

**neyco**

VACUUM & MATERIALS



# MULTIPIN CONNECTORS



## Description

CeramTec's multipin connector category of products describes hermetic feedthroughs of two or more conducting pins that accept plugs on the air side. Some connectors allow for plugs on the vacuum side as well.

Product variations include instrumentation Micro D (MIL-DTL-83513) type, Sub D (MIL-C-24308) type and circular connector types MIL-C-26482 and MIL-C-5015.

The products in this section are used primarily to provide instrumentation signals, voltage and/or current into an ultra-high vacuum environment, high pressure, or many other extreme environments, with an in-line connection to outside instrumentation. Designs adapt a Ceramaseal® feedthrough (receptacle) with an industry-standard plug.

The connector assembly is characterized by the Mil Spec designation, installation method and number of pins. In situations where voltage and current requirements are moderate, CeramTec is able to achieve a very high pin density using glass-ceramic technology. CeramTec's designs include both single-ended and double-ended connector assemblies.

## Standard Specifications

- Voltages to 12 kV DC
- Current to 40 Amps per pin
- Temperature Range: -269° C to 450° C
- Internal Pressure 1 x 10<sup>-10</sup> torr to 600 psig
- Up to 51 pins/conductors

## Extreme / Custom Design

- 940-pin connector using thermocouple and instrumentation leads
- Combination multipin and coaxial connectors with a custom plug
- Multiple combinations of circular and D connectors in a flange
- Plugs bakeable to 650° C



## Installation

Standard installation mountings include:

- Weld (Pulse-TIG, TIG, Laser, E-Beam)
- ISO KF flange
- ConFlat flange
- NPT fitting (see Pressure section)
- 1" Baseplate

For details and information on connector assembly installation, please refer to the Technical Reference section. For additional vacuum-side attachments, see the contacts and plugs in the Accessories section.

## Applications

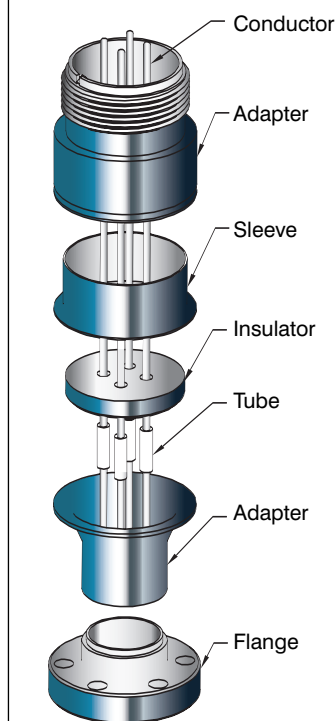
A few of the many applications in which these multipin connectors are commonly used are:



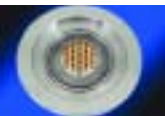




- Semiconductor processing equipment
- Analytical test and measurement equipment
- Pressure transducers
- Power generation: measurement and control
- Particle accelerators
- Furnaces
- Energy research
- Commercial & military aircraft

## New Products

- Micro D connector product family

## Typical Multipin Connector Construction



Type	Voltage DC	Current (Amps per conductor)	# of Conductors	Conductor Material	Sub-section	Section Pages
	375 V	1 Amp	9, 15, 25 and 51	Gold-Plated 300 Series Stainless Steel	Micro D Type MIL-DTL-83513	B.1 56-57
	500 V	5 Amps	9, 15, 25 and 50	Gold-Plated 300 Series Stainless Steel	Sub D Type MIL-C-24308	B.2 58-59
	1 kV	5 Amps	3, 6, 10, 19, 32 and 41	Gold-Plated 300 Series Stainless Steel	Circular Type MIL-C-26482	B.3 60-63
	700 V	7 Amps	4, 6, 10, 20, and 35	Alumel	Circular Type MIL-C-5015	B.4 64-65
	700 V	to 40 Amps	2 and 4	Nickel, Molybdenum	Circular Type Power: MIL-C-5015	B.5 66-69
	12 kV	13 Amps	2, 4, and 7	Molybdenum	High Voltage	B.6 70-71
	to 700 V	7 Amps	8 and 10	Alumel	Baseplate	B.7 72-73

## Micro D Type (MIL-DTL-83513) Connectors

CeramTec's hermetic Micro D type connectors are rugged and lightweight connectors that are designed to meet MIL-DTL-83513 specifications. Contacts are on .050 [1.27] centers, which provides a significant space and weight savings over other traditional Mil Spec connectors. Standard configurations include 9, 15, 25 and 51 gold plated pin/socket contacts, which are available as a weldable unit or in a ConFlat® or ISO flange. CeramTec uses a proprietary glass-ceramic sealing process to individually seal and electrically insulate each pin from the stainless steel housing. This allows for a very high pin/lead density and the extremely robust hermetic seal. These hermetic connectors are built for the most demanding environments and offer a much higher level of durability and reliability than any glass or elastomer sealed connector. These products are all RoHS compliant.

