



MISSION-CRITICAL  
INTERCONNECT  
SOLUTIONS



*Glenair*  
SIGNATURE SERIES

# Commercial Aerospace EWIS Technology

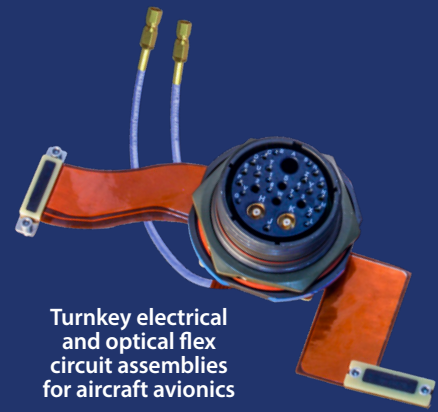
Signature Interconnect Solutions for Commercial Aircraft

MARCH 2023



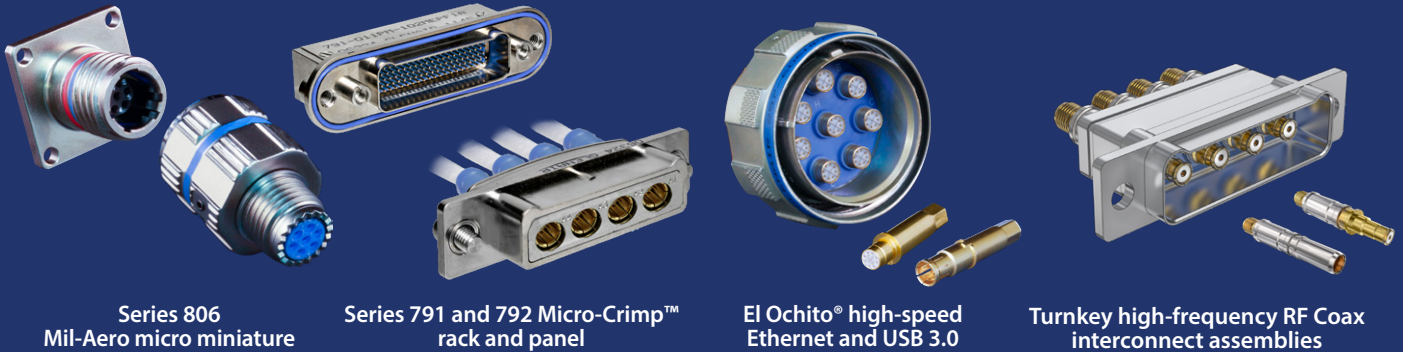
# Commercial Aerospace EWIS Technology

Signature Interconnect Solutions for Commercial Aircraft



Turnkey electrical and optical flex circuit assemblies for aircraft avionics

## SMALL FORM-FACTOR, HIGH-PERFORMANCE MICRO MINIATURE CONNECTORS



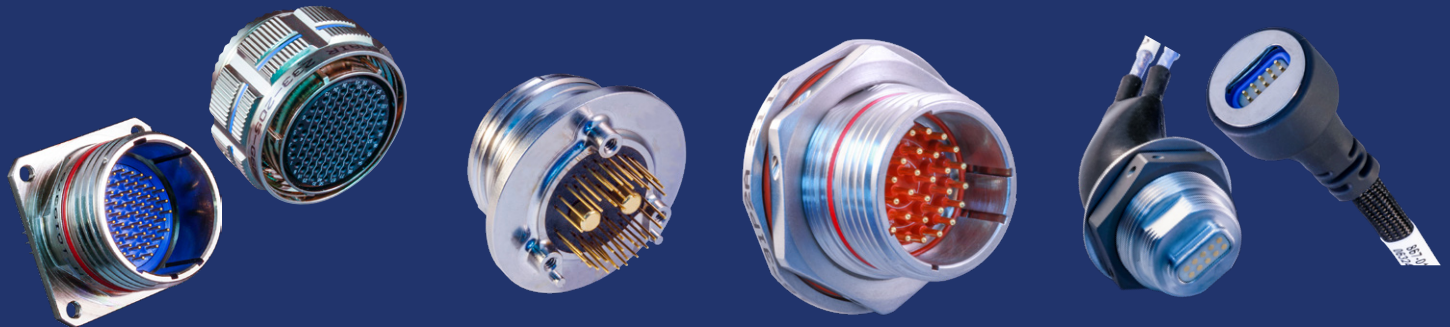
Series 806  
Mil-Aero micro miniature

Series 791 and 792 Micro-Crimp™  
rack and panel

El Ocho® high-speed  
Ethernet and USB 3.0

Turnkey high-frequency RF Coax  
interconnect assemblies

## HARSH ENVIRONMENTAL AEROSPACE CONNECTORS



SuperNine® "better than QPL"  
MIL-DTL-38999 Series III

CODE RED™  
lightweight hermetic

ThermaRex™ HT  
high-temperature connector

GateLink Pro™ high-speed  
data uplink connector

## POWER DISTRIBUTION CONNECTORS



PowerLoad™  
power distribution connectors

PowerTrip™ high-density ground test  
connectors and cables

PowerPlay™ MIL-DTL-38999 Series III type  
high-voltage, high-vibration

## SPECIAL-PURPOSE AEROSPACE CONNECTORS AND CONTACTS



Sr. 80 Mighty Mouse sensor connectors with QDC or threaded coupling



SpliceSaver™ time- and labor-saving wire splice replacement



Dummy Contact Sealing Plugs (DCSP)

## ADVANCED-PERFORMANCE CONNECTOR ACCESSORIES AND WIRE MANAGEMENT SOLUTIONS



ProSeal™ spring-action protective covers



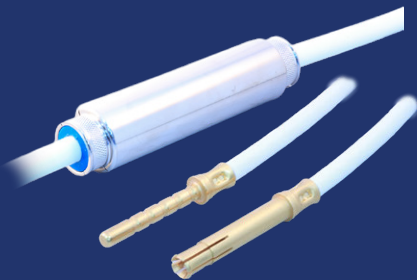
Swing-Arm™ and Swing-Arm FLEX™ strain relief clamps



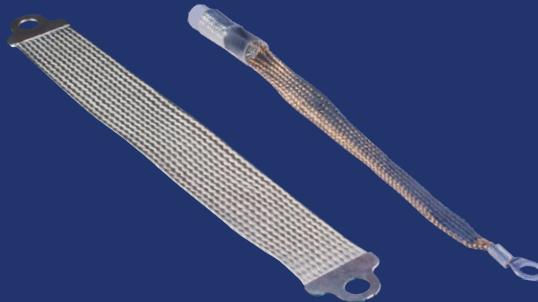
Autoshrink™ cold-action tubing and boots



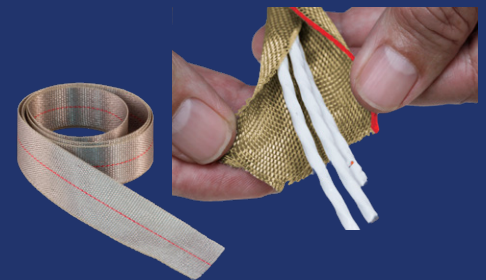
TurboFlex® ultra-flexible power cables



PwrLine HV™ power feed-line system for aircraft power distribution applications



Lightweight, flexible ground straps and HSTs



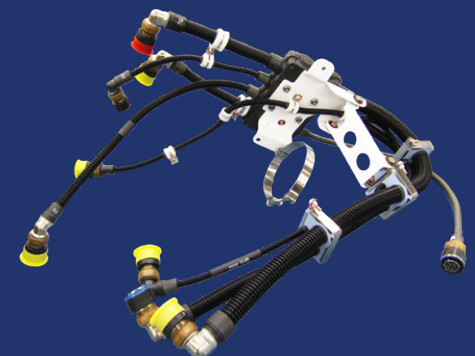
ArmorLite™ shielding / MasterWrap™ side-entry shielding



Problem-solving circular and rectangular connector accessories

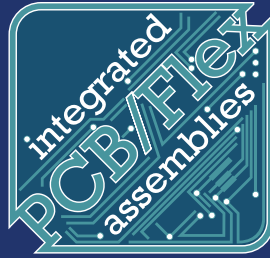


Band-Master ATS® advanced shield termination system



Turnkey, lightweight polymer- and metal-core conduit wire protection systems

PROPULSION AND  
AVIONIC SYSTEM  
BUILD-TO-PRINT  
INTEGRATED FLEX  
ASSEMBLIES

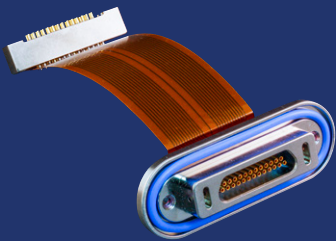


Flex, Rigid Flex, and Rigid PCB assemblies with signature interconnect technology for aircraft LRU applications

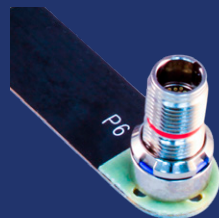


Turnkey connectorized flex, rigid flex, and rigid PCB assemblies incorporating Glenair's broad range of innovative small form-factor circular and rectangular PC-tail connector solutions for optimized ease-of-assembly and SWaP

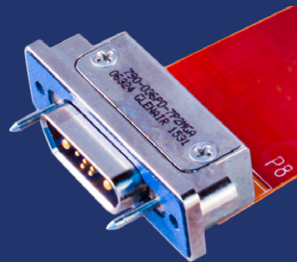
**GLENAIR SIGNATURE PC-TAIL CONNECTOR TYPES AVAILABLE IN TURNKEY FLEX ASSEMBLIES**



Series MWD Micro-D and innovative pogo-pin AlphaLink



Series 88 SuperFly



Series 79 Micro-Crimp



SuperNine MIL-DTL-38999 type flex with board connector

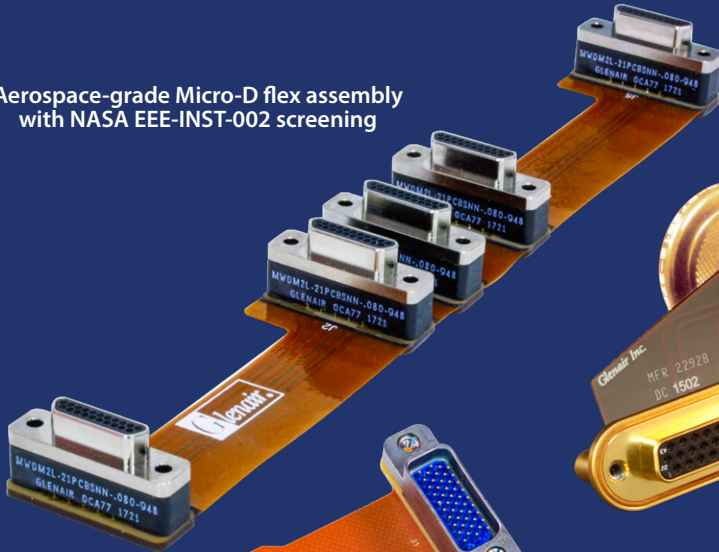
TURNKEY

# Flex, Rigid Flex, and Rigid PCB Assemblies with Glenair signature PC tail connectors for reliable, repeatable performance



## MULTIBRANCH FLEX / PCB ASSEMBLIES WITH GLENAIR SIGNATURE CONNECTORS

Aerospace-grade Micro-D flex assembly with NASA EEE-INST-002 screening



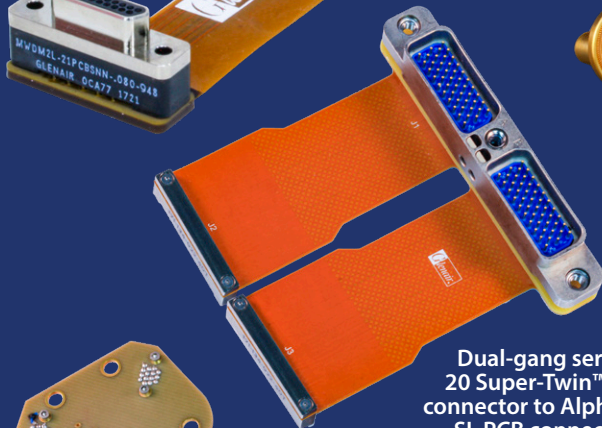
High-shock matched-impedance Mighty Mouse assembly with flex circuit



Aerospace-grade Series 28 HiPer-D to Series 80 Mighty Mouse I/O jumper: a tight space-constrained rectangular-to-circular solution



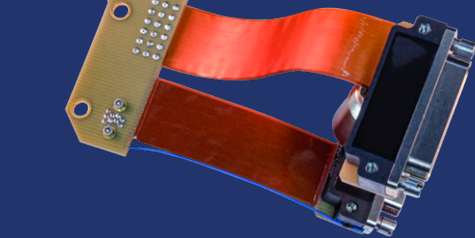
Dual-gang series 20 Super-Twin™ I/O connector to AlphaLink SL PCB connector



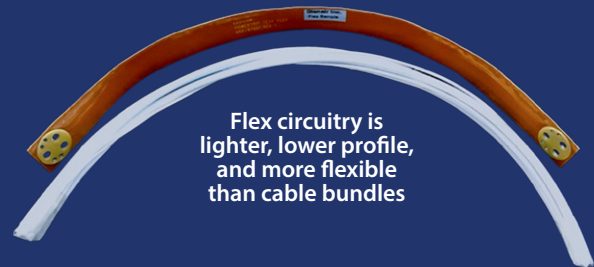
Hybrid flex/rigid flex multibranch Micro-D and Series 23 SuperNine flex assembly with discrete RF circuits



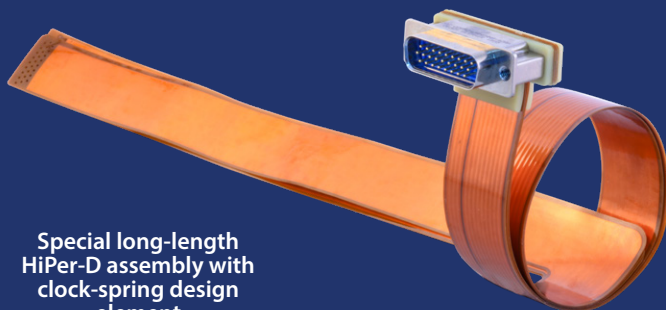
Stacked Micro-D I/O connectors with flex jumper to rigid PCB assembly



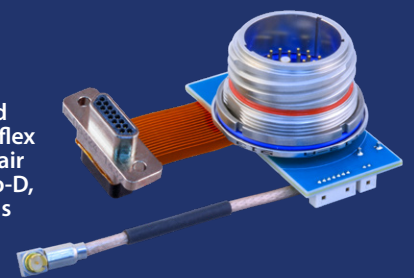
Flex circuitry is lighter, lower profile, and more flexible than cable bundles



Special long-length HiPer-D assembly with clock-spring design element



High vibration and shock resistant rigid flex assembly with Glenair Mighty Mouse, Micro-D, and RF connections



LIGHTWEIGHT  
AVIONICS,  
FLIGHT DECK,  
ACTUATOR AND  
SENSOR CONNECTORS

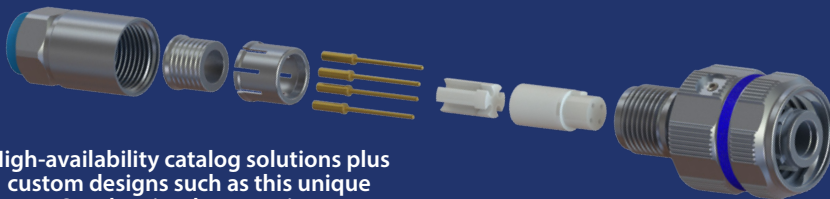
SERIES  
**806**  
MIL-AERO

Advanced performance,  
reduced size and weight  
connector series IAW  
MIL-DTL-38999



Series 806 offers significant size and weight savings while meeting key performance benchmarks for a broad range of commercial aircraft applications including sensors, flight navigation avionics in piloted vehicles, electronic speed controllers, and more. Designed for broad use in harsh vibration, shock, and environmental aircraft zones—as well as high-altitude, unpressurized zones with aggressive voltage ratings and altitude immersion standards—the Series 806 Mil-Aero features numerous design innovations including durable mechanical insert retention, radial and triple-ripple grommet seals. Its reduced thread pitch and re-engineered ratchet prevent decoupling problems, particularly in small shell sizes, solving one of the major problems of shell size 9 and 11 MIL-DTL-38999 Series III connectors.

**SIZE AND WEIGHT SAVING SOLUTIONS: CATALOG OR CUSTOM**



High-availability catalog solutions plus custom designs such as this unique Quadrax implementation

- Next-generation small form factor aerospace-grade circular connector
- Designed for harsh application environments including SWAMP-zone sensors, flight navigation electronics, and flight deck avionics
- Integrated anti-decoupling technology
- High density 20HD, 22HD, RF, and high-speed contact arrangements
- Hermetic and filter versions
- +200°C temperature rating

# Series 806 Mil-Aero Micro Miniature Circular Connectors



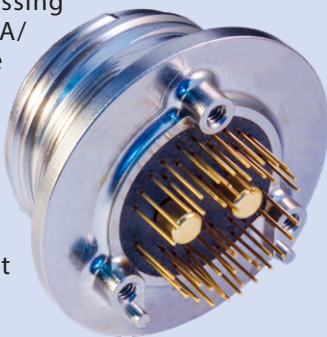
for rugged fixed-wing and rotorcraft applications

## SERIES 806 MIL-AERO: FEATURES / SPECIFICATIONS

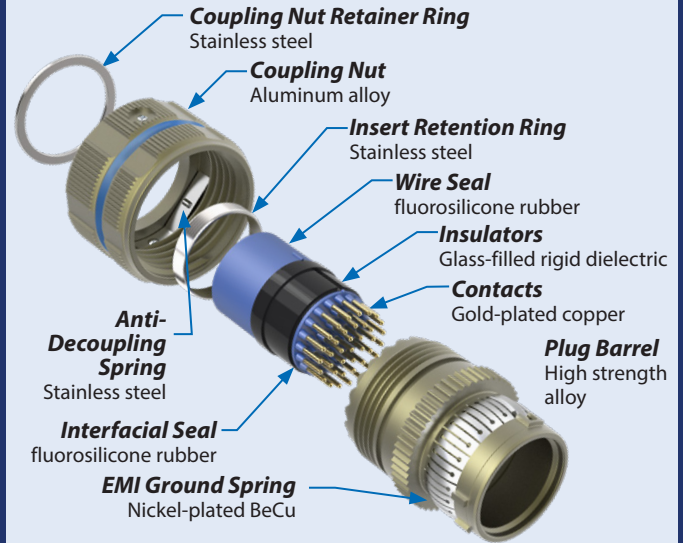
- High-density #20HD and #22HD arrangements for reduced size and weight
- Supported wire sizes:  
#20HD contacts 20–24 AWG  
#22HD contacts 22–28AWG
- Dielectric withstanding voltage  
#20HD layouts: 1800 Vac  
#22HD layouts: 1300 Vac
- Reduced pitch triple-start modified anti-decoupling stub ACME mating threads
- +200°C operating temperature
- “Triple ripple” wire sealing grommet (75,000 ft. rated)
- Snap in, rear release crimp contacts
- Metal contact retention clips
- Integral Nano-Band shield termination platform
- EMI shielding effectiveness per D38999M para. 4.5.28 (65 dB min. leakage attenuation @ 10GHz)
- 10,000 amp indirect lightning strike
- MIL-S-901 Grade A high impact shock

### AVAILABLE LIGHTWEIGHT ALUMINUM “CODE RED” HERMETICS

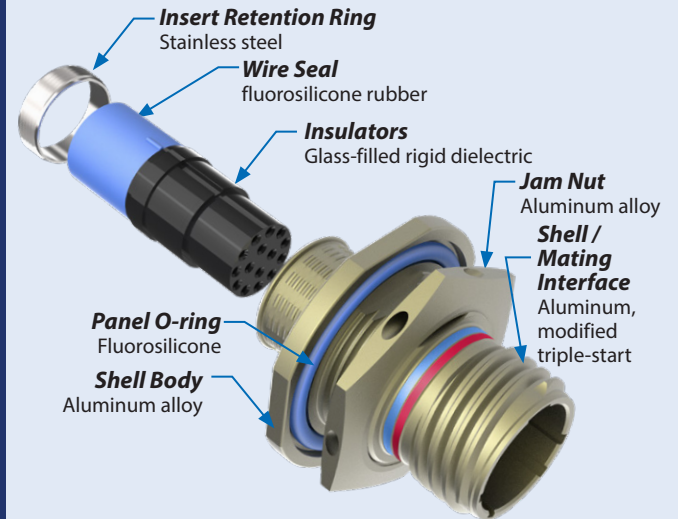
CODE RED is a lightweight encapsulant sealing and application process with 50% package-weight savings compared to glass-to-metal seal Kovar/stainless steel solutions. Non-outgassing CODE RED (IAW NASA/ESA) provides durable hermetic sealing with better than  $1 \times 10^{-7}$  leak rate performance. Gold-plated copper contacts deliver outstanding low-resistance current carrying capacity.



## SERIES 806 MIL-AERO PLUG

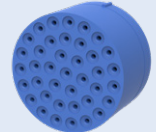
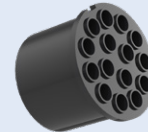
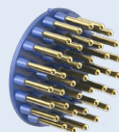


## SERIES 806 MIL-AERO RECEPTACLE



## SMALLER AND LIGHTER WITH EQUAL D38999 PERFORMANCE?

- |  |   |   |
|--|---|---|
| <b>High-Density<br/>Layouts</b>                | <b>“Top Hat”<br/>Insulator</b>              | <b>Triple Ripple<br/>Wire Seal</b>        |
| Twice as many contacts<br>in a smaller package | High voltage rating,<br>foolproof alignment | Reliable 75,000 ft.<br>altitude immersion |



NEXT-GENERATION  
MICRO  
MINIATURE  
RECTANGULAR  
CONNECTORS



High-density, crimp-contact, power and signal connectors with precision-machined micro miniature packaging



Polarized / keyed shells prevent mis-mating and allow designers to specify identical layouts side-by-side without risk of circuit damage

Sometimes the simplest ideas are the best ideas. The Series 791 is a simple idea. Let's create a brand new class of connector—the ultraminiature rectangular. Let's combine the versatility of the Series 790 Micro-D connector with the rugged features of our popular HiPer-D M24308 connector. Let's add a unique dual lobe shell and recess the pins to eliminate the possibility of scooping damage. Then let's add high speed datalink capability. Originally designed for NASA's Orion project, the Series 791, with all its special features, is well-suited for general aerospace use as well. The Series 791's small size and blind mate capability make it a perfect choice for LRU electronic modules. Other applications include radars, communication equipment, avionic systems, power distribution units, instrumentation, and other applications that require a smaller, higher performance interconnect in standard I/O or rack-and-panel configurations.



