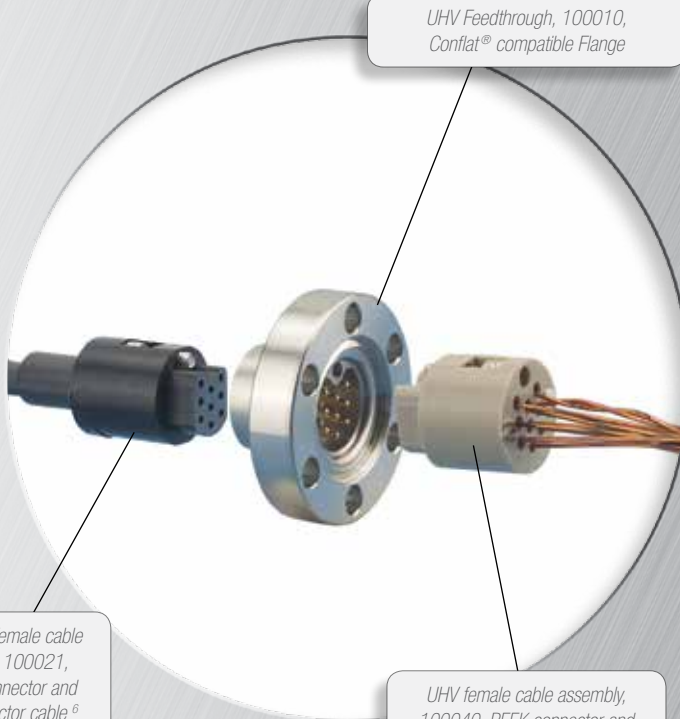




### Subminiature-C™

Accu-Glass 9-Pin Feedthrough



UHV Feedthrough, 100010, Conflat® compatible Flange

Air-service female cable assembly, 100021, Delrin® connector and nine conductor cable<sup>6</sup>

UHV female cable assembly, 100040, PEEK connector and Kapton® insulated wire<sup>6</sup>

### Subminiature-C™ Interface

Accu-Glass Products Subminiature-C™ multipin hermetic feedthroughs are designed for applications where space is limited or where Subminiature-D connections will not fit. This compact and unique 9-pin design allows installation into 1.33 inch CF metal seal and ISO NW16 KF elastomer seal flanges. Nine gold-plated pins are arranged in a straight through pin-to-pin design and are hermetically sealed and electrically insulated in a stainless steel shell using the latest in glass-ceramic bonding technology.

Subminiature-C™ feedthroughs and cables are sold individually or as kits, where each kit contains a feedthrough and both vacuum and air side cable assemblies.

Air and vacuum side connectors are fitted with captured stainless steel socket head screws that provide a means of securely locking them to their mating feedthroughs. On the vacuum side, Kapton® insulated cable assemblies fitted with PEEK connectors are available to meet the rigorous demands of ultrahigh vacuum environments. In-vacuum connector screws are vented where required and the feedthrough's screw-boss functions as a connection polarizing key. Air to vacuum pin position is identified with a permanent surface mark, which clearly locates pin assignments.

### Features

- Subminiature-C™ 9-Pin Interface
- High temperature rated to 250°C
- UHV compatible construction
- Conflat® and ISO NW compatible mounts
- Kapton® Insulated Vacuum Cables
- PEEK or Macor® Connectors with Locking Screws
- Air Service Cables / Connectors
- Custom Solutions on Request

### Specifications

#### Electrical

Voltage <sup>1</sup> , Maximum	500 VDC
Current <sup>2</sup> , Per Pin Maximum @ 20°C	5 A

#### Material

Shell	304 Stainless Steel
Pins	Au plated, Ni-Fe alloy
Seal / Insulator	Glass-Ceramic
Connector, Air	Delrin®
Connector, Vacuum <sup>3</sup>	PEEK
Connector, Vacuum, High Temperature	Macor® Ceramic

