DEFENSE

MISSION-CRITICAL
INTERCONNECT SOLUTIONS

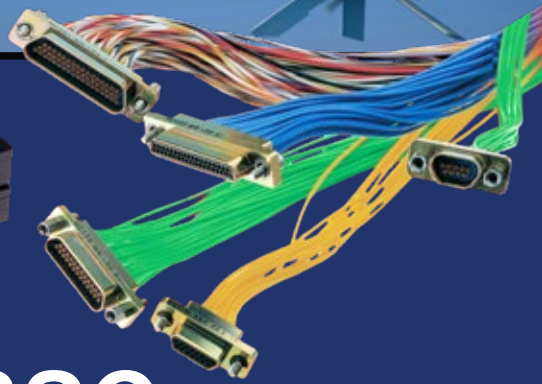
Glenair®











Glenair SIGNATURE SERIES

Mil-Aero / Defense Interconnect Solutions

For Land, Sea, Air, and Space Applications

DECEMBER 2024

TURNKEY
MIL-AERO/DEFENSE
WIRE AND CABLE
INTERCONNECT
ASSEMBLIES

Signature Wire & Cable

Military / Aerospace-Grade Wire Harnesses and Complex Multibranch Cable Assemblies Built with Glenair Signature Wire and Multiconductor Cable

MIL-STAR
HIGH-PERFORMANCE HOOKUP WIRE AND CABLE

AEROSPACE-GRADE
SuperFlex™
PCB/FLEX CIRCUIT ASSEMBLIES

SpeedLine™
High-Speed Protocol Cables

BLUMARK RF™
COAX CABLES

FIBER KING
FIBER OPTIC CABLES

turboflex®
THE ULTRA FLEXIBLE RUGGED POWER CABLE

Glenair is laser-focused on supplying our military, aerospace, and defense customers with harsh-environment interconnect assemblies built from Glenair MIL-STAR™, SuperFlex™, BluMark RF™, SpeedLine™, TurboFlex®, and FiberKing™ wire and cable.

Supplied in bulk—any length, with no minimum order quantity—or in fully-integrated and connectorized assemblies, Glenair wire and cable brands are optimized for the highest performance in mil-aero / defense applications.

FAST DELIVERY AND QUALITY SINCE 1956

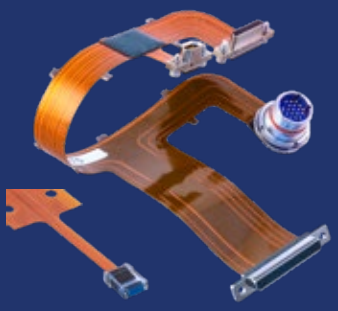
- **3.5 million square feet factory capacity**
- **Mission-critical sea, air, land, and space interconnect product focus**
- **Vertically-integrated, all key processes controlled in-house**
- **Massive inventory of material, component parts, and finished goods**
- **Glenair worldwide QMS: AS9100D SAE / ISO 9001 certified, and customer-audited**

MIL-AERO / DEFENSE GRADE

Mission-critical wire harnesses and interconnect assemblies: built in-house with 100% Glenair wire, cable, contacts, and connectors

HIGH-SPEED, HIGH-FREQUENCY, HIGH-POWER · ELECTRICAL, OPTICAL, RF, AND FLEX

MIL-STAR™ "better-than-QPL" wire interconnect assemblies



SuperFlex™ integrated PCB flex, rigid flex, and optical flex assemblies

SpeedLine™ high-speed protocol datalink assemblies

BluMark RF™ high-frequency, low-loss coax assemblies

FiberKing™ harsh-environment and inside-the-box optical assemblies

TurboFlex® high power, high flexibility cable assemblies

SPECIALTY ENVIRONMENTAL ASSEMBLIES BUILT WITH GLENAIR SIGNATURE WIRE AND CABLE

In addition to conventional land, sea, air, and space interconnect assemblies with overbraiding and overmolding, Glenair is able to supply all of our signature wire and cable brands in specialty harness designs optimized for ultra-harsh environments including high-pressure subsea, high-heat and cryogenics, and space.

High-pressure subsea (Mil-qualified and commercial Oil & Gas industry) 10K PSI electrical and optical cable assemblies

Ultra High Temperature and Cryogenic (ThermaRex™) wired cable assemblies

Space-grade EMI shielded and open-wire bundle assemblies built in ISO 8 and ISO 6 clean rooms

MIL•STAR™

GS22759 AEROSPACE-GRADE WIRE

MIL-STAR High-Performance Hookup Wire and Cable Glenair has branded its GS22759 high-temperature aerospace-grade wire, and GS27500 multi-conductor cables for aerospace applications, under the MIL-STAR brand. These discrete wires and cables are built in accordance with SAE specifications with a "GS" leadoff in place of both the base specification and the part number for individual slash sheets.

MIL-STAR is a high-performance, better-than-QPL discrete wire and cable specification unique to Glenair. The brand covers both protected (inside-the-box) hookup wire, high-durability open-loom wiring, and multi-conductor shielded and jacketed M27500-type cable.

M22759 single-ended hook-up wires are the industry standard for inside-the-box mil-aero environments and are optimized for size, weight, high-temperature resistance, and low flame propagation. The hundred-plus variants of AS22759 are organized by conductor material and plating, insulation type, wire gage, and single- or dual-wall.

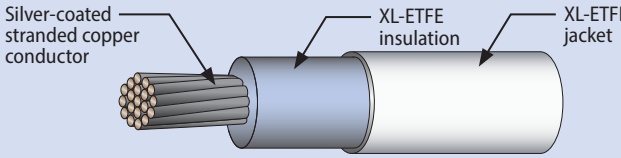
MIL-STAR™ 22759 OPEN WIRE LOOM AND (PROTECTED) HOOKUP WIRES

AS22759 high-temp single-conductor 600V military and aerospace-grade wire, standard and crosslinked, lightweight single-wall and rugged dual-wall configurations.

CROSSLINKED (XL) ETFE SAMPLES

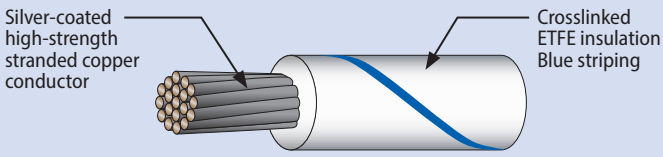
GS22759-43-22-9

- Silver-coated copper core, std. weight dual wall XL-ETFE insulation/jacket. High-temp, radiation- and fire-resistant.



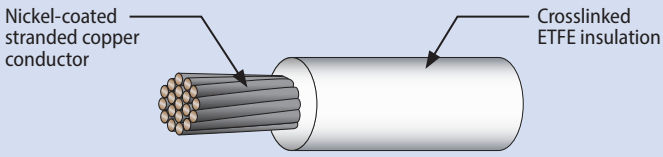
GS22759-33-24-96

- Silver-coated copper core with XL-ETFE insulation (blue striping). High-temp, low flammability.



GS22759-45-12-9 (Light weight)

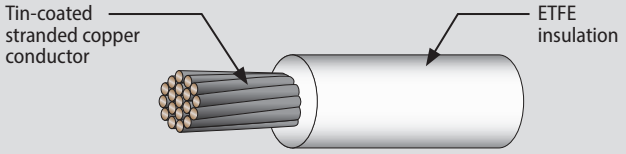
- Nickel coated copper core with XL-ETFE insulation. High-temp (200°C), fire and chemical resistant.



CONVENTIONAL FLUOROPOLYMER SAMPLES

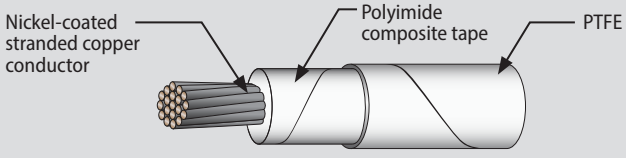
GS22759-16-8-9

- Tin-coated copper core with extruded ETFE insulation. Radiation-resistant and temperature tolerant to 150°C.



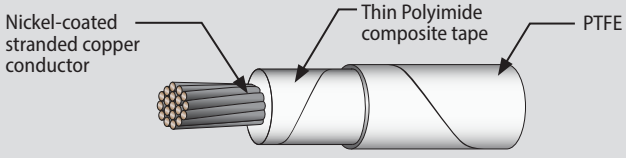
GS22759-87-20-9 (Standard weight)

- Nickel-coated copper, PTFE/Polyimide tape-wrapped. High-temp (260°C), fire and chemical-resistant, low smoke.



GS22759-92-20-9 (Light weight)

- Nickel-coated copper, PTFE/thin-wall Polyimide tape-wrapped. High-temp (260°C), fire and chemical-resistant, low smoke.



MIL-STAR™

Hookup Wire for Aerospace-Grade Harness Assemblies

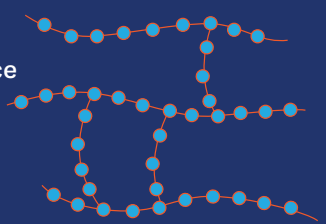
Better-than-QPL performance • QPL-grade batch testing and documentation

MIL-STAR™ Order Number	Conductor	Plating	Insulation	Insulation Weight	Available Wire Sizes	Temperature Rating
SAE AS22759/16-19, ETFE						
GS22759-16	Copper	Tin	ETFE	Medium	24, 22, 20, 18, 16, 14, 12, 10, 8	150°C
GS22759-17	High-Strength Copper Alloy	Silver	ETFE	Medium	26, 24, 22, 20	150°C
GS22759-18	Copper	Tin	ETFE	Light	24, 22, 20, 18, 16, 14, 12, 10	150°C
GS22759-19	High-Strength Copper Alloy	Silver	ETFE	Light	26, 24, 22, 20	150°C
SAE AS22759/32-35, XL-ETFE						
GS22759-32	Copper	Tin	XL-ETFE	Light	30, 28, 26, 24, 22, 20, 18, 16, 14, 12	150°C
GS22759-33	High-Strength Copper Alloy	Silver	XL-ETFE	Light	30, 28, 26, 24, 22, 20	200°C
GS22759-34	Copper	Tin	XL-ETFE	Normal (Dual Wall)	24, 22, 20, 18, 16, 14, 12, 10, 8	150°C
GS22759-35	High-Strength Copper Alloy	Silver	XL-ETFE	Normal (Dual Wall)	26, 24, 22, 20	200°C
SAE AS22759/41-46, XL-ETFE						
GS22759-41	Copper	Nickel	XL-ETFE	Normal (Dual Wall)	26, 24, 22, 20, 18, 16, 14, 12, 10, 8	200°C
GS22759-42	High-Strength Copper Alloy	Nickel	XL-ETFE	Normal (Dual Wall)	26, 24, 22, 20	200°C
GS22759-43	Copper	Silver	XL-ETFE	Normal (Dual Wall)	26, 24, 22, 20, 18, 16, 14, 12, 10, 8	200°C
GS22759-44	Copper	Silver	XL-ETFE	Light	28, 26, 24, 22, 20, 18, 16, 14, 12	200°C
GS22759-45	Copper	Nickel	XL-ETFE	Light	28, 26, 24, 22, 20, 18, 16, 14, 12	200°C
GS22759-46	High-Strength Copper Alloy	Nickel	XL-ETFE	Light	28, 26, 24, 22, 20	200°C

CROSS-LINKED ETFE INSULATION

Cross-linked insulation (XL) and standard insulation are two types of dielectric materials used in wire and cable manufacturing. Cross-linking provides the following advantages:

- **Improved thermal stability**
- **Chemical / solvent resistance**
- **Increased mechanical strength**
- **Laser-markable**
- **Longer service life**



RED PLAGUE MITIGATION

Mod Code 1304B
RED PLAGUE MITIGATION

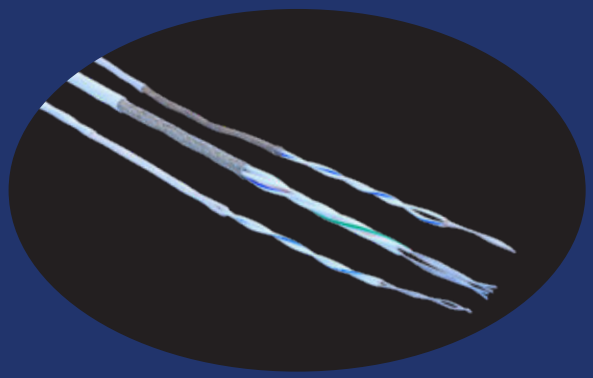
Glenair MIL-STAR™ high-temperature hookup wire and cable may be supplied in special 80 microinch silver-plated copper Mod Code configurations (1304A or 1304B) to combat Red Plague corrosion, a pernicious form of copper oxidation that results in the formation of red cuprous oxide (Cu_2O) and black cupric oxide (CuO). Red Plague corrosion can continue indefinitely, consuming conductor material and causing electrical system failures.

MIL•STAR™

GS27500 MULTI-CONDUCTOR CABLE

Glenair MIL-STAR multi-conductor 27500 type cables are built from in-house manufactured GS22759 hookup wire, available with industry qualification as well as Glenair GS signature part numbering. GS27500 constructions for shielded and unshielded cable are:

Made and tested IAW ANSI/NEMA WC 27500
1-15 22759 primary hook-up wires
Insulation types including crosslinked ETFE
Industry-standard and Glenair signature shielding materials
Standard and signature jacket compounds

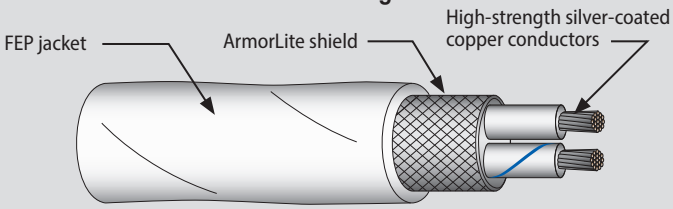


MIL-STAR™ 27500 MULTI-CONDUCTOR CABLES

ANSI/NEMA WC 27500 and Glenair signature multi-conductor cables. Each series supports M22759-16 thru -46 wire types with wire count, gauge, shield, and jacket options as allowed.

968-001-24SC2AR09

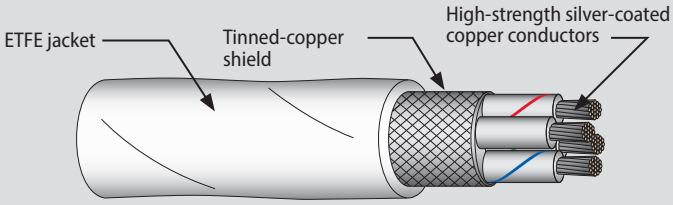
- 27500 type with ArmorLite or AmberStrand lightweight microfilament braided shielding



MIL-STAR GS27500 cables may be specified with signature braided shielding including ArmorLite, ArmorLite CF, and AmberStrand. The ability to supply 27500 type cable in accordance with the ANSI/NEMA standard but optimized for SWaP with lighter weight ArmorLite and AmberStrand shielding is a unique Glenair-only capability.

GS27500-22TF4T14

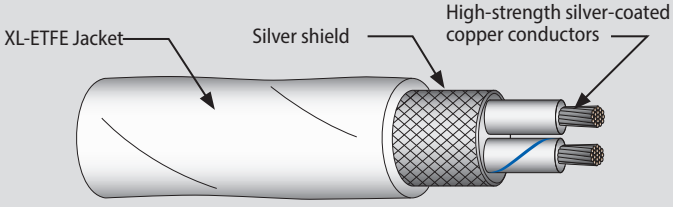
- 27500 type with GS22759-17 wire (silver-plated high-strength copper wire, ETFE insulation), and TC shielding.



This configuration of multi-conductor GS27500 cable is built with GS22759 dash 17 inner wires: silver-plated high-strength copper wire with ETFE insulation. The cable is equipped with an overall tinned-copper EMI/RFI shield and standard fluoropolymer ETFE outer jacket. The superior mechanical properties of high-strength conductors contribute to the overall safety, reliability, and mechanical strength of the cable.

GS27500-24SC2S23

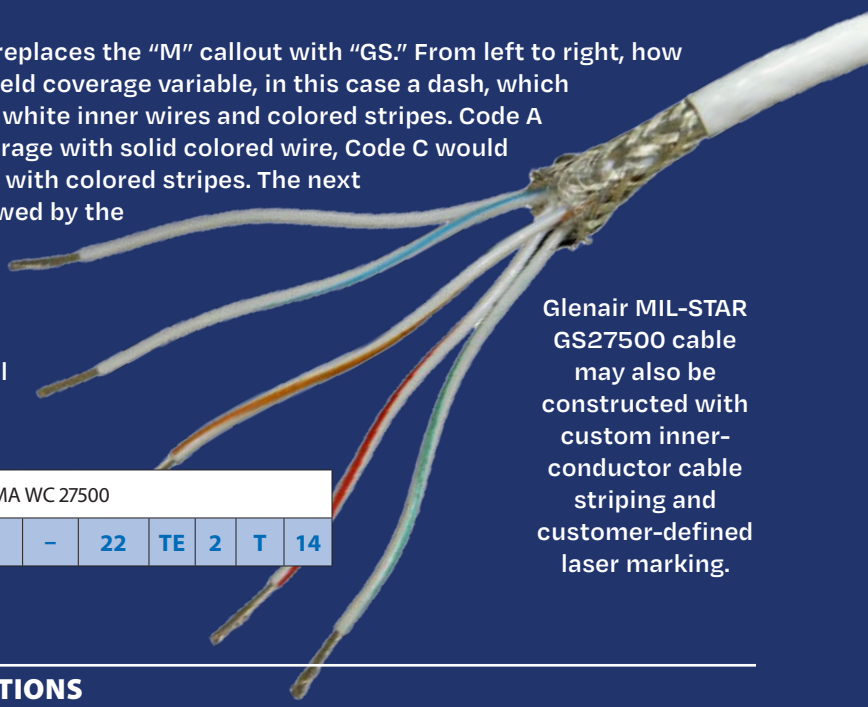
- 27500 type with GS22759-33 wire (silver-plated high-strength copper wire, XL-ETFE insulation), and silver shielding.



This cross-linked configuration of multi-conductor GS27500 cable is built with GS22759 type dash 33 inner wires: silver-plated high-strength copper wire with cross-linked XL-ETFE insulation. Cable is equipped with an overall silver-plated EMI/RFI shield and cross-linked XL-ETFE outer jacket. This multi-conductor 27500 type cable delivers far superior thermal stability, enhanced chemical resistance, mechanical strength, and electrical properties compared to non-crosslinked versions.

MIL-STAR GS27500 cable part numbering replaces the "M" callout with "GS." From left to right, how to order variables begin with the color code and shield coverage variable, in this case a dash, which indicates default 85% overall shield coverage, with white inner wires and colored stripes. Code A used in this position would denote 85% shield coverage with solid colored wire, Code C would denote 90% shield coverage with white inner wires with colored stripes. The next variable, 22 in our example, is conductor size, followed by the base wire specification (TE) indicating GS22759-16 wire is to be used in this cable buildup. Final variables include the number of inner wire conductors (2), type of overall shielding (T, for Tinned Copper), and finally jacketing material (14, indicating extruded ETFE in white).

Multi-conductor M27500 type IAW ANSI/NEMA WC 27500							
MIL-STAR Cable Sample Part Number	**GS27500**	**–**	**22**	**TE**	**2**	**T**	**14**



Glenair MIL-STAR GS27500 cable may also be constructed with custom inner-conductor cable striping and customer-defined laser marking.

BETTER-THAN-QPL MIL-STAR SHIELDING OPTIONS

Glenair signature braided cable shield solutions include single and double layers of metal-clad composite microfilament AmberStrand®, microfilament nickel-clad stainless steel ArmorLite™, and ArmorLite™ CF corrosion-resistant.

MIL-STAR GS27500 SHIELDING OPTIONS		
Single Shield Code	Double Shield Code	Shield Description
AM	AS	AmberStrand®, Round
AR	AL	ArmorLite™, Round
AC	AF	ArmorLite™ CF, Round
U	U	Unshielded

ArmorLite™

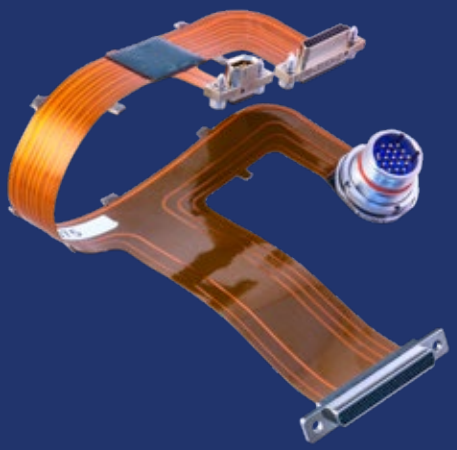
AmberStrand®

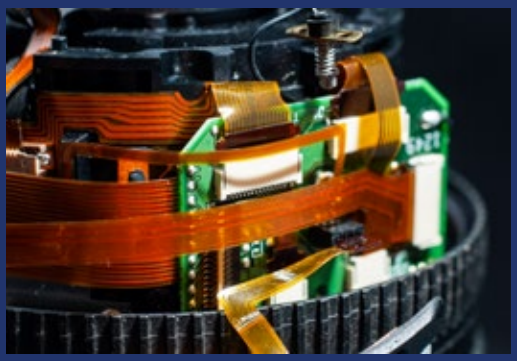
AEROSPACE-GRADE

SuperFlex™

PCB/FLEX CIRCUIT ASSEMBLIES

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





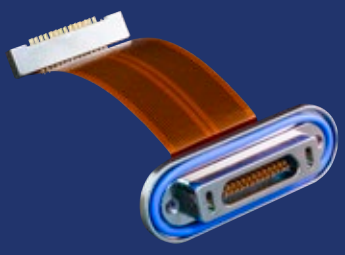
Flex circuits—metallic layers of traces, usually copper, bonded to a dielectric layer, like polyimide—are used to interconnect embedded electronic packages, displays, backplanes, and other PCB components. Flex and rigid-flex circuits are frequently superior to conventional wiring as they can be easily routed in three dimensions, are lighter and smaller than discrete wires, and offer virtually unlimited flex cycles in articulated applications. Flex and rigid-flex circuits are commonly deployed within avionic LRUs and other complex electronic systems, as well as between articulating components, such as disk drive, robotic arms, and other electro-mechanical devices.

Compared with conventional wiring, compact flexible printed circuit assemblies reduce system complexity and assembly time as well as enhance reliability. Due to their low mass and high circuit density, flex circuit assemblies are less susceptible to impact and vibration damage than conventional wire harness assemblies, making them an ideal choice in missile and other reduced form-factor applications.

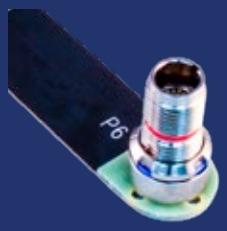
IPC 6012/6013 Class I, II, III, Types 1–4 Certified Production

Glenair recommends commercial customers specify IPC-6012/6013 standards of workmanship, which are fully supported by Glenair. Military customers may alternatively cite specifications IAW MIL-PRF-31032.