- Next-generation small form factor aerospace-grade rectangular connector
- Scoop-proof recessed pin contacts
- 37 arrangements, 12 shell sizes for the ultimate in versatility
- Rugged aluminum alloy dual-lobe shell
- Environmental
- EMI shielded
- Blind mating

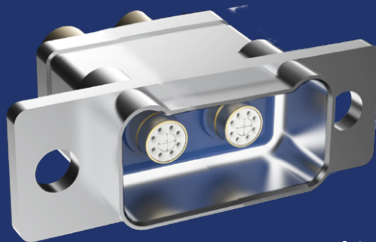
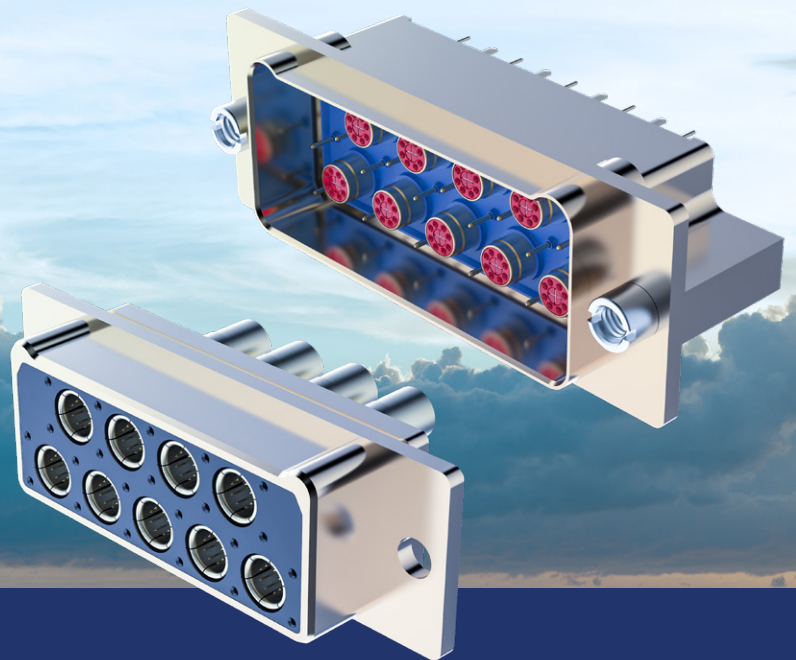




# High-speed El Ochito<sup>®</sup> variants of Glenair Signature micro miniature crimp-contact rectangular connectors



## El Ochito<sup>®</sup>



The Series 792 connector brings high-speed datalink capability to the Glenair Series 79 rectangular connector family. Size 8 cavities accept standard Quadrax and El Ochito datalink contacts. The 792's small size and blind-mate capability makes it a perfect choice for radars, communications gear, satellite downlink equipment, exoatmospheric vehicles, avionics, and instrumentation. Board mount versions feature straight and right angle terminals.

The Series 792 is an aerospace-grade ultraminiature rectangular connector for high-speed datalinks including 10Gb Ethernet, USB 3.0, and HDMI. The Series 792 features precision-machined (not stamped!) aluminum alloy shells with dual lobes for robust polarization. The 100% scoop-proof interface protects contacts from damage. An integrated ground spring reduces susceptibility to electromagnetic interference. Hybrid layouts with discrete size #23 signal or power contacts add additional versatility.

- High-speed Ethernet, USB 3.0, HDMI
- Printed circuit board and cable connectors
- Scoop-proof interface
- 12 arrangements, 6 shell sizes for the ultimate in versatility
- Rugged aluminum alloy dual-lobe polarized shells
- Environmentally sealed
- Integrated EMI shielding and grounding
- Blind mating

HIGH-SPEED  
DIGITAL  
DATALINK  
OCTAXIAL CONTACTS

El  
**Ochito**<sup>®</sup>

High-speed octaxial  
contacts/connectors  
for Ethernet,  
SuperSpeed USB and  
multi-Gb datalinks



Turnkey jumpers  
reduce assembly time  
and ensure optimal  
performance

High speed, harsh environment El Ochito<sup>®</sup> octaxial connectors, contacts, and turnkey jumpers save size and weight in aircraft avionics, weapons systems, satellites, and communications gear.

- 10GbE, SuperSpeed USB, and multi-gigabit shielded pairs
- Universal drop-in for keyed size #8 connector cavities
- Data-pair isolation for optimal signal integrity
- Crimp or threaded shield termination contact types
- Snap-in, rear release
- Environmentally sealed
- Aerospace-grade cable assemblies and jumpers
- 50% cable / contact reduction compared to Quadrax



El Ochito<sup>®</sup> White

10G Ethernet  
1000BASE-T  
10GBASE-T  
10Gbps / 100 Ohms



El Ochito<sup>®</sup> Blue

SuperSpeed  
USB 3.0  
Aerospace-grade  
5Gbps / 90 Ohms



El Ochito<sup>®</sup> Red

HDMI  
SATA  
DisplayPort  
5Gbps / 100 Ohms

# El Ochito®: The Ultimate Shielded High-Speed Data Contact / Connector



High-speed Ethernet · SuperSpeed USB 3.0 · HDMI

## EL OCHITO® OCTAXIAL CONTACT CONNECTOR PACKAGING



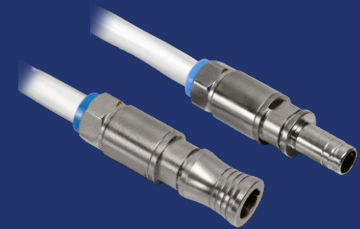
Series 792 miniature rectangular



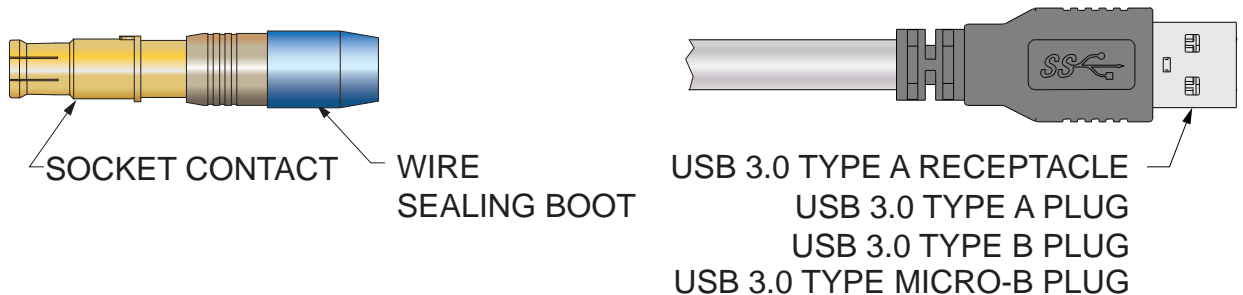
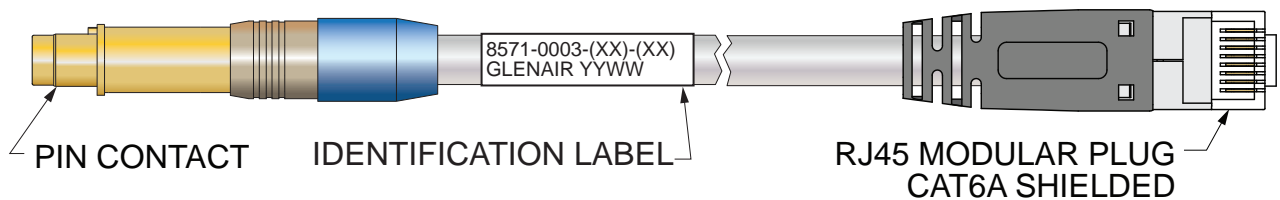
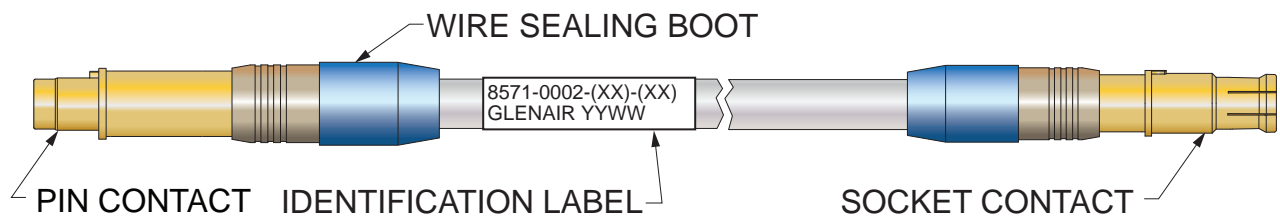
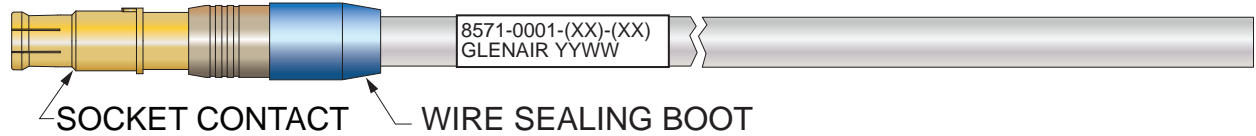
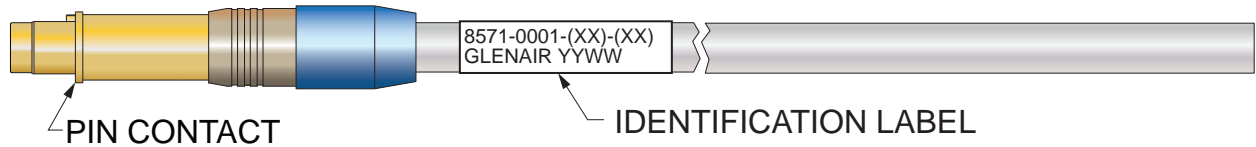
806 Mil-Aero Micro miniature



SuperNine advanced performance "fly-by-wire"



SuperFly® Datalink with El Ochito® contacts



MISSION-CRITICAL  
HIGH-FREQUENCY  
RF INTERCONNECT  
ASSEMBLIES



Flight-Grade RF, Microwave,  
and mmWave Connector  
Assemblies and Discrete  
RF Contacts and Connectors



RF and microwave turnkey  
cable assemblies with  
Glenair Signature connectors,  
contacts, and cables

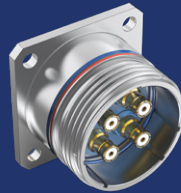
**GLENAIR SIGNATURE MULTI-PIN CONNECTORS FOR RF / MICROWAVE APPLICATIONS**



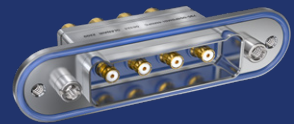
Series 23 SuperNine  
"better-than-QPL"  
MIL-DTL-38999 Series III  
type connector



Series 80 Mighty Mouse  
reduced size and weight  
aerospace-grade  
connector



Series 806 Mil-Aero  
micro miniature circular  
with performance  
IAW D38999



Series 795 RF  
precision-machined  
aerospace-grade  
coax connector

FLIGHT-GRADE

# RF / Microwave Turnkey Assemblies with Glenair Signature Connectors, Contacts, and Cables



for mission-critical RF applications

## 50 AND 75 OHM COAX CONTACTS FOR USE IN MULTIPIN AEROSPACE-GRADE CONNECTORS



Size #16 coaxial contacts



Size #12 coaxial contacts

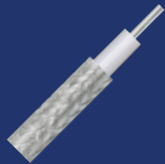


Size #8 coaxial and concentric twinax contacts



26.5 GHz G-Link RF contacts with integral female SMA adapter for easy cable attachment

## BLUMARK RF COAX CABLES 50 OHM LOW-LOSS COAX CABLES



Size 047  
26.5 GHz  
hand-formable  
tin-soaked braid



Size 086  
40 GHz  
FEP or  
ETFE jacket



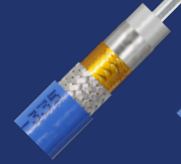
Size 160  
18 and 40 GHz,  
with FEP or  
ETFE jacket,  
Low Phase Change



Size 200  
26.5 GHz  
FEP or  
ETFE jacket  
triple shield



Size 235  
18 GHz,  
FEP or  
ETFE jacket  
triple shield



Size 300  
18 GHz,  
FEP jacket  
triple shield



Size 450  
10 GHz,  
FEP jacket  
triple shield

## 50 OHM COAX JUMPER ASSEMBLIES WITH LOW-LOSS CABLE AND PRECISION-GRADE CONNECTORS



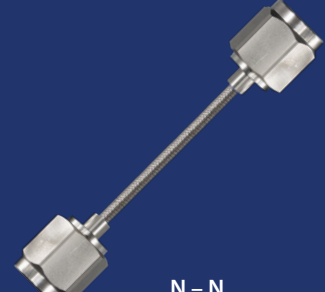
SMA  
086 cable,  
tinned-copper braid  
DC-26.5 GHz



SMA  
141 cable,  
tinned-copper braid  
DC-26.5 GHz



N - SMA  
141 cable,  
tinned-copper braid  
DC-18 GHz



N - N  
141 cable,  
tinned-copper braid  
DC-18 GHz

## RF CONNECTOR ADAPTERS AND PROTECTIVE COVERS, PRECISION-GRADE



TNC-SMA  
adapters



N-SMA  
adapters



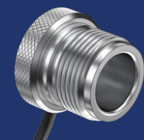
SMA-SMA  
adapters



SMP-SMA  
adapters



2.92-SMA  
adapters



Protective covers  
for RF connectors

LIGHTWEIGHT  
AVIONICS,  
FLIGHT DECK,  
ACTUATOR AND  
SENSOR CONNECTORS

# SuperNine®

The advanced-performance “fly-by-wire”  
connector series



SuperNine® is the aerospace industry’s most mature and complete power, signal, high speed, and high-frequency RF interconnect. Ideally suited for a broad range of aerospace applications, from an I/O interface role on electronic controllers, processors, and actuators, to targeted use on sensors and avionics gear, the SuperNine provides a level of reliability and safety not found on industrial-grade connectors. SuperNine® offers outstanding durability, sealing, ease of shield termination, a broad range of PC tail configurations, environmental and hermetic bulkhead feed-throughs, connector savers, as well as off-the-shelf EMI/EMP filter connectors and more—all supported with Glenair’s well-established reputation for service, support, and fast turnaround.



Glenair SuperNine connectors in action, shown here in a harsh-environment overmolded cable assembly for a military jet application. Glenair supplies both discrete connectors as well as turnkey interconnect assemblies for all our high-performance connector series.



Designed for use in rugged vibration and shock applications, Glenair SuperNine is the only D38999-type series connector to pass the Bell Helicopter 299-100-B29 vibration testing

SERIES 23

**SuperNine®**

**MIL-DTL-38999 Series III Type**

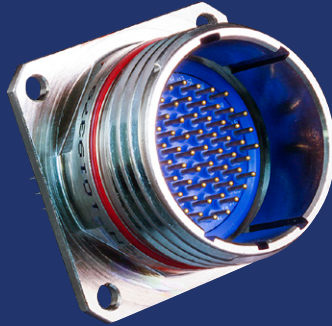
**Lighter, faster, stronger aerospace interconnects**



**RUGGED, HIGH VIBRATION AND SHOCK COUPLING AND MATING TECHNOLOGY**



Anti-decoupling, high vibration ratcheting coupling nut for ultimate safety and reliability



Triple-start stub ACME mating thread profile for fast mate and demate during maintenance cycles

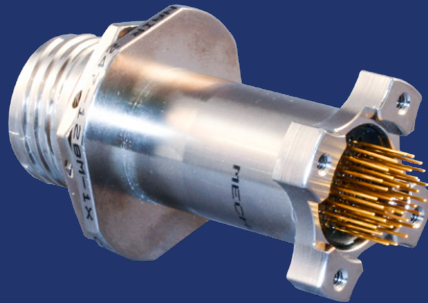


Special-purpose high-voltage in MIL-DTL-38999 Series III packaging

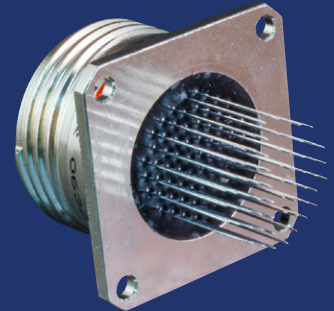
**BROAD RANGE OF PC TAIL STANDOFF DESIGNS FOR I/O-TO-BOARD APPLICATIONS**



Dual standoff design for superior resistance to vibration and shock

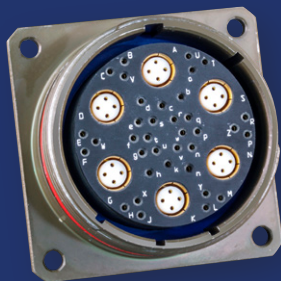


EMI / RFI planar-array filter connector for critical avionic systems



Ultra low-profile flat configuration for reduced package size applications

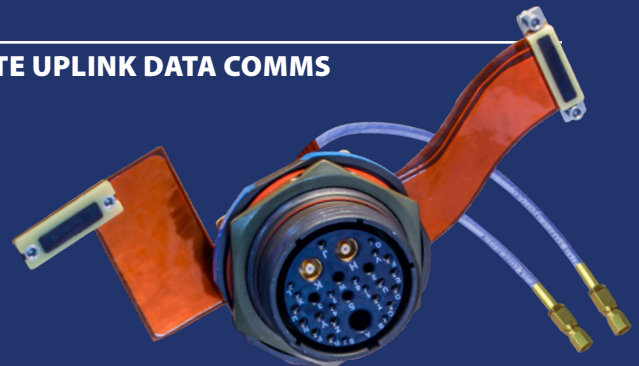
**HIGH-SPEED AND RF DESIGNS FOR SENSORS AND SATELLITE UPLINK DATA COMMS**



Industry-standard Quadrax-equipped layouts for signal and high-speed data



Ultra-light weight Octaxial contacts for 10Gb data transfer per contact



High-frequency RF designs for satcom communications

HERMETIC SEALING  
LIGHTWEIGHT  
ALUMINUM SHELL  
AND COPPER  
CONTACTS

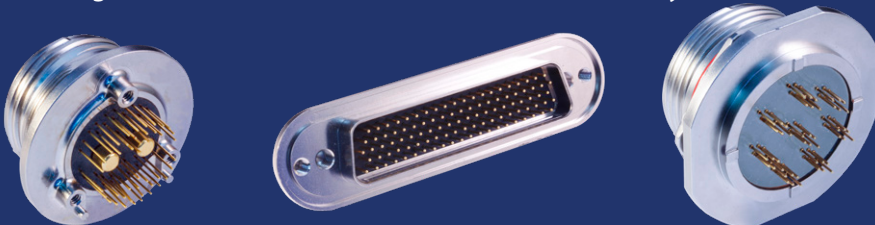
# CODE RED

Lightweight, low-resistance hermetic sealing  
with  $1 \times 10^{-7}$  leak-rate performance



Hermetically-sealed interconnects used in vacuum or high-altitude applications prevent moisture and other contaminants from damaging sensitive electronic equipment. Glass-to-metal hermetic sealing has been the gold standard in the aerospace and petrochemical industries for decades due to the strength and long-term durability of the materials used. But glass-to-metal seal hermetics come with a big price tag in both weight and electrical resistance. CODE RED is an innovative sealing encapsulant and application process invented by Glenair that provides durable hermetic sealing in a lightweight aluminum package. CODE RED allows for the use of gold-plated copper alloy contacts, significantly improving electrical performance. CODE RED hermetic connectors are available now in SuperNine® (D38999 Series III type metal and composite), Mighty Mouse, and M24308 D-Sub; and deliver reliable, life-of-system  $1 \times 10^{-7}$  max leak-rate hermetic sealing. Special non-magnetic (zero residual magnetism) versions are also available, consult factory.

- $1 \times 10^{-7}$  hermetic sealing in a lightweight aluminum shell
- Low-resistance gold-plated copper contacts
- Passed full D38999/23 qualification testing
- Meets NASA outgassing and aerospace temperature/corrosion resistance standards
- Operating temperature  $-65^{\circ}\text{C}$  to  $+200^{\circ}\text{C}$
- Up to +50% weight savings
- Improved current carrying capacity and electrical resistance compared to Kovar/Inconel solutions



CODE RED: Available today in Mighty Mouse 806 Mil-Aero, M24308/9 D-Sub and D38999/23

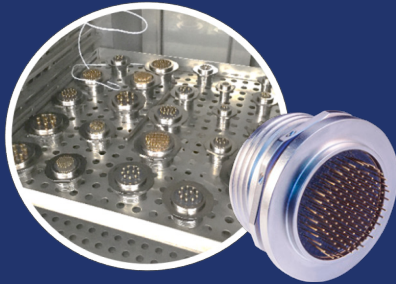


# Code Red Hermetic Connectors



Lightweight, low-resistance  
 “Mission-Critical” hermetic sealing solution

## CODE RED LIGHTWEIGHT HERMETIC CONNECTOR TESTING AND VALIDATION



Connectors utilizing CODE RED hermetic encapsulant sealing underwent a grueling qualification test and validation process to prove material durability and hermeticity. Validation testing including 100 cycles of thermal shock IAW EIA-364-32 Test Condition A -65°C to +200°C while maintaining hermeticity followed by 1000 hours of thermal aging at 200°C. Additional tests included:

- DWV, DWV at altitude
- IR, IR at temperature
- Highly Accelerated Life Testing (HALT)
- Insert and contact retention
- Mating durability
- Random vibration at temperature IAW MIL-DTL-38999
- Hermetic seal at 30 psi

The entire qualification test cycle was repeated successfully a second time with new parts to validate complete reliability.

