



Coax-D™ Subminiature-D

Accu-Glass 1, 3 and 5 Pin Coaxial Feedthroughs

UHV Feedthrough, 100520
Conflat® compatible flange

UHV female cable assembly,
100640, PEEK connector and
Kapton® insulated coaxial

Air-service female cable
assembly, 100580,
Connector and Cable

Note: Connectors and cables are not
included with feedthrough and must be
purchased separately.

UHV in-vacuum User-specified End
options, left to right : Non-terminated
.51 User end, .52 SMA and .53 BNC

Coax-D™ Subminiature-D Interface

Accu-Glass Coax-D™, floating shield coaxial feedthroughs are available in 1, 3, and 5 pin coaxial configurations that are sealed into standard size 9, 15 and 25 Subminiature-D shells respectively. Feedthroughs are mounted on Conflat® compatible CF or ISO flanges for UHV and high vacuum service.

The electrical shields on these coaxial feedthroughs 'float' relative to ground, thus providing a secondary and concentric electrical path around each conductor pin. Single-pin coaxial feedthroughs also include four (4), non-shielded, instrumentation pins for added connectivity options. Gold plated conductor pins and shields are constructed in straight-through pin-to-pin design. Pins and shield are electrically insulated and hermetically sealed to the stainless steel Subminiature-D shells using the latest in glass-ceramic and metal bonding technology.

Ultra-high vacuum cable assemblies fitted with PEEK polymer connectors and Kapton® insulated 50-Ohm coaxial cable are available to meet the rigorous demands of UHV vacuum environments. Connectivity accessories are also available and sold separately. Vacuum and air-side cable assemblies, individual connectors and other accessories begin on page 58. Custom Coax-D™ Subminiature-D coaxial solutions are available on request.

Features

- 1, 3 and 5 Subminiature-D interface
- Floating Shield Design
- Kapton® insulated 50-Ohm cable
- High temperature rated to 250°C
- UHV compatible construction
- Conflat® and ISO compatible mounts
- PEEK Connector with Locking Screws
- Air service cables / connectors
- Custom solutions on request

Specifications

Electrical

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

Material

Feedthrough-Shell	304 Stainless Steel
Coaxial Shield	Au plated, Ni-Fe alloy
Pins	Au plated, Ni-Fe alloy
Seal / Insulator	Glass-Ceramic
Connector, Vacuum ³	
Sub-D	PEEK
BNC	Ni plated brass, PEEK
SMA	Au plated brass, PEEK
User-End	Stainless Steel, Au plated BeCu, PEEK
Connector, Air	Composite
Cable Insulation	Kapton® Type-F Film

Vacuum Range

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

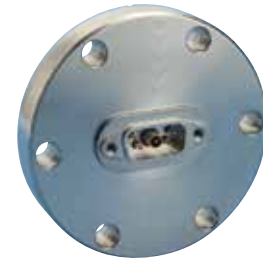
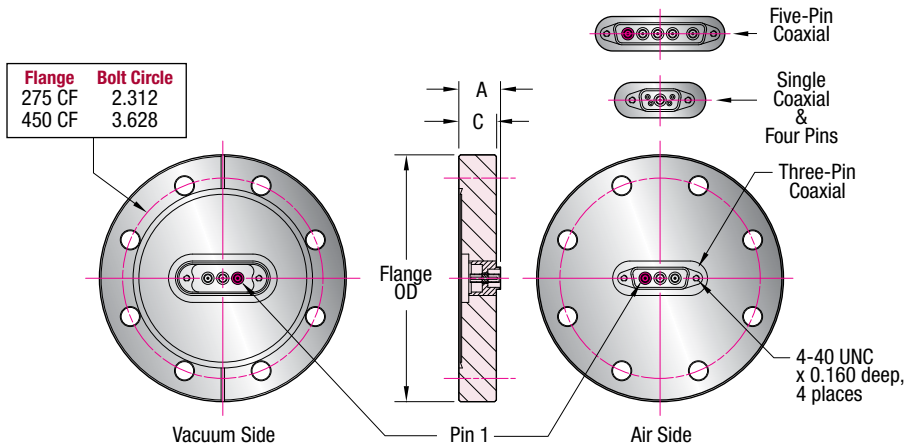
Temperature Range⁴

Feedthrough	250°C
Flange Mount, Conflat®	450°C
Flange Mount, ISO	150°C
Connector / Cable, Air	80°C
Connector / Cable, Vacuum	250°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. Overall assembly ratings must be adjusted to that of its lowest rated component.

§ Unless specified otherwise, dimensional units in all sections of this catalog are expressed in inches.