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

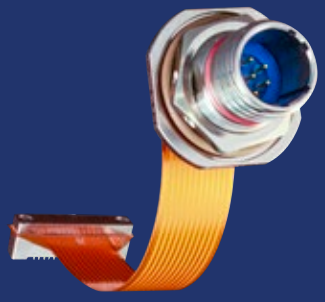


Series MWD Micro-D and spring-contact AlphaLink



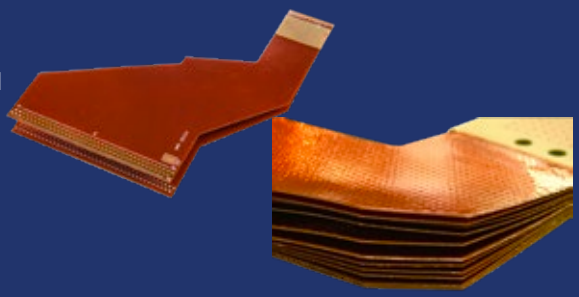
Series 88 SuperFly

Series 79 Micro-Crimp



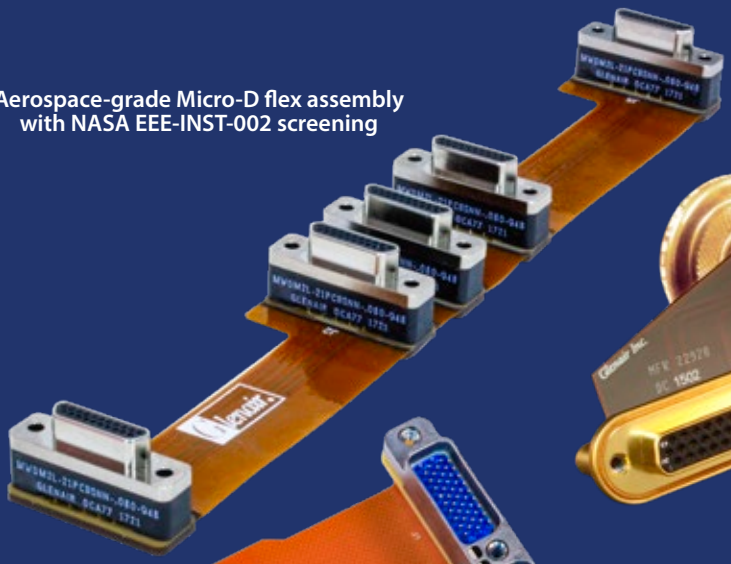
SuperNine MIL-DTL-38999 type flexi with board connector

Glenair SuperFlex turnkey connectorized flex, rigid flex, and rigid PCB assemblies begin with our signature flex circuit fabrication and innovation. All SuperFlex assemblies are optimized with ground planes and shields, strain relief features, mounting points for improved resistance to vibration and shock, and are available in multi-layer and double-sided configurations. All terminations backpotted for compliance with conformal coating processes. Optical and electrical solutions available. Special long-length assemblies up to 12 feet.



MULTIBRANCH SUPERFLEX ASSEMBLIES WITH GLENAIR SIGNATURE CONNECTORS

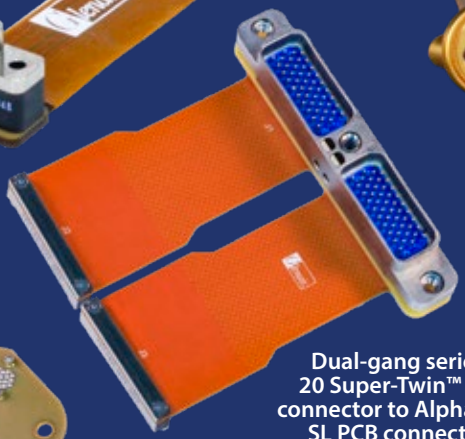
Aerospace-grade Micro-D flex assembly with NASA EEE-INST-002 screening



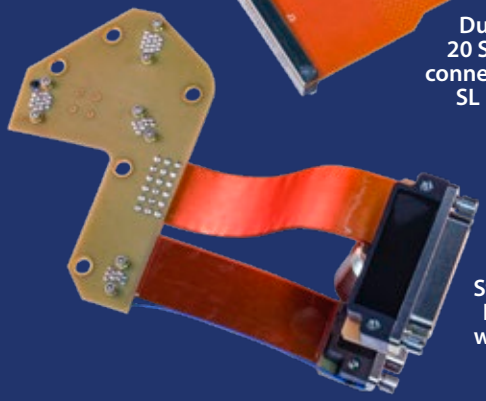
High-shock matched-impedance Mighty Mouse assembly with flex circuit

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

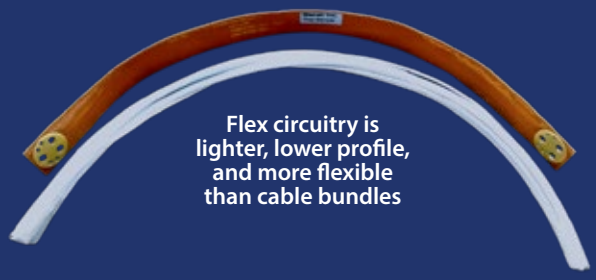
Hybrid flex/rigid flex multibranch Micro-D and Series 23 SuperNine flex assembly with discrete RF circuits



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



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

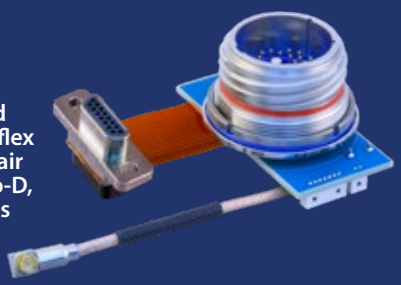


Flex circuitry is lighter, lower profile, and more flexible than cable bundles

Fairway-Flex™
LONG-LENGTH FLEX ASSEMBLIES

Special "Fairway-Flex" 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



SpeedLine™

High-Speed Protocol Cables

Glenair supplies a wide range of high-speed shielded twisted pair cabling for use with El Ochito®, VersaLink™, SpeedMaster™, and other of our shielded high-speed connector and contact technologies. High flexibility and high-density reduced-weight cable designs are a specialty. Glenair offers turnkey Cat 8 Ethernet, SuperSpeed USB 3.0, HDMI, SATA, and other solutions for today's most mission-critical application platforms.

Glenair SpeedLine cables are optimized for signal integrity, weight savings, flexibility, and durability. In addition, these aerospace and space-grade cables have been optimized for ease of termination and across-the-board compatibility with our broad range of high-speed contact modules and connectors.

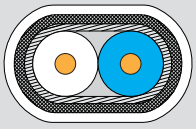
SpeedLine™ high-speed cable assemblies such as this VersaLink cordset for DisplayPort 2.0 and USB 4 are supplied as turnkey tested solutions, ready for immediate use.

- **Cat 8 Ethernet, SuperSpeed USB 3.0, HDMI, SATA, and other solutions for mission-critical applications**
- **Individual foil shielding around each data pair for reduced crosstalk and attenuation**
- **Up to 200°C high-temperature-rated cable**
- **Skydrol resistant, RoHS compliant versions**
- **Ethernet versions meet ANSI/TIA 568-C.2 Category 6A requirement up to 262 feet/80 meters**
- **Low-skew SuperSpeed USB data pairs have individual braided shields**
- **LSZH jacketing options including Duralectric Light and polyurethane**

DisplayPort · SERIAL ATA · HDMI™ HIGH DEFINITION MULTIMEDIA INTERFACE · SUPERSPEED CERTIFIED USB

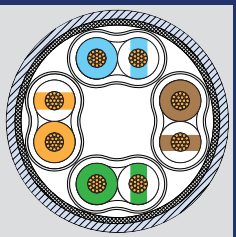
SpeedLine™ high-speed protocol cables: shielded differential data-pair cables for high-datarate Ethernet, USB, SATA, PCIe, DisplayPort, and HDMI protocols

963-069-26



- 100 Ohm #26 AWG flat pair shielded cable for use with VersaLink™ connectors
- Performance up to 18 GHz
- -65 to +200 °C rated operating temperature
- FEP jacket, FEP insulation
- Dual shields: Aluminized Kapton tape and #44 AWG silver-plated copper

963-066-24



- 100 Ohm #24 AWG 4-pair shielded cable for use with El Ochito contacts
- Performance up to 10 Gigabit Ethernet
- -65 to +200 °C rated operating temperature
- FEP jacket, FEP insulation with PTFE tape wrap
- Outer shield: #40 AWG silver-plated copper

Glenair signature SpeedLine high-speed protocol cables are designed for direct application and use with VersaLink™, SpeedMaster™, El Ochito®, and other of our lightweight, small form-factor high-speed protocol connectors.

Glenair Signature SpeedLine™ Cables, Shielded Contacts, and Connectors: a complete ecosystem of interconnect technologies for high-speed protocol applications in rugged aerospace-grade systems

Glenair supplies a complete ecosystem of military/aerospace-grade interconnect technology in support of every popular high-speed protocol. Downselect typically begins with protocol identification in accordance with application data rate requirements and standards. For each high-speed protocol, Glenair can supply an exactingly-designed, tested, and qualified SpeedLine™ differential data cable, shielded high-speed contact insert, and a signature range of ruggedized, environmentally-sealed connector housings.

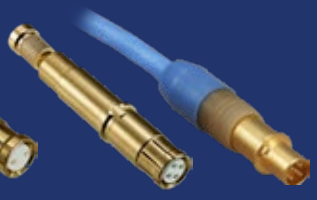
SPEEDLINE HIGH-SPEED DATA CABLE ASSEMBLIES

Glenair SpeedLine high-speed cable assemblies for VersaLink™ include factory-terminated pigtails and double-ended jumpers as well as turnkey Series 806 Mil-Aero and Series 794 Micro-Crimp high-density solutions

Glenair SpeedLine high-speed cable assemblies for El Ochito® include single- and double-ended jumpers, commercial protocol connector jumpers, and integrated Series 806 Mil-Aero, SuperNine®, and Series 792 Micro-Crimp

SPEEDLINE-COMPATIBLE HIGH-SPEED DIFFERENTIAL-PAIR SHIELDED CONTACTS

Size #8 differential twinax contacts



Size #8 quadrax contacts

Size #8 El Ochito octaxial

Size #8 SpeedMaster octaxial

VersaLink differential twinax

SPEEDLINE COMPATIBLE GLENAIR SIGNATURE HIGH-SPEED CONNECTORS

Series 806 Mil-Aero high-speed El Ochito micro miniature

SuperNine MIL-DTL-38999 "Better than QPL" high-speed El Ochito

Speed-Master™ modular 10G+ Ethernet (shown in SuperNine®packaging)

Series 792 Micro-Crimp precision-machined high-speed El Ochito

BLUMARK COAX CABLES RF™

Glenair is one of just a few interconnect manufacturers that can supply turnkey RF transmission line assemblies—fully connectorized and ready for immediate use—built 100% in-house with Glenair component parts. Glenair high-frequency RF assemblies are typically used in line-replaceable units and chassis that are part of an RF data transmission chain. The rugged, environmental construction of Glenair multi-port RF connector shells and contacts, combined with our high-reliability BluMark RF coax cables, makes these turnkey transmission line solutions ideal for mission-critical air, sea, land, and space applications with exacting size, weight, and frequency requirements.

BLUMARK COAX CABLES RF™ GLENAIR TURNKEY RF ASSEMBLIES ARE BUILT WITH AEROSPACE-GRADE 50 OHM LOW-LOSS COAX CABLES

Size 047 40 GHz	Size 086 40 GHz	Size 130 40 GHz	Size 160 40 GHz	Size 200 26.5 GHz	Size 235 26.5 GHz	Size 300 18 GHz
Double-Shielded • Low phase-change Fluoropolymer Dielectric • FEP Jacket		Triple-Shielded • Low-Loss PTFE Tape-Wrapped Dielectric • FEP Jacket				

TURNKEY

RF and Microwave Transmission Assemblies

With Glenair signature multi-port connectors, low-loss cables, and high-frequency contacts

BLUMARK RF™ COAX CABLES

BluMark RF 50 Ohm Coax Cables are available in seven size categories. These high-frequency, low-loss, flexible cables are suitable for radar and other aerospace applications as well as laboratory test equipment. Jacket options include FEP and radiation-resistant space-grade ETFE. Triple-shielded high-performance cables have expanded PTFE dielectric core for low loss up to 40 GHz. Application selection is based on compatibility with a particular RF / microwave connector type and size, as well as flexibility, EMI screening, weight considerations, temperature tolerance, and altitude.

962-032-200

50 ohm size 200 (.204" diameter, .051" conductor)
26.5 GHz max. frequency low-attenuation cable

-55 to +200 °C rated operating temperature

FEP jacket, expanded PTFE dielectric, solid SPC center conductor

Triple-shielded: Tape/foil/braid shield layers with >90 dB shield effectiveness

962-032-160

50 ohm size 160 (.161" diameter, .036" conductor)
40 GHz max. frequency low-attenuation cable

-55 to +200 °C rated operating temperature

FEP jacket, expanded PTFE dielectric, solid SPC center conductor

Triple-shielded: Tape/foil/braid shield layers with >95 dB shield effectiveness

962-032-130

50 ohm size 130 (.131" diameter, .029" conductor)
40 GHz max. frequency low-attenuation cable

-55 to +200 °C rated operating temperature

FEP jacket, expanded PTFE dielectric, solid SPC center conductor

Triple-shielded: Tape/foil/braid shield layers with >90 dB shield effectiveness

962-025-086

50 ohm size 086 (.104" diameter, .020" conductor)
40 GHz max. frequency low-attenuation cable

-65 to +165 °C rated operating temperature

FEP jacket, LPCF dielectric, solid SPC center conductor

Double-shielded: Tape/braid shield layers

962-025-047

50 ohm size 047 (.056" diameter, .011" conductor)
70 GHz max. frequency low-attenuation cable

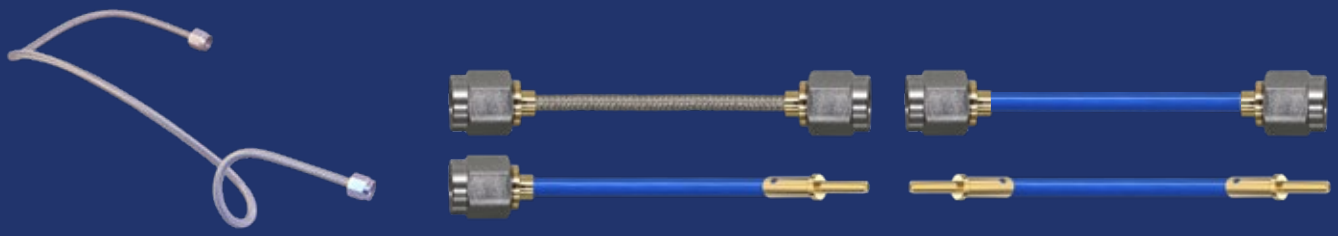
-65 to +165 °C rated operating temperature

FEP jacket, LPCF dielectric, solid SPC center conductor

Double-shielded: Tape/braid shield layers

50 OHM COAX RF JUMPERS

Series GRF02 50 Ohm Coax Cable "Jumpers" are COTS, cut-to-length cable assemblies with pre-installed connectors at both ends. Turnkey RF jumpers offer excellent flexibility with a bend radius of 6mm or 1/4 in.



FIBER KING

FIBER OPTIC CABLES

Turnkey Optical Flex circuit assembly with rugged MT ferrule terminations

Glenair is the worldwide leader in military, aerospace, and harsh-environment fiber optic interconnect assemblies. We manufacture every element in-house, from low-loss simplex, duplex, and multi-line fiber optic cables, to precision termini, military and aerospace-grade connectors, backshells, and tools. Glenair FiberKing fiber optic cables are optimized for reliable, durable performance in military and commercial aviation, space, harsh-environment oil and gas, and multi-termination (MT ribbon) assemblies.

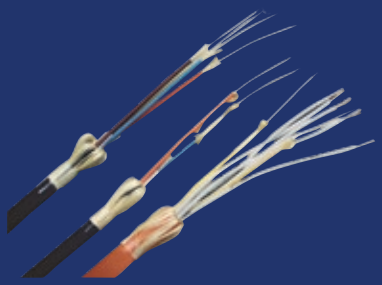
FIBERKING FIBER OPTIC CABLES

- **Lightweight, tight bend-radius fiber optic cable for 10Gb+ avionic networks**
- **Vibration, radiation, and temperature-resistant space-grade F/O designs**
- **Ultra harsh-environment (high-pressure, high-temp, water-blocking) oil & gas industry fiber optic cable assemblies**
- **Ruggedized fiber optic ribbon cable for multi-fiber termination (MT) applications**

TURNKEY

Fiber Optic Cables and Harnesses

For rugged mission-critical applications



THE FIBERKING MIL-AERO (MA) ECOSYSTEM

The FiberKing Mil-Aero (MA) Ecosystem is a complete flight-grade fiber optic interconnect solution for demanding military and commercial aerospace applications. This complete 10Gb+ low-loss fiber optic solution includes single- and multimode stepped and graded-index cables in simplex, duplex, and multi-line configurations. Glenair SuperNine and Glenair Front Release (GFR) fiber optic connectors are Glenair's signature offerings for high-speed, high datarate avionic networks. Cables and connectors are qualified to strict aviation industry standards for vibration, shock, moisture, and LSZH, and are rated to maximum optical loss (dB / km) at 850 nm ≤ 5.0 and at 1300 nm ≤ 3.0. Multimode cables are OM4 graded-index. Singlemode cables are OS1 stepped-index.

Hybrid optical / electrical assembly for weight reduction in a high-speed datalink application

Harsh environment overmolded MIL-DTL-38999 Series III type composite

High-density Next-Generation (NGCON) fiber optic harness assembly

Specialized MT ribbon fiber low-profile molded breakout capabilities

Cable reels and field-deployment technologies for both Glenair GFOCA and Eye-Beam™ GMA fiber optic systems

GFOCA I/O-to-board assembly with overbraiding for mechanical protection

Inside-the-box MIL-DTL-38999 type I/O connector to board cable harness

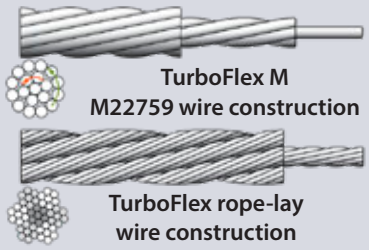
turboflex®

THE ULTRA FLEXIBLE RUGGED POWER CABLE

TurboFlex is an ultra-flexible and rugged power cable solution–ideal for high-voltage electrical distribution and propulsion applications such as battery plant-to-inverter-to-electric motor cables for eVTOL aircraft. Constructed from rope-lay configuration copper or aluminum wire and jacketed with Glenair signature Duralectric insulation, TurboFlex cables are optimized for use in an ecosystem of Glenair signature contact and connector technologies. Turnkey connectorized or lugged cable assemblies – fully tested and ready for immediate use – provide reliable high-temperature tolerant performance up to 4500 VAC.

◀ Duralectric™ is the high-performance TurboFlex® jacketing material. Different compounding formulas are optimized for weight savings, radiation resistance, ultra low temperatures, conductivity, and immersion in chemical or caustic fuels. Available in a broad range of colors including safety orange.

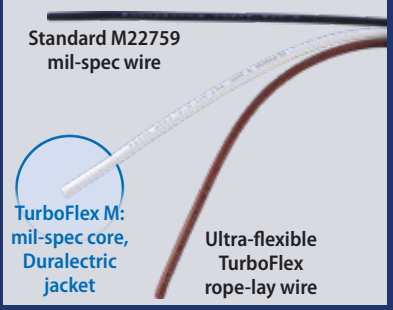
STANDARD TURBOFLEX R VS. TURBOFLEX M



TurboFlex M
M22759 wire construction

TurboFlex rope-lay
wire construction

TurboFlex cables are jacketed with Duralectric insulation, which contributes significantly to the flexibility of the product. Available wire cores include rope-lay (standard) for maximum flexibility, and M22759 wire (TurboFlex M) with the flight-heritage of a mil-spec core and a slightly larger bend radius, but far superior flexibility compared to standard M22759 wire.



SERIES 96

TurboFlex ultra-flexible power distribution cable

Technical overview

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 Duralectric jacketing in FED-STD 595C Safety Orange.

ABOUT TURBOFLEX WITH DURALECTRIC™ D JACKETING

Duralectric™ 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 Duralectric 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

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

DURALECTRIC™ D FIRE RESISTANCE PROPERTIES	
Property	**Typical Result**
Flammability	
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
Smoke Density	
BSS7238	Pass
NES 711	Pass
EN 60695-2-11	Pass
UL1685 FT4/IEEE1202	Pass
Combustion Toxicity	
BSS7239	Pass
NES 713	Pass
SMP800 C	Pass

MIL-AERO/
DEFENSE
INTERCONNECT
SOLUTIONS

Multiport USB hubs, cables, and peripheral device manager for soldier-worn power / data network applications

STAR-PAN™+

STAR-PAN™+ MISSION MANAGER
Plug-and-play EUD / USB
peripheral data exchange device

Relentless, ongoing innovation in baseline warfighter power and connectivity solutions

The Glenair STAR-PAN™+ data hub and power distribution system has evolved as the baseline warfighter power and data hub of choice–particularly in Joint Terminal Attack Controller (JTAC) applications. STAR-PAN™+ represents over a decade of soldier power and data hub innovation–improving situational awareness, surveillance, intelligence and reconnaissance while optimizing power monitoring, conditioning, and distribution performance. Importantly, all STAR-PAN™+ technologies are designed for optimal size, weight, power, and ruggedized mil-spec performance with battle-tested environmental and EMC sealing and shielding.

- **Versatile 2, 4, and 6-port high-speed hub configurations**
- **Compatible with USB 1.1, USB 2.0, and SMBus**
- **Embedded power charging/conditioning electronics in all designs**
- **Smart power monitoring for longer mission life**
- **Robust circuit protection**
- **Sealed IAW the MIL-STD-810 harsh-environment standard**
- **New MISSION MANAGER for on-the-fly device integration to soldier C4ISR networks**

Glenair's Tactical Interconnect Solutions team is backed by six decades of proven, made-in-America interconnect industry performance in service of US and NATO armed forces.

JTAC-TOUGH™

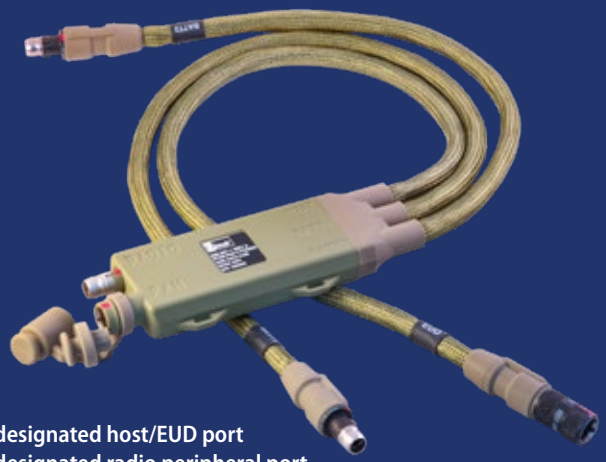
STAR-PAN™+ Scalable Soldier Networks

Powering soldier connectivity and C4ISR mission success with the world's most widely deployed power and data hub system

STAR-PAN™+ LIGHT FOR STANDARD SOLDIERS

- 1 designated host / EUD port
- 1 battery cable / port
- 1 designated peripheral cable / port (expandable for radio use with adapter cable)

STAR-PAN™+ II FOR ADVANCED SOLDIERS

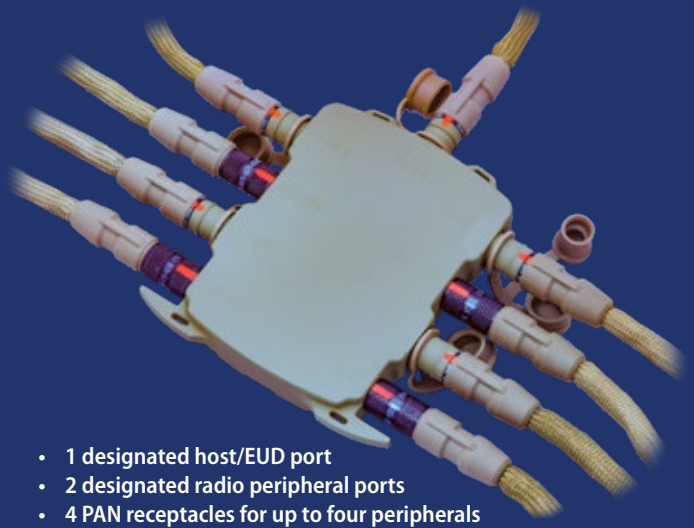


- 1 designated host/EUD port
- 1 designated radio peripheral port
- 1 expandable PAN port for up to two USB peripherals

STAR-PAN™+ IV FOR TACTICAL MISSION SPECIALISTS

- 1 designated host/EUD port
- 1 designated radio peripheral port
- 3 PAN receptacles for up to four peripherals

STAR-PAN™+ VI FOR JTAC / MISSION COMMANDERS



- 1 designated host/EUD port
- 2 designated radio peripheral ports
- 4 PAN receptacles for up to four peripherals

OPEN-SYSTEM NETWORK SUPPORT FOR THE COMPLETE RANGE OF C4ISR DEVICES

Radios | Batteries | Targeting | Video | GPS | Host / EUD

STAR-PAN™ X

Ten-port base station hub with universal device charging and data uplink capabilities

STAR-PAN™ X BASE STATION

Warfighter walk-on, walk-off connectivity and charging device for vehicle and other transport platforms

Integration of soldier C4ISR capabilities on an existing fleet of land, air, and maritime platforms is proving to be a challenge for many NATO members. STAR-PAN™ X 10-Port Base Station is a baseline multi-port data and power hub for platform-based soldier power and C4ISR integration. STAR-PAN X 10-port Base Station supports USB 3.2 Gen 1 high-speed data rates and 8 Amp power delivery. The unit allows soldiers to directly connect portable soldier power and data systems to the transportation platform's network for charging and data sharing—enabling soldiers to refresh critical battery power and access real-time BMS information during transport in a vehicle, helicopter, or vessel.

