Industrial-Strength Interconnect Solutions

Harsh-Environment, High-Speed, High-Current / High-Power Connectors for Nuclear, Rail, and Industry
Industrial-Strength Interconnect Solutions
Harsh-Environment, High-Speed, High-Current / High-Power Connectors for Nuclear, Rail, and Industry

HIGH-PERFORMANCE REVERSE-BAYONET

Super ITS - 921 High-Temp, High-Ampacity Power
Super ITS - MB Seacrow and IGE MB Seacrow Marine Bronze Power and Signal
Super ITS - RG RadGrip Molded Coupling Nut Connectors
Series 928 Quarter-Turn Head-to-Ballast HMI Lighting Connectors

HIGH-SPEED, HIGH DATA-RATE SOLUTIONS

Super ITS - ITH Octobyte High-Speed Quadraxial and Octaxial
Super ITS - IFO B Fiber Optic Singlemode and Multimode Connectors
Super ITS SuperSeal Rugged Field RJ45 and USB 2.0 Connectors

NUCLEAR-GRADE QUICK-DISCONNECT

SuperNG Double Peripheral Seal Quick-Disconnect Next-Generation Class 1E Containment Area Connectors
ITS - NG Class 1E Containment Zone Retrofit Application Connectors
Mighty Mouse NG Ultraminiature High-Pressure Quick-Connect for New Plant Class 1E Containment Area Applications

INDUSTRY-STANDARD M5015 / VG95234 TYPE AND OTHER RAIL INDUSTRY INTERCONNECTS

Series ITS and FR-ITS (Fire-Resistant) Reverse-Bayonet
Series ITH Rigid Insert
Series ITK High-Temp Firewall: Stainless Steel / Ceramic Insert
VG95234 Reverse-Bayonet and VG96929 Single-Pole (Glenair Series IGE)

VG95328 Bayonet-Lock IAW MIL-C-26482: Glenair BLO Series IFT and IFT SE
Threaded Coupling Series Connectors: IT (xxx) and ITZ (Trapezoidal)
ITS-Ex ATEX-qualified Explosion-Proof Threaded Coupling Connector Series
European Rail Connectors (ERTMS) and other Railcar and Trackside Solutions

HIGH-CURRENT, HIGH-VOLTAGE

ITS 901 Reverse Bayonet Multi-Pole High Voltage with Integrated Switch
ITS 901 Multi-Pole High Voltage with Wing Lock Mechanism
ITS 500 Reverse Bayonet Single Pole High Voltage Jumper Connectors
UJ Series Medium- and High-Power Connector and Cable Joints

IRT Series Multipole High-Voltage Traction Motor Connectors
UniPower Multiphase Power Distribution Series
15kV High-Voltage Dry-Mate Underwater Connector. Consult factory for specifications and availability.
The Super ITS - 921 Connector Series is a high ampacity, harsh environment connector capable of meeting the demanding requirements of power applications utilizing the latest generation of high-temperature power cables. Compared to legacy 5015 solutions, Super ITS - 921 offers better durability, better wire and connector interface sealing, integrated crimp contact retention clips, thermoplastic insulators, precision-machined shells, and more.

**Super ITS-921 Reverse-Bayonet**

**Rigid Insert, High-Ampacity Connectors**

**Features and Benefits**

- Fast, easy connector mating with reverse-bayonet coupling
- 3 polarizing keys
- Higher-density insert arrangements for reduced size and weight
- LouverBand Size 0, 4 and 8 socket contacts for high ampacity and longer life
- Crimp. front-release high-conductivity copper contacts
- Individual wire seals
- -65°C to +180°C operating temperature range
- Size 8, 4 and 1/0 power contact sizes
- Size 16 and 12 signal contact size
- Precision-machined plug bodies and receptacle shells
REVERSE-BAYONET

Super ITS-MB Seacrow™ Connectors

For amphibious vechicle, geo-marine, and other harsh-environment applications

Super ITS - MB Seacrow reverse bayonet marine bronze series connectors are compliant with MIL-DTL-5015, using the same power and signal insert arrangements but with reverse-bayonet coupling and precision-machined marine bronze construction. Typically used for power and signal transmission, with wires from 26 AWG to 4/0, these ultra-harsh-environment connectors are ideally suited for above-deck navy shipboard applications where repeated exposure to seawater and salt spray can quickly degrade effectiveness of connector finishes leading to corrosion and possible failure.

Super-ITS MB Seacrow connectors exceed VG95234 standards for both sealing and durability. Over 200 plus MIL-STD-1651A, standard and combo insert arrangements are available, in 9 shell sizes fully tooled and ready for immediate shipment. A wide selection of backshell options including cable shield termination for EMI/RFI applications and cable sealing backshells for conduit termination are also available. IP67 protection standard with IP68 available on request.

Super ITS - IGE marine bronze Seacrow™ connectors achieve high-performance working current and peak current, making them ideal for engines, power supplies, and power distribution boxes. Seacrow 5015-type reverse-bayonet connectors are qualified to VG96929 standards. Several backshells available in either straight or 90° elbows for convenient cable routing, IP67 standard, IP68 available.

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Super ITS - MB and IGE - MB Seacrow
Harsh-environment, precision-machined marine bronze connectors

Low- to medium-voltage single-pole power connector versions

Super ITS - IGE marine bronze Seacrow™ connectors achieve high-performance working current and peak current, making them ideal for engines, power supplies, and power distribution boxes. Seacrow 5015-type reverse-bayonet connectors are qualified to VG96929 standards. Several backshells available in either straight or 90° elbows for convenient cable routing, IP67 standard, IP68 available.

- Precision-machined marine bronze alloy for superior corrosion resistance in seawater and other harsh environments
- Chemical-resistant Viton® gaskets and O-rings
- Single-pole high-power VG96929 qualified
- IP67 environmental sealing in mated condition; IP68 available
- High power, single pole connectors accommodating cables from 25 mm square to 240 mm square
- Keyed polarization
- Rugged reverse-bayonet mating
### REVERSE-BAYONET

#### Super ITS - RG RadGrip Rubber-Covered Plug Connectors

For Improved User Ergonomics and Ease-of-Use

**Glenair** Super ITS-RG Series connector plugs with RadGrip™ rubber coupling nut covers are ideal for harsh environmental field applications such as geophysical exploration in arctic conditions. Super ITS-RG RadGrip™ connectors feature wide, easy-to-grip castellations as well as a raised thumb tab. Built for maximum durability and mechanical protection of plug coupling nuts, Super ITS-RG RadGrip™ is the perfect solution for protection against abusive handling and other forms of mechanical damage. In addition, RadGrip™ facilitates rapid mating and demating of connectors, even when surfaces are slick with oil, dust, water and other fluids. The highly durable rubber compound may be specified in seven different colors for improved connector and cable identification and management.

Colors available: Black, Yellow, Red, Blue, Light Green, Orange and Grey.

**Super ITS-RG RadGrip™ material specifications**

- IAW UNI-CEI 11170 - AFNOR NF-F 16101 - BSS 7239 - ASTM E-162, ASTM E-662
- RadGrip™ covers adhere easily to Aluminum alloy, Stainless steel, and Marine bronze.

- **Fast, easy, reverse-bayonet coupling:** 1/4 Turn
- **IP67 rated (mated condition)**
- **Compatible with all Series ITS 5015 Type connectors**
- **High shock and vibration Resistance**
- **200 Plus Insert Arrangements Available with Contact Sizes from #20 to #4/0**
- **Audible and Visual Coupling Indicators**
- **Colored materials facilitate connector and cable identification and/or connector phases**

Turnkey Super ITS-RG RadGrip cable assemblies available. Example shown equipped with high-speed Octobyte contacts and high-temperature wire-protection conduit.
Theatrical lighting demands reliable, built-to-last connectors and cables. Glenair Series 928 quarter-turn bayonet connectors meet demanding European “VG” standards for performance, durability and ruggedness. Available in all standard lighting industry configurations, these connectors feature electrocoated aluminum housings, neoprene inserts and machined copper alloy contacts.

- Nine industry-standard contact arrangements for use on Arri, DeSisti, Cinemills, Filmgear, Mole-Richardson and other HMI lighting solutions
- Rugged shells and couplings resist handling damage
- Fluted and/or rubber-coated coupling nuts facilitate easy mate and demate

**SERIES 928 HMI CONNECTOR SELECTION GUIDE**

- **145-07** Interchangeable, intermateable with Veam 14SA7
  - (7) #16 contacts
  - This connector is used on: Arri 200W, Mole-Richardson 200W and 800W, K5600 Jokerbug 200W, 400W, and 800W.

