

QwikConnect

GLENAIR ■ JULY 2016 ■ VOLUME 20 ■ NUMBER 3

INTERCONNECT SYSTEM DESIGN GUIDE 2016

The widest range of
mission-critical interconnect
technologies in the world



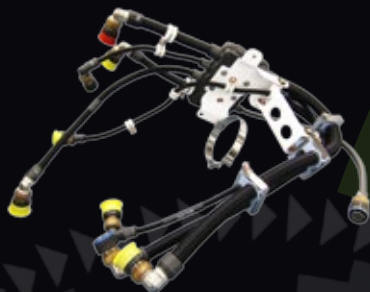


INTERCONNECT SYSTEM DESIGN GUIDE 2016

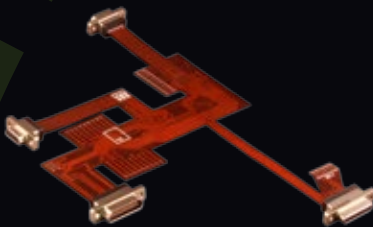
Glenair is proud of the quality and reliability we build into our extensive range of interconnect solutions—from discrete connectors to complex integrated systems. Glenair is the biggest “made in the USA” interconnect supplier in the high-reliability industry. We are laser-focused on customer service and committed to being the easiest manufacturer in our market 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: 2008 and AS9100: 2009 quality
- 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

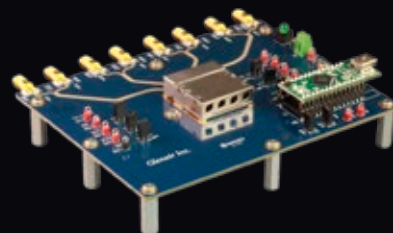
SYSTEM-LEVEL SOLUTIONS



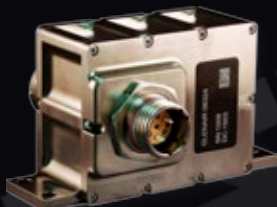
Complex cable assemblies and interconnect systems



PCB/flex assemblies



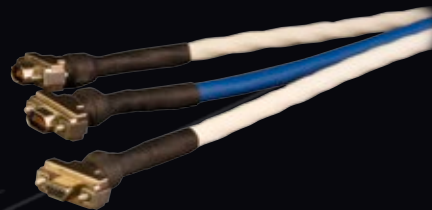
PCBA designs for ruggedized embedded systems



Electronic and photonic interconnect solutions



STAR-PAN™ tactical soldier systems



Space-grade solutions

CONNECTOR COMPONENT TECHNOLOGIES



Wire and cable



Contacts



Ultraminiature circular connectors

CONNECTOR COMPONENT TECHNOLOGIES (continued)



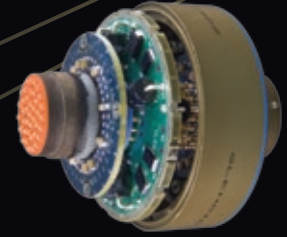
Mil-aero circular connectors



Rectangular connectors



Glass-sealed hermetic connectors



EMI/EMP filter connectors



High-speed datalink interconnects



Fiber optic interconnect systems



Industrial strength connectors



Marine / subsea interconnects

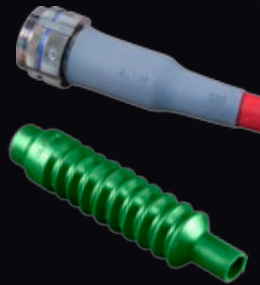
CONNECTOR ACCESSORY TECHNOLOGIES AND HARDWARE



Connector backshells and accessories



Braided shielding



Shrink boots and heat-shrink terminations



Metal and polymer-core conduit systems



Interconnect assembly tools

GLENAIR FACTORY CAPABILITIES



Track record of interconnect innovation



Mil-spec interconnect technology



Glendale factory tour



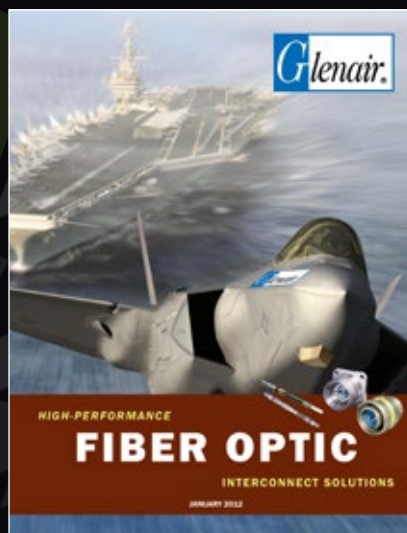
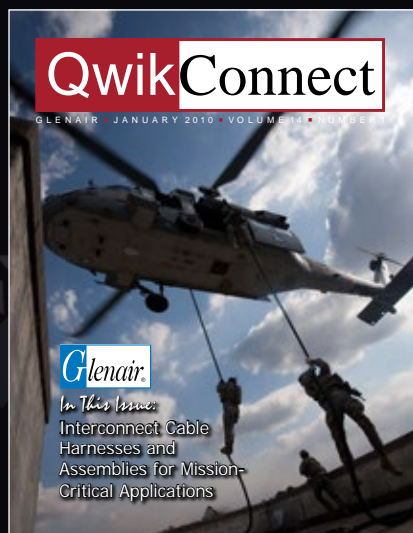
Mansfield factory tour



Bologna factory tour

OPTICAL AND ELECTRICAL COMPLEX CABLE ASSEMBLIES AND INTEGRATED SYSTEMS

customer bespoke harnesses,
overmolded assemblies, and
integrated systems



TURNKEY FIBER OPTIC CABLE ASSEMBLIES



Environmental overmolded
fiber optic cable assembly



Multi-way inside-the-box
D38999-to-ST assembly



GFOCA (IAW M83526)
environmental cable assembly

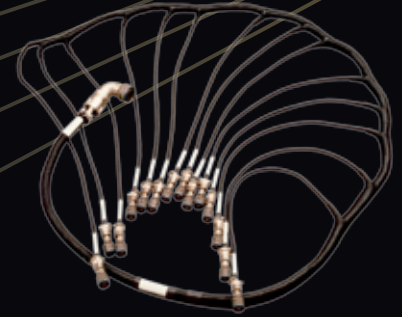
COMPLEX MULTIBRANCH AND OVERMOLDED CABLE ASSEMBLIES



F/A-18 radar pantograph assembly



Overmolded cable assembly



AWACS radar assembly



Hybrid fabric braid and overmolded environmental cable assembly

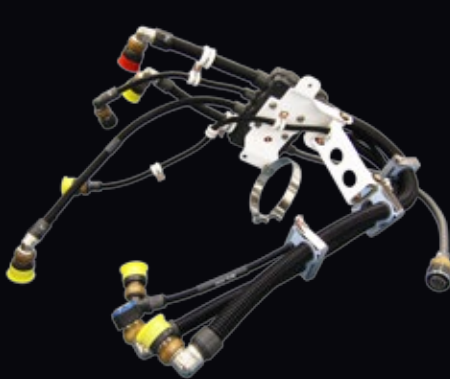


Desert tan fabric overbraided tactical interconnect assembly



Soldier radio power and USB data overmolded cable assembly

TURNKEY FACTORY-TERMINATED CONDUIT ASSEMBLIES



Complex multibranch fighter jet electrical wire conduit assembly



Lightweight, halogen-free rail industry wire conduit assembly



Crush-resistant commercial aerospace metal-core conduit assembly

INTEGRATED SYSTEMS



Precision-machined, injection molded or stamped-and-formed boxes and structural members

+



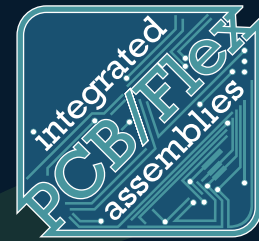
Multibranch interconnect cable harnesses and assemblies—terminated, tested, and ready for use

=



Turnkey integrated system components: Vertically integrated manufacturing, from backplanes to avionic control panels

CONNECTORIZED PCB/FLEX ASSEMBLIES



turnkey · integrated · IPC class 2 and 3

Glenair

**TURNKEY
PRINTED CIRCUIT BOARD
AND FLEX ASSEMBLIES**
COMPLETE VERTICAL INTEGRATION—FROM CONNECTORS TO BOARDS TO ASSEMBLY
DECEMBER 2014

EVERYTHING UNDER ONE ROOF
One production control and quality system for all operations—from connector manufacture to PCB/flex fabrication, assembly and test.

Turnkey Integrated PCB/Flex Assemblies
100% vertical integration—we make the connectors, we make the flex, and we assemble, test, and certify everything under one roof.

Are you tired of waiting a supplier down that is spread out all over the map? At Glenair, our integrated PCB/Flex capabilities are truly under one roof. We offer unparalleled expertise in connective PCB design, termination and test. Our operation is managed under a single world-class ISO 9001 and AS9100 certified quality system. Our flex fabrication cell delivers IPC 6012 and 6013 Class B manufacturing. And our assembly/termination team has a work-proven reputation for on-time delivery of even the most complex, high-reliability PCB/Flex assemblies.

One-Stop PCB Assembly Shopping

VERTICALLY INTEGRATED PCB CONNECTOR MANUFACTURING	IN-HOUSE BOARD AND FLEX DESIGN AND FABRICATION	CONNECTOR-TO-FLEX TERMINATION AND ASSEMBLY

Glenair offers a full range of MIL-qualified and commercial PCB interconnect solutions—from standard mid-spec circular to micro-d subminiature and nanometer-rectangles, board to right away. We stock tens of thousands of part numbers for immediate incorporation into both catalog and custom PCB/Flex assemblies.

Glenair's IPC 6012/6013 Class B1 manufacturing cell delivers up to 8x layers in multiple panel sizes and panel thicknesses up to 1/8 inch. A broad selection of PCB/Flex fabrication methods is available including hydrolytic, FR-4, Rogers 4003, and InCu. Available surface finishes include ENIG, HASL, NiAu and more.

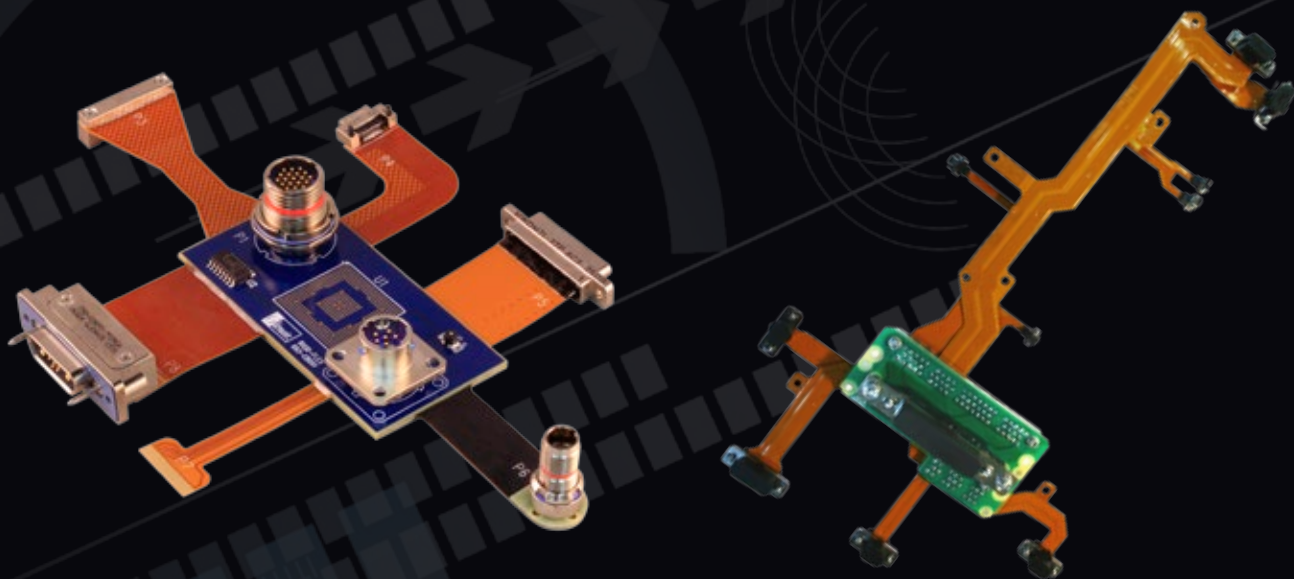
Because we design and produce all our own PCB connectors, our termination and assembly team is able to meet or beat even the most aggressive delivery requirements. And, because we've been in the business of producing high-reliability flex assemblies for over 50 years, you can rely on Glenair to deliver the highest levels of quality and service.

For more information contact Glenair at 818-247-6000 or visit our website at www.glenair.com
U.S. CAGE code 06324 **Glenair**

QwikConnect
GLENAIR • JANUARY 2016 • VOLUME 20 • NUMBER 1

Glenair

**Embedded Subsystem
Electronics and
Opto-Electronics
@ Glenair**



Multibranch demo flex assembly highlighting the broad range of catalog board connectors available from Glenair

Production flex and rigid flex assembly terminated, tested and ready for immediate use

POINT-TO-POINT CONNECTORIZED FLEX AND RIGID FLEX JUMPERS



Harsh-environmental Micro-D to AlphaLink jumper

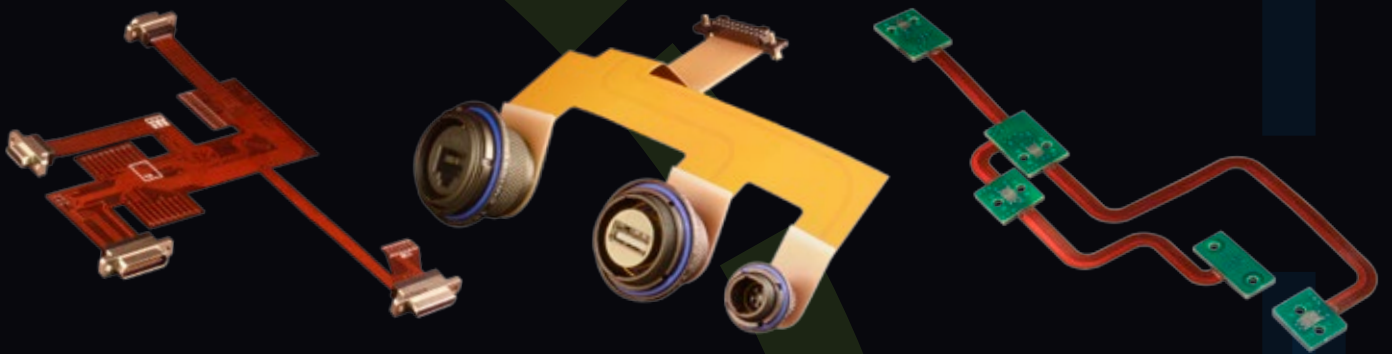
804 Mighty Mouse to Samtec surface-mount jumper

