

## Electrical Feedthroughs

### Introduction

LewVac offer a very broad range of electrical feedthroughs employing highly reliable ceramic to metal sealing technology, to ensure the highest possible vacuum integrity and performance. You will find details of many hundreds of standard feedthroughs within this catalogue section, which has been sub-divided into product groups to ease your search for the correct feedthrough to suit your application. In addition to the standard range of feedthroughs detailed within this catalogue, we are pleased to offer a custom manufacturing service, allowing you to specify your requirements, for us to manufacture the ideal feedthrough for your needs.

Our sales staff are always on hand to assist with any queries that you may have, or to assist you in making the correct selection for your application.



### Multipin

Multipin feedthroughs are sub divided into two sections, instrumentation feedthroughs including sub-miniature C & D types and power feedthroughs. As the name would suggest, these feedthroughs have two or more conductors mounted on a single flange carrying either instrumentation signals or higher power signals as appropriate.

**Subminiature C type** feedthroughs are offered with either 9 instrumentation pins (max 1A), or with 3 or 6 power pins (max 10A).

**Subminiature D type** feedthroughs are offered with 9, 15, 25 or 50 instrumentation pins, combinations of thermocouple and or power pins and also with up to 5 coaxial connections.

19 pin circular instrumentation feedthroughs manufactured to meet Mil-C26482 specifications are also available.



### Power

Power feedthroughs are used for transmitting either high current, high voltage or both into your vacuum system. Applications requiring high power feedthroughs are varied, but whatever your application, we can supply the feedthrough you require.

Power feedthroughs are designed to provide optimum performance at the same time as ensuring safe operating conditions. Feedthroughs are designed to have the longest possible insulator distance between the conductor and ground to maximise strike and creep distances. Insulators are often convoluted to increase this distance without increasing overall space requirement of the feedthrough. Air side ceramics are glazed to minimise contamination, which could inhibit electrical performance.

Water cooled power feedthroughs are available, with coolant being passed through the feedthrough conductor itself. Water cooled electrical feedthroughs should only be used in conjunction with closed loop cooling systems and non conducting coolant, i.e. de-ionised water. Great care should be taken when using any water cooled feedthroughs as the obvious dangers of mixing water and electricity are ever present.



**Power Glove**

Power glove feedthroughs are designed to be used in conjunction with power glove, silicone connectors. These connectors and feedthroughs allow for quick, easy and safe connection of high voltage or current cables.



**Coaxial**

Coaxial feedthroughs consist of an outer metal tube which forms an electrical shield around an inner conductor. The two conducting paths being insulated by an alumina ceramic insulator. Coaxial feedthroughs are available in a variety of industry standard configurations including; BNC, MHV, SHV, SMA, SMB, Type-N, Microdot® and also subminiature D type coaxial.



**Thermocouple**

Thermocouple feedthroughs are used in order to continue the dissimilar metal wires required for thermocouple operation. They are available for many industry standard thermocouple types such as; C, E, J, K, N, R, S and T. Feedthroughs are offered with a variety of industry standard connector types including, miniature push on, circular MS and screw connection.



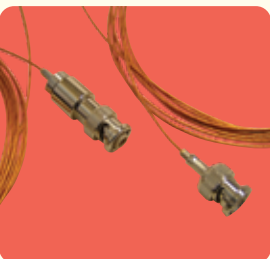
**RF Power**

RF power feedthroughs are designed specifically for transmission of radio frequency signal into the vacuum system. The conductor is tubular in section which allows for water cooling and therefore increased current carrying capability without increasing the feedthrough size.



**Breaks & Envelopes**

Breaks and envelopes are manufactured by bonding a section of insulating ceramic tube between two tubulated flanges. They provide an electrical insulation between the two ends and as such can be used to electrically isolate one part of a system from another.



**Connectors & Cables**

Many of our feedthroughs are supplied along with air side connector as standard. To complement our range of electrical feedthroughs we also offer a range of in-vacuum connectors and connector fitted cables. Additional air side connectors are also available. We also supply a wide range of Kapton® insulated wires, please see the vacuum accessories section of this catalogue.

All dimensions are nominal in millimetres unless otherwise specified



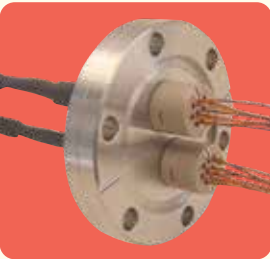
**Insulators & Spacers**

We offer a range of ceramic standoffs, alumina ceramic beads and ceramic spacers and insulators to enable you to route your in-vacuum cables without short circuiting, either between wires or to the chamber walls.



**Electrical Rating of Feedthroughs**

All of the electrical feedthroughs offered by LewVac have their electrical ratings based on; use at ambient or room temperature, the air side of the feedthrough being situated in dry atmosphere and the vacuum side being situated in a stable vacuum system with a maximum base pressure of  $1.3 \times 10^{-4}$  mbar. It remains the responsibility of the user to ensure that these conditions are met at all times and also to take any further precautions that may be deemed necessary, especially when using high voltage, high current or water cooled feedthroughs.



**Temperature Rating of Feedthroughs**

We recommend that the maximum thermal gradient during heating and cooling of electrical feedthroughs should not exceed 25°C per minute. This is to minimise stresses induced in differing seal materials caused by differing coefficients of thermal expansion.



**Dimensions**

Dimensions shown are all nominal in millimetres. Dimensional tolerances will differ between product lines. If specific dimensional details and tolerances are required, please contact our sales team who will be pleased to supply this information.



**Custom Engineering**

The range of feedthroughs detailed within this catalogue is our 'standard' range. There will be occasions when you cannot find the feedthrough that exactly meets your requirements. We are happy to discuss your individual needs and are able to offer bespoke manufacturing service in order to meet your specific requirements. For example you may require a custom length conductor, tighter tolerances, or a combination feedthrough.

All dimensions are nominal in millimetres unless otherwise specified

SECTION 1.1 MULTIPIN SIGNAL

Subminiature C Type Feedthroughs - 9 Pin



Subminiature C type multipin hermetic feedthroughs are designed for applications where space is limited or where subminiature D type feedthroughs will not fit. The compact design of the feedthrough allows installation into DN16CF or KF flanges.

Nine gold plated pins are orientated in a straight through pin-to-pin design pattern and are hermetically sealed and electrically insulated into the stainless steel shell using the latest in glass-ceramic bonding technology.

Subminiature C type feedthroughs are available either individually or as kits, which include both air and vacuum service cable assemblies. Air and vacuum side connectors are fitted with captured stainless steel socket head screws that provides 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 demands of UHV environments. In-vacuum connector screws are vented where required and the feedthrough's screw boss acts as a locating key for connector insertion. Air to vacuum pin position is identified with a permanent surface mark, which clearly locates pin assignments.

Features:

- 9 pin configuration.
- High temperature rated to 250°C.
- UHV compatible construction.
- Kapton® insulated in-vacuum cables.
- Air & vacuum side connectors available.

Specifications:

Voltage<sup>1</sup> 500VDC max

Current<sup>1</sup> 5A max @ 20°C

Material

Flange 304 St.St.

Shell 304 St.St

Pin Gold plated Ni-Fe alloy

Insulation Glass Ceramic

Connector, air / vacuum<sup>3</sup> Delrin® / PEEK

Temperature Range<sup>2</sup>

CF flanged feedthrough -200°C to 250°C

KF flanged feedthrough -20°C to 150°C

Vacuum side connector -200°C to 250°C

Air side connector -65°C to 80°C

Max Thermal Gradient 25°C / minute

<sup>1</sup> - Please see section introduction for safety information. Stated electrical ratings are maximum test values. Feedthroughs are intended for instrumentation applications carrying low level signal voltages and currents. For proper heat dissipation, a maximum of 20% of the pins on a feedthrough may carry the maximum pin current at any one time.

<sup>2</sup> - Assembly rating is reduced to that of the lowest rated component.

<sup>3</sup> - PEEK is a polyetheretherketone thermoplastic.

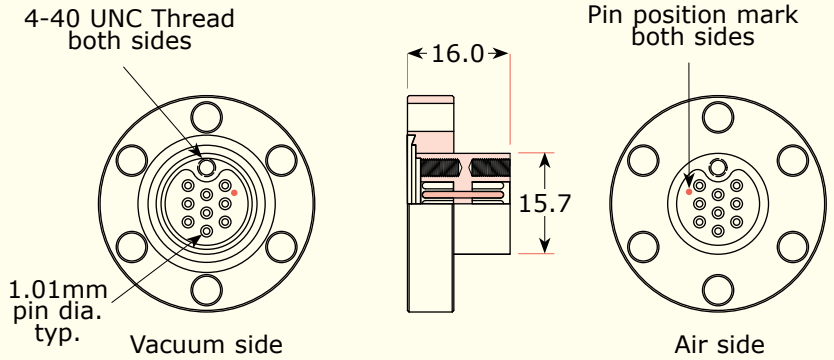
All dimensions are nominal in millimetres unless otherwise specified

SECTION 1.1 MULTIPIN SIGNAL

C9 Mounted On CF Flanges



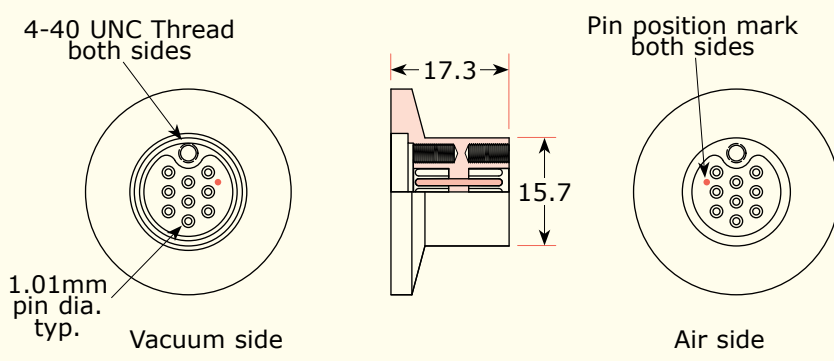
No. Pins	Description	Part Code	Price £	Price €
9	C9 F/T on DN16CF + UHV & air cables with connectors*	C9KIT-16CF	£489	€563
9	C9 F/T on DN40CF + UHV & air cables with connectors*	C9KIT-40CF	£529	€609
9	C9 F/T on DN16CF	C9-16CF	£225	€259
9	C9 F/T on DN25CF	C9-25CF	POA	POA
9	C9 F/T on DN40CF	C9-40CF	£250	€288
18	C9 F/T x2 on DN40CF	C9-2-40CF	£467	€538