STAR-PAN X incorporates an embedded MISSION MANAGER with upgraded processing power enabling it to act as a tactical edge computing device running any Battlefield Management System (BMS). STAR-PAN X incorporates all STAR-PAN + standard features as well as select next-generation features including Universal Power Ports, an expanded capability Host / EUD port, and full support for USB 3.2 Gen 1 peripherals.

STAR-PAN + STANDARD FEATURES

- **Compliance to both US and NATO STANAG 4695 connector interfaces**
- **Smart battery power management, built-in SMBus to USB conversion**
- **BMA-agnostic hardware**
- **Hot-swappable power sourcing, radio-supplied backup power support**
- **Water immersion IAW MIL-STD-810, IP67-rated dust/water resistant**
- **Intuitive equipment hookup and operation**

WARFIGHTER-TOUGH

STAR-PAN X Base Station

Portable base station unit for convenient vehicle-to-soldier data uplink and charging

SPECIFICATIONS

- PAN ports for up to ten soldier devices
- HDMI and Ethernet ports
- Integrated STAR-PAN MISSION MANAGER functionality
- Two USB 3.0 ports
- Three Universal Power Ports
- Glenair power port management
- Smart battery charging from auxiliary power
- Up to 5A battery power per port, 20A system total
- Up to 2A 5 Volt VBUS power per port, 10A across all ports
- Precision-machined construction, integrated connectors

STAR-PAN X BASE STATION APPLICATIONS

- Armored personnel carriers
- Land and air troop transports
- Landing craft and other naval vessels
- Command posts and shelters

STAR-PAN X CABLE PART NUMBERS

BB259 BATTERY CABLE ADAPTER	TS8-496
AC PWR SUPPLY CABLE ADAPTER	TS8-497
USB 3.0 CABLE ASSEMBLY	TS1-039
CAT 5E ETHERNET CABLE	TS1-040
HDMI TYPE A CABLE ASSEMBLY	TS1-041
USB 2.0 DONGLE	TS3-001
GENERAL-PURPOSE EXTENSION CABLE	TS1-069

OVERVIEW

STAR-PAN X 10-Port Base Station is a multi-port data and power hub for platform-based C4ISR integration. STAR-PAN X 10-port Base Station provides the same NATO standard interconnect interface as soldier-worn STAR-PAN systems, making it completely interoperable with the existing portfolio of cables and adapters and allowing easy soldier interconnection to the platform's data and power network. With STAR-PAN X, dismounted soldiers can connect to the vehicle power and data accessing on-board radios and sensors via a single cable connection and/or access data through the WiFi network when operating in the vicinity of the vehicle.

INTEROPERABLE
NATO STANAG 4695
Soldier Power Connectors

STAR-PAN X Base Station
Next-generation vehicle network interface design includes HDMI, Ethernet, and USB 3.0 ports, plus three Universal Power Ports.

Cat5E Ethernet Cable Assembly
TS1-040

USB 3.0 Cable Assembly
TS1-039

HDMI Type A Cable Assembly
TS1-041

AC Power Supply Adapter Assembly
TS8-497

USB 2.0 Dongle
TS3-001

Next-generation USB-C warfighter power and data hub with fast-charging universal 8 Amp power ports

WARFIGHTER-TOUGH

STAR-PAN™ NG

Next-Generation STAR-PAN Multiport USB Hub, Cable, and Power Management Systems

Glenair's next-generation power and data hub upgrade from the baseline STAR-PAN + series incorporates a broad range of new capabilities in direct response to requests from JTACs, special operations forces, mission commanders, and other military specialists. STAR-PAN NG innovations have resulted in higher current-carrying capabilities, greater versatility in power input support, and real-time plug-and-play USB device integration. Other advanced features include:

- A new 8A per-pin power connector design in the same dimensional package as our original 5 amp series 807 NATO STANAG 4695 push-pull connector. The new connector design features a retractable pin number 7 for backward-compatibility to legacy devices.
- STAR-PAN + hubs utilize dedicated power ports for battery power, auxiliary power, and radio power. New STAR-PAN NG Universal Power Ports (UPP) may be used interchangeably for any format of input or output power. The Universal Power Port interface supports both higher voltage input power and managed 5V output power to charging devices.
- STAR-PAN NG now incorporates an advanced host port with native USB-C "negotiation" and power integration—meaning power pin assignments are in conformance with the new standard, are backward-compatible to previous USB iterations, and deliver higher overall power levels. Daisy chaining of multiple EUD devices for power input is also enabled via the new host port and circuit board.
- Ongoing support of evolving USB protocols requires keeping pace with higher data rates, such as the new USB 3.2 Gen 1 5Gbps standard. STAR-PAN X Base Station, our 10-port "walk-on, walk-off" vehicle / soldier hub features board upgrades and interconnect interfaces in accordance with this new data rate standard.

- **Versatile 1, 2, 3, and 4 PAN port-equipped hub configurations**
- **Universal Power Ports with embedded power charging**
- **Integrated MISSION MANAGER for plug-and-play device integration**
- **Circuit board level USB-C power integration and delivery**
- **Precision-machined hub bodies, IAW MIL-STD-810 harsh-environment, IP67 dust/water resistant**
- **Support for 5Gb/s data transmission (STAR-PAN X Base Station only)**
- **Standard NG solutions and custom configurations**

Export of STAR-PAN™ outside of the U.S. is controlled by the U.S. Department of Commerce Export Administration. See individual product pages for details. Consult factory for technology / hardware licensing information.

WARFIGHTER-TOUGH

STAR-PAN NG

Next-generation multiport USB hub, cable, and power management systems with 8 amp power and USB-C integration

STAR-PAN NG SOLDIER HUB SELECTION GUIDE

STAR-PAN NG 1/2 **P/N TS2-011**

Our smallest hub with one EUD port, one pan port and two universal power ports

STAR-PAN NG 2/2 **P/N TS2-012**

The next step up with one EUD port, two pan ports and two universal power ports

STAR-PAN NG 3/3 **P/N TS2-013**

Next-generation design with one EUD port, three pan ports and three universal power ports

STAR-PAN NG 4/4 **P/N TS2-014**

Next-generation design with one EUD port, four pan ports and four universal power ports

STAR-PAN NG HUB SELECTION GUIDE

Part No.	Hub	Description
TS2-011	STAR-PAN NG 1/2	1X HOST; 1X PAN; 2X UPP, no PPS on HOST
TS2-012	STAR-PAN NG 2/2	1X HOST; 2X PAN; 2X UPP
TS2-013	STAR-PAN NG 3/3	1X HOST; 3X PAN; 3X UPP; w/ Charging
TS2-014	STAR-PAN NG 4/4	1X HOST; 4X PAN; 4X UPP; w/ Charging
TS2-022	STAR-PAN NG 2/2 WITH MISSION MANAGER	PORTS 1X EUD;2X PAN; 2X UPP MM32
TS2-023	STAR-PAN NG 3/3 WITH MISSION MANAGER	PORTS 1X EUD;3X PAN; 3X UPP MM64
TS2-024	STAR-PAN NG 4/4 WITH MISSION MANAGER	PORTS 1X EUD;4X PAN; 4X UPP MM64

Tactical Cable Assemblies

STAR-PAN™+, STAR-PAN™ X, and STAR-PAN™ NG compatible

GENERAL-PURPOSE STAR-PAN™ SYSTEM CABLES

NETT Warrior (C1) extension cable

2-port hub expansion cable

Radio port-to-PAN port adapter cable

STAR-PAN™ PERIPHERAL DEVICE CABLES

TacROVER-P SIR 2.5 video cable

Radio adapter cable for STAR-PAN IV

PAN port to USB-A adapter cable

DAGR GPS and micro DAGR-V cable

TacROVER-P SIR 2.0 cable

PLRF-15C/25C laser range finder cable

STAR-PAN™ RADIO DATA / POWER CABLES AND ADAPTERS

RT-1922 Microlight SADL radio Cable

AN/PRC-117G radio cable

AN/PRC-161 BATS-D radio adapter

AN/PRC-148 radio adapter

AN/PRC-152A radio adapter

Harris RF-7850M sync serial adapter

SMALL FORM-FACTOR

Tactical Soldier Interconnect Cable Assemblies

With Series 807 Mighty Mouse NW push-pull connectors
NWPAN-WP-20210223 approved · NATO STANAG 4695 interoperable

HARSH ENVIRONMENT OVERMOLDED

Overmolded breakout assembly featuring 100% Glenair content; a true turnkey solution

Multibranch cable assembly with Glenair Mighty Mouse, HiPer-D M24308 and customer-supplied power connector

Turnkey overmolded GPS cable assembly with integrated switch

Environmental cable with Glenair Series 804 Mighty Mouse, Series 79, and RF Coax terminations

ULTRAFLEXIBLE FABRIC OVERBRAID

Non-environmental aircraft cable with integrated circuit breakout box and Mighty Mouse 807 push-pull connectors

Heads-up display (HUD) cable with custom Series 807 Mighty Mouse and low-profile cable routing

Military jet jumper cable with user-serviceable backshells and fabric overbraid for mechanical protection

Hybrid Mighty Mouse and Micro-D aircraft pilot helmet cable assembly

JTAC-TOUGH
807 NW
QUALIFIED

Series 807 Mighty Mouse NW micro miniature connectors for dismounted soldier battery charging, radio, and PAN applications, NSN stock-listed.

PUSH-PULL QDC

Nett Warrior Qualified Power and Data Connectors

Today's warfighters demand quick battery charging and reliable radio operation. Glenair pioneered the original 6-pin Nett Warrior connector, as well as a second-generation 7-pin series with USB-C power integration and delivery. Now Glenair is introducing a signature 10 Amp Crown Ring contact-equipped version for higher-current applications that easily integrates into US / NATO, Nett Warrior, and STAR-PAN+ hub and cable systems.

Glenair STAR-PAN NG hubs and cables—now equipped with 10 Amp Crown Ring contact receptacles—are smart devices capable of managing next-generation high-power equipment as well as lower-power legacy devices.

SERIES 807 MIGHTY MOUSE NW CONNECTOR LINE

All designs backward-compatible with current and legacy Nett Warrior hardware

- **Original 6-pin Nett Warrior plugs and receptacles**
- **Backward-compatible 7-pin series with USB-C power integration and delivery**
- **New 10 Amp receptacles for higher-current soldier battery, radio, and PAN C4ISR equipment**
- **Glenair Signature Mighty Mouse 807 NW connectors are available in pigtail and point-to-point cables for all US/NATO soldier C4ISR devices**

US ARMY AND NATO QUALIFIED

Nett Warrior Connectors

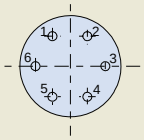
For STAR-PAN hub systems, Nett Warrior C4ISR hardware, next-gen and legacy radios and batteries

QUALIFIED FOR USE WITH
ALL STAR-PAN + AND STAR-PAN NG
POWER / DATA HUBS

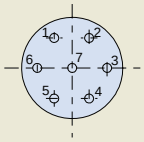
MATERIALS / FINISH

- Shell: Al alloy / ZNU plated
- Contacts: Cu alloy / Au plated
- Insulators: Rigid dielectric
- O-rings: Fluorosilicone

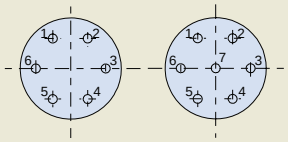
Series 807 NW Nett Warrior Connector Insert Arrangements



Original NSN-Listed 6-Pin
(Nett Warrior Program /
NATO STANAG 4695 Approved)



Backward-Compatible
7-Pin USB-C Power Series



10-Amp STAR-PAN NG Series
6-6 and 6-7 Arrangements

SERIES 807 MIGHTY MOUSE NW CONNECTOR LINE: HOW-TO-ORDER

In-line cable plug

Panel-mount plug

In-line cable receptacle

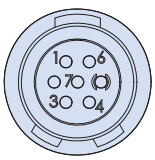
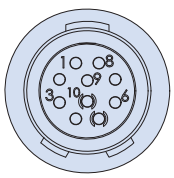
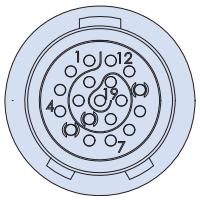
Panel-mount receptacle

Series 807 NW Plugs (6 pin)	Crimp	PC Tail	Solder Cup	In-Line	Rear Mount Jam Nut	Front Mount Jam Nut
8070-1676-06ZNU6-6PY NSN 5935-01-659-5575	X			X		
807-871-06ZNU6-6PY	X			X		
807-309-06ZNU6-6PY			X	X		
8070-1153-07ZNU6-6EC			X		X	
8070-1153-07ZNU6-6PC		X			X	
8070-1153-00ZNU6-6EC			X			X
8070-1153-00ZNU6-6PC		X				X
Series 807 NW Receptacles (6 socket)	**Crimp**	**PC Tail**	**Solder Cup**	**In-Line**	**Rear Mount Jam Nut**	**Front Mount Jam Nut**
8070-1675-01ZNU6-6SY NSN 5935-01-659-4090	X			X		
8070-1675-07ZNU6-6SY	X				X	
8070-1675-00ZNU6-6SY	X					X
807-874-01ZNU6-6SY	X			X		
807-874-00ZNU6-6SY	X					X
807-874-07ZNU6-6SY	X				X	
807-348-01ZNU6-6SY			X	X		
807-216-07ZNU6-6SY			X		X	
807-216-01ZNU6-6SY			X	X		
807-216-00ZNU6-6SY			X			X
807-216-07ZNU6-6DY		X			X	
807-216-01ZNU6-6DY		X		X		
807-216-00ZNU6-6DY		X				X
Series 807 NW Plugs (7 pin)	**Crimp**	**PC Tail**	**Solder Cup**	**In-Line**	**Rear Mount Jam Nut**	**Front Mount Jam Nut**
8070-1676-06ZNU6-7PY	X			X		
807-871-06ZNU6-7PY	X			X		
Series 807 NW Receptacles (7 socket)	**Crimp**	**PC Tail**	**Solder Cup**	**In-Line**	**Rear Mount Jam Nut**	**Front Mount Jam Nut**
8070-1675-01ZNU6-7SY	X			X		
8070-1675-07ZNU6-7SY	X				X	
8070-1675-00ZNU6-7SY	X					X
807-874-01ZNU6-7SY	X			X		
807-874-00ZNU6-7SY	X					X
807-874-07ZNU6-7SY	X				X	
8070-1299-ZNU6-7DY		X				X
Series 807 NW Receptacles (10 Amp)	**Pigtail Assembly**	**PC Tail**	**Solder Cup**	**In-Line**	**Rear Mount Jam Nut**	**Front Mount Jam Nut**
8071-6924	X			X		
8070-3151-07ZNU6-6SY		X			X	

MIGHTY MOUSE
SERIES 86 SEALTAC™

Mighty Mouse SealTac™ Spring Contact Push-Pull Connectors and Jumpers

The Mighty Mouse Series 86 SealTac is a durable, environmentally-sealed push-pull connector with outstanding user ergonomics. Receptacle target-contact designs are fully sealed, easy to maintain and clean, and immersible to 30 PSI / IP68 in the unmated condition. Spring pin contacts (plug side) are rated to 2 Amps and can withstand virtually unlimited mating cycles.

SHELL SIZE / CONTACT ARRANGEMENTS		
		
06-7 shell size 6, 7 contacts	07-10 shell size 7, 10 contacts	08-19 shell size 8, 19 contacts

- **High-durability unlimited life-cycle performance**
- **30 PSI open-face / IP68-level sealing (box side)**
- **Ergonomic keyed push-pull mating**
- **High-density micro miniature form factor**
- **Maintenance-free spring contact inserts**
- **Integrated EMI/RFI ground spring and shield termination band porch**
- **High vibration and shock resistant**
- **Full qualification testing complete and available**

SERIES 86

SealTac Tactical Push-Pull Connectors

Spring-pin equipped Mighty Mouse harsh-environmental

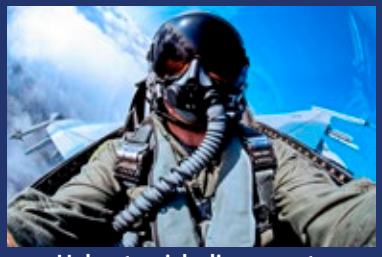
SERIES 86 SEALTAC APPLICATIONS

C4ISR soldier devices

Rugged computers and hand-helds

Power and data hubs

Tactical communications gear



Helmet quick-disconnects

CONNECTOR SELECTION GUIDE

IN-LINE RECEPTACLES		**860-051-01** Series 86 spring contact push-pull in-line receptacle for cable applications
IN-LINE PLUG		**860-050-06** Series 86 target contact push-pull in-line cable plug
JAM-NUT PLUG		**860-050-07** Series 86 target contact push-pull jam-nut mount plug
CABLE JUMPER Receptacle-to-receptacle		**861-001** Series 86 spring contact push-pull receptacle-to-receptacle overmolded cable jumper
CABLE JUMPER Plug-to-plug		**861-002** Series 86 target contact push-pull plug-to-plug overmolded cable jumper
CABLE JUMPER High-speed HDMI		**861-003** Series 86 target contact push-pull plug or spring contact push-pull receptacle-to-HDMI overmolded cable jumper
CABLE JUMPER High-speed USB 3.0		**861-004** Series 86 target contact push-pull plug or spring contact push-pull receptacle-to-USB 3.0 overmolded cable jumper

SERIES 86 SEALTAC™ PERFORMANCE SUMMARY		
	Performance	**Specification**
DWV	500 Vac	EIA 364-20
IR	5 GΩ, 200 Vdc	EIA 364-21
Temperature Range	-55°C / +125°C	
Contact Ω	40 mΩ	EIA-364-23 (26 AWG wire included)
Durability	2500 cycles min	EIA-364-09
Mating Force	8 lbs (size 06) 12 lbs (size 08)	EIA-364-13
Random Vibration		MIL-STD-810H, method 514.8, Annex E, figure 514.8E-1. One hour each axis, longitudinal and perpendicular axes
Shock		Mil-Std-810, method 516, Procedure I (40 G's, 11ms). 3 shocks X 3 axes X 2 directions = 18 shocks
Water Immersion	30 psi, 30 minutes, 100 MΩ min	EIA 364-21, mated and unmated (open face)

MIL-AERO/ DEFENSE INTERCONNECT SOLUTIONS

Mighty Mouse micro miniature connector series for optimized SWaP

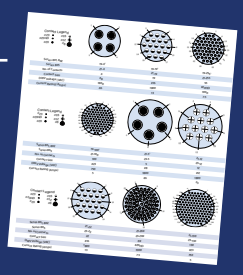
Mighty Mouse vs. 38999: less than half the size and weight.

Mighty Mouse connectors: Reducing the size and weight of tactical interconnect systems for over 25 years. The most widely deployed mil-aero micro miniature circular in the world.

- **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

Signal | Power | High-Speed | RF / Microwave | Pneumatic



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
Lightweight hermetic

EMI/RFI
Filter

EMP Transient Voltage
Suppression

Bulkhead feed-thrus and
penetrators

Sav-Con®
connector savers

High-frequency
RF / Microwave

High-speed
Ethernet

Single- and multimode
fiber optic

AVAILABLE NEXT-GENERATION TACTICAL CONNECTOR SERIES

Low-profile COBRA
right-angle

MouseBite spring-contact
series with thumb lock

Mighty Mouse Series 807
Nett Warrior

Mighty Mouse 3.2
USB-C Gen 1

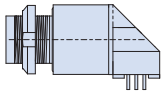
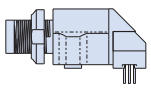
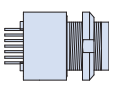
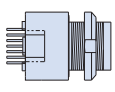
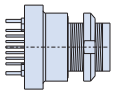
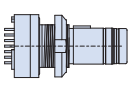
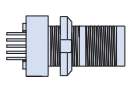
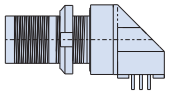
SuperFly®

The ultimate nano miniature tactical connector

Mighty Mouse not small enough? Meet the toughest, smallest, and highest-speed connector we've got—ideal for soldier-wearable C4ISR equipment.

- **Push-pull version with high / low force release option**
- **Threaded version for secure mating**
- **Hybrid contact system**
- **First mate / last break power contacts**
- **Layouts and contact spacing optimized for high-speed**

PRINTED CIRCUIT BOARD PLUG AND RECEPTACLES

QUICK-DISCONNECT						THREADED	
							
Right Angle, Rear Panel Mount	Right Angle, Rear Panel Mount, PCB Mounting Holes	Vertical, Rear Panel Mount	Vertical, Rear Panel Mount, PCB Mounting Holes	Vertical, Rear Panel Mount, Ground Pins	Vertical Plug, Rear Panel Mount	Vertical, Rear Panel Mount	Right Angle, Rear Panel Mount

SERIES 88

SuperFly® Nano miniature Soldier System Connectors and Cordsets

Tactical nano miniature connectors and cables

NANO MINIATURE SUPERFLY® CORDSETS AND PIGTAILS

Overmolded threaded plug and receptacle

Threaded pigtail plug and receptacle

Quick-disconnect overmolded cordset

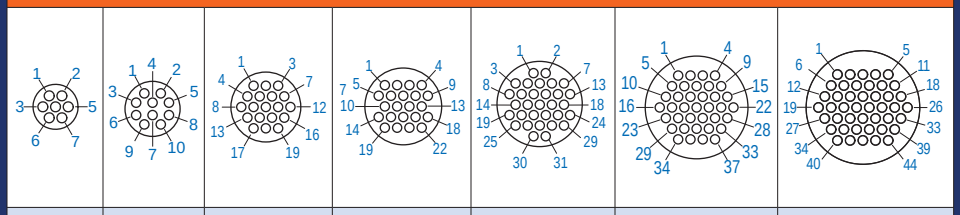
Quick-disconnect pigtail plug and jam nut receptacle

- IP67 immersion rated
- High-reliability contacts: 5 Amp, 3 Amp, and 1 Amp
- High shock and vibration
- Robust EMI shielding
- Designed for high speed data applications
- Pre-wired, epoxy-sealed cordsets
- Straight and 90° PC tail receptacles
- 27 Contact arrangements
- Front or rear panel mounting
- Aluminum or stainless steel
- Accepts #22 to #32 AWG wire

CONTACT ARRANGEMENTS

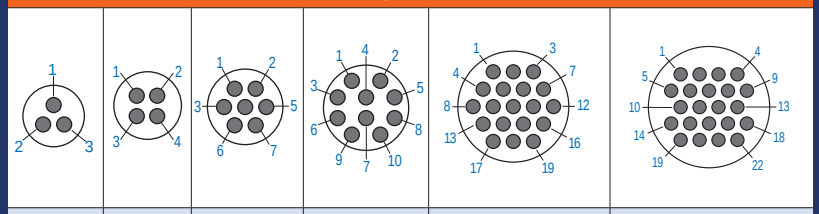
Series 88 SuperFly connectors are available in 27 contact arrangements with 1 Amp, 3 Amp, 5 Amp contacts, and mixed-contact hybrid arrangements

1 AMP



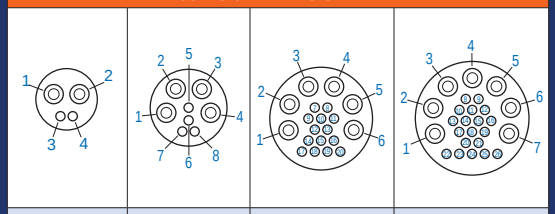
B7N	C10N	E19N	F22N	G31N	H37N	J44N
(7) 1A	(10) 1A	(19) 1A	(22) 1A	(31) 1A	(37) 1A	(44) 1A

3 AMP



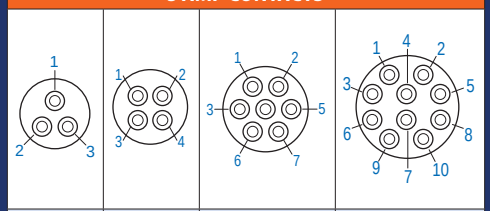
D3M	E4M	F7M	G10M	K19M	L22M
(3) 3A	(4) 3A	(7) 3A	(10) 3A	(19) 3A	(22) 3A