Micro-D to Micro-D jumper

Series 23 SuperNine to AlphaLink jumper

Low-profile Micro-D jumper

MULIBRANCH FLEX AND RIGID FLEX CONNECTORIZED ASSEMBLIES

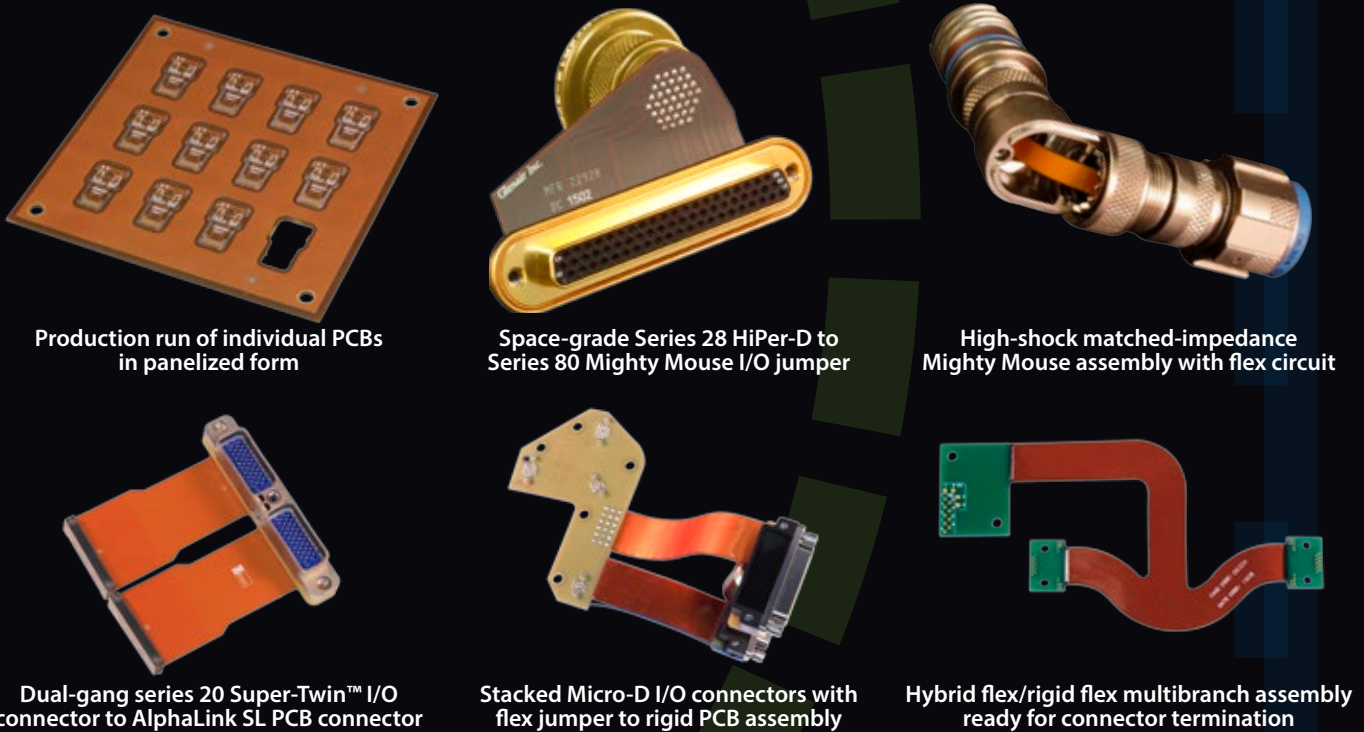


Micro-D subminiature multibranch flex assembly. Both Glenair in the US and in the UK specialized in complex Micro and Nano flex assembly work.

Multibranch RJ45 / Ethernet / USB Flex assembly. Glenair is the only manufacturer of catalog PCB-tail field RJ and USB connectors.

Hybrid flex/rigid flex multibranch assembly ready for connector termination

SPECIAL-PURPOSE FLEX AND RIGID-FLEX DESIGNS



Production run of individual PCBs in panelized form

Space-grade Series 28 HiPer-D to Series 80 Mighty Mouse I/O jumper

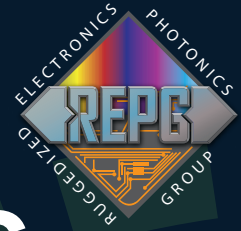
High-shock matched-impedance Mighty Mouse assembly with flex circuit

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

Hybrid flex/rigid flex multibranch assembly ready for connector termination

PCBA DESIGNS FOR RUGGEDIZED EMBEDDED SYSTEMS



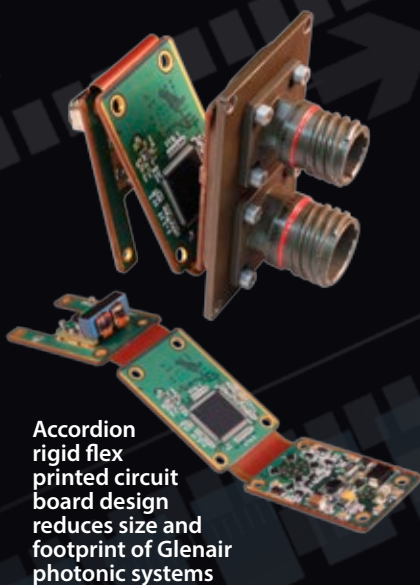
complete in-house optical and electrical
PCBA design and development capability



The design and fabrication of printed circuit board assemblies is a critical in-house capability of Glenair's Ruggedized Electronics and Photonics Group. These temperature, vibration, and shock tolerant PCBAs are key components in our broad range of turnkey electronic and photonic systems



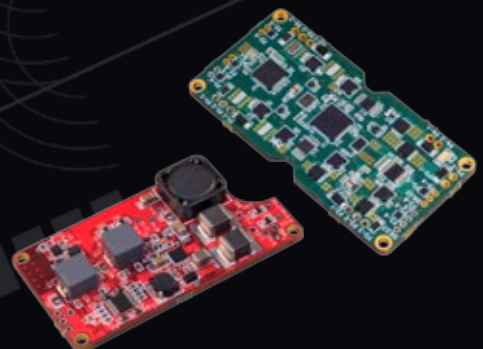
ADVANCED ELECTRONIC PACKAGING DESIGN FOR SIZE AND THERMAL MANAGEMENT



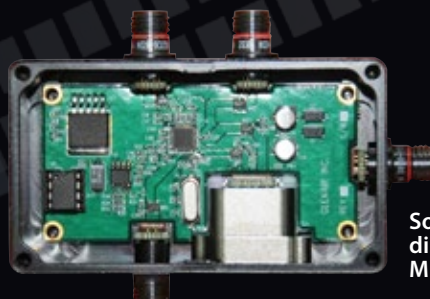
Accordion rigid flex printed circuit board design reduces size and footprint of Glenair photonic systems



Ruggedized power distribution PCB for use in STAR-PAN™ soldier system

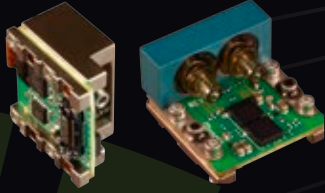


Small form-factor PCBs for a USB hub and protocol conversion application



Soldier-worn data hub and power distribution board design with Series 80 Mighty Mouse interconnects

SMALL FORM-FACTOR BOARD DESIGNS USED IN PHOTONIC SYSTEMS



Small form-factor PCB-mount transmitters and receivers (bi-directional unit shown on left)



2.5mm ELIO® Compatible D38999 Series III type photonic connector with integrated PCBA

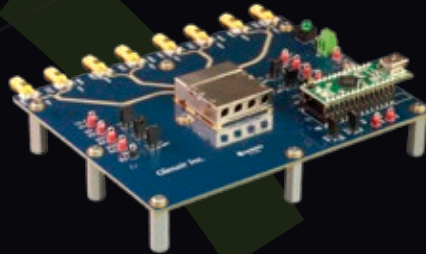


PCBA design for radio frequency-over-fiber links for SATCOM and RF signal distribution

ELECTRONIC AND OPTO-ELECTRONIC EVALUATION BOARDS



MIL-DTL-38999 type 2.5mm ELIO® compatible transceiver evaluation board

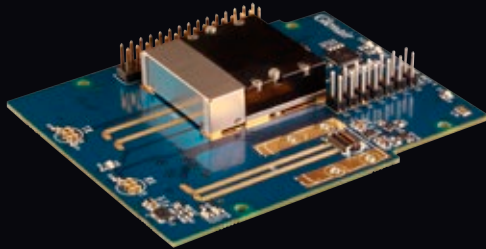


PCB-mount transceiver evaluation board



HiPer-D connector with size #8 opto-electronic contacts evaluation board

VITA 57, FPGA MEZZANINE CARD BASED DEVELOPMENT BOARDS

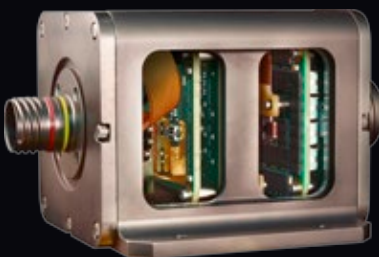


Ruggedized FMC connectivity PCBA for Ethernet, Fiber channel, and/or DVI, SMPTE video system applications



FPGA mezzanine card development board

EMBEDDED ELECTRONIC AND OPTO-ELECTRONIC PCBAs IN ACTION



Copper-to-fiber aggregation media converter (cutaway view)



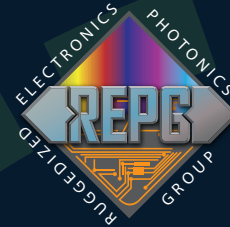
Small form-factor opto-electronic media converter with field fault monitoring



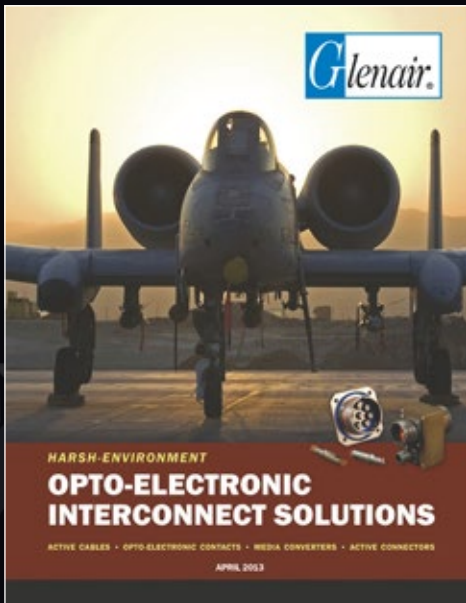
Small form-factor ruggedized opto-electronic media converter

RUGGEDIZED

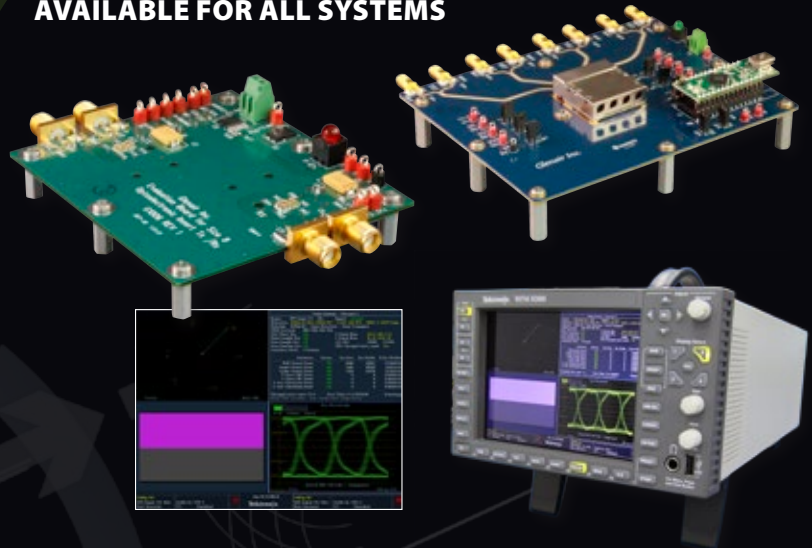
ELECTRONIC/PHOTONIC INTERCONNECT SOLUTIONS



contacts · transceivers · SMPTE video · media converters · ethernet switches



EVALUATION BOARDS AND PERFORMANCE TESTING AVAILABLE FOR ALL SYSTEMS



SMALL FORM-FACTOR 10 GBPS HARSH-ENVIRONMENT PHOTONIC CONTACTS AND CONNECTORS

Patented size #8 opto-electronic transmitter and receiver contacts...



...for use in ARINC 600 avionics connectors

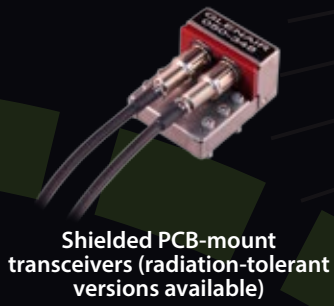
...and D38999 Series III type receptacles

Size #8 cavity adapter kit for 1.25mm ARINC 801 termini

Size #8 cavity adapter kit for ELIO® 2.5mm termini

2.5mm ELIO® Compatible D38999 Series III type

RUGGEDIZED 10 GBPS PCB-MOUNT PHOTONIC TRANSCEIVERS, TRANSMITTERS AND RECEIVERS



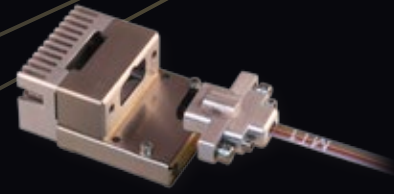
Shielded PCB-mount transceivers (radiation-tolerant versions available)



PCB-mount dual transceivers, quad transmitters and quad receivers

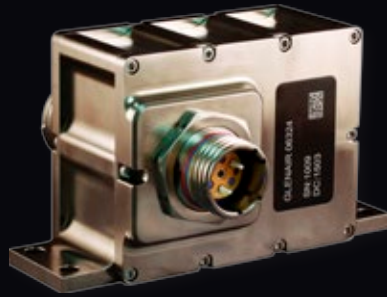


RF-over-fiber for SATCOM, IFE and other RF distribution systems



Parallel optical transceiver (40 Gbps available now; 120 Gbps version in development)

COPPER-TO-FIBER MEDIA CONVERTERS FOR ETHERNET AND VIDEO



Lightning-strike protected ARINC 801 F/O to D38999-type media converter



GFOCA fiber optic Ethernet media converter

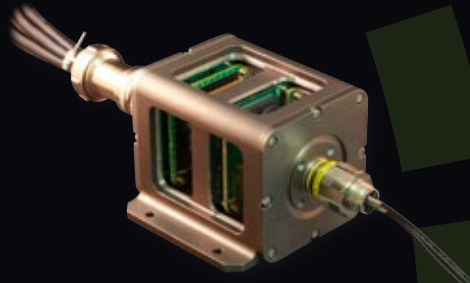


DVI media converter

COPPER-TO-FIBER MEDIA CONVERTERS FOR SIGNAL AGGREGATION



Small form-factor low-speed signal aggregator



High-speed signal aggregator (cutaway view)

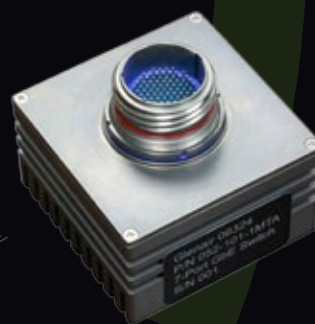


High-speed signal aggregator

SMALL FORM-FACTOR ETHERNET SWITCHES AND BREAKOUT CABLES



7-port Ethernet switch (shown with breakout test cable)



7-port Ethernet switch with heat-dissipation enclosure



Low-profile multiport Ethernet switch

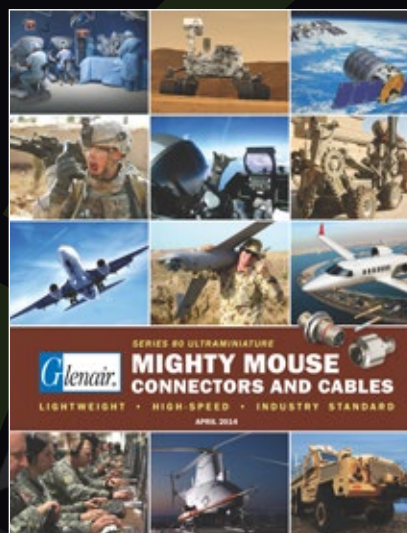
WARFIGHTER TOUGH

STAR-PAN™ TACTICAL SOLDIER SYSTEMS



TACTICAL INTERCONNECT SOLUTIONS

video · data · power distribution



STAR-PAN™ BB5590 BATTERY AND AUXILIARY POWER ADAPTERS



Cigarette lighter power adapter



AC/DC power adapter



BB2590 / BA 5590 battery adapter



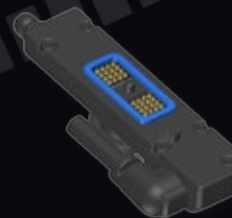
Hand-held radio battery adapter



Microlight radio data cable



PRC-148 radio data adapter



PRC-152A radio data adapter

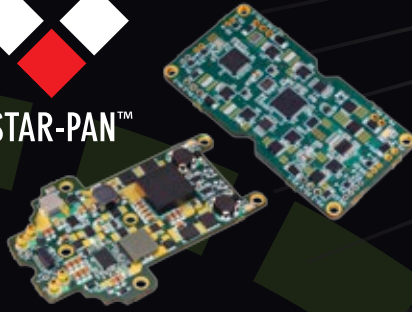


PRC-154 Rifleman radio data adapter

STAR-PAN™ USB HUBS AND POWER DISTRIBUTION INTERCONNECT SYSTEMS



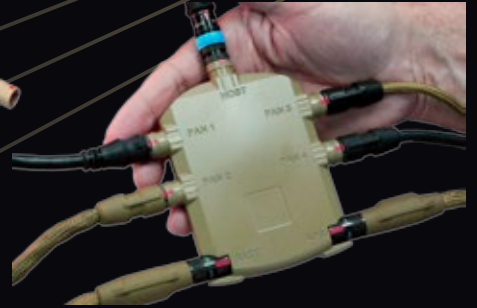
STAR-PAN™



Ruggedized high-temperature STAR-PAN™ USB hub PCBAs



STAR-PAN™ 2-port USB peripheral hub



STAR-PAN™ 4-port USB peripheral hub with battery and auxiliary power source input



