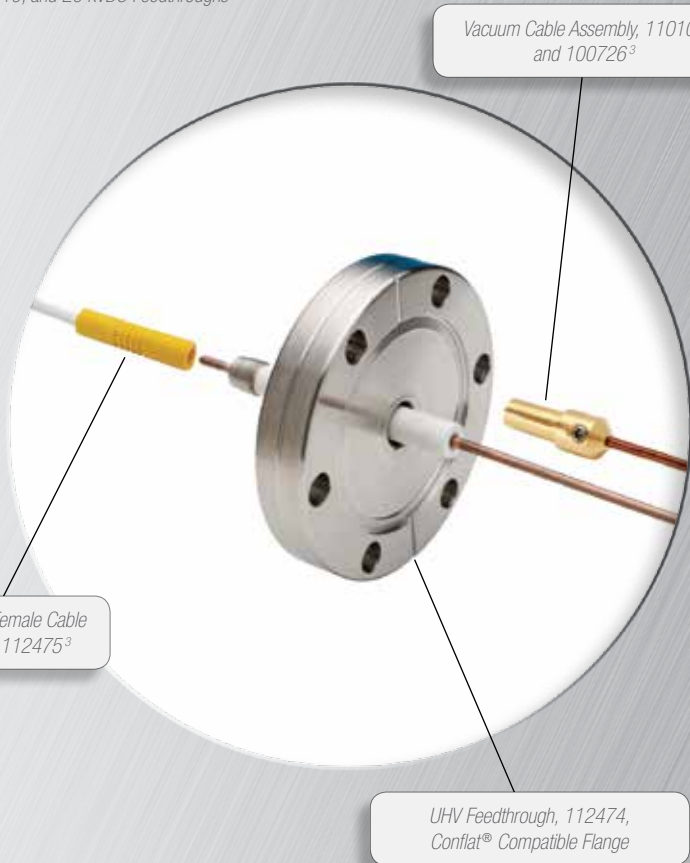




High Power

5, 10, and 20 kVDC Feedthroughs



Features

- High Voltage to 20 kVDC
- High Current to 30 Amps
- UHV Compatible Construction
- Conflat® and ISO Compatible Mounts
- Kapton® Insulated Vacuum Cables
- Air Service Cables / Boot Connectors
- Custom Solutions on Request

Specifications

Electrical

Voltage ¹ , Maximum	5, 10 and 20 kVDC
Current ² , Per Pin Maximum @ 20°C	30 A

Material

Shell	304 Stainless Steel
Conductor	OFE Copper
Seal	Vacuum Grade Braze Alloy
Insulator	High Purity Alumina Ceramic
Connector, Air / Vacuum	Silicone / Au-plated Be-Cu

Vacuum Range

UHV, Ultrahigh vacuum	1x10 ⁻¹⁰ Torr
HV, High vacuum	1x10 ⁻⁸ Torr

Temperature Range²

Feedthrough	250°C
Flange Mount, Conflat®	450°C
Flange Mount, ISO	150°C
Thermal Gradient	25°C / Minute Maximum

Notes

1. Electrical ratings are maximum test values, with vacuum side at $\leq 1 \times 10^{-4}$ Torr. Feedthroughs are designed for high power applications.
 2. Overall assembly ratings must be adjusted to that of its lowest rated component. For cryogenic service, the lowest recommended temperature is -200°C
 3. Unless designated a 'kit,' connectors and cable assemblies are not included with feedthrough and must be purchased separately.
- § Unless specified otherwise, dimensional units in all sections of this catalog are expressed in inches.

High Power Feedthroughs

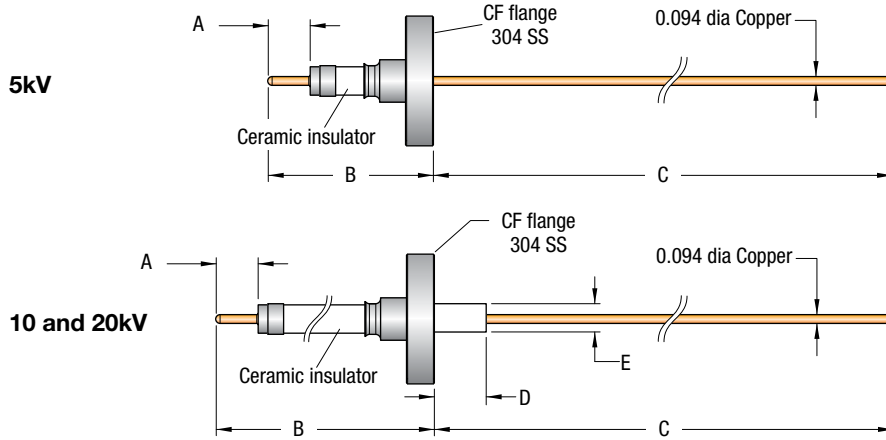
Accu-Glass Products' High Power hermetic feedthroughs are available in three power ratings up to 20,000 volts and 30 amps.

