



Douglas Electrical Components

GLOVE BOX

Hermetically Sealed Feedthroughs and Connectors

Douglas Electrical provides reliable epoxy-based sealing solutions for nuclear, medical and laboratory glove boxes—bringing power, signal and data into critical environments while protecting operators from hazardous conditions or substances. Our sealing technologies are hermetically, electrically and optically tested for long-term performance in applications involving inert atmosphere containment and hazardous material handling. All of our feedthroughs are engineered and manufactured in the United States.

TECHNICAL ADVANTAGES

- 100% QC tested for hermetic, electrical and optical performance
- Epoxy seals withstand hot nuclear environments
- Leak rates less than 1×10^{-9} cc He/sec
- Seals any cable—signal, power, high-frequency coaxial, thermocouple, USB and Ethernet
- Seals any connector—MIL-C, circular plastic, sub-D, coaxial, waterproof, thermocouple, high-current and high-voltage
- Lab feedthroughs custom-designed for LANL, LLNL, PNNL, SRNL, Oak Ridge, Ames, INL, SLAC, Brookhaven, AECL, Fermi Labs and more

CERTIFICATIONS AND STANDARDS

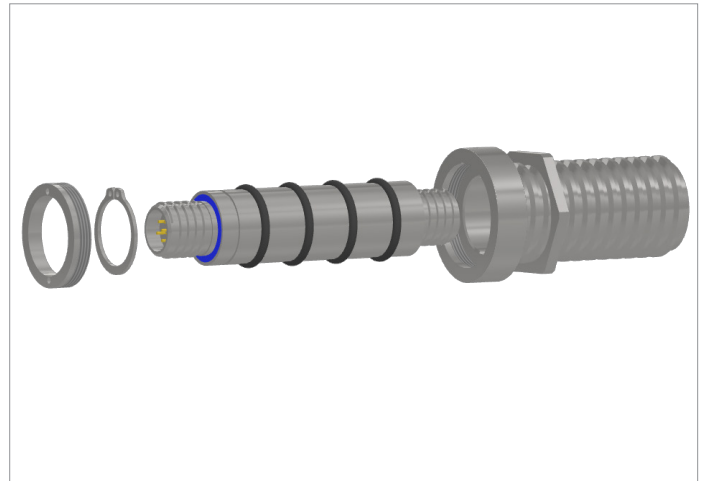
- ITAR-DDTC
- DFARS
- NIST
- ISO-9001:2015
- ISO-14001:2015
- Traceability and military certifications available
- IPC-620

ORDERING AND DELIVERY

- Engineered and manufactured in the USA
- Made to order in 4 to 6 weeks
- Expedited options available
- Ongoing technical support

PUSH-THROUGH HERMETIC FEEDTHROUGHS

- Housing and feedthroughs can be separated allowing for replacement connectors and cables to be installed without breaking hermetic chamber seal
- Avoid contaminating the outside environment
- Enable chamber maintenance and upgrades
- Quick installation
- Feedthrough options include connectors, wires, cables, and fibers
- Bulkhead housing options include O-ring face seals, weld-in, NPT, bolt on flange and custom



HERMETIC BULKHEAD CONNECTORS | POTCON™

- Seals any connector required by your application, including high-voltage, high-current, high-speed and thermocouple connectors
- Able to support all common data connectors including D-sub, Cat6, firewire, USB 2.0 and 3.0
- High frequency solutions up to 67 GHz
- Easy mating and unmating at bulkhead interface
- Able to directly cross-reference historic design with drop-in replacements
- Various configurations, including connector-to-connector and connector-to-wire



HERMETIC D-SUB / MICRO-D FEEDTHROUGHS

- Plug-and-play with two connectors in a hermetic package
- Hermetically sealed and 100% tested
- Reversible design to increase mounting options
- Plug-to-receptacle configuration where both sides can be mounted in vacuum environment



USB FEEDTHROUGHS

- Integrate USB connectors and “pigtail” cables for plug-and-play use
- USB 2.0 and 3.0 connections available
- Integrate multiple wires and connectors into a single feedthrough
- Various mechanical interfaces including face seal bulkhead connections, NPT's, and custom flanges

