



MILITARY AEROSPACE

SOLUTIONS THAT FLY HIGH

Help Your Design Take Off With Solutions That Save Space . . .
Reduce Weight . . . Survive Harsh Environments

SMARTER CONNECTIVITY FOR INTELLIGENT FLIGHT

Solving Tough Technical Issues

Success in today's rugged avionics environment takes more than a thorough understanding of your own products. Success demands an equally sophisticated understanding of the application and how well your product interacts as part of an overall integrated system. At TE Connectivity (TE), we understand complex system protocols, key electrical parameter requirements, and overall mechanical performance requirements of the military aerospace market.

As you look toward a holistic approach to system interconnection known as electrical wiring interconnection systems (EWIS) and the significant role avionics plays in EWIS systems, count on TE for solutions that combine avionics, high performance, long-term reliability, and innovation to meet the next-generation of needs.

Typical Applications

- Radio Communications
- Processors
- High-Speed Computers
- Navigation

TE Components . . . TE Technology . . . TE Know-how . . .

AMP | Agastat | CII | Hartman | Kilovac | Microdot | Nanonics | Polamco | Raychem | Rochester | DEUTSCH
SEACON Phoenix | L.L. Rowe | Phoenix Optix | SEACON

Get your product to market faster with a smarter, better solution.

FORTIS Zd CONNECTORS

This modular high-density backplane connector system handles signal, power, and high-speed differential pairs up to 12+ Gb/s in a rugged high-shock and high-vibration environment



RAYCHEM HIGH-SPEED CABLE

A true Gigabit Ethernet family of high-speed cables that are small in size, light weight, rugged, and capable of handling a wide temperature range from -55°C to +200°C



MULTIGIG RT 2-R CONNECTORS

The standard connector for VITA 46 applications, the MULTIGIG RT 2 connector has been redesigned to be even more rugged. Passing the extreme testing requirements of VITA 72, the new MULTIGIG RT 2-R connectors offer quad redundant contacts for reliable connections and is drop-in backwards compatible with the original design





Solutions for Avionics

Embedded Computing Connectors

- High-Speed Board-Level Connectors
- Mezalok Mezzanine Connectors
- VITA 66/67 Optical and RF Modules

High-Speed I/O

- Gigabit and 10G I/O Connectors
- High-Speed Cable and Cable Assemblies

I/O Connectors

- Subminiature-D Connectors
- Micro-D Connectors
- Nanominiature Connectors

Relays

- Switching Relays
- Solid-State Relays
- Board-Level Relays

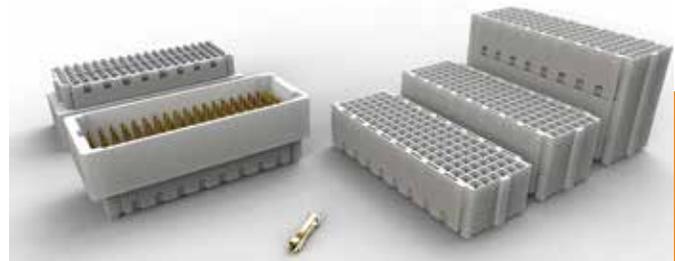
CEELOK FAS-X CONNECTORS

Using a 38999-style shell, CeeLok FAS-X connectors handle speeds of 10 Gb/s and higher, making them an ideal choice for 10G Ethernet, IEEE 1394, USB 2.0 and other high-speed protocols. The termination and assembly is fast and straightforward, including the ability to field terminate and repair in as little as 5 minutes



MEZALOK CONNECTORS

Using well-established Mini-Box contact and BGA technologies, Mezalok connectors for VITA 61 are a high-reliability choice for XMC serial switched fabric applications, supporting data rates of 5 Gb/s and providing exceptional thermal stability and resistance to shock and vibration. The connectors are available in stacking heights of 10, 12, 15, and 18 mm and sizes of 60, 114, and 320 positions



HARNES RELIABILITY FROM TIP TO TAIL

Rugged Reliability for Higher Performance, End to End

The backbone of every military aerospace platform, wiring harnessing interconnects every subtier system, including critical radar and avionics systems. Our robust and reliable harnessing components help you meet today's stringent 20-year mean time between failure (MTBF) life expectancy—and can help you reduce weight and size, operate at higher data rates, and perform over extended temperature ranges.

