

SPACE PRODUCTS

MISSION-CRITICAL RELIABILITY

Smaller, Lighter, High-Reliability Products Designed to Optimize Your TE Interconnect Solutions and Built to Withstand the Extreme Environments of Space



Proven technology, engineered for reliability

Innovative and reliable solutions from TE Connectivity (TE) meet the most demanding applications in the space industry with multiple products to address applications in satellites, spacecraft, launch vehicles, and ground support equipment.

TE's products are engineered for high quality and high performance. Our agency and integrator-approved products are the cornerstone of our portfolio. We offer a wide variety of products designed to be space compatible. These products are ruggedized and manufactured with materials worthy of space flight and challenging terrestrial applications. Success is the only option in space applications.

TE's space products have established themselves as dependable, durable, and reliable. Whether it is interconnects, wire, fiber optics, harnessing materials and devices, high performance relays, contactors and solenoids, switches or identification, we can assist with the enabling technology for your space applications. Our high-performance solutions give you the features you need in every space mission:

Reliability

- Very wide temperature ranges
- Low outgassing
- Radiation resistance

Reduced SWaP

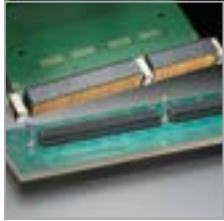
- Smaller size
- Lighter weight

TE space solutions have been approved by the major space agencies:

- ESA (European Space Agency)
- ISRO (Indian Space Research Organization)
- JAXA (Japan Aerospace Exploration Agency)
- NASA (National Aeronautics and Space Administration)



CONNECTORS AND RF PRODUCTS



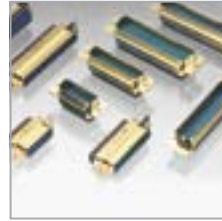
MULTIGIG RT 2-R Connectors SpaceVPX

Ultra-Rugged

- Withstand high shock and vibration levels

Optimized Performance

- Supports data rates to 10 Gb/s
- Compliant to VITA 46 standards
- Modularity and flexibility with a pinless wafer design



AMPLIMITE Military Subminiature-D Connectors

Weight-Saving Design

- Ultra-lite connector features up to 20% weight savings
- Designed for input/output and product break harnessing

Capable

- Improved EMI performance
- NASA qualified designs



Fortis Zd Backplane Connectors

High Speed

- Allows 10+ Gb/s data rates

High Performance

- Extreme mechanical and electrical performance
- Modular design allows for user configurability
- Space-compatible materials



DEUTSCH DSC Series Connectors

SWaP Reduction

- Space and weight-saving micro screw coupling
- High performance
- Based on 38999 Series II connectors

Flexible

- Hermetic, EMI shielded, cryogenic, and custom configurations
- Meets Ariane 5 and Vega requirements



Mezalok Mezzanine Connectors (VITA 61)

Compatible

- 114-position, compatible with XMC footprint
- 60 and 320-position versions also available

Reliable

- Mini-box contacts provide 4 points of contact
- LCP plastic housings for excellent thermal stability



DEUTSCH DBAS Series Connectors MIL-C-26482, SAE AS81703

High Reliability

- Easy and secure locking with a circular push/pull coupling ring for 100% mating
- -55°C to +200°C

Versatile

- Hermetic, rackable, lanyard, dead-face, cryogenic, and custom configurations
- Meets ESA SCC 3401, Ariane 5, and Vega requirements



DEUTSCH DFE Series Bayonet Coupling Connectors MIL-DTL-26482 Series 2

Rugged

- High reliability, with hermetic, pyrotechnic, and custom configurations
- 500-mating-cycle durability
- -65°C to +200°C

Adaptable

- Signal, power, and coaxial contacts
- Meets ESA SCC 3401, Ariane 5, and Vega requirements



DEUTSCH In-Line Connectors

Tough

- Resistant to most fluids and solvents
- 1500-mating-cycle durability
- -65°C to +175°C temperature range

Easy

- Individual plug shells quickly mate or unmate from a stack

CONNECTORS AND RF PRODUCTS



Quadraplex Connectors, Contacts, and Cable

High Density, High Speed

- Up to 10 Gb/s (over Cat 6A cable)
- 2 differential pairs in a size 8 contact shell

Compatible

- Inserts for many popular aerospace connectors



DEUTSCH D-PASO Series Rectangular Connectors

Capable

- Compact, ultra-flat designed for solar arrays
- Size 20 contacts: 7.5 A current rating