C9 Mounted On KF Flanges



No. Pins	Description	Part Code	Price £	Price €
9	C9 F/T on DN16KF + UHV & air cables with connectors*	C9KIT-16KF	£489	€563
9	C9 F/T on DN16KF	C9-16KF	£225	€259
9	C9 F/T on DN25KF	C9-25KF	£252	€290
9	C9 F/T on DN40KF	C9-40KF	£250	€288
18	C9 F/T x2 on DN40KF	C9-2-40KF	£467	€538

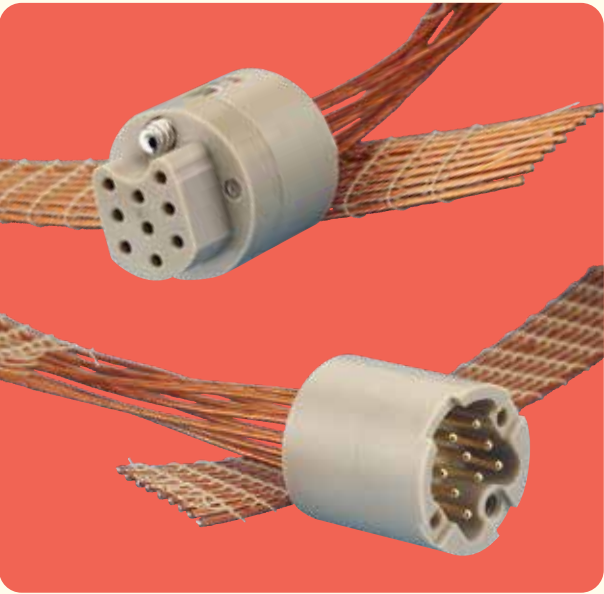


\* - Kits are supplied with In vacuum cable 482mm long & Air side cable 2438mm long.

All dimensions are nominal in millimetres unless otherwise specified



Subminiature 9 Pin C Type Cables & Connectors



UHV Cable Assemblies

In-vacuum cables for C type feedthroughs are available in two configurations: Round cable assemblies consisting of 9 wires bound with PEEK braid into a round bundle and fitted with PEEK C connector, or ribbon cable assemblies consisting of 9 wires woven into a flat ribbon using a PEEK weave thread and fitted with PEEK connector. Both types are supplied as standard with connector fitted one end and the opposite end being non-terminated. Round cables are colour coded for ease of identification. Both round and ribbon cables are also available fitted with female crimp connectors (without PEEK housing) one end with the opposite end not terminated. These cables will not allow subsequent fitting of connector as wire must be threaded through connector back prior to crimping contacts. Extension cables, with female PEEK connector fitted both ends are also available in both round and ribbon type cables.

Air-service Cables

Connector to cable air-service round cable assemblies are fitted with a Delrin® subminiature C female connector at one end and non terminated nine PVC insulated wires on the other. The female cable connectors mate directly onto the air side of 9 pin subminiature C type feedthroughs. The cable jacket is grey PVC with a nominal diameter of 5.8mm. The 9 wires are 24AWG tinned copper conductors, stranded 7 x 0.203mm. Shielding is aluminium / Mylar® foil with 24AWG tinned copper drain wire.

Features:

- 9 wire, 7 x 0.127mm (28AWG) configuration, either round or ribbon.
- PEEK braid outer or weave.
- UHV compatible.
- Custom lengths available.

Specifications:

Voltage<sup>1</sup> 500VDC max

Current<sup>1</sup> 2A

Material

Conductors Silver plated copper.

Insulation Type F Kapton® film

Braid / weave PEEK

In-vacuum connector<sup>3</sup> PEEK

Temperature Range<sup>2</sup> -75°C to 250°C

Kapton® Properties

Dielectric constant 2.9

Dielectric strength 80kV/mm

Dissipation factor, 1MHz 0.002

Initial tear 13.4kg/mm

Elongation 150%

Moisture absorbtion 0.4% @ 50% RH

Radiation resistance 10<sup>9</sup> Rads

<sup>1</sup> - Please see section introduction for safety information. Stated electrical ratings are maximum test values. Feedthroughs are intended for instrumentation applications carrying low level signal voltages and currents.  
For proper heat dissipation, a maximum of 20% of the pins on a feedthrough may carry the maximum pin current at any one time.

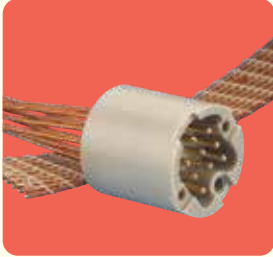
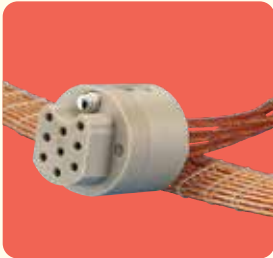
<sup>2</sup> - Assembly rating is reduced to that of the lowest rated component.

<sup>3</sup> - PEEK is a polyetheretherketone thermoplastic.

Ceramic in vacuum connectors are also available, please contact sales office for details

All dimensions are nominal in millimetres unless otherwise specified

In-Vacuum Subminiature C Type Cables



Length (mm)	Cable Type	Connector Type	Part Code	Price £	Price €
500	Round	Female	C9-VCF500	£166	€191
1000	Round	Female	C9-VCF1000	£198	€228
500	Round	Female / Female	C9-CXFF500	£289	€333
500	Round	Male	C9-VC500	£166	€191
1000	Round	Male	C9-VC1000	£198	€228
500	Round	Female pins only	C9-VCFP500	£51	€59
1000	Round	Female pins only	C9-VCFP1000	£84	€97
500	Round	Male pins only	C9-VCMP500	£51	€59
1000	Round	Male pins only	C9-VCMP1000	£84	€97
500	Ribbon	Female	C9R-F500	£181	€209
1000	Ribbon	Female	C9R-F1000	£229	€264
500	Ribbon	Female / Female	C9RX-FF500	£313	€360
500	Ribbon	Male	C9R-M500	£181	€209
1000	Ribbon	Male	C9R-M1000	£229	€264
500	Ribbon	Female pins only	C9RL-F500	£70	€81
1000	Ribbon	Female pins only	C9RL-F1000	£115	€133
500	Ribbon	Male pins only	C9RL-M500	£70	€81
1000	Ribbon	Male pins only	C9RL-M1000	£115	€133

In-Vacuum Subminiature C Type Connectors



Connector does not include pins. Order contact pins separately.

Material	Connector Type	Connector Dims	Part Code	Price £	Price €
PEEK	Female	Ø15.2 x 19.1	C9-PCF	£111	€128
PEEK	Male	Ø15.2 x 16.5	C9-PCM	£111	€128
MACOR	Female	Ø15.2 x 19.1	C9-MCF	£313	€360
MACOR	Male	Ø15.2 x 16.5	C9-MCM	£313	€360
UHV/air female skts for use in C9 connector shells 10/pk (20-24AWG)			CPINF-10	£12	€14
UHV/air male pins for use in C9 connector shells 10/pk (20-24AWG)			CPINM-10	£8	€10
UHV/air female skts for use in C9 connector shells 10/pk (26-30AWG)			CPINF-10-S	£21	€25
UHV/air male pins for use in C9 connector shells 10/pk (26-30AWG)			CPINM-10-S	£21	€25
Crimp tool for D / C pins - UHV			DCT1	£1109	€1276

Air Service Subminiature C Type Cables



Length (mm)	Cable Type	Connector Type	Part Code	Price £	Price €
1200	9 x 7x0.2mm	Female	C9-AC1200	£105	€121
2000	9 x 7x0.2mm	Female	C9-AC2000	£114	€132
2400	9 x 7x0.2mm	Female	C9-AC2500	£114	€132

Air Service Subminiature C Type Connectors

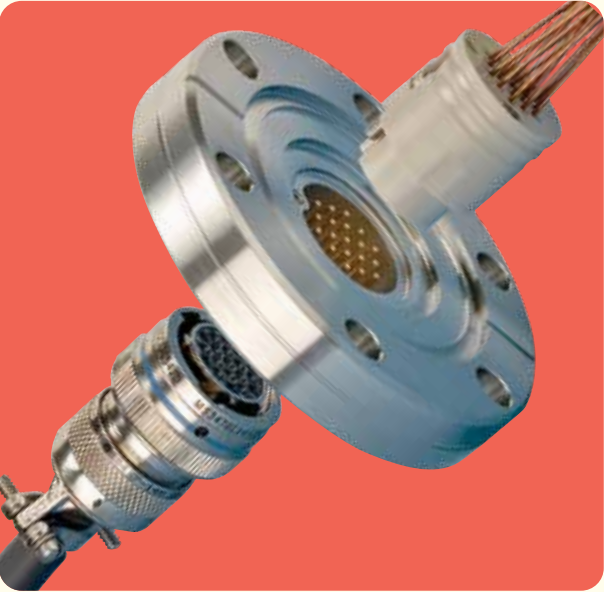


Material	Connector Type	Part Code	Price £	Price €
Delrin®	Female	C9-ACF	£78	€90
Delrin®	Male	C9-ACM	£78	€90
Delrin®	Strain relief	C9-ASR	£31	€36

Air side connectors utilise the same pins as vacuum connectors above

All dimensions are nominal in millimetres unless otherwise specified

Mil-C-26482 Circular Feedthroughs 19 Pin



Circular hermetic instrumentation feedthroughs are constructed with pin arrangements designed to meet Mil-C-26482 specifications. 19 gold plated pins are 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. Mil-C-26482 feedthroughs are sold individually or as kits, where the kit contains one feedthrough, and one each of the vacuum and air side cable assemblies. UHV cable assemblies with PEEK connectors and Kapton® insulated ribbon cables are available to meet the demands of UHV environments. Air side cable assemblies use standard Mil-C-26482 connectors. Custom in-vacuum and air side cable assemblies are available upon request.

