



smiths interconnect
a **molex** company

Industrial

Connectivity Solutions

CUTTING-EDGE
CONNECTIVITY

About Smiths Interconnect



We Offer



Smiths Interconnect, a Molex company, is a leading provider of high reliability connectivity products and solutions serving segments of aerospace and defense, medical, semiconductor test and industrial markets. It designs and manufactures technically differentiated electronic components, as well as microwave, optical and radio frequency products and sub-systems that connect, protect and control critical applications.

Smiths Interconnect is a leading provider of innovative solutions for demanding industrial applications. Smiths Interconnect's cutting-edge connectivity solutions offer superior quality and reliability, providing customers with a competitive advantage.

Our best-in-class engineering and technical expertise ensure the development of durable and robust platform products and customized solutions combining rugged backshells with high reliability contact technologies and easy assembly procedures.

Our extensive product portfolio ranges from highly integrated assemblies to microminiature connectors. We offer a number of value added services to customers, including cable assembly, prototyping, instrumentation housing, electrical modeling and testing.



Defense & Aerospace



Communications



Industrial



Your partner
of choice for
cutting-edge
connectivity
solutions

80+

Years
Experience

Technology

Broad Range of Advanced
Interconnect Technologies

Flexibility

High Volume Product Platforms
& Complete Tailored Solutions

Service

Global Reach with
Local Support

Original Hypertac®

Hyperboloid Contact Technology

Hypertac® (HYPERboloid conTACT) is the original superior performing hyperboloid contact technology designed for use in all applications and in harsh and demanding environments where high reliability and safety are critical.

The shape of the contact sleeve is formed by hyperbolically arranged contact wires, which align themselves elastically as contact lines around the pin, providing a number of linear contact paths. This construction allows a very tight control of the spring forces and consequently of the insertion and withdrawal forces.

The inherent electrical and mechanical characteristics of the Hypertac hyperboloid contact ensure unrivalled performance in terms of reliability, number of mating cycles, low contact force and minimal contact resistance.

Hypertac hyperboloid contact provides the following commercial benefits:

- **Low cost of ownership**
Does not need replacement during equipment life
- **Reduced system costs**
Equipment design is less critical
- **Reduced qualification costs**
No re-testing due to contact failures

Unrivalled Performance

100,000

Number of Mating Cycles

Shock

& Vibration Immunity

Low

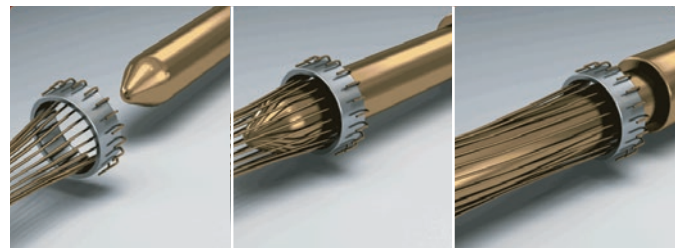
Insertion & Extraction Force

Low

Contact Resistance

High

Current Ratings



Wire sleeve before insertion of pin

Pin partially inserted into sleeve

Pin completely inserted into sleeve

Hypertac® Hyperboloid Contacts - HC

- Extremely low insertion/extraction forces
- Industry-leading mating cycles (up to 100,000)
- No fretting corrosion during life cycle
- Very low contact resistance



Screw-Machined Contacts – MR

- Rail standard contact life up to 500 mating cycles
- Tested signal integrity, no contact interruption >50 ns
- Low level contact resistance and low insertion/extraction forces



High-Speed Contacts

- Twinax, triax and quadax contacts suitable for high speed signal up to 100 MHz
- Fit various insert arrangements for d-sub, circular, PCB and rack and panel connectors



High-Power Contacts

- Current ratings up to 650A
- Fit various insert arrangements for waterproof modular & circular connectors
- Fully RoHS and REACH compliant
- Low contact resistance resulting in low temperature rise



Stamped Hyperboloid Contact - HCS

- Ideal for high volumes requiring a fully automated crimping process
- Delivered on reels for crimping machines with automatic feeder lines
- High reliability wire and insulation crimp



Spring Probes

- Low profile, high compliance ratio
- High frequency, current ratings and insertion life
- Exceptional misalignment tolerance



Test & Measurement for Semiconductor

Application-specific solutions for reliable and durable connectivity



LSH High Power Rack & Panel Connectors



High Density Mini-Modular Connectors

Stability

Increasingly automated production environments require stable connectivity, as network failures can result in expensive line stops. Our interconnect solutions embed leading contact technologies that offer high reliability and the optimum balance between performance and cost, making them the ideal choice for demanding environments where the cost of failure is high.