Mating air side cable assemblies with standard color coded 6" flying leads are offered for ease of installation. Custom PEEK thermoplastic plugs are offered for easy connectivity on the vacuum side of the connector. These PEEK plugs are fitted with gold plated 0.020 female crimp contacts, which mate to the male pins on the vacuum side of the Micro D connector and can be used with #26 through 30 AWG Kapton® wire. Typical applications for these hermetic Micro D connectors include military and commercial aircraft, IR cameras, laser-guided systems, MRI equipment and semiconductor testing & inspection equipment.

### Specifications

#### Materials

Shell: 304 Stainless steel  
Pins: 300 Series Stainless steel (Gold plated)  
Insulation: Glass-ceramic  
Magnetic Materials: No

**Voltage Rating** 375 V DC

**Current Rating** 1 Amp per pin

**Temperature Range** -269°C to 450°C, ISO KF -25°C to 205°C

**Pressure @ 20°C** ISO KF 0 PSIG

9 Pin - 1450 PSIG (100 Bar)	25 Pin - 1300 PSIG (89.6 Bar)
15 Pin - 1375 PSIG (94.8 Bar)	51 Pin - 1125 PSIG (77.6 Bar)

### Vacuum Side Plug Specifications

#### Materials

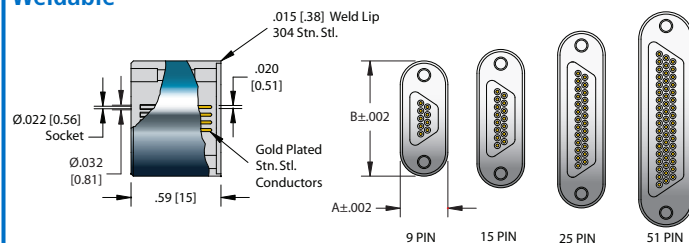
Shell/Insulation: PEEK (polyether ether ketone)  
Crimp Contacts: Copper alloy (Gold Plated)  
Magnetic Materials: No

