



## Solutions for Military Aerospace



# SMARTER CONNECTIVITY FOR INTELLIGENT FLIGHT

Success in today's rugged avionics environment is 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, we understand complex system protocols, key electrical parameter requirements,

and overall mechanical performance requirements of the military aerospace market.

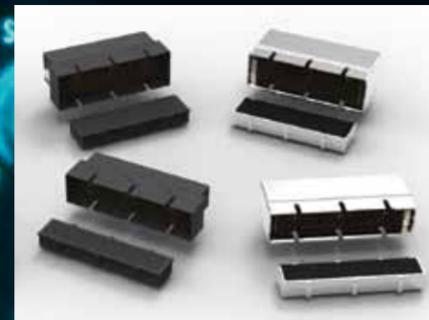
As you look toward a holistic approach to system integration known as electrical wiring integrated systems (EWIS) and the significant role avionics plays in EWIS systems, count on TE for solutions that combine avionics, high performance, long-term reliability, and innovation to meet the next-generation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

## Typical Applications

- Radio communications
- Processors
- High-speed computers
- Navigation

## Solutions for Avionics

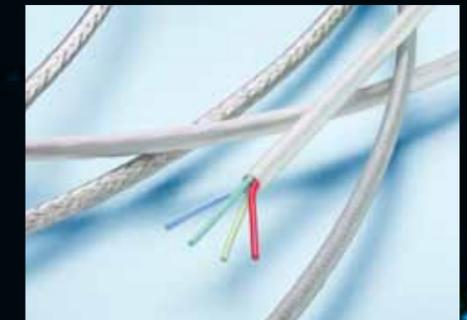
- 1-5 A Switching Relays
- 5-25 A Switching Relays
- D-Subminiature Connectors
- EMI Backshells
- High-Data-Rate Assemblies
- High-Data-Rate Cables
- High-Data-Rate Connectors
- High-Speed Board-Level Connectors
- Micro D Connectors
- Nanominiature Connectors
- Solid-State Relays
- Specialty Connectors



FORTIS Zd CONNECTORS



CEELOK FAS-T CONNECTORS



IEEE 1394 FIREWIRE CABLE

**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.**

**One of the smallest, field-repairable, 10 Gigabit Ethernet rugged I/O connector in the Aerospace, Defense and Marine marketplace. CeeLok FAS-T connectors are compatible with a variety of high-speed cables and protocols, and can handle speeds up to 10 Gb/s.**

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



# HARNESS RELIABILITY FROM TIP TO TAIL

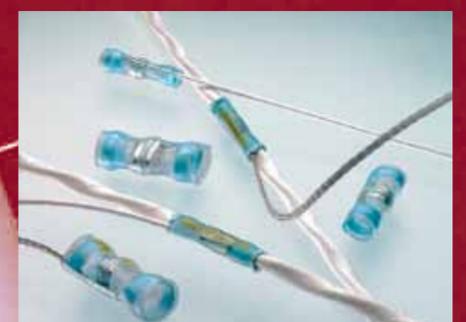
- ### Solutions for Aircraft Wiring
- MIL-STD-1553 Data Bus
  - Family of Repair Products
  - Fiber Optics
  - High-Data-Rate Cables
  - High-Performance Backshells
  - Primary Wire and Cables
  - Protection Products
  - Sealed Harnesses
  - Specialty Connectors
  - Termination Devices
  - Termination Splices



SPEC 55 WIRE AND CABLE



MIL-STD-1553B DATA BUS



200°C SOLDER SLEEVE DEVICES

At 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

TE's military-qualified, high-performance primary wire and cable, offered in both single- and dual-wall construction, provides 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.

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

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

# MEET YOUR VISION WITH TE INNOVATION

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 “family of products.” TE understands these needs, and will work with you from early design involvement to a final product solution.

