

smiths connectors



INTERCONNECT SOLUTIONS FOR

**DEFENCE**

LAND | SEA | AIR



# SMITHS CONNECTORS

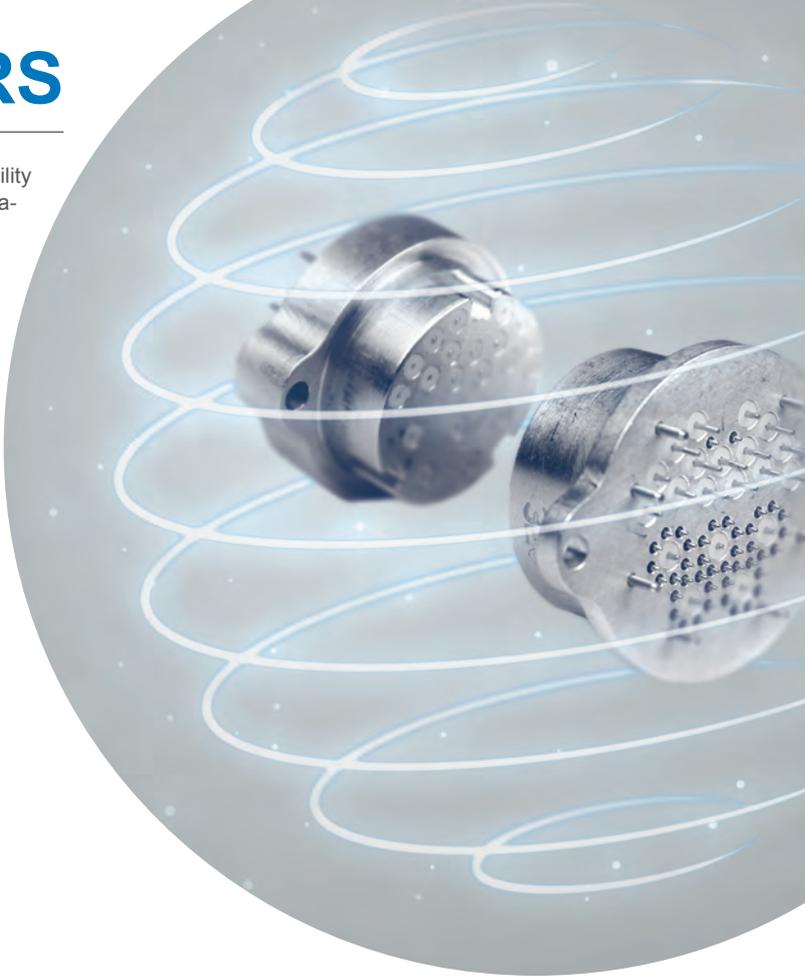
Smiths Connectors is a leading supplier of application-specific, high-reliability electrical interconnect solutions from highly integrated assemblies to microminiature connectors and spring probe contacts.

Smiths Connectors is comprised of Hypertac, IDI and Sabritec brands, which are synonymous of exceptional performance when critical applications require a technologically advanced, high quality, multi-pin electrical connection to ensure reliability and safety.

Alongside Smiths Microwave and Smiths Power, Smiths Connectors is part of the Smiths Interconnect division of Smiths Group, a global leader in applying advanced technologies for markets in threat and contraband detection, energy, medical devices, communications and engineered components. Smiths Group employs around 23,000 people in more than 50 countries.

*By uniting the competencies and capabilities of three world leading interconnect brands, Smiths Connectors offers:*

- ▶ Broad Range of Advanced Interconnect Technologies
- ▶ Vast Knowledge of Served Markets & Applications
- ▶ Complete Tailored Solutions
- ▶ Unmatched Reliability & Durability
- ▶ Global Reach with Local Support



# ENGINEERING SUPERIOR SOLUTIONS



# GROUP CAPABILITIES

Smiths Connectors' in-house capabilities encompass design, development, manufacturing and acceptance testing. Two key operational strengths are rapid prototyping and global sourcing. Together with world class engineering talent, these strengths enable Smiths Connectors to respond quickly and accurately to customer needs and provide the most reliable interconnect products available in today's market. Global internal working committees ensure experience and best practice sharing worldwide.

We are a global provider of interconnect solutions that create value for our customers by providing them with a competitive advantage. We leverage our application specific and engineering expertise to design and manufacture superior connectors, contacts and systems that ensure optimal performance, reliability, durability and safety in critical applications.

