Douglas Electrical Components

Cryogenic Feedthroughs

Douglas Electrical Components manufactures customized feedthroughs for various types of cryogenic equipment and systems, from land-based to off-shore. Our hermetic epoxy ensures wires, terminals, cables, connectors, and fibers are hermetically sealed in the cryogenic environment. Hermetic epoxy allows for both design flexibility and high-density electrical connection points to minimize the number of feedthroughs in the cryogenic environment and thus potential leak paths.

Our epoxy is rated for cryogenic temperatures. Our design team has performed various tests under pressure and temperature cycles to ensure a hermetic bond between the electrical interface and mechanical housing. Flanges and housings are customizable to our customers' exact specifications. From large diameter bolt-on flanges to threaded connections, our hermetic electrical feedthroughs can directly integrate into existing mechanical interfaces.

APPLICATIONS

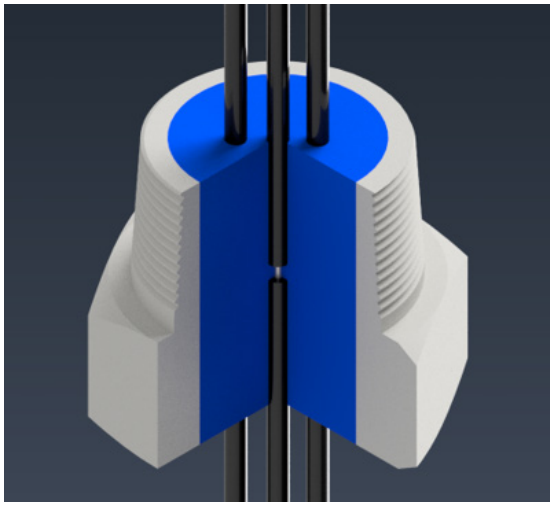
- Cryogenic storage tanks
- IoT Monitoring equipment
- Transportation vehicles
- Off-shore equipment

OPERATING CONDITIONS

- Operate up to 30,000V AC
- Hermetically seal against gases stored at cryogenic temperatures

OUR TECHNOLOGY

Hermetic sealing combines epoxy resin and a housing material such as stainless steel to encapsulate an electrical conductor such as a pin, stranded wire, or threaded stud. The conductor feeds through the opening with the epoxy curing to create a hermetic seal. Various types of epoxies can be used, which can yield varying results in hermetic performance, chemical compatibility, and outgassing. Our designs enable customers to increase signal density, mix conductor types, and integrate connectors and terminals for a hermetically sealed connection for power or signal.



TECHNICAL ADVANTAGES

- Directly integrate wires, cables, and terminals into a cryogenic environment without Coefficient of Thermal Expansion Challenges of other technologies
- Connect to wires, cables or connectors in the atmospheric environment for simplified system installation
- Create hermetic packages that meet global hazardous location standards including explosion-proof rated hermetic seals
- Create a high-density hermetic electrical feedthrough, minimizing feedthrough passages and potential leak points.
- Operate up to 30,000V AC for high power applications

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