Features:

- Mil-C-26482 type.
- 19 pin configuration.
- High temperature rated to 250°C.
- Kapton® insulated in-vacuum cables.
- PEEK connector with locking screws.

Specifications:

Voltage<sup>1</sup> 500VDC

Current<sup>1</sup> 5A max @ 20°C

Material

Flange	304 St.St.
Shell	304 St.St.
Pin	Gold plated Ni-Fe alloy
Insulation	Glass Ceramic
In-vacuum connector <sup>3</sup>	PEEK

Temperature Range<sup>2</sup>

CF flanged feedthrough	-200°C to 250°C
KF flanged feedthrough	-20°C to 150°C
Vacuum side connector	-200°C to 250°C
Air side connector	-200°C to 175°C

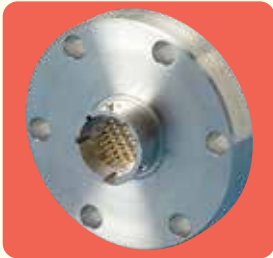
Max Thermal Gradient 25°C / minute

<sup>1</sup> - Please see section introduction for safety information. Stated electrical ratings are maximum test values. Feedthroughs are intended for instrumentation applications carrying low level signal voltages and currents. For proper heat dissipation, a maximum of 20% of the pins on a feedthrough may carry the maximum pin current at any one time.

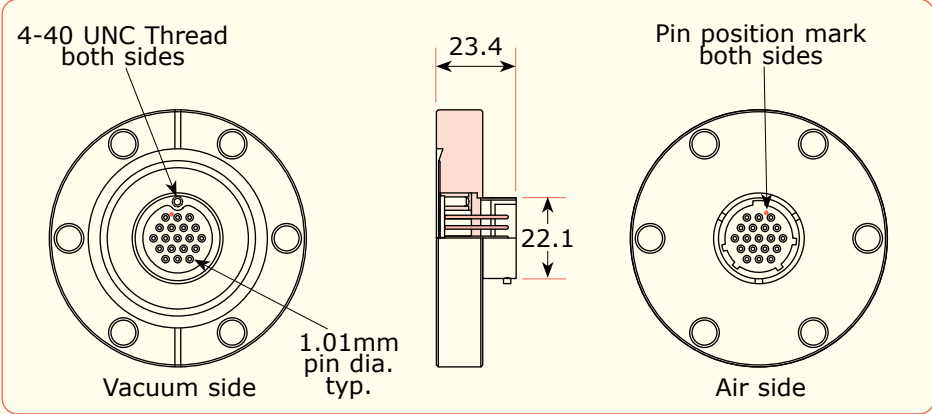
<sup>2</sup> - Assembly rating is reduced to that of the lowest rated component.

<sup>3</sup> - PEEK is a polyetheretherketone thermoplastic.

Circular 19 pin Mounted On CF Flanges



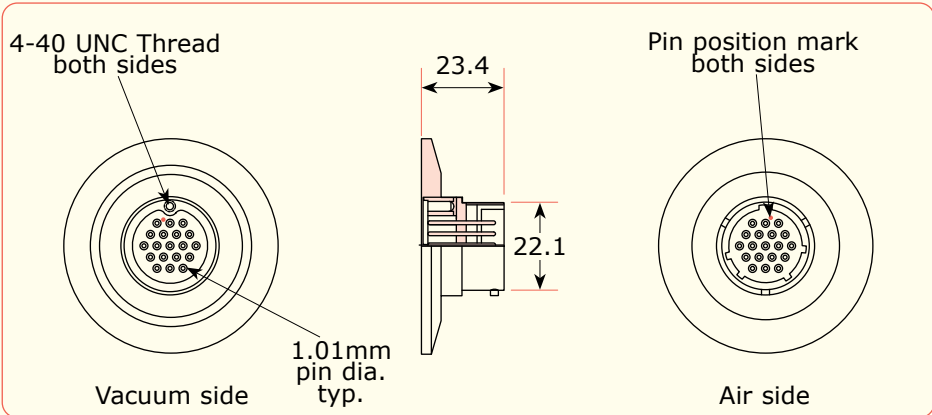
No. Pins	Description	Part Code	Price £	Price €
19	C19 F/T on DN40CF + UHV & air cables with connectors	C19-KIT40CF	£700	€805
19	C19 F/T on DN40CF 500VDC 5A per pin	C19-40CF	£287	€331



Circular 19 pin Mounted On KF Flanges



No. Pins	Description	Part Code	Price £	Price €
19	C19 F/T on DN40KF + UHV & air cables with connectors	C19-KIT40KF	£700	€805
19	C19 F/T on DN40KF 500VDC 5A per pin	C19-40KF	£296	€341
19	C19 F/T ON DN50KF 500VDC 5A PER PIN	C19-50KF	£296	€341



\* - Kits are supplied with In vacuum cable 482mm long & Air side cable 2438mm long.



Mil-C-26482 Circular 19 Pin Cables & Connectors



UHV Cable Assemblies

Connector to cable UHV ribbon cable assemblies are fitted with female PEEK Mil-C-26482 type 19 pin connectors at one end and non-terminated Kapton® insulated ribbon cable at the other. The female connectors mate directly onto the vacuum side of the MIL-C-24682 feedthroughs. It is locked into place with a single captured retaining screw. The ribbon cable consists of 19 conductors with a PEEK monofilament outer weave. The individual conductors are 28AWG silver plated copper conductors, stranded 7 x 0.127mm with Kapton® insulation.

Air-service Cable Assemblies

Connector to cable air-service round cable assemblies are fitted with an aluminium shell, with electroplated nickel finish, Mil-C-26482 19 pin female connector at one end. The cables are 24AWG stranded tinned copper conductors. The non-terminated end has 20 colour coded PVC insulated wires. One wire is not connected to the Mil-C-26482 connector and is available for grounding or other purposes. The conductors are shielded with an aluminium polyester foil shield wrap and a 0.97mm grey PVC jacket. The cable is rated at 300V, 80°C and 24AWG.

Features:

- 19 wire, 7 x 0.127mm (28AWG) configuration, either round or ribbon.
- PEEK braid outer or weave.
- UHV compatible.
- Custom lengths available.

Specifications:

Voltage<sup>1</sup> 600VAC, 2kVDC max

Current<sup>1</sup> 2A

Material

Conductors Silver plated copper.

Insulation Type F Kapton® film

Braid / weave PEEK

In-vacuum connector<sup>3</sup> PEEK

Temperature Range<sup>2</sup> -75°C to 250°C

Kapton® Properties

Dielectric constant 2.9

Dielectric strength 80kV/mm

Dissipation factor, 1MHz 0.002

Initial tear 13.4kg/mm

Elongation 150%

Moisture absorbtion 0.4% @ 50% RH

Radiation resistance 10<sup>9</sup> Rads

<sup>1</sup> - Please see section introduction for safety information. Stated electrical ratings are maximum test values. Feedthroughs are intended for instrumentation applications carrying low level signal voltages and currents.

For proper heat dissipation, a maximum of 20% of the pins on a feedthrough may carry the maximum pin current at any one time.

<sup>2</sup> - Assembly rating is reduced to that of the lowest rated component.

<sup>3</sup> - PEEK is a polyetheretherketone thermoplastic.

Mil-C-26482 Circular 19 Pin In-vacuum Cables



Length	Cable Type	Connector Type	Part Code	Price £	Price €
500	Round	Female	C19-VCF500	£272	€313
1000	Round	Female	C19-VCF1000	£349	€402
500	Round	Male	C19-VCN500	£272	€313
1000	Round	Male	C19-VCN1000	£349	€402

Mil-C-26482 Circular 19 Pin In-vacuum Connectors



Material	Connector Type / Dims	Pack qty.	Part Code	Price £	Price €
PEEK	Female / Ø24.9 x 28.5	1	C19-PCF	£157	€181
PEEK	Male / Ø24.9 x 19.6	1	C19-PCM	£157	€181
Ag plated Cu	Female pins 20-24AWG	10	C19-VPINF-10	£27	€32
Ag plated Cu	Female pins 26-30AWG	10	C19-VPINLF-10	£27	€32
Ag plated Cu	Male pins 20-24AWG	10	C19-VPINM-10	£26	€30
Ag plated Cu	Male pins 26-30AWG	10	C19-VPINLM-10	£26	€30

Mil-C-26482 Circular 19 Pin Air-service Cables & Connectors



Length	Cable Type	Connector Type	Part Code	Price £	Price €
1200	19 x 7x0.2mm	Female	C19-AC1200	£151	€174
2400	19 x 7x0.2mm	Female	C19-AC2500	£169	€195
Description					
Air side connector for C19 shell only female			C19-AIR	£66	€76
Air side 90° angled connector for C19 Sshell only female			C19-AIR-90	£89	€103
Air side female skts 20-24AWG for use in C19 connector shells 10/PK			C19-APINF-10	£27	€32
Air side male pins 20-24AWG for use in C19 connector shells 10/PK			C19-APINM-10	£27	€32

