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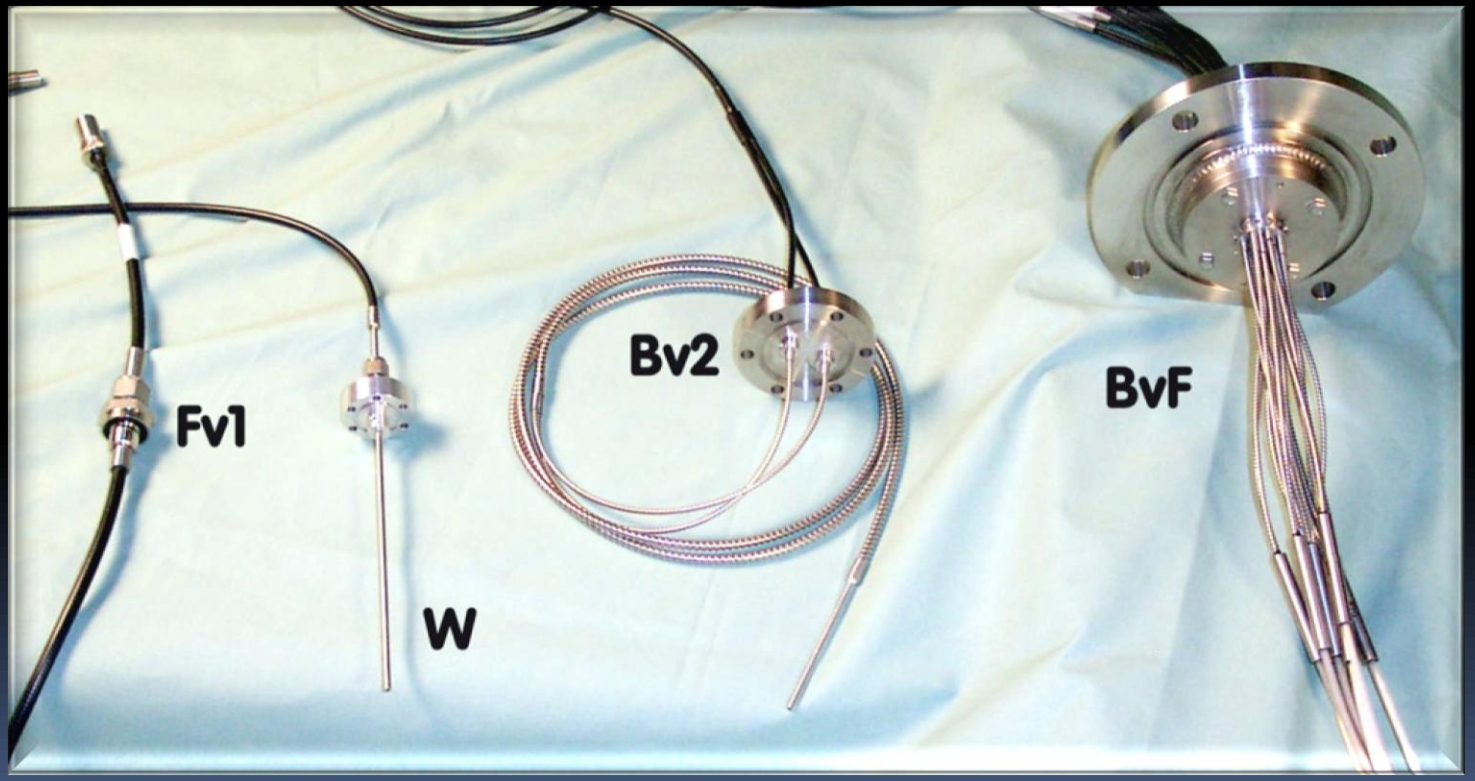
July 2009

VACUUM PASSTHRU PRODUCTS

Philtec provides a unique line of vacuum passthru hardware that enables measurements from low vacuum to UHV applications.