- **24-11**
  - (3) #8 contacts, (6) #12 contacts
  - This connector is used on: DeSisti 4KW (blue)

- **24-2**
  - (7) #12 contacts
  - This connector is used on: Arri 2.5 KW, 4KW DeSisti 2.5KW (red), Cinemills 2.5KW, 4KW Filmgear 2.5KW, 4KW Mole-Richardson 2.5KW, 4KW

- **24-2W**
  - (7) #12 contacts
  - This connector is used on: DeSisti 575W, 1200W, 1800W Mole-Richardson 575W, 1200W, 1800W

- **24-2Z**
  - (7) #12 contacts
  - This connector is used on: DeSisti 575W (green)

- **28-10**
  - (3) #12 contacts, (2) #8 contacts, (2) #4 contacts
  - This connector is used on: Cinemills 12KW, 18KW, 24KW Filmgear 24KW Mole-Richardson 12KW, 18KW, 24KW

- **28-09**
  - (5) #16 contacts, (4) #4 contacts
  - This connector is used on: Arri 12KW, 18KW Filmgear 12KW, 18KW

- **32-68**
  - (12) #16 contacts, (4) #4 contacts
  - This connector is used on: DeSisti 6KW (white), 12KW (pink), 18KW (orange) Mole-Richardson 6KW
RUGGED REVERSE-BAYONET
Super ITS-ITH Octobyte™
High-Speed Ethernet Connectors

ETHERNET-READY

Super ITS-ITH Octobyte
The faster ruggedized 4/8 pole interconnect system for Ethernet data applications

Glenair series ITH connectors with Ethernet-ready Octobyte™ contacts are available for harsh-environment mass transit applications that depend on sealed environmental (IP67) connector performance. Octobyte contacts, packaged in ruggedized ITH reverse-bayonet connectors, deliver both dedicated Ethernet datalink as well as mixed serial databus and power for high-speed data applications.

Octobyte™ contacts are vibration resistant and designed to work with Ethernet cables from CAT 5 to CAT 7A, MVB-WTB, and RG58 Coax. Reverse-bayonet ITH series connectors with Octobyte™ contacts are easy and fast to assemble and deliver reliable locking performance in severe vibration and shock applications.

RUGGED ENVIRONMENTAL PERFORMANCE

- For harsh-environment transit, industrial, or marine/subsea applications
- RF Coax applications (RG58 and RG59U cables)
- High-speed interconnect solution for audio, video, and digital displays
- Qualified for use in safety systems, sensors, detection devices, and control panels
- Tested in accordance with: ISO F0 STP: CAT 7A
- EN50173-1 F600-STP: CAT 7
- EN50173-1 D STP: CAT 5E
- Tested for compliance with AWG EN50173-1 standards for CAT5E and CAT7. Proven performance in numerous rail applications (consult factory for references)

OCTOBYTE CONTACTS FOR ETHERNET CAT 5 • CAT 6 • CAT 7 • COAX • MVB-WTB

How To Order Octobyte contacts

<table>
<thead>
<tr>
<th>Sample Part Number</th>
<th>Q</th>
<th>R</th>
<th>P</th>
<th>A</th>
<th>B1</th>
<th>XXX</th>
<th>-7A</th>
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<tbody>
<tr>
<td>Product Series</td>
<td>Octobyte contacts</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Contact Size</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Number of Contacts</td>
<td>8 = 8 poles 4 = 4 poles</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Contact Gender</td>
<td>F = Female S = Male</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Cable OD Range/Coax Cable Type</td>
<td>0.6 – 0.7 8 – 0.7 8 – 0.8 8 – 0.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plating</td>
<td>B1 = Gold plating</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Alternative Color (Cat 7A only)</td>
<td>G14 - Black G14GN - Green G14GY - Grey G14R - Red G14Y - Yellow</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethernet</td>
<td>7A = Cat 7A AD = Ethernet MVB-WTB Contacts Om for Cat 5</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Available in a range of contact arrangements including hybrid Octobyte, power, and signal.

Reverse Bayonet-lock Connectors

Rugged environmental performance – the perfect Octobyte packaging solution

- Tested for compliance with ISO F0 STP: CAT 7A
- EN50173-1 F600-STP: CAT 7
- EN50173-1 D STP: CAT 5E

- Rugged MIL-DTL-5015 type design with fast reverse bayonet coupling
- Rigid dielectric inserts with contact retention clips
- Positive lock technology provides reliable vibration and shock resistance
- Proven performance in even the most rugged applications
- Conforms to the European VG 95234 standard, French (NFF 61030) and British (BS 6853) electrical standards and EEC compliance directives
- Threaded coupling version available, contact factory for ordering information

SERIES ITH CONNECTORS FOR OCTOBYTE CONTACTS

- Available in a wide range of colors including safety red

RadGrip rubber-covered coupling nuts available in a wide range of colors including safety red
RUGGED REVERSE-BAYONET

Super ITS - IFO B Fiber Optic Connectors

High-speed, high data rate fiber optic connectors for harsh environmental conditions

Glenair Super ITS - IFO B connectors meet the need for high-speed, multi-gigabit data transmission in rugged harsh environments such as armored combat support vehicles, communications shelters and bunkers, military aircraft, harsh wayside rail applications, and more. These optical fiber-equipped interconnects far outstrip the data carrying capacity and speed of conventional copper wire systems. Super ITS - IFO B interconnects pack orders of magnitude more data with almost instantaneous delivery to the user, and are immune to all forms of electromagnetic interference.

Glenair Super ITS - IFO B fiber optic connectors are available with 2, 4, 6 or 12 termini configurations. Termini accommodate 9/125 (Singlemode), 50/125 and 62/125 (Multimode) optical fibers with a maximum 1.4dB insertion loss. Backshells and adapters are engineered to minimize bend radius and provide strain relief with design improvements such as integral wire sealing grommets and retractable conduit fittings. Fiber optic cleaning and inspection toolkits as well as fiber optic termination training and certification are also available.

Features:
- EMI and spark/arc immunity for high-reliability settings
- 2, 4, 6, or 12 fiber optic termini configurations available
- Termini accommodate 9/125 (Singlemode), 50/125 and 62/125 (Multimode) optical fibers
- Turnkey high-speed fiber optic interconnect cables and harnesses available
- Environmentally sealed (IP67)
- UL94-V0 compliant fiber optic cable
- Integrated optical media alignment grommet

High-speed, high data rate fiber optic connectors for harsh environmental conditions
### Super ITS - RJ45 SuperSeal™

**Ruggedized RJ45**

**MIL-DTL-5015 type reverse-bayonet field connectors for harsh-environment applications**

- IP67 open-face rated connectors with RJ45 jack, crimp contacts, solder cups, or PC tails
- Superior sealing—IP67 unmated—for complete system protection against water, sand and dust
- Highly durable RJ45 designs, including enhanced operating temperature, increased life-cycle, and rugged vibration and shock performance
- Shielded/grounded coupler designs for receptacle connectors
- Crimp, solder-cup, and PC tail termination options
- RJ45 plug and/or jack interface options available in Cat 5e
- Intermateable with other RJ45 field-duty connectors
- Super ITS RJ45 SuperSeal Ethernet Connectors
  - Connector Overview and Performance, Material and Finish, Panel Cutouts and Modifications Codes
  - Super ITS RJ45 SuperSeal 300
    - Super ITS 300: Rugged reverse-bayonet plugs and receptacles with easy plug-and-play cabling to commercial Cat 5e RJ45 cables.
  - Super ITS RJ45 SuperSeal 301
    - Super ITS 301: crimp contact connectors
  - Super ITS RJ45 SuperSeal 302
    - Super ITS 302: PC tail connectors
  - Super ITS RJ45 SuperSeal 303
    - Super ITS 303: solder cup connectors
  - Super ITS RJ45 SuperSeal 300H
    - Super ITS 300H: connector and ZL cable shield banding adapter with shrink boot groove
    - Super ITS 300H: connector pigtail assembly—with ZL banding adapter and shrink boot
  - Super ITS RJ45 SuperSeal 300H
    - Super ITS 300H: connector with M or PG style adapter for flexible conduit protection applications
  - Super ITS RJ45 SuperSeal 330
    - Super ITS 330: feedthrough connector with RJ45 jack/jack mating interface

Super ITS RJ45 SuperSeal Cat 5e Ethernet Connectors provide IP67 sealing in the un-mated condition and meet IP68 requirements in the mated condition. Rugged environmental VG95234 type / 5015-intermountable connector interface features quick reverse-bayonet coupling for fast reliable mating in hard-to-reach locations. In addition to reliable environmental sealing, Glenair Super ITS SuperSeal RJ45 solutions are designed for superior EMC performance and are supplied with the industry’s broadest range of wire terminations including crimp, solder cup, and PC tail.
SUPER ITS - USB SUPER SEAL

Ruggedized USB Type A MIL-DTL-5015 reverse-bayonet field connectors for harsh-environment applications

IP67 open-face rated connectors for wire and printed circuit board terminations plus pigtail cable assemblies.

