SPECIAL-PURPOSE AEROSPACE CONNECTORS AND CONTACTS (CONTINUED)

NEXT-GENERATION MICRO MINIATURE CONNECTORS

Series 806 Mil-Aero micro miniature
Series 791 and 792 Micro-Crimp rack and panel
Series 20 SuperTwin lightweight modular

HARSH ENVIRONMENTAL AEROSPACE CONNECTORS

SuperNine “better than QPL” MIL-DTL-38999 Series III
CODE RED lightweight hermetic
ThermalRex HT high-temperature connector
EMI filtered pressure transducers

SPECIAL-PURPOSE AEROSPACE CONNECTORS AND CONTACTS

PowerLoad power distribution connectors
GatLink Pro high-speed data uplink connector
El Ochito high-speed Ethernet and USB 3.0

ADVANCED-PERFORMANCE CONNECTOR ACCESSORIES AND WIRE MANAGEMENT SOLUTIONS

SuperFly Datalink
SpliceSaver time- and labor-saving wire splice replacement
Dummy Contact Sealing Plugs (DCSP)

Prosealed spring-action protective covers
Swing Arm and Swing Arm FLEX strain relief
AutoShrink cold-action tubing and boots
TurboFlex ultra-flexible power cables

ArmorLite microfilament EMI/RFI shielding
Lightweight, flexible ground straps and HSTs
MasterWrap wraparound shielding now available in Nomex®

Problem-solving circular and rectangular connector accessories
Band-Master ATS® advanced shield termination system
Turnkey, lightweight polymer- and metal-core conduit wire protection systems

© 2019 Glenair, Inc. • 1211 Air Way, Glendale, CA 91201 • 818-247-6000 • www.glenair.com • U.S. CAGE code 06324 • Commercial Aerospace Key Customer Briefing Book • Paris Air Show 2019
Series 806 offers significant size and weight savings while meeting key performance benchmarks for a broad range of applications such as commercial and military aerospace, robotics, transportation, and more. Designed for general use in harsh vibration, shock, and environmental settings—as well as high-altitude, unpressurized aircraft zones with aggressive voltage ratings and altitude immersion standards—the Series 806 Mil-Aero features numerous design innovations including durable mechanical insert retention, radial seals 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.

SAVE SIZE AND WEIGHT WITH SERIES 806 CONNECTORS

- Next-generation small form factor aerospace-grade circular connector
- Designed for harsh application environments such as aircraft, industrial robotics and more
- Upgraded environmental, electrical and mechanical performance
- Integrated anti-decoupling technology
- Higher density 20HD and 22HD contact arrangements
- Hermetic and filter versions
- +200°C temperature rating

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 1X10^-7 leak rate performance. Gold-plated copper contacts deliver outstanding low-resistance current carrying capacity.

Series 806 Mil-Aero Micro Miniature Circular Connectors for harsh mil-aero applications IAW MIL-DTL-38999

Next-generation small form factor aerospace-grade circular connector.

Series 806 MIL-AERO PLUG

- Coupling Nut Retainer Ring
- Stainless steel

- Coupling Nut
- Aluminum alloy

- Insert Retention Ring
- Stainless steel

- Wire Seal
- Fluorosilicone rubber

- Insulators
- Glass-filled rigid dielectric

- Contacts
- Gold-plated copper

- Plug Bars
- High strength alloy

SERIES 806 MIL-AERO RECEPTACLE

- Insert Retention Ring
- Stainless steel

- Wire Seal
- Fluorosilicone rubber

- Jam Nut
- Aluminum alloy

- Shell / Matting Interface
- Aluminum, modified triple-start

- Panel O-ring
- Fluorosilicone rubber

- Shell Body
- Aluminum alloy

AVAILABLE LIGHTWEIGHT ALUMINUM “CODE RED” HERMETICS

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SMALLER AND LIGHTER WITH EQUAL D38999 PERFORMANCE?

- High-Density Layouts
  - Twice as many contacts in a smaller package
  - “Top Hat” Insulator
  - High voltage rating
  - Footproof alignment
  - Triple Ripple Wire Seal
  - Reliable 75,000 ft. altitude immersion
The next-generation ultraminiature rectangular connector for demanding aerospace applications

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

Environmental
- EMI shielded
- Integrated EMI shielding and grounding
- Blind mating

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, weapons systems, communications gear, satellites, exoatmospheric vehicles, avionics, and instrumentation. Board mount versions feature straight and right angle terminals.