Accessories & Tools



Description	Part Code	Price £	Price €
Crimp tool for C19 UHV skts 20-24AWG & 26-30AWG	DCT2	£1109	€1276
Crimp tool for C3 & C6 UHV/air skts & C19 air skts	DCT5	£1194	€1374

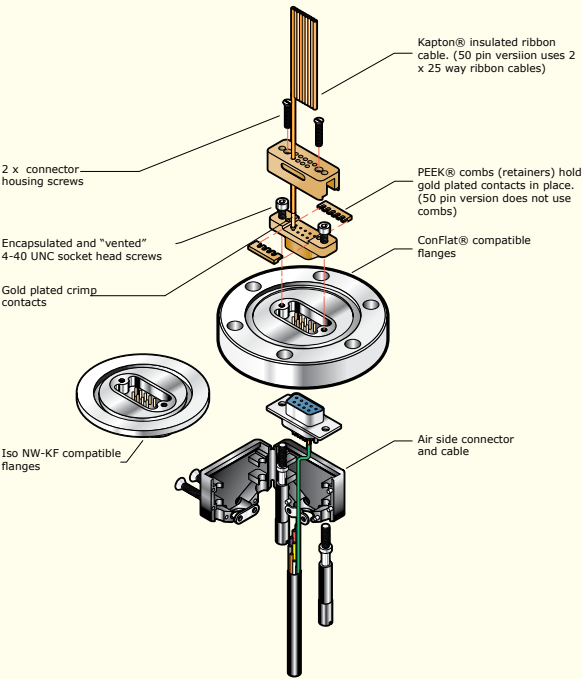
PLEASE NOTE : Pins and sockets are sold in packs of 10 pieces, therefore 2 packs required to fully populate a 19 pin connector.

Subminiature D Type Feedthroughs



Multipin hermetic subminiature D instrumentation feedthroughs are constructed with pin arrangements designed to meet Mil-C-24308 specifications. 9, 15, 25 & 50 gold plated pins are 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. UHV cable assemblies with PEEK connectors and Kapton® insulated ribbon cables are available to meet the demands of UHV environments.

Custom flanges and cables are available, please contact our sales office for further details.



Features:

- 9 to 100 pin standard configuration.
- High temperature rated to 250°C.
- UHV compatible construction.
- Kapton® insulated in-vacuum cables.
- Air & vacuum side connectors available.

Specifications:

Voltage<sup>1</sup> 500VDC max

Current<sup>1</sup> 5A max @ 20°C

Material

Flange 304 St.St.

Shell 304 St.St

Pin Gold plated Ni-Fe alloy

Insulation Glass ceramic

Connector, vacuum UHV<sup>3</sup> PEEK

Connector, vacuum HV<sup>4</sup> DAP / St.St.

Temperature Range<sup>2</sup>

CF flanged feedthrough -200°C to 250°C

KF flanged feedthrough -20°C to 150°C

Vacuum side connector -200°C to 250°C

Air side connector -65°C to 80°C

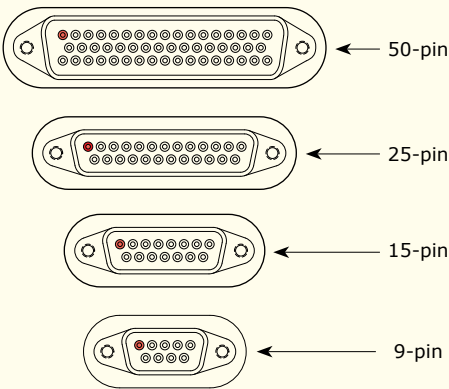
Max Thermal Gradient 25°C / minute

<sup>1</sup> - Please see section introduction for safety information. Stated electrical ratings are maximum test values. Feedthroughs are intended for instrumentation applications carrying low level signal voltages and currents. For proper heat dissipation, a maximum of 20% of the pins on a feedthrough may carry the maximum pin current at any one time.

<sup>2</sup> - Assembly rating is reduced to that of the lowest rated component.

<sup>3</sup> - PEEK is a polyetheretherketone thermoplastic.

<sup>4</sup> - DAP is a glass-filled dyiathilate.

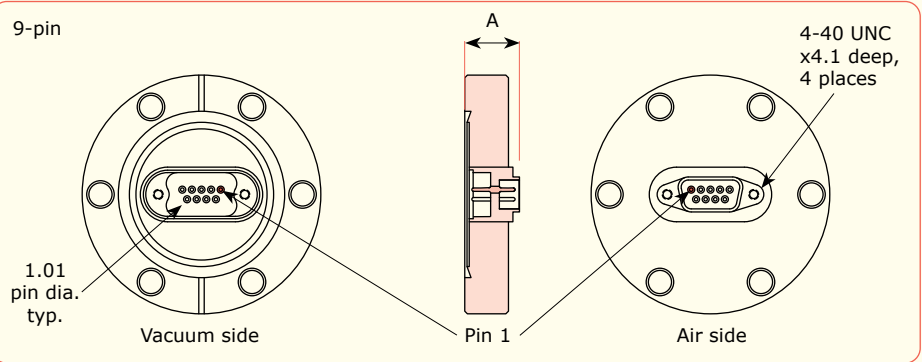


All dimensions are nominal in millimetres unless otherwise specified

D Type Feedthroughs Mounted On CF Flanges



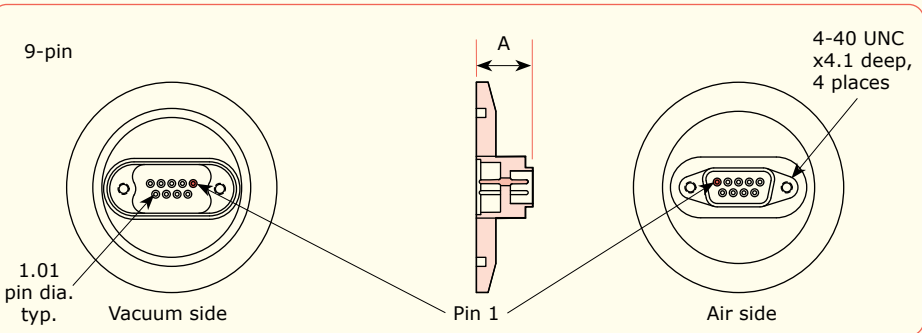
No. Pins	A	Description	Part Code	Price £	Price €
9	16.0	D9 F/T on DN40CF	D9-40CF	£254	€293
18	19.3	D9 F/T x2 on DN63CF	D9-2-63CF	£620	€713
15	19.3	D15 F/T on DN50CF	D15-50CF	£342	€394
15	19.3	D15 F/T on DN63CF	D15-63CF	£319	€367
30	19.3	D15 x2 F/T on DN63CF	D15-2-63CF	£647	€745
15	19.3	D15 F/T on DN75CF	D15-75CF	£342	€394
40	19.3	D15 & D25 F/T on DN63CF	D15-D25-63CF	£774	€891
25	21.8	D25 F/T on DN63CF	D25-63CF	£342	€394
25	19.3	D25 F/T on DN75CF	D25-75CF	£388	€447
25	21.8	D25 F/T on DN100CF	D25-100CF	£415	€478
50	19.3	D25 F/T x2 on DN63CF	D25-2-63CF	£665	€765
50	21.8	D25 F/T x2 on DN100CF	D25-2-100CF	£683	€786
25	23.3	D25 F/T on DN125CF	D25-125CF	POA	POA
50	21.8	D50 F/T on DN100CF	D50-100CF	£551	€634
100	21.8	D50 F/T x2 on DN100CF	D50-2-100CF	£1093	€1257
50	23.3	D50 F/T on DN125CF	D50-125CF	POA	POA



D Type Feedthroughs Mounted On ISO KF & LF Flanges



No. Pins	A	Description	Part Code	Price £	Price €
9	15.0	D9 F/T on DN40KF	D9-40KF	£250	€288
9	15.0	D9 F/T on DN50KF	D9-50KF	£287	€331
18	15.0	D9 F/T x2 on DN50KF	D9-2-50KF	£601	€692
24	15.0	D9 & D15 feedthrough on DN50KF	D9-D15-50KF	£629	€724
15	15.0	D15 F/T on DN50KF	D15-50KF	£287	€331
15	15.0	D15 F/T on DN63LF	D15-63LF	£346	€398
30	15.0	D15 F/T x2 on DN63CF	D15-2-63LF	£647	€745
25	15.0	D25 F/T ON DN63LF	D25-63LF	£342	€394
25	15.0	D25 F/T ON DN100LF	D25-100LF	£571	€657
50	15.0	D25 F/T x2 on DN100LF	D25-2-100LF	£665	€765
75	15.0	D25 F/T x3 on DN100LF	D25-3-100LF	£1,266	€1456
50	15.0	D50 F/T on DN100LF	D50-100LF	£551	€634
100	15.0	D50 F/T x2 on DN100LF	D50-2-100LF	£1,093	€1257



All dimensions are nominal in millimetres unless otherwise specified

Subminiature D Type Feedthroughs



The HV Bulkhead D feedthrough was developed for HV flat chamber wall applications where conventional ISO KF or LF flanges are either not available, or just not practical. Our universal 50.8 x 88.9mm (2x3.5") rectangular flange, the Bulkhead D flange, accommodates standard 9, 15, 25 or 50 pin subminiature-D feedthroughs, and shares the same gasket and fastening accessories, providing simple and convenient interchangeability.

Features:

- 9 to 50 pin standard configuration.
- Kapton® insulated in-vacuum cables available.
- Air & vacuum side connectors available.

Specifications:

Voltage<sup>1</sup> 500VDC max

Current<sup>1</sup> 5A max @ 20°C

Material

Flange	304 St.St.
Shell	304 St.St.
Pin	Gold plated Ni-Fe alloy
Insulation	Glass ceramic
Connector, vacuum HV <sup>3</sup>	DAP / St.St.