100500 / UHV 1-Pin Coaxial + 4-Pin Instrumentation (Air Side)



100520 / UHV 5-Pin Coaxial (Vacuum Side)



100501 / HV 1-Pin Coaxial + 4-Pin Instrumentation (Air Side)

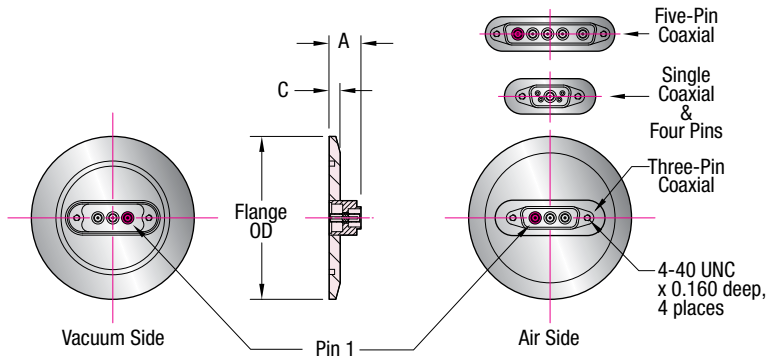
CF Flange¹ — 500VDC / 5 Amp / 250°C / UHV to 1x10⁻¹⁰ Torr

Contacts	Coax Pins	Instr Pins	CF Flange	OD	A	C	Model Number	Part Number	Unit Price \$
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Floating Shield — Coax-D™ Interface

5	1	4	275 CF	2.73	0.63	0.50	9D-1CX4i-275	100500	295
3	3	—	450 CF	4.47	0.76	0.68	15D-3CX-450	100510	375
5 ²	5	—	450 CF	4.47	0.76	0.68	25D-5CX-450	100520	395
6 ³	6	—	450 CF	4.47	0.76	0.68	15D-3CX2-450	100512	710
10 ³	10	—	450 CF	4.47	0.76	0.68	25D-5CX2-450	100522	730

1. Compatible with Conflat® flanges and hardware 2. Pin position not centered or symmetrical. 3. Uses Two Feedthroughs



ISO KF/LF Flange¹ — 500VDC / 5 Amp / 150°C / HV to 1x10⁻⁸ Torr

Contacts	Coax Pins	Instr Pins	ISO Flange	OD	A	C	Model Number	Part Number	Unit Price \$
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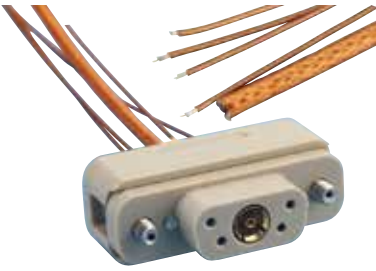
Floating Shield — Coax-D™ Interface

5	1	4	NW40 KF	2.16	0.59	0.20	9D-1CX4i-K40	100501	295
3	3	—	NW50 KF	2.95	0.59	0.20	15D-3CX-K50	100511	375
5 ²	5	—	NW63 LF	3.74	0.59	0.47	25D-5CX-L63	100521	395
10 ³	10	—	NW100 LF	5.12	0.59	0.47	25D-5CX2-L100	100523	730

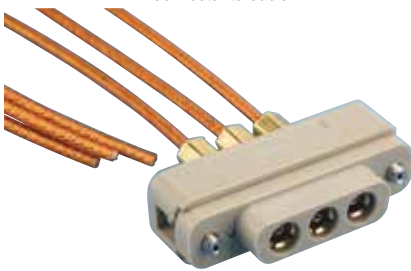
1. Compatible with ISO 2861/1 specification flanges and hardware 2. Pin position not centered or symmetrical. 3. Uses Two Feedthroughs



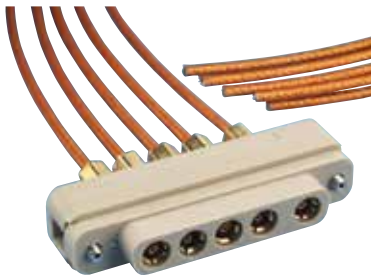
100511 / HV3-Pin Coaxial (Air Side)



100620 / Female Socket UHV Combination Connector to Cable



100630 / Female Socket UHV Connector to Cable



100640 / Female Socket UHV Connector to Cable



.51, .52 and .53 / User End Female, SMA Male and BNC Male



100660 and 100650 / Female Socket UHV Coaxial Contact to Cable and Female Socket UHV Instrumentation Contact to Cable

See page 56 for **Specifications**

Ultrahigh Vacuum Cable Assemblies Coax-D™

Connector to Cable assemblies are constructed with UHV compatible PEEK Subminiature-D connectors and Kapton® insulated 50-ohm coaxial cables. The single coaxial connector assembly also includes four Kapton® insulated non-terminated instrumentation wires with either 19-inch or 39-inch length. These four individual leads are 28 AWG silver plated copper wire, stranded 7 x 0.005.