Ultra small form-factor STAR-PAN™ Ethernet hub



Ruggedized STAR-PAN™ USB-to-fiber



STAR-PAN™ 6-port USB peripheral hub with battery and auxiliary power source input

STAR-PAN™ HOST AND PERIPHERAL CABLES / DEVICES



NETT Warrior (C1) Extension Cable



Bifurcated Cable with 5V Regulator



C4 Micro USB EUD Host Cable



STAR-PAN™ Ethernet Adapter



STAR-PAN™ Smartphone X-Frame



USB 2.0 Adapter Cable



DAGR GPS/Navigation Cable



TacROVER P ISR Receiver Cable

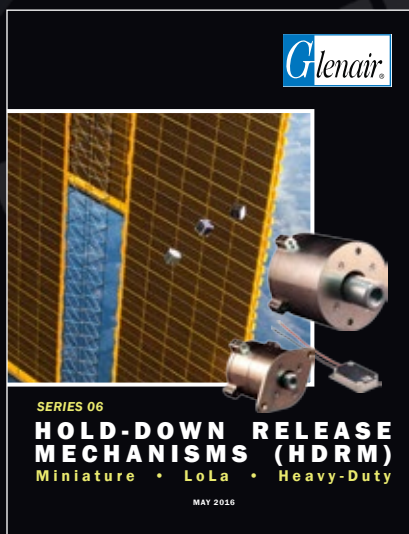


PLRF-15C/25C Laser Range Finder Cable

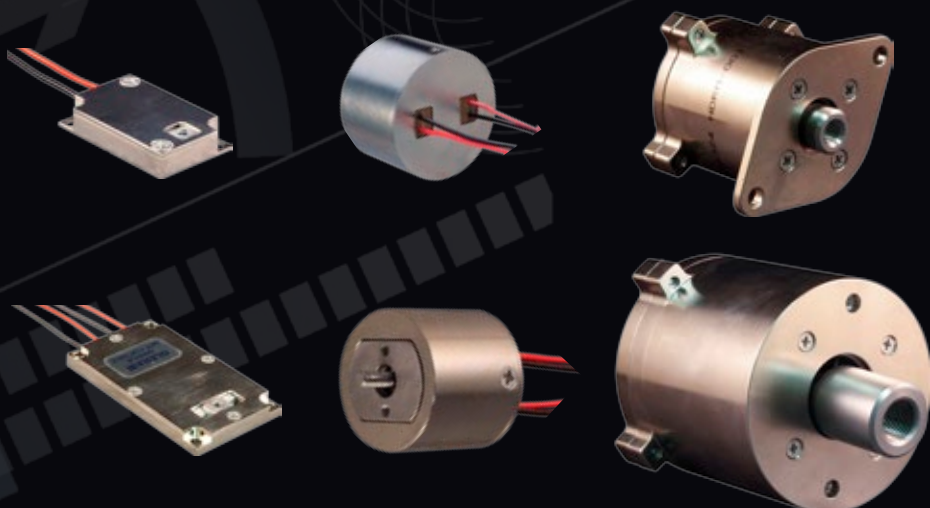
PROVEN FLIGHT HERITAGE

SPACE-GRADE SOLUTIONS

NASA • ESA • JAXA • Commercial



HOLD-DOWN RELEASE MECHANISM TECHNOLOGY

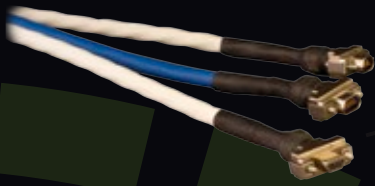


Miniature CubeSat HDRMs

LoLa low-lading medium-duty HDRMs

Heavy-duty HDRMs

HIGH-RELIABILITY CABLE HARNESS ASSEMBLIES



Certified SpaceWire cables



ESA and NASA screened multibranch cable assemblies

SPACE-QUALIFIED HERMETIC RECEPTACLES



Glass-sealed for high-pressure / low-leakage space applications



EMI/RFI FILTER CONNECTORS

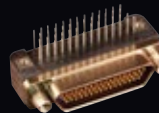


MIL-DTL-38999 type, Series 80 Mighty Mouse, and other circulars



HiPer-D and Micro-Crimp filtered rectangulars

SPACE-GRADE 83513 MICRO-D AND 32139 NANO



ESA and NASA screened solutions available as discrete connectors or wired pigtails

SERIES 28 HIPER-D M24308 INTERMATEABLE



Qualified MIL-DTL-24308 Class K Space-Grade Hermetic, environmental, filter, Sav-Con's and cordsets

LIGHTWEIGHT MIGHTY MOUSE AND MICRO-CRIMP

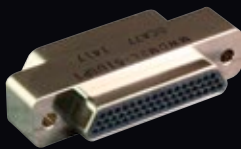


Small, lightweight, high-density ideally suited for space programs



A proven product, ideal for guidepin and rack-and-panel applications

SAV-CON® CONNECTOR SAVERS



Available for every circular and rectangular connector series

ULTRA-LIGHTWEIGHT CONDUIT AND BRAID

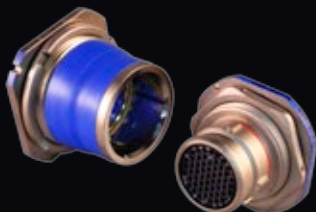


Factory-terminated and user-installable conduit systems



Weight-saving microfilament EMI braided shielding solutions

ZERO EXTRACTION FORCE, ASSISTED-RELEASE, AND LANYARD QUICK-DISCONNECTS



Blind-mate solutions with roll-off nose



Adjustable Separation Force (ASF) connectors



Blind mate D38999 type feedthrough with kick-off assist



Lanyard-release quick-disconnects

HIGH-PERFORMANCE WIRE AND CABLE

M22759 · Ethernet · USB · coax ·
harsh-environment power and signal



SERIES 94
**HIGH-PERFORMANCE
WIRE AND CABLE**

FAST TURNAROUND, NO MINIMUMS, MIL-SPEC AND COMMERCIAL
MAY 2013



turboflex
THE ULTRA FLEXIBLE RIGID POWER CABLE

Turboflex™ power distribution cables are constructed from highly flexible conductors and high-performance insulation to produce cables ideally suited for applications where flexibility, durability, and weight reduction are required. An uniquely durable and flexible—especially in cold weather—the 14 AWG to 450 MCM Turboflex cable features high strand count rope lay inner conductors made with tin, nickel and silver-plated copper. Turboflex is jacketed with Glenair's unique Duralectric™ compound that provides outstanding flexibility and resistance to environmental and chemical exposure. Duralectric is also low smoke, zero halogen.

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

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



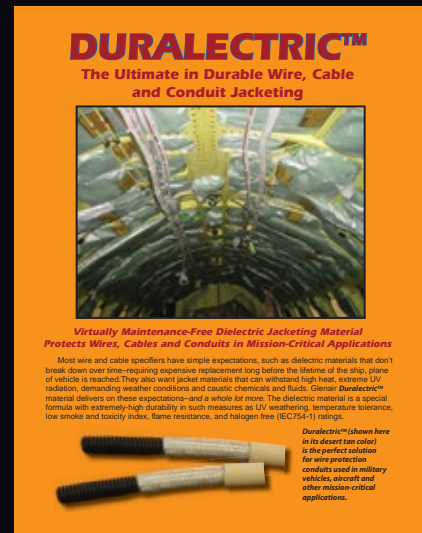
Ultra flexible rope lay construction



Available in a broad range of gauges, 14 AWG to 450 MCM

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

© 2013 Glenair, Inc. 1211 Air Way, Glendale, CA 91201 • 818-247-6000 • www.glenair.com • U.S. CAGE code 06324



DURALECTRIC™
The Ultimate in Durable Wire, Cable and Conduit Jacketing



Virtually Maintenance-Free Dielectric Jacketing Material Protects Wires, Cables and Conduits in Mission-Critical Applications

Most wire and cable specifiers have simple expectations, such as dielectric materials that don't break down over time—requiring expensive replacement long before the lifetime of the ship, plane or vehicle is reached. They also want jacket materials that can withstand high heat, extreme UV radiation, demanding weather conditions and caustic chemicals and fluids. Glenair Duralectric™ material delivers on these expectations—and a whole lot more. The dielectric material is a special formula with extremely-high durability in such measures as UV weathering, temperature tolerance, low smoke and toxicity index, flame resistance, and halogen free (ECF0-1) ratings.

Duralectric™ (shown here in its desert tan color) is the perfect solution for wire protection conduits used in military vehicles, aircraft and other mission-critical applications.

HIGH-PERFORMANCE WIRE AND CABLE



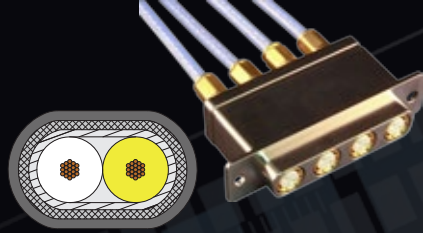
M22759 single-ended hookup wire



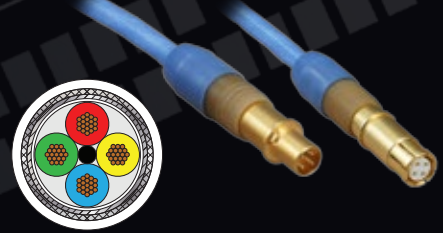
Coaxial cable for RF applications



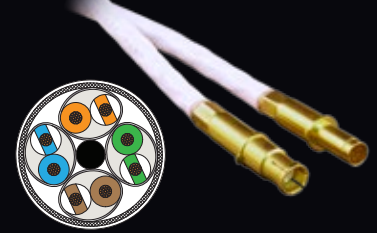
Single and multimode graded-index fiber optic cable



Matched-impedance twisted pair cable for Glenair Ultra-Twinax contacts



Aerospace-grade quad cable for Glenair Quadrax contacts



Aerospace-grade 10G Ethernet cable for El Ochito™

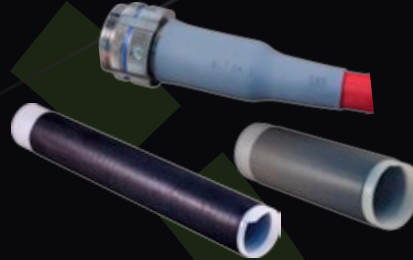
DURALECTRIC®

- Service temperature range: -65°C to 225°C
- Duralectric K (Kelvin) range: -110° to 225°C
- Fire-resistant, Low Smoke-Zero Halogen (LSZH)
- Mil-aero and industrial fluid-resistant
- Accelerated UV/sunlight resistant, 53 year equivalent exposure
- Ozone resistant IAW ASTM D518
- Moldable and extrudable

DURALECTRIC® HIGH-TEMPERATURE, HALOGEN-FREE, CHEMICALLY RESISTANT JACKETING



Bulk jacketed Duralectric® cable for harsh-environment power applications



Duralectric® Autoshrink™ employed in environmental boots and sleeves



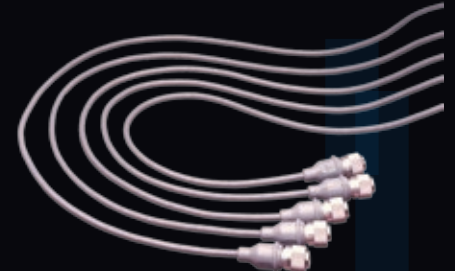
Duralectric jacketing employed as conduit covering in topside naval applications



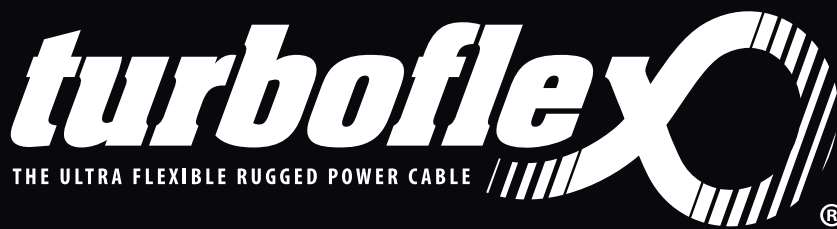
Aerospace overmolded cable assembly with rugged Duralectric® jacketing



Shipboard application with Duralectric® jacketing and overmolding



Duralectric® jacketing employed in environmental commercial application



- Ultra-flexible rope lay power cable construction
- Available in a broad range of gages, from 16 AWG to 450 MCM
- Rugged Duralectric® jacketing

TURBOFLEX™ ULTRA-FLEXIBLE / RUGGED POWER CABLE WITH DURALECTRIC® JACKETING



Ultra flexible rope-lay construction TurboFlex® power cable



TurboFlex® with Duralectric® jacketing ideally suited for equipment grounding

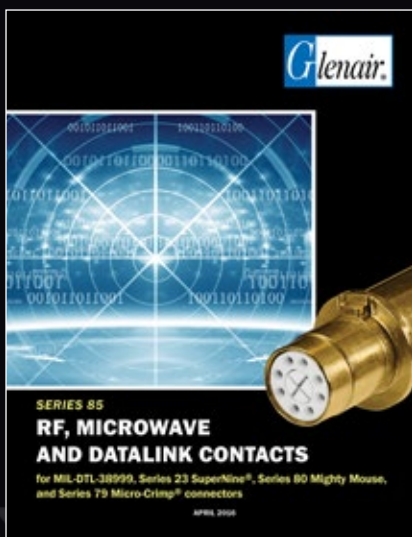


Turboflex® power pylon cable assembly with Duralectric® jacketing

QPL AND COMMERCIAL

CONTACT TECHNOLOGY

signal · RF · high-speed datalink ·
microwave · power · fiber optic ·
high voltage



LOW-LOSS, MATCHED-IMPEDANCE RF AND MICROWAVE CONTACTS



Size #12
50 Ohm contacts



Size #12
75 Ohm contacts



Size #12 spring-loaded SMPM
microwave contacts



Size #8 spring-loaded BMB
microwave contacts

HIGH-SPEED DATALINK CONTACTS FOR ARINC, 38999, AND OTHER CONNECTORS



Size #8 differential
twinax contacts



Size #8
quadrax contacts



Size #8 E1 Ochito®
octaxial contacts



Octobyte™
Ethernet Cat7A contacts

AS39029 SIGNAL CONTACTS



Standard density signal



High-density signal (up to 1500 cycles)