- Burn-in Test Equipment
- Industrial Robots
- Processing Equipment

- Servo-Drives & Encoders
- Power Suppliers
- Scientific Instrumentation



Shielded Circular
Metal Connectors



Robust Power &
Signal M23 Connectors

Wide Product Offering

Our diverse product offering, from off-the-shelf products to customized solutions, provides unrivalled performance under the most stringent industry conditions.

Test & Measurement for Automotive

Superior longevity and electrical stability



Compact Signal & Ethernet PCB Connectors



Robust & Reliable M12 Connectors

Integrity

Test equipment applications rely on the integrity of the components used within them. Our connectors ensure superior longevity with exceptionally low mating forces even when using high pin counts as requested in test applications, including microchips, wafer, burn-in, Hardware-In-Loop and automotive testing.

- Production End-of-Line Test Equipment & Laboratory Test Bench Equipment
- Power Hardware-in-Loop (HIL)

- Hardware-in-Loop (HIL) to Test Electronic Control Units (ECU)



Rugged High Density Modular Connectors



High Density Mini-Modular Connectors

Reliable Test Solutions

Test instrumentation devices are connected and disconnected many times, thus requesting the high mating cycles and low insertion/extraction forces of the Hypertac contact system. Our hyperboloid and pin loop and spring contact technologies are also suitable for Burn-In-Test equipment.

Electrification of High Vibration Applications

Enabling transition to clean energy sources



High Power Battery Connectors



LSH High Power Rack & Panel Connectors

High Power

Our high power solutions offer high current carrying capacity enabling up to 90% energy transfer at peak current which allows the battery to use every kWh of energy efficiently.



- Battery Energy Storage System
- Battery Fleet for Mining



Rugged High Density Modular Connectors



High Density Mini-Modular Connectors

Reduced Power Loss

Equipped with Hypertac Green Connect™ contact technology, our battery connectors minimize Joule heating and therefore reduce power loss. They offer low power consumption and the lower contact resistance of hyperboloid technology.

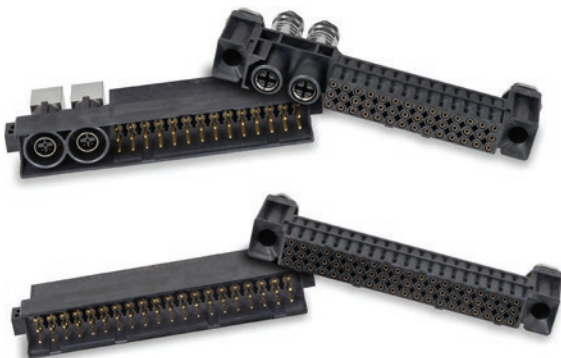
High Power Quick Release

- Compact and small size for weight savings available in both single and five pole version
- Quick locking device
- Current ratings from 300A to 500A
- 360° EMI/RFI shielding
- IP67 fully sealed
- Robust metal shells
- Finger proof IP2X



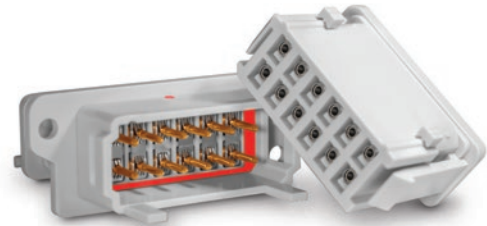
Signal & Ethernet PCB - Intercompact

- Compact Signal and Ethernet PCB Connectors
- Compliance with the main European Railway standards
- Insulators in Liquid Cristal Polymer material for an optimized insulation resistance in severe environment conditions



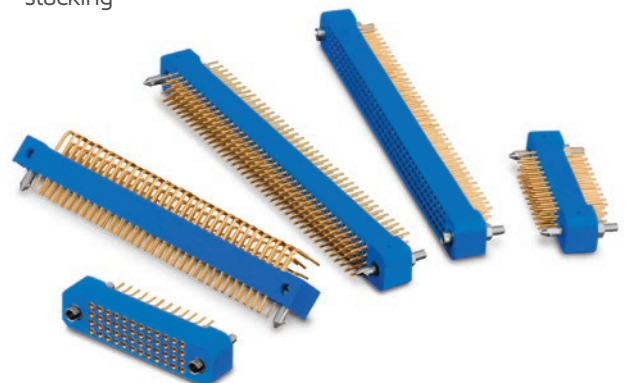
Environmentally Sealed Rectangular Plastic - REP