#### Vacuum Range<sup>4</sup>

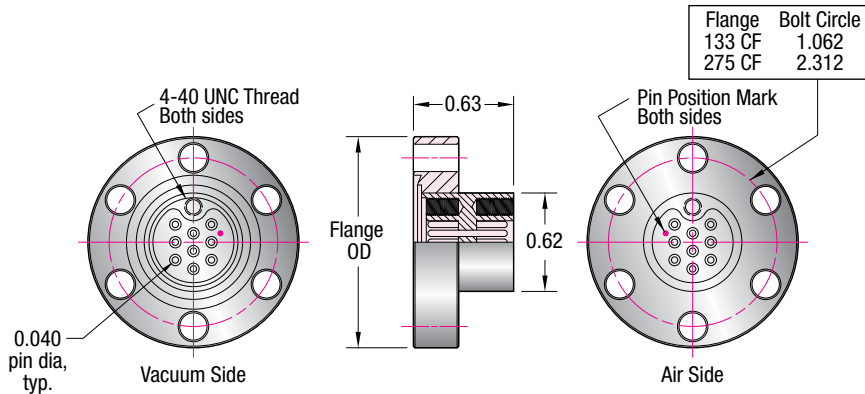
UHV, Ultrahigh vacuum	1x10 <sup>-10</sup> Torr
HV, High vacuum	1x10 <sup>-8</sup> Torr

#### Temperature Range<sup>5</sup>

Feedthrough	-200 to 250°C
Flange Mount, Conflat®	-200 to 450°C
Flange Mount, ISO	-26 to 150°C
Connector / Cable, Air	80°C
Connector / Cable, Vacuum	250°C
Connector, Ceramic	400°C
Thermal Gradient	25°C / Minute Maximum

#### Notes

1. Electrical ratings are maximum test values, with feedthrough's vacuum side at  $\leq 1 \times 10^{-4}$  Torr. Feedthroughs are intended for instrumentation applications carrying low level signal voltage and current.
  2. For proper heat dissipation, a maximum of 20% of the pins on a feedthrough may carry the maximum pin current at any given time.
  3. PEEK is a polyether ether ketone thermoplastic.
  4. Leak tested to  $5 \times 10^{-10}$  Standard cc/sec of He.
  5. Overall assembly ratings must be adjusted to that of its lowest rated component. For cryogenic service, the lowest recommended temperature is -200°C
  6. 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.



• Pin position mark reverses position from vacuum side to air side.

### CF Flange — 9-Pin Circular / 500 VDC, 5 Amp / 250°C / UHV to 1x10<sup>-10</sup> Torr

Number Contacts	Flange Type	OD	Kit Cable Lengths	Model Number	Part Number	Unit Price \$
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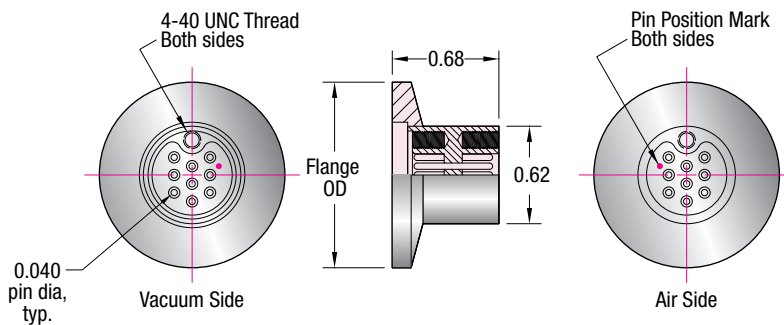
#### Kit — Feedthrough with Female Cable Assemblies

9	133 CF	1.33	96 Inch Air / 19 Inch Vacuum	9C-KIT-133	<b>100000</b>	515
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#### Feedthrough — Feedthrough without Cables

9	133 CF	1.33	—	9C-133	<b>100010</b>	265
9	275 CF	2.73	—	9C-275	<b>100013</b>	295
18	275 CF	2.73	Two 9-Pins on 0.750 Centers	9C2-275	<b>100012</b>	520

Compatible with Coniflat® flanges and hardware



• Pin position mark reverses position from vacuum side to air side.

### ISO KF Flange — 9-Pin Circular / 500 VDC, 5 Amp / 150°C / HV to 1x10<sup>-8</sup> Torr

Number Contacts	Flange Type	OD	Kit Cable Lengths	Model Number	Part Number	Unit Price \$
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#### Kit — Feedthrough with Female Cable Assemblies

9	NW16 KF	1.18	96 Inch Air / 19 Inch Vacuum	9C-KIT-K16	<b>100001</b>	515
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#### Feedthrough — Feedthrough without Cables

9	NW16 KF	1.18	—	9C-K16	<b>100011</b>	265
9	NW25 KF	1.57	—	9C-K25	<b>100016</b>	280
9	NW40 KF	2.16	—	9C-K40	<b>100015</b>	295
18	NW40 KF	2.16	Two 9-Pins on 0.710 Centers	9C2-K40	<b>100014</b>	520