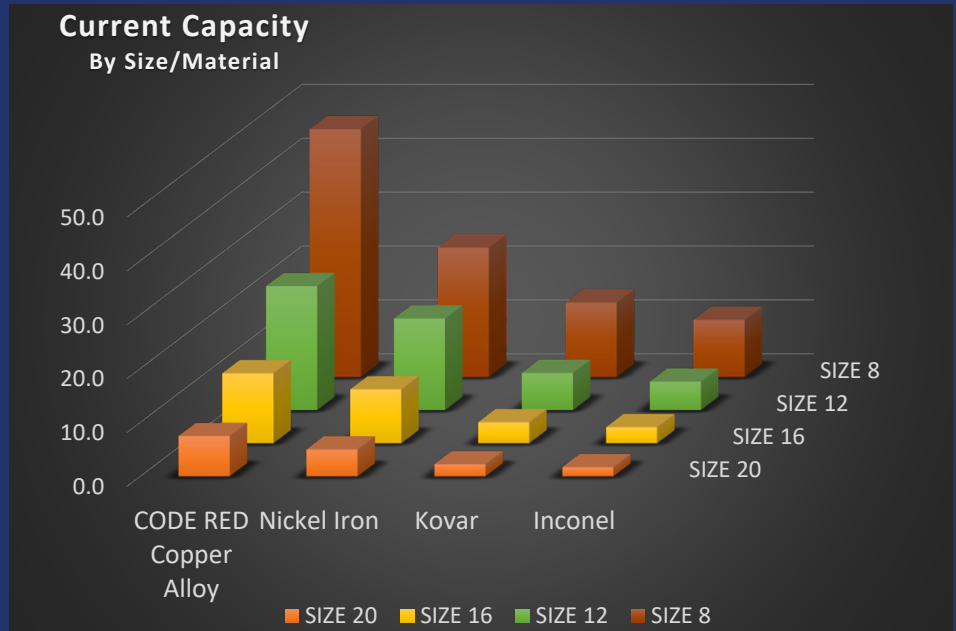
## CODE RED USES PROVEN-PERFORMANCE CONNECTOR AND CONTACT MATERIALS

CODE RED Materials / Finish	
Sealing Adhesive	Proprietary Glenair compound
Contacts*	Gold-plated beryllium copper alloy per ASTM B 197 or equivalent
Insulator	Rigid plastic
Seals	Blended fluorosilicone/silicone elastomer
Receptacle Shell and Jam Nut*	Aluminum alloy 6061-T6 per ASTM B 221
Finish*	Electroless nickel per ASTM B 733

\*zero residual magnetism materials also available

Graph illustrates Current Carrying Capacity of CODE RED copper alloy contacts compared to the Inconel, Kovar, and nickel iron contacts used in conventional glass-to-metal seal hermetics.

Percentage Weight Savings CODE RED vs. Glass-to-Metal MIL-DTL-38999 Sr. III	
Shell Size/Insert Arr.	Weight Reduction
9-35	52%
11-98	47%
13-35	47%
15-97	42%
19-32	40%
21-11	32%
23-21	28%
25-08	43%



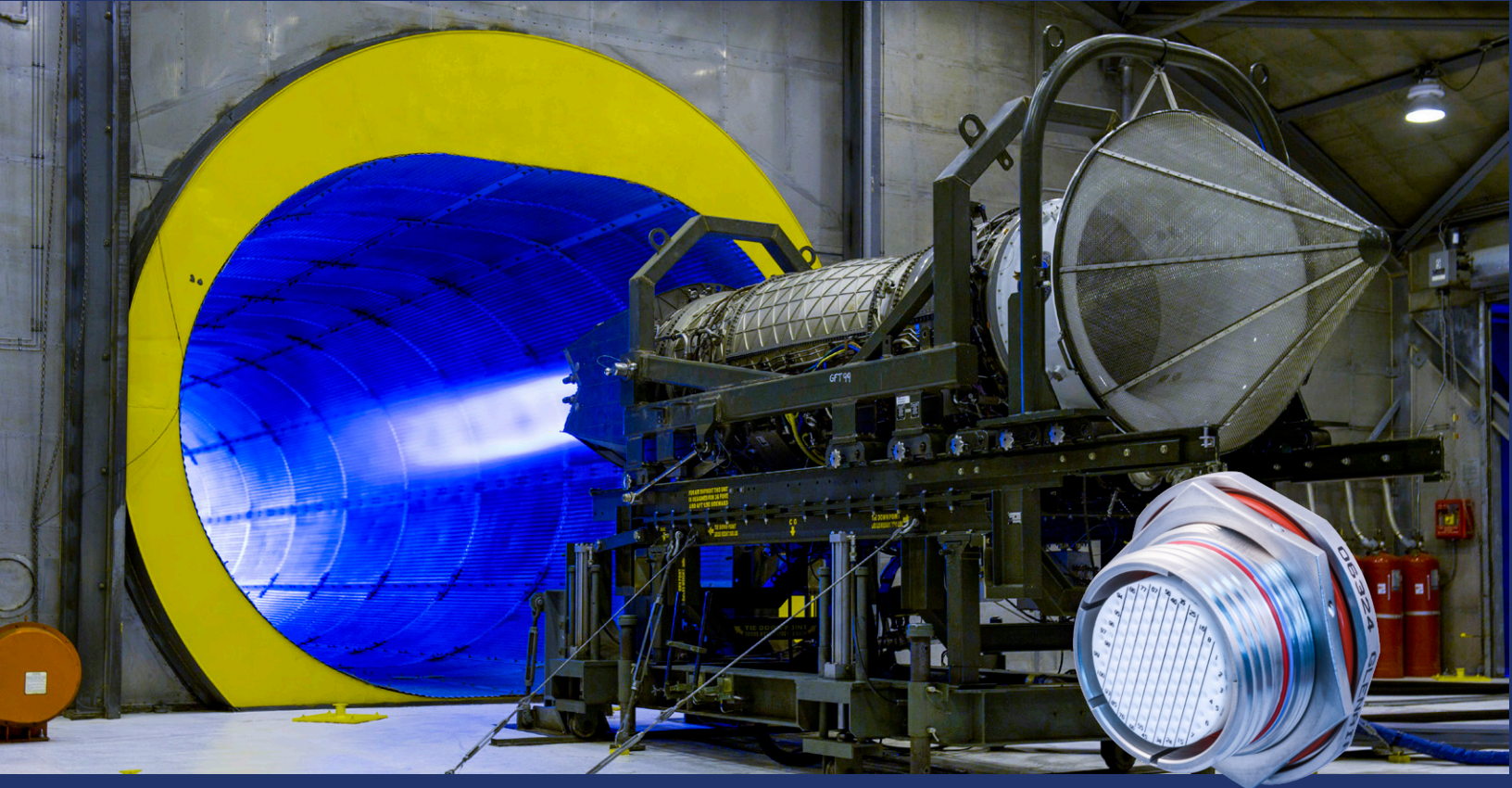
**APPLICATION NOTES:** CODE RED is a viable drop-in solution for conventional glass-to-metal seal hermetic connectors with the following exceptions:

1. Fuel Cells: Although CODE RED exhibits outstanding resistance to caustic chemicals and fuels, its use in fuel tanks/fuel cell applications is not recommended.
2. Cryogenics: CODE RED has been tested and qualified to -65°C IAW MIL-DTL-38999
3. Sustained High-Operating Temperatures: CODE RED has been tested and qualified to +200°C IAW MIL-DTL-38999
4. High Radiation: Exposure to no more than 6 Megarads of radiation
5. Deep Subsea: CODE RED is ideally suited for aerospace and downhole applications that do not exceed 3 BAR (50 psi) atmospheric pressure differential.
6. Space Life Support Systems: Requires additional qualification testing not yet performed by Glenair.

FOR 600°C  
OPERATING  
ENVIRONMENTS  
HIGH-TEMPERATURE  
CONNECTORS



Cryogenic and high-temperature tolerant connectors, cables, and conduit systems



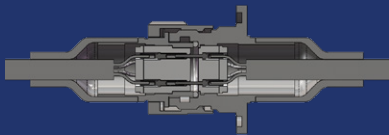
Sensor devices in aerospace engine applications are increasingly exposed to higher temperature operating environments. Environmental sensors in nuclear power reactors—an extremely high temperature and radiation-rich environment—are also exposed to temperature extremes well beyond the capabilities of conventional interconnect devices. Glenair ThermaRex interconnect solutions are designed to survive and excel in high continuous operating temperature application environments up to 600°C. The ThermaRex product family includes connectors, cables, and wire protection conduit systems.

### 300°C THERMAREX HT CONNECTOR



- Service rating up to 300°C
- Vibration-resistant threaded coupling
- High-temperature ceramic insulators and silicone seals
- Durable stainless steel construction
- Available in Mighty Mouse, SuperNine® D38999, or EN2997
- Utilizes Glenair Crown Ring contacts

### 600°C THERMAREX UHT CONNECTOR



- 300°C to 600°C service range
- Vibration-resistant threaded coupling
- Specialized contacts, laser welds, and metal seals
- Utilizes ultra-high temperature-tolerant Mineral Insulated cable
- Ideal for nuclear and other extreme temperature applications

# HIGH-TEMPERATURE TOLERANT ThermaRex Interconnect Solutions

## High-temperature and cryogenic



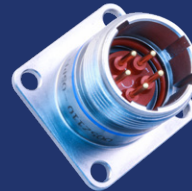
### -150°C THERMAREX CRYO CONNECTOR



ThermaRex™  
CRYO

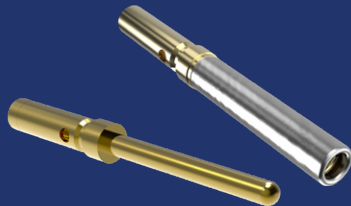
- Dynamic cryogenic connector
- Vibration at -150°C
- Ultra low-temperature Duralectric K seals

### THERMAREX HIGH-TEMPERATURE HERMETIC



- High-temperature sealing technology maintains  $1 \times 10^{-7}$  leak-rate performance at 300°C

### CROWN RING CONTACTS



- Crimp removable contacts
- Suitable for use at 300°C or higher while maintaining low electrical resistance
- Stainless steel Crown Ring provides compression force on the socket
- Superior vibration resistance
- Higher current carrying capabilities, lower contact resistance

### 300°C THERMAREX WIRE



P/N 961-047 -  
Single Wire

P/N 960-2371 -  
Twisted, Shielded,  
Jacketed Pair

- Special nickel-coated copper alloy conductors
- 300°C continuous service
- 24 to 8 AWG, 10 colors of insulation
- Single-wires plus jacketed, shielded, twisted pair available

### 300°C THERMAREX POLYMER-CORE CONDUIT



P/N 120-100,  
Material Code R

- High-temperature-tolerant flexible polymer-core conduit
- All standard colors: Black, clear, orange, blue, yellow
- Qualification test report GT-17-261 available
- 300°C continuous service
- Available with high-temperature braid shield and/or jacket

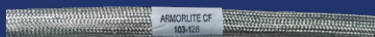
### 300°C THERMAREX METAL-CORE CONDUIT



P/N 750-216,  
Jacket Code R

- Flexible passivated stainless steel core conduit
- High-temperature-tolerant ThermaRex jacket
- .127" to .250" outer diameter sizes
- 300°C continuous service

### ARMORLITE CF



P/N 103-126

- Stainless steel over copper microfilament EMI shield
- High temperature -80°C to 300°C
- Corrosion / harsh environment resistant
- 1000 hour salt spray testing completed
- 70% reduced weight vs. standard braid
- Superb electrical resistance and shielding performance

SPECIAL PURPOSE  
AIRPORT  
TERMINAL-TO-  
AIRCRAFT DATA  
UPLINKS

# GateLink Pro™

GateLink Pro™  
High-Speed Data  
Uplink Connector



## Environmentally-sealed breakaway design for high-speed data transfer between terminal gate and aircraft

GateLink Pro™ connectors are exactly designed to meet the needs of airport terminal-to-aircraft data uplinks. The IP68 sealed receptacle connector on the aircraft is designed for low profile environmental performance (available ProSeal™ protective cover adds additional environmental protection). Plug connectors are ruggedized for rough handling with pogo pin contacts and retention springs recessed deep into the plug to prevent damage. Designed for fast and reliable high-speed Ethernet data transfer up to 1Gb / second. Turnkey overmolded cable assemblies as well as discrete connectors and environmental shrink boots are available.



- Durable pogo pin contact system rated to tens of thousands mating cycles
- Sealed receptacle available with ProSeal™ spring-action protective cover
- Straight or right-angle AutoShrink wire protection boots or rugged overmolded plug assemblies for reliable environmental protection

# IP68 SEALED GateLink Pro™



## High-speed data uplink connector

### GATELINK PRO APPLICATIONS AND SOLUTIONS

Wired datalink interconnect access to the aircraft from the airline terminal gate supports various information domains and data types including aircraft traffic control, airline information services, passenger entertainment, weather, and so on. Airline operating center applications (flight plans, schedules, advisories) are quickly and reliably uploaded to the aircraft during turnarounds at the gate. Mechanical and environmental damage to the datalink interface is a common problem solved by GateLink Pro.



Overmolded environmental plugs and hybrid GateLink Pro to RJ45 cable sets



IP68 sealed receptacle with integrated ProSeal™ protective cover and Autoshrink™ environmental sealing / strain relief boot.



Mated GateLink Pro™ plug and receptacle cordsets with shielded twisted pair cabling. Plug side features environmental overmolding, receptacles side utilizes strain relief boot

### GATELINK PRO SPECIFICATIONS

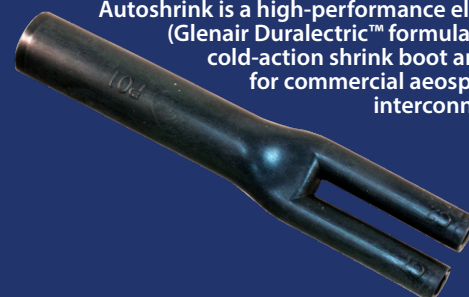


Voltage rating	500 VAC
Current rating	5 amps
Contact resistance	20 milliohms maximum
Plug-to-receptacle ground resistance	<5 milliohm
Maximum wire size	#24 AWG
Insulation resistance	5000 megohms min.
Water immersion	MIL-STD-810 Method 512, one meter for one hour
Durability	2000 mating cycles
Corrosion resistance	1000 hours
Sine vibration	EIA-364-28 condition IV, 20g peak
Random vibration	EIA-364-28 condition V letter H, 29g rms
Shock	EIA-364-27 condition D, 300g peak
EMI shielding effectiveness	40 dB minimum to 10 GHz

### GATELINK PRO AVAILABLE ACCESSORIES



Anti-vibration and shock spring-action solution • Self-aligning environmental seals



Autoshrink is a high-performance elastomeric material (Glenair Duralectric™ formula polymer GPS67) cold-action shrink boot and jacket solution for commercial aerospace electrical wire interconnect systems

AEROSPACE - GRADE  
POWER  
DISTRIBUTION  
CONNECTORS AND  
CABLES

**POWER  
LOAD™**

Advanced power connector  
design for higher voltage,  
higher altitude, and higher  
frequency applications



## The aircraft industry's most advanced power distribution interconnect

Electrical power generation technology in aircraft has evolved to meet modern requirements for higher power and lighter weight systems. Growing electrical power needs on commercial aircraft—particularly for backup generator applications—have caused major changes in power system architectures to accommodate peak-load stress factors in electrical wire interconnect (EWIS) cabling.

- **PowerLoad™, the high-vibration, high-temperature interconnect optimized for higher-voltage, higher-altitude, and higher-frequency**
- **TurboFlex®, the Glenair signature high-flexibility power cable solution**
- **Crown Ring crimp, bus bar, and lug style contacts, optimized for high current carrying, high temperature performance.**

### A GLENAIR SIGNATURE SOLUTION: CONNECTORS, CONTACTS, CABLES, ACCESSORIES, AND ASSEMBLIES

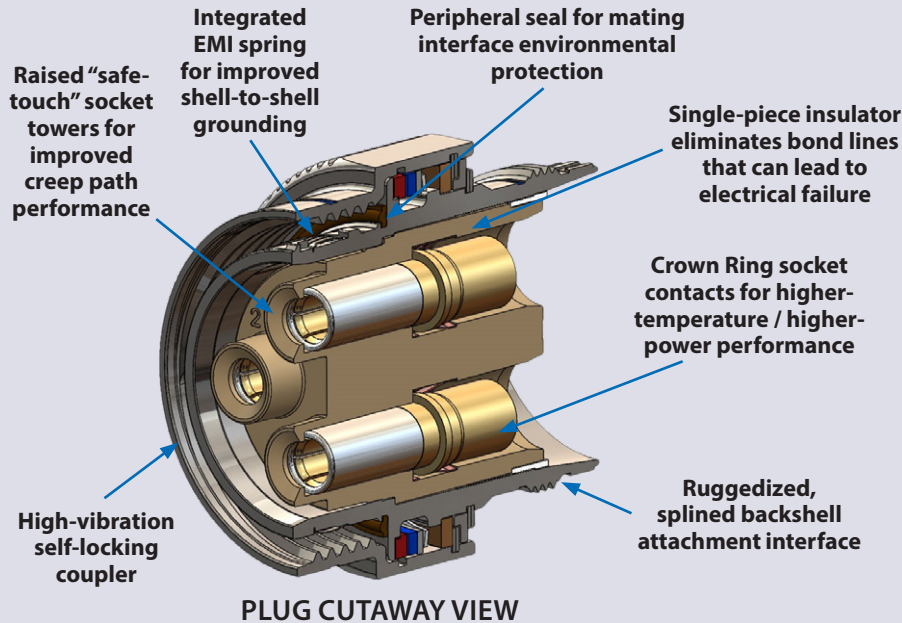
- **For applications up to 2000 VAC / 1500 Hz, and from 150 – 800 Amps.**
- **230°C maximum operating temperature connectors (stainless steel bodies and shells)**
- **TurboFlex® rope lay power cables optimized for PowerLoad™ connectors, from 8 AWG to 4/0**
- **Ultra-flexible cable configurations with ruggedized Duraelectric or FEP jacketing:**
  - **Single-wall hookup wire**
  - **Dual-wall jacketed interconnect cabling**
  - **High-temperature Crown Ring contact technology**
  - **Heavy-duty accessory interface**

# HIGH PERFORMANCE PowerLoad™ Series



for backup generators and other  
high power demand applications

## POWERLOAD™: KEY CONNECTOR AND CONTACT DESIGN FEATURES



## GLENAIR SIGNATURE CROWN RING CONTACTS



- Crimp, bus bar, and lug wire termination
- Precision-machined high conductivity copper alloy
- Up to 60% lower contact resistance than equivalent AS39029 contacts
- Higher operating temperature resistance compared to other specialized high-power contacts
- Gold-plated for enhanced high-vibration durability

## TURBOFLEX® ULTRA FLEXIBLE / RUGGED POWER CABLES WITH DURALECTRIC OR FEP JACKETING

TurboFlex, Glenair high-flexibility power cabling has been optimized for use with PowerLoad connectors, and is supplied with either industry-standard FEP or Glenair signature Duraelectric jacketing material, which is optimized for fluid immersion, caustic chemical exposure, temperature extremes, and UV radiation. Both materials are available in a broad range of colors including safety orange.



Available with cable gauge selections from 8 AWG to 4/0, to provide suitable margins for DWV, frequency derating, and peak-load performance.

Abrasion Resistance	Good
Wear Resistance	Good
Flame Resistance	Excellent
Sunlight Resistance	Excellent
Flex Resistance	Excellent

### TURBOFLEX® WITH DURALECTRIC™ JACKETING: ENVIRONMENTAL PERFORMANCE

Temperature rating: -60°C to 260°C  
 Halogen free per IEC 60614-1  
 Accelerated weathering and simulated solar radiation at ground level per IEC 60068-2-5; 56 Days exposure, suitable for greater than 50 years of service in direct sunlight  
 Flame resistant per IEC 60614-1  
 Flame resistant per UL 1685, section 12 (FT4/IEEE120), vertical-tray fire-propagation and smoke release test  
 Flame resistant per FAR 25.853 (A) amendment 25-116, appendix F part I (A) (1) (i), 60 second vertical burn test  
 Limiting oxygen index of 45 per ISO 4589-2:1999  
 Low smoke per NES 711, smoke density of 11.75  
 Smoke density class F1 per NF F 16-101 IAW DIN EN 60695-2-11:2011

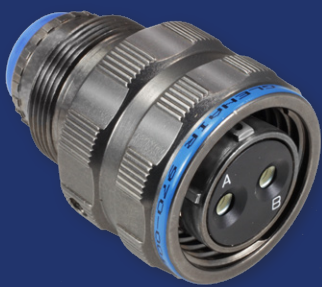
Low smoke toxicity per NES 713, tested value of 1.9  
 Fungus rating of 0 per MIL-STD-810g method 508.5, Does not support fungal growth  
 ASTM D624, die B tear strength, 150 pounds per inch minimum on jacket material  
 Low outgassing per ASTM e595 after post curing, TML .06%, CVCM .006%, WVR .02%  
 Resistant to fluids per MIL-STD-810F, method 504  
 JP-8 per MIL-DTL-83133 (NATO type 34)  
 MIL-H-5606 hydraulic fluid  
 MIL-PRF-23699 lubricating oil  
 MIL-C-85570 cleaner  
 TT-I-735 Isopropyl alcohol  
 AMS 1432 potassium acetate deicing/anti-icing fluid  
 MIL-C-87252 coolant  
 Amerex AFF fire extinguishing foam

THE POWER  
CONNECTOR FOR  
DEMANDING  
APPLICATIONS

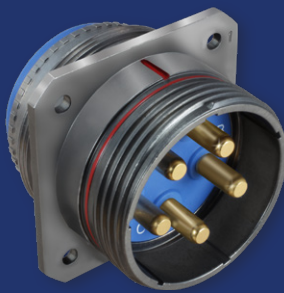


**POWER  
TRIP™**

Series 970 PowerTrip high-density reduced size and weight power connectors for demanding harsh-environment applications



Lightweight plug with ratcheting coupling nut and low-resistance LouverBand contacts



Keyed receptacle with superior sealing and EMI shielding



Splined backshell interface for improved backshell attachment, strain relief, and EMI shielding.

The Series 970 PowerTrip™ offers improved performance compared to industrial-grade power connectors including higher density, superior resistance to vibration and shock, lower resistance, and more. Designed explicitly for aerospace-grade power interconnect applications.