- Available with the proven Hypertac® hyperboloid contact technology (up to 20,000 mating cycles) and with the MR screw machined contacts (up to 500 mating cycles)
- Conforms to EN 45545 and EN 50124 standards
- Voltage rating up to 400 V
- Allows wire sections from 0.5 mm² to 2.5 mm² (20-12AWG)
- Shunt function available
- 2, 6, and 12 way standard sealed insulators
- Crimp, straight or bent termination options



High Density PCB

- Long life cycle connectors with immunity to shock and vibration fretting
- Signal, power, coaxial and high speed, RF contacts and spring probes solutions
- Straight dip, right angle solder, crimp, solder cup and Wire Wrap® terminations
- Board-to-board, cable to board, cable to cable and stacking



Robust & Reliable M12

- Compact IP67 metal shell
- 360° EMI shielding
- Hyperboloid contact technology
- Compliant with fire and smoke standards
- Straight and right angle 90° rotatable backshell
- Compatible with most commonly used rail cables
- Easy to terminate, field attachable



Robust Power & Signal M23

- Outstanding protection against electromagnetic interference through a full 360° screen shielding
- RoHS compliant and UL/CSA approved
- Metallic and plastic versions available
- Hypertac® contact technology ensures immunity to shock and vibration and minimal contact resistance
- O-rings for protection against vibration



High Power Battery Connectors

- Low power consumption with Hypertac Green Connect™: the lower contact resistance of hyperboloid technology
- High voltage interlock (HVIL) monitoring safety mechanism for enhanced electrical safety
- Suitable for harsh environments: IP67 (mated), suitable for high shock and vibration
- Compliant to EN45545-2



Did you know?

Smiths Interconnect are driving revolution in automotive testing by providing connectors that can perform reliably and consistently in the relentlessly unforgiving test environment.

Intelligent drone-based solutions saving time and increasing workflow



Rugged High Density Modular

- Mixed signal, power, coaxial, data, fiber optic and pneumatic modules
- Provides up to 200 amp power
- Cable to chassis and rack & panel; plastic backshell with strain relief and half turn quick disconnect jackscrew
- Float mountable for blind mating
- Configurations compliant to EN45545 standards
- Large offering thanks to the modularity
- High reliability contact technology
- Several locking devices and hood are proposed



High Density Mini-Modular

- High-density mini modular connectors
- Allows up to 900 contact positions
- Building block system composed of custom module combinations within a connector frame
- Keying system available
- Jackscrews available in half-turn quick disconnect
- Float mountable for blind mating



Spring Probe Interposers

- High density spring probe technology
- Low, stable contact resistance throughout long insertion life
- Optimal signal integrity ≥ 40 GHz
- Ingress protection to IP68 and MIL-810 available



Cable Assemblies & Wire Harnesses

- Wide range of cable assemblies and wire harnesses, consisting of point-to-point or multi-branch connections for efficient transmission of power, data or signal
- Pre-wired encoding connectors and adapters
- In-house capabilities to design, development, prototyping, manufacturing and testing
- Custom solutions tailored to volume manufacturing requirements and customers' technical needs



Global Capabilities



Reliable Solutions

In-house capabilities encompassing design, development, manufacturing and testing to anticipate market needs, respond quickly and accurately to customers, and provide the most reliable connectivity solutions.

Market-leading Engineering and Technology Solutions

80+

Years Experience





Certifications, Standards & Compliance

- AS9100D
- ISO 9001
- ISO 14001
- ISO 45001
- NF F 61-030
- NF F 61-032
- NF F 16-101
- NF F 16-102
- NF-C 93421
- DIN 41612
- DIN 43652
- EN 50124
- EN 45545-2
- IEEE-1101.2-'92
- IEC 1076-4 101
- IEC 61373
- IEC 61984
- HE 501
- HE 704
- UTE C93-425
- UL94 VO
- RoHS compliance
- IRIS

Engineering

- 3D EM Modeling
- Advanced RF & System Modeling
- CAD/CAM & Solid Modeling
- Finite Element Analysis
 - Thermal Analysis
 - Shock & Vibration Analysis
- Reliability Analysis