**Voltage Rating** 500 V DC

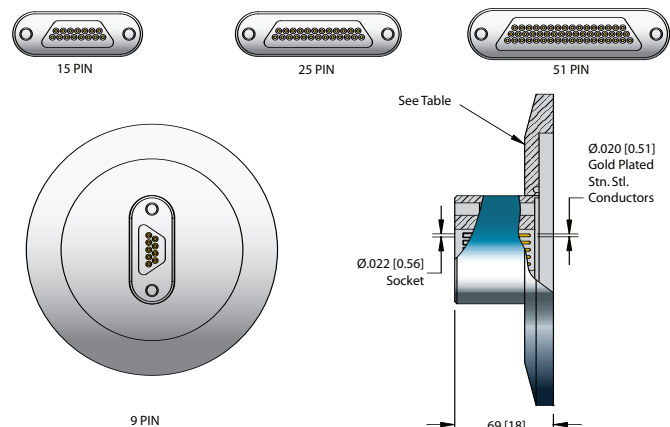
**Current Rating** 2 Amps per pin

**Temperature Range** -269°C to 200°C

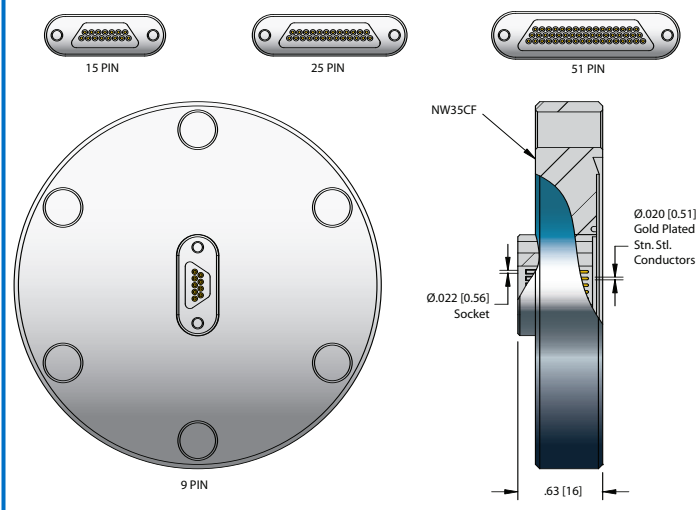
### Weldable



### ISO KF



### ConFlat



### Ribbon Cable Specifications

#### Materials

Insulation: Kapton® Type FN  
Weave: PEEK (polyether ether ketone) monofilament

**Number of Conductors** 9, 15, 25

#### Conductor

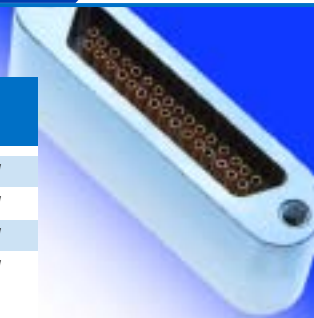
28 AWG 7 / 0.005" stranded silver plated copper

**Voltage Rating** 600 V AC, 850 V DC

**Resistance @ 20°C** 244 Ω/Km

**Current Rating** 2 Amps per conductor

**Temperature Range** -55°C to 200°C



MULTIPIN CONNECTOR

**Weldable**

NO. PINS	INSTALLATION	DIMENSIONS		PART NUMBER
		A	B	
9	Weld	0.310 [7.9]	0.750 [19]	21270-01-W
15	Weld	0.310 [7.9]	0.900 [22.9]	21271-01-W
25	Weld	0.310 [7.9]	1.150 [29.2]	21272-01-W
51	Weld	0.356 [9.04]	1.400 [35.6]	21274-01-W

**ISO FLANGE**

9	NW25KF	-	-	21607-01-KF
15	NW40KF	-	-	21608-01-KF
25	NW40KF	-	-	21609-01-KF
51	NW40KF	-	-	21611-01-KF

**CONFLAT FLANGE**

9	2 3/4" (NW35CF)	-	-	21594-01-CF
15	2 3/4" (NW35CF)	-	-	21598-01-CF
25	2 3/4" (NW35CF)	-	-	21599-01-CF
51	2 3/4" (NW35CF)	-	-	21601-01-CF

**ISO KF**

**ConFlat**

**Air Side Cable Assembly**

TYPE	VOLTAGE DC	QTY	CONDUCTOR		DIMENSIONS		TEMPERATURE °C		MAGNETIC MATERIALS	PART NUMBER
			AMPS	MATERIAL	W	H	MIN	MAX		
Air Side	500 V	9	3	Copper Alloy	0.775 [20]	0.298 [8]	-55	125	No	21585-01-A
Air Side	500 V	15	3	Copper Alloy	0.925 [23]	0.298 [8]	-55	125	No	21586-01-A
Air Side	500 V	25	3	Copper Alloy	1.175 [30]	0.298 [8]	-55	125	No	21587-01-A
Air Side	500 V	51	3	Copper Alloy	1.425 [36]	0.341 [9]	-55	125	No	21589-01-A

**Vacuum Side Plug**

TYPE	VOLTAGE DC	QTY	CONDUCTOR		DIMENSIONS		TEMPERATURE °C		MAGNETIC MATERIALS	PART NUMBER
			AMPS	MATERIAL	W	H	MIN	MAX		
Vacuum Side	500 V	9	2	Beryllium Copper	0.790 [20]	0.390 [10]	-269	200	No	21573-01-A
Vacuum Side	500 V	15	2	Beryllium Copper	0.935 [24]	0.390 [10]	-269	200	No	21574-01-A
Vacuum Side	500 V	25	2	Beryllium Copper	1.185 [30]	0.390 [10]	-269	200	No	21575-01-A
Vacuum Side	500 V	51	2	Beryllium Copper	1.135 [36]	0.390 [10]	-269	200	No	21577-01-A

Note that contacts are included with all plugs.

**Ribbon Cable 28 AWG**

CONDUCTOR QUANTITY*	CABLE LENGTH	CABLE WIDTH	INSULATION DIAMETER	WIRE DIAMETER	PART NUMBER
9	19"	0.4	Ø .028	7 X 0.005	21622-19-WW
9	39"	0.4	Ø .028	7 X 0.005	21622-39-WW
15	19"	0.7	Ø .028	7 X 0.005	21623-19-WW
15	39"	0.7	Ø .028	7 X 0.005	21623-39-WW
25	19"	1.2	Ø .028	7 X 0.005	21624-19-WW
25	39"	1.2	Ø .028	7 X 0.005	21624-39-WW
Adjustable Wire Stripper For 20 - 30 AWG (0.25 - 0.80 mm) Cable					21128-01

Contact CeramTec for custom lengths.