Extended-duty signal



Printed circuit board signal



Thermocouple

AS39029 RF CONTACTS



Size #16 coaxial contacts



Size #12 coaxial contacts



Size #8 coaxial contacts



Size #8 concentric twinax contacts

POWER CONTACTS



Size #8 power



LouverBand™ power



High-voltage



Size #8 - 4/0 power

FIBER OPTIC TERMINI



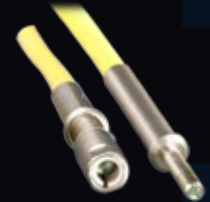
MIL-DTL-29504 QPL termini



Glenair High-Density (GHD) and Front-Release (GFR) termini



GFOCA genderless termini IAW M83526

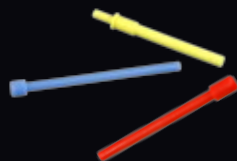


Eye-Beam® GLT grin lens termini

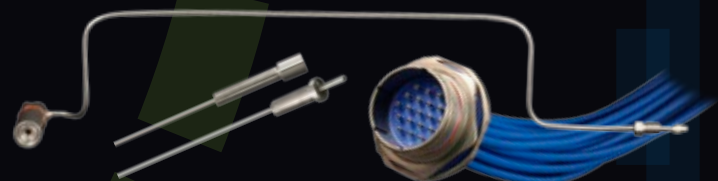
SPECIAL PURPOSE CONTACTS AND PURE GAS TUBE CONTACTS/ASSEMBLIES



Pneumatic contacts for Pitot applications



Lightweight sealing plugs and dummy sealing contacts




High-pressure (10K psi) gas tube contacts and assemblies

LIGHTWEIGHT

ULTRAMINIATURE CIRCULAR CONNECTORS


save weight · save space · optimize
power · enhance performance



Glenair
SERIES 80 ULTRAMINIATURE
MIGHTY MOUSE
CONNECTORS AND CABLES
LIGHTWEIGHT · HIGH-SPEED · INDUSTRY STANDARD
APRIL 2014



Glenair
SERIES 85
SUPERFLY
ULTRAMINIATURE CONNECTORS AND CORDSETS
APRIL 2013



Glenair
SERIES 860
MOUSEBUDTM
THE SNAP-LOCK, TRIGGER-RELEASE CONNECTOR
ULTRA LOW-PROFILE · SPRING-LOADED CONTACTS · HARSH-ENVIRONMENT
PRE-RELEASE SNEAK PEEK · OCTOBER 2014



Glenair
Glenair CB Series
"Pogo Pin" Connectors
The Compact Bayonet Connector with
Spring-Loaded Contacts - VG Qualified!
United States · United Kingdom · Germany · France · Nordic · Italy · Spain · Japan



Glenair
BETTER THAN QPL!
MIL-DTL-55116 TYPE
AUDIO FREQUENCY CONNECTORS
SUPERIOR ELECTRICAL, ENVIRONMENTAL, AND MECHANICAL PERFORMANCE
APRIL 2014

MIL-AERO NANOMINIATURE



.025" contact spacing Nanominiature
circular IAW MIL-DTL-32139

SERIES 80 MIGHTY MOUSE



SERIES 88 SUPERFLY™



TACTICAL DATA COMMS



TURNKEY HARSH-ENVIRONMENT POINT-TO-POINT AND MULTIBRANCH CABLE ASSEMBLIES



QPL AND COMMERCIAL

MIL-AERO CIRCULAR CONNECTORS

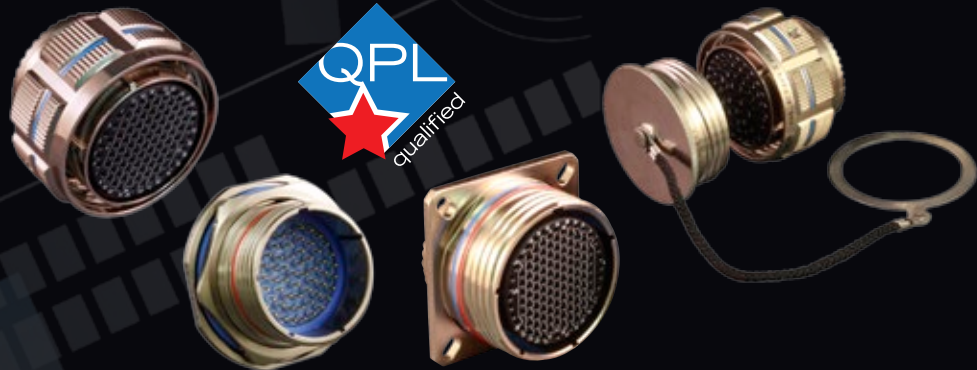
environmental · hermetic · filter · fiber · high-speed datalink · bulkhead feed-thrus · Sav-Con[®]s · lanyard-release



DLA QPL MIL-DTL-38999 SERIES III



100% made-in-America:
No foreign-sourced materials,
component parts, or assembly
labor employed



Qualified environmental plug, jam nut, and square flange receptacles.
All 1560 crimp-contact insert arrangements fully supported. W, F, and G plating classes,
plus Glenair COTS Nickel-PTFE and Zinc-Nickel

SUPERNINE® MIL-DTL-38999 TYPE CRIMP CONTACT TERMINATION



Extended-durability plug with band porch and 1500 mating cycle contacts

Extended-durability plug with accessory threads

High-density plugs and receptacles in all mounting styles (up to 1500 cycles)

Piston-seal submersible series

SUPERNINE® MIL-DTL-38999 TYPE PC TAIL RECEPTACLES



Flush flange

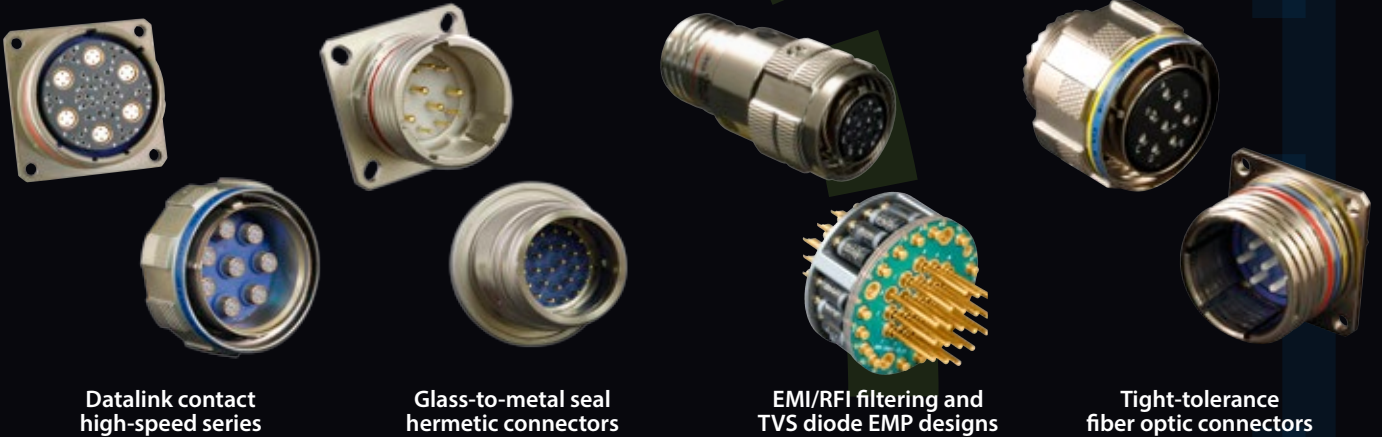
Stepped contacts

Short standoff

Threaded standoff

Dual flange

SUPERNINE® MIL-DTL-38999 SERIES III TYPE HIGH SPEED, HERMETIC, FIBER, AND FILTER



Datalink contact high-speed series

Glass-to-metal seal hermetic connectors

EMI/RFI filtering and TVS diode EMP designs

Tight-tolerance fiber optic connectors

SAV-CON® CONNECTOR SAVERS AND OTHER HIGH-PERFORMANCE SERIES



Sav-Con® connector savers for every MS circular series

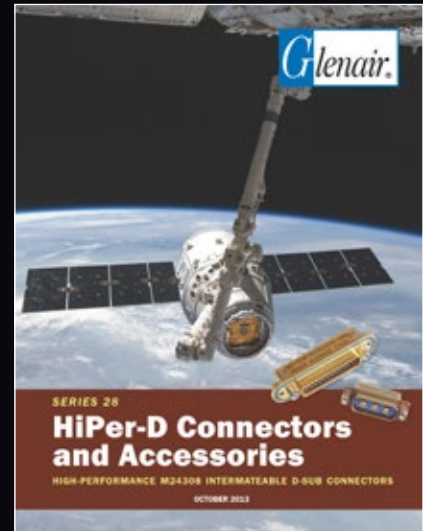
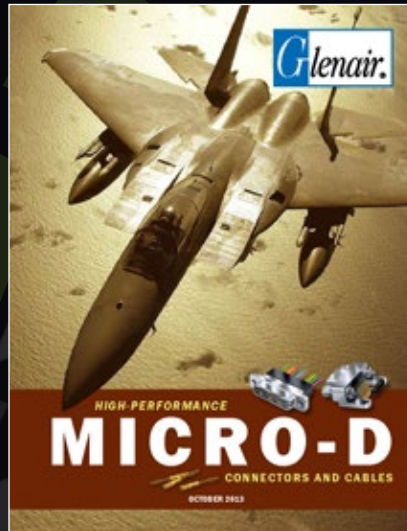
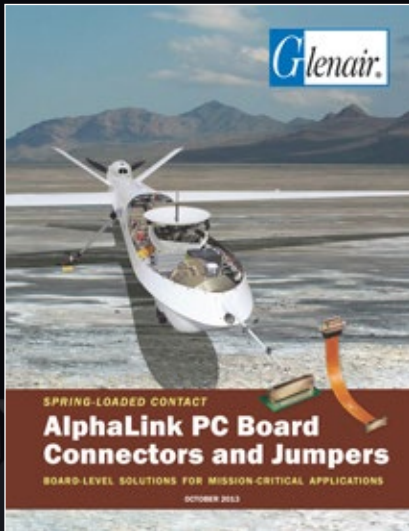
Environmental and hermetic bulkhead feed-thrus

MIL-DTL-38999 Series IV type breech-lock

AS81703 Series 3 type high-shock lanyard release

QPL AND COMMERCIAL RECTANGULAR CONNECTORS

AlphaLink™ · nanominiature (32139) ·
microminiature (83513) · subminiature
(24308) · Micro-Crimp · Super-Twin™



SERIES 28 HIPER-D HIGH-PERFORMANCE MIL-DTL-24308 INTERMATEABLE



Enhanced panel mount sealing and mounting



Combo power and signal contact arrangements



Ground spring for improved EMC



Precision-machined shells and EMC cowlings



Low-profile environmental and split-shell EMI backshells

SERIES 79 MICRO-CRIMP HIGH-DENSITY CRIMP CONTACT MICRO RECTANGULAR



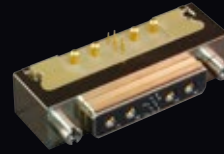
Crimp-terminated cable connectors



Crimp-terminated panel-mount connectors



Panel-mount connector with auxiliary sealing



Right angle PCB panel-mount connectors



Backshells, EMI adapters and protective covers

MIL-DTL-83513 MICRO-D QPL AND GLENAIR COMMERCIAL EQUIVALENTS



Micro-D for harness applications



Micro-D for PCB applications



Master-Latch™ locking Micro-D



Well-Master™ 260° high-temperature downhole



Micro EdgeBoard connectors and locking Micro-Strips

MIL-DTL-32139 NANOMINIATURE



Dual-row nano with flying leads



Right-angle and straight-mount PCB connectors



Nanominature dual-row back-to-back jumpers



Series 89 Nanominature Sav-Con® connector saver

SERIES 20 SUPER-TWIN™



Super-Twin™ lightweight composite modular connectors



ALPHALINK™



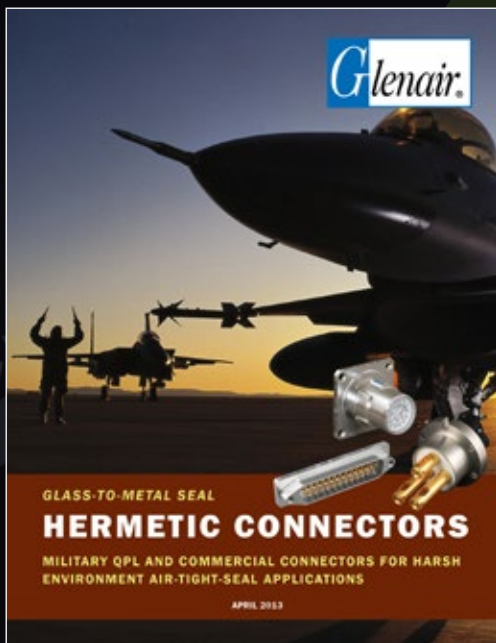
AlphaLink® board-level pogo-pin connectors and flex jumpers



QPL AND COMMERCIAL

GLASS-SEAL HERMETIC CONNECTORS

mil-spec circular and rectangular ·
HTHP · high-speed datalink/fiber optic



MIL-DTL-38999 QPL AND COMMERCIAL PIN AND SOCKET HERMETICS



Series I scoop-proof bayonet coupling



Series II low-profile bayonet coupling



Series III scoop-proof triple-start coupling



Series IV breech lock

HARSH-ENVIRONMENT / MODIFIED PACKAGE HERMETICS



Geo-Marine®
double-start hermetic
connector



Hermetic
power connector



Single-way tool
joint HTHP hermetic
connector



Hermetic probe
connector with
modified flange



Long-length hermetic
bulkhead penetrator with
optional crimp piggy-back
termination

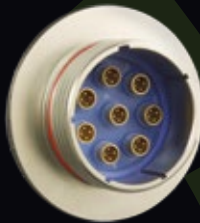
HIGH-SPEED DATALINK HERMETICS



Triax hermetic



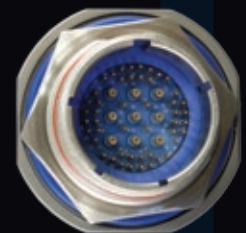
Hybrid coax/signal
hermetic



Quadrax hermetic with
special weld-mount
flange



MT ribbon
fiber optic hermetic



Hybrid coax/signal
hermetic

RECTANGULAR PACKAGE HERMETICS



MIL-DTL-24308
QPL hermetic



Series 79 Micro-Crimp
hermetic



MIL-DTL-83513 type
Micro-D hermetic



Sealed panel-mount
Micro-D hermetic

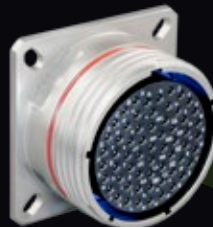
OTHER CIRCULAR GLASS-SEALED HERMETIC SERIES



MIL-DTL-26482



MIL-DTL-83723



MIL-DTL-38999 (QPL)



MIL-DTL-5015

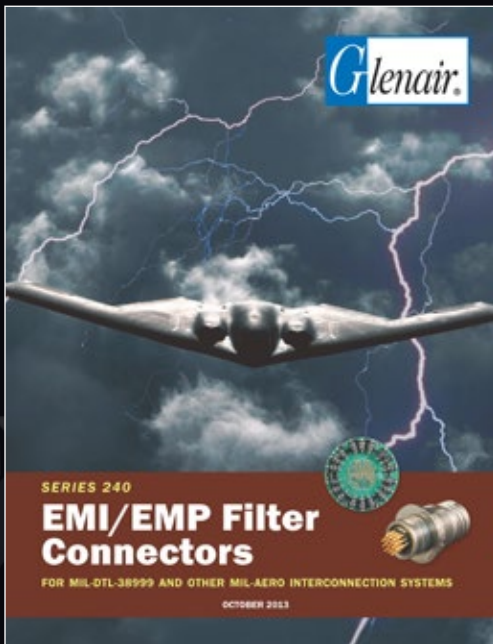


Series 80 Mighty Mouse

SERIES 240

EMI/EMP FILTER CONNECTORS

EMI ceramic planar array ·
EMP TVS diode

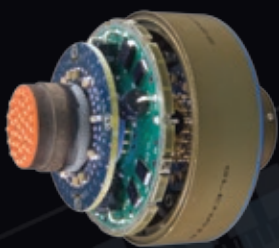


MINIATURIZED EMI/RFI FILTER PRESSURE TRANSDUCERS



Small form-factor pressure sensors for commercial and military aerospace applications with integrated ceramic planar array EMI/RFI filter technology (miniaturized MIL-DTL-38999 version shown on left, ultraminiature Mighty Mouse 804 on right)