CONVENIENCE FEEDTHROUGHS

- Easy-to-implement feedthroughs for 120 V power, available in all common NEMA connector insert arrangements including NEMA 5-15 and 5-20
- Other standard power connectors available including 240 V options
- DuctorSeal®, PotCon® and cable-to-connector configurations

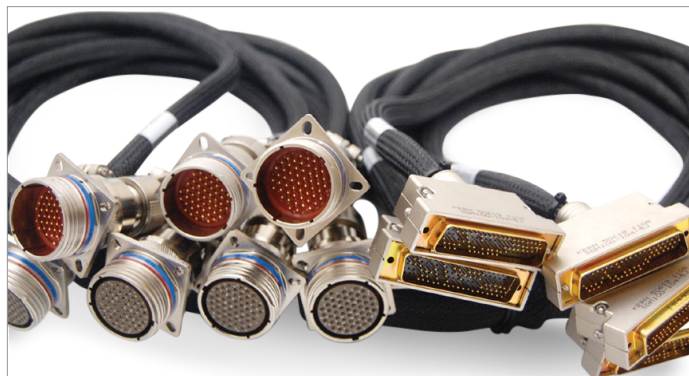


HERMETIC WIRE & CABLE FEEDTHROUGHS | DUCTORSEAL™

- Uses the same wire and insulation types already approved for use elsewhere in your system
- High-voltage cables up to 30,000 V
- NPT, face seal fittings, SAE, QF/KF flange and custom options available
- Full cable harness options with connectorization available

HERMETIC FIBER OPTIC FEEDTHROUGHS | OPTISEAL™

- Custom bifurcated fiber assemblies with a combination of optical and copper conductors for complex camera systems
- Can seal any fiber optic cable including: standard patch cables, singlemode, multimode, fused glass rod, plastic fiber, ribbon fiber solutions and armored cables
- NPT and face seal fittings



CABLE HARNESSES

- Suitable for low-outgassing vacuum applications
- Assembled by IPC-620 Class III certified operators
- Value-added mechanical assembly available upon request
- Fully connectorized “plug-and-play” functionality
- Manufactured using automated wire cutters, crimpers and electrical test equipment ensuring quality and consistency

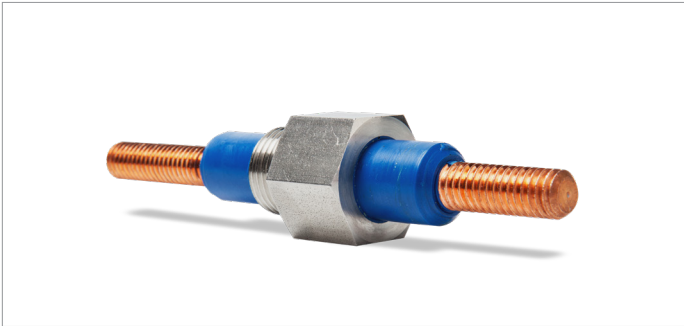
HERMETIC CIRCUIT BOARDS | CIRCUITSEAL™

- Flex, rigid, hybrid and flat flex cable (FFC) styles
- Ideal for applications with space or weight constraints
- Allows for easy use of active and passive signal conditioning at the glove box bulkhead



HERMETIC TERMINAL SEALS | STUDSEAL™

- Ideal for high-current/ampereage applications
- Transfers power in and out of sealed environments
- Up to 1,000 A and 15,000 VAC
- Easy connection points with simple ring terminals
- Custom stud electrical connections available



Solving Your Wire and Connector Sealing Challenges

For 75 years, Douglas Electrical Components has provided custom solutions to meet the demands of various industries including energy, alternative energy, power generation, transmission, and distribution markets. From cable harnesses to hermetic feedthrough assemblies, we look for new opportunities to push our boundaries even further to meet your unique application needs.

Visit www.douglaselectrical.com to learn more.

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