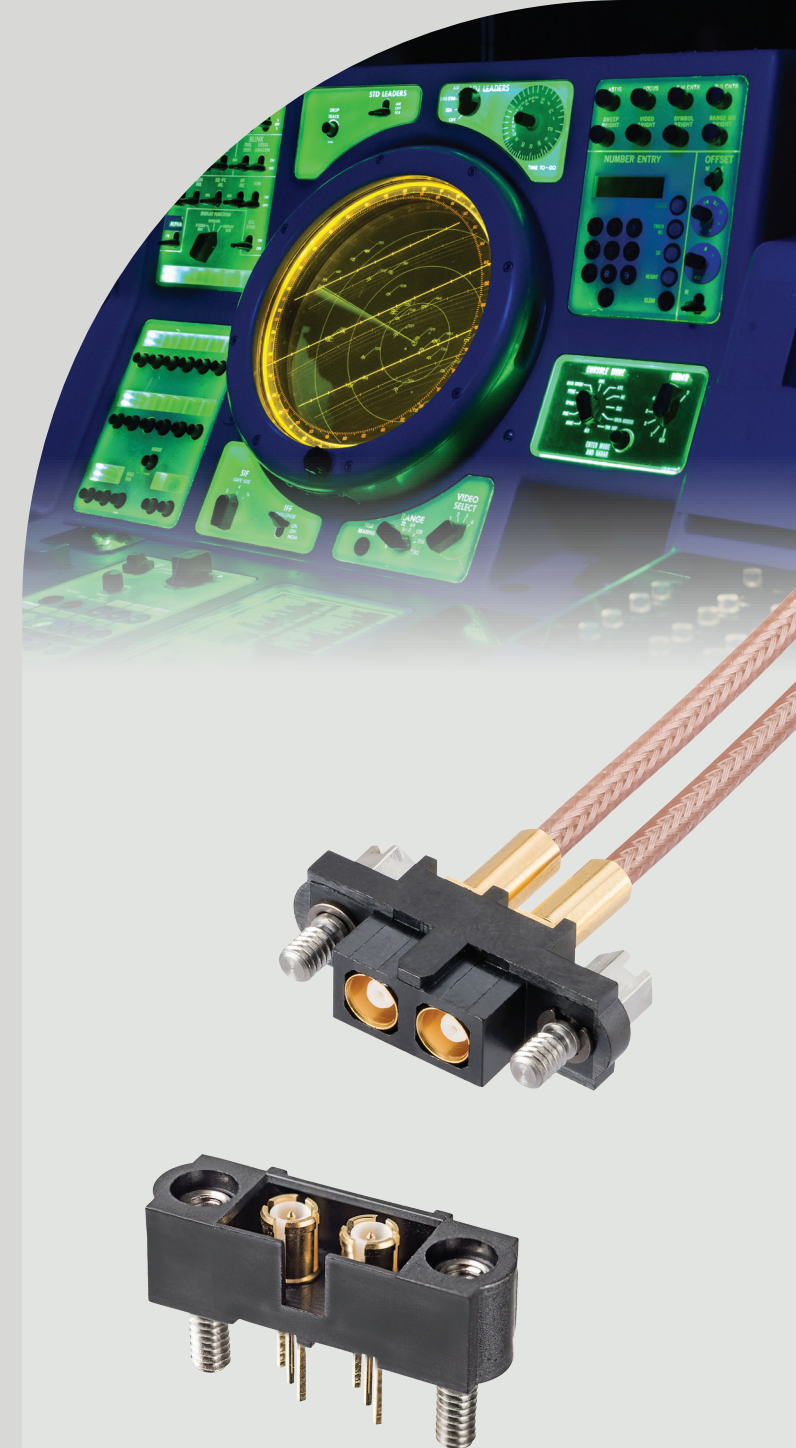
The customer manufactures units for active sonar installations onboard ship and submarine systems. Modules must be able to withstand vibration and long service times typical of marine defense applications.

The Challenge:

Multiple board-to-cable connections are required to perform under demanding circumstances, carrying both power and signal current around the various integrated PCBs.

Harwin Solution:

Datamate J-Tek and Mix-Tek have a proven record of service for many years in defense environments, and the compact size and range flexibility gave the customer multiple options for different PCB requirements.



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PRODUCTS IN ACTION

SEAT REST CONTROL

Application:

In-cabin passenger comfort systems.