Typical Applications

- Avionics Bays
- Engine Bays
- Flight Controls
- Environmental Systems
- Power Switching
- Landing Gear

DEUTSCH CTJ SERIES TERMINAL JUNCTION MODULES

Compact, environmentally sealed, CTJ Series modules accommodate common bussing of 6 to 20 contacts in a small area. Internal busbars are configured to allow connections of various combinations of wires from 22 through 12 AWG, while providing fluid resistance, vibration dampening, and a temperature range of -65°C to +200°C



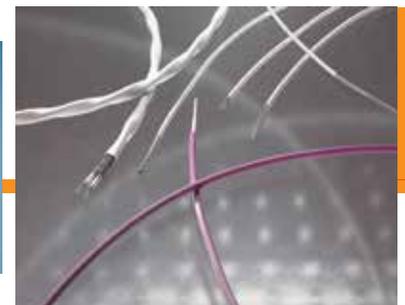
RAYCHEM MIL-STD-1553B DATA BUS

TE offers a complete line of couplers, connectors, terminators, and cables to help meet the most stringent airframe requirements. We also provide fully tested assemblies with temperature ranges from -55°C to +150°C



RAYCHEM SPEC 55 WIRE AND CABLE

TE's military-qualified, high-performance primary wires and cable, offered in both single- and dual-wall construction, provide small size, light weight, and outstanding chemical resistance. This wire provides excellent abrasion and cut-through resistance and flexibility, with an extended temperature range from -65°C to +200°C





Solutions for Aircraft Wiring

Connectors

- Fiber Optic Connectors
- 38999 Connectors
- MIL-STD-1553 Data Bus
- High-Performance Backshells

Wire and Cable

- Primary Wire and Cables
- High-Speed Cables
- Sealed Harnesses

Harnessing

- Termination Devices
- Protection Products
- Terminals and Splices

Accessories

- Feedthroughs
- Repair Products

RAYCHEM 200°C SOLDER-SLEEVE DEVICES

SolderSleeve terminations are one-step heat-shrinkable wire and cable interconnection devices that insulate, strain relieve, and help protect terminations from environmental damage



DEUTSCH DTS 38999 CONNECTORS

Our range of MIL-DTL-38999 and 38999-style connectors gives you more choice in shell sizes, materials, and inserts for power, signal, and optical needs, filtering and EMI protection, hermetics and other special environmental sealing. If you need 38999, talk to TE



MEET YOUR VISION WITH TE INNOVATION

Reduce SWaP, Increase High-Frequency Capability

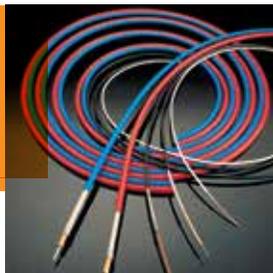
The changing RF world is now demanding higher bandwidths and faster speeds to meet the increasingly sophisticated needs of radar and communications. The drive toward smaller packages, higher electronic densities, and ease of use requires innovative next-generation “families of products.” TE understands these needs. We will work with you from early design involvement to a final product solution.

Typical Applications

- Radio Communications
- Radar Control
- Data Links
- C4ISR
- Seeker and Guidance
- AESA Radar

RAYCHEM CHEMINAX COAXIAL CABLE

Cheminax cables bring tightly controlled electrical characteristics to miniature coaxial cable—offering electrical performance exceeding standard RG cables in a smaller, lighter design while providing lower attenuation and capacitance