**Contacts**

TYPE	MATERIAL	DESCRIPTION	PART NUMBER
.020 Crimp Contacts	Beryllium Copper	Accepts wire up to 0.022 [.56]	21466-02-A

\*Contacts priced and sold in packages of 5. See the Accessories section for more information on all accessories.



### Sub D Type (MIL-C-24308) Connectors

CeramTec's hermetic Subminiature D type connectors are designed to meet MIL-C-24308 specifications. Standard configurations include 9, 15, 25, and 50 gold plated pin connectors, which are available as a weldable unit or in a ConFlat® or ISO flange. Custom configurations are commonplace and available upon request. CeramTec is able to achieve a very high pin/lead density (standard - up to 50 pins) using glass-ceramic sealing technology. The rugged stainless steel shell design is built to withstand severe environments and reduces seal failure due to overheating while welding. These connectors are used primarily to provide instrumentation signals, voltage and/or current into a high-vacuum or ultra-high vacuum environment, with an in-line connection to outside instrumentation.

### In-Vacuum Ribbon Cable

CeramTec's in-vacuum ribbon cable is designed to complement our Sub D Type (MIL-C-24308) hermetic multipin connector product line and therefore cable configurations include 9, 15, or 25 conductor cable. Note that 50 conductor cables are created by using two 25 conductor cables. Each of the Kapton® wrapped (19 x 0.0063) 22 AWG silver plated copper conductors are woven with a PEEK (polyether ether ketone) monofilament in order to achieve the ribbon cable form. The multistranded wrapped cable offers the most flexible solution and has a temperature range up to 200° C. All ribbon cable assembly materials are ultra-high vacuum (UHV) compatible. The ribbon cables are vacuum baked out prior to shipping. Additional vacuum bake out prior to use is also recommended. All cable assembly components are sold separately.

### Specifications

#### Materials

Shell: 304 Stainless steel  
Pins: 300 Series Stainless steel (Gold Plated)  
Insulation: Glass-ceramic  
Magnetic Materials: No

**Voltage Rating** 500 V DC

**Current Rating** 5 Amps per pin

**Temperature Range** -269°C to 450°C, ISO KF -25°C to 205°C

**Pressure @ 20°C** ISO KF 0 PSIG

9 Pin - 1350 PSIG (93.1 Bar)	25 Pin - 1200 PSIG (82.7 Bar)
15 Pin - 1250 PSIG (86.2 Bar)	50 Pin - 900 PSIG (62.1 Bar)

### Vacuum Side Plug Specifications

#### Materials

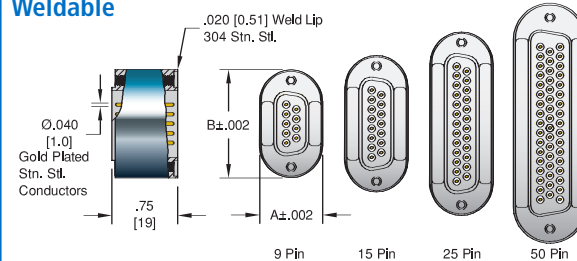
Shell/Insulation: PEEK (polyether ether ketone)  
Crimp Contacts: Copper alloy (Gold Plated)  
Magnetic Materials: No