- Fast, easy mating with triple-start ACME thread: 360° turn for full mating
- Reduced size and weight compared to conventional industrial and/or aerospace solutions
- LouverBand sockets for improved current ratings; up to 2000 mating cycles
- Ratcheting coupling nut for secure mating and high vibration resistance
- Operating temperature -65° C to +200° C
- Hermetic and EMI filter options available



High-density, high-performance power connectors

SERIES 970 POWERTRIP™ CONNECTOR STYLES



Plug  
970-001



Square Flange  
Receptacles  
970-003



Jam Nut Receptacles  
970-004



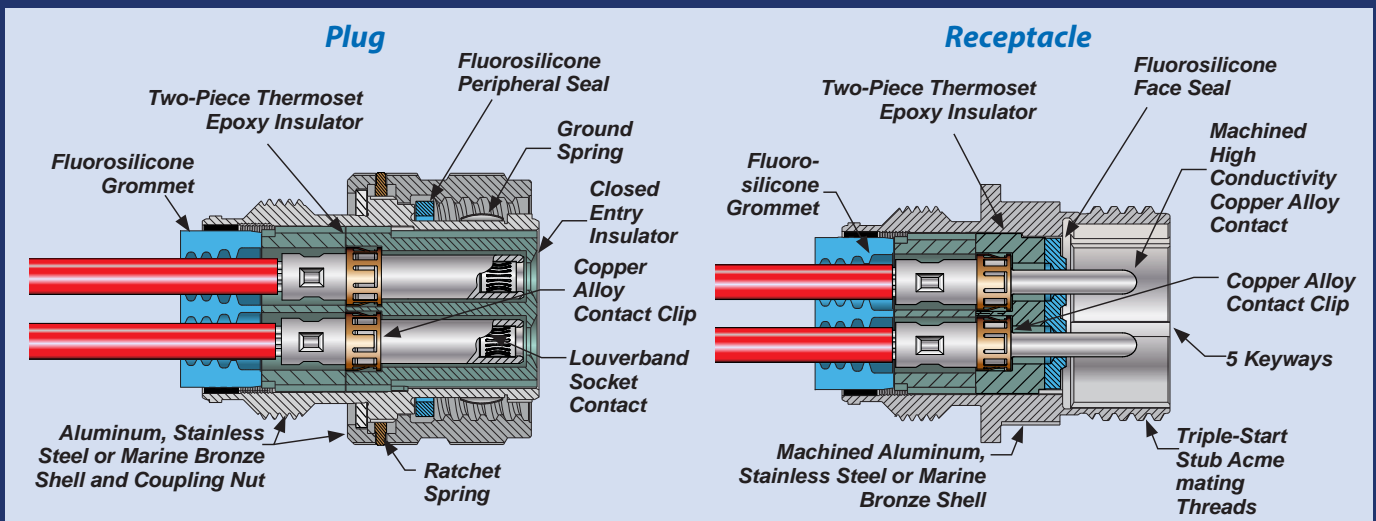
Cable Receptacles  
970-005



Feed-Thru Bulkhead  
970-006

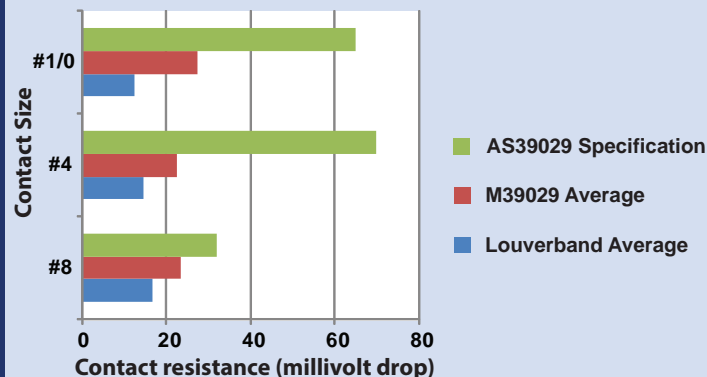


Hermetic Feed-Thru  
Bulkhead  
970-007



Series 970 PowerTrip™ Specifications	
Current Rating	Up to 225 A.
Dielectric Withstanding Voltage	2000 VAC
Insulation Resistance	5000 megohms minimum
Operating Temperature	-65° C. to +200° C.
Shock	300 g.
Vibration	37 g.
Shielding Effectiveness	65 dB minimum from 1GHz to 10GHz.
Durability	2000 mating cycles

CONTACT RESISTANCE AFTER 1000 MATING CYCLES



ABOUT THE POWERTRIP™ CONTACT SYSTEM

Series 970 contacts are precision-machined using high conductivity copper alloy. A stamped and formed spring (“LouverBand”) is installed into the socket contact. The spring is made from 6 mil copper alloy. Testing has demonstrated that this contact system outperforms conventional industrial and aerospace-grade contact systems. The LouverBand spring provides many points of electrical contact with the mating pin, as opposed to a few “high spots” on a conventional four-finger contact as shown in the figure below. The size #8 PowerTrip socket contact has a total of 18 louvers. The #4 has 27 louvers, and the #1/0 has 42 louvers. The LouverBand design offers lower voltage drop for reduced joule heating. In addition to its electrical advantages, the LouverBand also is mechanically superior to conventional four-finger contacts. The LouverBand spring has consistent, stable normal force, even when subjected to thousands of mating cycles and temperature extremes.



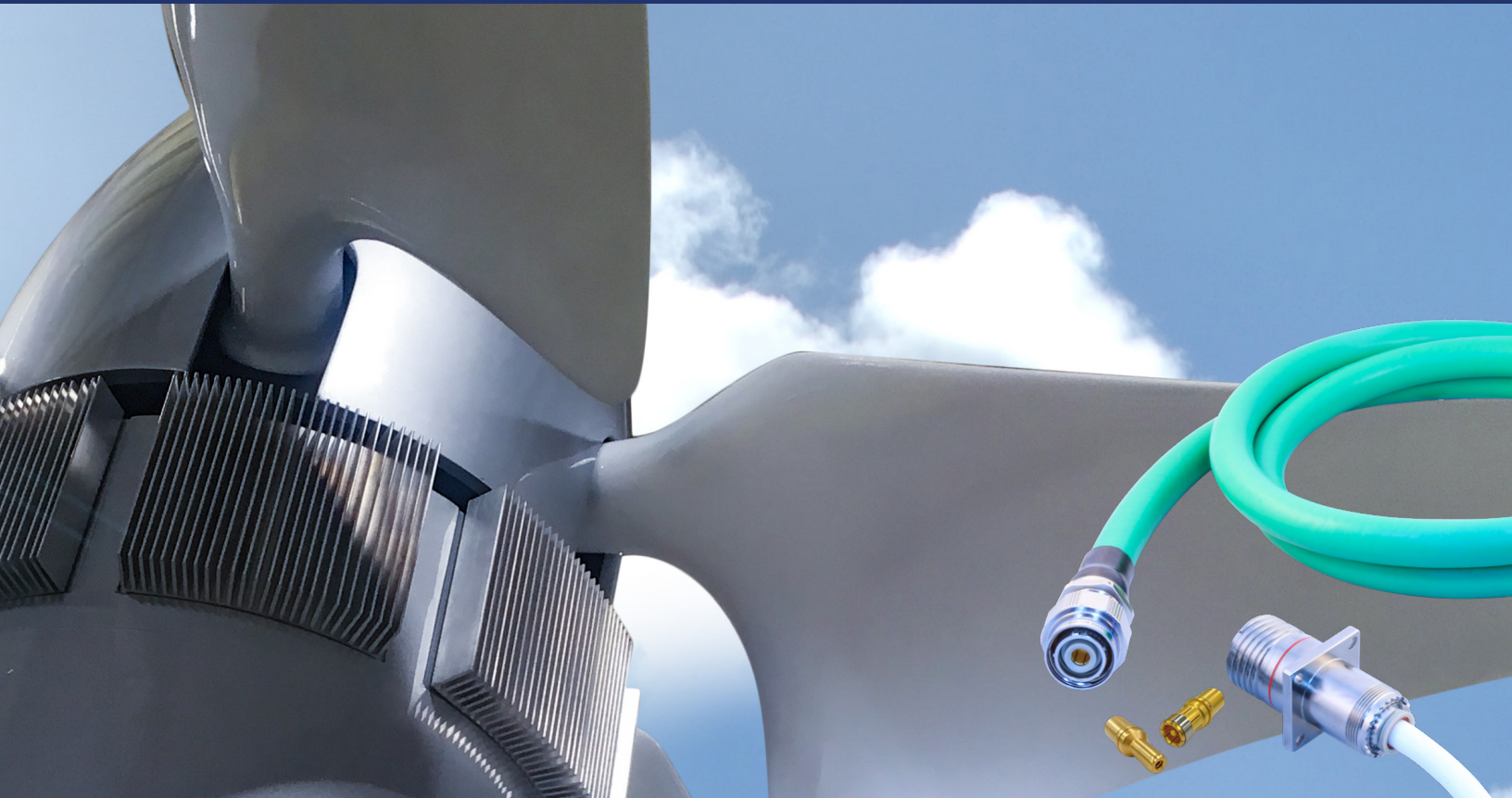
Conventional contact on the left, LouverBand contact on the right

LouverBand socket contact cutaway

ELECTRICAL POWER  
PROPULSION SYSTEM  
CONNECTORS,  
CABLES, AND  
ACCESSORIES

# PowerPlay™

SuperNine “Better than QPL” MIL-DTL-38999  
high-power connector series



SuperNine PowerPlay is a high-ampacity multi-pole connector series that combines the proven performance of MIL-DTL-38999 Series III connector packaging with contact and dielectric insert technology capable of 2000VAC working voltage. SuperNine PowerPlay utilizes Glenair Crown Ring contact technology, a crimp-removable, low insertion force contact series optimized for higher current carrying capabilities, lower contact resistance, and superior vibration resistance compared to LouverBand, hyperboloid, and other designs.

- 2000 VAC working voltage
- High current, low resistance, superior vibration resistance
- Safe-touch finger proofing
- Integrated band platform shield termination
- Compatible with TurboFlex high-flexibility cable
- Support for busbar and other wire terminations
- Multi-Pin arrangements for size 8 and 4 AWG contacts. Single-Pole arrangements for 2, 1/0, 2/0, and 4/0 contacts. Options for 20 AWG interlock contacts on all sizes

# PowerPlay Electric Motor Propulsion System Power Distribution Connectors



## BATTERY PLANT-TO-INVERTER-TO-ELECTRIC MOTOR CONNECTORS AND CABLES FOR POWER DISTRIBUTION AND PROPULSION APPLICATIONS

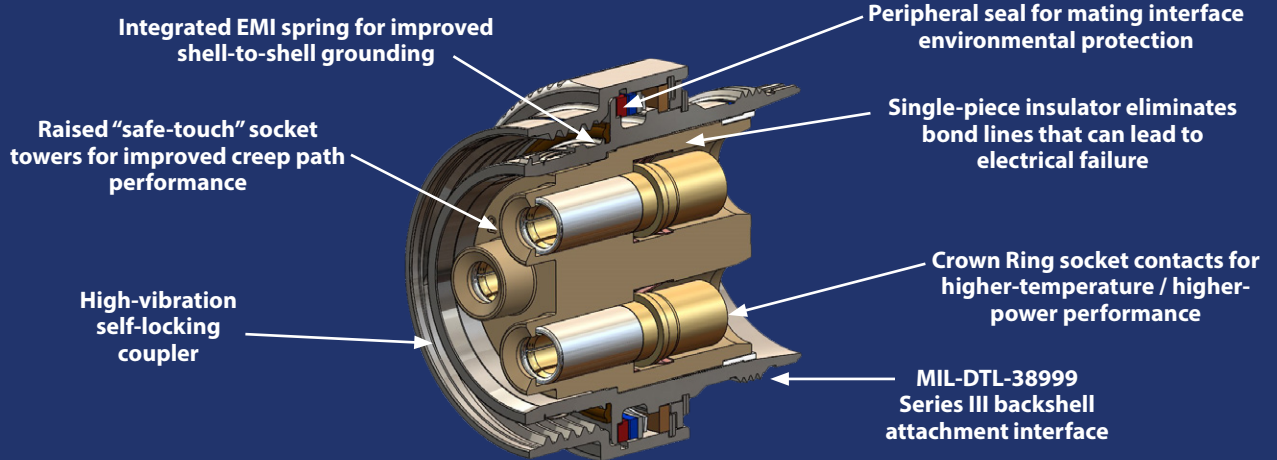


Range of insert arrangements for size 20, 8, 4, 2, 1/0, 2/0, and 4/0 AWG contacts with full support for Glenair TurboFlex cabling

Connector shell configurations IAW MIL-DTL-38999 Series III with safe-touch contact finger proofing

Range of wire termination options including crimp contact, threaded contact, bus bar, and factory-terminated cables and jumpers

### PowerPlay™: KEY CONNECTOR AND CONTACT DESIGN FEATURES, PLUG CUTAWAY VIEW



### HIGH-TEMPERATURE TOLERANT CROWN RING CONTACTS



#### Glenair Signature Crown Ring contact series

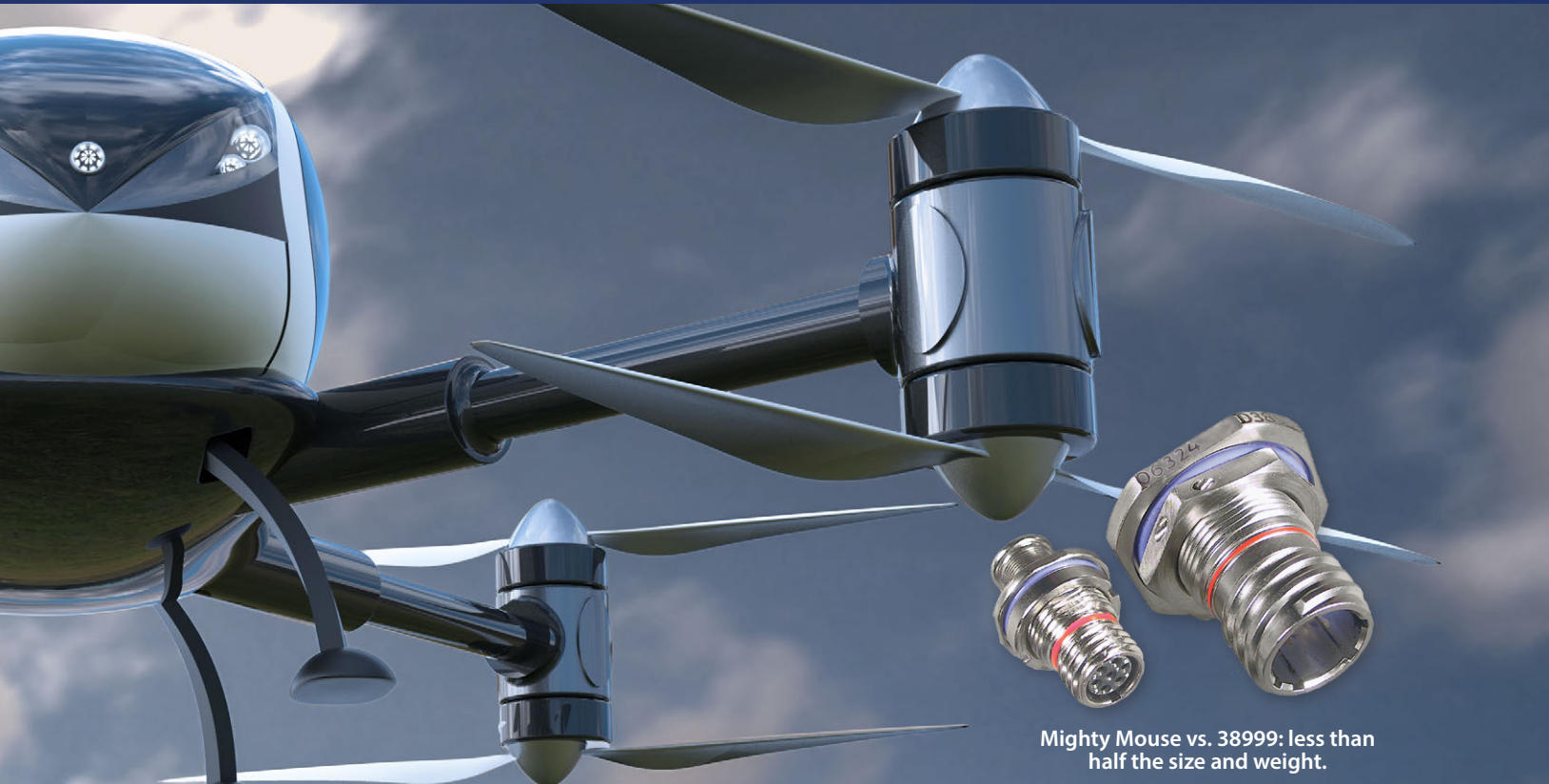
provides reduced contact resistance, superior conductivity, and higher temperature-tolerance than conventional AS39029 contacts and specialized high-power contacts from other manufacturers

- Maximum operating temperature 260°C
- Superior conductivity performance compared to beryllium copper contacts, across full temperature range
- Up to 60% lower contact resistance than equivalent AS39029 contacts (normalized, less wire)
- Contact bodies made from high conductivity copper alloy (approximately 95% IACS)
- Stainless steel Crown Ring
  - Provides socket forces without stress relaxation at high temperatures
  - Moves socket spring function from socket body to ring, allowing use of high-conductivity copper
- Gold over nickel plating
  - Thicker plating than industry standards for reduced contact fretting and higher temperature endurance
  - Gold over nickel is "gold standard" for high-reliability aerospace contacts
- Crimp versions use standard industry tooling, including crimp die/locator and insertion/extraction tools (2AWG Crown Ring contacts require custom tooling)

LIGHTWEIGHT  
AVIONICS,  
FLIGHT DECK,  
ACTUATOR AND  
SENSOR CONNECTORS



Mighty Mouse micro  
miniature connector series  
for optimized SWaP

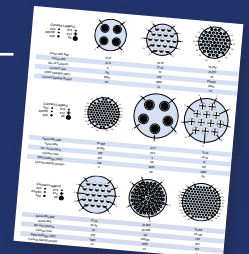


Mighty Mouse vs. 38999: less than half the size and weight.

# Mighty Mouse Connectors: Reducing the Size and Weight of Electrical Wire Interconnect Systems

- 8 coupling styles and 67 contact arrangements from 1 – 130 contacts
- MIL-DTL-38999 caliber performance
- Size #23, #22, #20, #20HD, #16, #12, #8 signal, power, RF, and high-speed contacts
- Discrete connectors and turnkey cable assemblies

## FULL RANGE OF SUPPORTED CONTACTS, 67 CONTACT ARRANGEMENTS



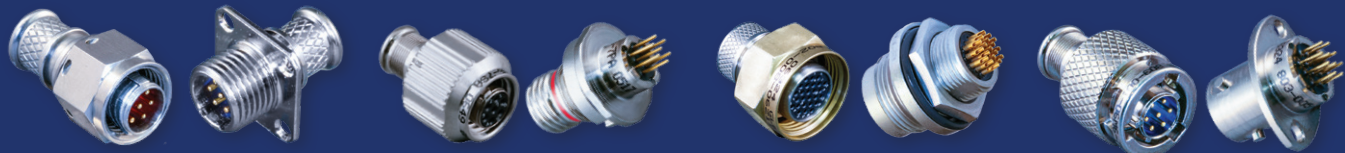
67 arrangements,  
from 1–130 contacts

# SERIES 80 MICRO MINIATURE Mighty Mouse Connectors and Cables

Awesome performance, itty-bitty package



## CHOOSE FROM 8 DIFFERENT COUPLING DESIGNS



Series 800  
UN thread

Series 801  
double-start ACME thread

Series 802  
AquaMouse UNEF thread

Series 803  
bayonet coupling



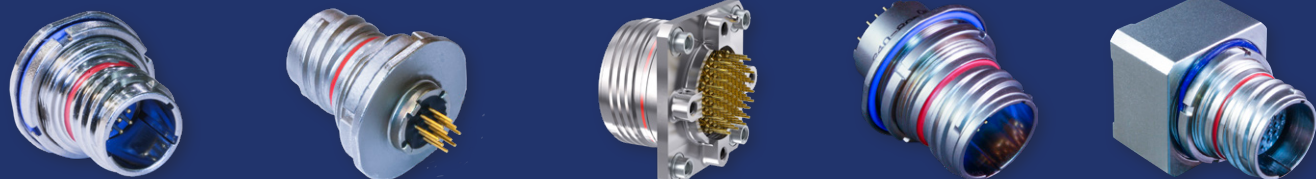
Series 804  
quick-disconnect

Series 824  
locking quick-disconnect

Series 805  
triple-start thread, size #23  
contact layouts

Series 806  
modified triple-start, size #22HD  
and #20HD layouts

## AVAILABLE MIGHTY MOUSE CONNECTOR CLASSES



IP67  
environmental

Glass-to-metal seal  
hermetic

**CODE RED**  
encapsulant-seal hermetic

EMI/RFI  
Filter

EMP Transient Voltage  
Suppression



Bulkhead feed-thrus and  
penetrators

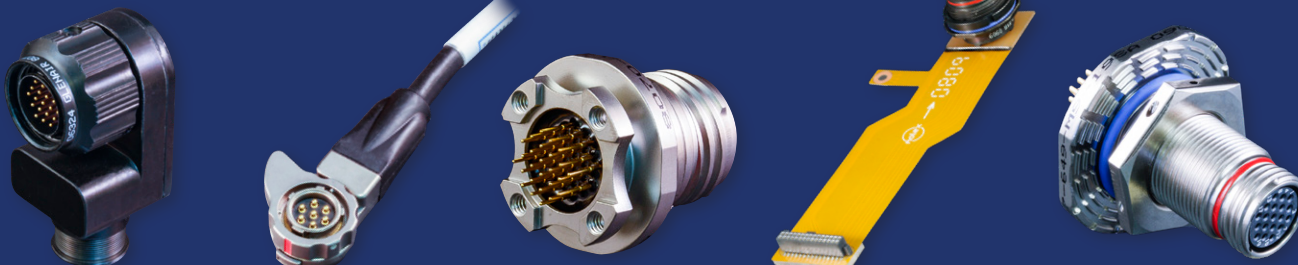
Sav-Con<sup>®</sup>  
connector savers

High-frequency  
RF / Microwave

High-speed  
Ethernet

Single- and multimode  
fiber optic

## AVAILABLE COTS SPECIAL-PURPOSE DESIGNS AND PACKAGING



Low-profile COBRA

Mouse Bud

Double-standoff PC tail

COTS flex jumpers

Special feed-thrus

CRIMP CONTACT  
TOOLS ONLY  
HEAT GUN FREE  
PROCESS



Crimp wire termination  
solution saves time and labor  
over manual D0150 splicing



## Glenair SpliceSaver™ reduces manual wire splice and terminal block operations

SpliceSaver™ is an innovative interconnect technology developed by Glenair for use in aircraft wiring operations that rely on heat shrink splicing of aircraft signal, sensor, and data transmission wiring. Single-piece SpliceSaver designs allow remote harness assembly facilities to pre-terminate each line with a crimp-and-poke contact. During aircraft wire harness installation, cabling is routed to interconnection points and the contact-equipped wires are quickly and easily installed into the lightweight single-piece SpliceSaver connector. Two-piece Spirallock® SpliceSaver designs enable the harness facility to terminate wires to the small form-factor, lightweight “connector” for subsequent mating on the aircraft. A special bussed version is also available. All SpliceSaver styles feature integrated banding platforms for the termination of EMI shielding utilizing qualified banding technology—one-piece design features three platforms for termination at both ends and in the center. Compared to legacy terminal blocks and wire splice technology, SpliceSaver offers faster, cleaner, and more reliable routing and termination of discrete wiring.