Prototyping

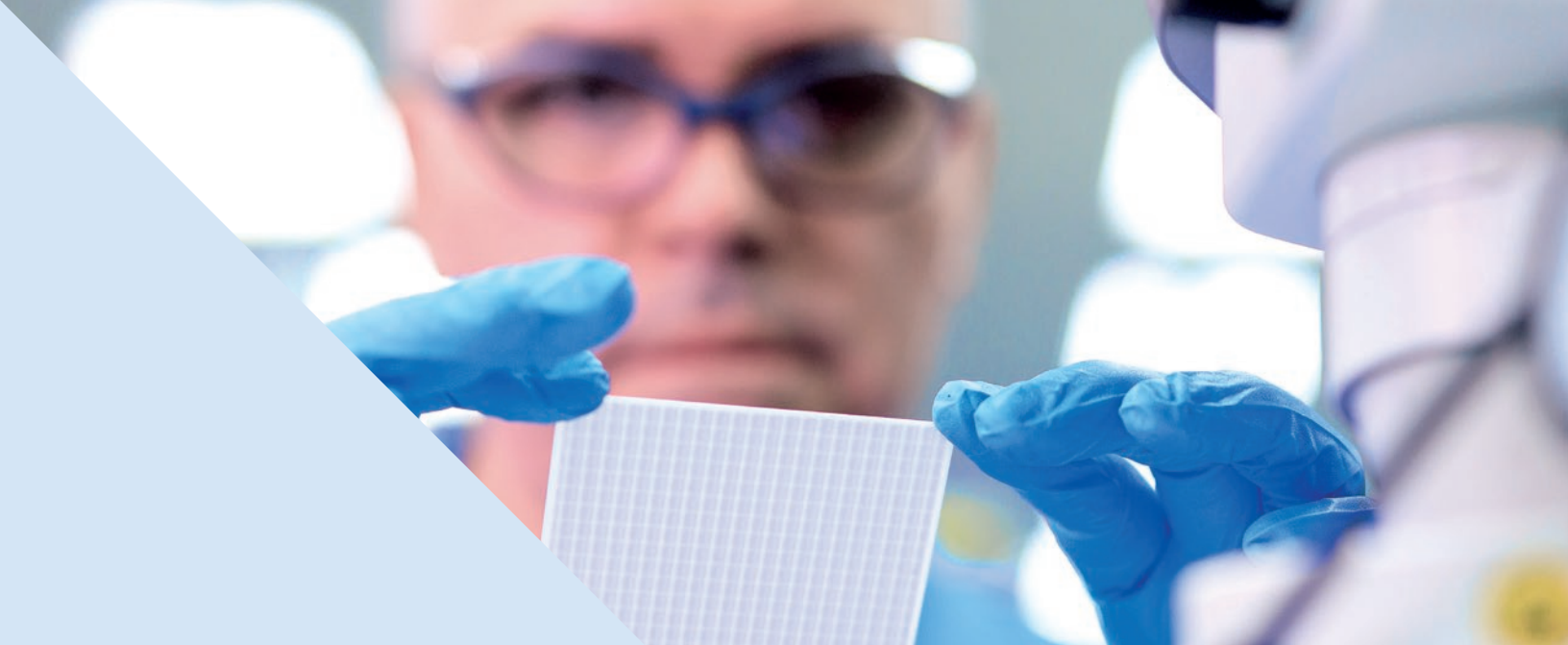
- CNC Turning & Milling Centers
- Cabling / Prototype Assembly
- 3D Printing
- Ceramic Grinding
- EDM
- Circuit Board Routing

Manufacturing

- Precision Machine Shops
- Connector, Contact & Cable Assembly
- Automated PCB Assembly & Inspection
- Automated Hybrid Assembly
 - Die Placement
 - Wedge & Wire Bonding
 - Gap Welding
- NASA Certified Soldering
- Automated Test & Tune
- Optical Alignment
- System Integration
- Validation Testing

Testing/Qualification

- Electrical Acceptance & LOT Test
- RF Test Capability, up to 325 GHz
- High Speed Digital
- Anechoic Chamber Testing
- ESS Environmental Qualification
- ESS Temperature, Shock & Vibration
- Metallurgical
- Real Time X-Ray
- Thermal Vacuum
- High Power RF Testing
- Optics Lab
- Multi paction, SRS mechanical shock



Connecting Global Markets

Smiths Interconnect's strong focus on serving international markets and customers is supported by our sales and technical teams across the Americas, Europe and Asia.

smithsinterconnect.com | [in](#) [X](#) [YouTube](#) [WhatsApp](#)

Business Unit

Connectors

Fiber Optics &
RF Components

Semiconductor
Test

Worldwide Support

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Pioneers of Progress

Advancing the world through cutting-edge connectivity

We aim to be the partner of choice for innovative connectivity solutions where reliability, high quality, technical expertise, application knowledge, and a reputation for excellence is vital.



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