Features:
- Superior sealing—IP68 mated, IP67 unmated—for complete protection against water, sand and dust
- Highly durable USB 2.0 Type A-equipped designs, with enhanced operating temperature, increased life-cycle, and rugged vibration and shock performance
- Crimp, solder-cup, USB jack, and PC tail termination options

Compatible with USB 2.0 and 1.1
Super ITS - USB Type A SuperSeal™ Rugged Field Connectors

Environmental, shielded, reverse-bayonet connectors

USB COMPATIBLE

COMPATIBLE WITH USB 2.0 AND 1.1
Super ITS - USB Type A SuperSeal™
Rugged Field Connectors

ITS 360
USB 2.0 Type A connector with rear USB jack

ITS 345
USB 2.0 Type A connector with crimp contacts

ITS 342
USB 2.0 Type A connector with PC tails

ITS 343
USB 2.0 Type A Connector with Solder Cups

ITS 340H
USB 2.0 Type A connector with rear USB jack and shield termination platform and shrink boot groove

ITS 340H
USB 2.0 Type A connector with rear USB jack and EMI backshell with pre-installed Cat 5e cable and shrink boot; loose wire end is unterminated

ITS 340H
USB 2.0 Type A connector with rear USB jack and metallic cable gland with optional shielding and pigtail

ITS 340H
USB 2.0 Type A connector with rear RJ45 jack and backshell with metallic cable gland with optional shielding and pigtail

ITS 330
USB 2.0 Type A feedthrough connector with RJ45 jacks on both sides for connectorized mating on both sides of a bulkhead

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SuperNG | Class 1E

Double peripheral seal reverse-bayonet connectors designed to meet the latest, most stringent global Zone 1E qualification standards including those requiring long-term submersion.

Glenair SuperNG connectors have been designed to withstand the most stringent LOCA qualification criteria, including those requiring long-term submersion, 60-year thermal cycle simulation, and long-term radiation exposure. SuperNG utilizes machined stainless steel shells and polymeric insert materials for maximum resistance to cumulative radiation, thermal, seismic, and pressure for class 1E harsh nuclear environments. Double peripheral seals ensure life-of-system environmental performance.

Built with proven reverse-bayonet technology for rapid mating and demating during maintenance cycles, and support for the broad range of military 5015 insert arrangements, the connectors can be configured in small shell sizes with as few as two signal contacts, all the way up to large size shells accommodating over sixty 20-amp power contacts. Need a single 500 amp power contact layout for a three-phase motor application? The Series SuperNG supports that too.

Wire-to-conductor termination is facilitated with precision-machined crimp or solder-cup contacts with ample wiring space in the connector housing for back-potting or cup contacts with ample wiring space in the connector housing for back-potting or cup contacts.

SuperNG is optimized for equipment applications in containment area (Class 1E) applications in modern nuclear power plants with SuperNG performance and applications.

KEY PERFORMANCE ATTRIBUTES: Glenair SuperNG Connectors

SuperNG performance and applications

阀 控 制 / 监 测

Control rod drive mechanisms

Radiation detectors

Limit switches

Data acquisition equipment

In-core detectors

Post accident monitoring systems

Process control monitoring

In-core detectors

Fuel handing equipment

SuperNG is optimized for equipment applications in containment area Class 1E including:

Glenair SuperNG connectors are optimized for containment area (Class 1E) applications in modern nuclear power plants with stringent LOCA test and performance requirements including radiation resistance, high-temperature tolerance, sealed, high-pressure tolerance, fluid/chemical resistance, and corrosion resistance. Radiation-hardened inserts, gaskets, seals, and O-rings ensure 60-year life-of-system performance and are manufactured in accordance with a 10CFR50 Appendix B quality system.

Test Zone 1 Requirements

Vibration aging

30 minutes of vibration each orthogonal axis, no discontinuity of 1 ms or greater, sinusoidal motion 0.38 g from 6 Hz to 100 Hz to 5 Hz

Thermal cycling

33 cycles between -30°C and 121°C (250°F)

Mechanical cycle aging

500 mating/un-mating cycles

Environmental Requirements (Temperature and Pressure)

Normal Operating Conditions:

Normal Temperature: (0° - 46°C) (32°-115°F)
Normal Pressure: 0.001 - 0.007 MPA (0.2 - 1.0 psig)

Group 1 Abnormal Operating Conditions: 30 f-h events

Abnormal Temperature: (0° - 66.6°C) (32°-151°F)
Abnormal Pressure, Atmospheric

Group 2 Abnormal Events Operating Conditions: 1.5 - 10 day events

Abnormal Temperature: (0° - 12°C) (32°-50°F)
Abnormal Pressure: 0.124 MPA (18 psig)

Normal Service Radiation

60-Year Equivalent Gamma Total Integrated Dose = 4.0 E+07 rads (413 kGy)

Total Accumulated Dose (TAD)

250 Mils (2.5 X 10°)

Seismic test

In accordance with IEEE 344 and IEEE 382, max peak value 6.5 g

Thermal Aging

Qualified Life 60 years

Containment pressure test

9.7 bars (88 psig) for 24 hours

DBA (LOCA) Test

DBA Operating Conditions in 1-year-long event:

Maximum Accident Temperature (for aprox. 3 s): 216.7°C (422°F)

Maximum Accident Pressure (for aprox. 3 s): 406.8 kPa (60 psig)

Post Accident Gamma Total Integrated Dose for 1 year = 3.75 E+07 rads (370 Gy)

Post Accident Beta Total Integrated Dose for 1 year = 2.8 E+08 rads (2600 Gy)

Chemical Spray 30 hours

Post DBA 30 days in chemical spray fluid

GLENAIR SuperNG ZONE 1 INTERCONNECT APPLICATION SUPPORT

<table>
<thead>
<tr>
<th>Insert Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>Insert with standard features</td>
</tr>
<tr>
<td>Enhanced</td>
<td>Insert with enhanced features</td>
</tr>
<tr>
<td>Special</td>
<td>Insert with special features</td>
</tr>
</tbody>
</table>

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Grade ITS series connector is Glenair’s qualified equivalent for MIL-DTL-5015 (VG95135) existing plant refurbishment power and signal connectors for Nuclear industry standard Bayonet Coupling Series ITS-NG Reverse-Bayonet CLASS 1E for power plants with legacy containment zone 1E requirements. These industry-standard Series ITS-NG reverse-bayonet connectors are ideally suited for power generation monitoring, valve control devices, sensors, and other electronic equipment in Class 1E harsh nuclear / safety-related applications.

Glenair ITS-NG series connectors meet previous-generation nuclear industry LOCA test requirements and are suitable for equipment retrofit and refurbishment applications for power plants with legacy containment zone 1E requirements. These industry-standard reverse bayonet lock connectors offer fast and reliable mating and demating. The Nuclear-Grade ITS series connector is Glenair’s qualified equivalent for MIL-DTL-5015 (VG95135) reverse-bayonet connectors. The popular series offers hundreds of crimp-contact power and signal insert arrangements with gold-plated copper contacts. Polymeric insert materials deliver maximum radiation and temperature tolerance, as well as long-term durability. Stainless steel, environmentally-resistant materials are fabricated in accordance with NQA-1 (10CFR50 Appendix B). All material selections meet cumulative radiation, thermal, seismic, and pressure-induced stress factors for legacy class 1E harsh nuclear environments.