- High-speed Ethernet, USB 3.0, and 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
Glenair Signature Commercial Aerospace EWIS Technology

Lightweight Composite Modular Connectors

High-density drop-in replacements for legacy modular rectangular connectors save weight, space, and assembly time.

The Glenair Series 20 Super-Twin™ lightweight modular connector is a drop-in replacement for legacy cable and panel connectors that no longer meet packaging requirements and performance specifications—especially for ease of assembly, electromagnetic compatibility and size, weight and power optimization.

The Glenair Series 20 Super-Twin™ can accommodate a broad range of contact sizes and types from #23 to #8 signal, Quadrax, El Ochito®, power, and fiber. Modular inserts offer fast and flexible assembly and repair. Peripheral and grommet seals provide outstanding environmental protection. Keyed inserts and shells provide versatile polarization and protection against mis-mating. The innovative clamshell and banding porch design brings modern, state-of-the-art connector capabilities to modular cable and panel applications. The lightweight connector is used in cable as well as panel/avionics bay applications, and is designed to replace larger and heavier legacy connectors.

For reduced size and weight cable and panel applications
- Flexible assembly and repair
- Environmentally sealed
- Meets highest performance requirements for rack-and-panel modular systems
- Replaces heavier and larger legacy connectors
- Series 200: modular inserts, composite shell, integral strain relief/backshell
- Series 201: separate backshell, crimp or PC tail, typically composite shells.

Mates with Sr. 200 Modular inserts easily removed with available tool

For Reduced Size and Weight Applications

For Reduced Size and Weight Applications

For Reduced Size and Weight Applications

Series 20 SUPER-TWIN™
Lightweight composite connector for cable and rack-and-panel applications

SUPER-TWIN™ TECHNICAL OVERVIEW

**Weight Study, Typical Regional Jet Airframe**

<table>
<thead>
<tr>
<th>Connector Type</th>
<th>Weight/Plane</th>
<th>Mated Pair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legacy rectangular</td>
<td>22,103g</td>
<td>192g</td>
</tr>
<tr>
<td>Legacy composite</td>
<td>16,123g</td>
<td>141g</td>
</tr>
<tr>
<td>Series 20 Super-Twin™</td>
<td>7,661g</td>
<td>67g</td>
</tr>
</tbody>
</table>

Summary:
- Using Series 20 composite instead of legacy aluminum connector saves 14,442 grams (31.8 lbs) per plane.
- Using Series 20 composite instead of legacy composite connector saves 8,482 grams (18.6 lbs) per plane.

**SUPER-TWIN™ SIZE 2 CONTACT ARRANGEMENTS**

**SUPER-TWIN™ SIZE 3 CONTACT ARRANGEMENTS**

**ATTACHABLE BACKSHELL**

**INTEGRAL OR ATTACHABLE BACKSHELL**

**Easily Removed Insert and Shell**

**Modular Connectors**

**Modular Inserts**

**Modular Inserts for Easy Removal**

**Modular Inserts for Secure Connector-to-Connector Mating**

**By Glenair, Inc. • 1211 Air Way, Glendale, CA 91201 • 818-247-6000 • www.glenair.com • U.S. CAGE code 06324 • Glenair Signature Commercial Aerospace EWIS Technology**

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Better than QPL? SuperNine® is the interconnect industry’s most complete and advanced D38999 Series III-type connector family. From IP-68 rated environmental-class connectors with improved durability and ease-of-use, to EMI/EMP filter connectors with innovative flange and PC tail termination configurations, SuperNine® offers military and commercial aerospace customers that have standardized on Series III technology the opportunity to improve interconnect system performance and resolve a wide range of persistent electrical, environmental, and mechanical performance problems —all with catalog (COTS) connector solutions backed by Glenair’s high-availability business model.

SuperNine® offers improved durability, sealing, cost-of-ownership, ease of shield termination, a broader range of PC tail configurations, environmental and hermetic bulkhead feed-throughs, connector savers, off-the-shelf EMI/EMP filter connectors and more—all supported with Glenair’s well-established reputation for service, support, and fast turnaround.

Now available: the interconnect industry’s most advanced and comprehensive MIL-DTL-38999 Series III connector series.
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 JESD22-32 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
- 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

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.

APPLICATION NOTES:

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. Cryogenetics: 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.