EMP TRANSIENT VOLTAGE SUPPRESSION DIODE-EQUIPPED CONNECTORS



EMP diode-equipped connector with oversized shell



MIL-DTL-38999 Series III type EMP connector



Reduced-package-size EMI/EMP cylindrical



MIL-DTL-38999 Series III type EMP with rectangular housing

EMI FILTER CONNECTORS WITH MIL-STANDARD CIRCULAR PACKAGING



MIL-DTL-38999 Series III triple-start



MIL-DTL-38999 Series IV breech-lock



MIL-DTL 26482 Series I and II bayonet



MIL-DTL-83723 Type T threaded



MIL-DTL-5015 threaded

UNIQUE AND SPECIAL-PURPOSE EMI FILTER CONNECTORS



Extended-shell PC-tail cylindrical with threaded standoff



Special-purpose filter connector cable adapter



Series 80 Mighty Mouse PC-tail filter receptacle



MIL-STD-1760 filtered umbilical connector



Filter plug with crimp contacts



MIL-DTL-38999 type filter connector with sidecar ceramic array packaging



MIL-DTL-38999 type filter connector with hybrid analog signal and RF contacts



Series 970 PowerTrip™ high-density EMI filtered power connector



Series 804 EMI filtered Mighty Mouse push-pull with custom flange

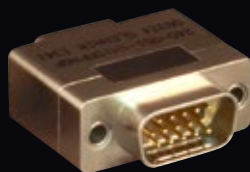


SuperSeal™ RJ45 Ethernet connector with EMI filtering

EMI FILTER CONNECTORS WITH MIL-STANDARD / GLENAIR RECTANGULAR PACKAGING



MIL-DTL-83513 type Micro-D filter connector



MIL-DTL-24308 type D-sub filter connector



Series 79 Micro-Crimp filter connector

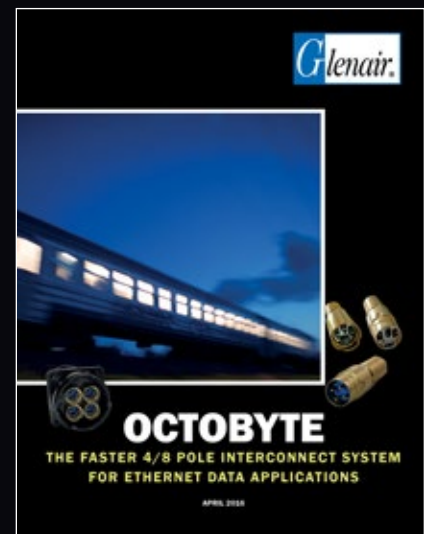
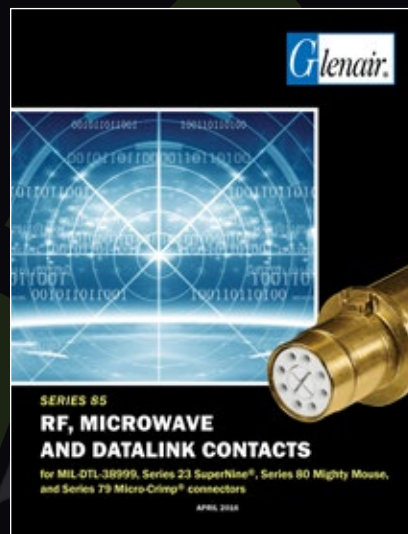
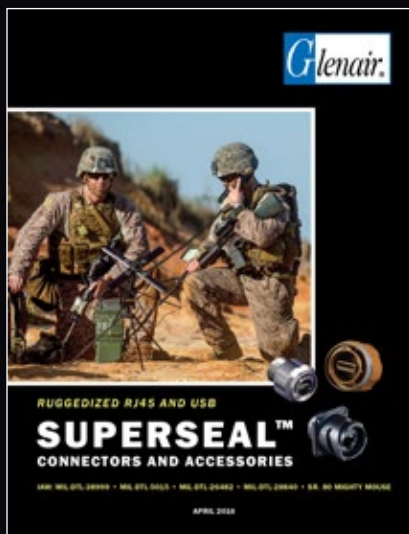


ARINC 600 rack-and-panel filter connector

RUGGEDIZED

HIGH-SPEED DATALINK INTERCONNECTS

contacts · connectors · jumpers



SUPERSEAL™ IP67 OPEN-FACE RUGGEDIZED FIELD RJ45 SOLUTIONS



MIL-DTL-38999 Sr. III type SuperSeal™ RJ45



Series 80 Mighty Mouse SuperSeal™ RJ45



Series IPT 26482 type SuperSeal™ RJ45



Series ITS 5015 type SuperSeal™ RJ45



MIL-DTL-28840 type SuperSeal™ RJ45

SUPERSEAL™ IP67 OPEN-FACE RUGGEDIZED FIELD USB SOLUTIONS



MIL-DTL-38999 Sr. III type SuperSeal™ USB



Series 80 Mighty Mouse SuperSeal™ USB



Series IPT 26482 type SuperSeal™ USB



Series ITS 5015 type SuperSeal™ USB



MIL-DTL-28840 type SuperSeal™ USB

HIGH-SPEED / RF DATALINK CONTACTS



Size #8 differential twinax contacts

Size #12 ultra-twinax differential twinax contacts

Size #8 quadrax contacts

Size #8 spring-loaded BMB microwave contacts

Size #12 SMPM type spring-loaded coaxial

EL OCHITO® OCTAXIAL SIZE #8 CONTACTS FOR GIGABIT AND 10G ETHERNET



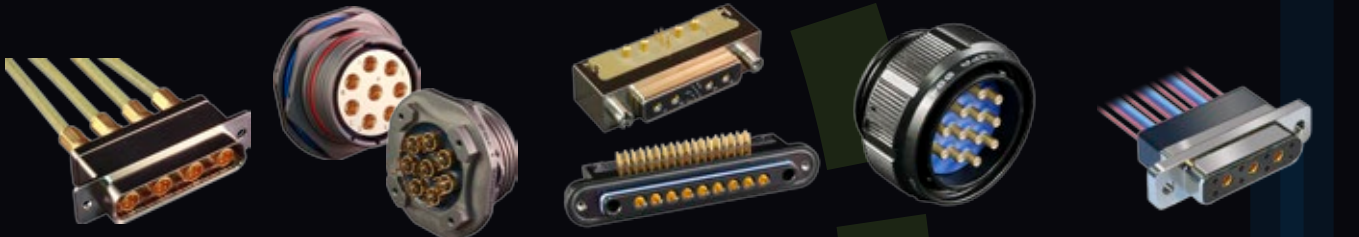
El Ochito®: The 10G Ethernet contact with patented data pair isolation technology

#24 / #26 version with integrated removal tool
#28 version
Discrete contacts for D38999 Series III type, Mighty Mouse, SuperNine®, and ARINC 600

#24 / #26 version
#28 version
Prewired contacts with Cat 6A aerospace #24, #26, or #28 gage Ethernet cable

El Ochito® test adapters and test jumpers

GLENAIR CONNECTOR SERIES FOR EL OCHITO® AND OTHER HIGH-SPEED DATALINK CONTACTS



Series 28 HiPer-D® with Quadrax contacts

Series 23 SuperNine® with El Ochito PC tail contacts

Series 79 Micro-Crimp® with coax contacts

Series 80 Mighty Mouse with differential twinax

MWDM Micro-D with coax contacts

OCTOBYTE™ SERIES RUGGEDIZED ETHERNET CONNECTOR

SPEED-MASTER™ 10G+ ETHERNET



Tested for compliance according to EN50173-1 standards for CAT5E and CAT7

Ethernet Cat7A contacts

Ethernet Cat5 contacts

Coax contacts

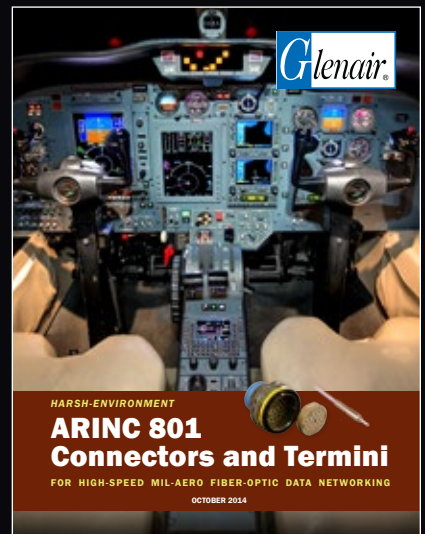
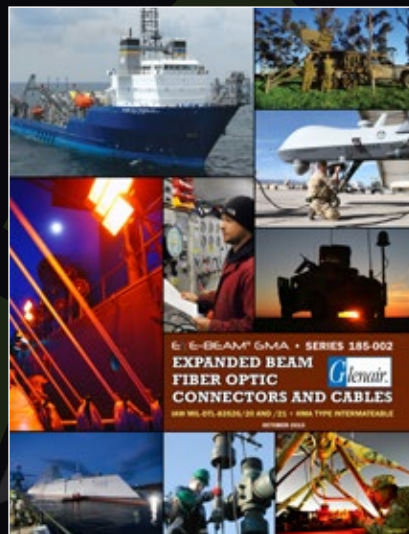
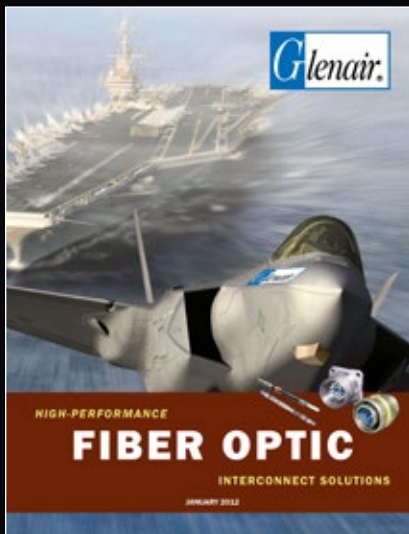
Ethernet MVB - WBT contacts

Speed-Master™ modular 10G+ Ethernet technology (shown here in SuperNine® packaging) available now for 22D gage contacts and wires

HIGH-PERFORMANCE

FIBER OPTIC INTERCONNECT SYSTEMS

connectors · termini · cables · tools



GLENAIR EYE-BEAM® GMA AND GLT EXPANDED-BEAM SOLUTIONS



Eye-Beam® GMA (HMA type intermateable) IAW M83526/21 panel mount configuration



Eye-Beam® GMA (HMA type intermateable) IAW M83526/20 hermaphroditic cable plug configuration

Available cable reels and field-deployment technologies including man-packable units



Innovative Eye-Beam® GLT grin-lens expanded-beam termini can be integrated into virtually any circular or rectangular connector package. Factory terminated lens pin termini and lens socket termini on cable jumpers allow for easy fusion splicing in the field.

GLENAIR BUTT-JOINT FIBER OPTIC INTERCONNECT SOLUTIONS



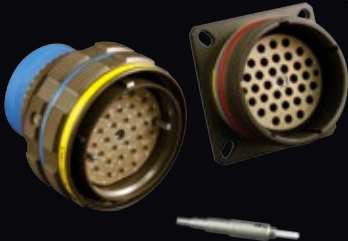
MIL-DTL-38999 type fiber optic



Glenair High Density (GHD) fiber optic



Mighty Mouse fiber optic



ARINC 801 type fiber optic



MT Ferrule 38999 type fiber optic



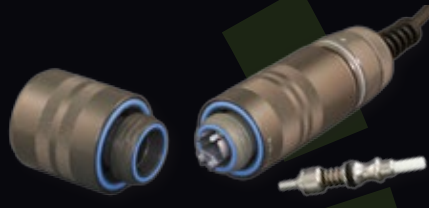
NGCON MIL-PRF-64266 fiber optics



Fiber optic Sav-Con® connector savers



MIL-PRF-28876 Fiber Optic



GFOCA M83526 Compliant Fiber Optic



Glenair Front Release (GFR) fiber optic

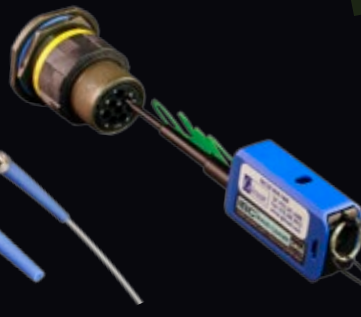
TOOL KITS AND TRAINING



Fiber Optic termination and maintenance kits



Fiber optic test probes and adapters



Dry-wipe fiber optic cleaning tools



On-site fiber optic technician certification training



FIBER OPTIC CONNECTOR BACKSHELLS



For user termination and fabrication of fiber optic cable and conduit assemblies

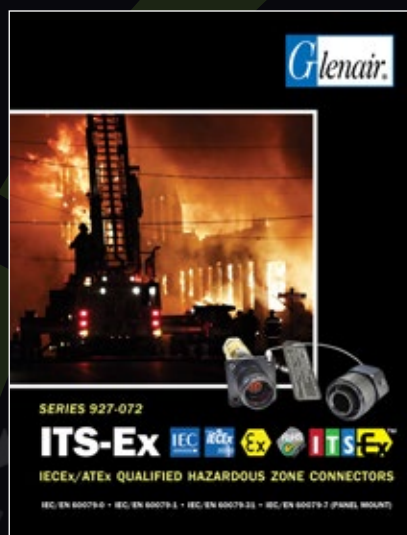
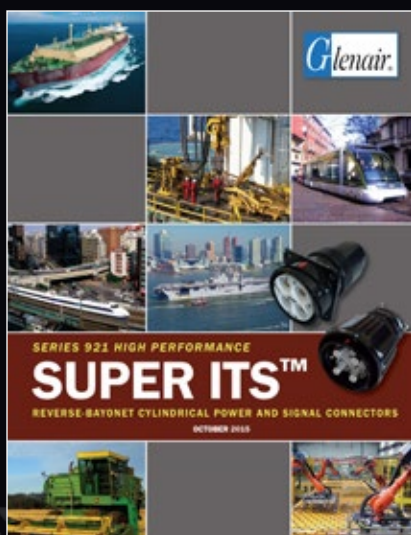
TURNKEY FIBER OPTIC CABLE AND CONDUIT ASSEMBLIES



Catalog point-to-point solutions as well as bespoke multibranch assemblies

VG QUALIFIED AND COMMERCIAL INDUSTRIAL-STRENGTH CONNECTORS

power · signal · hazardous zone · military



HIGH-VOLTAGE SINGLE AND MULTIPOLE POWER CONNECTORS



Glenair high-power tractor connector with TurboFlex™ cable, locking/lever coupling, and flexible standoff



Series IRT rectangular multipole high voltage traction motor connectors



UJ Series power joint connector system



Innovative tool-free locking and latching mechanisms

SUPER ITS™ HIGH-PERFORMANCE REVERSE BAYONET



Higher temperature and ampacity rating with rigid insert and mechanical contact retention

ITS-Ex HAZARDOUS ZONE CONNECTORS



IECEX / ATEX qualified explosive zone 5015 type reverse-bayonet connectors for Group IIC, Temperature Classes T6 and T5, Zones 1 and 2

POWERTRIP™ EXTREME ENVIRONMENT POWER CONNECTOR



The high-density, advanced performance PowerTrip™ is a reduced size and weight solution for demanding interconnect applications. High ampacity, anti-decoupling, and robust backshell accommodation standard.