Temperature Range<sup>2</sup>

Flanged feedthrough	-20°C to 150°C
Vacuum side connector	-20°C to 250°C
Air side connector	-65°C to 80°C

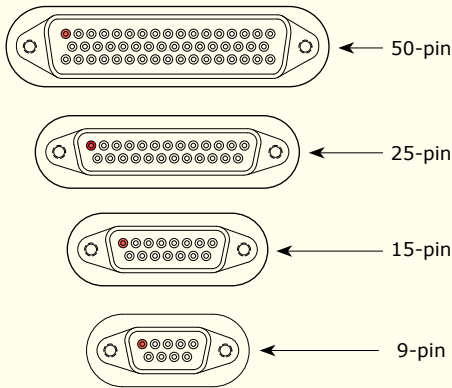
Max Thermal Gradient 25°C / minute

<sup>1</sup> - Please see section introduction for safety information. Stated electrical ratings are maximum test values. Feedthroughs are intended for instrumentation applications carrying low level signal voltages and currents.

For proper heat dissipation, a maximum of 20% of the pins on a feedthrough may carry the maximum pin current at any one time.

<sup>2</sup> - Assembly rating is reduced to that of the lowest rated component.

<sup>3</sup> - DAP is a glass-filled dyiathilate.

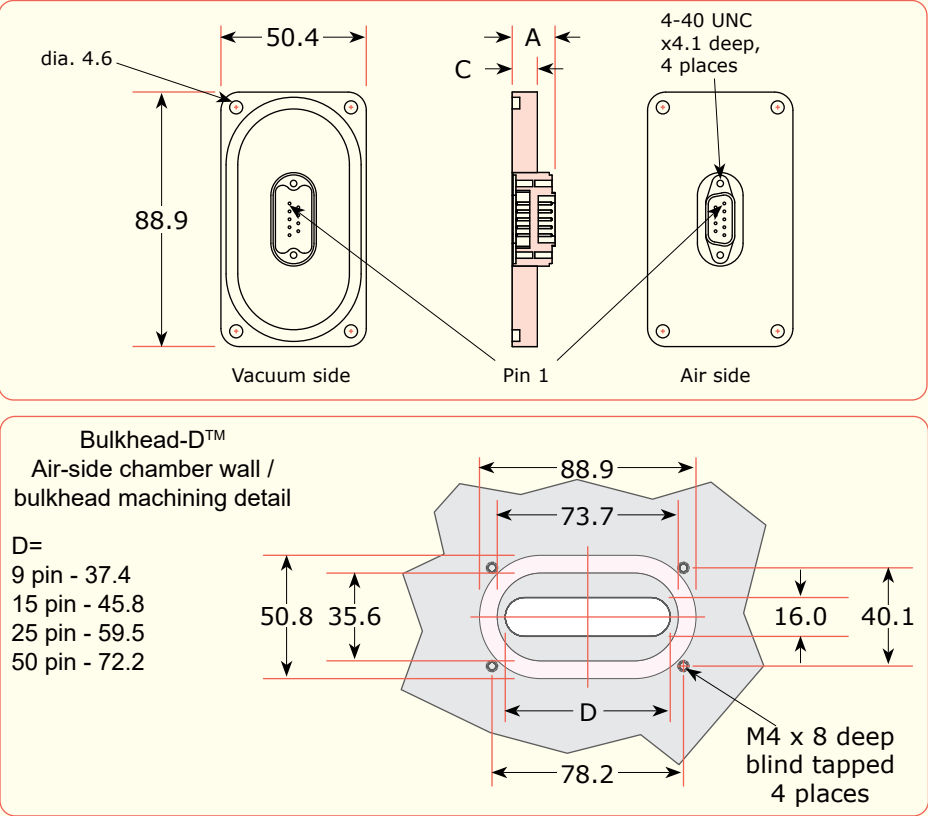


All dimensions are nominal in millimetres unless otherwise specified

D Type Feedthroughs Mounted On Bulkhead Flanges



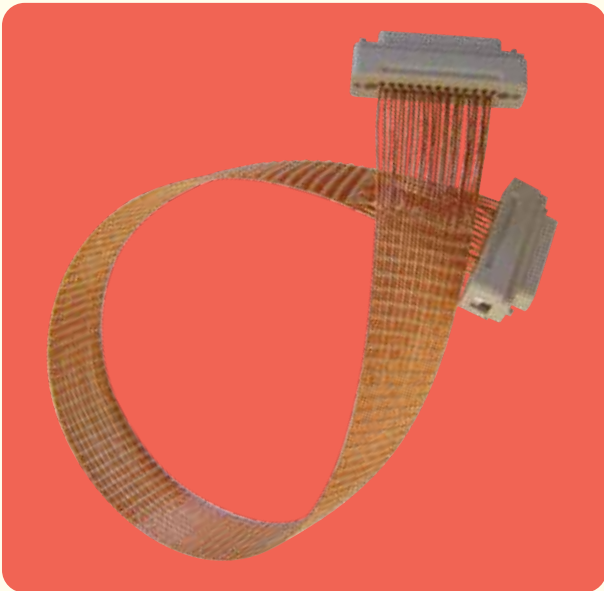
Description	Part Code	Price £	Price €
D9 feedthrough on HV bulkhead flange (inc Viton® seal)	D9-BHF	£319	€367
D15 feedthrough on HV bulkhead flange (inc Viton® seal)	D15-BHF	£374	€431
D25 feedthrough on HV bulkhead flange (inc Viton® seal)	D25-BHF	£401	€462
D50 feedthrough on HV bulkhead flange (inc Viton® seal)	D50-BHF	£519	€597
Viton® gasket for bulkhead flange	VG-BHF	£4	€5
Bolt kit - Imperial 8-32 x 5/8" for bulkhead flange	BKI-BHF	£4	€5
Bolt kit - Metric M4 X 16 for bulkhead flange	BKM-BHF	£2	€3



All dimensions are nominal in millimetres unless otherwise specified



Subminiature D Type Cables & Connectors - UHV



Connector to cable UHV ribbon cables are fitted with PEEK subminiature D connectors at one end and non terminated, Kapton® insulated ribbon cable at the other. The female cable connectors mate directly onto the vacuum side of subminiature D feedthroughs shown on the previous page or with the male in-vacuum cable connectors. The ribbon cable is made with Kapton® insulated 28AWG silver plated copper conductors, stranded 7 x 0.127mm. The cables are woven with a PEEK monofilament with a nominal diameter of 0.2mm. Contact to cable UHV ribbon cables do not include PEEK connectors.

**Special note:** The 50 pin contact fitted cable will not allow subsequent connector installation. Wires must be threaded through the connector back piece before crimping contacts.

UHV Ribbon Cables - Connector To Cable



\* - Uses 2 x 25-way ribbon cables

No. Contacts	Cable Length	Cable Dimension	Connector type	Connector Dimensions W x H x D	Part Code	Price £	Price €
9	500	1.02 x 10.2	Female	33.0 x 12.7 x 19.1	D9R-F500	£193	€222
9	1000	1.02 x 10.2	Female	33.0 x 12.7 x 19.1	D9R-F1000	£244	€281
9	500	1.02 x 10.2	Male	33.0 x 12.7 x 19.1	D9R-M500	£193	€222
9	1000	1.02 x 10.2	Male	33.0 x 12.7 x 19.1	D9R-M1000	£244	€281
15	500	1.02 x 18.8	Female	43.2 x 12.7 x 19.1	D15R-F500	£240	€276
15	1000	1.02 x 18.8	Female	43.2 x 12.7 x 19.1	D15R-F1000	£298	€343
15	500	1.02 x 18.8	Male	43.2 x 12.7 x 19.1	D15R-M500	£240	€276
15	1000	1.02 x 18.8	Male	43.2 x 12.7 x 19.1	D15R-M1000	£298	€343
25	500	1.02 x 30.5	Female	55.9 x 12.7 x 19.1	D25R-F500	£298	€343
25	1000	1.02 x 30.5	Female	55.9 x 12.7 x 19.1	D25R-F1000	£382	€440
25	500	1.02 x 30.5	Male	55.9 x 12.7 x 19.1	D25R-M500	£298	€343
25	1000	1.02 x 30.5	Male	55.9 x 12.7 x 19.1	D25R-M1000	£382	€440
50*	500	2.03 x 30.5	Female	68.6 x 12.7 x 19.1	D50R-F500	£502	€578
50*	1000	2.03 x 30.5	Female	68.6 x 12.7 x 19.1	D50R-F1000	£671	€772
50*	500	2.03 x 30.5	Male	68.6 x 12.7 x 19.1	D50R-M500	£502	€578
50*	1000	2.03 x 30.5	Male	68.6 x 12.7 x 19.1	D50R-M1000	£671	€772

UHV Ribbon Cables - Female To Female Connector Extension Cables



No. Contacts	Cable Length	Cable Dimension	Connector type	Connector Dimensions W x H x D	Part Code	Price £	Price €
9	500	1.02 x 10.2	Female	33.0 x 12.7 x 19.1	D9R-2F500	£318	€366
9	1000	1.02 x 10.2	Female	33.0 x 12.7 x 19.1	D9R-2F1000	£368	€424
15	500	1.02 x 18.8	Female	43.2 x 12.7 x 19.1	D15R-2F500	£414	€477
15	1000	1.02 x 18.8	Female	43.2 x 12.7 x 19.1	D15R-2F1000	£474	€546
25	500	1.02 x 30.5	Female	55.9 x 12.7 x 19.1	D25R-2F500	£515	€593
25	1000	1.02 x 30.5	Female	55.9 x 12.7 x 19.1	D25R-2F1000	£598	€688
50	500	2.03 x 30.5	Female	68.6 x 12.7 x 19.1	D50R-2F500	£841	€968
50	1000	2.03 x 30.5	Female	68.6 x 12.7 x 19.1	D50R-2F1000	£1,012	€1164