The maximum standard ratings are:

- 5 kVDC 30A
- 10 kVDC 30A
- 20 kVDC 30A

For custom feedthroughs or for ratings other than the standards, contact the factory. All three versions are offered on Conflat® compatible CF metal seal and ISO-KF elastomer seal flanges.

High purity Alumina ceramic insulators provide electrical isolation and copper conductors provide maximum current capacity. The high purity Alumina ceramic is bonded and sealed to low expansion metals in a vacuum furnace environment using precious and semi-precious high temperature vacuum tube grade braze alloys.



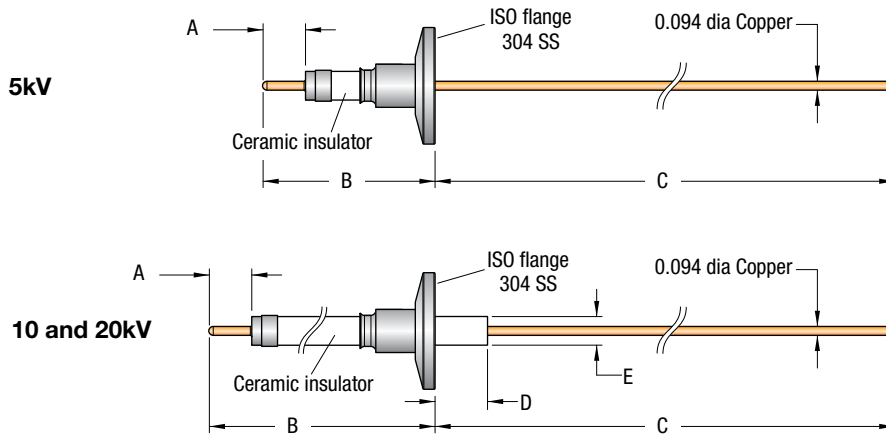
CF Flange — 5k to 20k VDC, 30 Amp / 250°C / UHV to 1×10^{-10} Torr

Flange Type	OD	Volts kVDC	A	B	C	D	E	Model Number	Part Number	Unit Price \$
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Feedthrough — Feedthrough without Cables

133 CF	1.33	5	0.43	1.69	5.34	—	—	HP-05-133	112467	142
133 CF	1.33	10	0.43	2.11	4.92	0.63	0.23	HP-10-133	112468	142
133 CF	1.33	20	0.43	2.25	4.75	0.50	0.28	HP-20-133	112470	184
275 CF	2.73	5	0.43	1.69	5.34	—	—	HP-05-275	112472	153
275 CF	2.73	10	0.43	2.11	4.92	0.63	0.23	HP-10-275	112469	153
275 CF	2.73	20	0.43	2.25	4.75	0.50	0.28	HP-20-275	112474	195

Compatible with Conflat® flanges and hardware



ISO KF Flange — 5k to 20k VDC, 30 Amp / 150°C / HV to 1×10^{-8} Torr

Flange Type	OD	Volts kVDC	A	B	C	D	E	Model Number	Part Number	Unit Price \$
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Feedthrough — Feedthrough without Cables

NW16 KF	1.18	5	0.43	1.79	5.21	—	—	HP-05-K16	112476	142
NW16 KF	1.18	10	0.43	2.20	4.85	0.58	0.23	HP-10-K16	112477	142
NW16 KF	1.18	20	0.43	2.33	4.67	0.45	0.28	HP-20-K16	112479	184
NW40 KF	2.16	5	0.43	1.69	5.31	—	—	HP-05-K40	112483	153
NW40 KF	2.16	10	0.43	2.10	4.95	0.68	0.23	HP-10-K40	112478	153
NW40 KF	2.16	20	0.43	2.23	4.77	0.55	0.28	HP-20-K40	112484	195

Compatible with ISO 2861/1 specification flanges and hardware



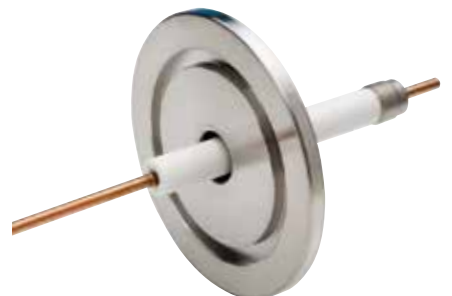
112467 / 5 kV Power Feedthrough (Air Side)



112474 / 20 kV Power Feedthrough (Vacuum Side)

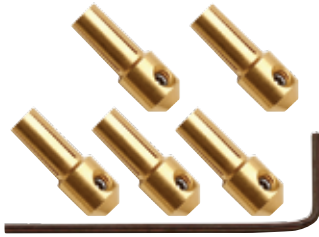


112477 / 10 kV Power Feedthrough (Air Side)



112484 / 20 kV Power Feedthrough (Vacuum Side)