Compatible with ISO 2861/1 specification flanges and hardware



**100000** / UHV CF 9-Pin Complete Kit



**100012** / UHV CF 2 x 9-Pin Feedthrough (Vacuum Side)



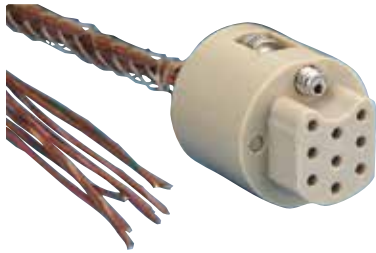
**100001** / HV ISO-KF 9-Pin Complete Kit



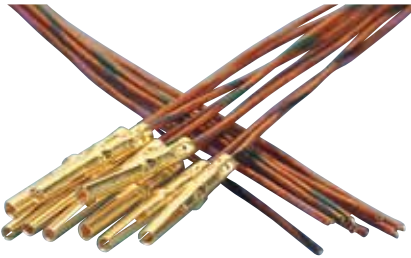
**100011** / HV ISO-KF 9-Pin Feedthrough (Vacuum Side)



**100030** / Male Pin UHV  
Connector to Cable



**100040** / Female Socket UHV  
Connector to Cable



**100060** / Female Socket UHV  
Contact to Cable



**100120** / Female Socket UHV  
Connector to Connector Extension Cable

### Ultrahigh Vacuum Round Cable Assemblies

*Connector to Cable* UHV round cable assemblies are fitted with PEEK Subminiature-C™ female or male connectors at one end and nine, non-terminated, Kapton® insulated wires at the other. The female cable connectors mate directly onto the vacuum-side of nine-pin Subminiature-C™ feedthroughs shown on page 9, or with the male in-vacuum cable connectors. The cable jacket is a PEEK braid with a nominal diameter of 0.14 inches. The nine wires are Kapton® insulated 28 AWG silver plated copper conductors, stranded 7 x 0.005.

*Contact to Cable* UHV round cable assemblies include male or female contacts on one end and nine, non-terminated, Kapton® insulated cable at the other.

*Connector to Connector Extension Cables* are fitted with PEEK Subminiature-C™ female connectors on both ends of a 19-inch UHV round cable.

### Round Cable Assemblies — 9-Pin Circular / 250°C / UHV to 1x10<sup>-10</sup> Torr

Number Contacts	Wire		Connector			Model Number	Part Number	Unit Price \$
	Length	Dia.	Gender	OD	Length			
<b>Connector to Cable</b>								
9	19	7x 0.005	M	0.60	0.65	CKAP-C9-19PC	<b>100030</b>	180
9	39	7x 0.005	M	0.60	0.65	CKAP-C9-39PC	<b>100031</b>	215
9	19	7x 0.005	F	0.60	0.75	CKAP-C9-19SC	<b>100040</b>	180
9	39	7x 0.005	F	0.60	0.75	CKAP-C9-39SC	<b>100041</b>	215
<b>Contact to Cable<sup>1</sup></b>								
9	19	7x 0.005	M	—	—	CKAP-C9-19P	<b>100050</b>	55
9	39	7x 0.005	M	—	—	CKAP-C9-39P	<b>100051</b>	90
9	19	7x 0.005	F	—	—	CKAP-C9-19S	<b>100060</b>	55
9	39	7x 0.005	F	—	—	CKAP-C9-39S	<b>100061</b>	90
<b>Connector to Connector Extension</b>								
9	19	7x 0.005	F / F	0.60	0.75	CKAP-C9-192SC	<b>100120</b>	315

<sup>1</sup>. They do not include PEEK connectors and will not allow subsequent connector installation. Wires must be threaded through the connector back-piece before crimping contacts

See page 8 for **Specifications**

## Ultrahigh Vacuum Ribbon Cable Assemblies

**Connector to Cable** UHV ribbon cable assemblies are fitted with PEEK Subminiature-C™ female or male connectors at one end and nine, non-terminated, Kapton® insulated ribbon cable at the other. The female cable connectors mate directly onto the vacuum-side of nine-pin Subminiature-C™ feedthroughs shown on page 9, or with the male in-vacuum cable connectors. The ribbon cable jacket is a PEEK weave with a 0.04 x 0.40 inch nominal cross-section. The nine wires are 28 AWG silver plated copper conductors, stranded 7 x 0.005.

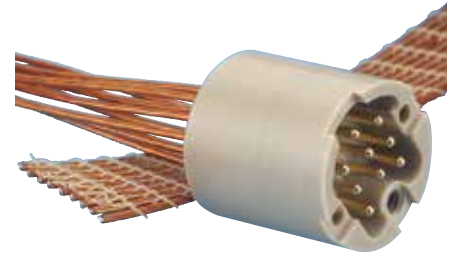
**Contact to Cable** UHV ribbon cable assemblies include male or female contacts on one end and nine, non-terminated, Kapton® insulated ribbon cable at the other.