- Fast connect / disconnect reverse-bayonet coupling
- High corrosion-resistant stainless steel shells and bodies
- Chemical and moisture-resistant inserts and O-rings
- Performance tested for advanced temperature, radiation, and seismic stress factors
- Ideally suited for power generation monitoring, valve control devices, sensors, and other electronic equipment in Class 1E harsh nuclear / safety-related applications

**CONTACT SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Contact Size</th>
<th>Rated Current at 20°C</th>
<th>Rated Current at 85°C</th>
<th>Max. Contact Resist.</th>
<th>Wire size</th>
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<tbody>
<tr>
<td>20</td>
<td>7.5 A</td>
<td>7.5 A</td>
<td>12.0 mΩ</td>
<td>20-26 AWG</td>
</tr>
<tr>
<td>16</td>
<td>10 A</td>
<td>7.5 A</td>
<td>12.0 mΩ</td>
<td>18-26 AWG</td>
</tr>
<tr>
<td>16</td>
<td>22 A</td>
<td>15 A</td>
<td>16.0 mΩ</td>
<td>16-22 AWG</td>
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<tr>
<td>16</td>
<td>41 A</td>
<td>23 A</td>
<td>3.0 mΩ</td>
<td>5-14 AWG</td>
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<td>75 A</td>
<td>46 A</td>
<td>1.0 mΩ</td>
<td>8-10 AWG</td>
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<td>125 A</td>
<td>80 A</td>
<td>0.5 mΩ</td>
<td>4-6 AWG</td>
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<td>245 A</td>
<td>150 A</td>
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<td>2-5 AWG</td>
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<tr>
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<td>350 A</td>
<td>225 A</td>
<td>0.2 mΩ</td>
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**Current at**

- 20°C: 7.5 A, 10 A, 22 A, 41 A
- 85°C: 7.5 A, 12.0 mΩ
- 20°C: 18-26 AWG, 16-22 AWG, 5-14 AWG
- 85°C: 8-10 AWG, 4-6 AWG, 2-5 AWG

**Contact Material**

- Copper alloy with gold plating (standard)

**Contact Resistance**

- ≥ 5 x 10^3 MΩ

**Rated Voltage & RMS Voltage**

- Operating: 250 V, 500 V, 1500 V
- Test: 2000 V, 2500 V, 4500 V

**Service Rating**

- Minimum Insulating resistance: ≥ 5 x 10^3 MD

- Copper alloy, Gold Plated
- Copper, Nickel Plated
- Stainless Steel

- Terminal: Nickel Plated, Stainless Steel, Aluminum Copper

- Insulating resistance: ≥ 5 x 10^3 MΩ

- Wire size: 20-26 AWG, 18-26 AWG, 16-22 AWG

**Materials and Finishes**

- Shells, Coupling nuts: Stainless Steel, Passivated
- Contacts: Copper alloy, Gold Plated
- Hoods (Socket contacts): Copper alloy, Nickel Plated
- Pencil Clip (Socket contacts): Stainless Steel
- Wave Spring: Stainless Steel
- Gasketing Finger: Acrylic Copper

**SYSTEM SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Class</th>
<th>Operating Voltage Vac</th>
<th>Operating Voltage Vac RMS</th>
<th>Test voltage Vac RMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>700 V</td>
<td>500 V</td>
<td>2000 V</td>
</tr>
<tr>
<td>B</td>
<td>1250 V</td>
<td>900 V</td>
<td>2500 V</td>
</tr>
<tr>
<td>C</td>
<td>1750 V</td>
<td>1250 V</td>
<td>4500 V</td>
</tr>
<tr>
<td>D</td>
<td>2400 V</td>
<td>1750 V</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>4200 V</td>
<td>3000 V</td>
<td>7000 V</td>
</tr>
</tbody>
</table>
High pressure small form-factor connectors designed to meet the latest, most stringent global Zone 1E qualification standards including those requiring long-term submersion.

High density, small form-factor Mighty Mouse NG connectors are designed for use in new nuclear power plant containment zone (class 1E) equipment. Series 802 Mighty Mouse NG connectors are built to meet the most severe nuclear industry test requirements, including long-term submersion, radiation, and 60-year thermal cycle simulation. The series is available in ten sizes from 1 to 130 contacts.

These ultraminiature connectors (fully half the size and weight compared to standard nuclear-grade connectors) feature high-density inserts, 316 stainless steel shells and a piston O-ring for high-pressure, 3500 psi sealing. Gold-plated crimp contacts accept #12 – #30 AWG wire. Connectors are backfilled with epoxy potting compound to achieve an open face pressure rating 1000 PSI.

3500 psi pressure rated
Ultraminiature #23 contacts
Size #20, #20HD, #16, #12, #8 signal, power, fiber optic and shielded contacts
Discrete connectors and turnkey cable assemblies

MIGHTY MOUSE NG SPECIFICATIONS AND PLUG KEY POSITIONS

<table>
<thead>
<tr>
<th>Key Position</th>
<th>Key Rotation</th>
<th>Performance Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>Current Rating [A–A; A–B]</td>
</tr>
<tr>
<td>B</td>
<td>C</td>
<td>Dielectric Withstanding</td>
</tr>
<tr>
<td>C</td>
<td>D</td>
<td>Voltage [A–A; A–B]</td>
</tr>
<tr>
<td>D</td>
<td>E</td>
<td>Insulation Resistance [A–A; A–B]</td>
</tr>
<tr>
<td>E</td>
<td>F</td>
<td>Operating Temperature [A–A; A–B]</td>
</tr>
<tr>
<td>Normal (A)</td>
<td>106° / 219°</td>
<td>3500 PSI mated, 1000 PSI open face (hermetic)</td>
</tr>
<tr>
<td>B</td>
<td>76° / 219°</td>
<td>Shock [A–A; A–B]</td>
</tr>
<tr>
<td>C</td>
<td>95° / 230°</td>
<td>Vibration [A–A; A–B]</td>
</tr>
<tr>
<td>D</td>
<td>144° / 279°</td>
<td>Durability [A–A; A–B]</td>
</tr>
<tr>
<td>E</td>
<td>79° / 229°</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>9° / 219°</td>
<td></td>
</tr>
</tbody>
</table>

Material and Finish

- Shells, Jam Nuts, Coupling Nuts: 316 stainless steel
- Contact Retention Clip: Beryllium copper alloy
Rugged reverse-bayonet circular power and signal connectors for general-purpose rail and industrial applications

Environmental and mechanical protection of cables, conductors and contacts is a critical requirement in rail and industrial applications especially when frequent mating and unmating is required, or when cables are routed through exposed intercar or undercar locations. To ensure rapid and accurate car linking and cabin reconfigurations, interconnects must be easy to couple and keyed to avoid mis-mating. Vibration, shock and connector decoupling problems are also common in rail applications, and require focused attention when selecting shell materials and mating technologies. As passenger and crew safety is paramount, interconnection systems must not compound flammability, smoke or toxicity risks. Series ITS meets all of these requirements and more, and has demonstrated proven performance on virtually every rail industry sub-system.

**SERIES ITS (EXPLODED VIEW)**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proven interconnect solution designed and built in accordance with</td>
<td>MIL-DTL-5015</td>
</tr>
<tr>
<td>Qualified to VG95234</td>
<td></td>
</tr>
<tr>
<td>Hundreds of power and signal contact arrangements (crimp and solder)</td>
<td></td>
</tr>
<tr>
<td>Reverse bayonet, quick-disconnect coupling technology</td>
<td></td>
</tr>
<tr>
<td>Standard insert (Series ITS), flame-resistant insert (Series FRITS),</td>
<td></td>
</tr>
<tr>
<td>rigid dielectric insert (Series ITH), and high-temperature ceramic</td>
<td></td>
</tr>
<tr>
<td>stainless steel firewall (Series ITK)</td>
<td></td>
</tr>
<tr>
<td>Machined body and shell components</td>
<td></td>
</tr>
<tr>
<td>Broad range of industry-standard plating including innovative new</td>
<td></td>
</tr>
<tr>
<td>Tin-Zinc formulas</td>
<td></td>
</tr>
<tr>
<td>Silver-plated and gold-plated crimp and/or solder cup contacts</td>
<td></td>
</tr>
<tr>
<td>Reverse-bayonet mating with stainless steel locking pins</td>
<td></td>
</tr>
<tr>
<td>Environmentally sealed</td>
<td></td>
</tr>
</tbody>
</table>

**FR ITS SERIES**

FR ITS is the fire-resistant ITS connector series, designed with Flame, Smoke, and Toxicity-compliant insulating materials, FRITS is broadly utilized for environmental and non-environmental rail applications. More than 230 insert arrangements are available, from 1 to 150 contacts. FRITS connectors are RoHS-compliant, and IP67 environmentally sealed. Available FRITS - STR backshells provide versatile locking of cables or wires into the connector, providing IP67 sealing and EMI/RFI termination.

**ITH SERIES**

The ITH connector series is based on the MIL-C-5015 standard, but with improved reverse bayonet coupling. Rigid inserts and crimp contacts provide better electrical insulation and reduced assembly time. The 3-point, positive-locking reverse bayonet coupling mechanism provides easier mating in awkward positions, reliable resistance to vibration and shock, and prevents de-coupling. ITH connectors conform to the VG95234 standard, French (NFF 61930) electrical standards, as well as EEC compliance directives for electromagnetic compatibility. EMI shield termination accessories are available for both overall as well as individual wire shields.