SERIES 928 HMI LIGHTING



Rugged bayonet-lock plugs and receptacles for ballast and head connections

5015 TYPE CIRCULAR HEAVY-DUTY POWER AND SIGNAL CONNECTORS



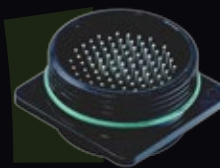
Series ITS reverse-bayonet



Series ITH rigid insert



Series IT threaded coupling



Series ITZ triple-start coupling



Series ITK high-temperature ceramic insert



ITS-RG RadGrip



Series 901 multi-pin high voltage



Series 500 single-pole high voltage



Series IGE single-pole high power

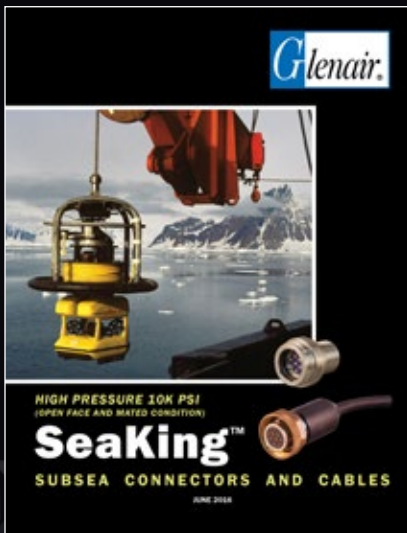


Series ITS bayonet with wing locks

HIGH-PRESSURE

MARINE / SUBSEA INTERCONNECTS

submersible · topside · harsh-environment ·
oil & gas · hazardous zone



Glenair.

HIGH PRESSURE 10K PSI
(OPEN FACE AND MATED CONDITION)

SeaKing™
SUBSEA CONNECTORS AND CABLES

JUNE 2014

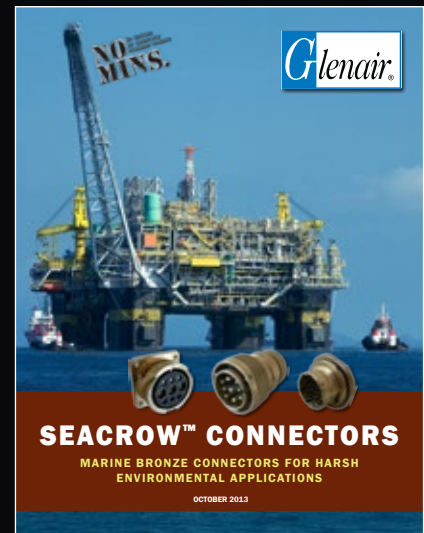


Glenair.

ULTRA HARSH-ENVIRONMENT

GEO-MARINE®
HIGH-PRESSURE ENVIRONMENTAL AND HERMETIC CONNECTORS AND CABLES

MAY 2014

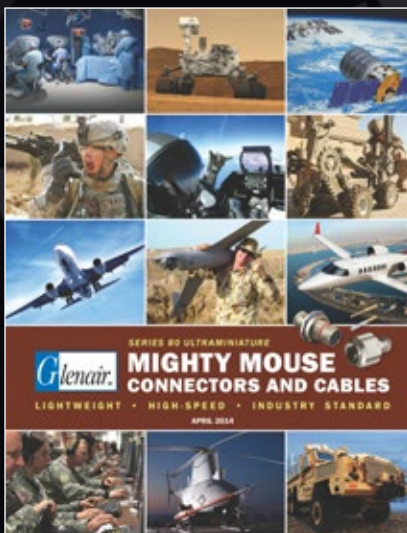


Glenair.

NO MORE
MINS.

SEACROW™ CONNECTORS
MARINE BRONZE CONNECTORS FOR HARSH
ENVIRONMENTAL APPLICATIONS

OCTOBER 2013



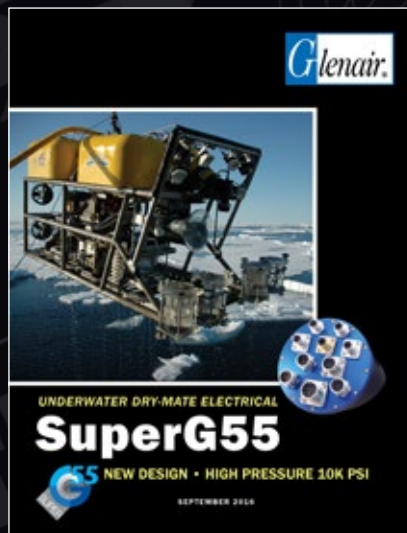
Glenair.

SERIES 90 ULTRAMINIATURE

MIGHTY MOUSE
CONNECTORS AND CABLES

LIGHTWEIGHT · HIGH-SPEED · INDUSTRY STANDARD

APRIL 2014

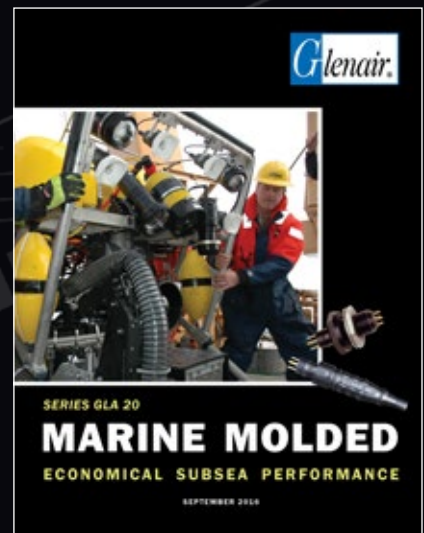


Glenair.

UNDERWATER DRY-MATE ELECTRICAL

SuperG55
NEW DESIGN · HIGH PRESSURE 10K PSI

SEPTEMBER 2010



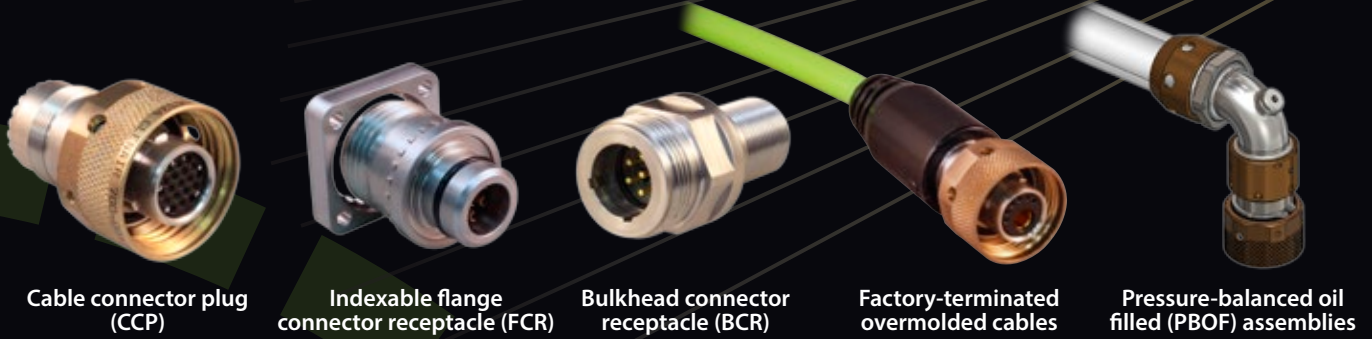
Glenair.

SERIES GLA 20

MARINE MOLDED
ECONOMICAL SUBSEA PERFORMANCE

SEPTEMBER 2010

SERIES 70 SeaKing™ 10K PSI OPEN FACE SUBSEA CONNECTORS



Cable connector plug (CCP)

Indexable flange connector receptacle (FCR)

Bulkhead connector receptacle (BCR)

Factory-terminated overmolded cables

Pressure-balanced oil filled (PBOF) assemblies

SERIES 22 GEO-MARINE® 5000 PSI HARSH-ENVIRONMENT CONNECTORS AND CABLES



Cable plug with overmold adapter

Right-angle strain relief backshell

Environmentally-sealed protective covers

Factory overmolded cable assembly

Environmental and hermetic receptacles

In-line receptacles

Environmental and hermetic FCRs

Solder-mount receptacle

Environmental and hermetic feed-throughs

SERIES 802 AQUAMOUSE



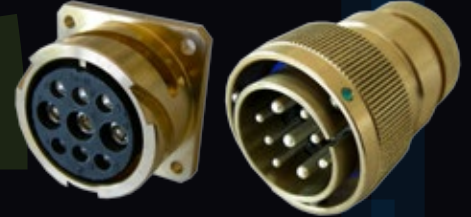
Ultraminiature series AquaMouse subsea and hermetic connectors

MIL-DTL-28840



MIL-DTL-28840 qualified Navy electrical connectors

SEACROW™ MARINE BRONZE



Seacrow™ harsh-environment marine bronze 5015 power connectors

NEW FOR 2016



Coming soon: Marine Molded ROV cable and bulkhead interconnects

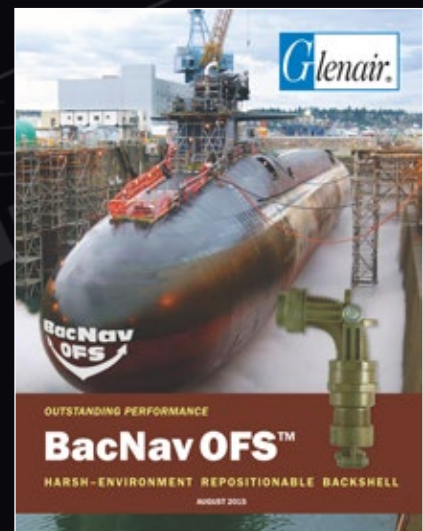
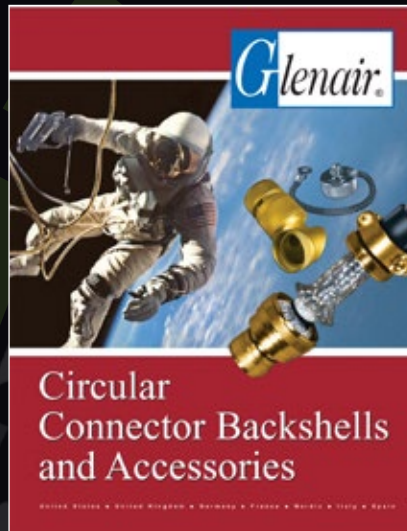
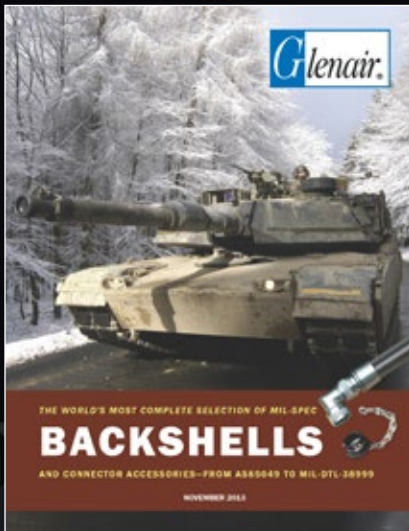
Available now: Series ITS-Ex ATEX qualified explosive zone connectors

Coming soon: SuperG55 dry-mate 10k psi connectors

QPL AND COMMERCIAL

CONNECTOR BACKSHELLS AND ACCESSORIES

environmental sealing · wire management · strain relief · EMC shield termination



LIGHTWEIGHT COMPOSITE THERMOPLASTIC BACKSHELLS AND ACCESSORIES



Band-in-a-Can
EMI/RFI composite
backshell



Composite EMI/RFI
backshell with attached
lightweight braid



Swing-Arm™ Flex with
drop-in wire shield
adapter



Split-shell low profile
composite banding
backshells

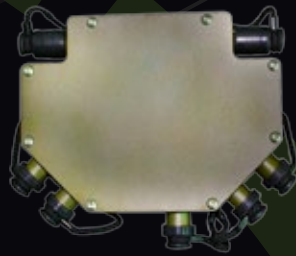


Composite bulkhead
feed-thru with hybrid wire
sealing grommet

LIGHTWEIGHT COMPOSITE EMI/RFI ENVIRONMENTAL JUNCTION BOXES



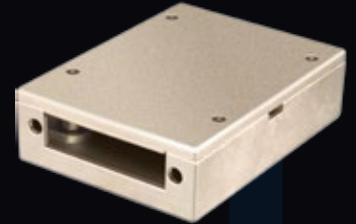
Modular junction box with
feed-thru fittings and caps



Custom connectorized
low-profile composite data hub



Heavy-duty composite
cable/equipment bay



Ultra small form-factor
miniature enclosure

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



Split-shell D-subminiature
composite backshell



Split-shell M24308
composite backshell



Composite D-subminiature
backshells



Flex-D composite
M24308 backshell



M24308 EMI/RFI
backshell

BACKSHELL AND CONNECTOR ACCESSORY INNOVATION SHOWCASE



StarShield™ zero-length
shield termination
backshell



Spring-loaded "flop-lid"
protective cover



Space-grade
Qwik Clamp backshell



Ultra low-profile
backshell



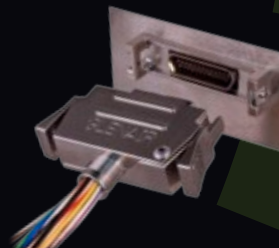
BacNav OFS™
repositionable EMI/EMP
backshell



Backshell
connector saver



Self-locking,
anti-decoupling
protective covers



Meta-Loc™ series
quick-lock, quick-release
backshells



Mil-grade RF protective
covers and accessories



Pressure-barrier
firewall feed-thrus

HIGH-PERFORMANCE

BRAIDED SHIELDING

EMI shielding · weight reduction · abrasion protection · grounding

Glenair.

**LIGHTWEIGHT
BRAIDED WIRE SHIELDING**

EMI/RFI METALLIC • NON-METALLIC • ARMORLITE™
AMBERSTRAND® • GROUND STRAPS • MASTERWRAP™

AUGUST 2014

Glenair.

FLEXIBLE, LIGHTWEIGHT WRAPAROUND SHIELD BRAID

MasterWrap™

ARMORLITE™ SELF-WRAPPING WIRE PROTECTION SAVES TIME AND WEIGHT

SEPTEMBER 2013

Glenair.

**LIGHTWEIGHT
ARMORLITE™**

Microfilament nickel-clad stainless steel EMI/RFI braided shielding

Ultra lightweight EMI/RFI braided shielding for high-temperature applications 400°C to 4250°C

Microfilament stainless steel 20% lighter than NCU A.A. 99569/Q08575

Outstanding EMI/RFI shielding and conductivity

Aerospace environment qualified

Superior flexibility and "windowing" resistance: 90 to 95% optical coverage

220,000 psi (min) tensile strength

Best performing metallic braid during lightning tests (Up to ANSD EIA-364-75-1997 Waveform S8)

Glenair.

**LIGHTWEIGHT
AmberStrand®**

Composite metal-clad EMI/RFI braided shielding

The smart way to reduce launch and flight weights in aerospace systems

For many applications, the cable shield is the most important element in controlling EMI. Unfortunately, metal shielding—especially when applied in multiple layers—can be extremely heavy. The opportunity to provide robust EMI shielding at a fraction of the weight is the principal advantage of composite thermoplastic EMI/RFI braid made from AmberStrand material. Thermal impedance test reports demonstrate the effectiveness of the material compared to conventional metal solutions. So get smart! Reduce weight and save money with AmberStrand!

- Metal-clad EMI/RFI shielding with a lightweight composite thermoplastic base material
- Highly conductive surface plating
- Reduce shielding weight up to 80% and more
- Reduce operation costs by permanently reducing launch and aircraft all-up weights
- Superior high frequency shielding compared to tin-plated and/or nickel-plated copper
- Exceptional tensile strength: 590,000 psi (min)

Glenair.