**Voltage Rating** 500 V DC

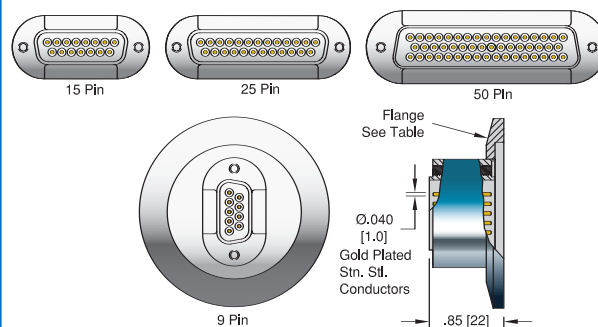
**Current Rating** 15 Amps

**Temperature Range** -269°C to 200°C

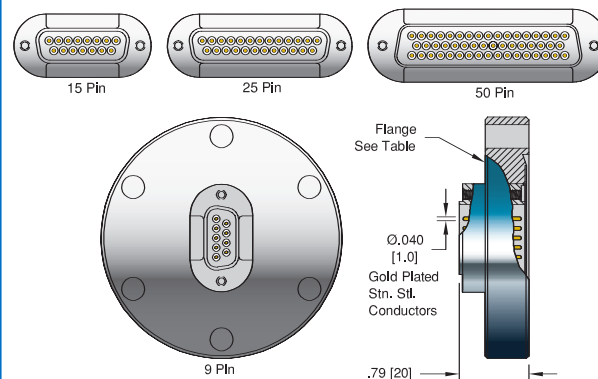
#### Weldable



#### ISO KF



#### ConFlat



### Ribbon Cable Specifications

#### Materials

Insulation: Kapton® Type FN  
Weave: PEEK (polyether ether ketone) monofilament

**Number of Conductors** 9, 15, 25

#### Conductor

22 AWG 19 / 0.0063" stranded silver plated copper

**Voltage Rating** 600 V AC, 850 V DC

**Current Rating** 5 Amps per conductor

**Temperature Range** -55°C to 200°C

**Resistance @ 20°C** 119Ω/km

**Weldable**



NO. PINS	INSTALLATION	DIMENSIONS		PART NUMBER
		A	B	
9	Weld	0.720 [18.29]	1.234 [31.34]	16800-01-W
15	Weld	0.720 [18.29]	1.562 [39.67]	16801-01-W
25	Weld	0.720 [18.29]	2.102 [53.39]	16802-01-W
50	Weld	0.832 [21.13]	2.738 [69.54]	16804-01-W

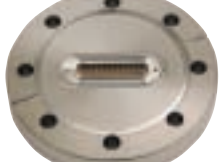
**ISO KF**



**ISO FLANGE**

9	NW40KF	-	-	18605-01-KF
15	NW50KF	-	-	18606-01-KF
25	NW63LF	-	-	20306-01-CLF
50	NW100LF	-	-	20307-01-CLF

**ConFlat**



**CONFLAT FLANGE**

9	2 3/4" (NW35CF)	-	-	18607-01-CF
15	3 3/8" (NW50CF)	-	-	18608-01-CF
15	4 1/2" (NW63CF)	-	-	21108-01-CF
25	4 1/2" (NW63CF)	-	-	18609-01-CF
50 (2x25)	4 1/2" (NW63CF)	-	-	21109-01-CF
50	6" (NW100CF)	-	-	18610-01-CF
100 (2x50)	6" (NW100CF)	-	-	21641-01-CF

**Air Side Plug**



TYPE	VOLTAGE DC	QTY	CONTACTS		DIMENSIONS			TEMPERATURE °C		MAGNETIC MATERIALS	PART NUMBER
			AMPS	MATERIAL	D	W	H	MIN	MAX		
Air Side	500 V	9	5	Copper Alloy	1.7 [43]	1.2 [31]	0.6 [15]	-55	105	Yes	18076-01-A
Air Side	500 V	15	5	Copper Alloy	1.6 [41]	1.6 [41]	0.6 [15]	-55	105	Yes	18076-02-A
Air Side	500 V	25	5	Copper Alloy	1.9 [48]	2.2 [56]	0.6 [15]	-55	105	Yes	18076-03-A†
Air Side	500 V	50	5	Copper Alloy	2.0 [51]	2.6 [66]	0.7 [18]	-55	105	Yes	18076-04-A
Vacuum Side-Female	500 V	9	5	Copper Alloy	1.3 [33]	0.4 [11]	0.63 [16]	-200	200	No	16810-01-A
Vacuum Side-Female	500 V	15	5	Copper Alloy	1.6 [40]	0.4 [11]	0.63 [16]	-200	200	No	16811-01-A
Vacuum Side-Female	500 V	25	5	Copper Alloy	2.2 [55]	0.4 [11]	0.63 [16]	-200	200	No	16812-01-A†
Vacuum Side-Female	500 V	50	5	Copper Alloy	2.7 [69]	0.5 [14]	0.63 [16]	-200	200	No	16814-01-A
Vacuum Side-Male	500 V	9	5	Copper Alloy	1.3 [33]	0.4 [11]	0.63 [16]	-200	200	No	19827-01-A
Vacuum Side-Male	500 V	15	5	Copper Alloy	1.6 [40]	0.4 [11]	0.63 [16]	-200	200	No	19828-01-A
Vacuum Side-Male	500 V	25	5	Copper Alloy	2.2 [55]	0.4 [11]	0.63 [16]	-200	200	No	17411-01-A
Vacuum Side-Male	500 V	50	5	Copper Alloy	2.7 [69]	0.5 [14]	0.63 [16]	-200	200	No	19829-01-A

Note that contacts are included with all plugs.