**Connector to Connector Extension** cables are fitted with PEEK Subminiature-C™ female connectors on both ends of a 19-inch UHV ribbon cable.

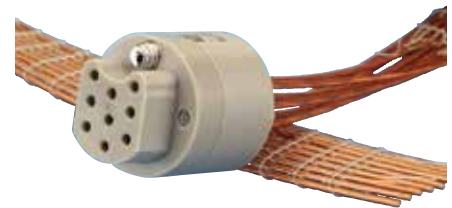
## Ribbon Cable Assemblies — 9-Pin Circular / 250°C / UHV to 1x10<sup>-10</sup> Torr

Number Contacts	Wire		Connector			Model Number	Part Number	Unit Price \$
	Length	Dia.	Gender	OD	Length			
<b>Connector to Cable</b>								
9	19	7x 0.005	M	0.60	0.65	CKAP-R9-19PC	<b>100100</b>	196
9	39	7x 0.005	M	0.60	0.65	CKAP-R9-39PC	<b>100101</b>	249
9	19	7x 0.005	F	0.60	0.75	CKAP-R9-19SC	<b>100110</b>	196
9	39	7x 0.005	F	0.60	0.75	CKAP-R9-39SC	<b>100111</b>	249
<b>Contact to Cable<sup>1</sup></b>								
9	19	7x 0.005	M	—	—	KAP-R9-19P	<b>100240</b>	75
9	39	7x 0.005	M	—	—	KAP-R9-39P	<b>100241</b>	125
9	19	7x 0.005	F	—	—	KAP-R9-19S	<b>100250</b>	75
9	39	7x 0.005	F	—	—	KAP-R9-39S	<b>100251</b>	125
<b>Connector to Connector Extension</b>								
9	19	7x 0.005	F / F	0.60	0.75	CKAP-R9-192SC	<b>100130</b>	340

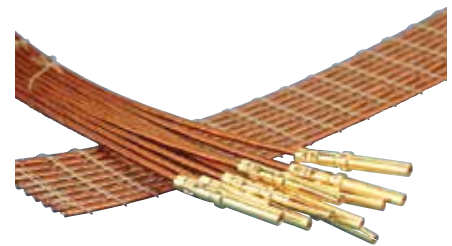
<sup>1</sup>. They do not include PEEK connectors and will not allow subsequent connector installation. Wires must be threaded through the connector back-piece before crimping contacts



**100100** / Male Pin UHV  
Connector to Cable



**100110** / Female Socket UHV  
Connector to Cable



**100250** / Female Socket UHV  
Contact to Cable

Instrumentation

See page 8 for **Specifications**



**100150** / Female PEEK Connector  
(Contacts sold separately)



**100140** / Male PEEK Connector  
(Contacts sold separately)



**112700** / Female Ceramic Connector  
(Contacts sold separately)



**112701** / Male Ceramic Connector  
(Contacts sold separately)



**100180** / Female Contacts  
**110908** / High Duty Cycle Contacts

### Ultrahigh Vacuum Connectors and Contacts

PEEK and Macor® ceramic connectors do not include contacts and must be purchased separately. High-use stainless steel Type-T1 contacts are recommended for use in connectors where plug-in cycles will exceed 3 cycles per day.

Macor® ceramic connectors are designed for high temperature and extreme environments not suitable for our standard PEEK connectors. Note that wires must be threaded through connector back-piece before crimping contacts.

### Connectors<sup>1</sup> — 9-Pin Circular / UHV to 1x10<sup>-10</sup> Torr

Number Contacts	Connector			Use Type-T1 Contacts	Model Number	Part Number	Unit Price \$
	Gender	Dia.	Length				

#### PEEK — Polymer Shell / 250°C

9	M	0.61	0.64	Male	9C-PKP	<b>100140</b>	120
9	F	0.61	0.74	Female	9C-PKS	<b>100150</b>	120

#### Macor® — Ceramic Shell / 400°C

9	M	0.61	0.64	Male	9C-MCP	<b>112701</b>	340
9	F	0.61	0.74	Female	9C-MCS	<b>112700</b>	340

1. Note temperature rating differences

### Contacts, Type-T1<sup>1,2</sup> — 250°C / UHV to 1x10<sup>-10</sup> Torr

Number Contacts	Contact		Wire	Model Number	Part Number	Unit Price \$
	Gender	Dia.	Dia. / Gauge			