We meet the customer's need, whether it is a single specialised contact, custom interconnect, cable harness or a complete pretested sub-system. Our success does not rely solely on our technology alone, but also on data management, manufacturing systems, forward planning tools, quality control and the ability to supply functional prototypes.

## STRENGTHS

- ▶ Customer Focus
- ▶ Leading Edge Technology
- ▶ Standard & Custom Interconnects
- ▶ Global Presence with Local Support

## VALUES

- ▶ Customer Satisfaction
- ▶ Innovation
- ▶ Quality & Environment
- ▶ Flexibility
- ▶ Accountability
- ▶ Teamwork
- ▶ Integrity

## ENGINEERING

- ▶ Electrical & Mechanical Design and Development
- ▶ CAD/CAM & Solid Modeling
- ▶ EMF/RFI/EMP Suppression Techniques
- ▶ Microwave Transmission
- ▶ High Voltage Applications
- ▶ Finite Element Analysis
- ▶ Signal Integrity Analysis
- ▶ Severe Environment Consideration
- ▶ System Integration

## OPERATIONS

- ▶ Prototyping
- ▶ Multi-faceted Machine Shops
- ▶ Contact Manufacturing
- ▶ Connector & Cable Assembly
- ▶ Electrical, Metallurgical & Mechanical Testing



# SMITHS CONNECTORS

Smiths Connectors' interconnect technologies are broadly used in aerospace and defence applications around the world. Smiths Connectors offers an extensive range of superior engineered standard and custom solutions designed to maintain the highest possible performance in demanding environmental conditions such as shock, vibration and extreme temperatures, which is mandatory for military and aerospace projects.

We work closely with our customers to design and manufacture connector solutions to achieve optimal system performance with low cost of ownership. Our engineering expertise, rapid prototyping and pre-production capabilities enable Smiths Connectors to partner with our customers to develop current and next generation application solutions ideal for an ever changing marketplace.

## TECHNOLOGIES

### Hyperboloid



Hypertac® is a superior performing hyperboloid contact technology designed for use in harsh and demanding environments where high reliability and safety are critical. The inherent electrical and mechanical characteristics of the Hypertac hyperboloid contact ensures unrivaled performance in terms of reliability, number of mating cycles, low contact force and minimal contact resistance.

### High Speed Data



Quadrax and Twinax contacts are designed for transmission of Ethernet high-speed signals required in harsh environment applications where excellent integrity and high reliability are crucial. Manufacturing to the following protocols: Fibre Channel, Ethernet (10 Base-T, 100 Base-T, 1000 Base-T), Firewire (IEEE 1394A and 1394B), USB, DVI and infiniban.

### Spring Probes



Spring probes are designed to optimize performance in high reliability, multi-cycle applications. Spring probes are compliant which makes them ideal for blind mate applications as they self-correct for x, y, z, rotational and angular misalignment of the target. Offered in compressed heights less than 2 mm and utilized on pitches as tight as 0.4mm, they are well-suited for high density, board-to-board, battery contact, and high frequency applications.

### Filter Connectors



EMI filter connectors use co-fired multi-layer ceramic capacitor arrays together with inductive materials to realize robust, high performance low pass filter networks. They can be combined with high energy TVS diode technology to achieve high level lightning and EMP transient protection.

### Tortac



Tortac® is a one-piece hyperboloid design that enables smaller contact diameters and, therefore, higher densities of up to 60 ways per cm<sup>2</sup>. The same high reliability performance is ensured in the same space.

### Fibre Optic Connectors



Fibre optic contacts support wide bandwidth applications and are suitable for inclusion in a broad variety of connector styles. All fiber optic connectors and contacts are offered fully terminated and tested ensuring signal integrity for ruggedised application environments.

### HyperSpring



HyperSpring® combines the electrical performance of the hyperboloid contact technology with the mechanical features of a spring loaded contact to produce interconnections with improved signal integrity, current density and parametric stability.

### High Power & Temperature



This contact range includes high power (up to 1200A) and high temperature (up to 250°C) resistant versions of the ultra reliable hyperboloid contact, ideal for mission critical interconnect systems within harsh environments.



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## QUALITY

First-class materials, state-of-the-art development methods, advanced know-how and exact processing are the essential ingredients of our quality expertise. Defence applications demand consistent quality and reliability under the most extreme conditions. Our diverse product offering, from off-the-shelf products to customised solutions, provides unrivalled performance under the most stringent elements. This combined with the maintenance of ISO certifications and quality assurance programs, makes Smiths Connectors the leading provider of interconnect solutions for defence.