COMBO 1 AMP & 5 AMP



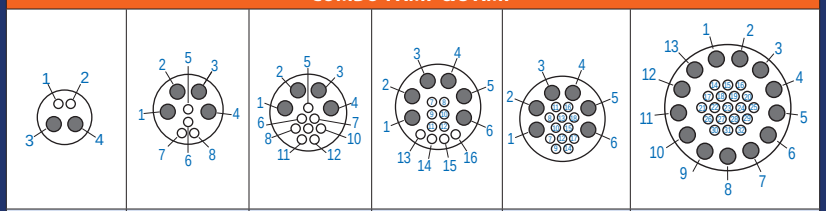
D2W2N	F4W4N	H6W14N	J7W19N
(2) 1A, (2) 5A	(4) 1A, (4) 5A	(14) 1A, (6) 5A	(19) 1A, (7) 5A

5 AMP CONTACTS



E3W	F4W	G7W	H10W
(3) 5A	(4) 5A	(7) 5A	(10) 5A

COMBO 1 AMP & 3 AMP

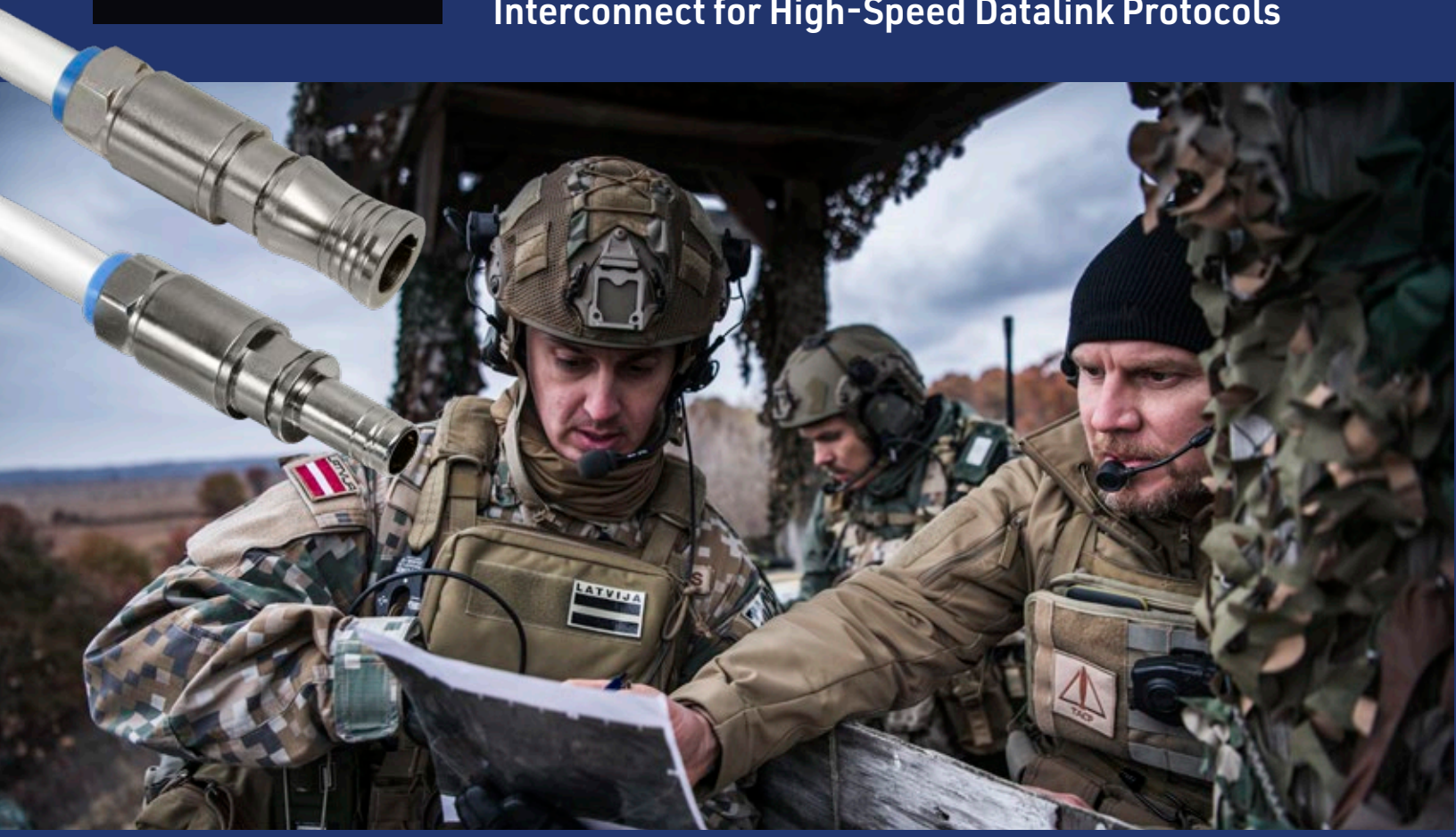


C2M2N	E4M4N	F4M8N	G6M10N	G6M12N	K13M19N
(2) 1A, (2) 3A	(4) 1A, (4) 3A	(8) 1A, (4) 3A	(10) 1A, (6) 3A	(12) 1A, (6) 3A	(19) 1A, (13) 3A

MIL-AERO/
DEFENSE
INTERCONNECT
SOLUTIONS

SUPERFLY DATALINK

The Nano miniature Shielded Octaxial Interconnect for High-Speed Datalink Protocols



High speed, harsh environment SuperFly® Datalink connectors–shielded for 10Gb Ethernet, SuperSpeed USB, HDMI, SATA, and DisplayPort protocols–deliver outstanding signal integrity and save significant size and weight compared to Quadrax solutions.

PANEL MOUNT CONNECTOR

Panel mount SuperFly Datalink receptacles feature straight or right angle printed circuit board terminals. SuperFly Datalink board mount jacks are epoxy-sealed and are compatible with conformal coatings.

Quick Disconnect

Threaded Coupling

Straight PC Tails

Right Angle PC Tails

SERIES 882

SuperFly® Datalink

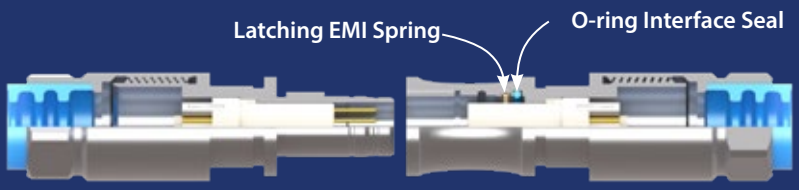
The high-speed nano miniature connector for harsh environment defense applications

SUPERFLY DATALINK

The High-Speed Ultraminiature Connector for Harsh Environments

- **Ultra-small size**
- **Shielded Octaxial contacts**
- **Combo arrangement for HDMI 2.0 and DisplayPort 1.2**
- **40Gb Ethernet, SATA and SuperSpeed USB**
- **Up to 10 Gbps per pair**
- **PCB or cable termination**
- **Threaded or Quick-disconnect**
- **Environmentally protected**
- **Aerospace-grade performance**
- **Panel-mount connectors fully-sealed for compatibility with conformal coatings used in board assembly**

PUSH-PULL QUICK-DISCONNECT

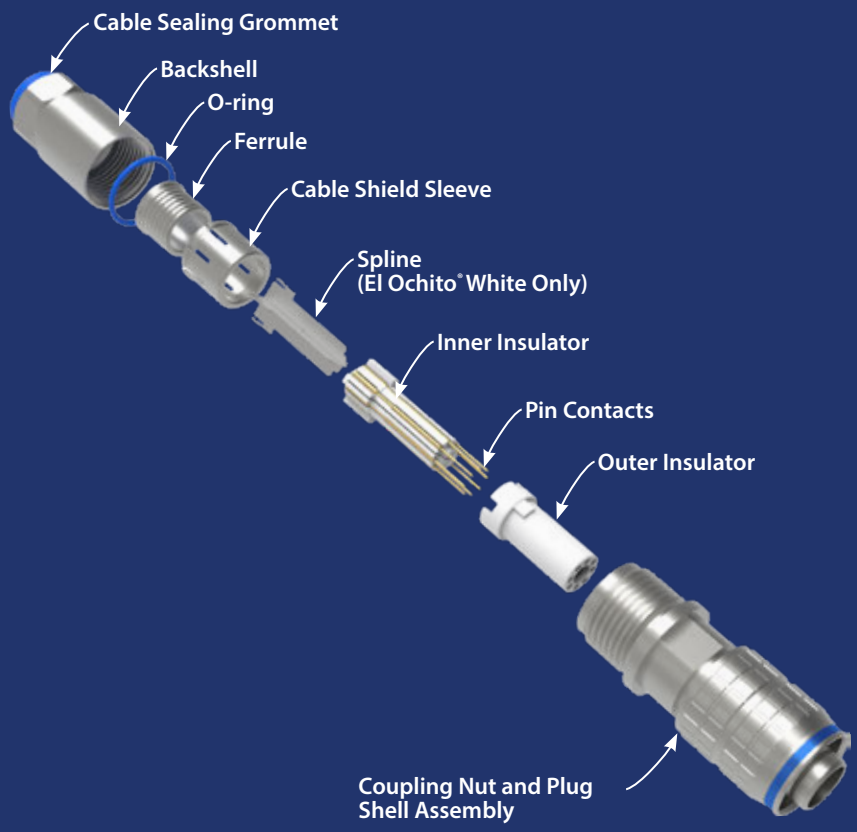


882-001
Plug Connector

882-002
Receptacle Connector

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

THREADED-COUPLING CABLE CONNECTOR



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.

nano miniature™

Glenair Signature MIL-DTL-32139 type Nano miniature circular connectors

Glenair Nano Circular—the smallest and lightest harsh-environment connector in the business. From left to right: D38999 Series III, Mighty Mouse Series 805, Glenair SuperFly, and Nanominiature Series 89 Nano Circular—all with similar pin count

The M32139 Nano circular is the smallest and lightest harsh-environment connector in the business. 1 Amp contacts are set on .025" centers and terminated to 30 AWG wire or PCB tails. Glenair supplies both breakaway and threaded mating configurations with optimal size and weight reduction (SWaP).

- **Push-pull and threaded mating**
- **Metal shell: aluminum or stainless steel**
- **High vibration and shock gold alloy TwistPin contact system**
- **Prewired pigtails and PCB thru-hole**
- **Straight and right-angle thru-hole PCB versions**

THE NANO TWISTPIN ADVANTAGE

Transverse cross-section of a TwistPin contact crimped to solid wire

- **Gas-tight crimp joint**
- **Better shock and vibration performance**
- **Corrosion proof contact alloy**

Optimal SWaP for tactical warfighter applications

SERIES 89

Nano Miniature Circular Connectors

High density nano · signature TwistPin contacts · cable and PCB

PRODUCT SELECTION GUIDE AND PERFORMANCE SPECIFICATIONS

Pre-wired and PCB thru-hole mount circular nano plug and receptacle connectors with threaded or breakaway interfaces. Available receptacle mounting configurations include front panel mount, rear panel mount and inline.

892-007 Breakaway Plug

892-005 Inline Threaded Receptacle

892-004 Inline Breakaway Receptacle

892-001 Front Panel Mount Threaded Receptacle

892-000 Front Panel Mount Breakaway Receptacle

892-003 Rear Panel Mount Threaded Receptacle

892-002 Rear Panel Mount Breakaway Receptacle

893-009 Rear Panel Mount, Threaded Receptacle with PC Tails

893-008 Rear Panel Mount, Breakaway Receptacle with PC Tails

893-011 Rear Panel Mount, Threaded Receptacle with Right-Angle PC Tails

893-010 Rear Panel Mount, Breakaway Receptacle with Right-Angle PC Tails

899-013, 899-014, 899-016 and 899-017 Threaded and Breakaway Circular EMI Covers

892-006 Threaded Plug

600-189 Spanner Nut Socket drive for rear panel mount circular connectors

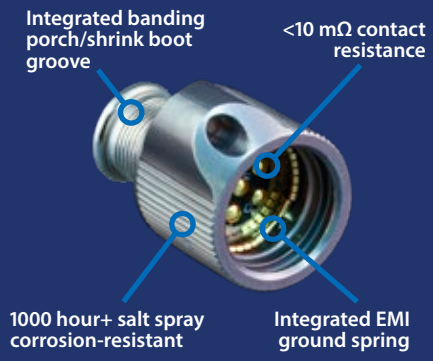
SERIES 89 NANO MINIATURE CIRCULAR CONNECTOR PERFORMANCE			
Contact Spacing	.025" (0.64mm) Contact Centers	Contact Resistance	71 Millivolt Drop Maximum
Wire Accommodation	#30-#32 AWG	Shock, Vibration	100g's, 20 g's
Current Rating	1 AMP Max	Durability	200 Mating Cycles
DWV	250 VAC RMS Sea Level	Corrosion Resistance	48 Hours Salt Spray
Insulation Resistance	5000 Megohms Minimum	Mating Force	5 Ounce Max, 0.4 Ounce Min
Operating Temperature	-55° C. to +125° C.		

MIL-AERO/
DEFENSE
INTERCONNECT
SOLUTIONS

HiPer 55116

QPL and high-performance MCOTS 55116 Audio / Radio Connector Technology

Series 152 HiPer 55116 connectors offer significant performance advantages for modern soldier communication systems



Fully intermateable and interoperable with MIL-DTL-55116 connectors

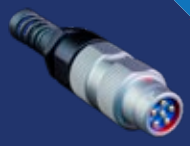
- **Intermateable and interoperable with standard MIL-DTL-55116 connectors**
- **Low contact resistance: Less than 10 milliohms**
- **Integrated EMI ground spring provides improved 2.5 milliohm shell-to-shell conductivity performance**
- **IP68 rated sealing in mated and unmated condition, prevents water ingress into radio equipment**
- **1,000 hour+ salt spray corrosion resistance**
- **Integrated cable shield termination band porch**
- **Superior 100 pound cable pull test rating**

GLENAIR DLA QUALIFIED SERIES 151 STANDARD MIL-DTL-55116 AUDIO CONNECTORS

151-001 MIL-DTL-55116 QPL audio plug with wire strain relief

151-002 MIL-DTL-55116 QPL audio plug/overmold adapter

151-003 MIL-DTL-55116 QPL radio-mount jam nut receptacle



151-004 MIL-DTL-55116 QPL in-line receptacle, strain relief

SERIES 152 INTERMATEABLE

HiPer 55116 Radio Connectors and Cables

Superior environmental, EMC, and durability performance

SERIES 152 HIPER 55116 CONNECTOR SELECTION GUIDE

Audio plug, field serviceable, with wire strain relief and rigid contacts, crimp and solder cup

Overmolded audio plug cordset with wire strain relief

Audio plug with shield termination porch, overmolding adapter and rigid contacts, crimp and solder cup

Overmolded audio plug cordset

In-line receptacle with shield termination porch, overmolding adapter, and non-rigid spring contacts, crimp and solder cup

Overmolded in-line audio receptacle cordset

Radio-mount jam nut audio receptacle with non-rigid spring contacts or PC tails and optional ground pins

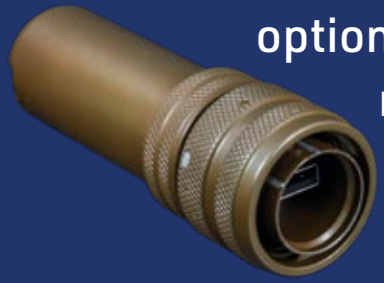
Filtered radio-mount jam nut audio receptacle with non-rigid spring contacts, solder cup, or PC tails

Special adapter configurations and protective covers

MIL-AERO/
DEFENSE
INTERCONNECT
SOLUTIONS

SuperSeal RJ45 and USB field connectors. Now available for USB SuperSpeed 3.0

Military-grade, ruggedized field connectors that deliver improved environmental sealing, EMI/RFI grounding, and a broader range of wire termination options for RJ45 and USB – now available for USB SuperSpeed 3.0



Available ruggedized memory stick
32GB, 64GB, and 128GB versions

- New SuperSpeed USB 3.0 protocol support
- Superior sealing—IP67 unmated—for complete system protection against water, sand and dust
- Highly durable SuperSeal™ insert design, provides enhanced operating temperature, increased life-cycle, and rugged vibration and shock performance
- Crimp, solder-cup, PC tail and cable assemblies

SuperSpeed USB 3.0
Ruggedized connectors and cables

MIL-DTL-38999 Series III USB / RJ45 field connectors

NEW SUPERSPEED USB 3.0 RUGGEDIZED FIELD CONNECTORS

Cable plug

Wall mount receptacle with metric clinch nuts

Wall mount receptacle with slotted holes

Wall mount receptacle with round holes

Jam nut mount receptacle

TURNKEY SUPERSPEED USB 3.0 CABLE ASSEMBLIES AND JUMPERS

Glenair SuperNine USB 3.0 cable jumpers, SuperSeal to standard USB Type A and Micro-B connectors

SuperSeal USB 3.0 connectors are available as turnkey cable jumpers. Rugged field connector styles—including plug, wall mount and jam-nut receptacles—may be cabled with commercial 3.0 connector types including male Type A, female Type A, and male Micro B. Assemblies may be ordered with straight or right angle cable exit. In addition, the USB 3.0 insert may be ordered in horizontal or vertical orientation to provide protection against mis-mating. Maximum overall length is 15 feet.

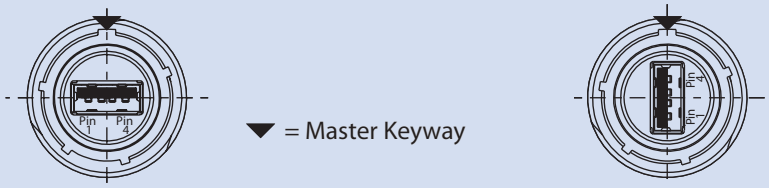
SUPPORTED USB 3.0 CONNECTOR TYPES

USB 3.0 male Type A

USB 3.0 female Type A

USB 3.0 male Micro B

USB ORIENTATION OPTIONS



Horizontal

Vertical

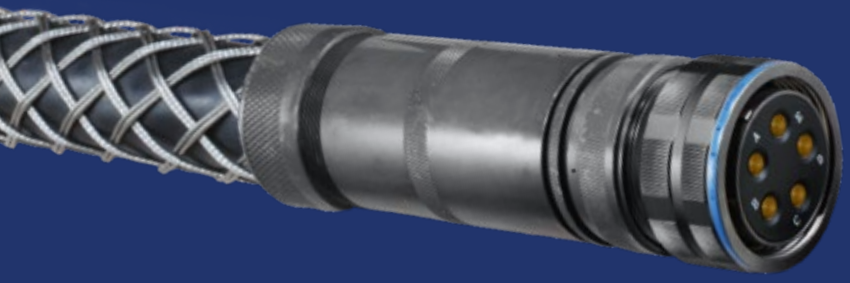
POWER TRIP™

Series 970 PowerTrip™ reduced size and weight power connectors for extreme environments

Reduced size and weight power connectors

Lightweight plug with ratcheting coupling nut and LouverBand contacts

Keyed receptacle with superior sealing and EMI shielding



- Fast, easy mating with triple-start ACME thread: 360° turn for full mating
- Reduced size and weight compared to 5015/VG95234 solutions
- LouverBand sockets for improved current ratings and longer life, up to 2000 mating cycles
- Splined backshell interface for improved backshell attachment and EMI shielding
- Ratcheting coupling nut for secure mating
- Operating temperature -65° C to +200° C
- Hermetic and filter options available

The Series 970 PowerTrip™ offers improved performance compared to standard 5015 type power connectors: higher density and lighter weight packaging, rapid mating and demating triple-start threaded coupling, and extremely rugged splined and threaded backshell attachment interface

SERIES 970

PowerTrip™ Connectors and Cables

The power connector for extreme environments

SERIES 970 POWERTRIP™ CONNECTOR STYLES

Plug
970-001

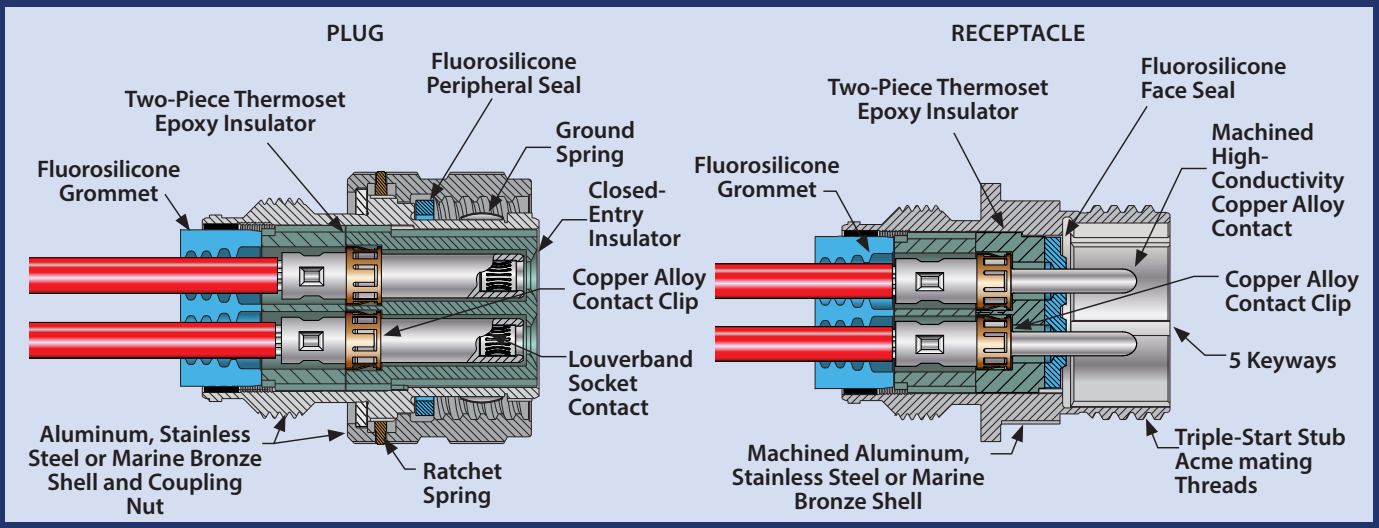
Square Flange Receptacles
970-003

Jam Nut Receptacles
970-004

Cable Receptacles
970-005

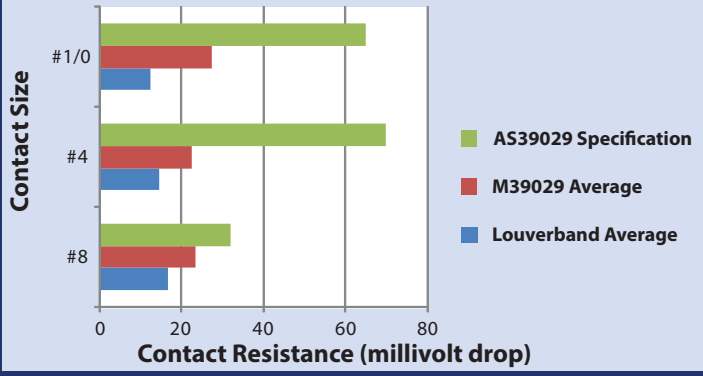
Feed-Thru Bulkhead
970-006

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 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 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

MIL-AERO/
DEFENSE
INTERCONNECT
SOLUTIONS

DLA, Navy, and TACOM-Qualified environmental heat-shrink boots and molded shapes

For advanced abrasion protection, environmental sealing, splicing, and wire protection

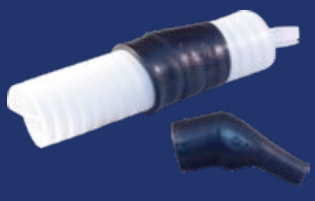
NAVSEA-Qualified
Heavy-Wall Boot
5617649