Hermatically-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 hermatics 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, long-life-of-system 1X10^-7 max leak-rate hermetic sealing. Special non-magnetic (zero residual magnetism) versions are also available, consult factory.

- 1X10^-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°C to +200°C
- Up to +50% weight savings
- Improved current carrying capacity and electrical resistance compared to Kovar/Inconel solutions

CODE RED hermetic encapsulant sealing underwent a grueling qualification testing including:

- Condition A -65°C to +200°C while maintaining hermeticity followed by 1000 hours of thermal aging at 200°C
- Insert and contact retention
- Hermetic seal at 30 psi

For detailed testing and validation information, refer to the full technical data sheet available from Glenair.

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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 300°C. The ThermaRex product family includes both connectors, cables, and wire protection conduit systems.

**ThermaRex HT (High Temperature) Connectors**
- Compatible with standard high-temperature wire and cable
- 260°C continuous operating temperature
- Drop-in insert solution for existing connectors

**ThermaRex UHT (Ultra High Temperature) Connectors**
- Compatible with Mineral Insulated cable
- 300° - 600°C continuous operating temperature

**THERMAREX TEMPERATURE-TOLERANT CONNECTOR MATERIALS**
- High-temp alloy contacts, clips, and EMI rings
- High-temperature tolerant ceramic insulators
- Advanced temperature-tolerant polymer seals

**300°C THERMAREX HT CONNECTOR**
- Service rating up to 300°C
- Vibration-resistant threaded coupling
- High-temperature ceramic insert and silicone seals
- Stainless steel shell and retention ring
- IAW aerospace engine and other high temperature application environments

**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
- IAW nuclear and other extreme temperature application environments

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

**300°C THERMAREX METAL-CORE CONDUIT**
- Flexible passivated stainless steel core conduit
- High-temperature-tolerant ThermaRex jacket
- .127” to .250” outer diameter sizes
- 300°C continuous service

**300°C THERMAREX POLYMER-CORE CONDUIT**
- Service rating up to 300°C
- Vibration-resistant threaded coupling
- 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 SHEATH**
- 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 POLYMER-CORE CONDUIT**
- Service rating up to 300°C
- Vibration-resistant threaded coupling
- 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
Glenair is the worldwide leader in the design and manufacture of ceramic planar-array filter connectors for the aerospace industry. Glenair pressure sensor transducers integrate our comprehensive in-house filter connector capability with thin film sensor technology for use in fuel systems, hydraulic systems, engine monitors, environmental systems, and other inline applications where accurate and reliable measurement of fluid pressure is a mission-critical requirement.

As a manufacturer of a broad range of military aerospace connectors—from our SuperNine® MIL-DTL-38999 type series to our micro miniature Mighty Mouse series—Glenair is uniquely positioned to supply both standard and lighter-weight, reduced form-factor connectorized transducers for the military and aerospace industries. Our complete in-house capability in connectors as well as thin film transducer technology enables Glenair to offer exceptionally fast turnaround on both made-to-order as well as standard catalog pressure transducers.

Glenair also offers transducers for the oil field industry including specialized devices for use in seismic exploration, wellhead pressure sensing and mud pulse telemetry. These intrinsically safe geophysical industry pressure sensors may be specified with a broad range of filtered interconnect types from MIL-DTL-5015, MIL-DTL-26482 and so on.

- Sealed, welded construction thin film packaging
- Stainless steel diaphragm suitable for all applications
- Extended operating temperature up to 150°C
- High reliability and accuracy ±1% F.S.
- Integral filter elements for EMI protection
- Ultra small form-factor—up to 20% shorter overall length compared to standard solutions
- Qualification per DO-160 pending

Glenair pressure transducers have been independently tested and certified per Glenair Qualification Test Plan QTP #367. Testing documentation available upon request.

<table>
<thead>
<tr>
<th>Test</th>
<th>Per Standard</th>
<th>Result</th>
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<tbody>
<tr>
<td>Workmanship</td>
<td></td>
<td>PASS</td>
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<tr>
<td>Temperature and Altitude</td>
<td>DO-160G, Section 4, Category E2, High Temp = 150 deg C</td>
<td>PASS</td>
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<tr>
<td>Temperature Variation</td>
<td>DO-160G, Section 7, Category E</td>
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<tr>
<td>Operation Shocks and Crash Safety</td>
<td>DO-160G, Section 7, Category E, Aircraft Type S, Test Type F</td>
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<tr>
<td>Vibration</td>
<td>DO-160G, Section 6, Category R</td>
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</tr>
<tr>
<td>Humidity</td>
<td>DO-160G, Section 6, Category B</td>
<td>PASS</td>
</tr>
</tbody>
</table>

Baseline Functionality Testing: Conducted before and after every major test. PASS

Dramatic size and weight reduction in pressure transducers.