Connector to User-Specified End cable assemblies are fitted with PEEK connectors at one end and a user-specified connector at the other: SMA Male, BNC Male or User-End Female.

Contact to Cable leads are single instrumentation or 50-ohm coaxial, Kapton® insulated wires terminated on one end with gold-plated female sockets that mate with feedthroughs shown on page 57. Opposite ends have no termination. They are ideally suited for applications where Subminiature-D connectors are not required or desired.

Cable Assemblies — 250°C / UHV to 1x10⁻¹⁰ Torr

Number Contacts	Cable		Connector		Model Number	Part Number	Unit Price \$
	Length	Dia.	Gender	W x H x D			

Connector to Cable — One Coaxial / Four Instrumentation

5	19	0.09	M	1.30 x 0.50 x 0.75	9KAP-1CX4i-19PC	110964	205
5	39	0.09	M	1.30 x 0.50 x 0.75	9KAP-1CX4i-39PC	110965	220
5	19	0.09	F	1.30 x 0.50 x 0.75	9KAP-1CX4i-19SC	100620	205
5	39	0.09	F	1.30 x 0.50 x 0.75	9KAP-1CX4i-39SC	100621	220

Connector to Cable — Coaxial

3	19	0.09	M	1.70 x 0.50 x 0.75	15KAP-3CX-19PC	110966	350
3	39	0.09	M	1.70 x 0.50 x 0.75	15KAP-3CX-39PC	110967	405
3	19	0.09	F	1.70 x 0.50 x 0.75	15KAP-3CX-19SC	100630	350
3	39	0.09	F	1.70 x 0.50 x 0.75	15KAP-3CX-39SC	100631	405
5	19	0.09	M	2.20 x 0.50 x 0.75	25KAP-5CX-19PC	110968	520
5	39	0.09	M	2.20 x 0.50 x 0.75	25KAP-5CX-39PC	110969	605
5	19	0.09	F	2.20 x 0.50 x 0.75	25KAP-5CX-19SC	100640	520
5	39	0.09	F	2.20 x 0.50 x 0.75	25KAP-5CX-39SC	100641	605

Connector to User-Specified End Options

1	User-End Female	Append to Part Number	.51	170
1	SMA Male	Append to Part Number	.52	90
1	BNC Male	Append to Part Number	.53	90

These are sold as additions to the above Connector to Cable assemblies and are added at the factory only. Price is net each and is added to Unit Price. For example, Part Number 100641.53 would require a quantity of 5 and would have a price of \$1,055. See page 65 for User End details.

Contact to Cable — Coaxial

1	19	0.09	M	Pin Contact	KAP-1CX-19P	110970	95
1	39	0.09	M	Pin Contact	KAP-1CX-39P	110971	108
1	19	0.09	F	Socket Contact	KAP-1CX-19S	100660	95
1	39	0.09	F	Socket Contact	KAP-1CX-39S	100661	108

Contact to Cable — Instrumentation

1	19	0.03	F	Socket Contact	KAP-1i-19S	100650	10
1	39	0.03	F	Socket Contact	KAP-1i-39S	100651	12

Ultrahigh Vacuum Connectors, Contacts and Tools

UHV Subminiature-D connectors are made of PEEK and do not include contacts, which must be purchased separately. Symmetric female socket connectors mate directly onto the vacuum or air side of Subminiature-D feedthroughs shown on page 57. The five-contact connector, part number 100930, is asymmetric and mates only with the vacuum side.