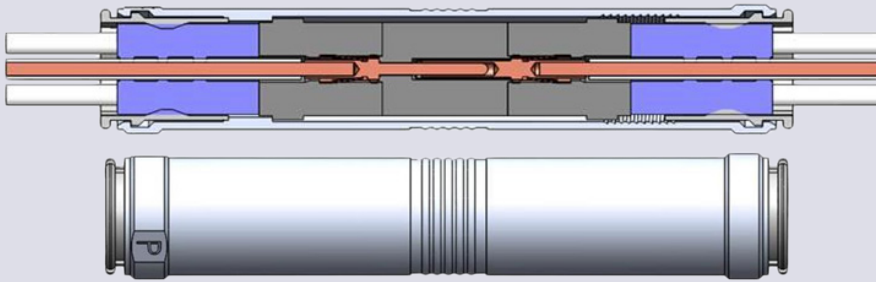
- Lightweight construction
- Conductive (plated) or non-conductive versions
- Crimp contact technology: front release/rear removal
- Three to eleven circuits per unit
- Environmentally sealed
- Full-mate indicator
- Replaces labor-intensive terminal blocks and splices

TIME SAVING · LABOR SAVING · WEIGHT SAVING

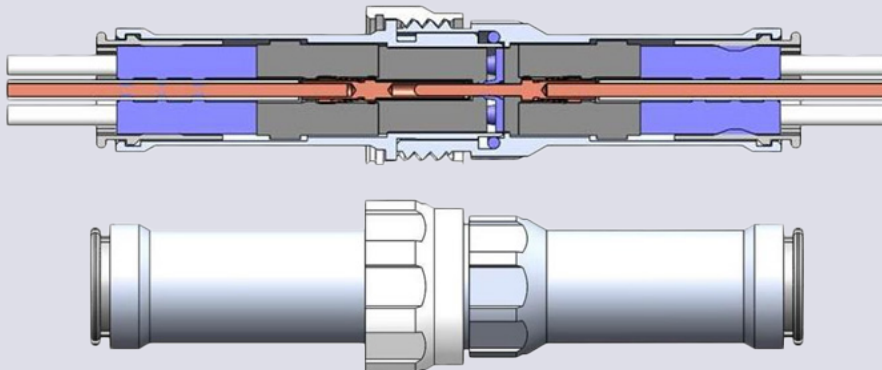
# SpliceSaver™ Fast and reliable replacement for wire splice and terminal block technologies



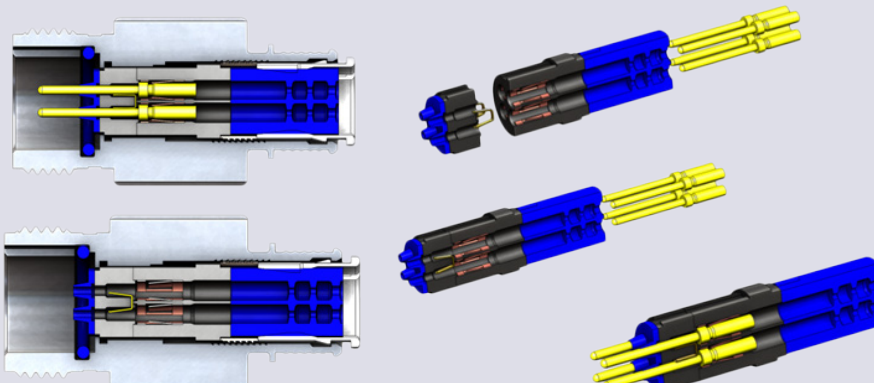
## SPLICESAVER AVAILABLE CONFIGURATIONS—FEATURES AND SPECIFICATIONS



Single-Piece



Spirallock® Threaded



Bussed

- Triple ripple grommet wire seal for sealing at high altitude
- Machined contact utilizes mil-spec crimp tooling
- Contacts are removable allowing corrections to circuits during testing if required

### SpliceSaver™ Specifications

**Altitude immersion:**  
75,000 ft.

**DWV rating at altitude:**  
>800 V

**Dielectric Withstanding Voltage Ratings:**  
22AWG = 5 amps/contact  
20AWG = 7.5 amps/contact

**Material and finish options**  
(for compatibility with available EMI/RFI braid materials):  
Cadmium-plated aluminum  
Nickel-plated aluminum  
Nickel-plated brass

### SpliceSaver™ Weight Analysis

**Receptacle connector:**  
1.6 grams including contacts and seals

**Plug connector:**  
1.66 grams including contacts and seals

**Total connector mass:**  
5.66 grams (all contact locations installed)

**Accessories:** Add the variable mass of two or three nano bands trimmed to length of grooves in the split sleeve

LABOR AND  
WEIGHT- SAVING  
AEROSPACE -  
GRADE DUMMY  
CONTACTS

## Weight / Cost-Saving Dummy Contact Sealing Plugs (DCSP)



### For reliable sealing of unused contact cavities—without the use of electrical contacts

The use of color-coded M27488 type plastic sealing plugs in unused contact cavities is a requirement in all environmental interconnect applications (IAW NA01-1A-505-1, WP 007 00 or 020 00). Conventional sealing plugs, combined with the connector grommet seal, provide reliable dust and moisture ingress protection. But common contact sealing plugs still require that a properly-sized electrical contact be first inserted into the cavity, followed by the plastic plug. Glenair innovative Dummy Contact Sealing Plugs (DCSP) eliminate the need to use expensive electrical contacts as part of the sealing regimen. Fast and easy-to-install, these longer form-factor Dummy Contact Sealing Plugs (DCSP) are a one-piece solution to contact cavity sealing that results in significant weight reduction, material cost reduction, and assembly labor. Available in Size #22 to Size #8, for connector series D38999, EN4165, Series 800 Mighty Mouse, EN4644 and ARINC 600, Glenair Dummy Contact Sealing Plugs reduce weight as much as 90% compared to conventional contact/sealing plug configurations.

- Powerful tool in Electrical Wire Interconnect System weight reduction
- Eliminates use of expensive electrical contacts for sealing-only applications
- Leverages connector contact clip for secure retention of the sealing plug—no FOD
- Easy-to-install single piece design
- Visible quality control / confirmation of cavity fill from back of connector
- EWIS compliant test report GT 15-106 available



WEIGHT / COST-SAVING

# Dummy Contact Sealing Plugs (DCSP)

for reliable sealing of unused contact cavities



Connector Series / Size / Color Code / Part Number Selection							
Connector Series	Crimp Removable Contact Cavity Size						
	23	22	20	16	12	8	8 w/ Boot
D38999 Series I, III, IV	680-116-23	680-116-22	680-116-20	680-116-16	680-116-12	680-116-8	680-116-8B
D38999 Series II							
EN4165							
Series 800-805 Mighty Mouse							
EPX		680-116-22	680-117-20			680-117-8	680-117-8B
ARINC 600							
Series 806 Mighty Mouse Mil-Aero		680-120-22HD	680-120-20HD				



1. Insert Dummy Contacts into unused contact cavities.
  - A. Dummy Contacts may be installed using contact insertion tool, needle nose pliers or by hand (space permitting).
  - B. Isopropyl alcohol may be used to facilitate insertion of Dummy Contacts.
2. Push Dummy Contact into cavity until flange locks into contact retention clip.
3. Attempt to pull Dummy Contact from connector body to ensure full retention.

**Important note: Size #22 Dummy Contacts In 38999 socket cavities**

4. Dummy Contact shall only be inserted into cavity far enough to engage retention clip.
5. Pull Contact back for maximum tail exposure.

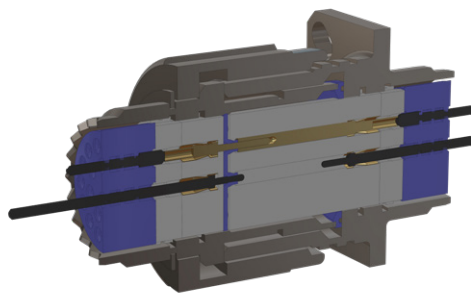
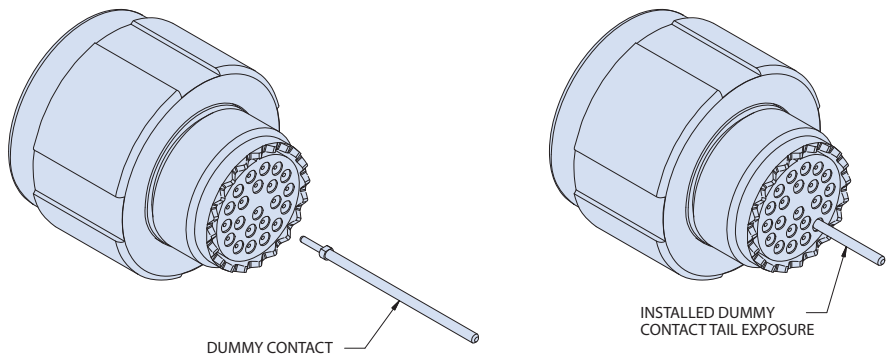
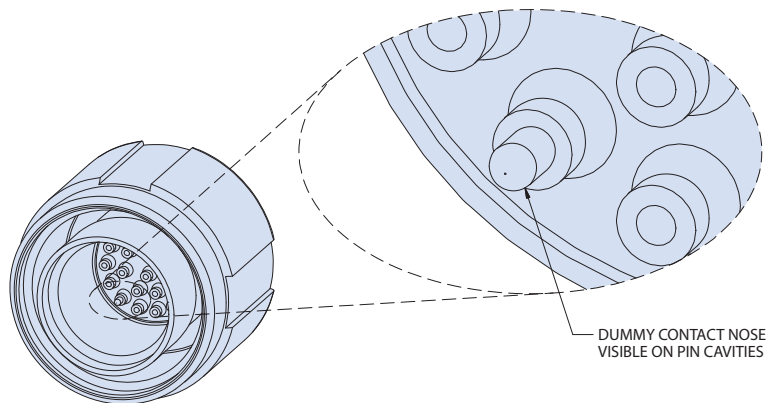


Illustration shows conventional sealing plug / contact configuration (top) and long form-factor Dummy Contact Sealing Plugs (bottom).



FOOLPROOF  
SPRING-ACTION  
DESIGN



IP67 and IP56 rated  
for mission-critical  
aerospace applications



High-performance aerospace applications employ protective covers to seal unmated receptacles from sand, dust, and moisture ingress, as well as other forms of environmental and mechanical damage. ProSeal protective covers are mounted directly to panels and electronic equipment housings to enhance the reliability and consistent use of connector covers. Spring-action equipped ProSeal covers are available for every military QPL and Glenair signature connector series, and are supplied in a broad range of designs to meet every application requirement.

- Anti-vibration and shock spring-action solution
- IP67 (dust / immersion) and IP56 (dust / water jet) ingress protected designs
- Self-aligning environmental seals
- Lock in open position or automatic closure
- Compatible with a broad range of military standard and commercial connectors including D38999 Series I, II, III, Mighty Mouse Series 801, 804, 805, and 806, MIL-DTL-24308 and more



IP67 AND IP56 RATED

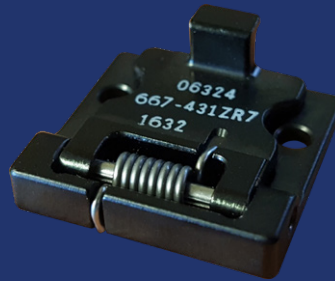
# ProSeal spring-action protective covers for mission-critical aerospace applications



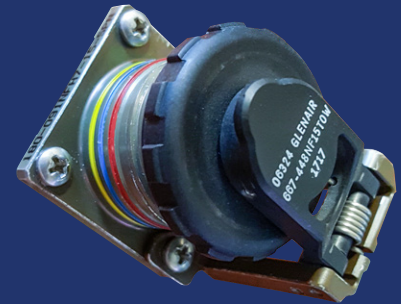
## ROBUST ENVIRONMENTAL SEALING



Self-aligning gimbal-action  
face seal



Anti-vibration and shock  
spring-action performance



Full environmental  
threaded / twist-lock seal

## RUGGED MECHANICAL PERFORMANCE



Dual-action mechanism: cover locks in open  
position and holds tight in closed position



ProSeal cover shares connector  
mounting holes and hardware



Jam nut and wall mount configurations  
available in all styles

## VERSATILITY OF DESIGN



Suitable for all circular designs including  
commercial USB / RJ45 interfaces



Rectangular connector designs with  
convenient thumb tabs

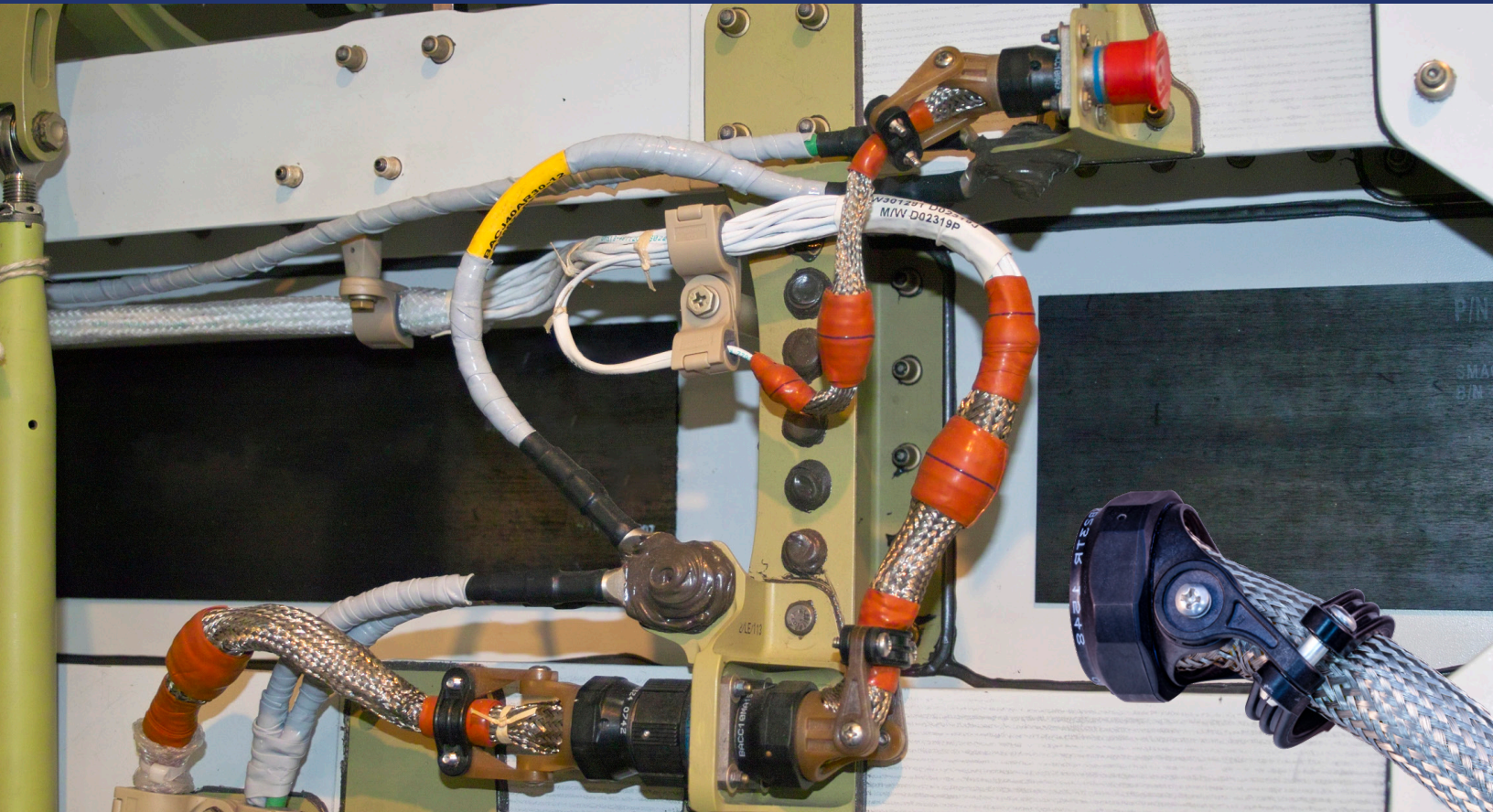


Low-profile non-locking designs for use  
with recessed quick-disconnect connectors

LIGHTWEIGHT  
STRAIN-RELIEF  
AND WIRE  
PROTECTION  
TECHNOLOGY

# SWING ARM®

3-in-1 lightweight composite clamp with  
optional drop-in braid termination follower



Glenair's composite Swing-Arm® is a lightweight and corrosion-free cable clamp with cable shield termination options for a wide range of EWIS applications. This innovative articulating strain relief has become the standard shield termination device for weight reduction in both military and commercial airframe applications. Made from temperature-tolerant composite thermoplastic, rugged Swing-Arm® clamps offer easy installation, long-term performance, and outstanding weight and SKU reduction. Performance tested to stringent AS85049 mechanical and electrical standards and available for all commonly-specified mil-standard and commercial cylindrical connectors including MIL-DTL-38999, SuperNine, and Series 806 Mil-Aero.

## Introducing Swing-Arm FLEX®, Glenair Next- Generation Composite Swing-Arm® Strain Relief

- Significant weight reduction: no saddle bars or hardware
- Rapid assembly: cable self-centers on bundle, little or no wrapping tape required
- Braid sock and drop-in band termination follower versions for EMI/RFI applications
- Internal conductive ground path



SWING ARM®  
COMPOSITE THREE-IN-ONE BACKSHELL  
FLEX

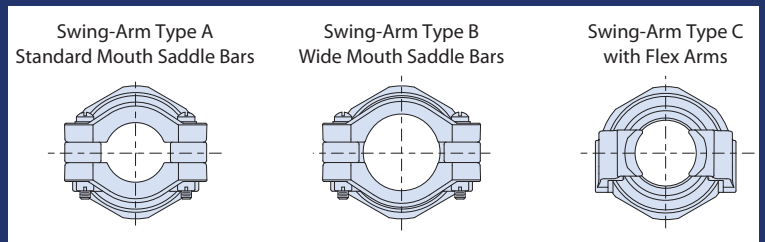
User-configurable straight, 45°, and 90° cable routing

# SWING-ARM 3-IN-1 LIGHTWEIGHT Composite thermoplastic strain-relief and EMI/RFI shield termination device



## THREE STYLES OF SWING-ARM STRAIN RELIEF CLAMPS

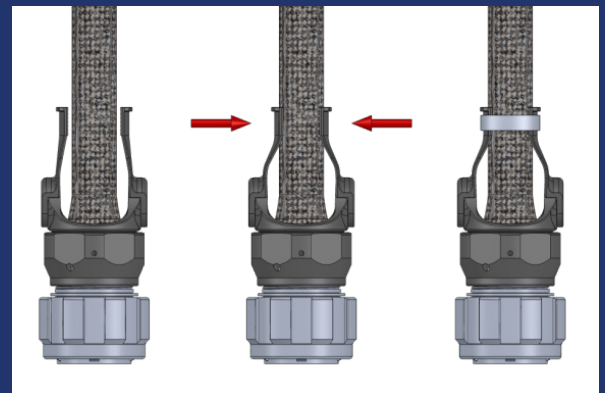
- Style A - standard mouth, rigid saddle bars
- Style B - wide mouth (for larger cable diameters), rigid saddle bars
- Style C Swing-Arm FLEX - no saddle bars, self-centering round cable strain relief



## SWING-ARM VERSATILITY: FROM SIMPLE CABLE STRAIN RELIEF TO EMI/RFI SHIELD TERMINATION



Fast and reliable termination of individual wire and overall EMI cable shielding with industry-standard Band-Master ATS® tools and straps. New slim profile bands eliminate sharp strap cutoff for improved safety.



## DROP-IN FOLLOWER FOR DIRECT TERMINATION OF OVERALL OR INDIVIDUAL WIRE SHIELDING

Two drop-in-follower designs, solid and slotted are available for all Swing-Arm styles (A, B, and C).