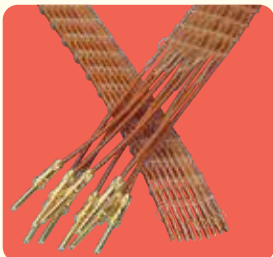
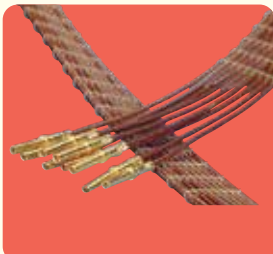
All dimensions are nominal in millimetres unless otherwise specified

UHV Ribbon Cables - Male To Female Connector Extension Cables



No. Contacts	Cable Length	Cable Dimension	Connector type	Connector Dimensions W x H x D	Part Code	Price £	Price €
9	500	1.02 x 10.2	Male/Female	33.0 x 12.7 x 19.1	D9R-M/F500	£318	€366
9	1000	1.02 x 10.2	Male/Female	33.0 x 12.7 x 19.1	D9R-M/F1000	£368	€424
15	500	1.02 x 18.8	Male/Female	43.2 x 12.7 x 19.1	D15R-M/F500	£414	€477
15	1000	1.02 x 18.8	Male/Female	43.2 x 12.7 x 19.1	D15R-M/F1000	£474	€546
25	500	1.02 x 30.5	Male/Female	55.9 x 12.7 x 19.1	D25R-M/F500	£515	€593
25	1000	1.02 x 30.5	Male/Female	55.9 x 12.7 x 19.1	D25R-M/F1000	£598	€688
50	500	2.03 x 30.5	Male/Female	68.6 x 12.7 x 19.1	D50R-M/F500	£841	€968
50	1000	2.03 x 30.5	Male/Female	68.6 x 12.7 x 19.1	D50R-M/F1000	£1,012	€1164

UHV Ribbon Cables - Contact To Cable



\* - Uses 2 x 25-way ribbon cables

No. Contacts	Cable Length	Cable Dimension	Connector type	Socket / Pin	Part Code	Price £	Price €
9	500	1.02 x 10.2	Female	Socket	D9RL-F500	£70	€81
9	1000	1.02 x 10.2	Female	Socket	D9RL-F1000	£115	€133
9	500	1.02 x 10.2	Male	Pin	D9RL-M500	£70	€81
9	1000	1.02 x 10.2	Male	Pin	D9RL-M1000	£115	€133
15	500	1.02 x 18.8	Female	Socket	D15RL-F500	£93	€107
15	1000	1.02 x 18.8	Female	Socket	D15RL-F1000	£157	€181
15	500	1.02 x 18.8	Male	Pin	D15RL-M500	£93	€107
15	1000	1.02 x 18.8	Male	Pin	D15RL-M1000	£157	€181
25	500	1.02 x 30.5	Female	Socket	D25RL-F500	£138	€159
25	1000	1.02 x 30.5	Female	Socket	D25RL-F1000	£221	€255
25	500	1.02 x 30.5	Male	Pin	D25RL-M500	£138	€159
25	1000	1.02 x 30.5	Male	Pin	D25RL-M1000	£221	€255
50*	500	1.02 x 30.5	Female	Socket	D50RL-F500	£272	€313
50*	1000	1.02 x 30.5	Female	Socket	D50RL-F1000	£442	€509
50*	500	1.02 x 30.5	Male	Pin	D50RL-M500	£272	€313
50*	1000	1.02 x 30.5	Male	Pin	D50RL-M1000	£442	€509

UHV PEEK Connectors



No. Contacts	Connector type	Connector Dimension W x H x D	Use Contact	Part Code	Price £	Price €
9	Female	33.0 x 12.7 x 19.1	DPINF-25	D9-PCONF	£124	€143
15	Female	43.2 x 12.7 x 19.1	DPINF-25	D15-PCONF	£142	€164
25	Female	55.9 x 12.7 x 19.1	DPINF-25	D25-PCONF	£161	€186
50	Female	68.6 x 12.7 x 19.1	DPINF-25	D50-PCONF	£231	€266
9	Male	33.0 x 12.7 x 19.1	DPINM-25	D9-PCONM	£124	€143
15	Male	43.2 x 12.7 x 19.1	DPINM-25	D15-PCONM	£142	€164
25	Male	55.9 x 12.7 x 19.1	DPINM-25	D25-PCONM	£161	€186
50	Male	68.6 x 12.7 x 19.1	DPINM-25	D50-PCONM	£231	€266
UHV/air female skts for use in D connector shells 25/PK (20-24AWG)				DPINF-25	£19	€22
Heavy duty UHV/air female skts for use in D connector shells 10/PK (20-24AWG)				DPINF-10-H	£34	€40
UHV/air male pins for use in D connector shells 25/PK (20-24AWG)				DPINM-25	£16	€19
UHV/air female skts for use in D connector shells 25/PK (26-30AWG)				DPINF-25-S	£53	€61
Heavy duty UHV/air female skts for use in D connector shells 10/PK (26-30AWG)				DPINF-10-H-S	£34	€40
UHV/air male pins for use in D connector shells 25/PK (26-30AWG)				DPINM-25-S	£53	€61
D9 PEEK gender adapter 2x female				D9PGA	£177	€204
D15 PEEK gender adapter 2x female				D15PGA	£196	€226
D25 PEEK gender adapter 2x female				D25PGA	£218	€251
D50 PEEK gender adapter 2x female				D50PGA	£318	€366

All dimensions are nominal in millimetres unless otherwise specified

Subminiature D Type Cables & Connectors - UHV

UHV PEEK Panel Mount Connectors



No. Contacts	Connector type	Cut Out Dimension / Mount Hole Spacing	Use Contact	Part Code	Price £	Price €
9	Male	33.0 x 14.0 / 38.4	DPINM-25	D9-PCONM-PM	£148	€171
15	Male	41.5 x 14.0 / 45.9	DPINM-25	D15-PCONM-PM	£161	€186
25	Male	53.5 x 14.0 / 59.2	DPINM-25	D25-PCONM-PM	£175	€202
50	Male	68.1 x 14.0 / 73.8	DPINM-25	D50-PCONM-PM	£249	€287

Contacts not included, please purchase separately

UHV Ribbon Cables - PEEK Backshell Strain Relief



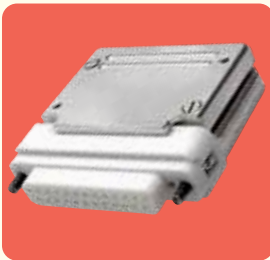
No. Contacts	Dimensions With Connector W x H x D	Use With Part	Part Code	Price £	Price €
9	25.4 x 16.5 x 31.8	D9-PCONF / D9-PCONM	D9PSR	£77	€89
15	33.0 x 16.5 x 31.8	D15-PCONF / D15-PCONM	D15PSR	£84	€97
25	48.3 x 16.5 x 31.8	D25-PCONF / D25-PCONM	D25PSR	£93	€107
50	59.7 x 16.5 x 31.8	D50-PCONF / D50-PCONM	D50PSR	£102	€118

Macor Ceramic D Connectors



No Contacts	Connector type	Connector Dimension W x H x D	Use Contact	Part Code	Price £	Price €
9	Femal	33.0 x 12.7 x 19.1	DPINF-25	D9-CONF-MAC	£240	€276
9	Male	33.0 x 12.7 x 19.1	DPINM-25	D9-CONM-MAC	£240	€276
15	Female	40.6 x 12.7 x 19.1	DPINF-25	D15-CONF-MAC	£276	€318
15	Male	40.6 x 12.7 x 19.1	DPINM-25	D15-CONM-MAC	£276	€318
25	Female	53.3 x 12.7 x 19.1	DPINF-25	D25-CONF-MAC	£295	€340
25	Male	53.3 x 12.7 x 19.1	DPINM-25	D25-CONM-MAC	£295	€340
50	Female	68.6 x 12.7 x 19.1	DPINF-25	D50-CONF-MAC	£377	€434
50	Male	68.6 x 12.7 x 19.1	DPINM-25	D50-CONM-MAC	£377	€434
UHV/air female skts for use in D connector shells 25/PK				DPINF-25	£19	€22
UHV/air male pins for use in D connector shells 25/PK				DPINM-25	£9	€11

UHV Ribbon Cables - Stainless Steel Backshell Strain Relief



No. Contacts	Dimensions With Connector W x H x D	Use With Part	Part Code	Price £	Price €
9	25.4 x 16.5 x 31.8	D9-PCONF / D9-PCONM	D9SSSR	£129	€149
15	33.0 x 16.5 x 31.8	D15-PCONF / D15-PCONM	D15SSSR	£148	€171
25	48.3 x 16.5 x 46.5	D25-PCONF / D25-PCONM	D25SSSR	£166	€191
50	59.7 x 16.5 x 46.5	D50-PCONF / D50-PCONM	D50SSSR	£208	€240

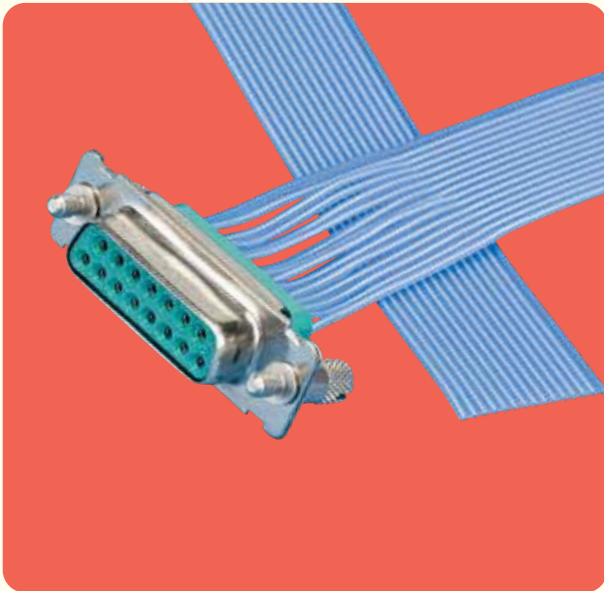
Crimp Tool & Wire Strippers



Description	Part Code	Price £	Price €
Crimp tool for D / C PINS - UHV	DCT1	£1109	€1276
Wire stripper 0.12 - 0.4mm DIA wires (26-36AWG)	WSTRIP1	£7	€9
Wire stripper 0.25 - 0.8mm DIA wires (20-30AWG)	WSTRIP2	£65	€75

All dimensions are nominal in millimetres unless otherwise specified

Subminiature D Type Cables & Connectors - HV

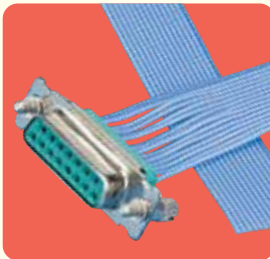


Connector to cable HV ribbon cable assemblies are fitted with stainless steel / DAP\* subminiature D connectors at one end and non terminated, Teflon® FEP insulated ribbon cable at the other. These components are suitable for vacuum applications down to 1 x 10<sup>-8</sup> Torr with a maximum temperature of 125°C. The female cable connectors mate directly onto the vacuum side of sub-miniature D feedthroughs shown earlier in this section or with the male in-vacuum cable connectors. The ribbon cable jacket is an extruded FEP Teflon®, the conductor is 28AWG silver plated copper, stranded 7 x 0.127mm.