Connectors and Contacts — 250°C / UHV to 1x10⁻¹⁰ Torr

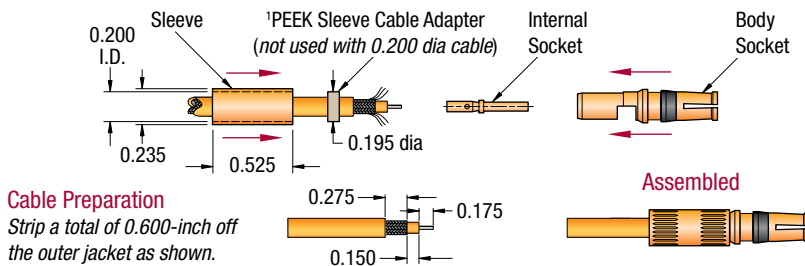
Number Contacts	Connector		Use With	Model Number	Part Number	Unit Price \$
	Gender	W x H x D				
1-4 *	M	1.30 x 0.50 x 0.75	110963, 100170-71	9D-1CX4i-PKP	110960	125
3	M	1.70 x 0.50 x 0.75	110963	15D-3CX-PKP	110961	135
5	M	2.20 x 0.50 x 0.75	110963	25D-5CX-PKP	110962	145
1-4 *	F	1.30 x 0.50 x 0.75	100909, 100180-81	9D-1CX4i-PKS	100910	125
3	F	1.70 x 0.50 x 0.75	100909	15D-3CX-PKS	100920	135
5	F	2.20 x 0.50 x 0.75	100909	25D-5CX-PKS	100930	145

* This Connector Can Be Fitted With One Coaxial and Four Instrumentation Leads.

Connectors, Type-T4 — Coaxial

- Assembly requires two (2) crimp tools, Body Socket (p/n 100908) and Internal Socket (p/n 100190).
- PEEK sleeve cable adapter¹ drilled for 100720 50-ohm Kapton® cable, 0.200-inch cable diameter, maximum.
- Includes all components in drawing except coaxial cable.

1 Unit	Coaxial socket for 100910, 100920 and 100930	CXS-1	100909	45
1 Unit	Coaxial pin for 110960, 110961 and 110962	CXP-1	110963	45



100910, 100920 and 100930 / Female Socket UHV Connectors
(Contact to Cable Leads Sold Separately)



100909 / Coaxial Contact



100180 / Instrumentation Contacts



100908 / Crimping Tool

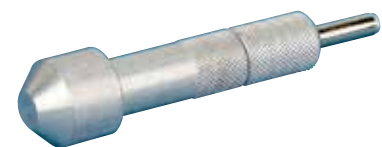
Contacts, Type-T1 — Instrumentation

	Size	Well Wire ID				
Male	0.04	.043-.046 (20-24 AWG)	10/pkg	GP-10	100170	24
Male	0.04	.023-.027 (26-30 AWG)	10/pkg	GP2-10	100171	24
Female	0.04	.043-.046 (20-24 AWG)	10/pkg	GS-10	100180	24
Female	0.04	.023-.027 (26-30 AWG)	10/pkg	GS2-10	100181	24

Crimp and Extraction Tools

Crimping tool for coaxial sockets Body Socket	1 each	DCT-4/6	100908	535
Crimping tool for coaxial sockets Internal Socket	1 each	DCT-1	100190	454
Extraction tool used to remove coaxial sockets ¹	1 each	CX-ET	100935	80

1. From PEEK Connectors, part numbers 100801, 100802, 100803



100935 / Extraction Tool

See page 56 for **Specifications**



100540 / Female Socket Air Connector to Cable



100570 / Female Socket Air Connector to Male BNC Connectors



100571 / Female Socket Air Connector to Male SMA Connector

Air-service Cable Assemblies Coax-D™

Subminiature-D coaxial Connector to Cable assemblies are prewired with 96-inch long RG174/U coaxial cables and are non-terminated at one end. The single Coax-D™ Connector to Cable assemblies also include a 96-inch long, four-conductor data cable with 0.18 diameter PVC cable jacket and aluminum-mylar foil shielding with a 24 AWG tinned-copper drain wire. The four individual conductors are PVC insulated 24 AWG, 7 x 0.008 stranded, tinned copper wires.

Cable Assemblies — 80°C / Air Atmosphere

Number Contacts	Cable		Connector		Model Number	Part Number	Unit Price \$
	Length	Dia.	Gender	W x H x D			

Connector to Cable — One Coaxial / Four Instrumentation

5	96 / 96	0.11 / 0.18	Female	1.40 x 0.75 x 1.90	9AIR-1CX4i-96SC	100530	110
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Connector to Cable — Coaxial

3	96	0.11	Female	1.70 x 0.75 x 1.90	15AIR-3CX-96SC	100540	205
5	96	0.11	Female	2.30 x 0.75 x 2.20	25AIR-5CX-96SC	100550	325

Air-service Cable Assemblies Coax-D™ to Male-BNC or Male-SMA

Subminiature-D coaxial *Connector to BNC or SMA Connector* assemblies are prewired with 6-inch long RG174/U coaxial cables and terminated with male BNC or SMA connectors. The single coaxial *Connector to BNC or SMA Connector* assemblies also include a 96-inch long, four-conductor data cable with 0.18 diameter PVC cable jacket and aluminum-mylar foil shielding with a 24 AWG tinned-copper drain wire. The four individual conductors are PVC insulated 24 AWG, 7 x 0.008 stranded, tinned copper wires.