- Design IAW MIL-C-5015 and VG95234
- Temperature range -40°C to +100°C (conductive plating) or -55°C to +125°C (non-conductive plating)
- RoHS compliant
- Low fire hazard inserts, UL94V0 and NFF 16-102 compliant
- Halogen-free silicone rubber gaskets per NFF 16-102

**ITK SERIES**

The high-temperature tolerant ITK series is a rugged reverse-bayonet mating connector that utilizes stainless steel connector shells and special high-temperature ceramic inserts. Compliant to EN 45545 standards, ITK connectors are capable of operation at +700°C for 15 minutes without electrical discontinuity.
SERIES IPT AND IPT SE

Rugged environmental bayonet connector series is resistant to vibration, shock, and environmental damage.

Series IPT and IPT SE are industry-standard solder contact and crimp contact multipin circulars IAW MIL-DTL-26482. Designed for use in both military and industrial applications that depend on a quick-mating and demating bayonet connector with a broad available range of power and signal contact arrangements.

The Glenair Series IPT SE bayonet-lock connector is designed for general and environmental applications that require a high-performance military-type cylindrical connector with support for crimp-removable contacts, standard wire gages and tools. Qualified to VG95328, the bayonet mechanism provides fast and easy coupling, especially when the connector is situated in an awkward or hard-to-reach location.

Environmental protection to IP67 levels provides additional reliability and the flexibility to specify these rugged connectors in harsh applications such as in machine tools and factory automation. Supplied crimp contacts are gold-plated copper alloy.

The IPT Series connector is similar in all regards, utilizing the same contact arrangements, but is supplied with solder contact wire termination.

The Series IPT SE Connector is interchangeable and intermateable with the wide range of industry-standard bayonet connectors designed around MIL-DTL-26482 Series I and/or qualified to VG 95328, including ITT Cannon KPT.

AVAILABLE CONFIGURATIONS

VGG328 Bayonet-Lock In Accordance With MIL-DTL-26482
Series IPT-SE crimp-contact In Accordance With MIL-DTL-26482
Series IPT solder contact In Accordance With MIL-DTL-26482

STANDARD BAYONET
Series IPT and IPT SE

Rugged, industry-standard multipin power and signal connectors

Glenair IPT and IPT SE series connectors offer rugged, high vibration performance and rapid mating for both high-performance and general duty signal connector applications. The products are environmentally sealed and can be equipped with EMI/RFI shield termination backshell accessories. IPT SE is qualified to VG 95328. Both product series are in accordance with MIL-DTL-26482 Series I.

**IPT-SE PRODUCT FEATURES AND SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applications</td>
<td>Factory equipment, off-road vehicles, military vehicles, sensors, power generators, and other industrial applications.</td>
</tr>
<tr>
<td>Shell Construction</td>
<td>Aluminum shell bodies provide durable performance in a lightweight package.</td>
</tr>
<tr>
<td>Mating System</td>
<td>Three pin bayonet system, 1/2 turn to full mate.</td>
</tr>
<tr>
<td>Shell Surface Coatings</td>
<td>A range of conductive and non-conductive surface coatings including standard Cadmium finishes as well as RoHS compliant electrostatic paint.</td>
</tr>
<tr>
<td>Environmental Sealing</td>
<td>Individual wire sealing grommets and optional environmental backshells provide moisture protection up to IP67.</td>
</tr>
<tr>
<td>Temperature Tolerance</td>
<td>F6, F7, F11 and G3 plated connectors are tested to -55°C to 125°C.</td>
</tr>
<tr>
<td>Contacts</td>
<td>High-performance crimp contacts and retention clips (IPT SE) and general duty crimp and solder contacts (IPT).</td>
</tr>
<tr>
<td>Contact Plating</td>
<td>Copper alloy with gold plating.</td>
</tr>
<tr>
<td>Wire Gauge</td>
<td>Contacts support wire sizes #12 - #14 (Size 12), #16 - #20 gauge (Size 16) and #20 - #24 (size 20).</td>
</tr>
<tr>
<td>Insert Materials</td>
<td>Resilient high-insulation synthetic insert (polychloroprene or silicone). IPT SE version includes hard plastic retention clip retainer.</td>
</tr>
<tr>
<td>Insert Arrangements</td>
<td>IPT SE: 25 different power and signal insert arrangements, featuring 16 and 20 gauge contacts, 3 to 61 contacts.</td>
</tr>
<tr>
<td></td>
<td>IPT: 39 different power and signal insert arrangements, featuring 16, 12 and 20 gauge contacts, 2 to 61 contacts.</td>
</tr>
<tr>
<td>EMI Shielding</td>
<td>Shield termination backshell accessories are available for all plug and receptacle configurations.</td>
</tr>
<tr>
<td>Shell Styles</td>
<td>Complete range of shell styles is available, including front and rear mount flange receptacles, jam nut receptacles, bulkhead feedthroughs, and straight and 90° plugs.</td>
</tr>
<tr>
<td>Polarization</td>
<td>5 keyway configuration with optional polarization.</td>
</tr>
<tr>
<td>Approvals</td>
<td>IPT SE is qualified to VG 95328. Both IPT and IPT SE meet all requirements of MIL-DTL-26482 Series I.</td>
</tr>
<tr>
<td>Intermateability</td>
<td>Intermateable with all industry-standard bayonet connectors designed to MIL-DTL-26482 Series I and VG 95328 including Veam VPT, Amphenol PT and ITT Cannon KPT.</td>
</tr>
</tbody>
</table>
Glenair’s IT series threaded-coupling connectors are designed in accordance with the MIL-DTL-5015G specification and comply with all its requirements of performance, reliability and intermateability with connectors from other manufacturers that share the same material/plating characteristics and contact insert arrangements.

These rugged circular connectors, originally designed for military applications, are used widely in industrial applications where reliable environmental and mechanical performance is required.

A wide range of connector backshell accessories allows these connectors to be used in virtually any environment, while the high number of available contact arrangements cover every power and signal requirement commonly encountered in rail, industrial, robotic, and mining applications. Available in either crimp contact or solder cup termination with optional silver or gold contact plating as well as thermocouple contacts.

The ITZ connector series provides the same electrical characteristics as the IT and ITS families, but utilizes rapid-advance threaded coupling in place of bayonet coupling. Originally designed to be used on special amphibious military vehicles, the series evolved into a versatile railway and industrial connector, used where threaded coupling is desired. The ITZ connector series uses solder and crimp contacts in accordance with MIL-C-5015 and a trapezoidal threaded coupling system with rubber O-ring environmental seals.

- Aluminum alloy construction with electrodeposited (cataphoresis) black coating (F6)
- Copper alloy contacts, silver plated
- Oil-resistant synthetic rubber insulators and O-rings
- Temperature tolerance -55° to +125°C

ITZ SERIES WITH RAPID-ADVANCE THREADED COUPLING

The ITZ connector series provides the same electrical characteristics as the IT and ITS families, but utilizes rapid-advance threaded coupling in place of bayonet coupling. Originally designed to be used on special amphibious military vehicles, the series evolved into a versatile railway and industrial connector, used where threaded coupling is desired. The ITZ connector series uses solder and crimp contacts in accordance with MIL-C-5015 and a trapezoidal threaded coupling system with rubber O-ring environmental seals.

- Aluminum alloy construction with electrodeposited (cataphoresis) black coating (F6)
- Copper alloy contacts, silver plated
- Oil-resistant synthetic rubber insulators and O-rings
- Temperature tolerance -55° to +125°C

ITS-EX ICEX / ATEX-QUALIFIED EXPLOSIVE ZONE CONNECTORS

Designed for safe operation in petrochemical refineries, oil & gas drilling platforms, and other explosion zone applications, the Glenair ITZ-Ex series connector is optimized for life-of-system durability and reliability. Qualified by the globally-recognized IEC and IECEx standards bodies, the connector series is suitable for use in application areas where potentially flammable dust is present as a normal condition of operation (group IIIC) and with temperature classes T80°C and T95°C in zone 21 and 22. A full range of power and signal contacts, from size #16 to size #0 in over 40 insert arrangements are available to address all common voltage, wire size and connector service class ratings.

- Utilizes all standard features of 5015 inserts, contacts, tools, etc.
- Grub nuts (set screw) to lock coupling nut
- Long plug barrels provide cooling zone
- Labyrinth gas exit port/pathway augments cooling
- Accessory accommodation for potted glands
- Increased wall thickness
- Stainless steel and Marine Bronze available

RANGE OF APPLICATIONS FOR THREADED 5015-TYPE POWER AND SIGNAL CONNECTORS

- Oil & gas extraction
- Oil refineries
- Gas pipelines and distribution
- Chemical processing plants
- Aircraft refuelling and hangars
- Transportation control panels
- Pharmaceuticals
- Sugar refineries
- Grain handling and storage
- Coal mining

Glenair ITS-Ex series encompasses both in-line cable plugs and receptacles as well as fixed bulkhead-mountable designs.