Summary of Vacuum States

Vacuum Quality	Torr	Pascal	Philtec Model
Ambient	760	101 kPa	
Low	760 to 25	100 to 3 kPa	
Medium	25 to 1 E^{-3}	3 kPa to 100 mPa	F_v1, F_v2
High	1 E^{-3} to 1 E^{-7}	100 mPa to 1 nPa	B_v1, B_vF, W
Ultra High	1 E^{-9} to 1 E^{-12}	100 nPa to 100 pPa	B_v2, B_v3, B_v4 B_vw, W_b
Outer Space	1 E^{-6} to <3 E^{-17}	100 uPa t0 <fPa	
Perfect	o	o	

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Hardware Summary

Model	Usage	Sensor Type	Vacuum Rating, Torr
B_v1	Single/Dual Channel	D or RC	10^{-7}
B_v2	Single Channel	D	10^{-11}
B_v3	Single Channel	RC	10^{-11}
B_v4	Dual Channel	D	10^{-11}
B_vF – CF	Multi Channel	D and RC	10^{-7}
B_vF – ISO	Multi Channel	D and RC	10^{-7}
B_vW	Single Channel	D or RC	10^{-11}
F_v1	Single Channel	D or RC	10^{-4}
F_v2	Single Channel	D or RC	10^{-4}
W	Single Channel	D or RC	10^{-7}
W_b	Single Channel	D or RC	10^{-11}

For specifications, see the individual Product Data Sheets at **http://www.philtec.com/datasheetlist.htm**

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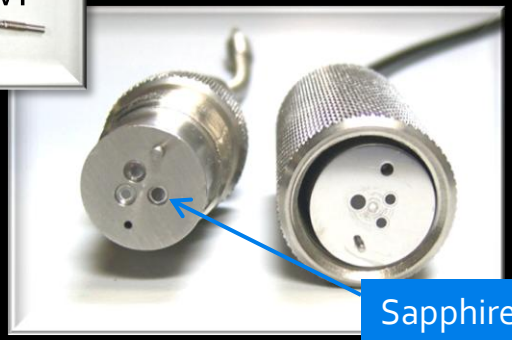
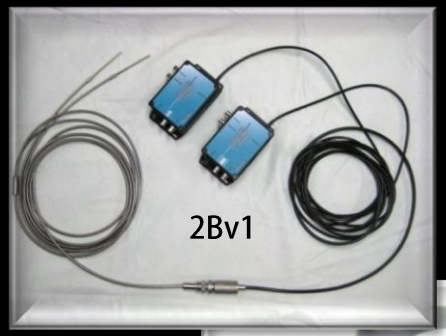
Model Bv1 ··· Compact Passthru