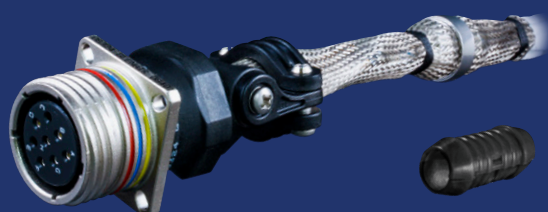


## SWING-ARM AND SWING-ARM FLEX WITH OPTIONAL INTEGRATED SHIELD SOCK

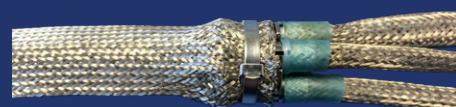
For fast and reliable EMI/RFI shield termination of individual wire and overall cable shielding



## SWING-ARM SHIELD SOCK TERMINATION OPTIONS, STANDARD SPLIT RING OR STARSHIELD STAR



Termination of shield sock to cable shield with split support ring



Termination of shield sock to individual wire shields with auxiliary "flex shield" HST and StarShield™ Star



HEAT GUN FREE  
MOLDED SHAPES  
AND COLD-  
SHRINK TUBING

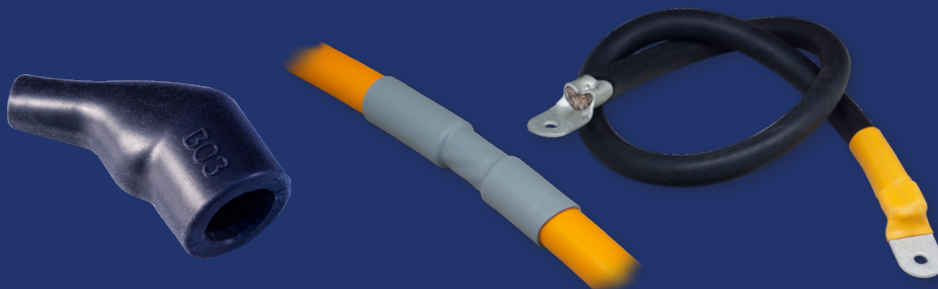
**AUTOSHRIK™**

Fast and easy cold-action shrink boot and tubing solutions for wire and cable protection



Designed for rugged weathering, UV and ozone-resistant performance, Glenair Autoshrink is the one-piece easy-action shrink boot and tubing solution. Quickly attach shrink boots, splice insulation, or repair Glenair Duraelectric formula jacketing. Straight, 45° and 90° angle lipped shrink boots lock into boot groove on adapters to keep out environmental debris. Universal-design Autoshrink tubing delivers reliable and durable sealing as well as mechanical protection for cable-end terminations in harsh military and industrial applications. Built from Glenair Duraelectric formula material, Autoshrink is fully hydrophobic and resistant to caustic chemicals and solvents. Easy-action spiral hold-out and large cold shrink ratio makes for fast installation and durable, split-resistant performance.

- Straight, 45° and 90° angle-lipped shrink boots and shrink tubing
- Fast and easy installation
- Four high-performance material types
- Fire-resistance in all material types
- Reliable IP68 sealing
- 3000 VAC rated
- Multiple color options
- Service temperature range: -65°C to 300°C
- Ideal for repair of cables and conduit with Duraelectric jacketing
- Extreme UV / sunlight resistance
- Integrated ground strap versions available



Mil-Aero / Industrial fluid-resistant lipped shrink boots

Fast and easy repair of Duraelectric-jacketed cables

Utilize for termination of lugs on new installations

# Cold-Action Shrink Boots and Tubing



Four material types for high UV plus LSZH, fluid resistance, temperature tolerance, and submersible use

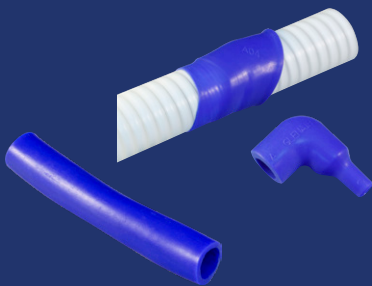
## AUTOSHRINK D UV-RESISTANT / LSZH SHRINK BOOTS AND TUBING



Autoshrink D is a high-performance elastomeric material (Glenair Duraelectric™ formula polymer GPS67) cold-action shrink boot and jacket solution for general-purpose use in military and commercial aerospace electrical wire interconnect systems and other harsh wire protection, sealing, and repair applications.

- Service temperature range: -65°C to 225°C
- Fire resistant and Low smoke-zero halogen (LSZH)
- General-purpose resistance to common aerospace, military and industrial fluids
- Tubing available with integrated ArmorLite ground strap

## AUTOSHRINK F ADVANCED FLUID RESISTANT SHRINK BOOTS AND TUBING



Autoshrink F is a high-performance elastomeric material (Glenair Duraelectric™ formula polymer GPS125) cold-action shrink boot and jacket solution for application-specific use in military and commercial aerospace electrical wire interconnect systems and other harsh wire protection, sealing, and repair applications. Autoshrink F is highly resistant to aircraft industry jet fuels, oils, solvents, and cleaners.

- Service temperature range: -65°C to 200°C
- Fire resistant and suitable for immersion in jet fuel, diesel, lubricants, and solvents

## AUTOSHRINK S SUBMERSIBLE SHRINK BOOTS AND TUBING



Autoshrink S is a high-performance polymer material (Glenair Subsea formula GPS153) cold-action shrink boot and jacket solution for use in high-pressure applications such as underwater oil & gas industry electrical wire interconnect systems and other subsea harsh-environment wire protection, sealing, and repair applications.

- Service temperature range: -40°C to 100°C
- Low smoke-zero halogen (LSZH)
- Resistant to common industrial and environmental fluids

## AUTOSHRINK T HIGH-TEMPERATURE-TOLERANT SHRINK BOOTS AND TUBING



Autoshrink T is a high-performance rubber material (Glenair ThermaRex formula GPS139) cold-action shrink boot and jacket solution for use in high-temperature applications in military and commercial aerospace electrical wire interconnect systems and other harsh-environment wire protection, sealing, and repair applications.

- Service temperature range: -65°C to 300°C
- Fire resistant and low smoke-zero halogen (LSZH)
- Resistant to common aerospace, military and industrial fluids

LIGHTWEIGHT AND  
FLEXIBLE  
TURBOFLEX®  
POWER CABLES



The ultra-  
flexible and  
rugged power  
cable solution



The ultra flexible and rugged power cable solution—ideal for rotating turret applications and weight reduction in SWaP-sensitive vehicle applications. TurboFlex® cable is jacketed with Duralectric™ to provide outstanding flexibility and resistance to environmental and chemical exposure.



Available in a broad  
range of gages,  
16 AWG to 450 MCM



◀ Duralectric™ is the high-performance TurboFlex® jacketing material perfectly suited for immersion, chemical or caustic fluid exposure, temperature extremes, UV radiation and more—available in a broad range of colors including safety orange



Many sizes In-stock and available for  
immediate, same-day shipment. No  
minimums!



SERIES 96

# TurboFlex® Ultra-Flexible Power Distribution Cable

with rugged Duraelectric™ jacketing



## TURBOFLEX CABLE APPLICATION EXAMPLE



This multibranch TurboFlex power and data interconnect assembly for a ruggedized defense application demonstrates the remarkable flexibility and minimal bend radius of large form-factor (up to 450 MCM) TurboFlex cable. Example shown features UV- and chemical-resistant Duraelectric jacketing in FED-STD 595C Safety Orange.

## ABOUT TURBOFLEX WITH DURALECTRIC™ D JACKETING

Duraelectric™ D is a Glenair Signature elastomeric material used in wire insulation, cable and conduit jacketing, overmolding, and shrink boots. Glenair TurboFlex high-flexibility power distribution cables are supplied with Duraelectric jacketing in different wall thicknesses, as well as “tell-tale” dual-layering.

TurboFlex core conductors are available in three aerospace-grade material and temperature configurations:

- T = Tin/Copper (-60° – 150°C),
- S = Silver/Copper (-60° – 200°C)
- N = Nickel/Copper (-60° – 260°C)

A signature configuration of TurboFlex is available with high-temperature shielding and lightweight aluminum conductors.

DURALECTRIC™ D PHYSICAL PROPERTIES		
Property	Typical Result	Test Method
Hardness, Shore A	60	ASTM D2240
Tensile Strength, psi	1100	ASTM D412
Elongation, %	500	ASTM D412
Tear Strength, Die B, ppi	150	ASTM D624
Low Temperature Impact at -65°C	Pass/No Cracks	ASTM D2137
Accelerated UV/Sunlight Resistance, 53 yr. Equiv. Exposure	Pass/Excellent	IEC 60068-2-5
Ozone Resistance	Pass/No Cracks	ASTM D1149
Zero Halogen	Pass	IEC 754-1

DURALECTRIC™ D ELECTRICAL PROPERTIES		
Property	Typical Result	Test Method
Dielectric Strength, kV/mm	19	ASTM D419
Comparative Tracking Index, VAC	> 600	ASTM D3638

DURALECTRIC™ D FIRE RESISTANCE PROPERTIES	
Property	Typical Result
<b>Flammability</b>	
Oxygen Index, %	45
FAR 25.853, 12 Second Vertical	Pass
FAR 25.853, 60 Degree	Pass
FAR 27.1365 b,c	Pass
BSS7230 Method F2	Pass
IEC60614-1	Pass
EN60695-2-12, 850°C Glow-Wire	Pass
UL1685 FT4/IEEE1202	Pass
<b>Smoke Density</b>	
BSS7238	Pass
NES 711	Pass
EN 60695-2-11	Pass
UL1685 FT4/IEEE1202	Pass
<b>Combustion Toxicity</b>	
BSS7239	Pass
NES 713	Pass
SMP800 C	Pass

### GENERAL DURALECTRIC D PERFORMANCE SUMMARY

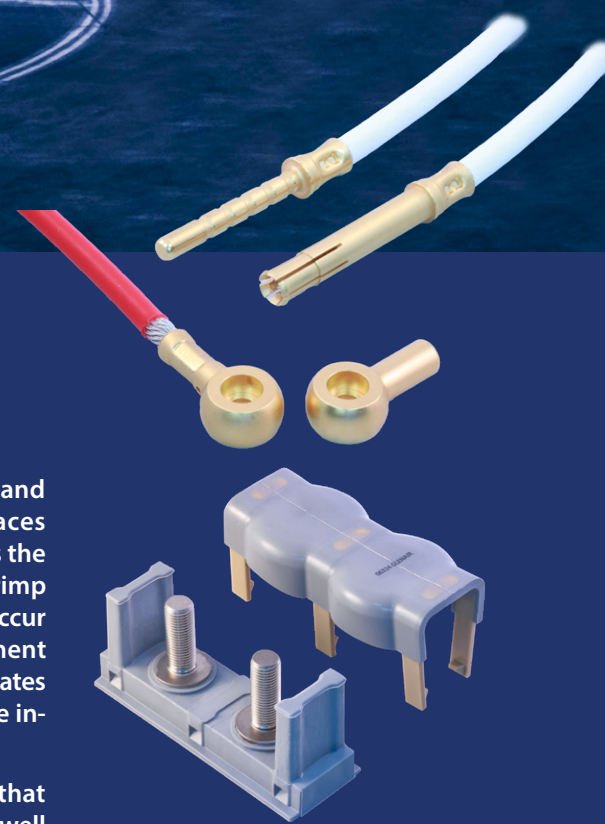
- Service Temperature Range: -65°C to 260°C
- Fire Resistant and Low Smoke-Zero Halogen (LSZH)
- RoHS materials
- Resistant to common aerospace, military and industrial fluids
- UV resistant



POWER FEEDER LINE  
TECHNOLOGY  
FOR COMMERCIAL  
AIRCRAFT

# PWRLINE HV™

High-current power feeder system and current return network for metal and composite fuselage aircraft applications



## Unique power feeder system eliminates power line routing and termination issues

For aircraft electrical applications that require discrete routing of 3-phase and DC power lines, Glenair has developed the PwrLine HV. PwrLine HV replaces conventional terminal strips and terminal lugs with a solution that eliminates the issues associated with routing large gauge cables. The PwrLine HV uses a crimp contact system that can accommodate tolerancing variations that routinely occur with large cables. Routing power feeders through the 3-D spatial environment routinely creates installation and terminal lug orientation issues. PwrLine eliminates these problems with its unique rotatable pin / socket architecture and unique in-line insulation packaging.

PwrLine HV is a complete power feeder and current return network system that includes contacts, cables, holding fixtures, mountable connector packages, as well as high-voltage terminal blocks and lugs for reduction of partial discharge and corona. Lightweight, high-durability Duraelectric terminal blocks, hoods, and cable jackets deliver outstanding environmental and insulation performance.

PwrLine HV: a complete power feeder ecosystem with matched, compatible components

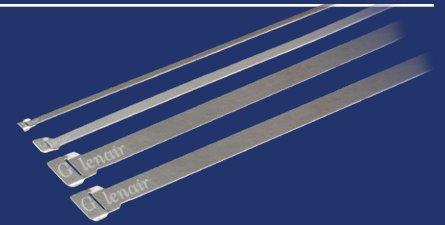
# HIGH-CURRENT / HIGH-VOLTAGE PwrLine HV Power Feeder System



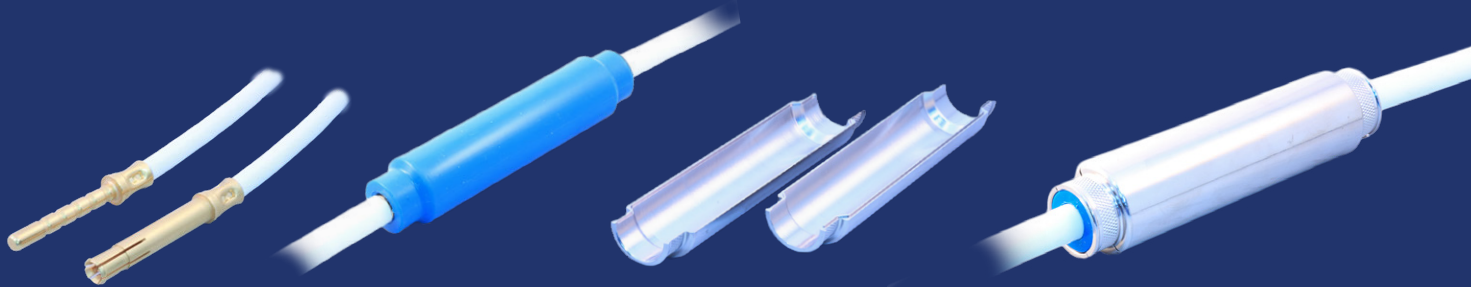
for aircraft electrical power distribution systems

## PWRLINE HV POWER FEEDER SYSTEM COMPONENTS

- Resolves cable lug misalignment issues
- Eliminates twisted cable (rotational) problems during assembly
- Integrated / compatible power line feeder system used in combination with PowerLoad and other power distribution system connectors



PwrLine HV power feeder system uses Band-Master ATS® termination bands

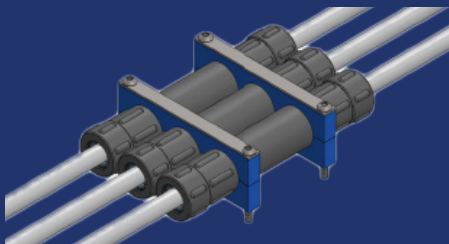


High-current power feeder contact and cable system

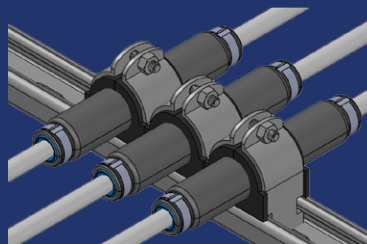
Mated contact pair inside self-vulcanizing Duraelectric insulator

Lightweight outer composite split shell with shield banding platforms

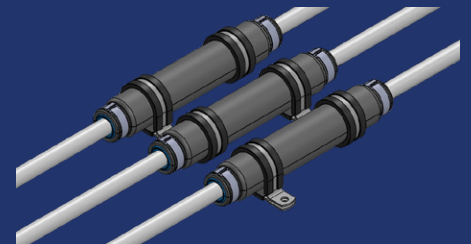
Assembled and ready for shield band termination with Band-Master ATS® bands



Schematic illustration with line block mounting hardware...



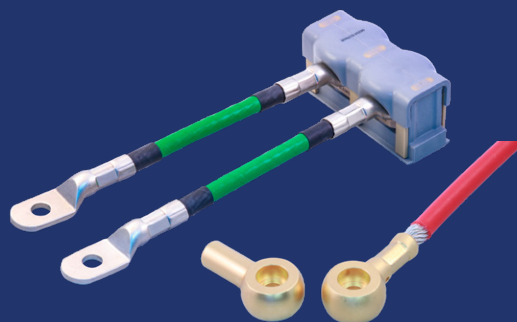
...strut clamp mounting hardware...



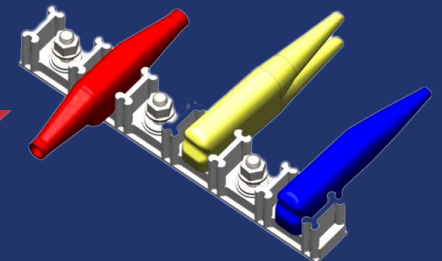
... and P-clamp mounting hardware



Multiple designs of high-voltage terminal blocks with accommodation for PwrLine HV lugs and/or standard lugs



Conventional and PwrLine HV terminal lugs



Color-coded terminal lug hoods made from high-performance Duraelectric material

POWER FEEDER LINE  
TECHNOLOGY  
FOR COMMERCIAL  
AIRCRAFT

# PWRLINE HV™

Current Return Network for protection  
against electromagnetic interference  
propagated in aircraft power lines



## The PwrLine™ Current Return Network revises traditional approaches to grounding systems on commercial aircraft.

The Glenair Current Return Network grounding solution uses a contact system and Band-Master ATS® grounding technology to simplify routing and termination processes and guarantee a stable electrical interface. Power contacts feature a rotatable pin / socket construction to eliminate twisted cable during assembly. The Duraelectric™ overmolded T fixture and AutoShrink™ boots, easily installed over the fixture's integral boot platforms, provide a durable environmental seal. The design is scalable for lightning strikes and fault currents.

The Current Return Network system employs "plug and play" connections and calibrated banding, eliminating the need for washers and torque wrenches, and waiving inspection requirements. The network's optimized TurboFlex™ wire and 16 mil insulated copper conductor provide both outstanding environmental protection and extreme flexibility.

- Replaces the traditional terminal lug / terminal strip solution
- Resolves cable lug misalignment issues
- Eliminates twisted cable (rotational) problems during assembly
- Integrated / compatible power line feeder system used in combination with PwrLine HV power distribution system