Available RadGrip coupling nut covers assist in mating threaded connector series in harsh weather applications.

Glenair ITS-Ex series encompasses both in-line cable plugs and receptacles as well as fixed bulkhead-mountable designs.

IT SERIES

Industrial-strength power and signal connector series with unique threaded coupling interfaces for special-purpose power and signal applications

RANGE OF APPLICATIONS FOR THREADED 5015-TYPE POWER AND SIGNAL CONNECTORS

- Oil & gas extraction
- Oil refineries
- Gas pipelines and distribution
- Chemical processing plants
- Aircraft refuelling and hangars
- Transportation control panels
- Pharmaceuticals
- Sugar refineries
- Grain handling and storage
- Coal mining

Glenair ITS-Ex series encompasses both in-line cable plugs and receptacles as well as fixed bulkhead-mountable designs.

Available RadGrip coupling nut covers assist in mating threaded connector series in harsh weather applications.
**IRIS CERTIFIED**

International Railway Industry Standard Interconnect Solutions


IRIS certification seeks to avoid multiple business management system audits and enhance industry efficiency. The IRIS Certificate replaces individual management system evaluations by at least the four founders of this initiative (Alstom Transport, AnsaldoBreda, Siemens Transportation Systems and Bombardier Transportation).

Companies seeking IRIS certification undergo extensive quality systems review and documentation, as well as auditing by a third-party examiner.

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**RUGGED**

Power and Signal Connectors for mass transit applications

**Micro-Switch · One Cable - Two Contacts · ERTMS**

**MICRO-SWITCH CONNECTOR**

The Glenair Micro-Switch connector is a rugged, reverse-bayonet connector for enhanced-safety mating in rail applications. The connector is supplied with 3 #4/0 power contacts and a specially-designed sensing contact that allows current to flow only when the connector pair is fully mated.

- 3 #4/0 contacts and 1 sensing contact
- Thermoplastic resin insert (UL94 V0)
- IP67 environmental sealing
- Sensing contact is suitable for standard cavity
- 4 Amps current rating
- Operating Temp: -30°C to +75°C
- Solder lug termination

**ONE CABLE - TWO CONTACTS**

The “One Cable - Two Contacts” system is a rugged, RFI-shielded connector design that divides the source power in a 70 mm² cable into two contacts of 35 mm² each, enabling the plug connector to divide and deliver RFI shielded power via two separate cables. Designs for additional contact gages and power requirements are available. Mated pairs are sealed to IP67.

**ERTMS INTERCONNECTION SYSTEM**

Specially designed for utilization on the European Rail Traffic Management System, the ERTMS connector family offers plug connectors with integrated RFI shield termination backshells for complete electromagnetic compatibility when mated. Mated pairs offer IP67 environmental sealing.

**“STINGER” SYSTEM**

The Stinger System connector is equipped with integrated short circuit contacts which will cut power should the single-pole power circuit be unmated under load. The push-pull connector incorporates a fully insulated (rubber covered) coupling nut for additional user safety. Three backshell/rear fitting options accommodate conduit, PG-gland, or rubber-covered backshell.

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Signal and Lighting Systems for mass transit

LED LIGHTS AND LIGHT SIGNALING SYSTEMS
LED devices are designed to be installed in all compartments, from coaches to locomotives. Case and electronic components can be customized.
- Case: Aluminum
- Source: 18-36Vdc
- Working Temperature: -25/+70°C
- Standards: EN50155; UNI CEI 11170

LIGHT BUTTONS
Circular and rectangular devices, timed or not, with writing in relief for blind persons. Pictographs and case can be customized. Programmable, with LED light source.
- Case: Aluminum
- Source: 18-36Vdc
- Working Temperature: -25/+70°C
- Standards: EN50155; UNI CEI 11170

SIGNAL DEVICES
Signaling units designed for heavy duty conditions, when long life and high reliability are required. LED light source. The Ground Signal Device is available with fixed lights.
- Case: Fiberglass
- Color: Black
- Source: 150Vac
- Working Temperature: -25/+80°C
- Mechanical Degree Protection: IP54
- Standards: EN50155; UNI CEI 11170

CONTROL PANELS

SENSORS

TEST EQUIPMENT

WARNING LED LIGHT PANELS
Panels are designed with LED lights. Number of lights, case and pictographs can be customized.
- Case: Aluminum
- Source: 18-36Vdc
- Working Temperature: -25/+70°C
- Standards: EN50155; UNI CEI 11170

LED LIGHT INFORMATION PANELS
Number of lights, case and pictographs can be customized.
- Case: Aluminum
- Source: 18-36Vdc
- Working Temperature: -25/+70°C
- Standards: EN50155; UNI CEI 11170

INTERCOM SYSTEMS
Customizable intercom units designed as communication system between coaches and locomotives.
- Case: Aluminum
- Painting: Epoxy paint
- Source: 18-36Vdc
- Working Temperature: -25/+70°C
- Standards: EN50155; UNI CEI 11170
HIGH-CURRENT / HIGH-VOLTAGE
Rugged Connectors for Metro Traction Motor Applications

UJ SERIES UNIPOLE POWER JOINT CONNECTOR SYSTEM

The Glenair UJ Power Joint system allows connection of medium and high power cables without the need for bulky junction boxes. The UJ Power Joint System offers the same environmental protection with substantial size and weight savings and better temperature tolerance than junction boxes.

UJ Series vs. Junction Box

<table>
<thead>
<tr>
<th>Feature</th>
<th>UJ Series</th>
<th>Junction Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>Small</td>
<td>Regular / Big</td>
</tr>
<tr>
<td>Weight</td>
<td>Light</td>
<td>Heavy</td>
</tr>
<tr>
<td>Protective Varnish</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Modularity</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Environmental</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Electrical Performance</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Cost Reduction</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Temperature Range</td>
<td>High</td>
<td>Standard</td>
</tr>
</tbody>
</table>

3-position configuration

Head-to-head size comparison: UJ connector vs. junction box

2-position configuration

IT'S 901 SERIES REVERSE BAYONET MULTI-POLE MEDIUM VOLTAGE JUMPER CONNECTORS

ITS 901 Series is the extension of the ITS Reverse Bayonet connector family, for power cables over AWG 1/0. Suitable for harsh environmental conditions, 901 Series Connectors accept cable from AWG 4 to 262 MCM (35 - 120 mmq), for current up to 450 Amps. Working voltage is from 800 - 1000 VAC. Available for single wires and multipole jacketed cables, with cable clamp or conduit.

Male contacts offer Finger Test Protection, Load Side (Receptacle or Plug).

Long bayonet ramps, three polarization keys and rubber recovered coupling facilitate mating and unmating operations.

Plug connectors are available with coupling nut castellations or with special wing lock mechanism to prevent accidental de-mating.

901 Series meet the most important rail requirements and specifications:

- 500 Mating Cycles
- Salt Spray Test Corrosion: 500 hours
- Shock and Vibrations for Under-Car and Car-To-Car Applications
- IP67 Sealing (Coupled Connectors)
- Fire Resistant and RoHS Compliant Materials

Wide range of available backshell accessories

Reverse-Bayonet Panel-Mount Receptacle Connector

IT’S 500 SERIES REVERSE BAYONET SINGLE-POLE HIGH VOLTAGE JUMPER CONNECTORS

ITS 500 Series derives from the VG96929 Military Specification for Power Connectors. Suitable for harsh environmental conditions, ITS 500 accepts cable gauges AWG 3/0 to 444 MCM (95-240 mmq), for current up to 750 Amps.

Special insulator drawing allows high working voltage, up to 3000 Vcc.

Suitable for jacketed cables, with or without conduit protection.

Receptacle with finger protection (Load side).

ITS 500 meets the most important rail requirements and specifications:

- 500 Mating Cycles
- Salt Spray Test Corrosion: 500 hours
- Shock and Vibrations for Under-Car and Car-To-Car Applications
- IP67 Sealing (Coupled Connectors)
- Fire Resistant and RoHS Compliant Materials
HIGH-CURRENT / HIGH-VOLTAGE

Multipole Traction Motor Connectors with IRIS Certification

High current/high voltage electrical connectors for traction motor, lighting, data communications and more.

The interconnection of power transmission cables in traction motors is a critical application. Conventional systems may employ bulky and inefficiently-sealed junction boxes for cable interconnection. Glenair offers a number of different special-purpose designs for traction motors and other power requirements on transit cars. Features such as integral mounting, robust environmental sealing, screw and/or lever-action mating, as well as compliance to transit industry standards such as IRIS, FST, and RoHS make Glenair the natural design partner and supplier to the worldwide mass transit / rail industry. The following pages present an overview of our most popular power and signal connector series, principally manufactured, tested, and qualified in our Bologna, Italy factory. Glenair delivers worldwide application engineering and support to the mass transit / rail industry with support teams located in every major market.