Contact to cable HV ribbon cables do not include connector shells.

\* - DAP is a glass filled dyiathilate.

HV Ribbon Cables - Connector To Cable



\* - Uses 2 x 25-way ribbon cables

No. Contacts	Cable Length	Cable Dimension	Connector type	Connector Dimensions W x H x D	Part Code	Price £	Price €
9	500	0.76 x 11.4	Female	31.0 x 12.7 x 15.5	D9HVR-F500	£106	€122
9	1000	0.76 x 11.4	Female	31.0 x 12.7 x 15.5	D9HVR-F1000	£131	€151
9	500	0.76 x 11.4	Male	31.0 x 12.7 x 15.5	D9HVR-M500	£87	€101
9	1000	0.76 x 11.4	Male	31.0 x 12.7 x 15.5	D9HVR-M1000	£112	€129
15	500	0.76 x 19.1	Female	39.4 x 12.7 x 15.5	D15HVR-F500	£134	€155
15	1000	0.76 x 19.1	Female	39.4 x 12.7 x 15.5	D15HVR-F1000	£149	€172
15	500	0.76 x 19.1	Male	39.4 x 12.7 x 15.5	D15HVR-M500	£115	€133
15	1000	0.76 x 19.1	Male	39.4 x 12.7 x 15.5	D15HVR-M1000	£131	€151
25	500	0.76 x 31.8	Female	53.3 x 12.7 x 15.5	D25HVR-F500	£180	€207
25	1000	0.76 x 31.8	Female	53.3 x 12.7 x 15.5	D25HVR-F1000	£234	€270
25	500	0.76 x 31.8	Male	53.3 x 12.7 x 15.5	D25HVR-M500	£171	€197
25	1000	0.76 x 31.8	Male	53.3 x 12.7 x 15.5	D25HVR-M1000	£225	€259
50*	500	1.52 x 31.8	Female	67.3 x 15.2 x 15.5	D50HVR-F500	£322	€371
50*	1000	1.52 x 31.8	Female	67.3 x 15.2 x 15.5	D50HVR-F1000	£431	€496
50*	500	1.52 x 31.8	Male	67.3 x 15.2 x 15.5	D50HVR-M500	£308	€355
50*	1000	1.52 x 31.8	Male	67.3 x 15.2 x 15.5	D50HVR-M1000	£417	€480

HV Ribbon Cables - Female To Female Connector Extension Cables



No. Contacts	Cable Length	Cable Dimension	Connector type	Connector Dimensions W x H x D	Part Code	Price £	Price €
9	500	0.76 x 11.4	Female	31.0 x 12.7 x 15.5	D9HVR-2F500	£152	€175
9	1000	0.76 x 11.4	Female	31.0 x 12.7 x 15.5	D9HVR-2F1000	£193	€222
15	500	0.76 x 19.1	Female	39.4 x 12.7 x 15.5	D15HVR-2F500	£198	€228
15	1000	0.76 x 19.1	Female	39.4 x 12.7 x 15.5	D15HVR-2F1000	£231	€266
25	500	0.76 x 31.8	Female	53.3 x 12.7 x 15.5	D25HVR-2F500	£289	€333
25	1000	0.76 x 31.8	Female	53.3 x 12.7 x 15.5	D25HVR-2F1000	£359	€413
50*	500	1.52 x 31.8	Female	67.3 x 15.2 x 15.5	D50HVR-2F500	£391	€450
50*	1000	1.52 x 31.8	Female	67.3 x 15.2 x 15.5	D50HVR-2F1000	£515	€593

All dimensions are nominal in millimetres unless otherwise specified



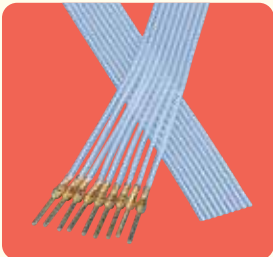
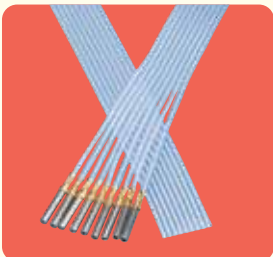
Subminiature D Type Cables & Connectors - HV

HV Ribbon Cables -Male To Female Connector Extension Cables



No. Contacts	Cable Length	Cable Dimension	Connector type	Connector Dimensions W x H x D	Part Code	Price £	Price €
9	500	0.76 x 11.4	Male/Female	31.0 x 12.7 x 15.5	D9HVR-M/F500	£151	€174
9	1000	0.76 x 11.4	Male/Female	31.0 x 12.7 x 15.5	D9HVR-M/F1000	£193	€222
15	500	0.76 x 19.1	Male/Female	39.4 x 12.7 x 15.5	D15HVR-M/F500b0	£198	€228
15	1000	0.76 x 19.1	Male/Female	39.4 x 12.7 x 15.5	D15HVR-M/F1000	£231	€266
25	500	0.76 x 31.8	Male/Female	53.3 x 12.7 x 15.5	D25HVR-M/F500	£289	€333
25	1000	0.76 x 31.8	Male/Female	53.3 x 12.7 x 15.5	D25HVR-M/F1000	£359	€413
50*	500	1.52 x 31.8	Male/Female	67.3 x 15.2 x 15.5	D50HVR-M/F500	£391	€450
50*	1000	1.52 x 31.8	Male/Female	67.3 x 15.2 x 15.5	D50HVR-M/F1000	£515	€593

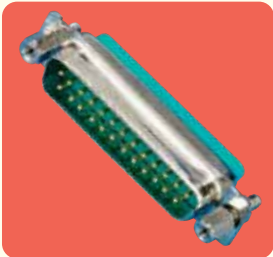
HV Ribbon Cables - Contact To Cable



\* - Uses 2 x 25-way ribbon cables

No. Contacts	Cable Length	Cable Dimension	Connector type	Socket / Pin	Part Code	Price £	Price €
9	500	0.76 x 11.4	Female	Socket	D9HVRL-F500	£46	€53
9	1000	0.76 x 11.4	Female	Socket	D9HVRL-F1000	£71	€82
9	500	0.76 x 11.4	Male	Pin	D9HVRL-M500	£46	€53
9	1000	0.76 x 11.4	Male	Pin	D9HVRL-M1000	£71	€82
15	500	0.76 x 19.1	Female	Socket	D15HVRL-F500	£71	€82
15	1000	0.76 x 19.1	Female	Socket	D15HVRL-F1000	£105	€121
15	500	0.76 x 19.1	Male	Pin	D15HVRL-M500	£71	€82
15	1000	0.76 x 19.1	Male	Pin	D15HVRL-M1000	£105	€121
25	500	0.76 x 31.8	Female	Socket	D25HVRL-F500	£115	€133
25	1000	0.76 x 31.8	Female	Socket	D25HVRL-F1000	£170	€196
25	500	0.76 x 31.8	Male	Pin	D25HVRL-M500	£115	€133
25	1000	0.76 x 31.8	Male	Pin	D25HVRL-M1000	£170	€196
50*	500	1.52 x 31.8	Female	Socket	D50HVRL-F500	£231	€266
50*	1000	1.52 x 31.8	Female	Socket	D50HVRL-F1000	£339	€390
50*	500	1.52 x 31.8	Male	Pin	D50HVRL-M500	£231	€266
50*	1000	1.52 x 31.8	Male	Pin	D50HVRL-M1000	£339	€390

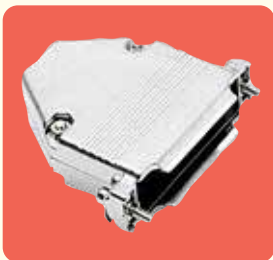
HV - Connectors



No. Contacts	Connector type	Connector Dimension W x H x D	Use Contact	Part Code	Price £	Price €
9	Female	31.0 x 12.7 x 15.5	DPINHVF-25	D9-HVCONF	£60	€69
15	Female	39.4 x 12.7 x 15.5	DPINHVF-25	D15-HVCONF	£63	€73
25	Female	53.3 x 12.7 x 15.5	DPINHVF-25	D25-HVCONF	£64	€74
50	Female	67.3 x 15.2 x 15.5	DPINHVF-25	D50-HVCONF	£93	€107
9	Male	31.0 x 12.7 x 15.5	DPINHVM-25	D9-HVCONM	£41	€48
15	Male	39.4 x 12.7 x 15.5	DPINHVM-25	D15-HVCONM	£44	€51
25	Male	53.3 x 12.7 x 15.5	DPINHVM-25	D25-HVCONM	£55	€64
50	Male	67.3 x 15.2 x 15.5	DPINHVM-25	D50-HVCONM	£78	€90
HV/air female skts for use in HV connector shells 25/PK (20-24 AWG)				DPINHVF-25	£67	€78
HV/air male pins for use in HV connector shells 25/PK (20-24 AWG)				DPINHVM-25	£67	€78
HV/air female skts for use in HV connector shells 25/PK (26-30 AWG)				DPINHVF-25-S	£67	€78
HV/air male pins for use in HV connector shells 25/PK (26-30 AWG)				DPINHVM-25-S	£67	€78