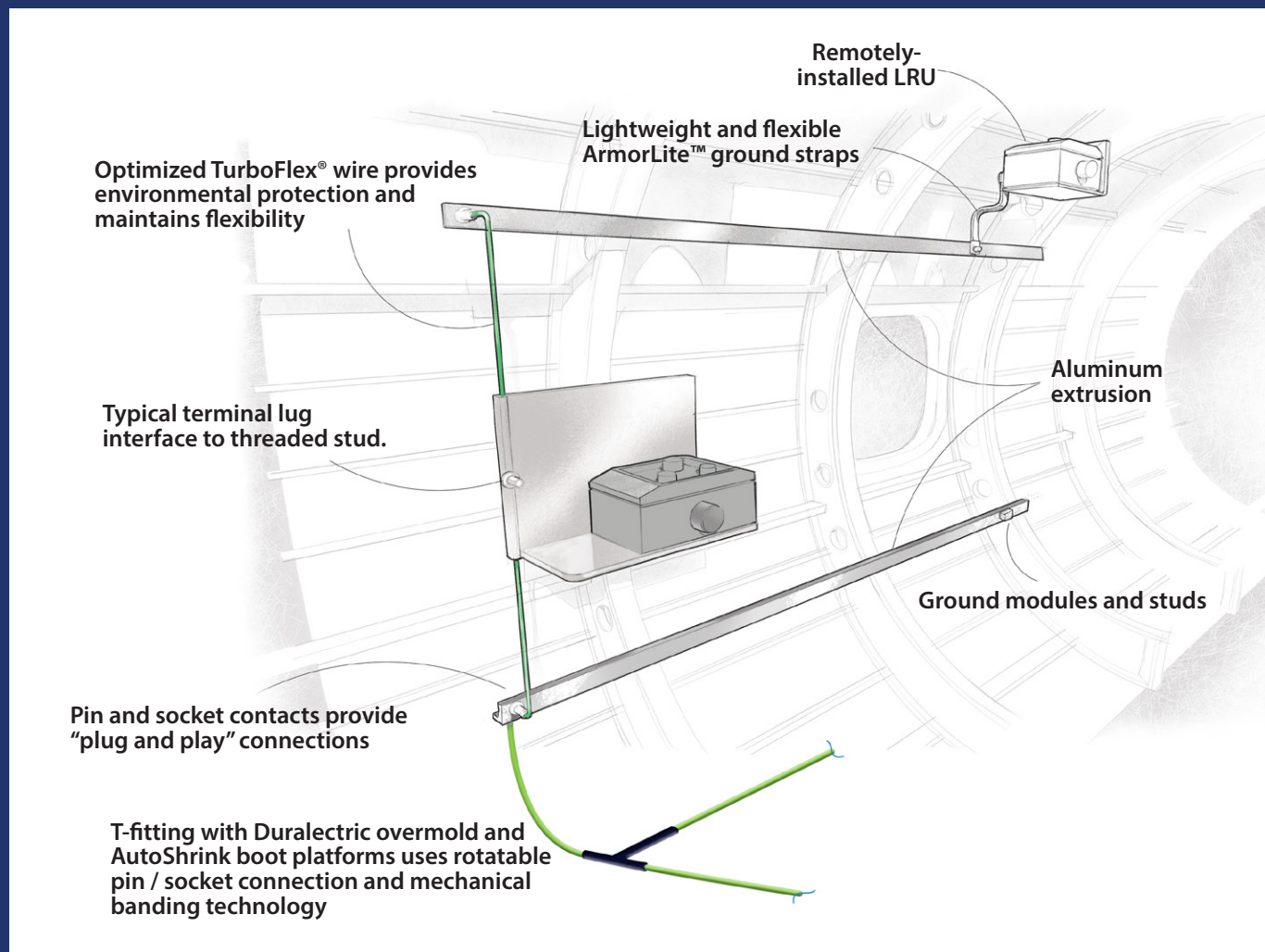
HIGH-CURRENT / HIGH-VOLTAGE

# PwrLine HV™ Ground (Current) Return Network

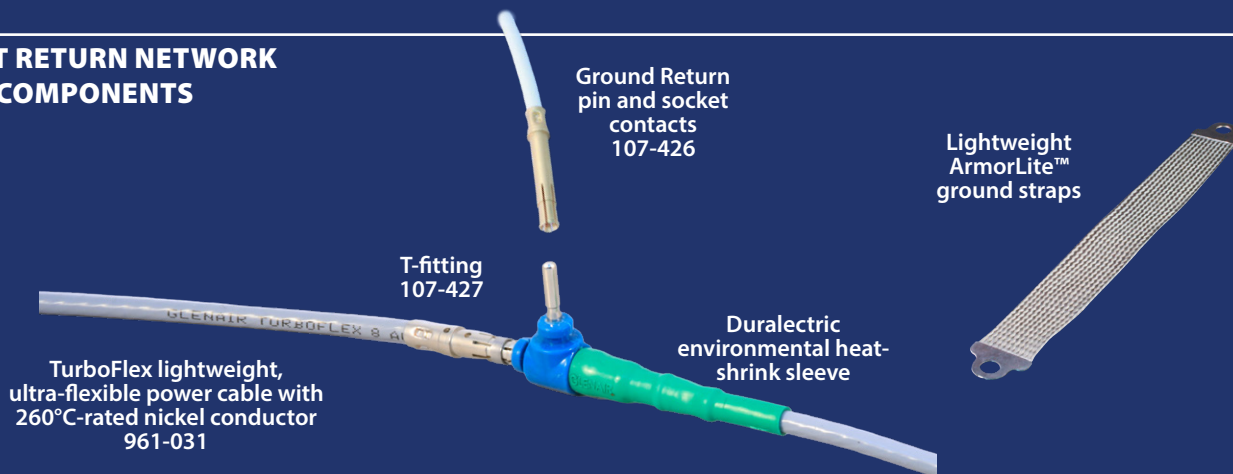


for aircraft electrical power distribution systems

## CURRENT RETURN NETWORK SYSTEM ILLUSTRATION



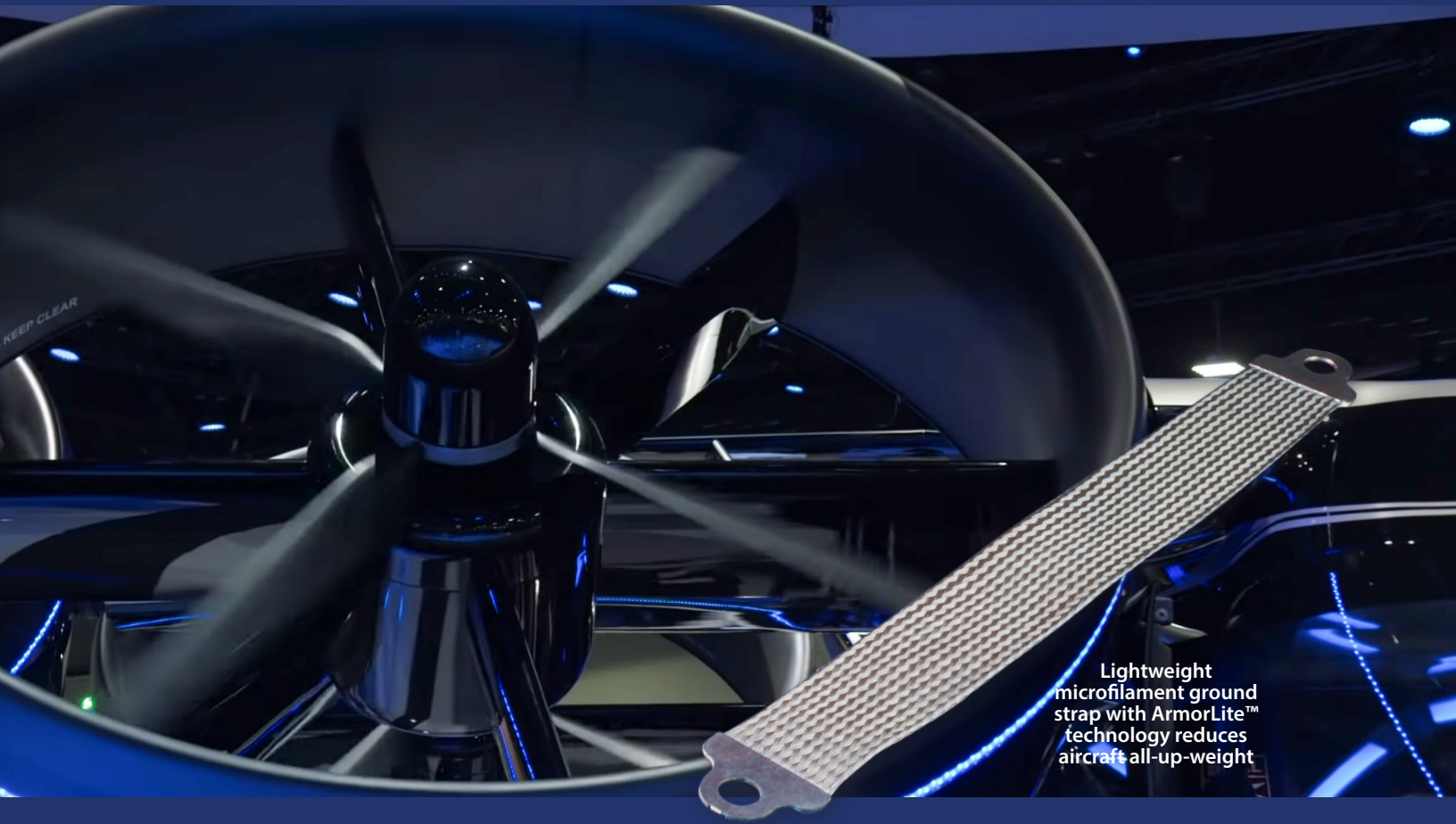
## CURRENT RETURN NETWORK SYSTEM COMPONENTS



GROUNDING  
SOLUTIONS FOR  
ELECTROMAGNETIC  
COMPATIBILITY

# ARMORLITE™

Ground Straps for electrostatic discharge,  
lightning strike and power equipment  
grounding

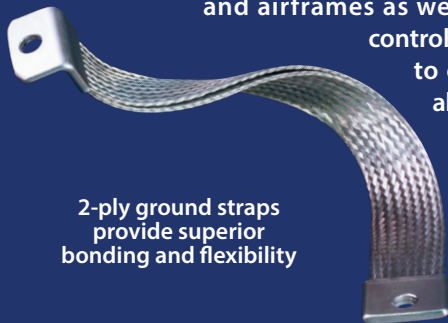


Lightweight  
microfilament ground  
strap with ArmorLite™  
technology reduces  
aircraft all-up-weight

A single lightning strike can hit an aircraft with as much as 1,000,000 volts. Static electricity can charge an aircraft, particularly in cold and wet air, with enough electrical potential to result in a discharge that can fry avionics gear and disrupt electric motor operation. Power generation systems (batteries, motors, inverters, etc.) can also produce transient electrical current that can damage adjacent electronic systems such as electronic controllers and fly-by-wire systems.

Damage from these events is minimized and managed in aircraft through the use of electrical bonding. Flexible bonding straps are attached between equipment and airframes as well as between structural elements and flight control surfaces to conduct destructive electrical surges to ground or to bus bar components capable of absorbing significant amounts of transient voltage

Glenair has designed and supplies a broad range of braided and solid material ground straps to both commercial and military aerospace customers. Our ground straps are exactly designed with appropriate conductive and dissipative materials for each application.



2-ply ground straps  
provide superior  
bonding and flexibility

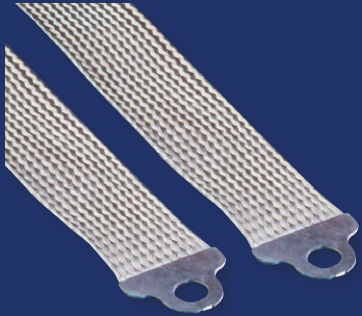
- Ultra-lightweight ground straps with highly conductive or dissipative performance
- Metal-clad microfilament braided solutions
- Significant contribution to weight reduction initiatives in commercial and military aircraft
- Heavy-duty variants for electrical potential grounding from engines, starters, and power units
- Fast turnaround on requests for unusual and build-to-print requirements

# High-Performance Ground Straps

Lightweight, general, and heavy-duty

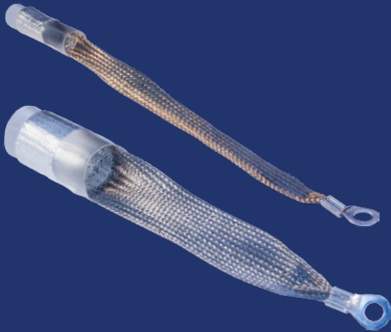


## LIGHTWEIGHT ARMORLITE™ MICROFILAMENT GROUND STRAPS



- Ultra lightweight metal-clad stainless steel braid material
- Low-profile lug design and assembly
- Available in seven widths and any length
- Low electrical resistance and high temperature tolerance
- High conductivity-to-weight / material-cross-section ratio
- Corrosion resistant materials for life-of-system durability
- Bend cycle durability up to 250,000 cycles per EN4199-001

## LARGE-DIAMETER, LIGHTWEIGHT ARMORLITE™ EWIS GROUNDING HSTS



- Oversized heat shrink termination sleeves for grounding of long-run overbraided EWIS harnesses
- Manufactured in-house by Glenair (made in America)
- Fabricated from lightweight, highly flexible ArmorLite™ microfilament EMI/RFI braid material
- Weight reduction up to 70% lighter compared to legacy NiCu A-A-59569 / QQB575 materials

## GROUND PLANE ADAPTER PLATE FOR USE WITH COMPOSITE THERMOPLASTIC PANELS



- Resolves connector-to-panel grounding issues in composite fuselage aircraft
- Fabricated from highly conductive tinned beryllium copper IAW AMS 4530 or ASTM B194 and ASTM B545
- Available for all popular aerospace connectors with straight and 90° ground attachments

## FAST TURNAROUND ON UNUSUAL/BUILD-TO-PRINT REQUESTS



Hybrid braid materials and customizable lug material options



Specialized lug configurations including integrated bonding hardware and angled lugs



Heavy-duty braid and lug configurations



Round cross-section braid



Harsh environment and chemical-resistant ground strap jacketing

SHIELDING  
SOLUTIONS FOR  
ELECTROMAGNETIC  
COMPATIBILITY

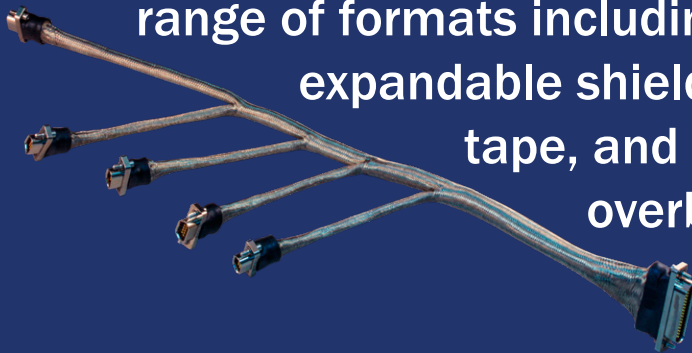
# ARMORLITE™

Microfilament nickel-clad expandable  
stainless steel EMI/RFI braided shielding



ArmorLite™ is an expandable, flexible, high-strength, conductive stainless-steel microfilament braid material designed for use as EMI/RFI shielding in high-performance wire interconnect systems. ArmorLite™ is packaged in a wide range of formats including bulk expandable shielding, mesh tape, and factory overbraiding.

- Ultra-lightweight EMI/RFI braided sleeving for EMC and lightning strike applications
- Best performing metallic braid during lightning tests (IAW ANSI/EIA-364-75-1997 Waveform 5B)
- Microfilament stainless steel: 70% lighter than NiCu A-A-59569/QQB575
- Outstanding EMI/RFI shielding and conductivity
- ArmorLite™ CF with enhanced corrosion protection
- Superior flexibility and “windowing” resistance: 90 to 95% optical coverage
- 70,000 psi (min.) tensile strength





LIGHTWEIGHT, FLEXIBLE  
**ArmorLite™ Microfilament Braid**  
 for EMI/RFI Shielding Applications

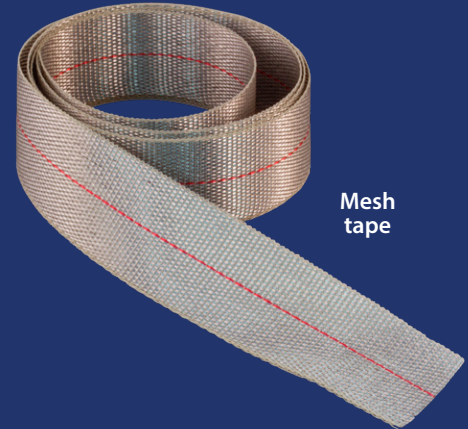


Lightweight · non-windowing · corrosion-resistant

**ARMORLITE™ SHIELDING SOLUTIONS AND PACKAGING**



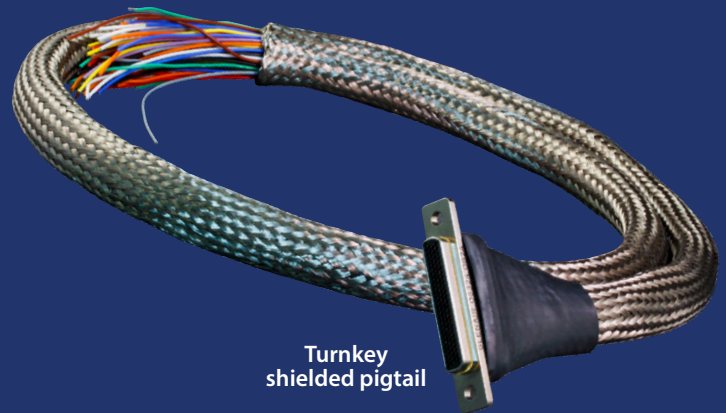
Factory overbraided



Mesh tape

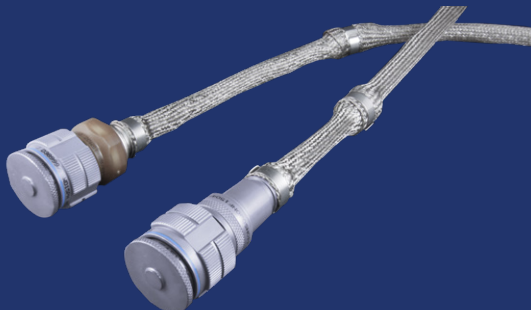


Integrated shield sock



Turnkey shielded pigtail

**ALSO AVAILABLE FOR ADDITIONAL WEIGHT SAVINGS: AMBERSTRAND METAL-CLAD COMPOSITE BRAIDED SHIELDING**



Braid Dia.	AmberStrand® 100% vs. nickel-coated copper		
	AmberStrand® 100% 103-026	Nickel-Copper 100-003	% Weight Savings/ Foot
.062	.6	1.9	68%
.125	1.0	4.8	79%
.250	1.8	16.1	88%
.375	2.3	18.5	87%
.500	3.7	22.3	83%
.625	4.4	27.7	84%
.750	5.2	34.3	85%
1.000	8.0	35.0	77%

Braid Dia.	AmberStrand® 75% vs. nickel-coated copper		
	AmberStrand® 75/25% NiCu 103-027	Nickel-Copper 100-003	% Weight Savings/ Foot
.062	.9	1.9	52%
.125	1.5	4.8	68%
.250	2.4	16.1	85%
.375	3.9	18.5	79%
.500	5.4	22.3	76%
.625	6.4	27.7	77%
.750	7.2	34.3	79%
1.000	11.0	35.0	69%



CONDUCTIVE AND  
NON-CONDUCTIVE  
SIDE-ENTRY  
SHIELDING



MasterWrap™

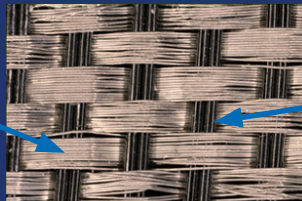
Flexible, lightweight wraparound  
EMI/RFI wire shielding and  
abrasion protection material



Tubular braided sleeving meets the broad range of EMC shielding and mechanical protection requirements of aircraft harness assemblies. But the need to apply shielding materials over already-installed aircraft wire and cable bundles requires new technology. Legacy self-wrapping cable braid has long been available for EMI/RFI applications and abrasion protection, albeit with poor performance due to its heavy weight, inflexibility, and “windowing,” which results in poor shielding performance.

MasterWrap™, a lightweight, easy-to-install, side-entry, self-wrapping shielding solution—available in conductive ArmorLite™ and now in abrasion-resistant Nomex®—solves these problems and more. MasterWrap™ is ideally suited for both long-run wire harness protection as well as spot coverage and maintenance of EWIS cable applications—all with outstanding weight reduction and ease-of-assembly. MasterWrap™ ArmorLite™ and MasterWrap™ Nomex® are qualified for use at major aircraft manufacturers for long cable runs, spot coverage, and repairs.

Material design provides uniform surface with limited interference to structures and clamps. Reduces kinking and windowing compared to full metal braid solutions for excellent shielding performance



Interwoven with high-temperature PEEK composite thermoplastic spring members ensure up to 95% optical / mechanical coverage

#### MASTERWRAP ARMORLITE

- Up to 70% weight reduction
- 500 hour salt spray corrosion resistance
- 50,000 cycle 90°–120° bend flex tested
- Temperature tolerant from -65°C to 200°C

#### MASTERWRAP NOMEX®

- Soft, abrasion resistant unbonded Nomex® yarn
- -60° to +240°C temperature range
- 90,000 PSI yield tensile strength
- Excellent chemical resistance; will not melt

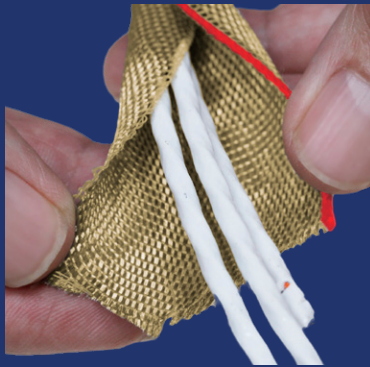
NEW MASTERWRAP™ WITH NOMEX®

# MasterWrap™ Nomex® flexible, lightweight wraparound abrasion / thermal protection



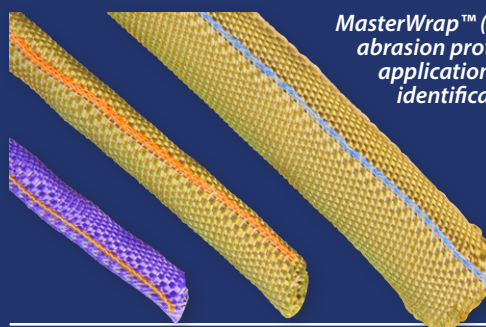
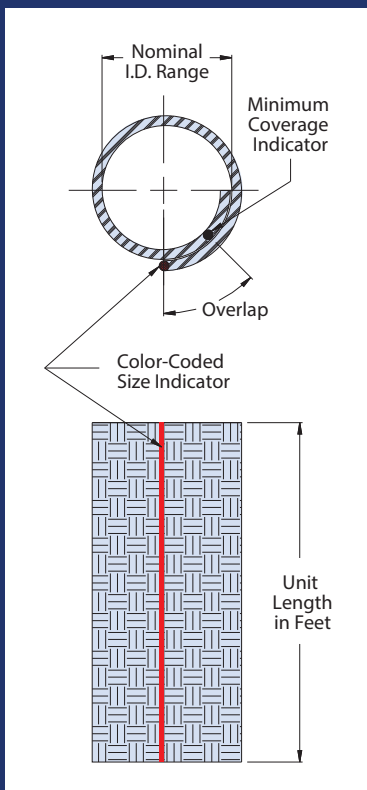
for spot mechanical coverage and repair of wire harnesses

## MASTERWRAP (NOMEX®): DIMENSIONAL INFORMATION • HOW TO ORDER



How To Order			
<b>Sample Part Number</b>	103-095	-024	GY
<b>Basic No.</b>	MasterWrap™ (Nomex®) material		
<b>Dash No.</b>	See Table I		
<b>Color option</b>	W = White R = Red GN = Green GY = Gray TN = Desert Tan OR = Orange Omit = for standard Black		

Table I								
Dash No	Nominal I.D. (Ref.)		Ref. Wire Bundle Range Nominal		Approx. Weight Grams/Ft.	Min. Pull Strength (lbs)	Size Indicator color code	Quantity feet/spool
	In.	mm	In.	mm				
004	.125	3.2	.093 .170	2.4 4.3	1.8	39	Black	50-500
008	.250	6.4	.170 .300	4.3 7.6	2.3	75	Brown	50-400
012	.375	9.5	.300 .406	7.6 10.3	3.2	94	Red	50-300
016	.500	12.7	.406 .520	10.3 13.2	3.7	116	Orange	50-250
020	.625	15.9	.520 .675	13.2 17.2	5.0	158	Yellow	50-200
024	.750	19.1	.675 .825	17.2 21.0	6.0	193	Green	50-100
032	1.000	25.4	.825 1.100	21.0 27.9	7.3	237	Blue	50-100
040	1.250	31.8	.938 1.312	23.8 38.3	10.0	TBD	Violet	50-75
048	1.500	38.1	1.187 1.590	30.1 40.4	11.0	TBD	Gray	50
064	2.000	50.8	1.812 2.090	33.0 53.1	12.2	TBD	White	50



MasterWrap™ (Nomex®) is the ideal solution for mechanical abrasion protection of wire bundle harnessing in aircraft applications. Available color selections allow for easy identification and labeling of wire circuitry.

### NOTES

Product ordered in 1 foot increments, packaged in boxed spools. See Table I. Lengths of 1-49 feet will be packaged in individual polybags.