Background:

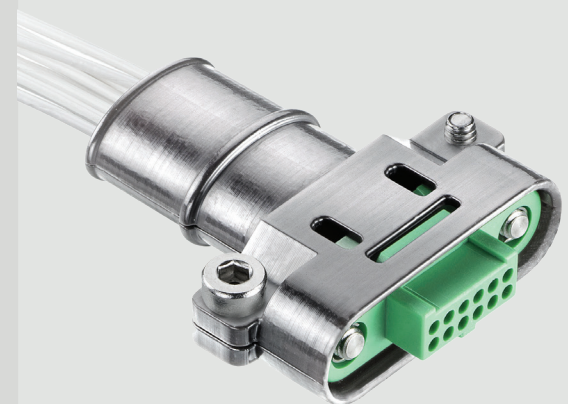
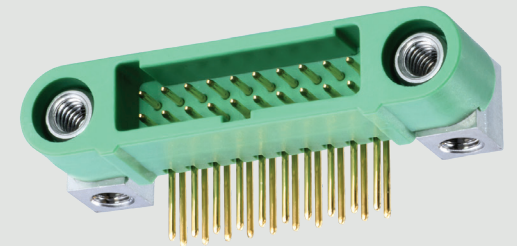
Highly reliable connection required to connect the seat rest control to the cord sending positioning signals back to the seat. Subject to consumer handling.

The Challenge:

The connection would be under general cabin vibration levels, but also shock and pull from user handling to retrieve the handset from its docked position, pulling on the cable.

Harwin Solution:

Gecko-SL Horizontal was a timely solution – the customer is now specifying the horizontal connection in the unit, and using Gecko-SL metal backshells to provide added strain relief and protection.



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PRODUCTS IN ACTION

MULTI-PURPOSE REFLEX WEAPON SIGHT

Application:

Optical sight and laser range finder.

Background:

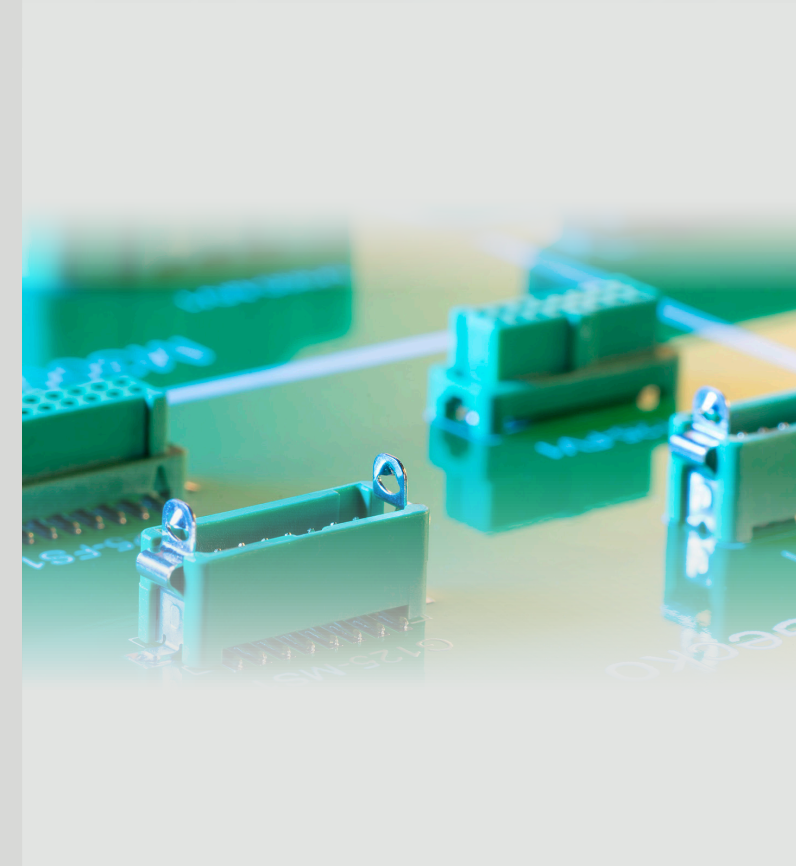
Customer is looking for an alternative trusted supplier for compact hi-rel connectors to be used inside their small arms-mounted sights.

The Challenge:

Product must be small and light as the sights are hand-carried mounted on a rifle. High-reliability and secure mechanical fixings are also necessary.

Harwin Solution:

Gecko connectors, both board mounted and ready-made cable assemblies. Horizontal Gecko-SL addition to the range expected to bring further design wins.



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PRODUCTS IN ACTION

HIGH-DEFINITION THERMAL IMAGER

Application:

Infra-red vision system and range finder.

Background:

The customer required a high-reliability system capable of withstanding transport vibration and portable use in defense environments.

The Challenge:

As a portable or mounted imager, size and weight are important – but rugged performance and vibration resistance are also key aspects. Connectors need to be compact and high-reliability.

Harwin Solution:

A combination of Gecko-SL and Datamate J-Tek make board-to-cable connections inside the equipment, bringing high-rel with different current ratings.



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PRODUCTS IN ACTION

FADEC UNIT FOR LIGHT AIRCRAFT

Application:

Engine control for replacement engines.

Background:

The customer manufactures replacement light aircraft engine units fitted with FADEC for upgrading existing small airplanes. The space allowed for the FADEC is very tight.

The Challenge:

Multiple high-reliability connections between FADEC boards and cable-to-board requirements, all space-conscious and vibration resistant.