## Typical Applications

- Radio communications
- Radar control
- EO/IR
- C4ISR
- Seeker and guidance
- AESA radar

## Solutions for Radar

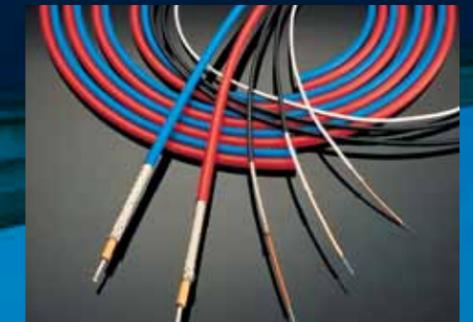
- Cheminax Coaxial Cables
- Board-Level Relays
- D-Subminiature Connectors
- Fortis Zd High-Speed Board-to-Board Connectors
- Mezalok Mezzanine Connectors
- Microminiature Connectors
- Nanominiature Connectors
- OSP, OSSP RF Connectors
- RF Cable Assemblies
- SMA, BNC, TNC RF Connectors
- SMP/SMPM RF Connectors



SMP/SMPM RF CONNECTORS



RF CABLE ASSEMBLIES



CHEMINAX COAXIAL CABLE

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

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

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.

# TARGET RUGGED RELIABILITY

The complexity and advanced capabilities of today's smart munitions requires 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 meet the most stringent electrical and physical demands.

## Typical Applications

- Missile launchers
- Bomb racks
- Gun mounts
- Pods

## Solutions for Weapon Systems

- D-Subminiature Connectors
- High-Data-Rate Cables
- High-Data-Rate Connectors
- MIL-STD-1553 Data Bus
- MIL-STD-1760
- Ruggedized Connectors
- Sealed Harnesses
- Specialty Wiring



EXPANDED BEAM OPTICS

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



MICRO D CONNECTORS

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



SEALED HARNESS

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

## TAP OUR POWERFUL SOLUTIONS

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, light-weight 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
- APU start



### Solutions for Power Systems

- Primary Power Distribution
- Secondary Power Distribution
- Overcurrent Protection
- Custom Packaged Panels
- Board-Level Switching
- Timers and Sensors
- Ground Fault Interrupters
- Solid-State Relays
- Solenoids



AC AND DC RELAYS AND CONTACTORS



POWER DISTRIBUTION UNITS



SMART CONNECTIVITY

**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.**

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

**Our products can be integrated with power sensing electronics to address the increased sensitivities of today's complex systems, providing fault interruption and overload protection to critical mission systems.**



## Solutions for Flight Controls and Landing Gear

- Harnessing Components
- High-Temp Wire and Cable
- EMI and Non-EMI Backshells
- Rugged Conduit Harnesses
- Tubing and Molded Parts
- Custom Tubular Solenoids
- Sensors

# SETTING NEW DIRECTIONS IN FLIGHT CONTROL

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



SENSORS

**Our sensors 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.**



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.**



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.**



## KEEP UAVS ON ACTIVE DUTY

### Solutions for Unmanned Systems

- Active Optical Assemblies
- Composite Enclosures
- Connectors and Backshells
- Expanded Beam Optical Termini
- High-Data-Rate Components, 100Base-T to 1000Base-T
- Relays and Contactors
- RF Connectors and Cable Assemblies
- Termination Devices
- Wire and Cable

Unmanned aerial systems, 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

#### See Our Full Product Lineup

For additional products for the Military Aerospace Market, visit our internet site at: [www.te.com/ADM](http://www.te.com/ADM)



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.



RAYCHEM SPIN LOCK ADAPTERS

Raychem spin lock variable-angle backshells allow a single part to accommodate a wide range of needs. Providing straight, 45°, and 90° cable terminations, the backshell's swivel body rotates around the axis of the cable bundle, thereby minimizing stress on the wire bundle and providing better strain relief.



COMPOSITE ENCLOSURES

Engineered polymers, micro-encapsulants, molded-in antennas, selective traces, EMI, 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.

## FOR MORE INFORMATION

### Technical Support

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South America:	+55 (0) 11-2103-6000
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