1. Typical inline transducer for general-duty industrial applications
2. Legacy MIL-DTL-38999 form factor transducer
3. Innovative reduced form-factor transducer with Glenair EMI/RFI SuperNine® filter connector
4. Series 80 Mighty Mouse locking push-pull transducer with additional size/weight reduction.
PowerLoad™ is a high-vibration, high-temperature resistant connector series designed for high altitude aircraft power distribution applications. An innovative combination of low-resistance contacts and a one-piece composite thermoplastic insulator with aggressive contact cavity isolation results in a reliable high-current solution that optimizes wire-to-contact termination and weight reduction in power distribution cables. Designed for use in integrated drive generator and backup generator applications, PowerLoad is available in three- and six-contact layouts for both multiphase and high-frequency power systems. Removable wire-sealing grommet and wire separator allow for easy rear release of contacts and improved sealing of tape-wrapped wire.

PowerLoad™ 28-6 layout connector is rated at 500 volt at 50,000 ft. with a current of 45 amps per contact with 3 phase power in parallel at high frequency.

Available configurations include a high-vibration self-locking coupling nut plug, panel-mount receptacle with stub-ACME mating threads, and bulkhead feed-thru for firewall applications.

Aluminium class connectors are rated to 200°C operating temperature; passivated stainless steel designs rated to 230°C.

<table>
<thead>
<tr>
<th>Aviation Zone 4 Performance Requirements</th>
<th>Environmental Stress Factors</th>
<th>Applicable RTCA/DO-160 Requirements</th>
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</thead>
<tbody>
<tr>
<td>Vibration</td>
<td>DO-160 Category E and F1</td>
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<tr>
<td>Shock</td>
<td>DO-160 Category D, Test Procedure 1</td>
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<tr>
<td>Ground Survival Temperature</td>
<td>-65° to 200°C, DO-160 Category D3</td>
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<td>Pressure Differential</td>
<td>Sea level to 50kft, DO-160 Category D3</td>
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<tr>
<td>Operating Temperature</td>
<td>-55° to 200°C, DO-160 Category D9</td>
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<tr>
<td>Moisture</td>
<td>Exposure to humidity and condensation, DO-160 Category B</td>
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</table>
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.

GATELINK PRO SPECIFICATIONS

- Voltage rating: 500 VAC
- Current rating: 5 amps
- Contact resistance: 20 milliohms maximum
- Plug-to-receptacle ground resistance: <1 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
- Wire vibration: MIL-STD-810 Method 206.1-7 condition IV, 20g peak
- Random vibration: MIL-STD-810 Method 206.1-7 condition V letter H, 29g rms
- Shock: MIL-STD-810 Method 206.1-7 condition D, 300g peak
- EMI shielding effectiveness: 40 dB minimum to 10 GHz

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 ruggerized 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.

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

GateLink Pro™ connectors are 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 ruggerized 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

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

GateLink Pro™ connectors are 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 ruggerized 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
El Ochito®: The Ultimate Shielded High-Speed Data Contact
Now available for SuperSpeed USB 3.0 and HDMI

High-speed octaxial contacts for Ethernet, USB 3.0 and other multi-gigabit protocols

- 10Gbps, 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
- 50% cable / contact reduction compared to Quadrax

El Ochito® White
10G Ethernet
1000BASE-T
10GBASE-T
10Gbps / 100 Ohms

El Ochito® Blue
SuperSpeed USB 3.0
Aerospace-grade 5Gbps / 90 Ohms

El Ochito® Red
HDMI
DisplayPort
5Gbps / 100 Ohms
HIGH SPEED, HARSH ENVIRONMENT SUPERFLY® DATALINK CONNECTORS — OPTIMIZED FOR 10Gb Ethernet and SuperSpeed USB protocols — save significant size and weight compared to Quadax. Suitable for aircraft avionics, weapons systems, satellites, radars, communications equipment and other aerospace/defense gear, Octaxial SuperFly® Datalink connectors bring superior EMC shielding, environmental protection, and signal integrity to mission-critical mil-aero applications.