**Vacuum Side Plugs**



**Ribbon Cable 22 AWG**



CONDUCTOR QUANTITY*	CABLE LENGTH	CABLE WIDTH	INSULATION DIAMETER	WIRE DIAMETER	PART NUMBER
9	19"	0.4	Ø .035	19 X 0.0063	20370-19-WW
9	39"	0.4	Ø .035	19 X 0.0063	20370-39-WW
15	19"	0.7	Ø .035	19 X 0.0063	20371-19-WW
15	39"	0.7	Ø .035	19 X 0.0063	20371-39-WW
25	19"	1.2	Ø .035	19 X 0.0063	20372-19-WW
25	39"	1.2	Ø .035	19 X 0.0063	20372-39-WW
Adjustable Wire Stripper	For 20 - 30 AWG (0.25 - 0.80 mm) Cable				21128-01

\*The 50 conductor cables are created by using two 25 conductor cables. Contact CeramTec for custom lengths.

**Contacts**

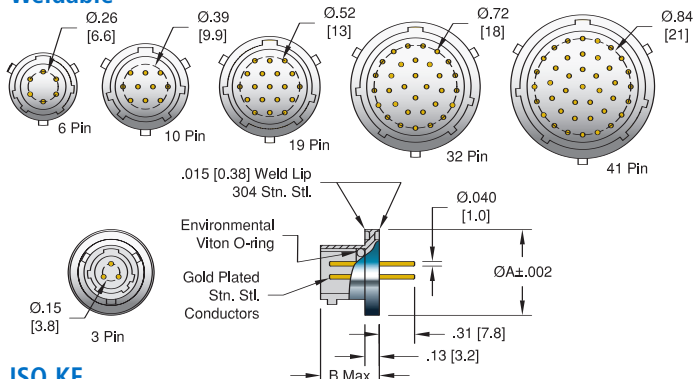


TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.040 Female Crimp Contacts	Copper Alloy	Female accepts wire up to 0.040 [1.0]	16757-02-A
0.040 Male/Pin Crimp Contacts	Copper Alloy	Male/Pin contact - 0.040 [1.0] Pin	17412-02-A
Crimp Tool		For 0.025" - 0.075" Crimp Diameters	2840-05

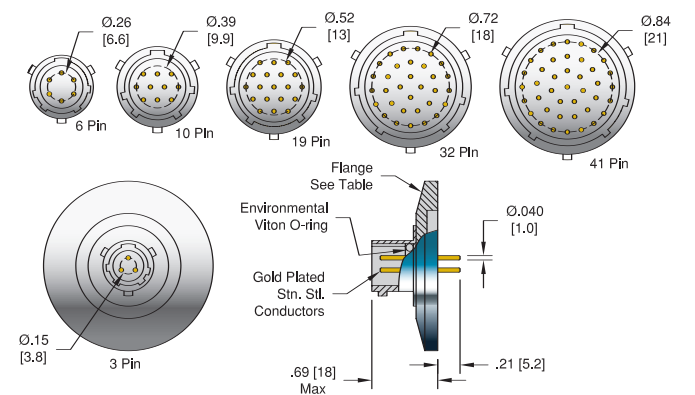
\*\*Contacts priced and sold in packages of 5. See the Accessories section for more information on all accessories.

MULTIPIN CONNECTOR

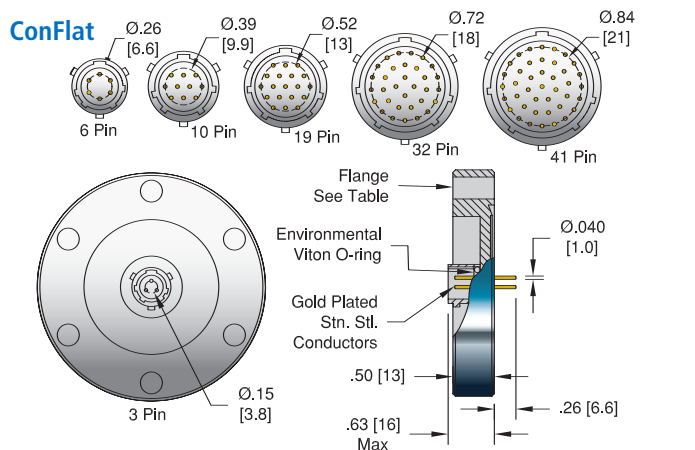
**Single Ended - Straight Pin  
Weldable**