### The Essential in Harsh Environments

Reliability is essential in the leading edge technology we utilize. With performance such as exceptional tolerance to shock and vibration, low insertion forces, high current ratings and the lowest fretting corrosion available, our products add a competitive advantage and value to our customers' offerings.

## SPECIFICATIONS

- ▶ MIL-DTL-38999
- ▶ MIL-DTL-83723
- ▶ MIL-DTL-83527
- ▶ MIL-DTL-24308
- ▶ MIL-DTL-83513
- ▶ MIL-C-26500
- ▶ MIL-C-81511
- ▶ MIL-C-26482
- ▶ ARINC 628
- ▶ ARINC 404
- ▶ ARINC 600

# DEFEND AGAINST HOSTILE ENVIRONMENTS

## APPLICATIONS

Communication Systems

Future Soldier

Radar & Threat Detection

Unmanned Vehicles

Vehicles / Tanks

Weapons / Missiles

Improved Explosive Device Protection

Air Conditioning & Cleaning Systems

Power Control Systems

Auxiliary Power Units

Electric Drive

Servo Systems

Munitions Handling

Battery Systems

Electric Armor

The next generation of vehicles requires advanced technologies that enhance their performance, survivability, mobility and stealth. The introduction of these technologies means that power management in military vehicles is more critical than ever. With the introduction of electric drive servo systems and vehicles into modern military vehicles, the efficient generation, distribution and storage of electrical power is crucial to achieve mission success.

Smiths Connectors' interconnect solutions are designed and manufactured with the end use in mind. If you're being asked to design products to perform under tough conditions, then you need reliable connector technologies that can withstand the punishment. That's why Smiths Connectors' solutions are in most major defence application where conventional connectors just aren't cutting it. Smiths Connectors' custom interconnect systems are "ruggedised" to assure contact - at every contact - while delivering exceptional performance benefits in harsh environments.



# LAND BASED



# CONNECTING MODERN BATTLEFIELD OPERATIONS

## APPLICATIONS

- Battery Connection
- Charging and Cradling
- Antenna Interface
- Electromechanical Switching
- RF Signal Connectors
- External Accessory Interconnection
- Internal Board to Board Connection

Smiths Connectors recognises that communication is critical in today's battlefield. Ground, sea and air personnel depend on systems which are rugged, reliable and fail-safe. We have been an integral part of land mobile radio interconnection from the earliest days through today's latest developments.

Smiths Connectors leads the way in spring probe based connectors which have become the industry standard for high performance accessory interconnect. Compliant, resistant to shock and vibration, and able to withstand more than 10 amps without significant temperature rise, they are ideal for blind mate, mixed signal, power delivery, accessory interconnection and antenna applications.



# COMMUNICATIONS





Advanced technologies enable soldiers at the combat level to directly influence their action through decisions based on a common tactical picture and accurate situation awareness.

Smiths Connectors provides interconnect solutions that allow battle units to interact effectively in the rapidly changing combat environment. Our product offering includes unique, robust, lightweight connectors which address the demanding interconnect challenges that a modern-day fighting soldier will face. Combining our superior application knowledge with cabling expertise and overmolding capability, we are able to design, develop and manufacture complete and reliable point-to-point future soldier interconnect solutions.

## APPLICATIONS

- Health Monitoring Systems
- Radio Communications
- Common Core Computers
- GPS & Navigation Systems
- Thermal & Optical Systems



# PROVIDING A COMPETITIVE ADVANTAGE



# FUTURE COMBAT SOLDIER

# WITHSTANDING THE RIGOURS OF THE ENVIRONMENT



Connectors must be able to withstand the harsh environment of marine applications where heat, dust, moisture, salt corrosion and chemicals are prevalent. Smiths Connectors' knowledge of electrical connectivity has been developed from vast experience obtained within the defence and aerospace industries. Our connector solutions provide the flexibility, performance and reliability that marine customers demand.