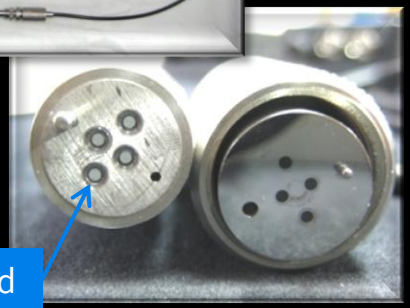
Vacuum PassThru for 10^{-7} Torr

Single Channel





Dual Channel



Sapphire Windows Recessed & Epoxied On Vacuum Side

Bv1 Includes An Ultra-Torr® Fitting

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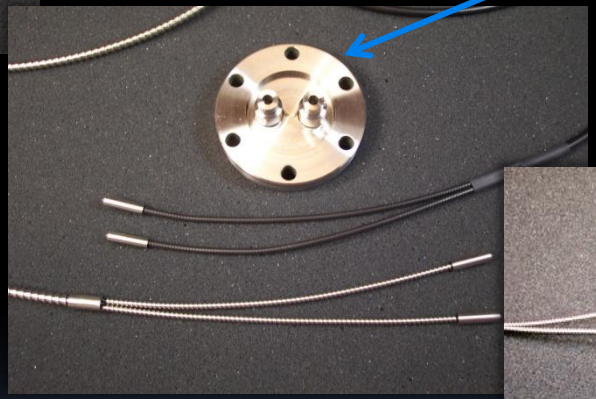
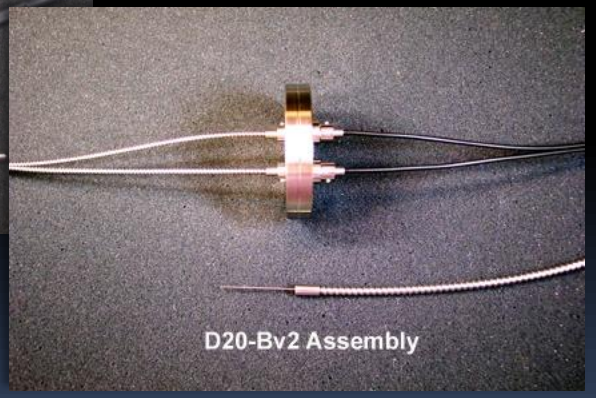
Model Bv2 ··· for D Model Sensors

Vacuum PassThru for 10^{-11} Torr

Sapphire Windows Welded Inside Flange Ports

Ø 2.75″ CF Flange





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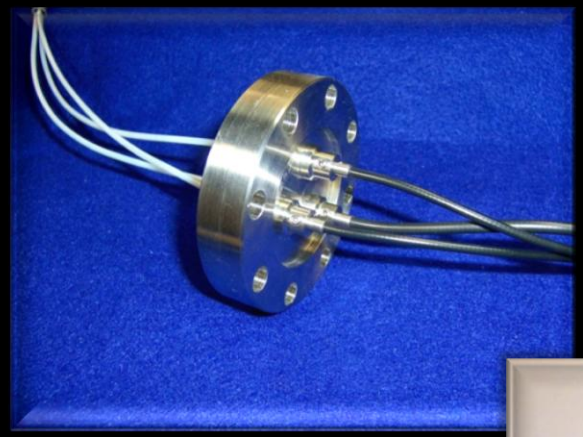
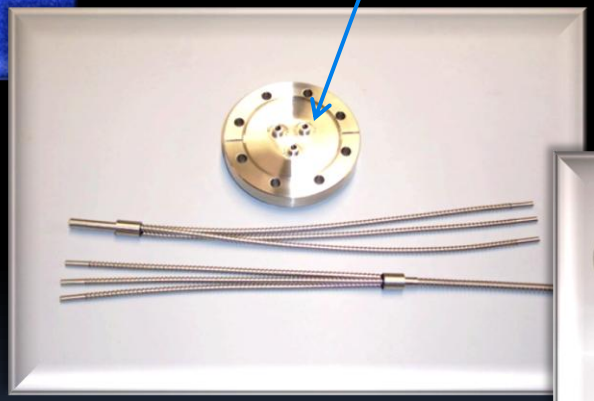
Model Bv3 ··· for RC Model Sensors