Robust

- High reliability, high density
- Extreme temperature range of -175°C to +130°C



Micro-D Nanominiature and Microminiature Connectors

Rugged Reliability

- High shock and vibration ratings
- Wide temperature range (-200°C to +200°C)
- Lightweight and space-proven
- Low outgassing



Raychem MIL-STD-1553B Data Bus Components

SWaP Reduction

- Conserve space, weight, and power consumption
- Tin/nickel-plated metallic parts
- Baked silicone rubber components

Optimum Performance

- Low outgassing tubing
- Low-fluoride-outgassing cable
- Enhanced temperature range and radiation resistance



MTC Connectors

Save Space and Weight

- Lightweight materials for weight savings
- Reliable, low profile, and stackable

Rugged Reliability

- Environmentally sealed
- EMI accessories available



Terminals and Splices

Comprehensive Selection

- High temperature
- Radiation resistant
- Gold, silver, nickel and tin platings available



RF Connectors, Cable, and Cable Assemblies

More Choice, More Performance

- Standard, subminiature, and microminiature interfaces and frequencies
- Flexible and semi-rigid cable
- Qualified to MIL-PRF-39012, MIL-DTL-83517, MIL-PRF-55339



STRADA Whisper High Speed Backplane Connectors

High Speed

- Transfers data at speeds of 25 Gbps and offers unparalleled scalability up to 112 Gbps

Reliability

- Industry leading crosstalk performance
- Robust signal pins and ground shields
- Simple upgrade path

Space Products

FIBER OPTICS



DEUTSCH RSC Connectors

Rugged

- Single-channel connectors
- Manufactured from ARCAP alloy for corrosion resistance
- Anti-vibration coupling mechanism

Versatile

- RSC: M29504/4 and /5 termini
- RSC EB: EB16 termini
- RSC-v: APC or tunable interface



PRO-BEAM EB16

Durable

- No wear on fiber optic interface
- Vibration and dirt resistant

Low-Loss Performance

- Low sensitivity to thermal fluctuations
- Stability over life of system

Easy

- Fits standard size 16 cavity
- Simplified cleaning process



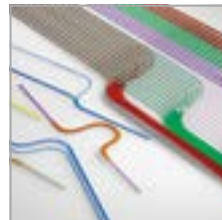
Hybrid Penetrators

Space Saving

- Electrical and optical in one device
- Compact packaging
- Wide range of configurations and contact counts

Reliable

- Hermetic sealing



Optical Flex Circuits

Versatile

- Symmetrical and asymmetrical designs
- Tight bend radii
- Very low insertion loss

Highly Customizable

- Up to 6 levels of fiber crossings in a single layer
- Up to 12 layers
- Range of packaging options for environmental conditions



DEUTSCH MC Series Physical Contact Connectors

Sustained High Performance

- Withstands a wide range of environmental conditions
- Compact 1.25-mm precision zirconia ceramic ferrules
- Extensive range with simple termination process and tooling

WIRE AND CABLE



SPEC 55 Series Raychem Space Wire

Save Space and Weight

- Smallest and lightest performance wire

Capable

- -85°C to +200°C
- Low temperature flexibility
- Mechanically tough, low outgassing
- Excellent resistance to chemicals
- Minimizes effects of high-frequency EMI



Cheminax Series Raychem Controlled Electrical Cable

High Performance

- Low capacitance and attenuation
- High velocity of propagation
- Rated -65°C to +200°C

Adaptable

- Lightweight, small size
- Suitable for demanding video and RF applications
- Highly flexible



Raychem Space Wire and Cable

High Performance

- 125°C, 150°C, or 200°C temperature ratings
- Cross-linked "non-melting" insulation system
- Low fluorine insulation system and low outgassing

Qualified

- NASA and ESA-qualified designs



Raychem High-Speed Copper Cable

Rugged Choices

- Material choices to match application requirements
- Shielded and unshielded
- Low-smoke, zero-halogen versions for increased safety

High-Speed Protocols

- Configurations to support various Ethernet, QuadraX, IEEE 1394, USB, Fibre Channel, etc.