- Ultra-small size
- Shielded Octaxial contacts
- Up to 5 Gbps
- 10Gb Ethernet and SuperSpeed USB
- Environmentally protected
- Aerospace-grade performance

Panel mount SuperFly Datalink receptacles feature straight or right angle printed circuit terminals. Watertight even when unmated, SuperFly Datalink receptacles are epoxy-sealed and are compatible with conformal coatings.

Push-pull SuperFly Datalink receptacle connectors feature two canted coil springs for secure mating and excellent EMI protection. A fluorosilicone O-ring provides watertight sealing when mated.

Cable connectors feature gold-plated crimp contacts, precision insulators, integral backshell, sealing grommet and machined shells. Cable connectors are available as unassembled kits or ready-to-use factory-terminated cordsets.
**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 Spiralock™ 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.

### 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
<table>
<thead>
<tr>
<th>Component</th>
<th>Weight (grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receptacle connector</td>
<td>1.6 grams including contacts and seals</td>
</tr>
<tr>
<td>Plug connector</td>
<td>1.66 grams including contacts and seals</td>
</tr>
<tr>
<td>Total connector mass</td>
<td>5.66 grams (all contact locations installed)</td>
</tr>
<tr>
<td><strong>Accessories:</strong> Add the variable mass of two or three nano bands trimmed to length of grooves in the split sleeve</td>
<td></td>
</tr>
</tbody>
</table>

---

**SPECIAL PURPOSE AEROSPACE CONNECTORS AND CONTACTS**

Crimp wire termination solution saves time and labor over manual DO150 splicing

Glenair SpliceSaver™ reduces manual wire splice and terminal block operations

**TIME SAVING · LABOR SAVING · WEIGHT SAVING**

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

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© 2019 Glenair, Inc • 1211 Air Way, Glendale, CA 91201 • 818-247-6000 • www.glenair.com • U.S. CAGE code 06324 • Glenair Signature Commercial Aerospace EWIS Technology
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.

WEIGHT / COST-SAVING Dummy Contact Sealing Plugs (DCSP) for reliable sealing of unused contact cavities

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).
High-performance military and commercial interconnect 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 mil-aero 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
Glenair’s composite Swing-Arm® strain relief backshell is a lightweight and corrosion-free cable clamp with cable shield termination options for a wide range of EWIS applications. This innovative backshell has become the standard shield termination device for weight reduction in military and commercial aircraft applications. Made from temperature-tolerant composite thermoplastic, rugged Swing-Arm® backshells 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 and Glenair Series 806 Mil-Aero connectors.

**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 3-in-1 lightweight composite or stainless steel strain-relief and EMI/RFI shield termination backshell

**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**

- **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 Type C

Swing-Arm Type B

Swing-Arm Type A

**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

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

Stainless Steel Swing-Arm versions ideally suited for extreme temperature range applications

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.

**Swing-Arm VERSATILITY: FROM SIMPLE CABLE STRAIN RELIEF TO EMI/RFI SHIELD TERMINATION**

- **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 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**
**Series 77**

**Cold-Action Shrink Boots and Tubing**

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

**Autoshrink D UV-Resistant / LSZH Shrink Boots and Tubing**

Autoshrink D is a high-performance elastomeric material (Glenair Duralectric™ 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 Duralectric™F 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 Subsea 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

**Autoshrink T High-Temperature-Tolerant 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
TurboFlex® power distribution cables are constructed from highly flexible conductors and high-performance insulation to produce cables ideally suited for applications where flexibility, durability, and weight reduction are required. Amazingly durable and flexible—especially in cold weather—the 16 AWG to 450 MCM TurboFlex cable features high strand count rope lay inner conductors made with tin-, nickel- and silver-plated copper. TurboFlex is jacketed with Glenair’s unique Duralectric™ compound that provides outstanding flexibility and resistance to environmental and chemical exposure. Duralectric is also low smoke, zero halogen.