ALSO AVAILABLE: AUTOSHRINK COLD-SHRINK BOOTS

AUTOSHRINK™

Autoshrink D
UV-resistant / LSZH

Autoshrink F
Advanced fluid resistant



Autoshrink S
Subsea

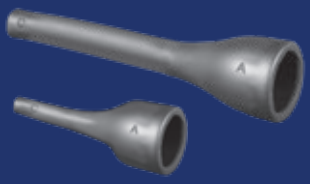
Autoshrink T
High-temperature-tolerant

Heat-Shrink and Autoshrink™ Boots and Molded Shapes

Abrasion protection · environmental sealing · splicing

COMPLETE RANGE OF ENVIRONMENTAL HEAT-SHRINK BOOTS AND MOLDED SHAPES

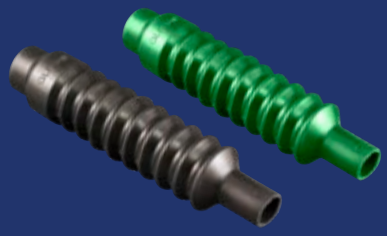
Standard lipped or lipless boots



Long tail and high-ratio configurations

90° and 45° angle boots

SuperFly, Mighty Mouse, and D-subminiature configurations



Convoluted accordion boots

Y, T, and multibranch transitions

Colored boots available

GLENAIR SERIES 77 "FULL NELSON" TACOM APPROVED SHRINK BOOTS

Description	Military Part Number	Glenair Part Number	Raychem Part Number	Hellermann Part Number
Heat Shrinkable Low Profile 3-Entry "Y" Transition	12273148-1**	770-009Y*05	381A301-**	492H412-*
	12273148-2**	770-009Y*06	381A302-**	492H413-*
	12273148-3**	770-009Y*07-01	381A303-*01	492H414-*01
	12273148-4**	770-009Y*08-01	381A304-*01	492H415-*01
	12273148-5**	770-009Y*07	381A303-**	—
Heat Shrinkable Low Profile 3-Entry "T" Transition	12273162-1**	770-012T*01	301A511-**	412H622-*
	12273162-2**	770-012T*02	301A512-**	412H623-*
	12273162-3**	770-012T*03	301A513-**	412H624-*
	12273162-4**	770-012T*04	301A514-**	412H625-*
Heat Shrinkable Low Profile 4-Entry 3:1 Transition	12273163-1**	770-014*09	462A421-**	573H532-*
	12273163-2**	770-014*10	462A422-**	573H533-*
	12273163-3**	770-014*11	462A423-**	573H534-*
	12273163-4**	770-014*12	462A424-**	573H535-*
Heat Shrinkable Adapter Shim Boot	12273164-1**	770-019SB*01	202E334-**	313E445-*
	12273164-2**	770-019SB*02	202E344-**	313E455-*
	12273164-3**	770-019SB*03	202E336-**	313E447-*
	12273164-4**	770-019SB*04	202E346-**	313E457-*
Heat Shrinkable Convoluted Strain Relief 2-Entry Boot	12273242-1**	770-022C*01	202C611-**	313C722-9
	12273242-2**	770-022C*02	202C621-**	313C732-9
	12273242-3**	770-022C*03	202C632-**	313C743-9
	12273242-4**	770-022C*04	202C642-**	313C753-9
	12273242-5**	770-022C*05	202C653-**	313C764-9
	12273242-6**	—	202G621-**	—
	12273242-7**	—	202G632-**	—
	12273242-8**	—	202C642-**	—
	12273242-9**	—	202C653-**	—

Description	Military Part Number	Glenair Part Number	Raychem Part Number	Hellermann Part Number
Heat Shrinkable Straight Lipped 2-Entry Long Tail Boot	12273147-1**	770-020S*02	202F211-**	313F322-*
	12273147-2**	770-020S*03	202F221-**	313F332-*
	12273147-3**	770-020S*04	202F232-**	313F343-*
	12273147-4**	770-020S*05	202F242-**	313F353-*
	12273147-5**	770-020S*06	202F253-**	313F364-*
	12273147-6**	770-020S*07	202F263-**	313F374-*
	12273147-7**	770-020S*08	202F274-**	313F385-*
Heat Shrinkable 90° Lipped 2-Entry Long Tail Boot	12273176-1**	770-021A*02	222F211-**	333F322-*
	12273176-2**	770-021A*03	222F221-**	333F332-*
	12273176-3**	770-021A*04	222F232-**	333F343-*
	12273176-4**	770-021A*05	222F242-**	333F353-*
	12273176-5**	770-021A*06	222F253-**	333F364-*
	12273176-6**	770-021A*07	222F263-**	333F374-*
	12273176-7**	770-021A*08	222F274-**	333F385-*

M85049-QUALIFIED BOOTS

M85049/140 (straight), /141 (right-angle), and /142 (transitions)

HighSpeed

VersaLink™, SpeedMaster™, El Ochito®, and other Signature high-speed datalink connectors

Glenair high-speed datalink assemblies are proudly made with Signature SpeedLine high-speed cable

Glenair Signature high-speed interconnects are optimized for all popular datalink protocol standards

DisplayPort · SERIAL ATA · HDMI™ HIGH DEFINITION MULTIMEDIA INTERFACE · SUPERSPEED USB CERTIFIED

RF / HIGH-SPEED DATALINK CONTACTS

Size #8 differential twinax contacts

Size #8 quadrax contacts

Size #8 spring-loaded BMB microwave contacts

Size #12 SMPM type spring-loaded coaxial

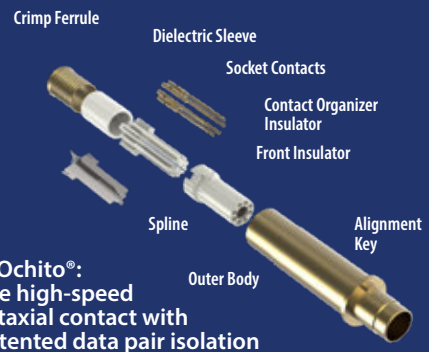
G-LinkRF SMA contact adapter

SIGNATURE

High-Speed Datalink Interconnect Solutions

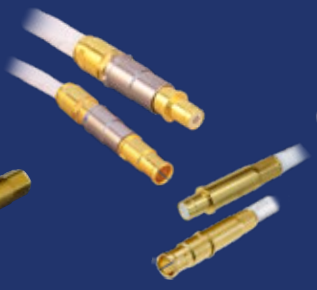
Up to 28 Gbps

El Ochito® THE OCTAXIAL SIZE #8 CONTACT FOR GbE/10GbE ETHERNET, USB 3.0, HDMI, AND MORE



El Ochito®: The high-speed octaxial contact with patented data pair isolation

Discrete contacts for D38999 Series III, Series 806 Mil-Aero, SuperNine®, ARINC 600, and Series 79 for both #24 and #26 gauge cable



Turnkey jumpers with Cat 6A #24 or #26 gauge flexible aerospace cable

Series 79 right-angle PCB connector with El Ochito white (Ethernet), blue (USB 3.0), and red (100 Ohm HDMI, DVI, SATA, and PCI)

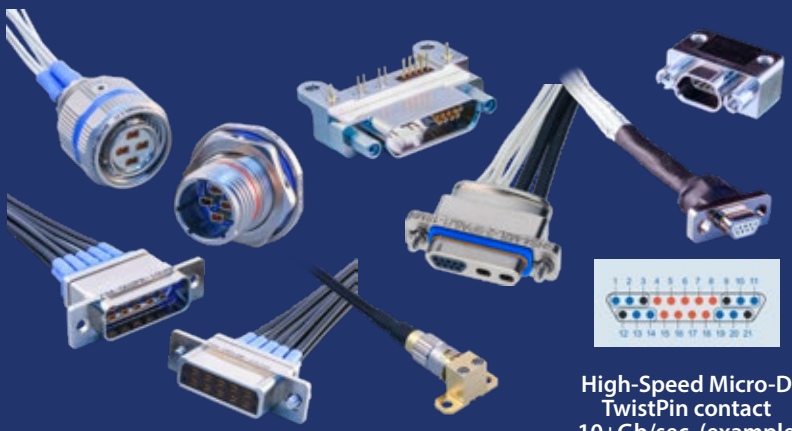
Series 882 SuperFly Datalink El Ochito nanominiature

Series 806 Mil-Aero high-speed El Ochito micro miniature

SuperNine MIL-DTL-38999 "Better than QPL" high-speed El Ochito

Series 792 Micro-Crimp precision-machined high-speed El Ochito

GLENAIR SIGNATURE HIGH-SPEED CONNECTOR SERIES



VersaLink micro miniature differential twinax with Signature Series 806, 795, and Micro-D packaging

High-Speed Micro-D TwistPin contact 10+Gb/sec. (example insert with four high-speed signal pairs

GMMD modular high-speed Micro-D RF / 10GbE connector

Speed-Master™ modular 10G+ Ethernet (shown in SuperNine® packaging)

MIL-AERO/
DEFENSE
INTERCONNECT
SOLUTIONS

SuperNine®

The advanced-performance MIL-DTL-38999 Series I, II, III, and IV type connectors

Wide range of signature PC tail standoff designs, all with superior sealing and resistance to vibration and shock

SuperNine® is a "Better-than-QPL" MIL-DTL-38999 Series I, II, III, and IV connector family with outstanding durability, sealing, ease of shield termination, PC tail configurations, environmental and hermetic classes, connector savers, as well as off-the-shelf EMI/EMP filter connectors and more—all with Glenair's legendary service, support, and product availability.

SUPERNINE SERIES I AND SERIES II BAYONET-LOCK CONNECTORS

SuperNine Series I (scoop-proof) and Series II (low-profile) bayonet-lock connectors (available now in Class G space-grade)

SERIES 23

SuperNine MIL-DTL-38999 Series I, II, III, and IV

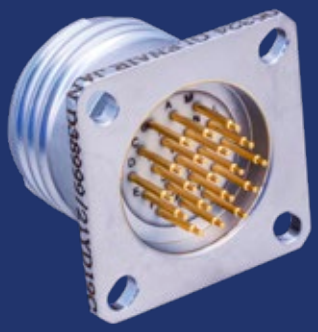
Advanced performance mil-aero / defense connectors

SUPERNINE MIL-DTL-38999 SERIES III QPL COMPOSITE CLASSES J AND M

- DLA-qualified composite classes J (Cad / O.D.) and M (Electroless Nickel)
- QPL and Glenair signature series
- Available integrated banding porch with 50% weight savings
- D38999/26 plug and D38999/20 wall-mount receptacle
- 100% molded composite (not machined) for superior strength and durability
- 30% glass-filled PEEK
- 20% weight savings versus standard metal connector

ADVANCED-PERFORMANCE SUPERNINE PLUGS AND RECEPTACLES

Anti-decoupling, high vibration ratcheting coupling nut IAW Bell Helicopter 299-100-B29 vibration testing



Glass-to-metal sealed and lightweight CODE RED encapsulant sealing hermetic-class connectors

SuperNine PowerPlay high-voltage connectors with temperature-tolerant Crown Ring contacts

High-temperature and cryogenic ThermaRex solutions

High-speed El Ochito Octaxial solutions for 10Gb Ethernet, USB 3.0 and SATA

High-frequency RF and hybrid RF/signal configurations

MIL-AERO/
DEFENSE
INTERCONNECT
SOLUTIONS

SuperNine®

The advanced-performance MIL-DTL-38999 Series IV breech-lock connector

From vertical launch fire-control, tracking, and multi-target missile systems to rugged industrial applications, Glenair "Better-than-QPL" SuperNine and DLA-qualified D38999 Series IV connectors are the ultimate solution for positive and reliable breech-locking performance.

- **QPL manufacturer of MIL-DTL-38999 Series IV Class F, W and G connectors**
- **"Better-than-QPL" SuperNine Series IV offers advanced performance and features beyond the Mil-spec**
- **Optimized for SWAMP area applications**
- **Quick-disconnect 90° breech coupling mechanism**
- **Visual, audible and tactile full-mate indicators**
- **Integrated EMI grounding fingers**
- **-65°C to 200°C operating temperature range**

QPL QUALIFIED AND MCOTS EQUIVALENT

MIL-DTL-38999 Series IV, Breech Coupling

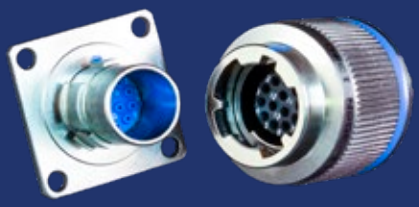
Anti-decoupling, vibration and shock resistant DLA qualified and Glenair SuperNine derivatives

SUPERNINE SERIES IV "BETTER-THAN-QPL" FEATURES AND BENEFITS

- Secure breech-lock mating connector meets D38999 shock and vibe
- Integral banding porch eliminates need for back-end accessories
- Improved plug ground fingers deliver outstanding EMI performance—equal to D38999 Series III
- Glenair Signature Tin-Zinc finish class is RoHS compliant and cadmium compatible
- Precision-machined key/keyway polarization for reliable mismating protection
- Scoop-proof design prevents pin damage and short circuits
- Fully tooled for all MIL-STD-1560 insert arrangements
- Contact options include size #22D, #20, #16, #12, and High-Speed Twinax, Quadrax, and Octaxial El Ochito Size #8 plus hybrid arrangements
- 500 mating cycles exceeds MIL-DTL-38999 specification

38999 SERIES IV ACCESSORIES

QPL accessories including protective covers and dummy receptacles



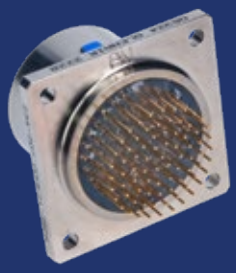
Series IV solutions are available in environmental and hermetic class configurations in shell sizes from 11–25 supporting a popular range of MIL-STD-1560 insert arrangements

Glenair's complete Series IV solution includes support for power, signal, and hybrid insert arrangments including shielded coax, #22, #20, #16 and #12 contacts

"BETTER-THAN-QPL" SUPERNINE SERIES IV CONNECTOR DESIGNS

Sav-Con® connector saver, black zinc-nickel finish

Dual-flange panel-mount feedthrough



Panel-mount receptacle with sealed PC-tails

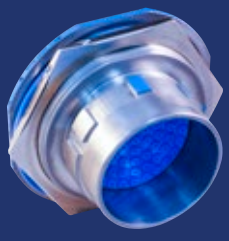
Plug with wing-lock coupling and EMI ground fingers

SUPPORTED CRIMP-CONTACT SHELL STYLES

Plug

Wall-Mount Receptacle

Box-Mount Receptacle



Jam-Nut Receptacle

In-Line Receptacle

filter connectors

EMI/RFI Filter Connectors and EMP Suppression: Planar Array Power, Signal, and TVS Solutions

All diode-equipped EMP inserts and planar array EMI filter inserts produced in-house

Planar filter array and TVS diode connectors diodes in standard catalog as well as build-to-order configurations

Table I: Capacitor Array Code / Capacitance Range		
Class	Pi - Circuit (pF)	C - Circuit (pF)
X	160,000 - 240,000	80,000 - 120,000
Y	80,000 - 120,000	40,000 - 60,000
Z	60,000 - 90,000	30,000 - 45,000
A	38,000 - 56,000	19,000 - 28,000
B	32,000 - 45,000	16,000 - 22,500
C	18,000 - 33,000	9,000 - 16,500
D	8,000 - 12,000	4,000 - 6,000
E	3,300 - 5,000	1,650 - 2,500
F	800 - 1,300	400 - 650
G	400 - 600	200 - 300
J	70-120	35-60

Planar filter arrays and TVS diodes may also be incorporated into rectangular connector packaging such as the Micro-D and Series 79 Micro-Crimp devices shown here.

- **Planar, multilayer ceramic capacitive filters, with and without transient voltage suppression diodes**
- **Space-grade plating and outgassing processing**
- **C and Pi electrical configurations**
- **PC tail, crimp or solder cup termination**
- **35 – 240,000 pF capacitance**
- **Fast and reliable diode burn-in and test services**
- **Turnkey in-house manufacturing of all filter connector elements and processes**

SPACE-GRADE

EMI/EMP Filter connectors

Innovative designs · total vertical integration

Extended-shell
PC-tail cylindrical filter
with threaded standoff

Special-purpose
filter connector cable
adapter (Sav-Con®)

Custom reduced-length
sidecar filter connector design

Series 80 Mighty Mouse
PC-tail filter receptacle

Series 80 Mighty Mouse
solder-cup filter receptacle
with integrated banding porch

MIL-DTL-38999 type
crimp-contact termination
filter receptacle

MIL-DTL-38999 Series
III type EMP TVS diode-
equipped filter connector

MIL-DTL-83723 type filter
connector, gold-plated for atomic
oxygen corrosion resistance

Quick-disconnect circular with
solder-free contact filter array

MIL-AERO/ DEFENSE INTERCONNECT SOLUTIONS

GLASS-SEALED **Hermetic** CONNECTORS

Best-of-Class Hermetic Seal Connector Design

Resolve gas, moisture, and particle ingress problems with conventional glass-sealed hermetic or advanced CODE RED lightweight encapsulant-sealed designs.

ALL SOLUTIONS DELIVER

- **Superior pressure resistance to 32,000+ PSI**
- **Higher resistance to extreme operating temperatures to 260°+ C**
- **Superior mechanical strength**
- **No material breakdown or aging over time**
- **Helium leak rate <1X10^{-7} cc/sec to 1X10^{-10}**

CODE RED LIGHTWEIGHT HERMETIC SEALING

Lightweight hermetic encapsulant sealing solution with 1X10^{-7} leak rate performance. Available today in Mighty Mouse 806 Mil-Aero, M24308/9 D-Sub and D38999/23.

Aluminum shell CODE RED hermetic connectors and copper contacts reduce weight and improve electrical performance compared to heavier-duty glass-to-metal seal hermetic solutions.

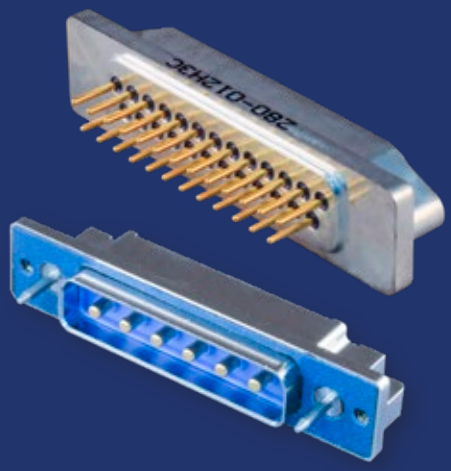
ADVANCED PERFORMANCE

Glass-Sealed Hermetic Connectors

Thousands of same-day-availability part numbers

UNIQUE HERMETIC OFFERINGS AND CATALOG (COTS) SOLUTIONS

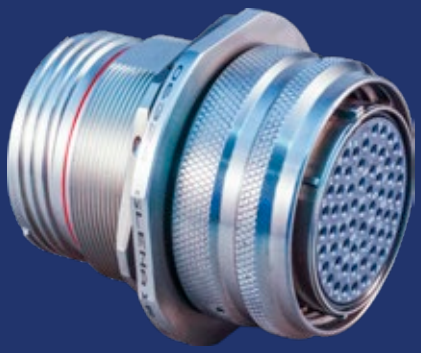
Coax, Triax, Quadrax and hybrid-contact layouts



Rectangular hermetics including Series 28 HiPer-D and Series 79

El Ochito high-speed octaxial contacts in a lightweight CODE-RED sealed bulkhead feed-thru

Triax hermetic



Hermetic Sav-Con feed-thrus and gender changers

Dual-flange PC tail hermetic

Hermetic with crimp-removable contacts

Hermetic bulkhead penetrators

Hermetic receptacles with integrated band porch

MIL-AERO/ DEFENSE INTERCONNECT SOLUTIONS

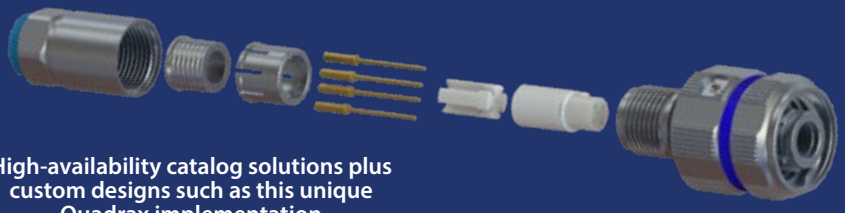
SERIES 806 MIL-AERO

Series 806 Mil-Aero: Advanced performance, reduced size and weight

Two mating styles available: Triple-start stub ACME and bayonet-lock

Innovative design meets key performance benchmarks for harsh vibration, shock, and environmental settings—as well as high-altitude, unpressurized aircraft zones with aggressive voltage ratings and altitude immersion standards.

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, power, and high-speed contact arrangements
- Hermetic and filter versions
- +200°C temperature rating

Series 806 Mil-Aero Ultraminiature Circular Connectors

For harsh mil-aero applications IAW MIL-DTL-38999

SERIES 806 MIL-AERO: FEATURES / SPECIFICATIONS

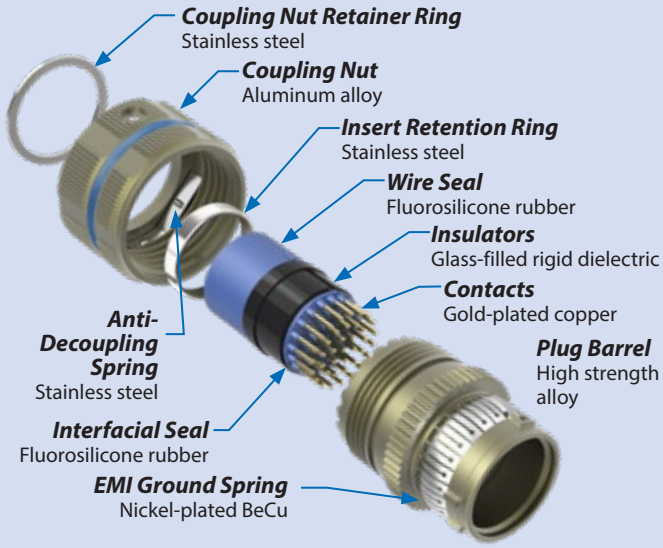
- **Supported wire sizes:**
  #20HD contacts
  20–24 AWG
  #22HD contacts
  22–28AWG
- **Dielectric withstanding voltage**
  #20HD layouts: 1800 VAC
  #22HD layouts: 1300 VAC
- **Reduced pitch triple-start modified anti-decoupling stub ACME mating threads**
- **"Triple ripple" wire sealing grommet (75,000 ft. rated)**
- **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

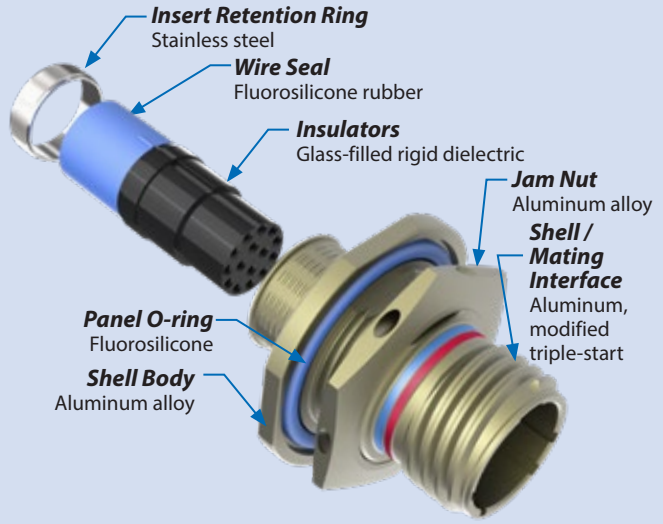
CODE RED is a lightweight encapsulant sealing and assembly process with 50% package-weight savings compared to glass-to-metal seal Kovar/stainless steel solutions. Non-outgassing CODE RED (IAW NASA/ESA) provides durable hermetic sealing with $1X10^{-7}$ leak rate performance. Gold-plated copper contacts deliver outstanding low-resistance current carrying capacity.

CODE RED

SERIES 806 MIL-AERO PLUG



SERIES 806 MIL-AERO RECEPTACLE



SMALLER AND LIGHTER WITH EQUAL D38999 PERFORMANCE?