Vacuum PassThru for 10^{-11} Torr



Sapphire Windows Welded Inside Flange Ports

Ø 3.375″ CF Flange



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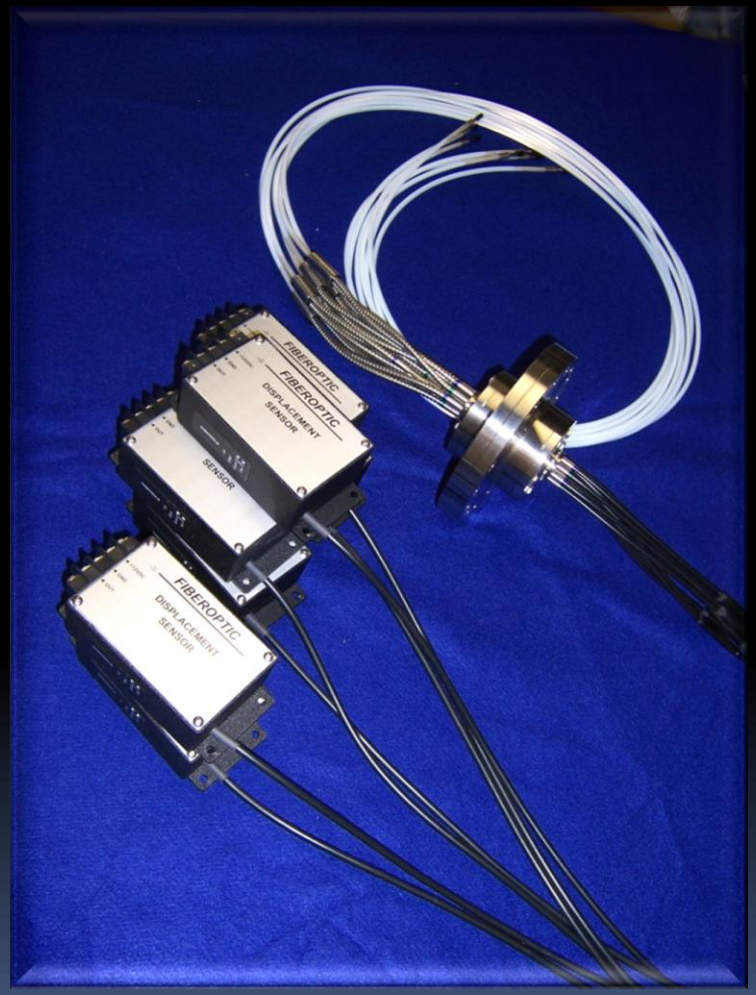
Multi-Channel PassThru Assemblies



Fused Fiber Optic Image Rod
Passes Light Signals From
Targets In Vacuum
To Electronics In Air

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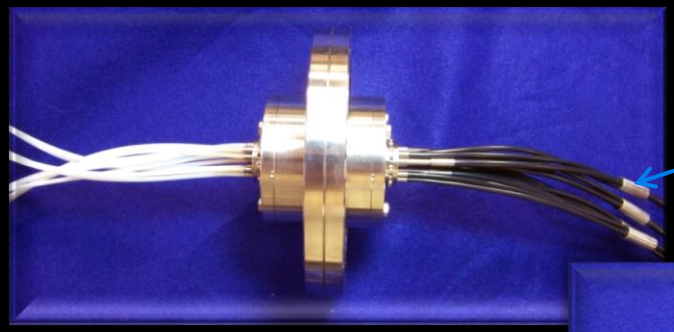
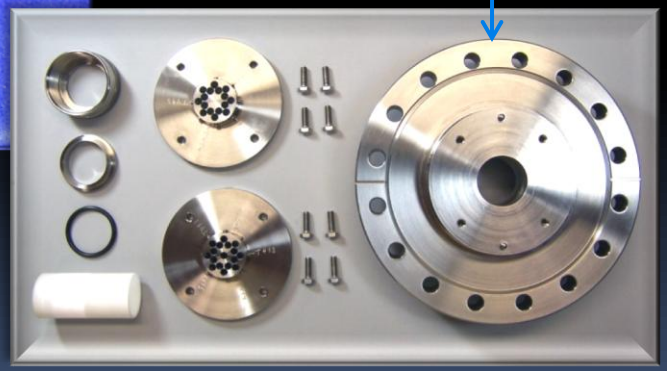
Model BvF-CF ··· for RC & D Type Sensors

Multi-Channel Vacuum PassThru for 10^{-7} Torr



Up To 16 Fiber Optic Sensor Legs Can Be Inserted Into Ports on Air & Vacuum Sides.