Materials:

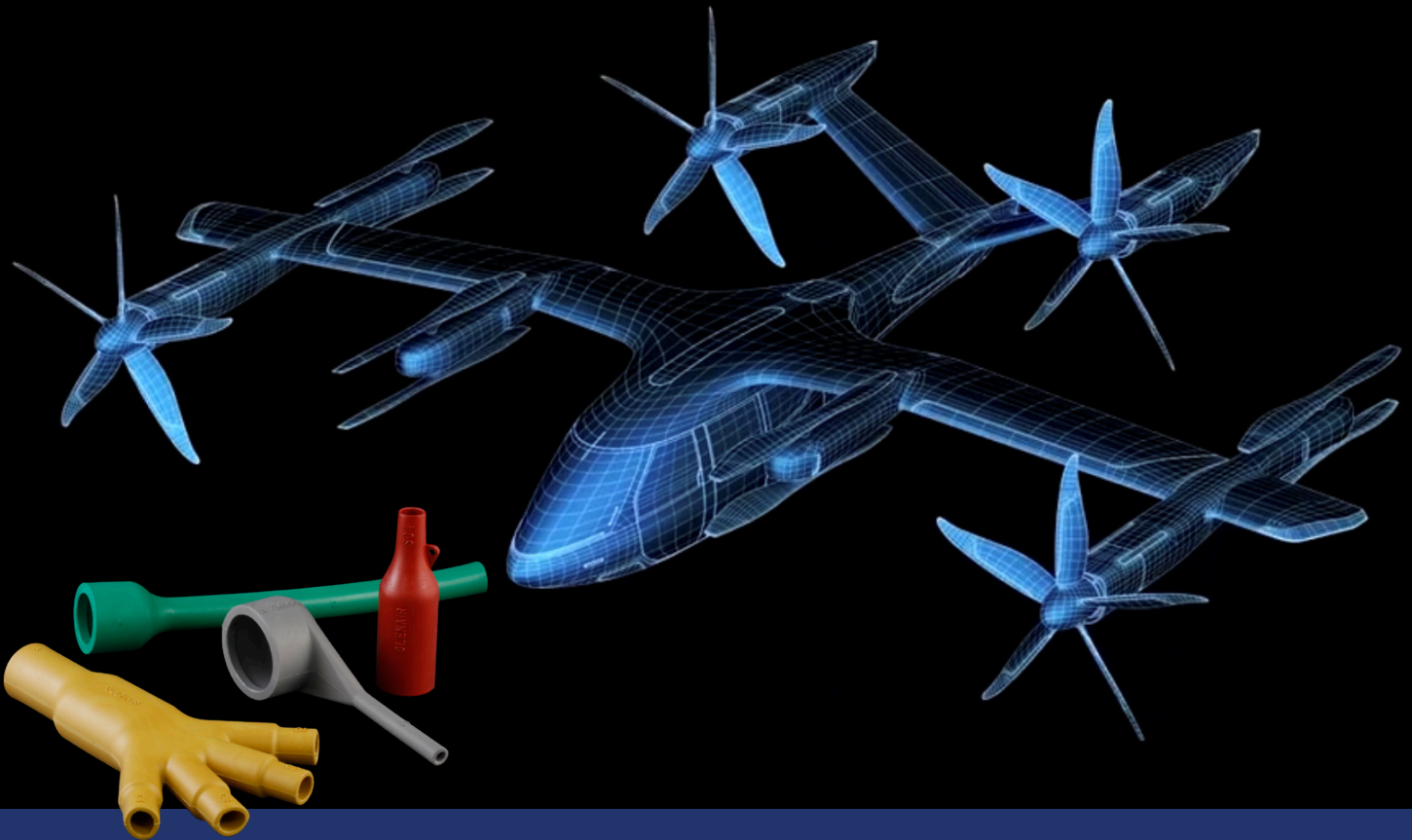
Woven mesh - high temperature DuPont™ Nomex®; Monofilament - PEEK; Overlap tracer - high temperature DuPont™ Nomex® thread

DuPont™ and Nomex® are trademarks or registered trademarks of E.I. duPont de Nemours and Company.

INNOVATIVE  
CIRCULAR  
CONNECTOR  
BACKSHELLS



Circular backshell and accessory designs for weight reduction, life-of-aircraft durability, and optimal reliability



## Innovative solutions to EWIS environmental sealing, wire management, strain relief, and EMC shield termination

Glenair is the go-to design partner for innovative solutions to electrical wire interconnect system (EWIS) problems in airframe applications. Our backshell and connector accessory design engineers are responsible for more problem-solving innovation in our industry than every other connector accessory supplier combined. Take our extensive composite thermoplastic connector accessory series, for example. Glenair can supply the lightest weight solution for all EWIS cable routing, shield termination, environmental sealing, and cable strain relief applications—all in conductively-plated engineering thermoplastic.



Composite thermoplastic backshells and strain reliefs reduce weight and improve durability

### GLENAIR: MASTERS OF THE BACKSHELL UNIVERSE

- High-performance circular connector accessories for every environmental, mechanical and electromagnetic shielding requirements
- Tens of thousands of innovative part numbers in inventory ready for same-day shipment
- Fast turnaround on made-to-order accessories, typically only two to three weeks
- Constant, relentless backshell innovation

# NEW INNOVATIONS IN Circular Backshells and Accessories



Unique, problem-solving backshells and connector accessories for aerospace applications

## HIGH-TEMP, LIGHTWEIGHT COMPOSITE THERMOPLASTIC ACCESSORIES



Split-shell and snap-lock banding backshells

Dummy stowage shorting plugs and receptacles

Piggyback boot Band-in-a-Can

Drop-in EMI/RFI shield termination configurations

## PRESSURE BOUNDARY, FIREWALL, AND SPLIT-SHELL FEED-THRU



Pressure boundary composite feed-thru

Firewall pressure boundary feed-thru

EMI/RFI split-shell metal feed-thru

- High-grade engineering thermoplastic or machined metal
- Six pressure-boundary feed-thru layouts with accommodation for 1 – 6 cables
- Split-shell jam nut versions with EMI/RFI shield termination porch
- O-ring sealed panel and box mounting interface

## INNOVATIVE NEW EWIS TECHNOLOGIES



Self-locking protective covers

Connector coupling ring safety sleeve for F/O applications

Heat shrink boot / wire routing clamp assembly

Leonardo's ProSeal spring-loaded protective covers

Lightweight SpliceSaver single- and multi-wire series

Lightweight Dummy Contact Sealing Plugs (DCSP)

INNOVATIVE  
RECTANGULAR  
CONNECTOR  
BACKSHELLS

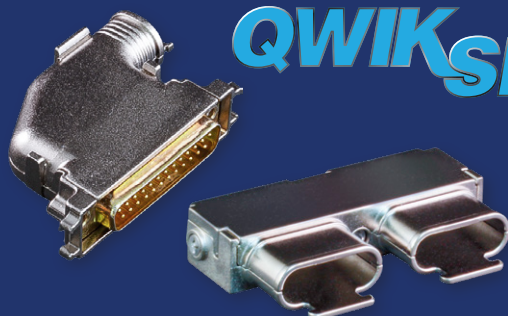


Rectangular backshell and accessory designs for weight reduction, life-of-aircraft durability, and optimal reliability



## Proven-performance backshells and accessories for rectangular connectors

Glenair offers more tested and tooled rectangular interconnect products—including the world's broadest range of rectangular backshells—than any other supplier in the industry. Simply put, from the smallest Micro-D subminiature to the largest ARINC 600, Glenair has an unparalleled range of solutions. Need something light and corrosion free? Glenair is the industry leader in tooled composite thermoplastic connector accessories.



**QWIKSNAP™**

Glenair has developed an extensive range of lightweight Split-Shell backshells that completely eliminate assembly hardware in rectangular backshells. The Glenair QwikSnap™ series utilizes innovative composite spring latch technology to reduce weight, FOD, and accelerate assembly.

- All forms of environmental, mechanical and EMC backshells
- Straight, 45° and 90° cable routing
- High-temp composite thermoplastic and metal shell versions
- To fit all current and legacy rectangular connectors
- Innovative split-shell versions for easy access to wire terminations
- Equally large range of protective covers and caps
- Thousands of part numbers in stock and ready for immediate shipment



## MICRO-D AND NANOMINIATURE BACKSHELLS AND CONNECTOR ACCESSORIES



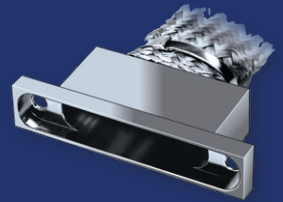
Composite Micro-D banding backshell



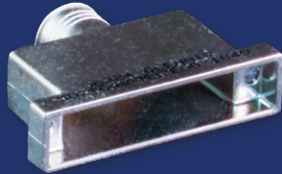
Plastic caps and covers for safe connector shipment and storage



Micro-D backshell with elliptical banding platform



Metal Micro-D banding backshell



Split-shell backshell

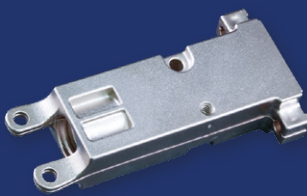


Environmental protective covers for Micro-D connectors



Conductive rubber covers

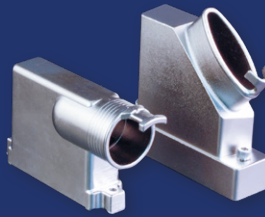
## M24308 D-SUB SOLUTIONS: HIGH PERFORMANCE, RUGGEDIZED D-SUBMINIATURE PRODUCTS



Split-shell D-subminiature composite backshell



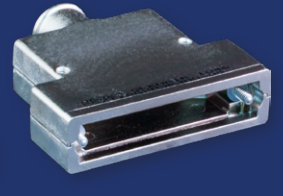
Split-shell M24308 composite backshell



Composite D-subminiature backshells



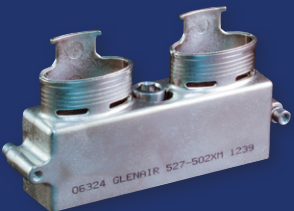
Flex-D Composite M24308 Backshell



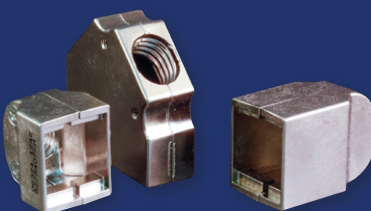
M24308 EMI/RFI backshell

## LARGER FORM FACTOR RECTANGULAR BACKSHELLS

EPX® and EPXB® are registered trademarks of Radial



Composite EMI/RFI banding backshell for EPXB® connectors



Composite EN4165 fiber optic/electrical backshells



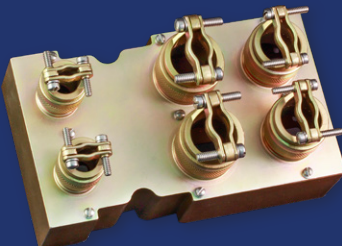
Backshells for EPX® series connectors



ARINC series backshells



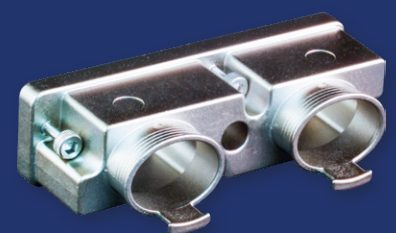
Composite airframe banding backshell



ARINC series backshell with individual wire bundle strain relief



MIL-C-81659



Special Quadrax connector backshell

360° SHIELD  
TERMINATION  
THE HANDS-  
DOWN INDUSTRY  
STANDARD

# Band-Master ATS®

EMI/RFI Shield Termination System



**Quick, easy, cost-effective and highly reliable termination of braided metallic shielding or fabric braid to connectors and backshells**

Band-Master ATS® is the advanced termination system for interconnect cable shielding. The unique low profile and smooth inside diameter of the one-piece type 304 austenitic stainless steel clamping band virtually eliminates RFI/EMI/EMP leakage paths. The lock maintains constant tension under extreme environmental conditions. Band-Master ATS® bands have passed severe shock, vibration and thermal cycle testing with negligible deterioration of shell conductivity and have been approved and added to the specifications for the world's largest aircraft manufacturers.

- Precision hand-held tools and termination bands—both from a single supplier
- Innovative Slim Standard and Nano bands reduce weight and improve safety (no buckle cuts)
- Clamp both small and large diameters easily and reliably

## BAND-MASTER ATS® ADVANCED TERMINATION SYSTEM



Easy-to-use manual tools with built-in calibration counter



High-volume pneumatic tool for bench use



Save time and tool maintenance costs with the Glenair band tool calibration system



# BAND-MASTER ATS® EMI/RFI Shield Termination System



The advanced termination system  
for interconnect cable shielding

## Band-Master ATS® Manual Tool Selection



### 601-100 Hand Tool for Standard Bands

The 601-100 Standard Band-Master ATS® Tool weighs 1.18 lbs., and is designed for standard .24" width clamping bands in a tension range from 100 to 180 lbs. Calibrate at 150 lbs. ± 5 lbs. for most shield terminations. Tool and band should never be lubricated.



### 601-109 Hand Tool for Slim Standard Bands

The 601-109 Slim Standard Band-Master ATS® Tool weighs 1.2 lbs., and is designed for slim standard .24" width clamping bands in a tension range from 50 to 100 lbs. Calibrate at 100 lbs. ± 5 lbs. for most shield terminations. Tool and band should never be lubricated.



### NEW 601-122 Hand Tool for Micro Slim Bands

The 601-122 Micro Slim Band-Master ATS® Tool weighs 1.2 lbs., and is designed for micro slim .125" width clamping bands in a tension range from 50 to 100 lbs. Calibrate at 82 lbs. ± 3 lbs. for most shield terminations. Tool and band should never be lubricated.  
*Consult factory for band weights and performance specifications.*



### 601-101 Hand Tool for Micro Bands

The 601-101 Micro Band-Master ATS® Tool weighs 1.18 lbs., and is designed for micro .120" width clamping bands in a tension range from 50 to 85 lbs. Calibrate at 80 lbs ± 5 lbs. for most shield terminations. Tool and band should never be lubricated.



### 601-108 Hand Tool for Nano Bands

The 601-108 Nano Band-Master ATS® Tool weighs 1.18 lbs., and is designed for nano .075" width clamping bands in a tension range from 20 to 50 lbs. Calibrate at 50 lbs. ± 3 lbs. for most shield terminations. Tool and band should never be lubricated.

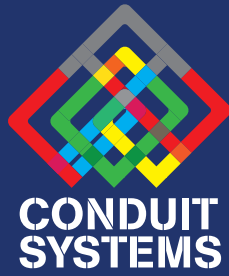


3 lengths and 3 widths of EMI braid termination bands plus new Slim Standard bands for size and weight savings—50% lighter and lower-profile than standard bands. Terminated "Slim" style bands have a tighter, smoother buckle with no sharp edge to injure assembly technicians. Plus, say goodbye to protective tape wrapping!

## Band-Master ATS® Band Selection

Bands	Length		Part Number		Fits Diameter	
	in.	mm.	Flat	Pre-Coiled	in.	mm.
Short Standard Band	9.0	228.6	<b>601-005</b>	<b>601-006</b>	1.0	25.4
Medium Standard Band	14.0	355.6	<b>601-040</b>	<b>601-041</b>	1.8	47.8
Long Standard Band	18.0	457.2	<b>601-049</b>	<b>601-050</b>	2.5	63.5
Short Micro Band	5.0	127.0	<b>601-024</b>	<b>601-025</b>	0.5	12.7
Medium Micro Band	8.0	203.2	<b>601-060</b>	<b>601-061</b>	.88	22.4
Long Micro Band	14.0	355.6	<b>601-064</b>	<b>601-065</b>	1.8	47.8
Short Nano Band	6.0	152.4	<b>601-500</b>	<b>601-501</b>	.60	15.2
Medium Nano Band	9.0	228.6	<b>601-504</b>	<b>601-505</b>	.94	23.9
Long Nano Band	14.0	355.6	<b>601-508</b>	<b>601-509</b>	1.8	47.8
Short Slim Standard Band	9.0	228.6	<b>601-570</b>	<b>601-571</b>	1.0	25.4
Medium Slim Standard Band	14.25	362.0	<b>601-572</b>	<b>601-573</b>	1.8	47.8
Short Micro Slim Band	8.125	206.4	<b>601-600</b>	<b>601-601</b>	.88	22.4
Medium Micro Slim Band	14.25	362.0	<b>601-602</b>	<b>601-603</b>	1.8	47.8

AEROSPACE - GRADE  
CONDUIT WIRE-  
PROTECTION  
ASSEMBLIES



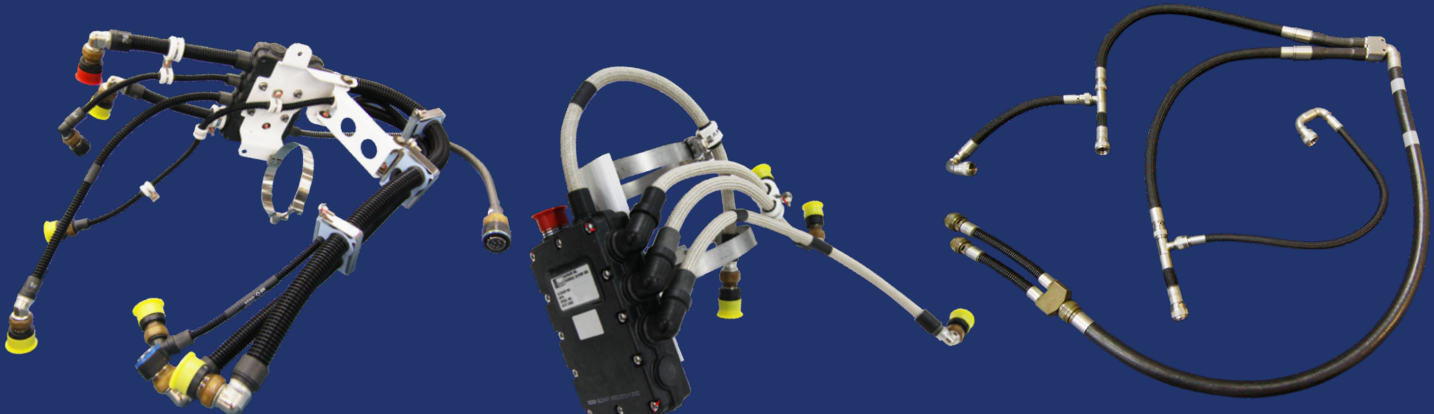
Conduit components and  
wired assemblies with proven  
aerospace performance



Ultra-flexible  
polymer-core point-  
to-point fiber optic  
conduit assembly

All of the metal-core conduit and polymer-core convoluted tubing systems we fabricate at Glenair may be wired and assembled at our factory with tamper-proof crimp ring or solder terminations according to customer requirements. Reduced size and weight factory terminated conduit assemblies offer the utmost in environmental ruggedness, reliability and durability. Certified factory assemblers and calibrated tooling guarantee reliable long-term performance. Glenair's expertise in wired conduit systems extends from simple point-to-point jumpers to complex multibranch assemblies as well as turnkey integrated systems and LRUs with flexible conduit interconnect cabling.

**TURNKEY FACTORY-TERMINATED CONDUIT ASSEMBLIES**



Complex multibranch aircraft electrical  
wire conduit assembly with high-  
temperature polymer-core conduit

Lightweight multibranch wire protection  
conduit assembly with high-temperature  
polymer-core convoluted tubing

Crush-resistant commercial aerospace  
metal-core conduit assembly

RUGGED

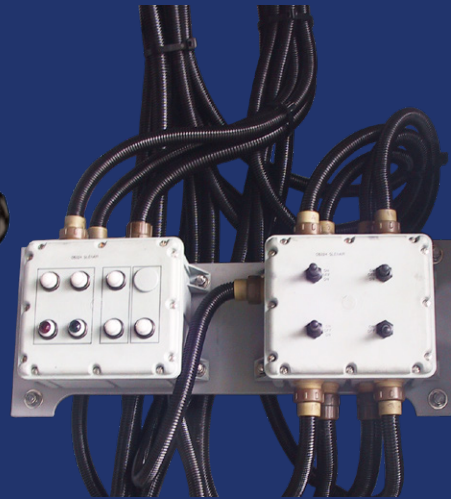
# Conduit Wire Protection Systems



Flexible, impact resistant alternatives to lighter-duty jacketed cable assemblies

## COMPLEX, MULTIBRANCH ASSEMBLIES WITH INNOVATIVE LIGHTWEIGHT POLYMER-CORE WIRE PROTECTION CONDUITS

Lightweight, halogen-free PEEK wire conduit assembly



Turnkey integrated box assembly and wired polymer-core interconnect system

PEEK, PFA, ETFE, Siltem polymer core and Glenair signature high-temperature polymer core conduit solutions and user-installable fittings



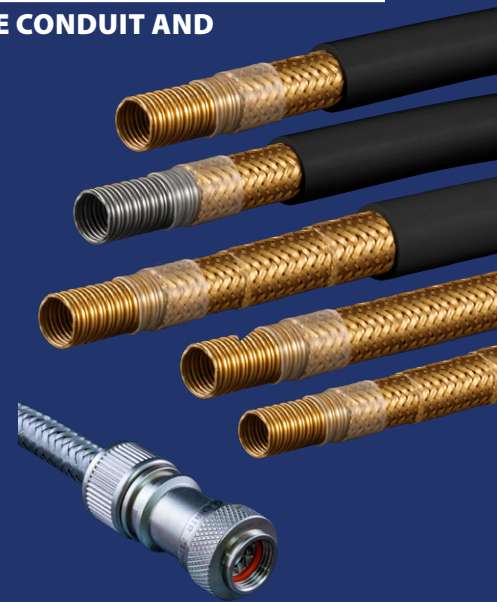
## COMPLEX, MULTIBRANCH ASSEMBLIES WITH HEAVY-DUTY METAL-CORE CONDUIT AND OVERBRAIDING WIRE PROTECTION MATERIALS



Turnkey wheel well impact-resistant metal-core conduit assembly



Metal-core conduit wire protection aircraft brake assembly



Brass, SST, or nickel-iron metal-core conduit material types with innovative microfilament and drawn filament braiding. Factory terminated or for use with user-installable fittings.



# MISSION-CRITICAL INTERCONNECT SOLUTIONS

## Glenair, Inc.

1211 Air Way • Glendale, California • 91201-2497

Telephone: 818-247-6000 • Fax: 818-500-9912 • sales@glenair.com

[www.glenair.com](http://www.glenair.com)

### Glenair East

20 Sterling Drive  
Wallingford, CT  
06492

Telephone:  
203-741-1115  
Facsimile:  
203-741-0053  
sales@glenair.com

### Glenair UK Ltd

40 Lower Oakham Way  
Oakham Business Park  
Mansfield, Notts  
NG18 5BY England

Telephone:  
+44-1623-638100  
Facsimile:  
+44-1623-638111  
sales@glenair.co.uk

### Glenair Microway Systems

7000 North Lawndale Avenue  
Lincolnwood, IL  
60712

Telephone:  
847-679-8833  
Facsimile:  
847-679-8849

### Glenair Nordic AB

Gustav III:s Boulevard 42  
SE-169 27 Solna  
Sweden

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