COMPOSITE CONNECTORS

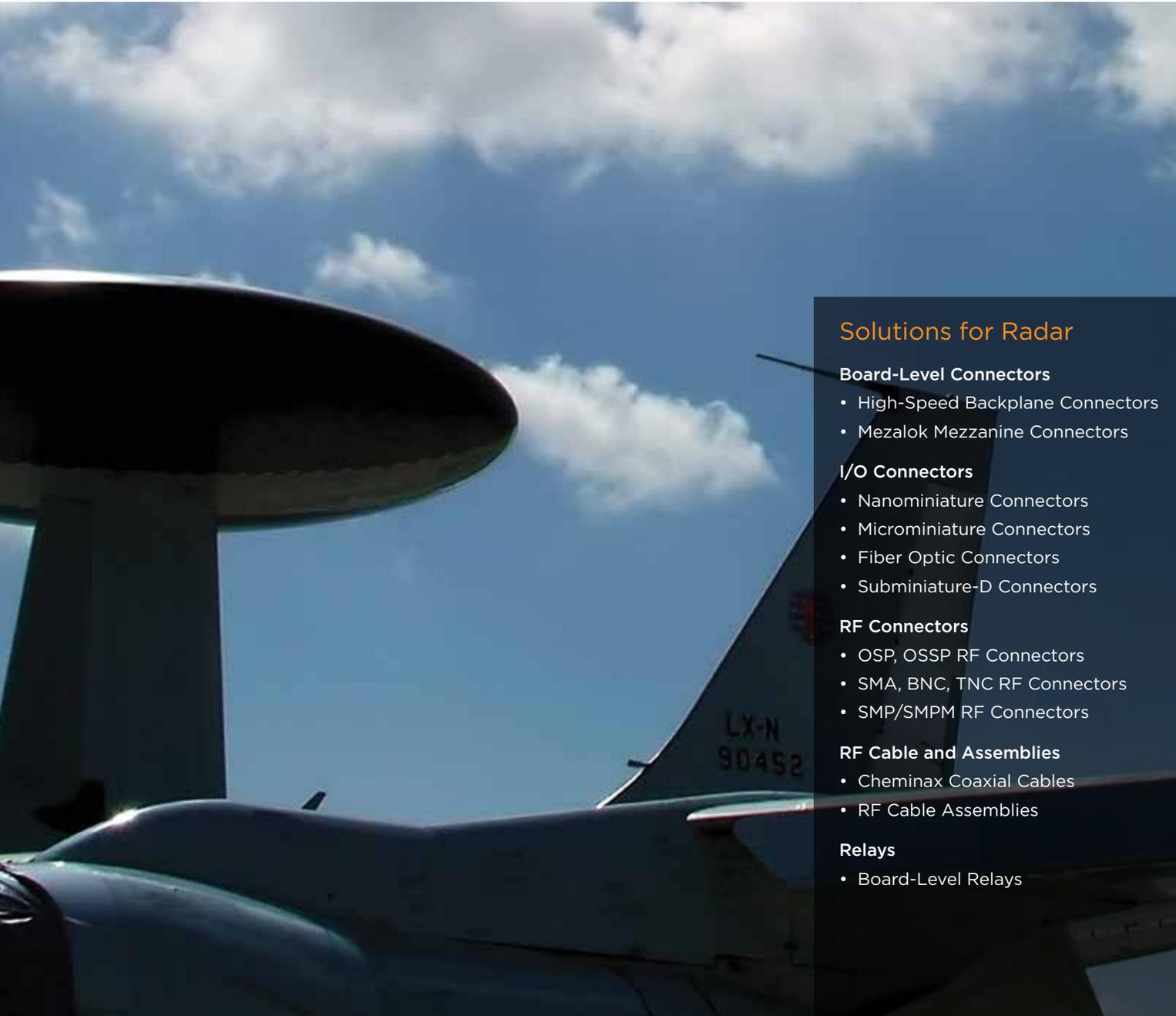
Achieve significant weight savings with help from our composite-shell connectors, which combine weight savings with corrosion resistance, temperature ranges as wide as -65°C to +200°C, and compatibility with standard inserts for signal, power and optical connectivity. Many of our connector families are available with composite options



DEUTSCH HIGH-FREQUENCY MICROWAVE HARNESSES

Custom-designed and application-specific, with flexible and semirigid cables capable of handling up to 60 GHz. We offer complete in-house design, testing, and certification of our RF cable assemblies





Solutions for Radar

Board-Level Connectors

- High-Speed Backplane Connectors
- Mezalok Mezzanine Connectors

I/O Connectors

- Nanominiature Connectors
- Microminiature Connectors
- Fiber Optic Connectors
- Subminiature-D Connectors

RF Connectors

- OSP, OSSP RF Connectors
- SMA, BNC, TNC RF Connectors
- SMP/SMPM RF Connectors

RF Cable and Assemblies

- Cheminax Coaxial Cables
- RF Cable Assemblies

Relays

- Board-Level Relays

SMP/SMPM RF CONNECTORS

Supporting applications up to 40 GHz, TE's military-qualified SMP/SMPM connectors are available in board- and cable-mount versions, including VITA 67



DEUTSCH EMI FILTER CONNECTORS

By incorporating electronic components to provide EMI filtering or transient protection, superior performance can be obtained, with the additional benefits of helping to save space, weight, and system cost. Filter options range from a few kilohertz to several gigahertz. Custom filtered boxes are also an option



TARGET RUGGED RELIABILITY

Powerful Solutions for Extreme Conditions

The complexity and advanced capabilities of today's smart munitions require a high level of interconnection. Multifunctional levels of capability drive the need for more complex processing in a smaller, lighter weapons package. Rapid-fire weapon systems demand solutions to withstand the high shock and vibration they exhibit.

We are creating the next generation of interconnect products to help meet the most stringent electrical and physical demands.