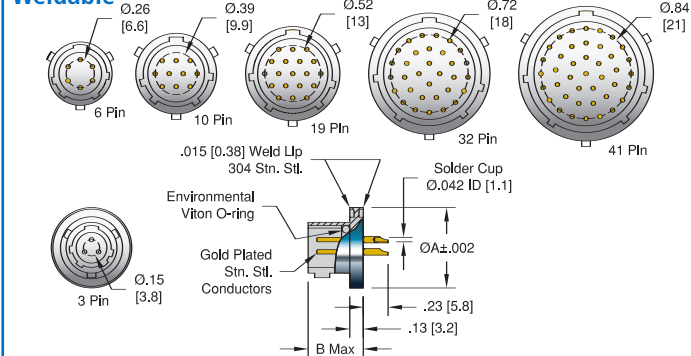
**ISO KF**



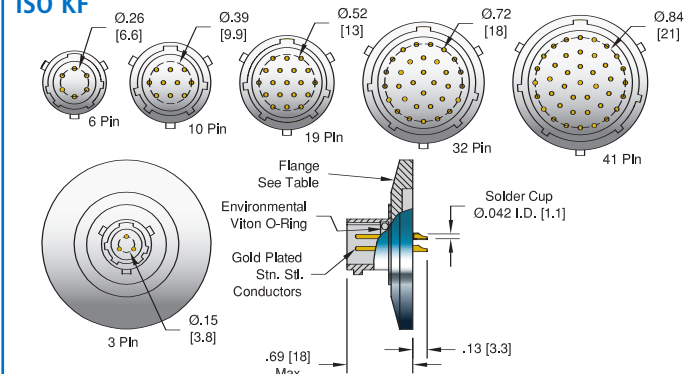
**ConFlat**



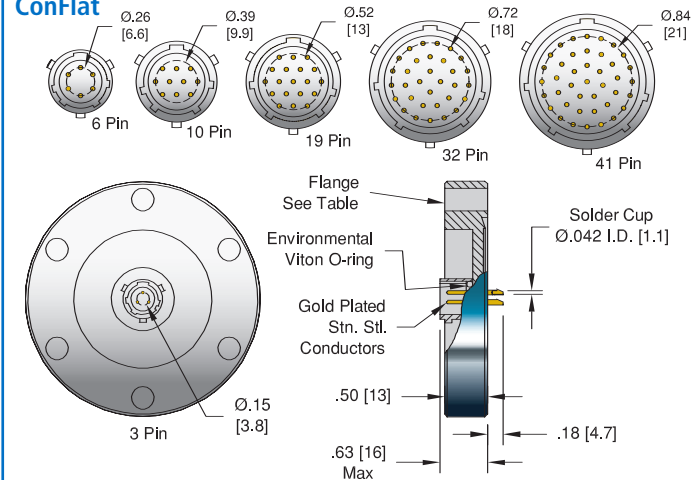
**Single Ended - Solder Cup  
Weldable**



**ISO KF**



**ConFlat**



**Specifications**

**Materials**

- Shell: 304 Stainless steel
- Pins: 300 Series Stainless steel (Gold plated)
- Insulation: Glass-ceramic
- Magnetic Materials: No

**Voltage Rating** 1 kV DC

**Current Rating** 5 Amps per pin

**Temperature Range** -269°C to 450°C, ISO KF -25°C to 205°C

**Pressure @ 20°C** ISO KF 0 PSIG

3 Pin - 550 PSIG (38 Bar)	19 Pin - 400 PSIG (28 Bar)
6 Pin - 500 PSIG (34 Bar)	32 Pin - 375 PSIG (26 Bar)
10 Pin - 450 PSIG (31 Bar)	41 Pin - 350 PSIG (24 Bar)





MULTIPIN CONNECTOR



NO. PINS	PIN TYPE	INSTALLATION	DIMENSIONS		PART NUMBER
			A	B	
3	Straight	Weld	0.745 [18.92]	0.51 [13.0]	16130-02-W
6	Straight	Weld	0.870 [22.10]	0.51 [13.0]	16131-02-W
10	Straight	Weld	0.995 [25.27]	0.51 [13.0]	16132-02-W
19	Straight	Weld	1.120 [28.45]	0.51 [13.0]	16133-02-W
32	Straight	Weld	1.370 [34.80]	0.51 [13.0]	16134-02-W
41	Straight	Weld	1.495 [37.97]	0.57 [14.5]	16135-02-W