TurboFlex® power distribution cables are constructed from highly flexible conductors and durable jacket delivers both. Duralectric™ is the high-performance and rugged power cable solution

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

### TurboFlex® Cable Application Example

Ultra flexible rope lay construction TurboFlex bend radius is 3X the outer diameter

### Voltage Ratings

<table>
<thead>
<tr>
<th>P/N</th>
<th>Jacket Wall Thickness</th>
<th>AC Voltage Rating, RMS</th>
<th>DC Voltage Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>961-004</td>
<td>.093”</td>
<td>2000</td>
<td>2000</td>
</tr>
<tr>
<td>961-005</td>
<td>.062”</td>
<td>3000</td>
<td>4000</td>
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<tr>
<td>961-002</td>
<td>.032”</td>
<td>3500</td>
<td>4900</td>
</tr>
<tr>
<td>961-001</td>
<td>.015”</td>
<td>4500</td>
<td>6200</td>
</tr>
</tbody>
</table>

Standard catalog product is available with either Tin/Copper, Silver/Copper, or Nickel/Copper conductors, with standard Duralectric™ jacketing in four wall thicknesses. Consult factory for special formula Duralectric™ K, F, and C configurations.

### Temperature Rating

-40°C to 260°C

### Halogen free per IEC 6004-1

### Accelerated weathering and simulated solar radiation at ground level per IEC 60083-2-1 (66 days exposure, suitable for greater than 50 years of service in direct sunlight)

### Flame resistant per IEC 60694-4-1

### 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 Fpart I (A) (1) (i), 60 second vertical burn test

### Limiting oxygen index of 45 per IEC 60332-1-2 and 1.9

### Smoke density class F1 per NF F 16-101 IAW DIN EN 60332-1-2:2011

### Smoke density class F1 per NF F 16-101 IAW DIN EN 60332-1-2:2011

### Flame resistant per IEC 60614-1

### Flame resistant per IEC 60614-1

### Resistance to fluids per MIL-STD-810F, method 504

### Low outgassing per ASTM D3417, after post-curing, TML 0.02%, CVCM 0.06%, VWH 0.02%

### Low smoke toxicity per NES 713, tested value of 1.9

### Fungus rating of 0 per MIL-STD-812 method 5.9.

### Does not support fungal growth ASTM D224, die B tear strength, 150 pounds per inch minimum on jacket material

### Low outgassing per ASTM D3417, after post-curing, TML 0.02%, CVCM 0.06%, VWH 0.02%

### Resistant to fluids per MIL-STD-810F, method 504

### PTFE per MIL-DTL-83133 (NATO type 34)

### MIL-H-5606 hydraulic fluid

### MIL-PRF-83100 lubricating oil

### MIL-C-85750 cleaner

### TT-I-735 (aerosol) alcohol

### AMS 1452 potassium acetate deicing/anti-icing fluid

### MIL-C-87252 coolant

### Avexor AFF fire extinguishing foam

### Environmental Performance

- Temperature rating: -60°C to 260°C
- Halogen free per IEC 6004-1
- Accelerated weathering and simulated solar radiation at ground level per IEC 60083-2-1 (66 days exposure, suitable for greater than 50 years of service in direct sunlight)
- Flame resistant per IEC 60694-4-1
- 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 Fpart I (A) (1) (i), 60 second vertical burn test
- Limiting oxygen index of 45 per ISO 5815:1999
- Low smoke per NES 711, smoke density of 1.3
- Smoke density class F1 per NF F 16-101 IAW DIN EN 60332-1-2:2011
- Low smoke毒性 per NES 713, tested value of 1.9
- Fungus rating of 0 per MIL-STD-812 method 5.9.
- Does not support fungal growth ASTM D224, die B tear strength, 150 pounds per inch minimum on jacket material
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- MIL-PRF-83100 lubricating oil
- MIL-C-85750 cleaner
- TT-I-735 (aerosol) alcohol
- AMS 1452 potassium acetate deicing/anti-icing fluid
- MIL-C-87252 coolant
- Avexor AFF fire extinguishing foam

### Jacketing Options

- Weatherproof, halogen free, flame resistant, functional to 260°C
- Abrasion Resistance: Good
- Wear Resistance: Good
- Flame Resistance: Excellent
- Sunlight Resistance: Excellent

### Applications

- Available in a broad range of colors, 16 AWG to 450 MCM
- Standard catalog product is available with either Tin/Copper, Silver/Copper, or Nickel/Copper conductors, with standard Duralectric™ jacketing in four wall thicknesses. Consult factory for special formula Duralectric™ K, F, and C configurations.

### Performance

- Amazingly durable and flexible—especially in cold weather—The 16 AWG to 450 MCM TurboFlex cable features high strand count rope lay inner conductors made with tin-, nickel- and silver-plated copper. TurboFlex is jacketed with Glenair’s unique Duralectric™ compound that provides outstanding flexibility and resistance to environmental and chemical exposure. Duralectric is also low smoke, zero halogen.