Typical Applications

- Missile Launchers
- Bomb Racks
- Gun Mounts
- Pods

RAYCHEM SEALED HARNESSES

Design engineered from the beginning, our harnesses are small, lightweight, rugged, and environmentally sealed. Each design is customer specific and tailored to help meet your strictest requirements. Our comprehensive solutions include TE cables, connectors, backshells, tubing, molded parts, and adhesives—including next-generation lightweight shielding and boots



DEUTSCH DMC-M EN4165 CONNECTORS

With aluminum alloy or composite shells, DMC-M connectors are lightweight multimodule connectors that give you modularity to deploy signal, power, optical, and high-speed connectivity. Designed to EN4165 requirements, the series' range of inserts, options, and accessories provides maximum flexibility in configuration



DEUTSCH STORES INTERFACE CONNECTOR

TE's MIL-STD-1760 connector systems enable a high-reliability interface with mission stores equipment. The drop launch 1760 Type 1 is available in both aluminum and composite versions. The 1760 Type 2 is for rail launch applications and incorporates a replaceable buffer system for protection from missile efflux. The 1760 interface is also available in standard MIL-DTL-38999 Series III shells





Solutions for Weapon Systems

Connectors

- MIL-STD-1760 and Lanyard Connectors
- Ruggedized Circular Connectors
- High-Temperature Connectors
- Hermetic Connectors

Networking

- MIL-STD-1553 Data Bus

Wire and Cable

- Specialty Wiring
- High-Speed Cables and Assemblies
- Sealed Harnesses
- Lightweight Shielding

MICRO-D CONNECTORS

TE's Micro-D connectors are qualified to M83513. These high-density, low-profile connectors are available in circular and rectangular formats. Our new offerings include high-speed signal and power, and can be put into a single housing to help support maximum space and weight savings



EXPANDED BEAM OPTICS

Our optics design incorporates a ball lens into a ruggedized connector with outstanding reliability and ease of maintainability. Add in an armored cable for an ideal optical assembly package



TAP OUR POWERFUL SOLUTIONS

Performance and Reliability Take Flight

Today's modern aircraft, with their advanced avionics, AESA radar, and complex control systems, demand generators to produce electrical power at record levels. This drives requirements for increased isolation and switching performance, better sensing capability, and improved thermal management. With all the capabilities we build into our products, you can still rely on us for compact, lightweight components. Plus we can integrate electronics and custom tailor efficient power distribution panels.

Typical Applications

- Main Bus Isolators
- Radar/Jammer
- Hydraulic Pumps
- Directed Energy
- Weapons Fire and Control
- Fly by Wire
- Battery Isolators
- Auxiliary Power Unit Start



DEUTSCH 983 SERIES FIREWALL CONNECTORS

High-temperature 983 Series firewall connectors are designed to take the heat—up to 200°C. The finely threaded connectors feature self-locking plugs, shell-to-shell metal bottoming, and special insert materials to make them well suited to firewall feedthrough applications



AC AND DC RELAYS AND CONTACTORS

With one of the largest QPL offerings in the industry, we offer a broad range of relays and contactors, switching power from signal level to hundreds of kilowatts. Our components maintain superior reliability in some of the smallest, lightest weight packages in the industry





Solutions for Power Systems

Connectors

- Circular Power Connectors

Wire and Cable

- Flexible Power Wire and Cable

Relay and Contactors

- Solid-State Relays
- 270 VDC Contactors
- Board-Level Switching

Protection and Control

- Overcurrent Protection
- Ground Fault Interrupters
- Timers and Sensors
- Solenoids

Value-Added Subassemblies

- Primary Power Distribution
- Secondary Power Distribution
- Custom Power Panels

POWER DISTRIBUTION UNITS

We have decades of experience designing custom panel assemblies that help accommodate whatever bill of material and point-to-point layout the application requires, optimizing space and providing weight savings over discrete installations



DEUTSCH DTS-HC SERIES POWER CONNECTORS

Ideally suited for high-power interconnections in harsh environments, the connector's power contacts are rated to 300 A and are suitable for terminating conductors up to 70 mm². Based on military-standard 38999 housings, the connectors help provide the reliability and performance required for many of the most demanding aerospace applications



SMART CONNECTIVITY

We are bringing advanced intelligence to contactors, with current and voltage sensing using current transformers or Hall-effect switches, protection from differential currents, overcurrent tripping, hard faults, and remote reset capabilities. The result is better power management, lower power consumption, and smaller, more capable packages



SETTING NEW DIRECTIONS IN FLIGHT CONTROL

Fly with a Higher Level of Confidence

Modern flight controls combine mechanical, hydraulic, and, increasingly, fly-by-wire systems to manage flight control surfaces, landing gear, and other mechanisms.