GENERAL DUTY • MIL-SPEC • LIGHTWEIGHT • SPECIALS

BRAIDED GROUND STRAPS

OCTOBER 2014

ARMORLITE™ MESH TAPE

For spot EMI/RFI shielding coverage and reinforcement of cable interstices

ARMORLITE™ AmberStrand®

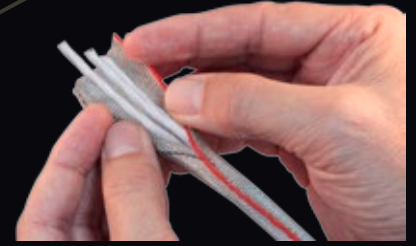
LIGHTWEIGHT ARMORLITE™ (STAINLESS STEEL) AND AMBERSTRAND® (COMPOSITE) SHIELDING



Tubular AmberStrand® and ArmorLite™ lightweight metal-clad microfilament EMI/RFI braided shielding



Shield sock backshells with lightweight ArmorLite™ or AmberStrand® microfilament EMI/RFI braid



MasterWrap™ flexible, field-installable/repairable side-entry EMI/RFI shielding with ArmorLite™ technology

TURNKEY FACTORY OVERBRAIDING WITH LIGHTWEIGHT AND QQ-B-575B/A-A-59569 BRAID



Turnkey factory-overbraided multibranch cable assembly



Overbraided conduit assembly, ready for customer termination



Factory-overbraided pigtail assembly

ARMORLITE™ AND METALLIC BRAID GROUND STRAPS



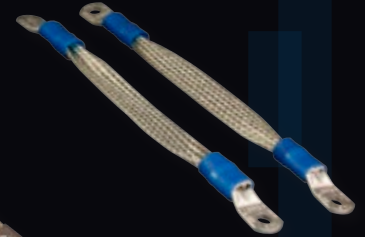
Lightweight ArmorLite™ microfilament ground straps



Heavy-duty metallic braid ground straps

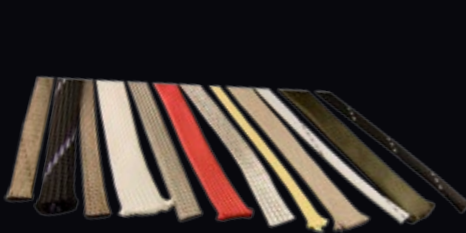


MIL-DTL-24749 Type IV Qualified navy ground straps



Round braid profile ground straps

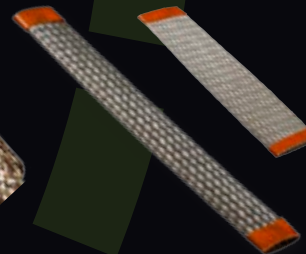
INDUSTRY-STANDARD TUBULAR FABRIC AND METAL BRAID



Tubular fabric braid for mechanical and abrasion protection of electrical wire interconnect systems



Wide range of colored Nomex for abrasion protection and wire identification



QQ-B-575B/A-A-59569 metallic braid for EMI shielding

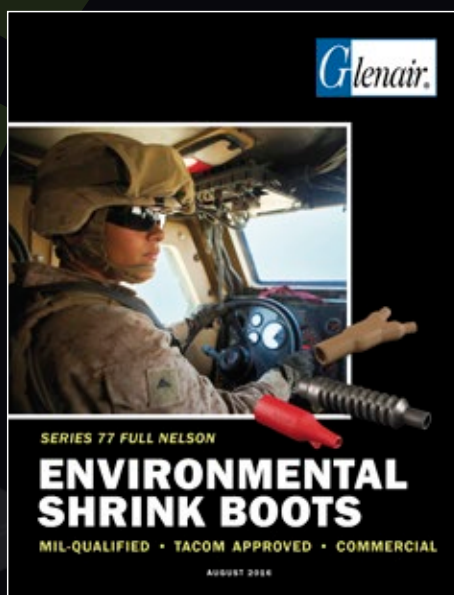


High-temperature fiberglass braid for engine applications

ENVIRONMENTAL

SHRINK BOOTS AND HEAT-SHRINK TERMINATIONS

abrasion protection · environmental
sealing · splicing · space-grade

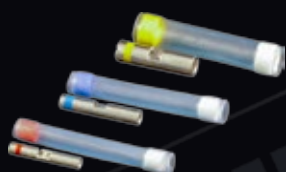


NEW SPACE-GRADE SHRINK BOOTS



Low-outgassing fluoropolymer alloy
shrink boots

HEAT SHRINK TERMINATION SLEEVES / SPLICES



Three sizes of available
inline splices

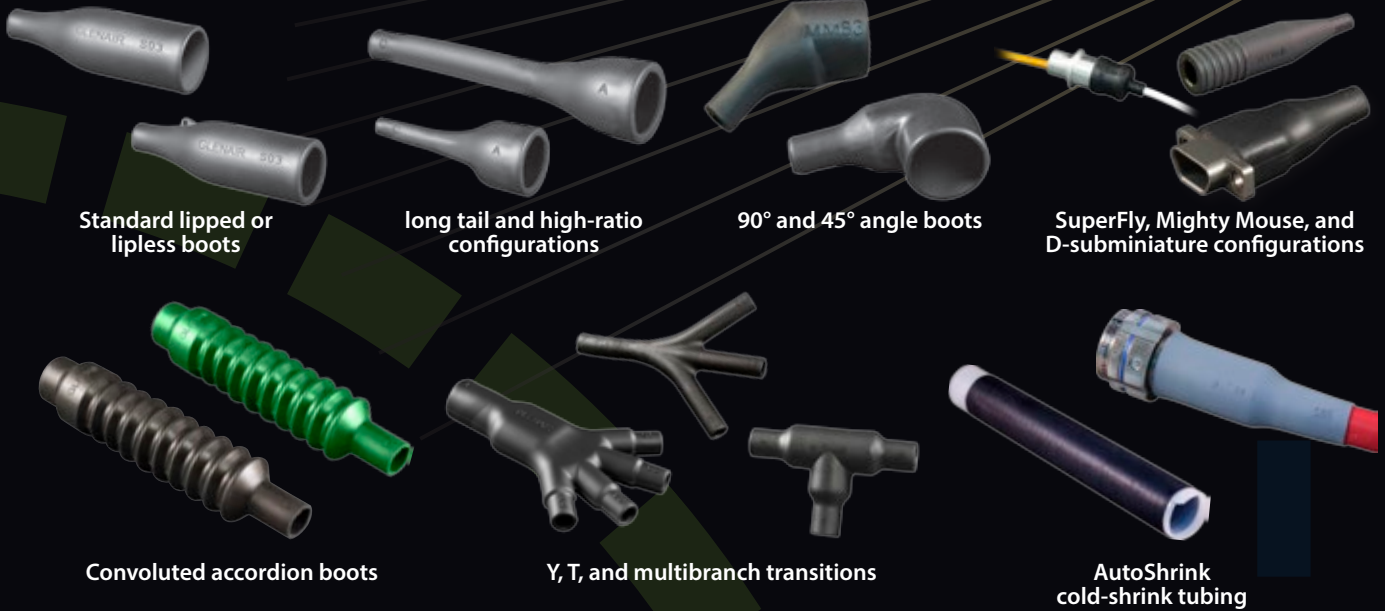


Wired and unwired AS83519/1 and /2 Type heat shrink
terminations for EMI shield-to-ground termination applications
(note braided versions qualified for lightning strike)



Example rectangular interconnect
assembly outfitted with heat
shrink termination grounds

HOT AND COLD SHRINK BOOTS AND TUBING FOR RUGGED ENVIRONMENTAL APPLICATIONS



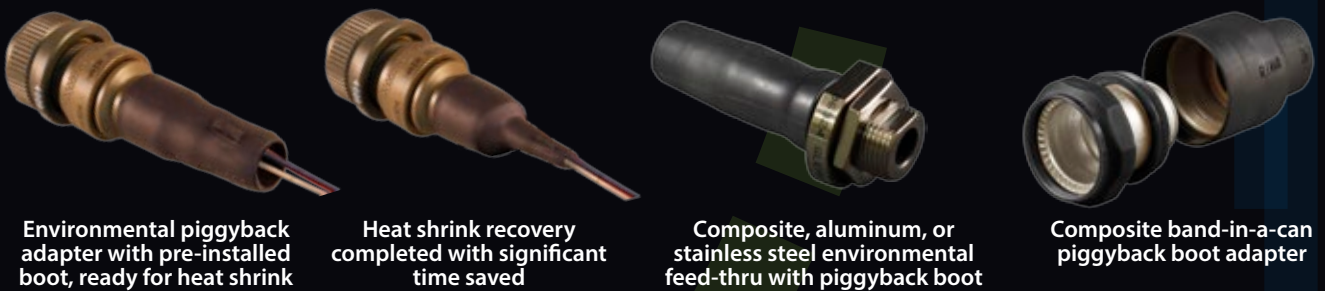
SELECTED ENVIRONMENTAL SHRINK BOOT COLOR OPTIONS



SHRINK BOOT ADAPTERS SELECTION GUIDE



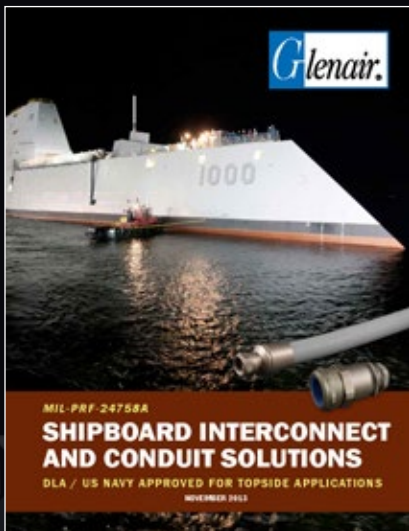
PIGGYBACK SHRINK BOOT ADAPTERS



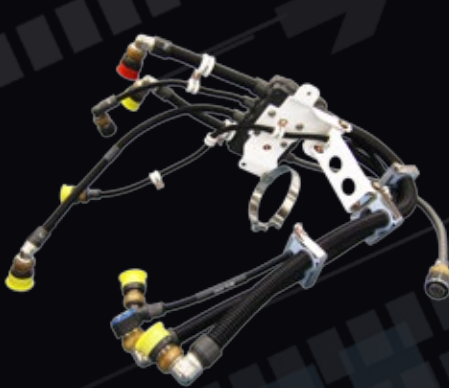
HARSH-ENVIRONMENT

METAL AND POLYMER CORE CONDUIT SYSTEMS

high-temperature · crush-resistant · EMI/RFI shielded · land, sea, and air



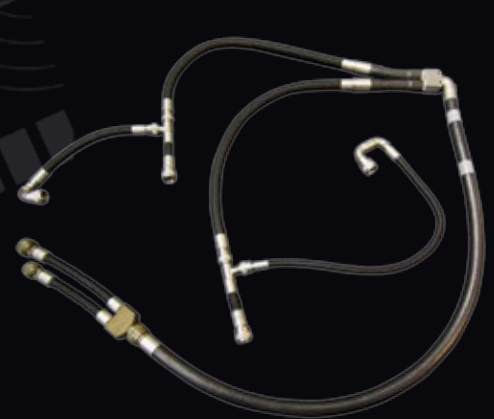
TURNKEY FACTORY-TERMINATED CONDUIT ASSEMBLIES



Complex multibranch fighter jet electrical wire conduit assembly



Lightweight, halogen-free rail industry wire conduit assembly



Crush-resistant commercial aerospace metal-core conduit assembly

LIGHTWEIGHT, SEALED/FLEXIBLE POLYMER-CORE ANNULAR CONDUIT WIRE PROTECTION SYSTEMS



Kynar, PVDF, and G-Flex Siltem materials

Braided shielding and jacketing options

Easy-to-install Guardian wire protection system

Sentry economical wire protection system

Non-wired factory-terminated assemblies

HIGH-TEMPERATURE, HIGH-STRENGTH HELICAL POLYMER-CORE WIRE PROTECTION SYSTEMS



High-temperature, high-strength helical conduit

Easy-to-install Hat-Trick wire protection system

Internal braid wire protection system

AeroLite wire protection system

Non-wired factory-terminated assemblies

HEAVY-DUTY METAL-CORE CONDUIT WIRE PROTECTION SYSTEMS



Flexible, crush-proof EMI/RFI metal-core conduit

Low-profile RP Plus wire protection system

Heavy-duty metal and weight-saving composite systems

Legacy Mil-C-24758 wire protection system

Non-wired factory-terminated assemblies

MIL-PRF-24758 SHIPBOARD CONDUIT WIRE PROTECTION SYSTEMS



Stainless steel and brass metal-core conduit with UV-resistant BlueJacket

Complete range of qualified MIL-PRF-24758 fittings

Master Seal self-vulcanizing BlueJacket (Duralectric) repair tape

Non-wired factory-terminated assemblies

SPECIAL-PURPOSE CONDUIT MATERIALS AND CONFIGURATIONS



Spring-reinforced polymer-core assemblies

Halogen-free PEEK tubing

Special composite fiber optic backshells

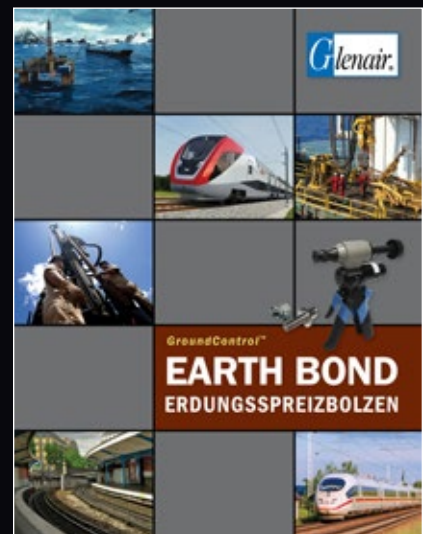
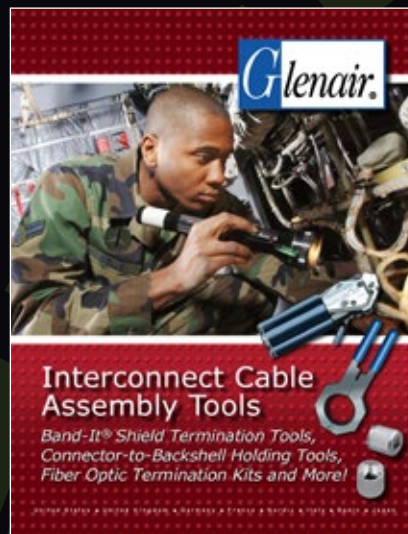
Conduit and jacket color options including Desert Tan

Special processing including drain holes, ovalization and split-entry

INTERCONNECT

ASSEMBLY TOOLS

banding · grounding · crimping ·
mounting · termination · testing



GROUNDCONTROL EARTH BOND



Hydraulic Earth Bond setting tools for aluminum and stainless steel plate



Bi-laminar (copper core) earth bonds



Available dynamometer



Used for ground strap bonding and equipment rack installation

FIBER OPTIC TERMINATION AND TEST TOOLKITS



Turnkey fiber optic termination and maintenance kits



Inspection and test probes and adapters



Dry-wipe fiber optic cleaning tools



Fiber optic polishing pucks



Video scope inspection kits

CRIMP TOOLS



M22520/01 and /02
Wire-to-contact crimp tools



Locators and
accessories



Crimp contact insertion
and removal tools

BACKSHELL-TO-CONNECTOR MOUNTING TOOLS



TG70 Universal
strap wrench



Circular backshell
assembly wrenches



Connector holding tool
kits and wrenches



Soft jaw pliers



Bench-mount tools
for volume production

BAND-MASTER ATS®



Nano banding tool for use with
ultraminiature connectors and
banding backshells



Micro banding tool for use with most
subminiature connectors and
banding backshells



Standard and Slim Standard banding tools
for use with large form-factor connectors
and banding backshells



Each tool accommodates
a specific width of band
(nano, micro, or standard)



Bands are available precoiled for
high-volume assembly operations



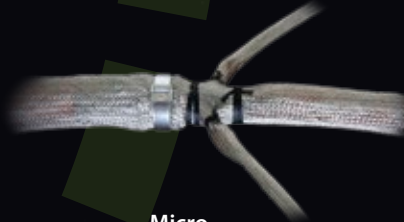
Special high-volume pneumatic tool
for bench use, available for all sizes



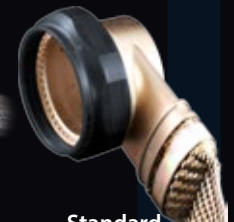
The only banding tool with a built-in
calibration counter



Nano



Micro



Standard

Bands and tools optimized for size and weight reduction across the complete range of
connector, backshell, and cable form factors

Glenair Track Record of Interconnect Innovation



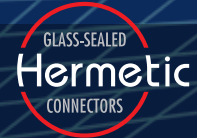
1956: Glenair founded to produce a universal Mil-Spec connector cable clamp, the G1



1965: Glenair's first connector product: the Sav-Con® Connector Saver



1973: Glenair qualifies to MIL-C-85049 spec governing electrical connector accessories



1988: Glenair launches hermetic connector product series



1980: Glenair expands metal-core conduit product line to include high-temperature thermoplastics

1950

1960

1970

1980



Air Way, Glendale California, circa 1950



1965: Glenair manufactures the "Golden Umbilical" spacewalk cable

1972: Glenair launches Mansfield, UK factory specializing in complex cable assemblies and Micro-D flex circuitry



1980: Glenair enters harsh-environment oil & gas market with rugged multipin connector series

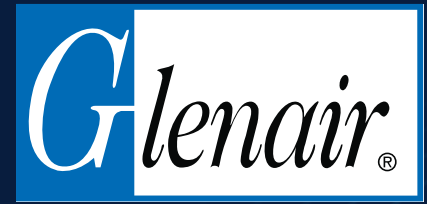


1989: Glenair retools entire metal connector accessory product family with composite thermoplastic alternatives

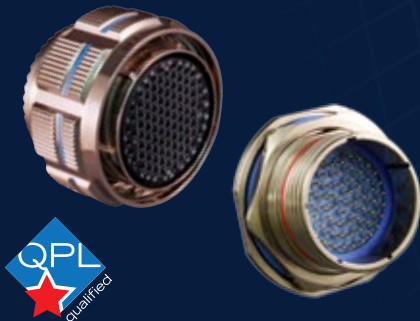


At home in SoCal since 1956, Glenair's engineering team tackles everything from new interconnect component R&D to complex cable design and prototyping, as well as all acceptance test requirements and standards qualification programs

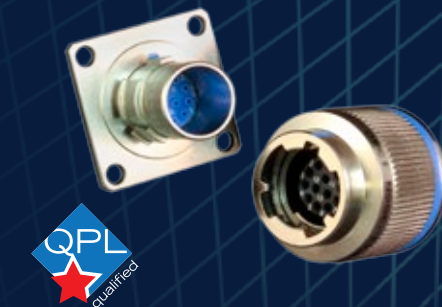
Glenair Mil-Spec Interconnect Technologies



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 the Defense Logistic Agency of the US government. These certification exercises are multi-year activities that test every aspect of a connector's performance.