- Long life and performance are critical in power distribution applications. TurboFlex, with its flexible conductors and durable jacket delivers both.

- Available in a broad range of colors including safety orange

- Many sizes In-stock and available for immediate, same-day shipment. No minimums!
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, turnkey backshell shield sock assemblies, factory overbraiding, ground straps, HSTs, and more. ArmorLite™ offers superior temperature tolerance compared to other lightweight tubular braided shielding including microfilament composite technologies. New ArmorLite™ CF offers advanced corrosion protection compared to all other shielding types with comparable electrical performance due to its innovative combination of conductive copper filament and stainless steel cladding.

Ultra-lightweight EMI/RFI braided sleeving for high-temperature applications -80°C to +260°C

Microfilament stainless steel: 70% lighter than NiCu A-A-59569/QQB575

Outstanding EMI/RFI shielding and conductivity

ArmorLite™ CF with enhanced corrosion protection now available

Superior flexibility and “windowing” resistance: 90 to 95% optical coverage 70,000 psi (min.) tensile strength

Best performing metallic braid during lightning tests (IAW ANSI/EIA-364-75-1997 Waveform 5B)

New enhanced corrosion resistance ArmorLite™ CF

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

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 ignite ground fueling equipment or fry avionics gear. Power generation systems (engines, alternators, starters, etc.) can also produce transient electrical current that can damage adjacent electronic 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 exactingly designed with appropriate conductive and dissipative materials for each application.

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

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

Lightweight, general, and heavy-duty 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

- 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

- 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

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

**MasterWrap™**

**NEW MASTERWRAP™ WITH NOMEX®**

MasterWrap™ Nomex® flexible, lightweight wraparound abrasion / thermal protection for spot mechanical coverage and repair of wire harnesses

### 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
- 100°F to +240°F temperature range
- 90,000 PSI yield tensile strength
- Excellent chemical resistance; will not melt
- Will not block EMI/RFI shielding and 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.

### MasterWrap™ (Nomex®): Dimensional Information - How to Order

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>Basic No.</th>
<th>Dash No.</th>
<th>Color option</th>
</tr>
</thead>
<tbody>
<tr>
<td>103-095</td>
<td>MasterWrap™ (Nomex®) material</td>
<td>See Table I</td>
<td>W = White, R = Red, GN = Green, GY = Gray, TN = Desert</td>
</tr>
</tbody>
</table>

#### Table I

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<td>0.200</td>
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<td>0.750</td>
<td>12.2</td>
<td>5.0</td>
<td>Yellow</td>
<td>50–200</td>
</tr>
<tr>
<td>024</td>
<td>0.750</td>
<td>0.900</td>
<td>15.2</td>
<td>6.0</td>
<td>Green</td>
<td>50–100</td>
</tr>
<tr>
<td>032</td>
<td>1.000</td>
<td>1.250</td>
<td>20.3</td>
<td>7.3</td>
<td>Blue</td>
<td>50–100</td>
</tr>
<tr>
<td>034</td>
<td>1.250</td>
<td>1.500</td>
<td>30.1</td>
<td>10.0</td>
<td>Violet</td>
<td>50–75</td>
</tr>
<tr>
<td>040</td>
<td>1.500</td>
<td>1.800</td>
<td>41.2</td>
<td>11.0</td>
<td>Grey</td>
<td>50–60</td>
</tr>
<tr>
<td>044</td>
<td>1.800</td>
<td>2.000</td>
<td>53.1</td>
<td>12.2</td>
<td>White</td>
<td>50–50</td>
</tr>
</tbody>
</table>
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 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 new CompAction connector accessory design (shown left on a Series 806 Mighty Mouse). The splined interface and unique compression grommet deliver guaranteed environmental sealing, even at high altitude, on difficult-to-seal asymmetrical twisted-pair wiring.

NEW INNOVATIONS IN Connector 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
- Connector coupling ring safety sleeve for F/O applications
- Piggyback boot Band-In-a-Can
- Drop-in EMI/RFI shield termination configurations

PRESSURE BOUNDARY, FIREWALL, AND SPLIT-SHELL 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 2019

- MIL-DTL-38999 SAV-CON® Connector saver go-between with Micro-D diagnostic test port
- Environmental panel cut-out sealing plug assembly
- Heat shrink boot / wire routing clamp assembly
- Dummy stowage shorting plugs and receptacles
- Self-locking protective covers
- Advanced “Dogbone” terminal blocks and hoists

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

© 2019 Glenair, Inc • 1211 Air Way, Glendale, CA 91201 • 818-247-6000 • www.glenair.com • U.S. CAGE code 06324 • Glenair Signature Commercial Aerospace EWIS Technology
Innovative Rectangular Backshells and Connector Accessories

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.