Ø 6″ CF Flange



Swagelok Ultra-Torr® Fitting Welded To The I.D. Of The BvF Seals The Image Passthru Rod

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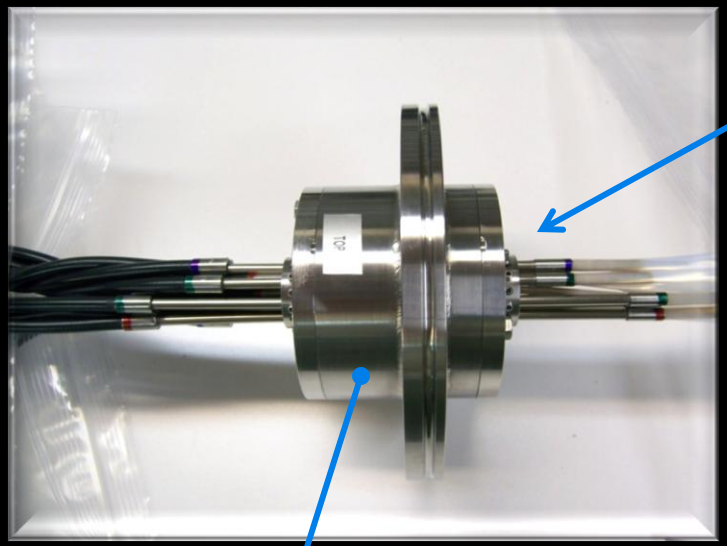
Model BvF-ISO ··· for RC & D Type Sensors

Multi-Channel Vacuum Pass Thru for 10^{-7} Torr



Up To 16 Fiber Optic Sensor Legs Can Be Inserted Into Ports on Air & Vacuum Sides.

Internally, an Ultra-Torr® Compression Fitting Seals Fiber Optic Image Rod Against Vacuum

ISO-100 K Flange

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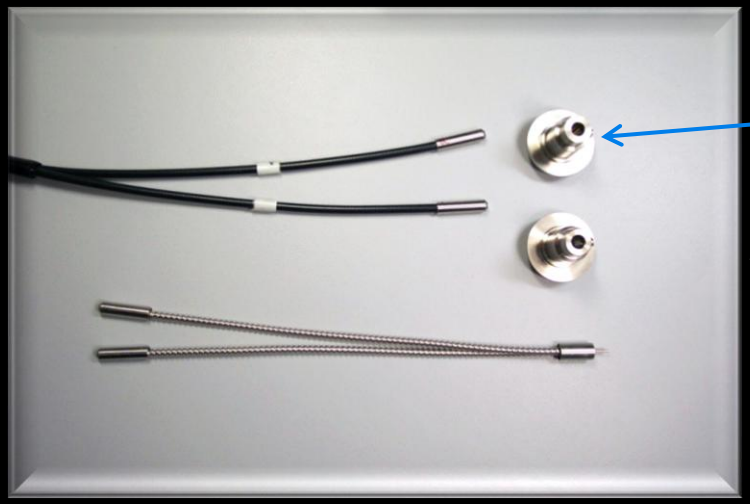
Model BvW ··· for D or RC Type Sensors