## APPLICATIONS

- Weapon Systems
- Submarine Control Systems
- Torpedo Guidance System
- Radar Installations
- Communications



# MARINE

# DESIGNING SAFETY & RELIABILITY

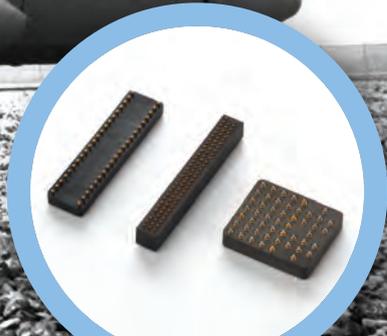
## APPLICATIONS

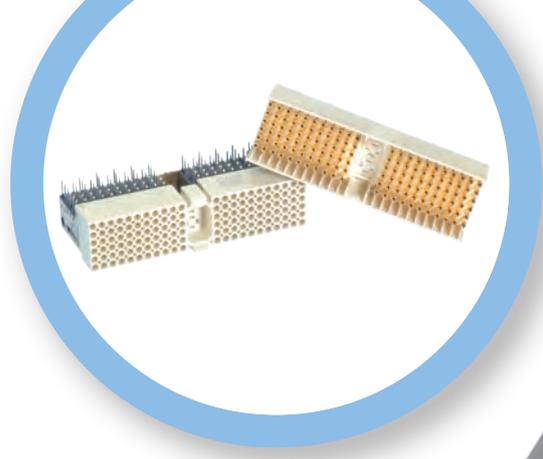
- Engine Control Systems
- Radar
- Displays
- Avionics Equipment
- Power Distribution Systems
- Landing Gear Control Systems
- Wing & Engine Ice Protection
- Braking Control Systems

Smiths Connectors is committed to developing innovative and advanced technological solutions for the latest generation of fighter bomber transport and rotary wing air craft. Our technology is well-suited to address both the reliability required for flight critical systems as well as environmental concerns such as shock, vibration and extreme temperature ranges. Our connector solutions, whether standard or custom, serve in cockpit avionics, communications equipment, navigation systems and various other airframe applications.



# AVIATION







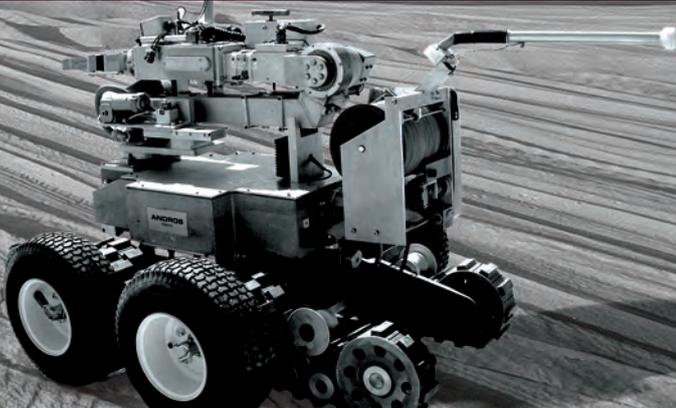
Accounting for endurance and persistence are key in the design of an Unmanned Vehicle System (UVS). The ability to eliminate electronic intermittencies is an achievable requirement, all while enduring the harshest environments ranging from dust to salt spray. This feat requires high speed signal performance in combination with high current capacity. Additionally there is a need for interoperability or a “plug and play” connection to reduce replacement or hardware transfer times with the ability to combat vibration while in service.

Smiths Connectors has the solutions to meet a wide variety of UVS needs ranging from payloads, operational designs, base station requirements, power and propulsion. Interconnects are available for in-box needs including communications and antenna interface, flight control boxes and power distribution. Smiths Connectors can also address out-of-box necessities such as payload requirements including cameras and weapon systems. Smiths Connectors offers a broad range of platforms but also develops custom connectors to meet application specific requirements while still benefiting from a variety of superior contact technologies.

## ENGINEERING FOR ENDURANCE



# UNMANNED SYSTEMS





## SMITHS CONNECTORS GLOBAL SUPPORT

### NORTH AMERICA

|                 |                |
|-----------------|----------------|
| Gilbert, AZ     | 1.480.682.6200 |
| Hudson, MA      | 1.978.568.0451 |
| Irvine, CA      | 1.949.250.1244 |
| Kansas City, KS | 1.913.342.5544 |

### EUROPE

|                |                 |
|----------------|-----------------|
| France         | 33.2.32969176   |
| Germany        | 49.991.250120   |
| Italy          | 39.010.60361    |
| United Kingdom | 44.20.8450.8033 |

### ASIA

|                  |                  |
|------------------|------------------|
| Bangalore, India | 91.80.4241.0500  |
| Shanghai, China  | 86.21.3318.4650  |
| Singapore        | 65.6846.1655     |
| Suzhou, China    | 86.512.6273.1069 |

FOR MORE INFORMATION | [smithsconnectors.com](http://smithsconnectors.com) |    