- 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

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.

METAL AND COMPOSITE
Rectangular backshells and accessories

The world’s largest tooled selection

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

- Composite EMI/RFI banding backshell for EPX® 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 Quadraex connector backshell

EFX® and EFX® are registered trademarks of radiall
**Band-Master ATS®**

**EMI/RFI Shield Termination System**

The advanced termination system for interconnect cable shielding.

- **Quick, easy, cost-effective and highly reliable**
- **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 build-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® Manual Tool Selection**

<table>
<thead>
<tr>
<th>Tool Type</th>
<th>Part Number</th>
<th>Fits Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>601-100</td>
<td>601-005</td>
<td>1.8 - 25.4</td>
</tr>
<tr>
<td>601-060</td>
<td>601-061</td>
<td>0.5 - 12.7</td>
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<tr>
<td>601-500</td>
<td>601-501</td>
<td>0.60 - 15.2</td>
</tr>
<tr>
<td>601-040</td>
<td>601-041</td>
<td>0.88 - 22.4</td>
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<tr>
<td>601-024</td>
<td>601-025</td>
<td>1.0 - 25.4</td>
</tr>
<tr>
<td>601-068</td>
<td>601-069</td>
<td>1.0 - 25.4</td>
</tr>
</tbody>
</table>

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

The 601-122 Micro Slim Band-Master® 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.

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

The 601-109 Slim Standard Band-Master® 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.

**601-101 Hand Tool for Micro Bands**

The 601-101 Micro Band-Master® Tool weighs 1.18 lbs., and is designed for micro .060" 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.

**601-108 Hand Tool for Nano Bands**

The 601-108 Nano Band-Master® Tool weighs 1.18 lbs., and is designed for nano .050" 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.

**Band-Master ATS® Band Selection**

<table>
<thead>
<tr>
<th>Length Part Number</th>
<th>Fits Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Standard Band</td>
<td>601-005</td>
</tr>
<tr>
<td>Medium Standard Band</td>
<td>601-060</td>
</tr>
<tr>
<td>Long Standard Band</td>
<td>601-500</td>
</tr>
<tr>
<td>Short Micro Band</td>
<td>601-068</td>
</tr>
<tr>
<td>Medium Micro Band</td>
<td>601-040</td>
</tr>
<tr>
<td>Long Micro Band</td>
<td>601-024</td>
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<tr>
<td>Short Nano Band</td>
<td>601-069</td>
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<tr>
<td>Medium Nano Band</td>
<td>601-025</td>
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<td>Long Nano Band</td>
<td>601-041</td>
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<tr>
<td>Short Slim Standard Band</td>
<td>601-042</td>
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<tr>
<td>Medium Slim Standard Band</td>
<td>601-043</td>
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<tr>
<td>Short Slim Micro Band</td>
<td>601-044</td>
</tr>
<tr>
<td>Medium Slim Micro Band</td>
<td>601-045</td>
</tr>
</tbody>
</table>

**Band-Master ATS® Tool Specifications**

- For standard .24" 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.
- For slim standard .24" 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.
- For micro slim .125" 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.
- For micro .060" 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.
- For nano .050" 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 cable-style bands have a tighter, smoother buckle with no sharp edge to injure assembly technicians. Plus, say goodbye to protective tape wrapping!**

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**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

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

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.

**TURNKEY FACTORY-TERMINATED CONDUIT ASSEMBLIES**

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 LRU's with flexible conduit interconnect cabling.

**TURNKEY CONDUIT ASSEMBLIES**

Conduit components and wired assemblies with innovative polymer and metal-core wire protection materials
# Glenair, Inc.

1211 Air Way • Glendale, California • 91201-2497
Telephone: 818-247-6000 • Fax: 818-500-9912 • sales@glenair.com
www.glenair.com

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Glenair GmbH</td>
<td>Telephone: 06172 / 68 16 0</td>
<td>Facsimile: 06172 / 68 16 90</td>
</tr>
<tr>
<td>Glenair Korea</td>
<td>Telephone: +82-31-8068-1090</td>
<td>Facsimile: +82-31-8068-1092</td>
</tr>
</tbody>
</table>

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