Vacuum PassThru for 10^{-11} Torr

D Models Require 2 BvW Flanges
RC Models Require 3 Flanges



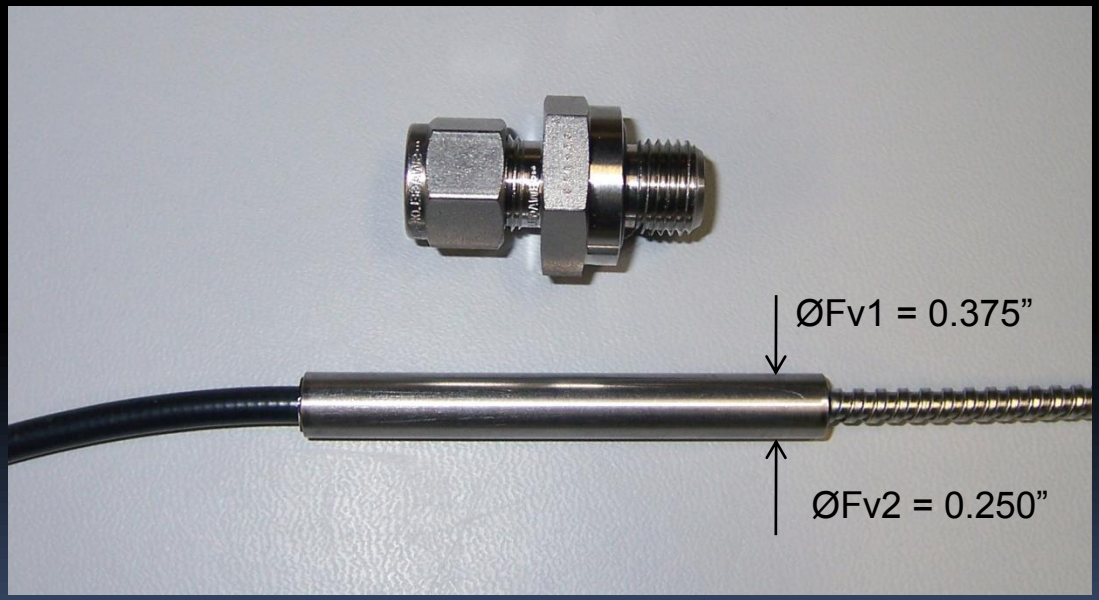
Ø 1″ Weldable Flange

Sapphire Window Welded Inside Flange Ports

Option Fv1/Fv2 ··· for Low To Moderate Vacuum

Vacuum Pass Thru for 10^{-4} Torr

- A solid SS section is added to the fiberoptic cable.
- The fibers pass thru the section and are potted in with epoxy.
- A straight thread o-ring compression fitting seals to the bulkhead.



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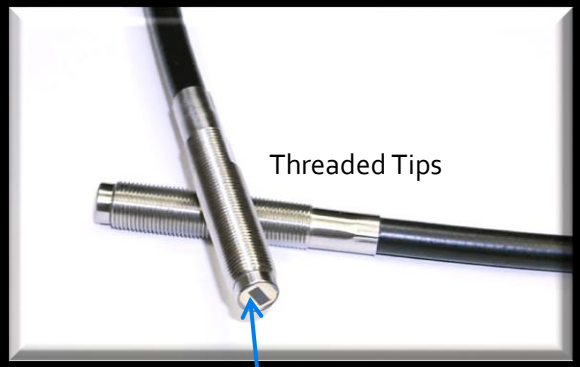
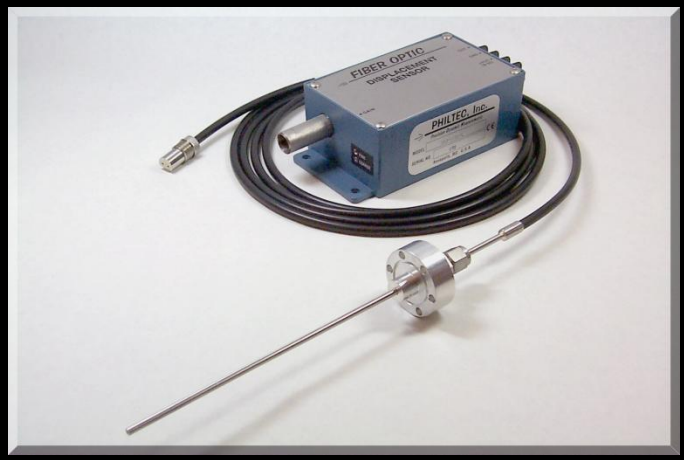
Option W – Window Probes for Tips In Vacuum

Vacuum Pass Thru for 10^{-7} Torr

- For High Pressure Support
- For Vacuum Applications



A sapphire window is recessed into the sensor tip and epoxied to the face of the fiber bundle to seal against high pressure or vacuum.



Compression Fitting with Nylon Ferrules
Allows Gap Adjustment of Probe Tip

O-Ring Face Seal Fitting Brazed To Probe
Has Fixed Tip Length

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Option W_b – Brazed Window Probes

Vacuum Pass Thru for 10^{-11} Torr

- For Pulsating Pressure Support
- For High Temperature Pressure Support
- For High Vacuum Applications
- For Failsafe Window Performance

A sapphire window is brazed onto the sensor tip to seal against high pressure or vacuum.