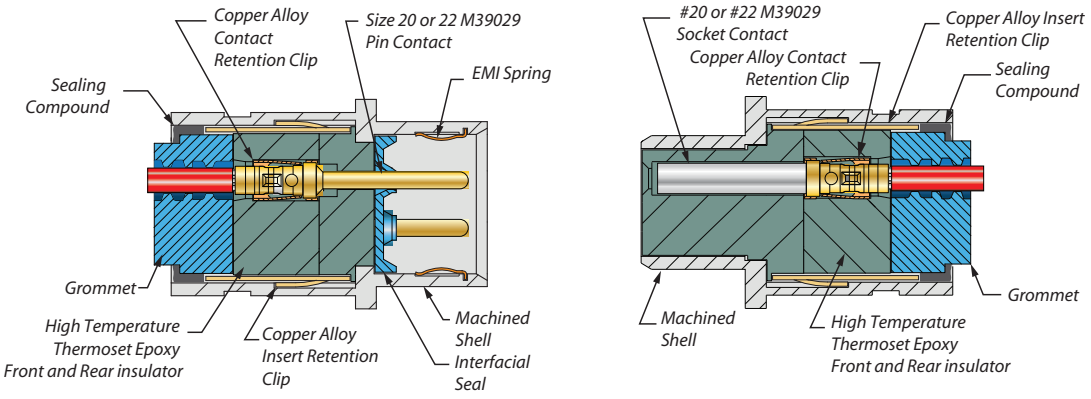
High-Density Layouts	*"Top Hat" Insulator*	*Triple Ripple Wire Seal*
Twice as many contacts in a smaller package	High voltage rating, foolproof alignment	Reliable 75,000 ft. altitude immersion

Advanced-Performance HiPer-D Connectors: Aerospace-Grade M24308 Intermateable

HiPer-D: the advanced-performance M24308 intermateable with one-piece precision-machined shells and enhanced shielding, sealing, and high temperature and vibration tolerance

- **Advanced temperature, vibration and EMC/ electrical performance**
- **11 standard and 20 combo insert arrangements**
- **High temperature epoxy insulators**
- **Watertight sealing**
- **Rugged machined one-piece shell**

STANDARD AND HIGH DENSITY HiPer-D® - CUTAWAY

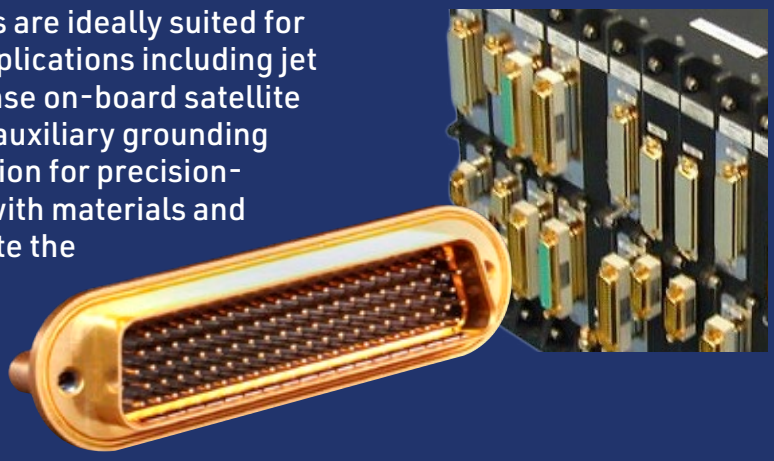


SERIES 28

HiPer-D Aerospace-Grade M24308 Connectors

Precision-machined · shielded · sealed

Glenair HiPer-D M24308 D-sub connectors are ideally suited for both high-altitude and exoatmospheric applications including jet aircraft avionic systems and military defense on-board satellite computers. Connectors are supplied with auxiliary grounding fingers, fully-sealed inserts, accommodation for precision-machined backshells, and are fabricated with materials and production processes designed to eliminate the broad range of electrical, mechanical, and environmental failure modes endemic in stamped-and-formed connector packaging.



HIPER-D HIGH-PERFORMANCE D-SUB VS. MIL-STD-24308		
Specification / Feature	**M24308**	**HiPer-D**
Temperature	-55°C to +125°C	-65°C to +200°C
Insulator	Thermoplastic	Thermoset Epoxy
Shell	Steel (Brass)	Aluminum (SST)
Voltage	1000 VAC	1000 VAC
Grounding	Dimples in shell (not in Mil-Spec)	Nickel-plated Copper Alloy EMI spring
Environmental	No	Yes
Vibration, sine	20 g	60 g
Vibration, random	N/A	43 g
Shock	50 g	300 g
Bolt-on backshells	No	Yes

HIPER-D M24308 COMBO-DS FOR POWER, SIGNAL, AND RF APPLICATIONS

- **Size #8 power and 50 ohm or 75 ohm RF contacts**
- **Mixed layouts with #8's and #20's**
- **200°C continuous operating temperature**
- **20 tooled layouts**
- **Crimp and PC tail terminations**

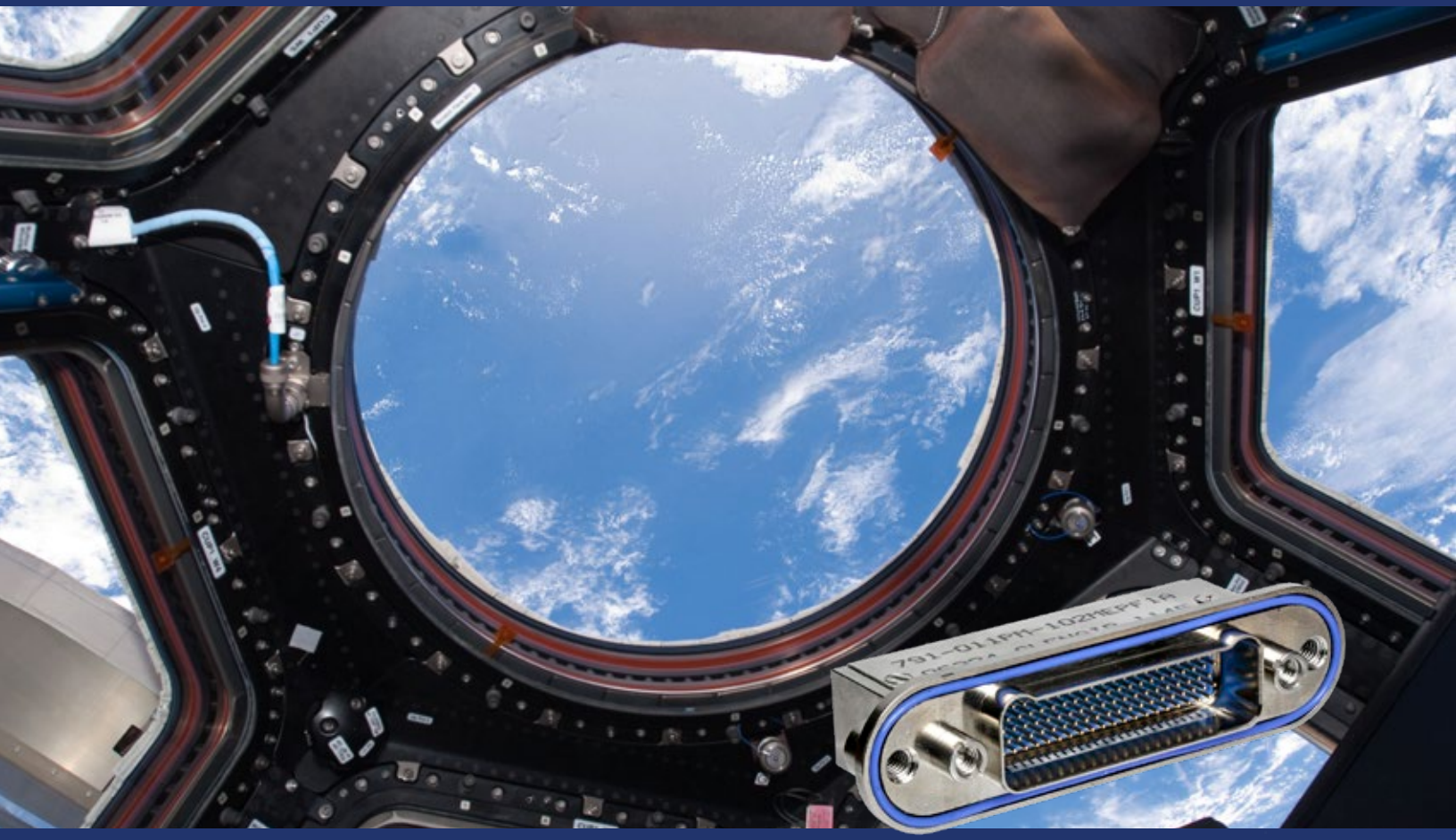
HIGH-SPEED HIPER-D HIGH-PERFORMANCE M24308

Crimp contact non-environmental connectors with #8 contacts for high-speed data transmission

- **One-piece rugged machined aluminum shell**
- **Two to five size 8 Coax, Twinax, or Quadrax contacts**
- **Common ground plane (no insulators)**
- **Available in straight and right angle PCB versions**
- **Non scoop-proof solution. For scoop-proof rectangular connector requirements, see Series 792**

NEXT-GENERATION
MICRO
MINIATURE
CONNECTORS

SERIES 791™ 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.

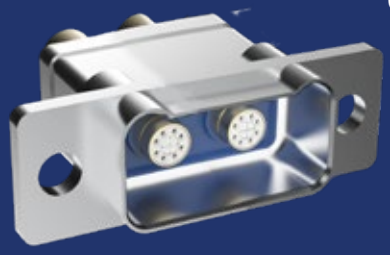
Originally designed for NASA's Orion project, the 791's small size and blind mate capability make it a perfect choice for 2U and 3U electronics modules. Applications include radars, satcom, exoatmospheric vehicles, flight avionics, power distribution units, and satellite instrumentation.

- **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**

SERIES 792™

High-speed El Ochito® variants of Glenair Signature micro miniature crimp-contact rectangular connectors

The Series 792 connector brings high-speed data-rate performance to the Glenair Series 79 rectangular family. Size 8 cavities accept standard Quadrax or El Ochito® shielded octaxial contacts, making it a perfect choice for radars, weapons systems, mission computers and displays, communications gear, and more.



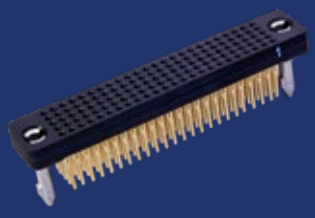
- High-speed Ethernet, USB 3.0, HDMI
- Printed circuit board and cable connectors
- Scoop-proof interface
- 12 arrangements, 6 shell sizes for the ultimate in versatility
- Rugged aluminum alloy dual-lobe polarized shells
- Environmentally sealed
- Integrated EMI shielding and grounding
- Blind mating

MIL-AERO/
DEFENSE
INTERCONNECT
SOLUTIONS

HD STACKER™

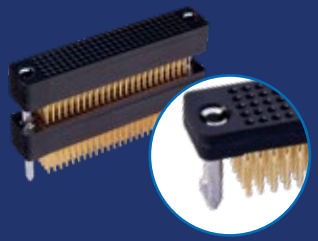
High-density, solder-free, compliant pin board-to-board stackable connectors

HD Stacker: the innovative mission-critical board-to-board connector with fail-safe signal integrity and rugged, reliable harsh-environment performance



Solder-free press-fit (compliant pin) board mounting

.0625" pitch contact spacing: highest available density



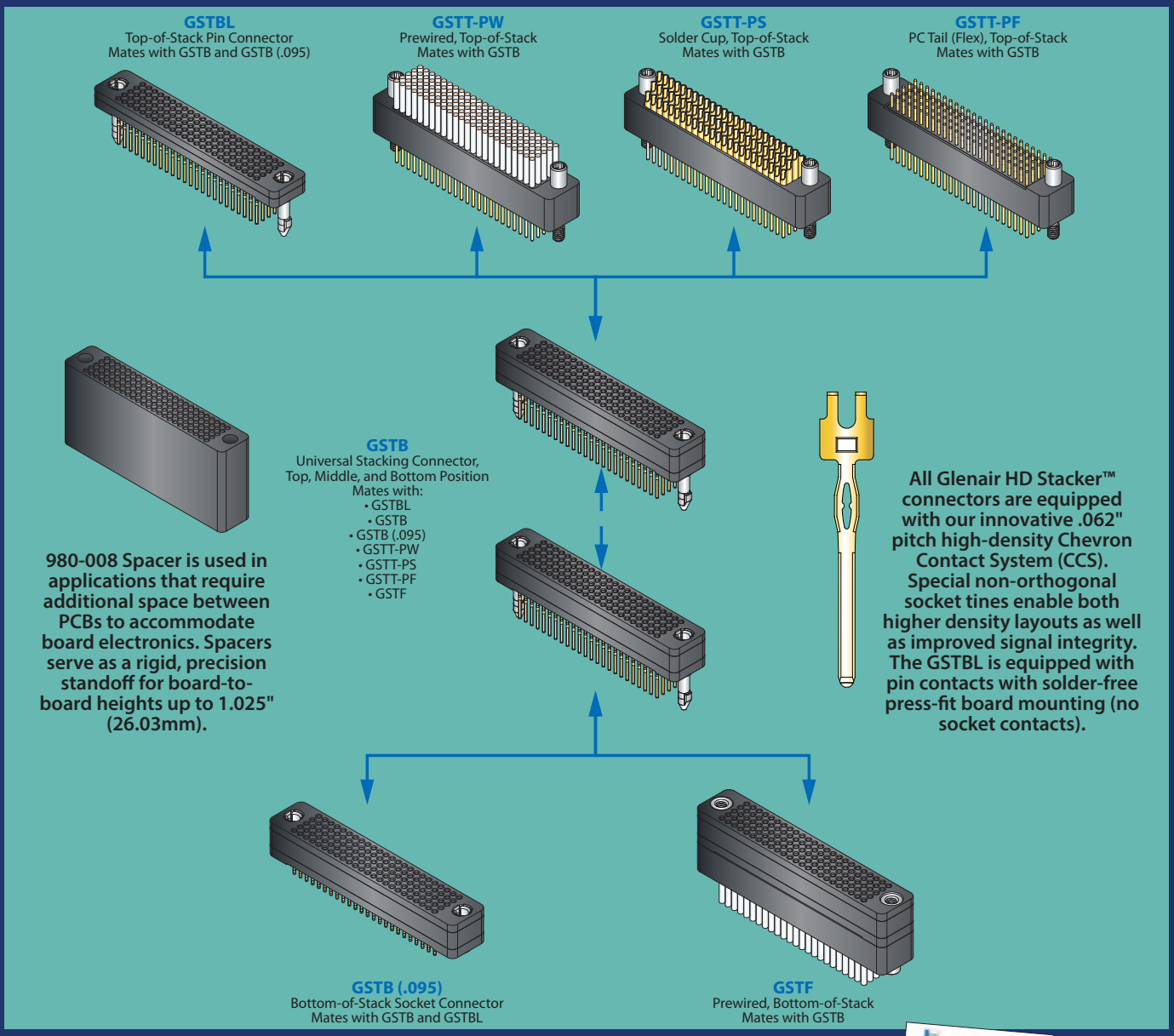
Polarized shells and keyed guide pin hardware prevent mis-mating

- **High-density .0625" pitch Chevron Contact System: 55% more contacts per connector size**
- **PCIe 3.0 capable**
- **Performance up to 10.5 Gbps**
- **Polarized insulator and hardware options**
- **Solder free "eye of the needle" compliant tail for press fit installation**
- **High-temp PPS insulator meets NASA outgassing requirements**
- **Available wired / flex jumpers**
- **Available between-board spacers up to 1 inch**

HD Stacker™

High-density, rugged, solder-free compliant pin board-to-board stackable connectors

HD STACKER™ POSITION AND MATING COMPATIBILITY GUIDE



QUALIFICATION TESTING / HIGH-SPEED PERFORMANCE

Stacker connectors were qualified in accordance with MIL-DTL-55302G testing for:

- Contact engagement/separation
- Contact retention
- DWV
- Electrical resistance
- Mechanical vibration and shock
- Insulation resistance
- Thermal shock
- Contact resistance
- Humidity

High-frequency electrical performance tests were performed for: Insertion loss, return loss, crosstalk, and time domain performance metrics including impedance and eye pattern. Complete test reports are available at **www.glenair.com/test-reports-and-technical-information**

MIL-AERO/
DEFENSE
INTERCONNECT
SOLUTIONS

MICRO-D

MIL-DTL-83513 and Glenair Signature Micro-D Connectors and Splice-Free Cable Assemblies

The world leader in Micro-D connectors: from COTS to custom, backshells to hardware, Glenair has it all

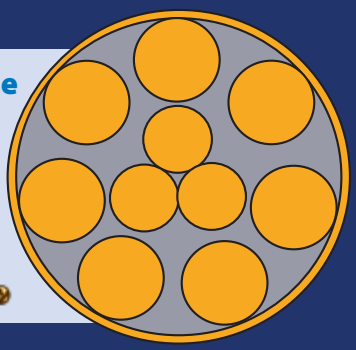
TwistPin equipped MIL-DTL-83513 Micro-D connectors and cables offer outstanding mating performance, durability, low contact resistance, and same-day availability

- **High density TwistPin contacts on .050" centers**
- **Turnkey multibranch and complex cable assemblies**
- **9 to 130 contact arrangements**
- **Single row, multi-row, low profile and high density insert arrangements**
- **QPL and commercial versions**

Splice-free Micro-D and Nano cable assemblies

The Micro TwistPin Advantage

Seven strands of TwistPin BeCu wire make direct contact with the machined socket, assuring low resistance, plenty of contact wipe, and superior shock and vibration performance.



MIL-DTL-83513 AND COMMERCIAL

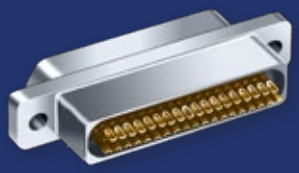
Micro-D Connectors

Mission-critical mating performance industry-leading selection and availability

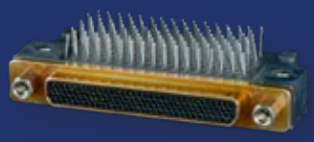
MATERIAL CLASSES AND QUALIFICATIONS

Environmental

Hermetic



EMI / RFI Filter

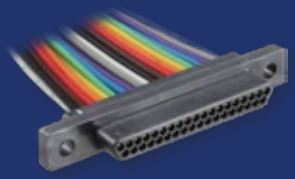


Space-Grade

TERMINATION STYLES

Flex

PCB

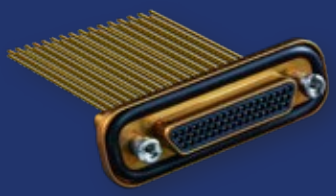


Pigtail

Solder

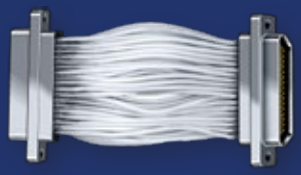
WIRED / CABLED CONFIGURATIONS

Shielded



Uninsulated

Insulated



Back-to-Back

PCB DESIGNS

Vertical

Horizontal

Surface-Mount

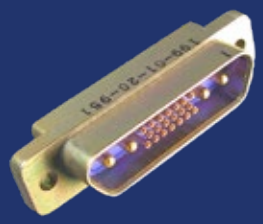
Shrouded

SPECIAL-PURPOSE DESIGNS

High-Temperature

Sav-Con®

Latching MicroStrip



Combo

MIL-AERO/ DEFENSE INTERCONNECT SOLUTIONS

nano miniature™

MIL-DTL-32139 QPL and Glenair Signature Nano miniature connector designs

Turnkey solutions from shielded cable assemblies to discrete wire-to-board interconnects

The M32139 Nano is the smallest and lightest mil-spec connector in the business. 1 Amp contacts are set on .025" centers and terminated to 30 AWG wire or PCB tails. Glenair supplies both standard QPL designs as well as a broader range of signature offerings.

- Single and double row
- Metal shell, aluminum, titanium or stainless steel
- TwistPin contact system
- Gold alloy contact, unplated
- Thru-hole and surface-mount PCB versions

THE NANO TWISTPIN ADVANTAGE

Transverse cross-section of a TwistPin contact crimped to solid wire

- Gas-tight crimp joint
- Better shock and vibration performance
- Corrosion proof contact alloy

SERIES 89

Nano miniature Connectors

Nano high density · single- and dual-row · cable and PCB

SERIES 89 NANO MINIATURE CONNECTOR PERFORMANCE	
Contact Spacing	.025" (0.64mm) Contact Centers
Wire Accommodation	#30-#32 AWG
Current Rating	1 AMP Max
DWV	250 VAC RMS Sea Level
Insulation Resistance	5000 Megohms Minimum
Operating Temperature	-55° C. to +125° C.
Contact Resistance	71 Millivolt Drop Maximum
Shock, Vibration	100g's, 20 g's
Durability	200 Mating Cycles
Corrosion Resistance	48 Hours Salt Spray
Mating Force	5 Ounce Max, 0.4 Ounce Min

HOW SMALL ARE THEY?

D-Subminiature Connector
25 Contacts
on 0.109 Inch Spacing

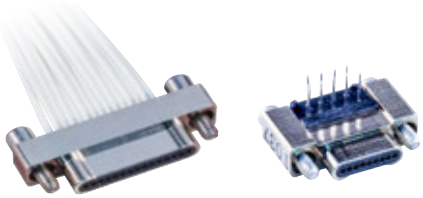
Micro-D Connector
25 Contacts
on 0.050 Inch Spacing

Nano Connector
25 Contacts
on 0.025 Inch Spacing

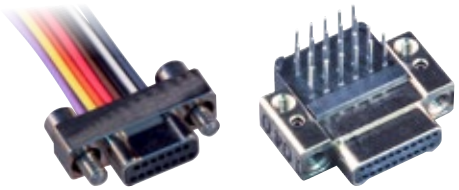
Also available: aerospace-grade Nano circulars

Nano Circular Connectors and Accessories

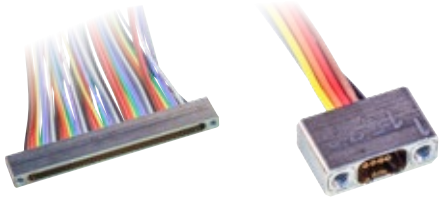
Nano Rectangular Single-Row Connectors and Accessories



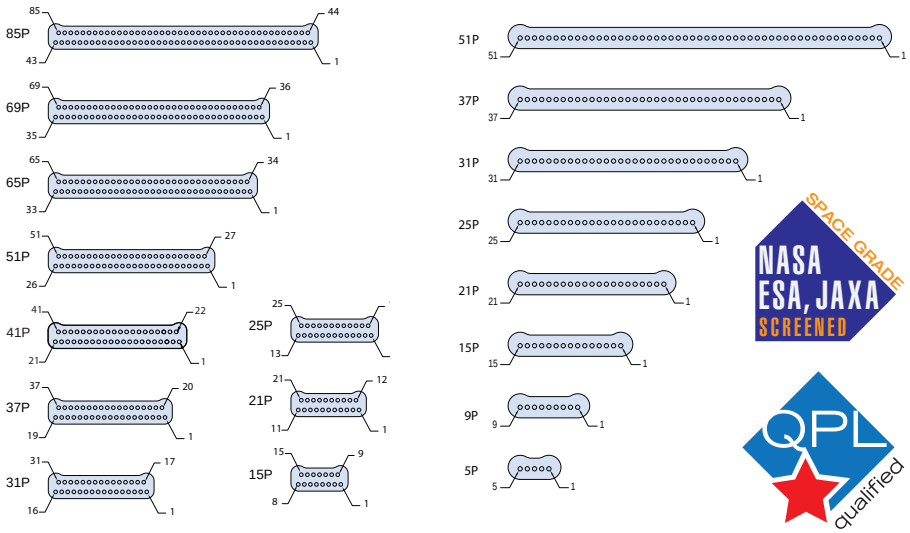
Nano Rectangular Dual-Row Connectors and Accessories



MIL-DTL-32139 Qualified Connectors and Accessories



NANO MINIATURE CONTACT ARRANGEMENTS



MIL-AERO/ DEFENSE INTERCONNECT SOLUTIONS

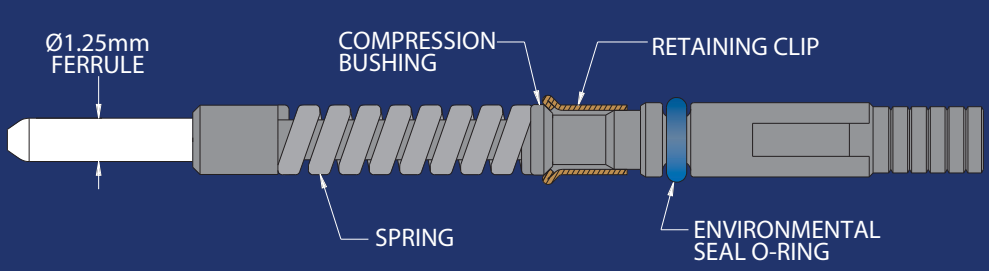
Rugged Fiber Optic CONNECTORS

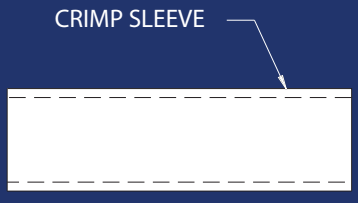
Glenair High Density (GHD) and other Aerospace-Grade Fiber Optic Connection Systems

Our extensive portfolio of high-speed, high-datarate fiber optic connection systems for military defense applications includes QPL'd MIL-T-29504 termini for Mil-standard 38999 fiber optic connectors, ARINC 801 fiber optic connectors and qualified termini, NAVSEA-qualified 28876 fiber optic connectors and qualified termini, and Glenair Signature High-Density (GHD).