HARNESSING COMPONENTS



POLAMCO Backshells

Full Range

- Unshielded, shielded, and rugged conduit systems
- Rectangular and circular configurations
- Straight, 45, or 90-degree options

Rugged

- Versions to match any harsh environment



Raychem Adhesives and Sealants

Versatile

- Matched to application requirements
- Matched to Raychem molded parts and tubing



HexaShield Series Raychem Backshells

High Performance

- 360° shield termination system for shielded wires and cables
- Excellent mechanical and environmental resistance
- Efficient strain relief

Versatile and Flexible

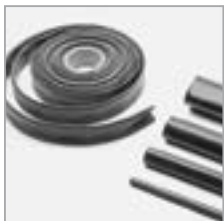
- Aluminum, stainless steel, and composite versions available
- Simple installation and easy re-entry



Raychem High-Temperature Devices

Reliable

- Heat shrinkable technology for one-step shield
- Transparent insulation sleeve saves time during installation
- Provides strain relief with ratings of up to 150°C
- Minimal tools required to achieve connection, insulation and protection
- Inhouse design and quality controlled process offers reliability and traceability



Raychem Heat Shrinkable Tubing

Excellent Performance

- Space-grade versions for low outgassing
- With or without adhesive lining
- Wide range of sizes, shrink ratios, and environmental resistance



HarnWare Harness Design Software

Powerful

- Speeds and simplifies harness design

Comprehensive

- Component selection
- Layout
- Assembly drawings
- Bills of material



Raychem Molded Parts

More Choice

- Available to fit TE backshell adapters

Protects

- Provides excellent strain relief at connector cable terminations



Raychem Sealed Harnesses

Lightweight and Tough

- Small, lightweight, rugged, and environmentally sealed

Customized

- Designs are customer specific, tailored to help meet your strictest requirements

Complete

- Harnesses include TE cables, connectors, backshells, tubing, molded parts, and adhesives

HIGH-PERFORMANCE RELAYS AND CONTACTORS



KILOVAC High Voltage Relays

Space and Weight Savings

- Small size and weight for given power rating

Robust and Versatile

- High resistance to shock, vibration, and temperature extremes
- Low, stable contact resistance over relay life
- Usable in RF devices



HARTMAN N-Series Relays

High Reliability

- Magnetic latch or side stable
- Stainless steel-welded construction
- Hermetically sealed

Flexible Performance

- -55 °C to +125 °C
- Multiple mounting and auxiliary contact configurations
- Main contact current ratings 30 to 125 A



CII Mid-Range Relays

Comprehensive Selection

- Qualified to a variety of Mil Specs
- Designed to perform in a wide range of extreme environments

Flight Ready

- Hermetically sealed
- High shock and vibration ratings



DRI Mid-Range Latching Relays

Versatile

- 5A to 25A product
- Internal voltage suppression options
- Variety of mounting and termination styles

Reliable

- Qualified to M83536
- Hermetically sealed
- Magnetic latching assures improper switching



CII DC Solid State Relays

Rugged Reliability

- Optically coupled input/output
- Hermetically sealed
- High shock and vibration resistance

Versatile

- Some relays incorporate short circuit protection and status
- Compatible with a wide range of extreme environments



Power Distribution Units

Smaller, Lighter

- Optimize floor space weight savings over discrete installations

Customized

- Accommodate whatever bill of material and point-to-point layout the application requires
- Decades of experience designing custom panel assemblies

INTEGRATED SOLUTIONS



KILOVAC Contactors

Rugged Reliability

- Lightweight high power DC or high-voltage DC
- Hermetically sealed, available with a variety of electrical configurations, power ratings, voltage ratings, and mounting styles to make your electrical system more reliable and capable



Composite Enclosures

Weight-Saving Rugged Performance

- Light weight — up to 50% lighter than aluminum
- Extremely rugged and corrosion resistant

Customizable

- Conductive composites and plating options for grounding/EMI shielding
- Highly customizable with integrated wire traces, antennas, and connectors

Empower Engineers to Solve Problems, Moving the World Forward.

AMP | AGASTAT | CII | DEUTSCH | DRI | HARTMAN | KILOVAC
MICRODOT | NANONICS | POLAMCO | Raychem | Rochester | SEACON

CONNECT WITH US

We make it easy to connect with our experts and are ready to provide all the support you need. Visit te.com/support to chat with a Product Information Specialist.

QUALITY STARTS WITH THE RIGHT APPLICATION TOOLING

Creating a quality crimp connection is essential to delivering high performance and reliability in extreme environments. From low to high volume wire processing, TE has you covered with a full range of application tooling and a global field service team.

- [View all application tooling](#)
- [Connect with our experts to find the right tool for your application](#)

te.com/space

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TE Connectivity
Aerospace, Defense & Marine
2900 Fulling Mill Road
Middletown, PA 17057