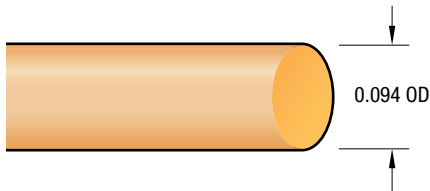
Power



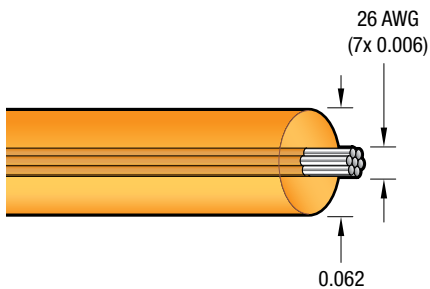
110103 / Push-On Connectors



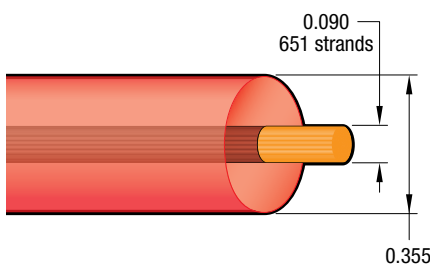
110112 / In-Line Connectors



111322 / Copper Bare Conductor



100726 / Kapton Insulated High Voltage Wire



111660 / Silicone Insulated High Voltage Wire

Ultrahigh Vacuum Power Components

Push-On Connectors are available to accept a 0.094 standard pin size. They are constructed of UHV compatible gold-plated beryllium-copper material, and the included set screw is stainless steel. Maximum temperatures are 200°C in vacuum and 150°C in air.

In-Line Connectors are available to accept a 0.120 standard pin size. They are constructed of UHV compatible gold-plated beryllium-copper material, and the two included screws are stainless steel. Maximum temperatures are 400°C in vacuum and 150°C in air.

Components — See Above / UHV to 1x10⁻¹⁰ Torr

Accepts Pin Size	Well Wire ID	OD	Length	Qty.	Model Number	Part Number	Unit Price \$
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Push-On Connectors

0.094	0.052	0.250	0.690	5/pkg	POC94-5	110103	40
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In-Line Connectors

0.120	0.120	0.250	0.560	5/pkg	ILC120-5	110112	41
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Bare Copper Conductor

Copper Conductor is an ultra-pure electronic grade copper. Suitable for ultrahigh vacuum and high temperature use. Multiple quantities will be sold in one continuous length.

Conductor — 400°C / UHV to 1x10⁻¹⁰ Torr

Length	Conductor OD	Nominal AWG	Qty.	Model Number	Part Number	Unit Price \$
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Copper Conductor

1 Foot	0.094	—	1/pkg	CU-BC-094-1	111322	8
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See page 115 for ceramic insulation beads.

High and Ultrahigh Vacuum Wire

High Voltage Wire, Kapton Insulated is suitable for most HV and UHV applications. The Kapton insulation has a dielectric strength of 10kVDC.

High Voltage Wire, Silicone Insulated is suitable for most HV applications. The halogen-free silicone insulation has a dielectric strength of 30kVDC.

High Voltage Wire — 3 kVAC, 10kVDC / 3 Amp / 250°C / UHV to 1x10⁻¹⁰ Torr

Wire AWG	Strands x Length	Insulation Dia.	Resistance @ 20°C	Min. Bend Radius	Model Number	Part Number	Unit Price \$
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Kapton Insulated — 7 Strands

26	15' 7x .006	0.062	159Ω/km	1.10	TYP22-15	100726	75
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High Voltage Wire — 30 kVDC / 20 Amp / 250°C / 300°C Temporary / HV to 1x10⁻⁸ Torr

Wire AWG	Strands x Length	Insulation Dia.	Resistance @ 20°C	Min. Bend Radius	Model Number	Part Number	Unit Price \$
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Silicone Insulated — 651 Strands

11	15' 651 x .007	0.355	-	1.10	SIL-TYP26-15	111660	220
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Air-service High Power Cable Assemblies

Accu-Glass Products High Power Cable Assemblies are designed to provide safe air side connections for 5 to 20 kVDC Power Feedthroughs. They are rated 26 Amps, up to 125°C. All cables are 96 inches long, 12 AWG stranded copper conductor with a silicone rubber insulation. Termination on one end is a gold-plated beryllium copper contact covered with a molded silicone rubber boot insulator.

To provide as much safety as possible, the molded silicone rubber insulator extends beyond the beryllium copper contact. However, whenever high power products are used, power should be turned off prior to installation or handling of the products.

Cable Assemblies — 125°C / Air Atmosphere

Fits Contact Size	Cable		Dia.	Length	Model Number	Part Number	Unit Price \$
	Size	Rating					

High Power Cable Assemblies

.094	12 AWG	26 Amps, 5kVDC	0.44	96	HP-AIR-05-96SC	112475	90
.094	12 AWG	26 Amps, 10kVDC	0.48	96	HP-AIR-10-96SC	112481	90
.094	12 AWG	26 Amps, 20kVDC	0.48	96	HP-AIR-20-96SC	112485	100



112475 / Power Boot Cable Assembly



112485 / Power Boot Cable Assembly

Power