VACUUM PRESSURE FEEDTHROUGH – FIBER OPTIC

FEATURES:
- Vacuum or Pressure Seal
- Fiber in Penetrating Style Can Be Protected in 900µm Loose Tubing or 3mm OD Stainless Steel Cable
- Rugged Design
- Compact
- Low Transmission Loss (Excluding Connector Losses)
- Easy Installation
- Wide Range of Connector Types
- Single Fiber and Four Fiber Penetrating Versions Available
- Receptacle Type, Penetrating Type
- LOW COST!

SPECIFICATIONS:
- Gas leak rate: less than 1x10⁻⁸ scc/sec (tested w/100 psig He)
- Transmission loss: See Table A
- Available sealants: Teflon and Viton
- Fiber Sizes: 125 to 1000 micron cladding diameters
- Weight: Less than 100 grams
- Temperature Range: -35°C to +90°C for receptacle type
  Penetrating type is dependent on the sealant material
  Viton: -20°C to +230°C
  Teflon: -180°C to +230°C

DESCRIPTION:
Fiber optic vacuum feedthroughs provide a simple way to use optical fibers with vacuum and pressure chambers. They are available in two versions - a penetrating feedthrough fiber version and a receptacle style version.

Penetrating versions have the fibers directly installed. One or four fiber versions are available. The fibers are installed in the factory. The fibers pass through a soft sealant material which is compressed by the compressive endcap and internal squeezer of the feedthrough. This conforms the sealant material surrounding the fiber, sealing the hole. A variety of sealant materials can be used. Viton is recommended for most applications up to 230°C, and Teflon for cryogenic applications.

A 1/4" NPT thread vacuum feedthrough is our standard. 1/8" NPT thread is also available for single channel assemblies with no connectors.

The receptacle style version contains a short fiber stub, which is sealed using a vacuum rated glue. An O-ring is used between the chamber wall and the flange to seal the system. Adapters for various standard connectors are available.

Table A

<table>
<thead>
<tr>
<th>Design Wavelength (nm)</th>
<th>1300/1550</th>
<th>980</th>
<th>780</th>
<th>633</th>
<th>488</th>
<th>400</th>
<th>320</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Wavelength Range (nm)</td>
<td>1290-1650</td>
<td>980-1550</td>
<td>760-980</td>
<td>600-850</td>
<td>450-650</td>
<td>400-450</td>
<td>320-400</td>
</tr>
<tr>
<td>Fiber Core/Cladding Size (microns)</td>
<td>9/125</td>
<td>6/125</td>
<td>5/125</td>
<td>4/125</td>
<td>3.5/125</td>
<td>3/125</td>
<td>2/125</td>
</tr>
<tr>
<td>Insertion Loss ¹,²</td>
<td>Maximum</td>
<td>0.8dB</td>
<td>1.2dB</td>
<td>1.5dB</td>
<td>2.5dB</td>
<td>3.0dB</td>
<td>3.5dB</td>
</tr>
</tbody>
</table>

Notes: ¹- As measured using FC connectors, with Super PC Finish (Two connection on each side is considered).
²- As measured when mating to a matching connector.
ORDERING INFORMATION:

Penetrating Feedthrough Type: VAC-0A-S-FMJ-XY-W-a/b-1-L

- **Feedthrough Type:** 1 for Single Channel, 4 for Four Fiber Channel
- **Sealant Material:** T for Teflon, V for Viton
- **Fiber Type:** M for Multimode, S for Singlemode, P for Polarization Maintaining, QM for High Power Multimode, QS for High Power Singlemode, QP for High Power PM
- **Fiber Length,** in meters, on each side of the feedthrough.
  - a: Compressive End Cap side
  - b: Feedthrough Body side
- **Fiber Core/Cladding in Microns:**
  - 9/125 for 1300/1550nm SM fiber
- **Wavelength:** Specify in nanometers
  - For multimode fibers specify either UVVIS for ultraviolet/visible wavelengths or IRVIS for visible/infrared wavelengths
- **Connector Code:** 3S = Super NTT-FC/PC, 3U = Ultra NTT-FC/PC, 3A = Angled NTT-FC/PC, 8 = AT&T-ST, 8U = Ultra AT&T-ST, SC = SC, SCU = Ultra SC
- **Receptacle Code:** (one on each end)
  - 3 = For FC Connectors
  - 3A = Angle polished FC Connector
  - For other type connectors we can provide receptacle type feedthrough with above mentioned connectors along with applicable hybrid adaptors on each side.
- **See Table 6 of the Standard Tables for other connectors.**

For other types we can provide it with hybrid adapters.

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Receptacle Type:

- **Receptacle Code:** (one on each end)
  - 3 = For FC Connectors
  - 3A = Angle polished FC Connector
- **Wavelength:** Specify in nanometers
  - (Example: 1550 for 1550nm)

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VAC-XY-W-a/b-F

- **Fiber Type:** M for Multimode, S for Singlemode
- **Core/Cladding Diameter,** in microns
- **Wavelength:** Specify in nanometers
  - (Example: 633 for 633nm)

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Single Channel Penetrating Feedthrough

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Four Channel Penetrating Feedthrough

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Receptacle Style Feedthrough