Innovative screw and lever mated power connectors for mass transit / rail applications

Proven performance and qualification credentials in hundreds of installations

IRIS International Railway Industry Standard certified (Rev. 02, May 2009)

SERIES IRT RECTANGULAR MULTIPOLE HIGH VOLTAGE TRACTION MOTOR CONNECTORS

The Glenair IRT series is a rectangular power connector for harsh environmental conditions. Available with three, four and six contacts, typical for traction motor applications. Suitable for single cables AWG 4 – 373MCM (35 to 185 mm²). Working voltage up to 3000 Vdc.

Two mating systems offered:
- Screws, for light weight and reduced dimensions
- Lever system with secondary lock, easy-to-use in difficult positions.

The IRT Series is suitable for separated power cables, with or without shielding, ground body available with a copper plait.

Available with three different cable back-end styles:
- Metallic gland
- Clamp with strain relief
- EMC shield and gland

SITE IRT Connector Selection Guide

<table>
<thead>
<tr>
<th>Size</th>
<th>Contacts</th>
<th>Mating System</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>3</td>
<td>Screw Mating</td>
</tr>
<tr>
<td>02</td>
<td>4</td>
<td>Screw Mating</td>
</tr>
<tr>
<td>03</td>
<td>3</td>
<td>Lever Mating</td>
</tr>
<tr>
<td>04</td>
<td>3</td>
<td>Double-Lever Mating</td>
</tr>
<tr>
<td>05</td>
<td>4</td>
<td>Lever Mating</td>
</tr>
<tr>
<td>06</td>
<td>6</td>
<td>Stacked, Lever Mating</td>
</tr>
</tbody>
</table>
UniPower™ Connectors

Safe, rugged, and reliable multi-phase power distribution connectors

Glenair UniPower™ Connectors provide reliable interconnection between power distribution systems and high-powered equipment such as three-phase motors, concert sound systems, lighting panels, carnival rides and municipal emergency power systems. The color-coded plastic bodies are fire and high impact resistant and are also watertight when mated.

- For heavy industry, mobile generators, sound equipment, and entertainment industry power distribution applications
- Color-coded for three-phase application
- Easy termination and assembly
- Secondary locking mechanism and contacts with dielectric covers for added safety

Glenair UniPower™ line source connectors are available in 400A and 800A ratings, and feature rigid IP2X spring loaded contacts secured firmly in place with rugged nylon cotters pins. Like their source counterparts, shock-resistant insulating tips safeguard users from accidental electrocution.

The 400A version allows users to terminate a wide range of cables, from 25mm² to 120mm², by means of a reduction sleeve. Simply tightening the two set screws atop the contact fastens the reducer onto the wire–providing complete versatility in the selection of cable and wire for power system applications.

Glenair UniPower™ line drain connectors are available in 400A and 800A max current ratings, and feature rigid IP2X spring loaded contacts. Secondary remote locking key disengages the mated connectors safely and quickly. Color coded connectors prevent mis-mating and comply with EU, UK and US standards.

- For heavy industry, mobile generators, sound equipment, and entertainment industry power distribution applications
- Color-coded for three-phase application
- Easy termination and assembly
- Secondary locking mechanism and contacts with dielectric covers for added safety

Glenair UniPower™ panel source and drain connectors offer complete flexibility in power system device configuration. Choose between source and drain formats, in either 400A or 800A ratings. All panel connectors feature a rigid IP2X “finger proof” dielectric insulating tip to protect users from accidental electrocution.

The panel source connector features a male contact and secondary locking pin slot to prevent accidental cable de-mating due to cable torsion. Panel drain connectors are supplied standard with female contacts that feature an IP2X spring loaded nose and IP67 rated O-ring environmental seal. The connectors are ideally suited for industrial power distribution systems, three-phase motors, concert sound systems and other outdoor, environmental applications.

- For heavy industry, mobile generators, sound equipment, and entertainment industry power distribution applications
- Color-coded for three-phase application
- Easy termination and assembly
- Secondary locking mechanism and contacts with dielectric covers for added safety

Glenair UniPower™ panel drain connectors are available in 400A and 800A max current ratings, and feature rigid IP2X spring loaded contacts. Secondary remote locking key disengages the mated connectors safely and quickly. Color coded connectors prevent mis-mating and comply with EU, UK and US standards.

- For heavy industry, mobile generators, sound equipment, and entertainment industry power distribution applications
- Color-coded for three-phase application
- Easy termination and assembly
- Secondary locking mechanism and contacts with dielectric covers for added safety

Product Specifications

- Formats: Panel Drain, Panel Source, Line Drain, and Line Source
- Cable Section: Crimp Contact Version: 300 mm² max; Set Screw Version: 120 mm² max
- Contact Types: Crimp, Set Screw or Threaded Post (Panel Versions Only)
- Contact Retention/Extraction System: Drive Pin with Secondary Lock
- Mating Method: Polarization Keyways with Lock Pins
- Mating Cycles: 500
- Layout: Single Contact with Finger Touch Insulating Tip
- Maximum Current Rating: 400A (120 mm² Set Screw), or 800A (300 mm² Crimp)
- Maximum Rated Voltage to Ground: 2kVAC, 3kVDC
- Test Voltage: 8,000 Vac
- Minimum Insulating Resistance: >5x10^10 MΩ at 500 Vac
- Operating Temperature Range: -30°C to +125°C
- Flammability: UL 94VO
- Shell Material: Thermoplastic Resin
- Environmental Resistance: Watertight in Mated Condition to IP67
- Safety Features: Mechanical and Color-Coded Mis-Mate Protection; Finger-Proof Contact Nose
- Shell Colors: Black, Green, Blue, Yellow, Blue, Brown, White, and Grey
- Accessories: Compression Sleeves, Lock Pin Release Key, and Protective Covers
- Crimp Tools: Industry Standard Crimp Tools and Dies Available for All Crimp, Set Screw and Panel Mount Terminations

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GLEN AIR ITALIA BLQ: Manufacturing harsh-environment military, nuclear, rail, and industrial interconnects for power, high-speed Ethernet, and fiber optic applications.

TOTAL VERTICAL INTEGRATION includes in-house rubber and thermoplastic injection molding.

SAME-DAY SHIPMENT INVENTORY Glenair Italia BLQ offers the fastest turnaround on orders of any industrial-strength connector manufacturer.

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 PLATING LINE Capabilities include VG95328-qualified Marine Bronze and "Code J" Tin-Zinc plating—VG95211 and VG95212 qualified cadmium alternative for corrosion-resistant interconnects.

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Environmental Test Laboratory

Fast and reliable IEC qualified assessment laboratory for electronic components (IECQ)

Environmental testing, consisting of the complete range of mechanical, electrical and environmental stress factors that affect electronic equipment, cabling, and systems.

- Mechanical / dynamic testing for fiber optic systems, electrical components, wiring harnesses
- Broad spectrum of electrical testing (resistance, current rating, EMC shielding and more)
- Heat, cold, and thermal shock testing
- Corrosion and solvent resistance testing
- Fast turnaround on quotes and testing services
- Decades of experience

**Electrical and Electronic Components/Devices Tested**

- Electrical/fiber optic connectors
- Electro/Mechanical Devices
- Wiring Harnesses
- Switches
- Aerospace Components & Equipment
- Automotive Components & Equipment
- Railway Components

**Mechanical / Dynamic Testing**

**Vibration-Sinoidal (Ambient temperature)**

<table>
<thead>
<tr>
<th>Mechanical/Dynamic Tests</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency: 5 to 2000 Hz</td>
<td>BS EN/IEC 60068-2-6</td>
</tr>
<tr>
<td>Peak Thrust: 8,90kN</td>
<td>EIA-364-28</td>
</tr>
<tr>
<td>Max pk/pk displacement: 50mm</td>
<td>EIA-364-28</td>
</tr>
</tbody>
</table>

**Vibration/Random (Ambient temperature)**

<table>
<thead>
<tr>
<th>Mechanical/Dynamic Tests</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency: 5 to 2000 Hz</td>
<td>BS EN/IEC 60068-2-64</td>
</tr>
<tr>
<td>Peak Thrust: 5,76 kN</td>
<td>EN 61373</td>
</tr>
<tr>
<td>Max pk/pk displacement: 50mm</td>
<td>EIA-364-28</td>
</tr>
</tbody>
</table>

**Shock (Half sine, Sawtooth, and Trapezoidal waveforms)**

<table>
<thead>
<tr>
<th>Mechanical/Dynamic Tests</th>
<th>Specification Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Thrust: 17,36kN</td>
<td>BS EN/IEC 60068-2-27</td>
</tr>
<tr>
<td></td>
<td>EIA-364-27</td>
</tr>
<tr>
<td></td>
<td>EN 61373</td>
</tr>
</tbody>
</table>

**Bump (Half sine)**

<table>
<thead>
<tr>
<th>Mechanical/Dynamic Tests</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severity: 20/40 g</td>
<td>BS EN/IEC 60068-2-29:1993</td>
</tr>
</tbody>
</table>

**Discontinuity (During vibrations)**

<table>
<thead>
<tr>
<th>Mechanical/Dynamic Tests</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ins Electrical discontinuity</td>
<td>EIA-364-28</td>
</tr>
</tbody>
</table>

Controlled vibration and shock testing ensures electrical and electronic components can withstand specified forms of dynamic stress encountered during operation and shipping.