DESIGNED FOR

- **Low mass**
- **Dynamic vibration and shock resistance**
- **Extreme temperature resistance**
- **Environmentally sealed**
- **Flammability, toxicity, low-smoke**
- **Indirect lightning strike**
- **Ease-of-maintenance**
- **Uncompromised reliability**



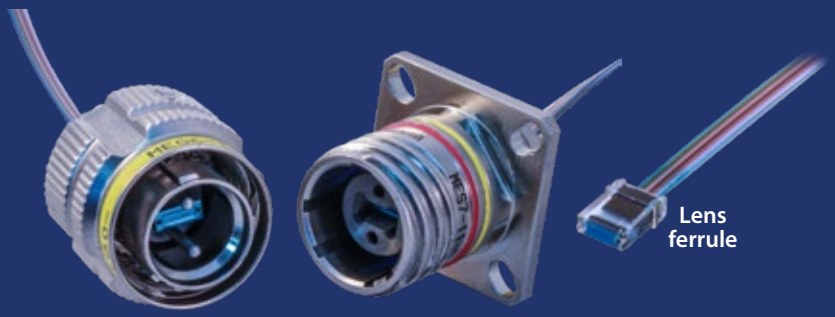


GHD's high-density cavity spacing is achieved with an innovative front-release terminus design that incorporates a high-force spring and compression bushing that enables low-loss performance even in high-vibration / high-shock applications.

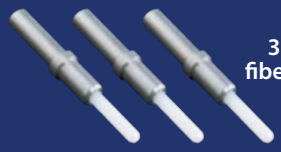
Fiber Optic Interconnect Systems

Ruggedized, harsh-environment solutions

ALSO-AVAILABLE MIL-STANDARD TECHNOLOGY: MT FERRULE FIBER OPTICS



Rugged, High-Density



Up to 24 fibers in a single compact, lightweight ferrule (7mm x 3mm)

ALSO-AVAILABLE MIL-STANDARD TECHNOLOGY: MIL-PRF-28876 AND NGCON FIBER OPTICS

Qualified M29504 termini and M28876 connectors / accessories

Next-generation connectors and rear-release genderless termini IAW the emerging MIL-PRF-64266 standard

ALSO-AVAILABLE MIL-STANDARD TECHNOLOGY: ULTRA-LOW dB LOSS ARINC 801 FIBER OPTICS

- Genderless terminus design eliminates pin and socket complexity
- Rear-release size #16 termini
- Singlemode and multimode
- Mechanical and environmental performance IAW ARINC 801 standards
- Sav-Con Connector Savers available

ALSO-AVAILABLE MIL-STANDARD TECHNOLOGY: TIGHT-TOLERANCE MIL-DTL-38999 SERIES III TYPE

- Composite, aluminum and stainless steel shells available
- QPL size #16 MIL-PRF-29504 /4 and /5 precision ceramic termini
- Singlemode and multimode fiber, from 9/125 to 1000 microns
- Ultra-low insertion loss, <.50dB typical
- From 2 to 37 Termini
- Patented MIL-DTL-38999 fiber optic test probes and adapters

Composite

Aerospace backshell and accessory designs for weight reduction and life-of-aircraft durability

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.

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**

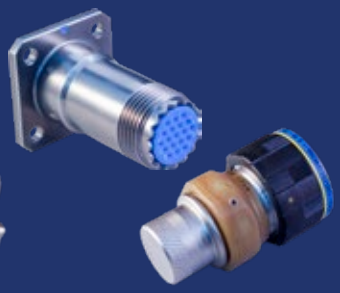
NEW INNOVATIONS IN

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



Dummy stowage shorting plugs and receptacles

Piggyback boot band-in-a-can

Drop-in EMI/RFI shield termination configurations

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

INNOVATIVE NEW EWIS TECHNOLOGIES

Self-locking protective covers

Split-shell snap-lock rectangular composite backshells

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)

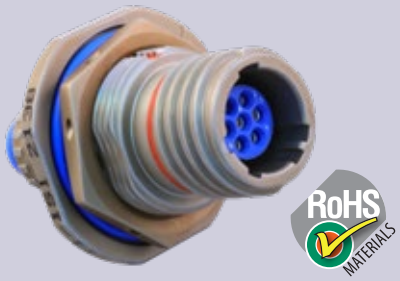
MIL-AERO/ DEFENSE INTERCONNECT SOLUTIONS

Qualified MIL-DTL-28840 Connectors and Accessories: Every Slash Sheet, No Gaps

- All sizes and platings in-stock and ready for immediate shipment
- High density, scoop proof contact arrangements
- Flange mount, box mount, jam-nut and in-line receptacles
- Straight, 45° and 90° strain reliefs and backshell assemblies
- Sav-Con® connector savers and bulkhead feedthrus
- Contact and connector assembly tools

MIL-DTL-28840 qualified connectors and accessories. Splined connector-to-backshell interface is ideally suited for heavy backshells and cables

QUALIFIED CADMIUM-FREE AND COMPATIBLE TIN-ZINC (TZ) PLATING FOR CLASS CODE L AND M (CLASS T AND TJ) NAVY LAND AND MARITIME APPLICATIONS.



L - Class T: Aluminum, Tin-Zinc Plate over Electroless Nickel, Non-Reflective

- New DLA-qualified replacement for Cadmium
- High conductivity and shielding performance in harsh maritime conditions
- High corrosion resistance
- Compatibility with legacy cadmium-plated connectors and environmental shrink boots
- RoHS-compliant material
- Test reports available upon request

QUALIFIED

MIL-DTL-28840 Connectors and Accessories

With in-stock same-day availability

MIL-DTL-28840 • FULLY-QUALIFIED • EVERY SLASH SHEET • NO GAPS • IN-STOCK AVAILABILITY

Contacts

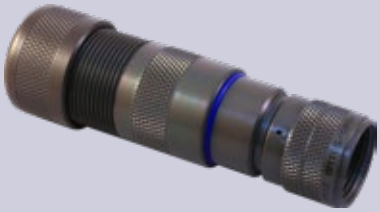
M39029/83 pin and /84 socket

Clamps

M28840/1 straight
M28840/2 90°
M28840/3 45°

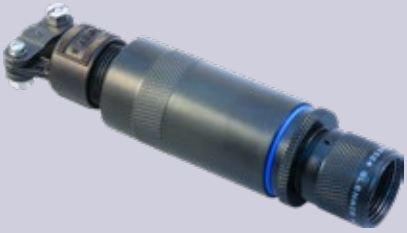
Conduit

M28840/4 Metal-Core



Conduit Fittings

M28840/5 Backshell for Metal Core Conduit
M28840/6 EMI/RFI Environmental Backshell
M28840/25 90° EMI Conduit Adapter
M28840/27 45° EMI Conduit Adapter
M28840/30 Metal Conduit Coupler, Styles A and B
M28840/22 Metal Conduit Bushing
M28840/23 "E Nut"



Backshells

M28840/8 90° EMI/RFI Environmental
M28840/ 45° EMI/RFI Environmental Backshell

Connectors

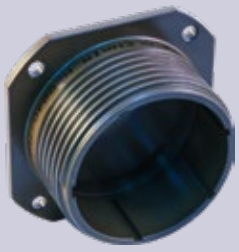
M28840/10 Wall Mount Receptacle Connector
M28840/11 In-Line Receptacle Connector
M28840/12 Box Mount Receptacle Connector
M28840/14 Jam Nut Mount Receptacle Connector
M28840/16 Plug Connector

Connector / Backshell Assemblies

M28840/17 Plug Connector / Straight Strain Relief
M28840/18 Plug Connector with 90° Strain Relief
M28840/19 Plug Connector with 45° Strain Relief
M28840/20 Recept., Straight EMI/RFI Backshell
M28840/21 In-Line Recpt., St. EMI/RFI Backshell
M28840/26 Plug, with Straight EMI/RFI Backshell
M28840/28 90° Adapter Assembly Plug
M28840/29 Plug with 45° EMI/RFI Backshell

Protective Covers

M28840/13 Protective Receptacle Cover
M28840/15 Protective Plug Cover



Tools and Accessories

M28840/7 Dummy Stowage Receptacle
M28840/24 Mounting Gasket

Rugged Fiber Optic CONNECTORS

QPL and Glenair Signature MIL-PRF-28876 Fiber Optic Connection System

Qualified MIL-PRF-28876 fiber optic connectors and MIL-PRF-29504 termini—navy approved, in stock, and ready for immediate shipment

M28876/11 jam nut receptacle

M28876/7 plug with backshell

M28876/2 receptacle with backshell

- **Connectors qualified to the complete requirements of MIL-PRF-28876: plugs, wall-mount receptacles, jam-nut receptacles, and in-line receptacles**
- **Multiple shell sizes and insert arrangements, including 2, 4, 6, 8, 18 and 31 channel layouts**
- **Backshells in straight, 45° and 90° configurations**
- **Corrosion-resistant and environmentally sealed**
- **Qualified MIL-PRF-29504/14 and /15 pin and socket termini and /03 dummy terminus**
- **Same-day availability**

QPL AND COMMERCIAL

MIL-PRF-28876

NAVSEA-qualified fiber optic connection system

CONNECTOR/BACKSHELL TYPES			
Connector Type	Backshell Type	MIL-Spec	Commercial Connector Type Code
Wall Mount Receptacle	None	M28876/1	03
	Straight	M28876/2	13
	45°	M28876/3	23
	90°	M28876/4	33
In-Line Receptacle	Straight	M28876/5	15
Plug	None	M28876/6	06
	Straight	M28876/7	16
	45°	M28876/8	26
	90°	M28876/9	36
Jam Nut Receptacle	None	M28876/11	04
	Straight	M28876/12	14
	45°	M28876/13	24
	90°	M28876/14	34

QUALIFIED FIBER OPTIC TERMINI			
Type	Military Part Number	A Dia (Microns)	Typical Fiber Type
Pin Termini	M29504/14-4131C	126.0	Multi Mode
	M29504/14-4132C	127.0	Multi Mode
	M29504/14-4135C	142.0	Multi Mode
Socket Termini	M29504/15-4171C	126.0	Multi Mode
	M29504/15-4172C	127.0	Multi Mode
	M29504/15-4175C	142.0	Multi Mode
Dummy Terminus	M29504/03-4038		

Crimp sleeve is supplied with terminus assembly and may be ordered separately (see Table II). For terminus less crimp sleeve, omit **C** from end of part number. Consult factory for additional sizes.

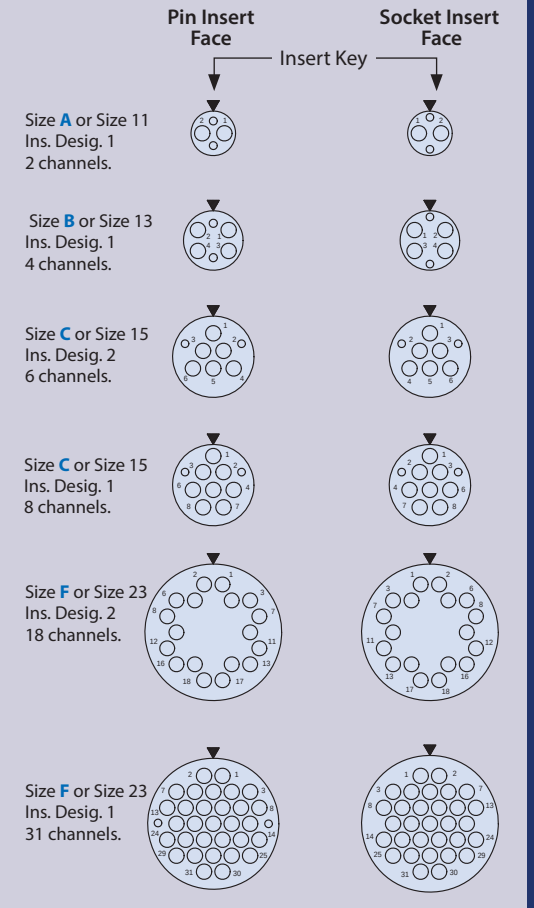
Qualified QPL-29504 pin and socket termini

Terminated and tested MIL-PRF-28876 fiber optic cable assembly

TEST DESCRIPTION	PERFORMANCE REQUIREMENTS/ SPECIFICATIONS
Optical Insertion Loss, Multimode	-0.3 dB Typical (62.5/125)
Optical Insertion Loss, Singlemode	-0.3 dB Typical (9/125)
Optical Back Reflection, Singlemode	Better than -40 dB - PC Polish • Better than -50 dB - Enhanced PC Polish
Operating Temperature	-28°C to +65°C (MIL-Spec Epoxy and Cable) -55°C to +125°C (alternative Epoxy and Cable)
Temperature (Thermal) Shock	-40°C to +70°C, 5 Cycles
Temperature Cycling	-28°C to +65°C, 5 Cycles
Temperature/Humidity Cycling	-10°C to +65°C, 10 Cycles, 240 hours, 98% RH
Temperature Life Aging	+110°C, 240 hours, Dry Air
Mating Durability	500 cycles
Vibration - Sinusoidal	10 g Peak, 5-500 Hz sin./ 10.2 g RMS, 50-2000 Hz random
Impact	8 Drops from 8 feet
Crush Resistance	281 lbs, 7 Cycles
Cable Pull Out Force - Termini	Termini: 22 lbs min for 1 minute Connector: 162 lbs min for 10 minutes
Fluid Immersion	Turbine Fuel, Isopropyl Alcohol, Hydraulic Fluid, Lubricating Oil, Coolant, Tap- and seawater, 24 hrs
Water Pressure	32 feet for 48 hours at +10°C to +35°C
Mechanical Shock (High Impact)	MIL-S-901, Grade A, Type B, Class I
Corrosion Resistance (Salt Spray)	500 hours
Sand and Dust	12 hours
Flammability	0.75 inch flame for 10 sec. mated, 1.50 inch flame for 60 sec. unmated

*Performance Specifications/Requirements based on the use of MIL-PRF-24792 Epoxy and MIL-PRF-85045 Simplex and Breakout Shipboard Optical Fiber.

Insert Arrangements



SeaKing™ 700 Dry-Mate Underwater Connectors and Mil-Qualified / MCOTS Cable Assemblies

SeaKing 700 is an innovative underwater connector series that eliminates a broad range of mechanical design weaknesses found in many of today's high-pressure subsea connector families. From its double O-ring seals and retractable engaging nut, to its multi-keyed mating interface, the SeaKing underwater connector represents a far more reliable approach to subsea power and signal connectivity.

- **High density, small form-factor connector**
- **Dual O-ring seals ensure high-pressure performance for every leak path**
- **Signal, power, RF, and optical insert arrangements**
- **Stainless steel with anti-galling marine bronze engaging nut or cathodic delamination-free PEEK**
- **Full-mate inspection ports**
- **Easy O-ring replacement**
- **Key and keyway polarization**

10K PSI / 700 BAR

SeaKing™ High-Pressure Subsea Connectors

Electrical · Optical · Power · Turnkey Cables

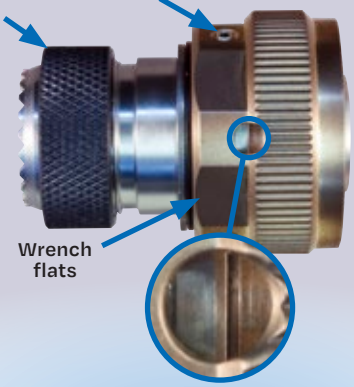
Retractable engaging nut retention ring for easy O-ring inspection/replacement.

Optional overmold delamination ring accessory

Engaging nut set screw (3 places)

Accessory thread and overmold features

Multiple PBOF backshell indexing points

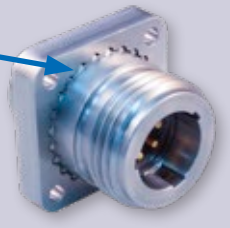


Wrench flats

Full-mate inspection port

SeaKing Flange Connector Receptacles feature a removable spoked body and indexable flange.

Indexable flange



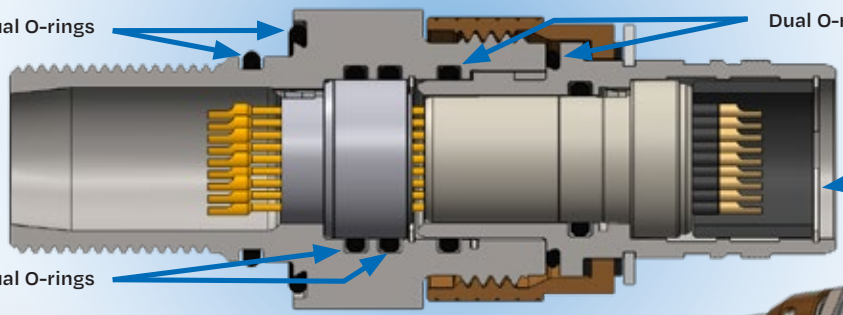
Disengage flange to rotate body for multiple clocking positions.

Available in both metal and PEEK

Replaceable Nitrile or Buna-N (NBR) O-ring seals facilitate fast and trouble-free field replacement.

Dual O-rings

Dual O-rings

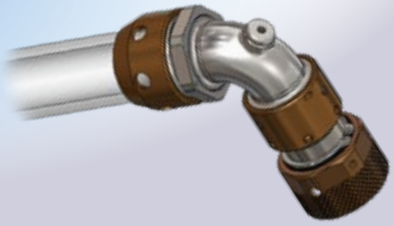


Dual O-rings

Available pressure-balanced oil filled (PBOF) back end for use with oil-filled cables.

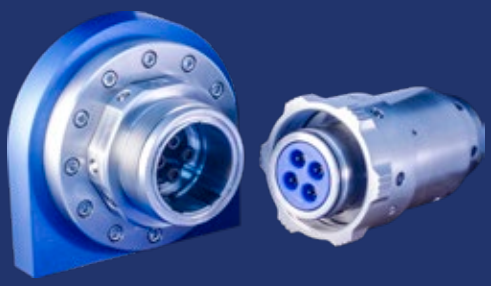
BCR with keyway-assisted mating, polarization keys, and wrench flats for secure attachment to pressure bulkheads.

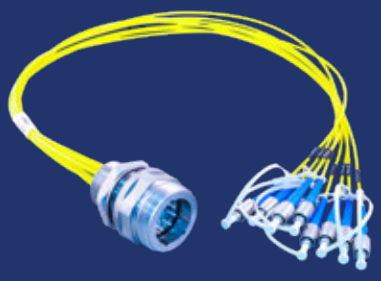
SeaKing™ 700 overmolded and pigtail "HotShot" cable assemblies are available from the factory with accelerated lead times as short as 2 weeks.



Revolutionary PBOF swivel assembly with kink-proof hose swivel, straight, 45° and 90° routing, and superfast assembly.

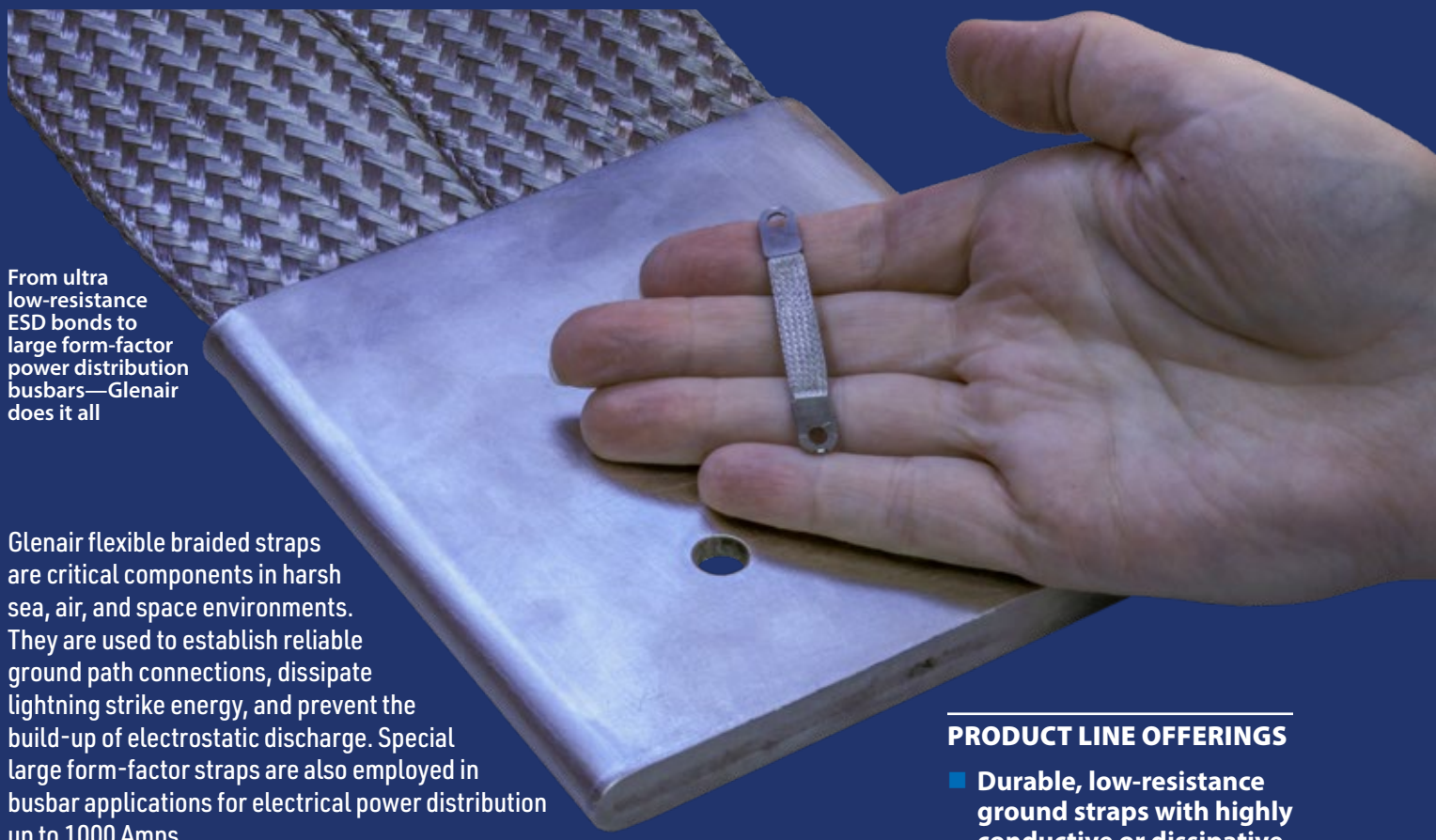
SEAKING PEEK, SEAKING POWER, AND SEAKING FIBER OPTIC CONFIGURATIONS





ARMORLITE™

Braided Ground Straps: Glenair Signature and QPL Solutions for ESD, Lightning Strike, and Electrical Power Applications



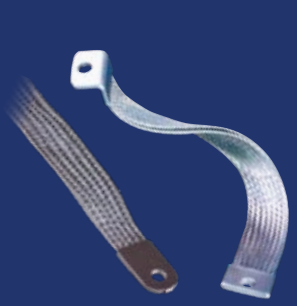
From ultra low-resistance ESD bonds to large form-factor power distribution busbars—Glenair does it all

Glenair flexible braided straps are critical components in harsh sea, air, and space environments. They are used to establish reliable ground path connections, dissipate lightning strike energy, and prevent the build-up of electrostatic discharge. Special large form-factor straps are also employed in busbar applications for electrical power distribution up to 1000 Amps.

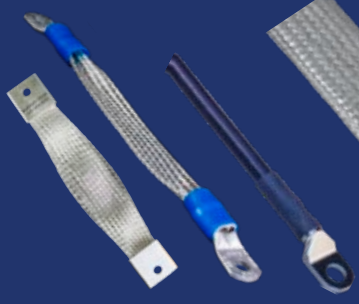
Glenair supplies a complete range of lugged flexible braided bonding, grounding, and power distribution solutions with lightweight ArmorLite microfilament material as well as low-resistance plated copper. In addition to high-availability catalog designs, we are also able to supply custom solutions in virtually any form factor, wire gauge, amperage, resistance, and mounting-lug configuration. Straps may also be supplied with and without insulation jacketing in wire rope (jumper) and flat profiles. Mil-qualified (QPL) straps are available for both topside and submarine applications.