Harwin Solution:

Connectors from all of Harwin's High-Reliability connector ranges have been designed in, after samples supplied on quick turnaround and backed up by good technical knowledge.



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PRODUCTS IN ACTION

VENTILATOR ALARM HARNESS

Application:

Cable assembly used for function monitoring.

Background:

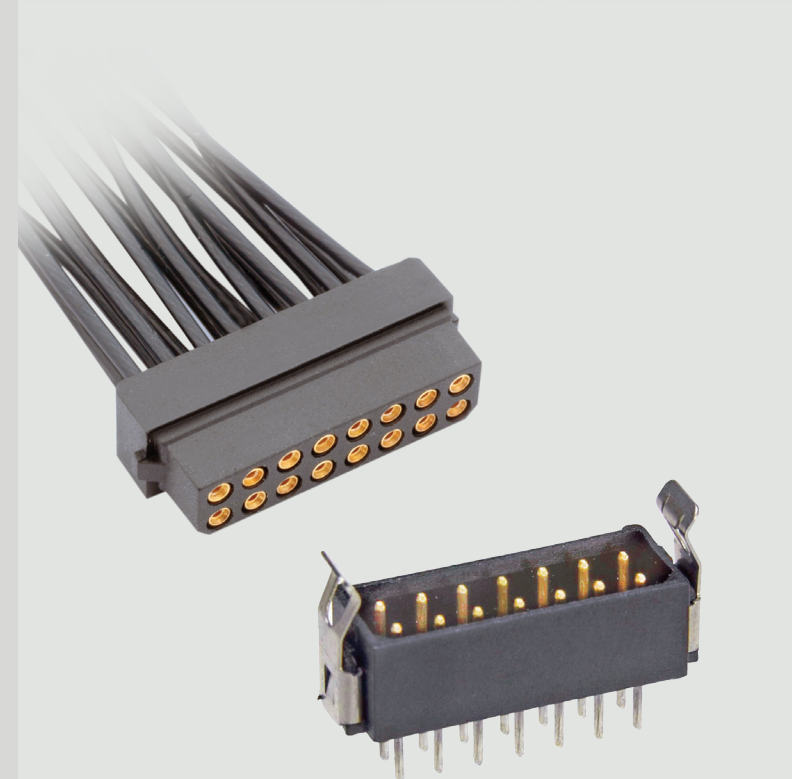
The customer creates mechanical ventilators suitable for transportation and outdoor usage, as well as home and hospital environments. The cable assembly for the alarm system ensures that the ventilator is working as expected and carries alarm signals when there is an issue.

The Challenge:

The alarm system cable connection must be robust and durable. No interruption in signal giving false readings and alarms can be allowed. In addition, standard products are desirable to cope with the additional demand due to COVID-19 escalation.

Harwin Solution:

Datamate connectors provide the rugged connection need to ensure continued signal transmission. These cable connections are standard product manufactured in the UK with flexible scheduling for fast demand reactivity.



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PRODUCTS IN ACTION

MECHANICAL VENTILATOR SYSTEM

Application:

Compact portable unit for airway ventilation and oxygen therapy.

Background:

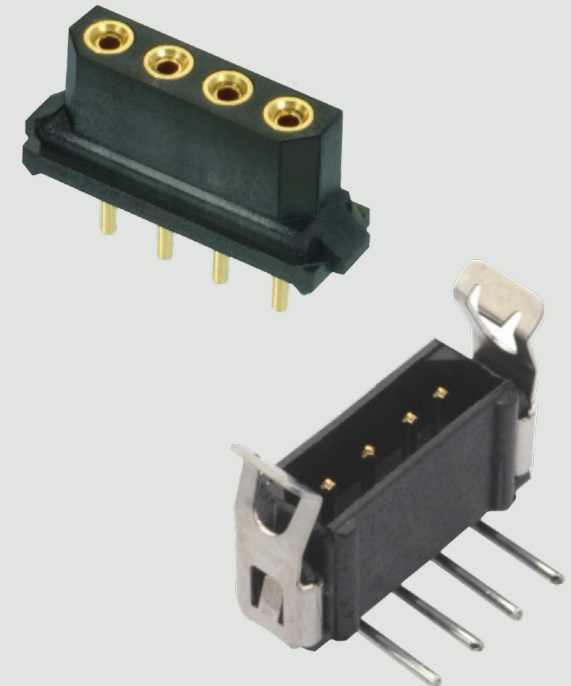
Designed and tested for a wide range of environments including hospitals, ambulances, aircraft, outdoors and in MRI scanners, the unit is capable of ventilation during emergency or controlled transportation of adults, children and infants.

The Challenge:

Internal connections between PCBs that withstand the more extreme conditions of handling and transportation of the unit in external operations. No interruption in function can be allowed. Increased and immediate demand requirements due to COVID-19 escalation.

Harwin Solution:

Datamate male and female connectors are ideally suited for the vibration and bump conditions that can prevail in usage and transportation, without any signal disruption. Standard components with flexible UK manufacturing allowed for fast demand reactivity.



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