#### Contacts, Type-T1 — Standard / 10 per Pack

1 Pack	M	0.04	.043-.046 / 20-24 AWG	GP-10	<b>100170</b>	24
1 Pack	M	0.04	.023-.027 / 26-30 AWG	GP2-10	<b>100171</b>	24
1 Pack	F	0.04	.043-.046 / 20-24 AWG	GS-10	<b>100180</b>	24
1 Pack	F	0.04	.023-.027 / 26-30 AWG	GS2-10	<b>100181</b>	24

#### Contacts<sup>3</sup>, Type-T1 — High Duty Cycle / 10 per Pack

1 Pack	F	0.04	.043-.046 / 20-24 AWG	GS-10-S	<b>110908</b>	35
1 Pack	F	0.04	.023-.027 / 26-30 AWG	GS2-10-S	<b>110909</b>	35

1. For use in air or vacuum service connectors. 2. See page 109 for bulk packs. 3. High duty cycle stainless steel contacts require positioner DCT-P-2 on DCT-1 crimp tool. See Tools on page 13

## Air-service Cable Assemblies / Cable

Connector to Cable air-service cable assemblies are fitted with a Delrin® Subminiature-C™ female connector at one end and non-terminated nine wires PVC insulated on the other. The female cable connectors mate directly onto the air side of nine-pin Subminiature-C feedthroughs shown on page 9. The cable jacket is gray PVC with a nominal diameter of 0.23 inches. The nine wires are 24 AWG tinned-copper conductors, stranded 7 x 0.008. Shielding is aluminum / Mylar® foil with a 24 AWG tinned-copper drain wire.

### Cable Assemblies — 9-Pin Circular / 80°C / Air Atmosphere

Number Contacts	Wire		Connector			Model Number	Part Number	Unit Price \$
	Length	Dia.	Gender	OD	Length			

#### Connector to Cable — 9-Pin Circular Connector (one end only)

9	48	7x 0.008	F	0.60	0.87	AIR-CP9-48SC	<b>100020</b>	115
9	96	7x 0.008	F	0.60	0.87	AIR-CP9-96SC	<b>100021</b>	125

#### Cable — Non Terminated 9 Conductor Cable

9	15-ft	7x 0.008	No Connector			AIR-CP9-15	<b>100022</b>	27
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## Air-service Connectors / Tools

Delrin® shell connectors do not include contacts and must be purchased separately. High duty cycle stainless steel Type-T1 contacts are recommended for use in connectors where plug-in cycles will exceed 3 cycles per day.

### Connectors<sup>1</sup> — 9-Pin Circular / 80°C / Air Atmosphere

Number Contacts	Connector			Use Type T-1 Contacts	Model Number	Part Number	Unit Price \$
	Gender	Dia.	Length				

#### Delrin® — Polymer Shell

9	M	0.61	0.64	Male	9C-DP	<b>100162</b>	86
9	F	0.61	0.74	Female	9C-DS	<b>100160</b>	86
Strain Relief <sup>2</sup>		0.61	0.64	—	9C-DSR	<b>100161</b>	34

1. See page 12 for Type-T1 electrical contacts. 2. Includes two screws and shrink tubing

### Tools — for Wiring 9-Pin Circular Vacuum and Air-Service Connectors

Contents	Description	Model Number	Part Number	Unit Price \$
1 Unit	Crimping tool for Type-T1 Contacts	DCT-1	<b>100190</b>	454
1 Unit	Crimp Tool Positioner <sup>1</sup>	DCT-POS-T2	<b>111315</b>	69
1 Unit	Wire Stripper, 26-36 AWG, .12-.40mm	2636AWG-STR	<b>100191</b>	95
1 Unit	Wire Stripper, 20-30 AWG, .25-.80mm	2030AWG-STR	<b>100192</b>	95
1 Set	Connector Screwdriver Set <sup>2</sup>	DRVR-SET	<b>112146</b>	27

1. Used only with high duty cycle stainless steel contacts, fits DCT-1 part number 100190. 2. Includes one each flat, phillips and hex drivers



**100020** / Female Air Connector to Cable  
**100022** / Non-terminated Air-Service Cable



**100160** / Female Air-Service Connector  
**100162** / Male Air-Service Connector  
(Contacts sold separately)



**100161** / Air-service Connector Strain Relief  
(Connector sold separately)



↶ Set Dial to #5

**100190** / Contact Crimp Tool



**100191** / Wire Stripper