All dimensions are nominal in millimetres unless otherwise specified

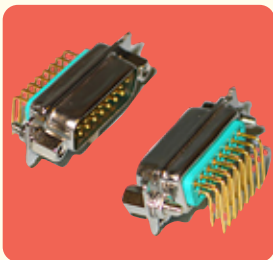
HV Backshell Strain Relief



No. Contacts	Dimensions Without Connector W x H x D	Use With Part	Part Code	Price £	Price €
9	49.5x 16.5 x 31.0	D9-HVCONF / D9-HVCONM	D9-HVSR	£28	€33
15	43.8 x 16.1 x 40.1	D15-HVCONF / D15-HVCONM	D15-HVSR	£33	€38
25	43.8 x 16.1 x 53.3	D25-HVCONF / D25-HVCONM	D25-HVSR	£37	€43
50	44.5 x 23.5 x 67.1	D50-HVCONF / D50-HVCONM	D50-HVSR	£43	€50

Nickel-plated zinc back shell strain relief for HV connectors.  
Note: NOT recommended for use with flat ribbon cable or small diameter wire. Use with small diameter wire may require use of additional wire protection such as FEP or PTFE heat shrink tubing to help protect the wire from damage.

HV PCB Mount Connectors



Description	Part Code	Price £	Price €
High vacuum PCB connector for D9 male	D9-HV-PCB	£94	€109
High vacuum PCB connector for D15 male	D15-HV-PCB	£104	€120
High vacuum PCB connector for D25 male	D25-HV-PCB	£139	€160
High vacuum PCB connector for D50 male	D50-HV-PCB	£207	€239

Crimp Tool & Wire Strippers



Description	Part Code	Price £	Price €
Crimp tool for D / C pins - HV	DCT1-P	£1109	€1276
Pin insert / extract tool for HV pins	DPIE-HV	£63	€73
Wire stripper 0.12 - 0.4mm DIA wires (26-36AWG)	WSTRIP1	£75	€87
Wire stripper 0.25 - 0.8mm DIA wires (20-30AWG)	WSTRIP2	£65	€75

All dimensions are nominal in millimetres unless otherwise specified



Subminiature D Type Cables & Connectors - Air



Air service cable assemblies are 3m (10 feet) long and terminated with industry standard moulded male / female subminiature D connectors. These cables have straight through pin-to-pin wiring. Please contact our sales office for special cable assembly configurations.

Air service connectors accept up to 20AWG wires. Contacts are gold plated and the shell has a tin finish. Plastic subminiature D hoods are a one piece, unshielded design with long knurled thumb screws, a side snaplock and a metal screw down strain relief.

Gender changers are offered for use with LewVac subminiature D feedthroughs with male pins on both sides, to correct pin numbering to the standard subminiature D configuration. Pin 1 reverses position from vacuum side to air side due to the male-to-male configuration. Air service gender changers are made with Delrin® material.

Subminiature D Cable Assemblies



26AWG, 300V  
80°C max

No. Contacts	Cable Length	Connector type	Part Code	Price £	Price €
9	3m	Female - male	D9-AIRCAB-3M	£32	€37
15	3mt	Female - male	D15-AIRCAB-3M	£41	€48
25	3m	Female - male	D25-AIRCAB-3M	£51	€59
50	3m	Female - male	D50-AIRCAB-3M	£96	€111

Subminiature D Connectors



Accepts up to  
20AWG wires

No. Contacts	Connector Type	Connector Dimension W x H x D	Part Code	Price £	Price €
9	Female	36.8 x 15.2x 49.5	D9-AC	£11	€13
15	Female	44.5 x 15.2x 49.5	D15-AC	£12	€14
25	Female	58.4 x 15.2x 49.5	D25-AC	£14	€17
50	Female	72.4 x 17.8x 49.5	D50-AC	£24	€28

Subminiature D Gender Changers



No. Contacts	Connector Type	Connector Dimension W x H x D	Part Code	Price £	Price €
9	2 x Female	33.0 x 10.2 x 30.5	D9-GA	£105	€121
15	2 x Female	40.6 x 10.2 x 30.5	D15-GA	£125	€144
25	2 x Female	53.3 x 10.2 x 30.5	D25-GA	£138	€159
50	2 x Female	66.0 x 12.7 x 30.5	D50-GA	£242	€279
9	2 x Male	44.5 x 11.4 x 27.7	D9-GA-MM	£119	€137
15	2 x Male	53.3 x 11.4 x 27.7	D15-GA-MM	£138	€159
25	2 x Male	65.5 x 11.4 x 27.7	D25-GA-MM	£147	€170
50	2 x Male	80.0 x 11.4 x 27.7	D50-GA-MM	£242	€279

USB 2.0 Instrumentation Feedthrough



A double ended USB 2.0 feedthrough with standard USB 2.0 series A female receptacle both sides.

Features:

- USB 2.0 series A female receptacle both sides.
- High temperature rated to 160°C.
- UHV compatible construction.
- Gold plated beryllium copper contacts.
- Vacuum side cables available.

Specifications:

Material

Flange	304L St.St.
Shell	304L St.St.
Pin	Gold plated beryllium copper
Dielectric	Ceramic
Interface insulation	Glass filled polybutylene terephthalate

Temperature Range<sup>1</sup>

CF flanged feedthrough	-200°C to 160°C
KF flanged feedthrough	-20°C to 150°C
Vacuum side connector	-200°C to 250°C

<sup>1</sup> - Assembly rating is reduced to that of the lowest rated component.

All dimensions are nominal in millimetres unless otherwise specified

USB 2 Instrumentation Feedthrough

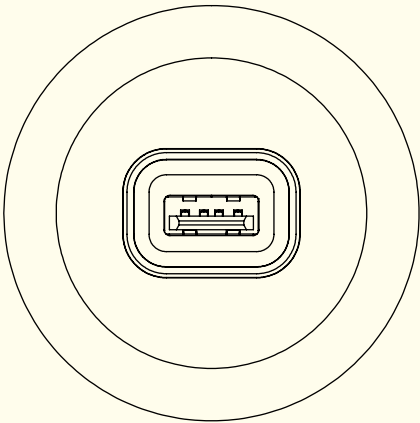


Description	Part Code	Price £	Price €
USB 2.0 feedthrough DN40CF (Female both sides)	FH-USB2-40CF	£997	€1147
USB 2.0 feedthrough DN63CF (Female both sides)	FH-USB2-63CF	POA	POA
USB 2.0 feedthrough DN40KF (Female both sides)	FH-USB2-40KF	£997	€1147
USB 2.0 feedthrough DN50KF (Female both sides)	FH-USB2-50KF	POA	POA

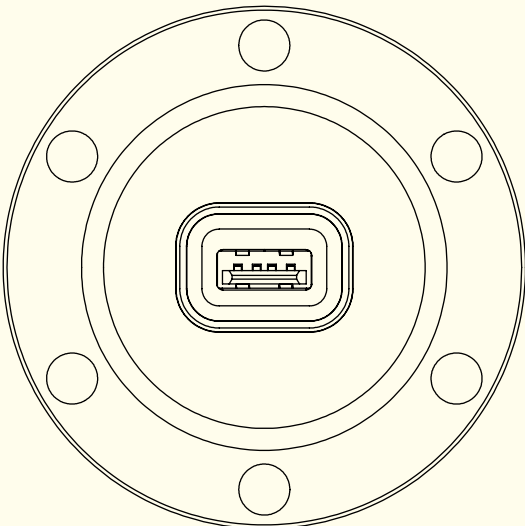
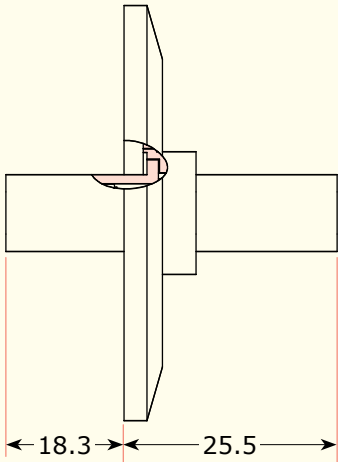
In Vacuum Cable For USB Feedthrough

Description	Part Code	Price £	Price €
In-vacuum USB 2.0 (Male) - N/C cable length = ##mm	FH-USB2-CAB-##	POA	POA

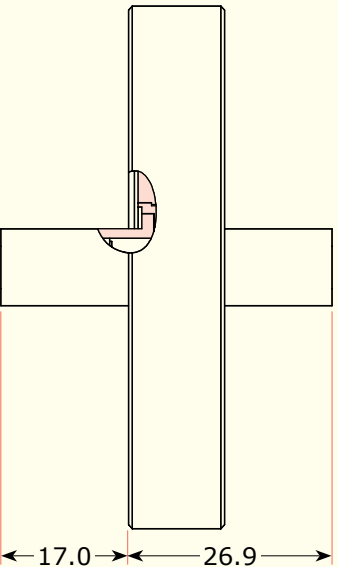
In vacuum cables have a Polyetheretherketon (PEEK) shell, stainless steel fittings and are fitted with 28AWG Kapton<sup>®</sup> insulated wires with stainless steel braided jacket. Please specify required length.



DN40/50KF



DN40CF



All dimensions are nominal in millimetres unless otherwise specified