Cable Assemblies — 80°C / Air Atmosphere

Number Contacts	Cable		Connector		Model Number	Part Number	Unit Price \$
	Length	Dia.	Gender	W x H x D			

D-Connector to BNC Connector — One Coaxial / Four Instrumentation

5	6 / 96	0.11 / 0.18	F / M	1.40 x 0.75 x 1.90	9AIR-1CX4i-06SSC	100560	110
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D-Connector to BNC Connector — Coaxial

3	6	0.11	F / M	1.70 x 0.75 x 1.90	15AIR-3CX-06SSC	100570	215
3	6	0.11	F / M	2.30 x 0.75 x 2.20	25AIR-5CX-06SSC	100580	335

D-Connector to SMA Connector — One Coaxial / Four Instrumentation

5	6 / 96	0.11 / 0.18	F / M	1.40 x 0.75 x 1.90	9AIR-1CX4i-06SMA	100561	120
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D-Connector to SMA Connector — Coaxial

3	6	0.11	F / M	1.70 x 0.75 x 1.90	15AIR-3CX-06SMA	100571	235
5	6	0.11	F / M	2.30 x 0.75 x 2.20	25AIR-5CX-06SMA	100582	375

See page 56 for **Specifications**

Air-service Connectors, Contacts and Tools

Components in this section are sold as the most basic components. Connectors do not include contacts and must be purchased separately. Connectors are made of a composite material.

Connectors — 80°C / Air Atmosphere

Number Contacts	Connector		Model Number	Part Number	Unit Price \$
	Gender	W x H x D			

Connectors — One Coaxial / Four Instrumentation

5	F	1.30 x 0.50 x 0.75	9D-1CX4i-DS	110801	38
		Dimensions with shell:	1.40 x 0.75 x 2.52		

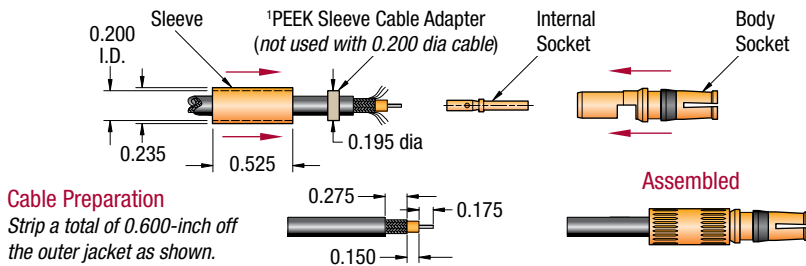
Connectors — Coaxial

3	F	1.70 x 0.50 x 0.50	15D-3CX-DS	110802	40
		Dimensions with shell:	1.72 x 0.75 x 2.10		
5	F	2.10 x 0.50 x 0.50	25D-5CX-DS	110803	45
		Dimensions with shell:	2.27 x 0.75 x 2.36		

Contacts, Type-T4 — Coaxial

- Assembly requires two (2) crimp tools, Body Socket (p/n 100908) and Internal Socket (p/n 100190).
- PEEK sleeve cable adapter¹ drilled for 0.090 OD cable, 0.200-inch cable diameter, maximum.

1 Unit	Coaxial socket for use with 100801, 100802, 100803	CXS-1	100909	45
Includes all components in drawing except coaxial cable				



Cable Preparation
Strip a total of 0.600-inch off the outer jacket as shown.

Contacts, Type-T2 — Instrumentation

	Size	Well Wire ID				
Female	0.04	.043-.046 (20-24AWG)	10/pkg	HVGS-10	110009	28
Female	0.04	.023-.027 (26-30AWG)	10/pkg	HVGS2-10	110035	28

Crimp and Extraction Tools

Crimping tool for coaxial sockets Body Socket	1 each	DCT-4/6	100908	535
Crimping tool for coaxial sockets Internal Socket	1 each	DCT-1	100190	454
Crimping tool for part numbers 110009, 110035	1 each	DCT-2	100193	454
Extraction tool ¹ used to remove coaxial sockets ¹	1 each	CX-ET	100935	80

1. From PEEK Connectors, part numbers 100801, 100802, 100803



110801 / One Coaxial, Four Instrumentation Connector
(Contacts Sold Separately)



110803 / Coaxial Connector
(Contacts Sold Separately)



100909 / Coaxial Contact



110008 and 110009 / HV Contacts
(Connector and Contacts Sold Separately)



100908, 100190, and 100935 /
Crimp and Extraction Tools

See page 56 for **Specifications**