As the sophistication of these controls increases, so do the requirements for faster processing speeds and smaller, lighter, and more reliable solenoids, sensors, and actuators.

Typical Applications

- Altitude Control
- Angle of Attack
- Yaw, Roll, and Pitch
- Throttle Controls
- Control Yoke
- Elevator Trim
- Wing Flaps
- Landing Gear

HERMETIC CONNECTORS

The variety of TE connector families available in hermetic versions means you do not have to compromise in your choice of connectivity. Get hermetic sealing for increased environmental performance that helps to meet the harsh demands throughout the aircraft



POLAMCO CONNECTORS AND BACKSHELLS

Our newest line offers a complete range of high-performance backshells for unshielded, shielded, and rugged conduit systems. Supporting one of the widest variety of Mil-Spec and COTS connectors, we have a solution for virtually every rugged, lightweight, and specialized need



RAYCHEM RUGGED CONDUIT HARNESSES

Our rugged conduit harnesses provide reliable connectivity in severe environments with high-temperature insulation and jackets, lightweight shielding, flexibility, and repairable components to meet EWIS requirements





Solutions for Flight Controls and Landing Gear

Connectors

- High-Temperature, Vibration-Resistant Connectors
- Hermetic Connectors

Harnessing

- High-Temperature Wire and Cable
- Rugged Conduit Harnesses
- High-Performance Backshells
- Tubing and Molded Parts

Control

- Custom Tubular Solenoids
- Sensors

CUSTOM SOLENOIDS

We custom design linear-motion solenoids to perform in extreme temperatures, high altitudes, and demanding shock, acceleration, and vibration environments. Available with push, pull, or combination actuation, our solenoids service a variety of applications such as fuel tanks, bomb racks, and hydraulic systems



SENSORS

Our sensors help give you high-accuracy and high-reliability sensing combined with low weight, compact size, and low power requirements. Packaged to withstand harsh environments, our sensors can include wired or wireless high-speed telemetry and integration into value-added assemblies



KEEP UAVs ON ACTIVE DUTY

Fly Higher, Fly Longer

Unmanned aerial vehicles (UAVs), ranging from 60-foot wing spans on high altitude platforms to the size of a small hummingbird, require innovative solutions to meet the mission requirements of long flight times, advanced intelligence-gathering capabilities, and weapons delivery. The UAV market demands small, lightweight, low-cost solutions in an ever-evolving market that must adapt quickly to changes and threats in a global environment.

Typical Applications

- Electro-Optical
- Infrared
- Radar
- Communications
- Weapons Systems
- Flight Controls



DEUTSCH DBAS SERIES CONNECTORS

The rugged DBAS series offers easy and secure locking with a push/pull coupling ring for 100% mating. They are rated from -55°C to +200°C, and available in environmentally or hermetically sealed, rack-mountable, and lanyard release versions



COMPOSITE ENCLOSURES

Engineered polymers, micro-encapsulants, molded-in antennas, selective traces, EMC, and thermal management are crucial in any enclosure. We have the capability to design rugged, lightweight enclosures with our expertise in materials, manufacturing, engineering, and modeling





Solutions for Unmanned Systems

Embedded Computing Connectors

- High-Speed Backplane Connectors
- Mezalok Mezzanine Connectors
- VITA 66/67 Optical and RF Modules

Optical Connectors

- Active Optical Assemblies
- Fiber Optic Connectors
- Expanded Beam and Ceramic Ferrule Optical Termini

I/O Connectors and Cable

- Gigabit and 10G I/O Connectors
- Wildcat Micro Connectors
- High-Speed Cable

Relays and Contactors

Packaging

- Composite Enclosures

K SERIES RELAYS

Our K Series contactors are among the smallest, lightest available, helping you to meet critical SWaP requirements while providing switching capabilities of up to 1000 A at 28 VDC



DEUTSCH 369 SERIES CONNECTORS

For applications requiring fewer contacts per connector, the new 369 Series connectors feature aerospace-grade materials to help meet stringent smoke, toxicity, flammability, and sealing requirements



INTEGRATED SOLUTIONS

Our expertise in materials, packaging, modeling, and advanced products provides you with custom integrated solutions with plug-and-go convenience. From harnesses and composite enclosures to conformal antennas and PDUs, we help you save weight and space while lowering costs and boosting performance



For More Information

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Consult TE for the latest dimensions and design specifications.