PRODUCT LINE OFFERINGS

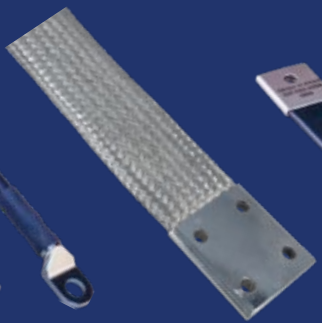
- **Durable, low-resistance ground straps with highly conductive or dissipative performance**
- **Lightweight, low-resistance flexible bond straps for ESD dissipation**
- **Heavy-duty variants for low-voltage, high-current power distribution busbar applications**
- **Glenair signature and qualified military standard designs**



Ultra flexible, lightweight ArmorLite microfilament ground straps and bonds



Flat and round cross-section straps, plus wire rope jumpers



High current AC and DC flexible busbars and shunts

Harsh-environment insulation and jacketing available for enhanced user safety and short-circuit prevention

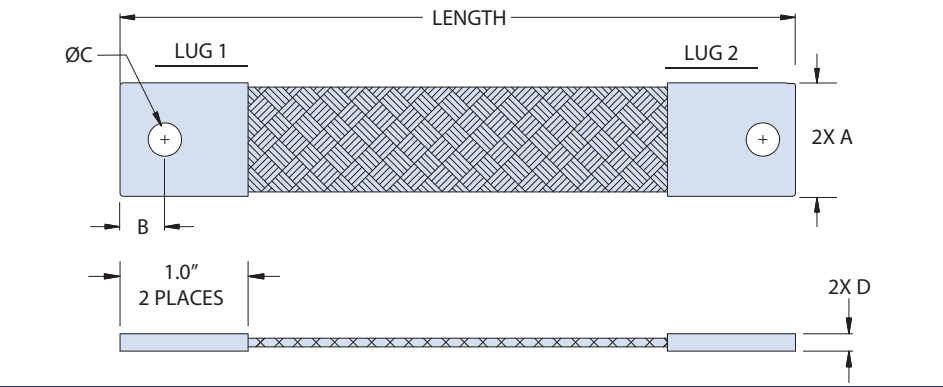
SERIES 107

Braided Ground Straps

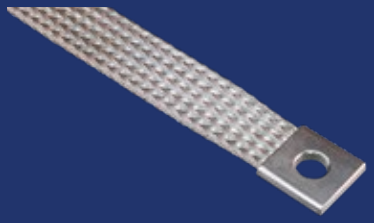
Mil-spec and Glenair Signature lightweight designs

107-086 GROUND STRAPS FOR SUBMARINE APPLICATIONS

- Materials and design in accordance with Commercial Item Description A-A-59569 for grounding bonds
- Low-profile nickel-plated copper lugs with configurable mounting hole size options
- Nickel-plated copper braid material conforms to ASTM B355

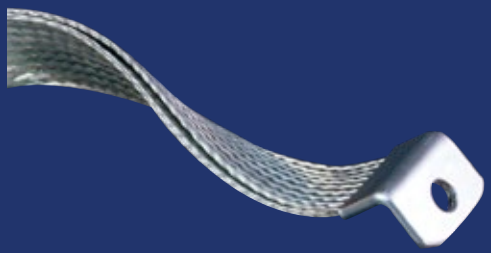


M24749 TYPE IV MIL-SPEC AND GLENAIR SIGNATURE "BETTER THAN QPL" CONFIGURATIONS



- Meets the rigorous specifications of MIL-DTL-24749 Rev. C with width, length, and lug configuration options beyond standard mil-spec straps
- Tested to survive 1000 hours salt spray
- Unique Stainless Steel/Nickel hybrid braid
- Lightweight, durable, configurable crimp lugs: square, radiused, straight, single- and double-right-angle versions

VARIABLE LUG / HOLE / STRAP CONFIGURATION OPTIONS AVAILABLE ON ALL STYLES



Choose single-layer straps or dual-layer for strength and electrical performance.

Available black or clear sleeving over strap. Square or radiused lugs and variable hole sizes.

Straight, single right-angle, and dual right-angle configurable lugs.

GROUND CONTROL EARTH BOND SYSTEM

The Ground Control Earth Bonding system is an efficient, easy-to-use method to create an electrical bond between structures and equipment for the secure passage of high intensity current in case of electrical short circuit.

How To Order	
600-120	Hydraulic Setting Tool for 1/4" Earth Bonds
600-123	Hydraulic Setting Tool for 3/8" Earth Bonds
600-124	Hydraulic Setting Tool for M6 Earth Bonds
600-125	Hydraulic Setting Tool for M10 Earth Bonds
The tools feature one hand operation and ram retract mechanism actuated by release trigger. Consult factory for control gauges and earth bond part numbers for each material type and size.	

CONDUIT SYSTEMS

US Navy Qualified Helical Metal-Core Conduit for Above- and Below-Deck Shipboard Wire Routing Applications

Improved sealing and shielding: the ultimate in highly flexible, crush-proof EMI/EMP wire protection

- **Hermetically sealed, flexible metal-core conduit for shipboard wire interconnect applications**
- **UV-resistant "BlueJacket" jacketing over Brass, Stainless Steel, or Nickel Iron Alloy conduit**
- **Turnkey, factory-terminated assemblies for fast-turnaround dockside maintenance cycles**
- **All materials deliver superior EMC performance as well as crush resistance and environmental sealing compared to legacy systems**

Select for superior crush resistance and corrosion protection

Highly flexible crush-proof metal conduit in stainless steel with Viton, Neoprene, or Bluejacket protective covering

Select for low-frequency EMC protection in and around motors and control equipment

Nickel-iron conduit material plus shielding and jacketing

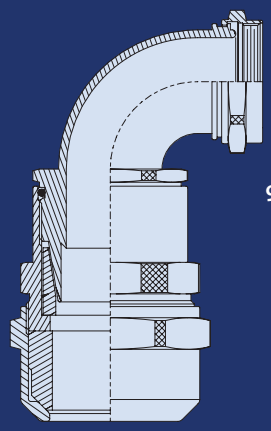
MIL-PRF-24758A NAVSEA-APPROVED

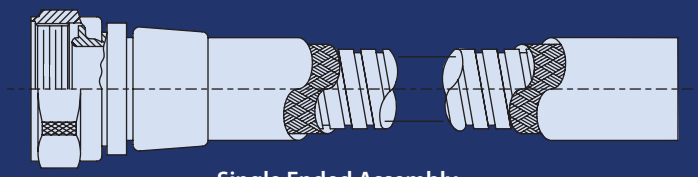
Metal-Core Conduit Wire Protection Systems

US Navy Qualified Brass, CRES, and Nickel-Iron, with Glenair Signature "BlueJacket" jacketing

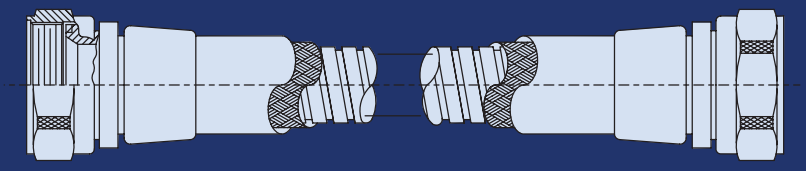
- **Qualified to MIL-PRF-24758A(SH)**
- **User-installable and factory terminated configurations**
- **Innovative fitting design with advanced environmental sealing, EMI shield termination and rotatable coupling nut**
- **Adapters for all shipboard interfaces—fully compatible with legacy MIL-C-24758 conduit system components**

Do it once, do it right with Glenair Signature MIL-PRF-24758A wire protection conduit systems



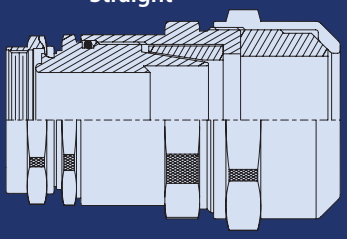


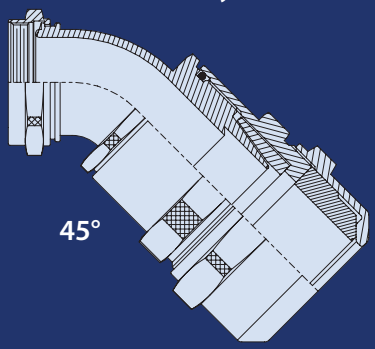
Single Ended Assembly



Double Ended Assembly

Straight





MIL-PRF-24758A Configuration Options: Choose from high-performance user-installable fittings or lighter-weight factory terminated assemblies

FITTINGS AND ADAPTERS FOR USER-INSTALLED APPLICATIONS

Composite conduit splice fitting

Stainless steel conduit feed-thru fitting

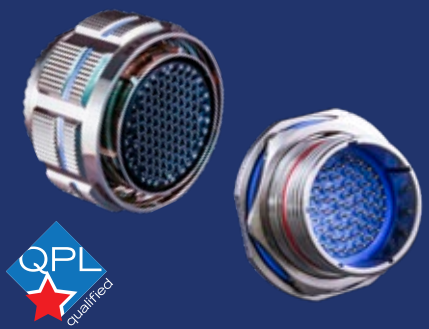
Low-Profile RP Plus System

Heavy-duty environmental conduit-to-panel fitting

Heavy-duty environmental conduit-to-connector fitting

Glenair Mil-Spec Interconnect Technologies

Qualified Products: Glenair is a Mil-Aero connector supplier. Our product quality begins in engineering (the largest team in the high-performance interconnect business) and is realized in our "made in the USA" vertically-integrated manufacturing cells. One of the key ways we ensure both areas are functioning smoothly is to submit designs and manufactured specimens into the military QPL process administered by NAVSEA and the Defense Logistic Agency of the US government. These certification exercises are multi-year activities that test every aspect of an interconnect component's performance.



MIL-DTL-38999 Series III
Environmental Connectors

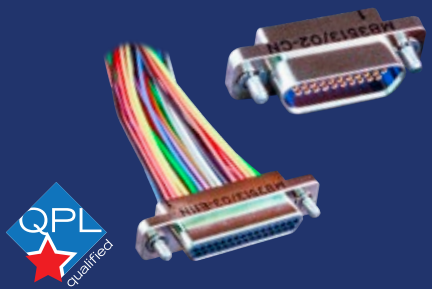
MIL-DTL-38999 Series IV
Environmental Connectors

MIL-DTL-28840 Shipboard
Connectors and Accessories

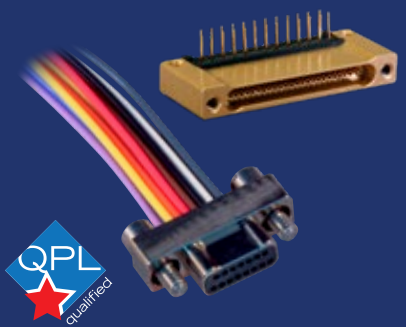
MIL-DTL-38999 Series I, II, III, and IV
Hermetic Connectors

MIL-DTL-24308
Hermetic Connectors

MIL-DTL-28876
Shipboard Fiber Optic



MIL-DTL-83513 Micro-D
Connectors and Accessories



MIL-DTL-32139 Nanominiature Connectors
and Accessories

MIL-DTL-29504 Fiber Optic Termini and
AS39029 Electrical Contacts

MIL-DTL-55116 Radio / Audio Connectors

807 NW Nett Warrior
Qualified Tactical Connectors

STAR-PAN Power / Data Hubs and
Tactical Cordsets

M85049 (AS85049) Backshells and
Connector Accessories

MIL-DTL-83723 Backshells and Connector
Accessories

M81511 (AS81511) Protective Covers and
Connector Accessories

M85049/140 TACOM-Approved and Navy-
Qualified 5617649 Shrink Boots

MIL-PRF-24758 NAVSEA-Qualified Conduit
and Fittings

M85049 Composite Backshells and Covers
for MIL-DTL-38999

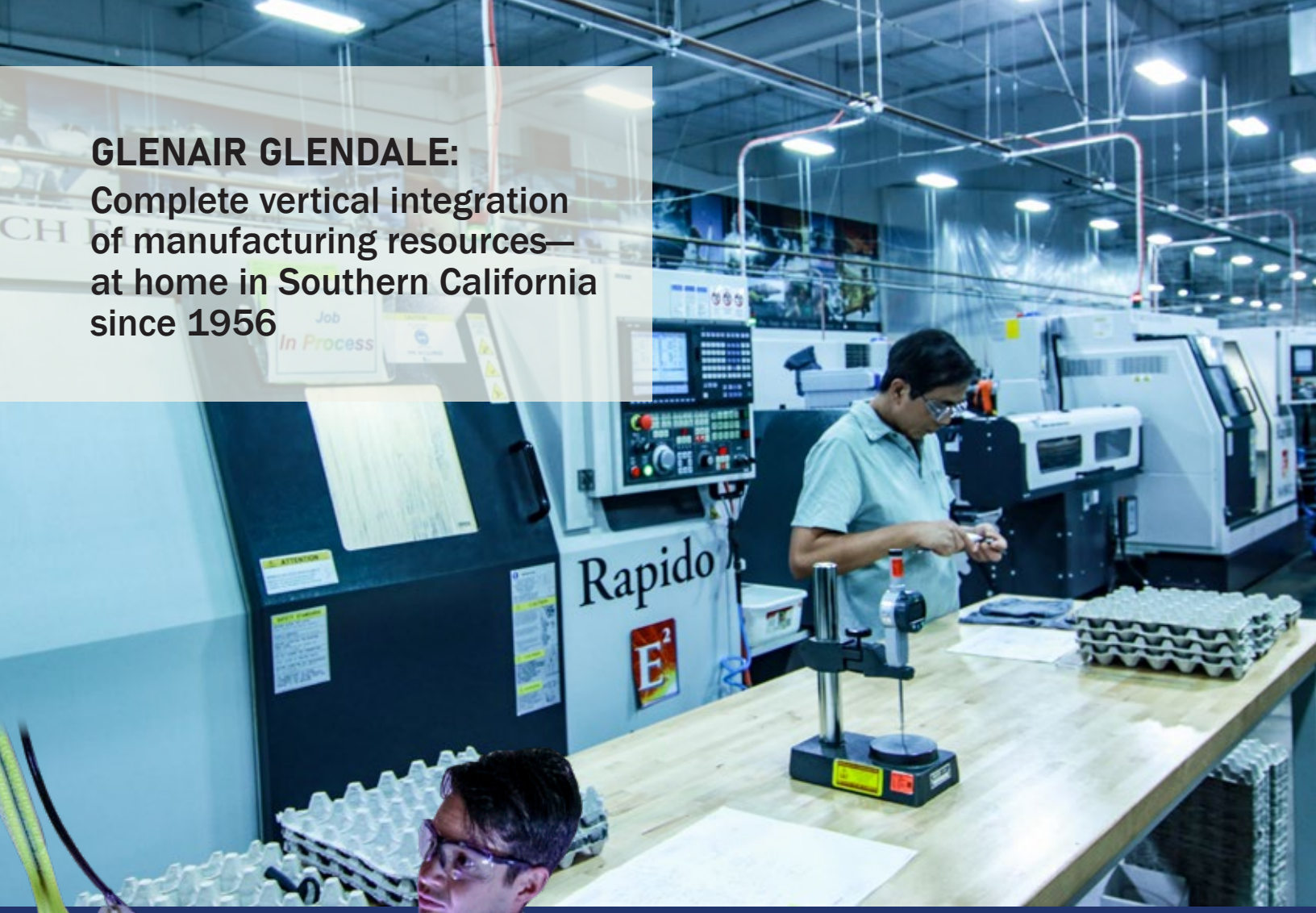
GLENAIR'S COMMITMENT TO QUALITY

Glenair is proud of the quality and reliability we build into our broad range of mission-critical interconnect solutions—from discrete connectors to complex cable assemblies and embedded systems. Glenair is the biggest "made in the USA" interconnect supplier in the high-reliability industry, but we also operate factories in the UK, Italy, and Germany to serve the unique requirements of those markets. Glenair's Worldwide Quality System is ISO 9001 and AS9100 certified and registered. We also hold many discrete product and operations certifications for specialty, high-performance markets including space, nuclear power, and rail. In addition to world-class quality, we are laser-focused on customer service and committed to being the easiest manufacturer in our industry to do business with. Here are just some of our key customer service principles:

- **Lightning-fast turnarounds on quotes and special orders**
- **Worldwide sales and technical support in every major market**
- **Full-spectrum, "no gap" product lines**
- **No dollar or quantity minimums**
- **ISO 9001 and AS9100 certified**
- **Huge same-day shipment inventory**
- **Generous NRE, RMA, and sample request policies**
- **Abundant engineering and technical support**
- **No attitudinal constraints when it comes to customer convenience and service**

GLENAIR GLENDALE:

Complete vertical integration of manufacturing resources—at home in Southern California since 1956



Glenair operates the largest high-reliability interconnect manufacturing operation in the United States, allowing us to fully support our broad range of land, sea, air, and space customers.

Glenair SoCal's most important asset: highly technical staff, fully empowered with all the right facilities and operation resources.

SAME-DAY SHIPMENT STOCKING

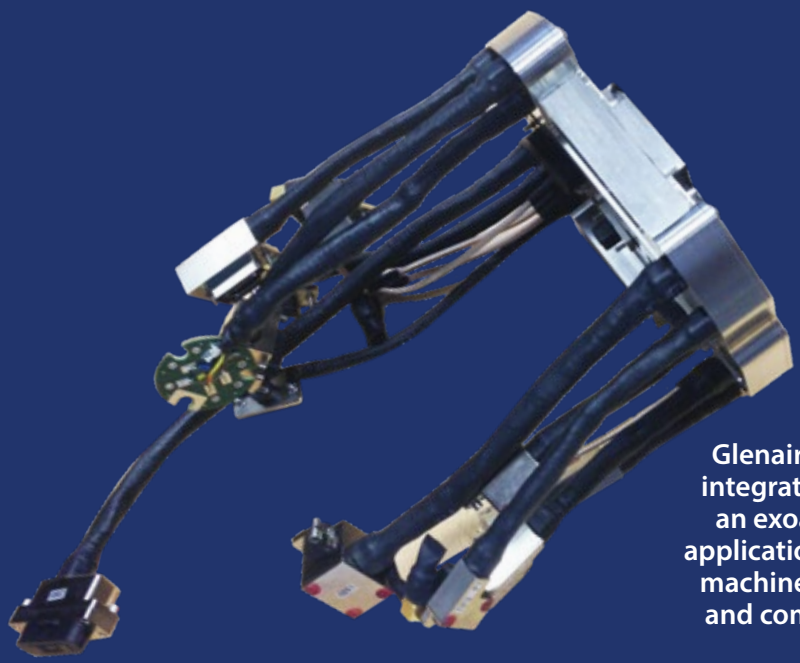
Immediate availability for high-demand connectors and tooling.

HARNESS ASSEMBLIES

For Micro-D, Nanominiature, and fiber optic connectors and cable assemblies.

IN-HOUSE TESTING CAPABILITIES

Glenair UK operates an independently accredited BS9000:CECC:IECQ test lab for internal and third-party product development / design verification and connector qualification including pure air standards.



Glenair UK complex integrated system for an exoatmospheric application with custom machined connectors and complex cabling

GLENAIR UK:

Mission-critical connectors and assemblies for UK and European markets with a special focus on micro and Nanominiature flexi assemblies

GLENAIR ITALIA:

Manufacturing harsh-environment military, nuclear, and aerospace interconnect technologies for power, high-speed Ethernet, and hermetic seal applications.

HIGH-CAPACITY CNC MACHINING CENTERS

Allow Glenair BLQ to provide lightning-fast turnaround on small and custom orders as well as large production runs, all with superior surface finishes and better part quality.

ADVANCED HERMETIC SEAL AND CONNECTOR PLATING CAPABILITIES

Space-compliant gold and nickel plating performed in-house. Hermetic seal connector fabrication with performance levels to 1 X 10^{-7} helium leak rates.

TOTAL VERTICAL INTEGRATION

Includes In-house rubber and thermoplastic injection molding.

IN-HOUSE TEST LAB

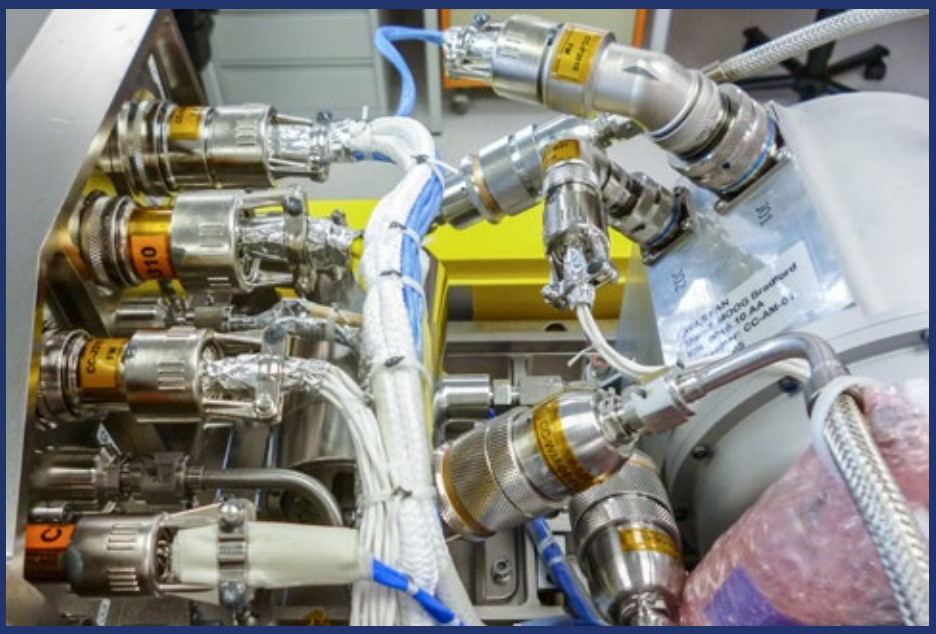
With capabilities for both high-voltage as well as high-speed signal product qualification. Credentials include ISO 17025 and others.

GLENAIR SALEM:

Our space systems business unit in Salem, Germany, includes ample production space for precision machining and assembly, 300 m^2 ISO 8 and ISO 6 clean rooms, an ISO 5 flow chamber (certified to ESD Standard 61340-5-1), with accommodation for large mock-up and integration projects.

CLEAN ROOM ASSEMBLY

With both environmental filtering and electrostatic discharge protection.



SPACE-GRADE HARNESS FABRICATION AND INTEGRATION

In-house or at customer facility.

ELECTRO-MECHANICAL

Fabrication of space-grade interconnect technologies including HDRM (release nut) mechanisms.

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

Glenair East
20 Sterling Drive
Wallingford, CT
06492

Telephone:
203-741-1115
Fax:
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
sales@glenair.co.uk

Glenair Microway Systems
7000 North Lawndale Avenue
Lincolnwood, IL
60712

Telephone:
847-679-8833
Fax:
847-679-8849

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

Telephone:
+46-8-50550000
sales@glenair.se

Glenair GmbH
Schaberweg 28
61348 Bad Homburg
Germany

Telephone:
06172 / 68 16 0
Fax:
06172 / 68 16 90
info@glenair.de

Glenair Iberica S.L.
Av. De Manoteras, 24 – 2º
28050 Madrid
Spain

Telephone:
+34 915 562 687
sales@glenair.es

Glenair Italia S.p.A.
Via Del Lavoro, 7
40057 Quarto Inferiore –
Granarolo dell'Emilia
Bologna, Italy

Telephone:
+39-051-782811
Fax:
+39-051-782259
info@glenair.it

Glenair France SARL
7, Avenue Parmentier
Immeuble Central Parc #2
31200 Toulouse
France

Telephone:
+33-5-34-40-97-40
Fax:
+33-5-61-47-86-10
sales@glenair.fr

Glenair Korea
6-21Tapsil-ro 58beon-gil
Giheung-gu, Yongin-si
Gyeonggi-do
Republic of Korea

Telephone:
+82-07-5067-2437
Fax:
+82-504-375-4549
sales@glenair.kr

Glenair Japan
40F, Nagoya Lucent Tower,
6-1, Ushijima-cho,
Nishi-ku, Nagoya, 451-6040
Japan

Telephone:
+81-52-569-2521
Fax:
+81-52-569-2523
sales@glenair.jp

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