MIL-DTL-38999 Series III environmental connectors



MIL-DTL-38999 Series IV environmental connectors (pending)



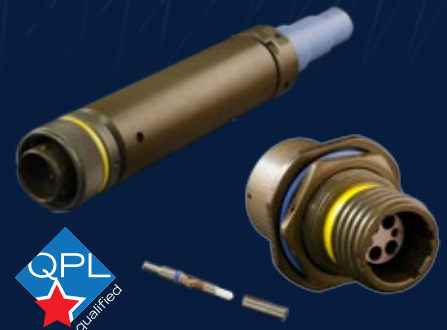
MIL-DTL-28840 shipboard connectors and accessories



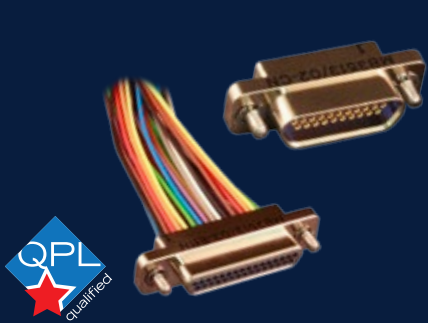
MIL-DTL-38999 Series I, II, III, and IV hermetic connectors



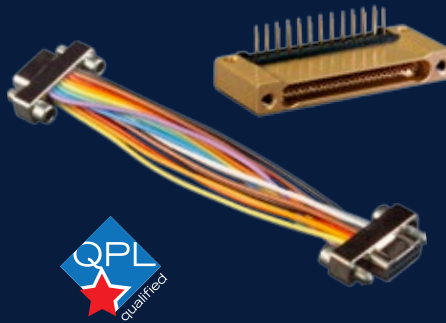
MIL-DTL-24308 hermetic connectors



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) and AS39029 (electrical) contacts



M85049 (AS85049) backshells and connector accessories



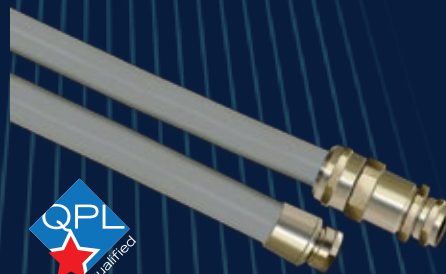
MIL-DTL-83723 backshells and connector accessories



M81511 (AS81511) protective covers and connector accessories



M85049/140 series qualified / TACOM approved environmental shrink boots



MIL-PRF-24758 Navsea-qualified conduit and fittings



M85049 composite backshells and covers for Mil-DTL-38999

Glenair's mil-spec qualified interconnect technology is specified by EVERY major military/aerospace company in the world. For many of these OEM, system, and sub-system manufacturers, Glenair has become their principal interconnect design partner and supplier—especially for fast turnaround on hard-to-find or small-quantity requirements.



Glenair Factory Tour

GLENDALE STOP NUMBER ONE: Complete vertical integration of manufacturing resources is a critical requirement for fast and reliable delivery performance. Glenair operates the largest precision machining facility in the high-performance interconnect industry.



At home in SoCal since 1956

The industry's largest and most experienced North American based interconnect component machining operation—literally hundreds and hundreds of CNC turning and milling centers



Glenair's die casting operation supports large-volume interconnect requirements—from backshells to conduit fittings, industrial connector shells and more



Our massive screw machine operation produces connector component parts such as coupling nuts in quantities to meet the industry's largest volume requirements

GLENDALE STOP NUMBER TWO:

Glenair's composite and resilient material injection molding and extrusion capabilities include robotic systems as well as quick-turn small-quantity machinery run by skilled craftsmen.



Just a small portion of Glenair's composite thermoplastic injection molding equipment used in the fabrication of lightweight, corrosion-resistant connectors and backshells



Precision overmolding of harsh environment connector assemblies with chemically-resistant materials such as Viton® and Duralectric®



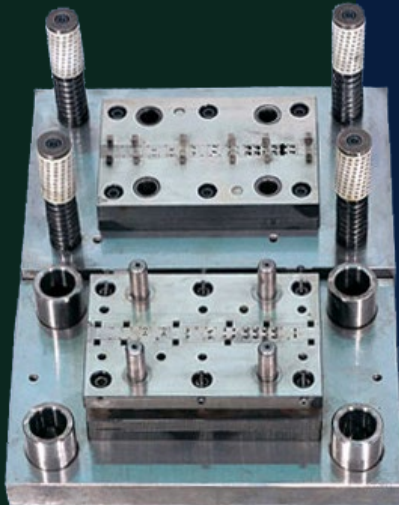
The extrusion of lightweight, high-temperature wire protection conduit in a broad range of materials including PEEK, PFA, PTFE, and Kynar



The ability to produce Glenair's broad range of composite thermoplastic interconnect components depends on massive expenditures in tooling (above) as well as a trained, professional workforce (left)

Viton® is a registered trademark of E.I. du Pont de Nemours and Company

GLENDALE STOP NUMBER THREE: Glenair's vertically integrated factory includes every essential specialty operation—from stamping presses to certified welding cells, automated solder sleeve lines, hermetic furnaces, cable shield overbraiding, plating, and more—enabling us to offer the shortest lead times in the industry.



Stamping press technology enables Glenair to produce large quantities of quality-controlled component parts such as strain-relief saddle bar clamps. As in other areas, the commitment to produce and maintain the broad range of tooling required is a key manufacturing requirement

Many specialty interconnect components such as 45° and 90° angled backshells require skilled welding and/or brazing.



Glenair fully automated solder sleeve fabrication cell



Metal and fabric cable harness overbraiding facility



Firing furnace for vitreous-seal hermetic connectors



NADCAP certified plating facility

GLENDALE STOP NUMBER FOUR: Final assembly and test of the interconnect—from discrete components to highly-engineered electronic and photonic subsystems—is a core capability in every Glenair manufacturing cell.



Each connector series and product division at Glenair is empowered with its own dedicated assembly team, ensuring fast turnaround and high availability

Small form-factor connector assembly is intense, precision hand labor. Our operators have long tenure and broad experience with our high-reliability, mission-critical connector offering.



Glenair not only manufactures every popular military/aerospace connector series, we also operate our own in-house electrical and fiber optic cable assembly facility

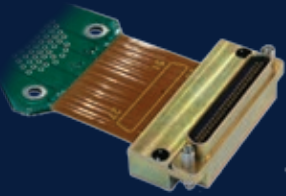


(Left) Glenair's hydrostatic test lab: just one of the many dedicated laboratory test environments maintained by Glenair to ensure interconnect performance and reliability. (Above) A small slice of the finished goods and component inventory that allows us to offer the shortest lead times in the high-reliability interconnect industry—from one piece to large production quantities.

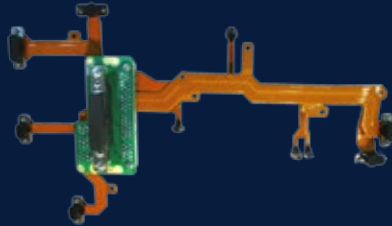


MANSFIELD STOP NUMBER ONE: Glenair's facility in Mansfield, England specializes in high-performance interconnect technologies for the UK and European markets. From Micro-D and Nanominiature wired and flexi assemblies to harsh-environment moulded cable harnesses, Glenair UK offers turnkey capabilities including engineering, design verification, prototyping, manufacture, and test.

MICRO AND NANOMINIATURE HARNESS AND FLEX ASSEMBLIES



Terminated and tested flexi and rigid flexi point-to-point assemblies with Glenair Micro and Nano interconnectos



Complex multibranch flexi and rigid flexi assembly with Glenair Micro and Nano interconnectos



Micro and Nano wired harnesses and pigtails

MOULDED ENVIRONMENTAL INTERCONNECT COMPONENTS AND COMPLEX ASSEMBLIES



In-house moulded shrink boots and multibranch cable transitions



Color-coded overmoulded power and signal cable assemblies



Complex integrated Micro assemblies with machined chassis

MWDM MICRO CONNECTORS



ESCC series Micro connectors for ESA space and other UK and EU markets

TOOLING



Complete range of interconnect tooling including GroundControl Earth Bond system

NEW SUPERG55 SUBSEA



Oil & Gas industry subsea connector series



The Glenair Mansfield machine shop houses a full complement of CNC milling, turning, measurement, and mechanical inspection equipment.

Extensive fibre optic facilities for the termination and test of expanded-beam and butt-joint fibre optic interconnects



Moulding capabilities include insert moulding, connector moulding, and cable overmoulding as well as a complete tool, jig, and fixture fabrication cell.



Micro-D and Nanominiature harnessing is completed in our ISO 9001:2008 and BS EN 9100:2003, BS EN 9120:2005 certified facility



Glenair UK builds a broad range of interconnect components for the UK and EU markets including circular form-factor connectors for aerospace applications



The Glenair Mansfield clean room assembly area is used for fabrication of laser, space, and satellite assemblies IAW ISO Class 8 -100,000 PPM



Glenair UK operates an independently accredited BS9000:CECC:IECQ test lab for both internal as well as third-party product development / design verification and connector qualification

BOLOGNA STOP NUMBER ONE: Glenair Italia serves harsh-environment military, transportation, rail, and industrial markets for high-performance connectors—particularly series based on MIL-DTL-5015 power, high-speed Ethernet, hazardous-zone connectors and more. Glenair Bologna is a go-to partner for both legacy solutions as well as leading-edge innovations for European and international customers.

SUPER ITS™ HIGH-PERFORMANCE REVERSE BAYONET



Higher temperature and ampacity rating with rigid insert and mechanical contact retention

ITS-Ex HAZARDOUS ZONE CONNECTORS



IECEX / ATEX qualified explosive zone 5015 type reverse-bayonet connectors for Group IIC, Temperature Classes T6 and T5, Zones 1 and 2

CIRCULAR HEAVY-DUTY POWER AND SIGNAL CONNECTORS: 5015 TYPE DERIVATIVES



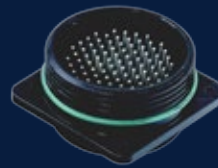
Series ITS reverse-bayonet



Series ITH rigid insert



Series IT threaded coupling



Series ITZ triple-start coupling



Series ITK high-temperature ceramic insert

OCTOBYTE SERIES RUGGEDIZED ETHERNET CONNECTOR



Tested for compliance according to EN50173-1 standards for CAT5E and CAT7



Ethernet Cat7A contacts



Ethernet Cat5 contacts



Coax contacts



Ethernet MVB - WBT contacts

HIGH-VOLTAGE POWER



Series IRT rectangular multipole high voltage traction motor connectors



Abundant precision machining resources for connector shell fabrication as well as extensive die-casting resources enable Glenair Bologna to respond "Prestissimo" to extremely high-volume production requirements.



Total vertical integration, includes in-house contact fabrication for gages as small as #16 and as large as 4/0



In-house injection molding (far left) and resilient insert processing (left) provides Glenair Italia with all the resources required to fabricate interconnect technologies from scratch without dependence on outside suppliers.

Glenair Italia operates a broad function interconnect test lab with capabilities for both high voltage as well as high speed signal product qualification



Glenair Italia hosts the most modern and comprehensive interconnect plating facility in Europe



What a team!

What a team we have here at Glenair. That is the most important thought that comes to mind as I page through this *2016 Design Guide* for interconnect professionals. Because really, how else do you explain the wonderful, relentless output of our engineering, operations and marketing groups? Do our people know how to work together as a team to get things done? You bet they do.

I am particularly gratified at the incredible progress we have made in fleshing out our core interconnect offerings into mission-critical areas such as EMI filtering and EMP/lightning strike solutions, at the absolute “no gap” status we now enjoy in fiber optic interconnect systems, at our growing high-pressure/subsea capabilities, at the growth of our circuit board design and embedded systems group, at the innovation and expertise of our high-speed datalink team, and of course at the ongoing growth and professionalism of our factory operations in Glendale, Chicago, Mansfield and Bologna. Again, this is all due (I believe) to good teamwork and the dedication of our 3000+ member organization.

I really can't think of another company in our industry that is as committed as Glenair to broadening its range of interconnect solutions, and I might add, doing it year-after-year with in-house, organic growth as opposed to mergers, acquisitions and takeovers. I suppose it might be considered naïve or Pollyannaish in some circles to observe that the aggressive, hardball, win/lose tactics other folks use to reach the top effectively robs them of the “good company” and “team-spirit” we enjoy every day here at Glenair. As someone much smarter than me once observed, “it's great to be great, but it's better to be human.” I'll take human every time.

Now don't get me wrong: we aspire to business success and material accomplishment as much as the next guy. It's just that we also believe it is equally important to live a meaningful and satisfying life—and we manage our business accordingly. To accomplish this balance, you need genuine, high-quality relationships; the kind of “good company” that comes by being the right kind of team-mate yourself—trustworthy, authentic, happy, kind, courageous and humble. One of our young summer interns asked me the other day what advice I could give him for a successful career. I hope it doesn't surprise you to learn I told him to simply “give more than you take on every team you are a part of and you will be fine.” Advice, I am happy to say, I see put into practice every day here at Glenair.

Publisher

Christopher J. Toomey

Managing Editor

Marcus Kaufman

Editor/Art Director

Mike Borgsdorf

Editor

Carl Foote

Graphic Designer

George Ramirez

Technical Consultant

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Issue Contributors

Deniz Armani
 Peter Bialobrzeski
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 Dan Bolwell
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Distribution

Terry White

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GLEN AIR, INC.

1211 AIR WAY
 GLENDALE, CA 91201-2497
 TEL: 818-247-6000
 FAX: 818-500-9912
 E-MAIL: sales@glenair.com
www.glenair.com