Available Tests:
- Vibration sine
- Vibration random
- Bump
- Shock
### ELECTRICAL / EMC TESTING

<table>
<thead>
<tr>
<th>ELECTRICAL</th>
<th>EMC</th>
<th>SPECIFICATION/APPLICABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Ultraviolet</strong></td>
<td>BS EN / IEC 62153-4-7</td>
</tr>
<tr>
<td></td>
<td><strong>Touch Method</strong></td>
<td>BS EN / IEC 60512-2-2</td>
</tr>
<tr>
<td></td>
<td>1 kHz - 2.5 GHz</td>
<td>ESA-364-06</td>
</tr>
<tr>
<td></td>
<td><strong>Contact Resistance</strong></td>
<td>BS EN / IEC 60512-2-1</td>
</tr>
<tr>
<td></td>
<td><strong>Insulation Resistance</strong></td>
<td>BS EN / IEC 60512-3-1</td>
</tr>
<tr>
<td></td>
<td>150 - 2000 TΩ</td>
<td>ESA-346-21</td>
</tr>
<tr>
<td></td>
<td><strong>Dielectric Withstanding Voltage</strong></td>
<td>BS EN / IEC 60512-2-3</td>
</tr>
<tr>
<td></td>
<td>AC Voltage 10 Hz - 50 kV</td>
<td>BS EN / IEC 60512-3-1</td>
</tr>
<tr>
<td></td>
<td>ESA-364-21</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Temperature Rise and Current derating</strong></td>
<td>BS EN / IEC 60512-5-1</td>
</tr>
<tr>
<td></td>
<td>Test Voltage: 0 - 50 kVAC</td>
<td>BS EN / IEC 60512-5-2</td>
</tr>
<tr>
<td></td>
<td>Max I. Leak: 60 mA</td>
<td>ESA-364-70</td>
</tr>
<tr>
<td><strong>Partial Discharge</strong></td>
<td></td>
<td>IEC 60270:2000</td>
</tr>
<tr>
<td></td>
<td>100 kHz, 160 kHz, 300 kHz, 650 kHz, 1 MHz</td>
<td>BS EN 62270:2001</td>
</tr>
</tbody>
</table>

### Electrical / EMC Testing

Electrical / EMC Testing services cover the complete range of performance requirements for interconnect and electronic components. Glenair brings years of EMC design engineering experience into the testing process, ensuring equipment under test is always correctly fixtured and prepared for the most accurate results.

**Available Tests:**

- **Contact resistance**
- **Dielectric withstanding voltage (DWV)**
- **Current rating**
- **Insulation resistance**
- **EMC shielding**
- **Partial discharge**

### TEMPERATURE / HUMIDITY TESTING

<table>
<thead>
<tr>
<th>TEMPERATURE / HUMIDITY TESTING</th>
<th>SPECIFICATION/APPLICABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DAMP HEAT STEADY STATE</strong></td>
<td>BS EN / IEC 60068-2-3</td>
</tr>
<tr>
<td>Temp. Range: +10°C to +90°C</td>
<td>EIA-364-31</td>
</tr>
<tr>
<td>Humidity Range: 10 to 98%</td>
<td></td>
</tr>
<tr>
<td>900 mm x 900 mm x 610 mm</td>
<td></td>
</tr>
<tr>
<td>900 mm x 600 mm x 610 mm</td>
<td></td>
</tr>
<tr>
<td><strong>DAMP HEAT CYCLIC</strong></td>
<td>BS EN / IEC 60068-2-30</td>
</tr>
<tr>
<td>Temp. Range: +10°C to +90°C</td>
<td>EIA-364-59</td>
</tr>
<tr>
<td>Humidity Range: 10 to 98%</td>
<td></td>
</tr>
<tr>
<td>150 mm x 600 mm x 610 mm</td>
<td></td>
</tr>
<tr>
<td>900 mm x 600 mm x 610 mm</td>
<td></td>
</tr>
<tr>
<td><strong>DAMP DRY COLD</strong></td>
<td>BS EN / IEC 60068-2-1</td>
</tr>
<tr>
<td>Min Temp.: -75°C</td>
<td>EIA-364-59</td>
</tr>
<tr>
<td>Max chamber size: 850 mm x 600 mm x 500 mm</td>
<td></td>
</tr>
<tr>
<td><strong>DAMPER DRY COLD</strong></td>
<td>BS EN / IEC 60068-2-2</td>
</tr>
<tr>
<td>Min Temp.: -75°C</td>
<td>ESA-364-26</td>
</tr>
<tr>
<td>Max chamber size: 500 lt</td>
<td></td>
</tr>
<tr>
<td><strong>DAMP HEAT CYCLIC</strong></td>
<td>BS EN / IEC 60068-2-30</td>
</tr>
<tr>
<td>Min Temp.: -75°C</td>
<td>EIA-364-59</td>
</tr>
<tr>
<td>Max chamber size: 850 mm x 600 mm x 500 mm</td>
<td></td>
</tr>
</tbody>
</table>

### TEMPERATURE-DRY HEAT

<table>
<thead>
<tr>
<th>TEMPERATURE-DRY HEAT</th>
<th>SPECIFICATION/APPLICABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Temp: +100°C</td>
<td>BS EN / IEC 60068-2-2</td>
</tr>
<tr>
<td>Chamber Size:</td>
<td>ESA-364-27</td>
</tr>
<tr>
<td>900 mm x 600 mm x 610 mm</td>
<td></td>
</tr>
<tr>
<td><strong>THERMAL SHOCK</strong></td>
<td>BS EN / IEC 60068-2-2-14</td>
</tr>
<tr>
<td>Min Temp.: -75°C</td>
<td>ESA-364-24</td>
</tr>
<tr>
<td>Max chamber size: 500 Lt</td>
<td></td>
</tr>
</tbody>
</table>

### CHANGE OF TEMPERATURE

<table>
<thead>
<tr>
<th>CHANGE OF TEMPERATURE</th>
<th>SPECIFICATION/APPLICABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Temp.: +180°C</td>
<td>BS EN / IEC 60068-2-14</td>
</tr>
<tr>
<td>Maximum Temp.: -75°C</td>
<td></td>
</tr>
<tr>
<td>Maximum rate of change: +180°C to +10°C, 1°C/min</td>
<td></td>
</tr>
<tr>
<td>+180°C to -75°C, 3°C/min</td>
<td></td>
</tr>
</tbody>
</table>

### SALT SPRAY / CORROSION TESTS

<table>
<thead>
<tr>
<th>SALT SPRAY CORROSION TESTS</th>
<th>SPECIFICATION/APPLICABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt chamber size: 580 lt</td>
<td>BS EN / IEC 60068-2-17</td>
</tr>
<tr>
<td><strong>SALT SPRAY</strong></td>
<td></td>
</tr>
<tr>
<td>Max chamber size: 500 lt</td>
<td></td>
</tr>
<tr>
<td>Company</td>
<td>Telephone</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Glenair East</td>
<td>203-741-1115</td>
</tr>
<tr>
<td>Glenair Microway Systems</td>
<td>847-679-8833</td>
</tr>
<tr>
<td>Glenair GmbH</td>
<td>06172 / 68 16 0</td>
</tr>
<tr>
<td>Glenair Italia S.p.A.</td>
<td>+39-051-782811</td>
</tr>
<tr>
<td>Glenair Korea</td>
<td>+82-31-8068-1090</td>
</tr>
<tr>
<td>Glenair UK Ltd</td>
<td>+44-1623-638100</td>
</tr>
<tr>
<td>Glenair Nordic AB</td>
<td>+46-8-50550000</td>
</tr>
<tr>
<td>Glenair Iberica</td>
<td>+34-925-89-29-88</td>
</tr>
<tr>
<td>Glenair France SARL</td>
<td>+33-5-34-40-97-40</td>
</tr>
</tbody>
</table>