ISO FLANGE					
NO. PINS	PIN TYPE	INSTALLATION	A	B	PART NUMBER
3	Straight	NW25KF	-	-	17160-01-KF
6	Straight	NW40KF	-	-	17161-01-KF
10	Straight	NW40KF	-	-	17162-01-KF
19	Straight	NW40KF	-	-	17163-01-KF
32	Straight	NW40KF	-	-	17164-01-KF
41	Straight	NW50KF	-	-	17165-01-KF



CONFLAT FLANGE					
NO. PINS	PIN TYPE	INSTALLATION	A	B	PART NUMBER
3	Straight	2 3/4" (NW35CF)	-	-	18894-01-CF
6	Straight	2 3/4" (NW35CF)	-	-	18895-01-CF
10	Straight	2 3/4" (NW35CF)	-	-	18896-01-CF
19	Straight	2 3/4" (NW35CF)	-	-	18897-01-CF
32	Straight	2 3/4" (NW35CF)	-	-	18898-01-CF
41	Straight	3 3/8" (NW50CF)	-	-	18899-01-CF

Female Crimp Contacts Female accepts wire up to 0.040 [1.0]  
\*Contacts priced and sold in packages of 5.



NO. PINS	PIN TYPE	INSTALLATION	DIMENSIONS		PART NUMBER
			A	B	
3	Solder Cup	Weld	0.745 [18.92]	0.51 [13.0]	16010-02-W
6	Solder Cup	Weld	0.870 [22.10]	0.51 [13.0]	16011-02-W
10	Solder Cup	Weld	0.995 [25.27]	0.51 [13.0]	16012-02-W
19	Solder Cup	Weld	1.120 [28.45]	0.51 [13.0]	16013-02-W
32	Solder Cup	Weld	1.370 [34.80]	0.51 [13.0]	16014-02-W
41	Solder Cup	Weld	1.495 [37.97]	0.57 [14.5]	16015-02-W



ISO FLANGE					
NO. PINS	PIN TYPE	INSTALLATION	A	B	PART NUMBER
3	Solder Cup	NW25KF	-	-	17171-01-KF
6	Solder Cup	NW40KF	-	-	17172-01-KF
10	Solder Cup	NW40KF	-	-	17173-01-KF
19	Solder Cup	NW40KF	-	-	17174-01-KF
32	Solder Cup	NW40KF	-	-	17175-01-KF
41	Solder Cup	NW50KF	-	-	17176-01-KF



CONFLAT FLANGE					
NO. PINS	PIN TYPE	INSTALLATION	A	B	PART NUMBER
3	Solder Cup	2 3/4" (NW35CF)	-	-	17148-01-CF
6	Solder Cup	2 3/4" (NW35CF)	-	-	17343-01-CF
10	Solder Cup	2 3/4" (NW35CF)	-	-	17149-01-CF
19	Solder Cup	2 3/4" (NW35CF)	-	-	17787-01-CF
32	Solder Cup	2 3/4" (NW35CF)	-	-	17697-01-CF
41	Solder Cup	3 3/8" (NW50CF)	-	-	17156-01-CF



TYPE	VOLTAGE DC	CONDUCTOR AMPS	NO. CONTACTS	DIMENSIONS		PART NUMBER
				H	L	
Air Side	1 kV	1	3	0.8 [20]	1.9 [48]	16060-01-A
Air Side	1 kV	1	6	1.0 [25]	1.9 [48]	16060-02-A
Air Side	1 kV	1	10	1.0 [25]	1.9 [48]	16060-03-A
Air Side	1 kV	1	19	1.2 [31]	1.9 [48]	16060-04-A
Air Side	1 kV	1	32	1.4 [36]	2.1 [53]	16060-05-A
Air Side	1 kV	1	41	1.5 [38]	2.3 [58]	16060-06-A

Note that contacts are included with all plugs. See the Accessories section for more information on all accessories.



MULTIPIN CONNECTOR

**Specifications**

**Materials**

- Shell: Stainless steel
- Pins: 300 Series Stainless steel (Gold plated)
- Insulation: Glass-ceramic
- Magnetic Materials: No

**Voltage Rating** 1 kV DC

**Current Rating** 5 Amps per pin

**Temperature Range** -269°C to 450°C, ISO KF -25°C to 205°C

**Pressure @ 20°C** ISO KF 0 PSIG

- 3 Pin - 550 PSIG (38 Bar)
- 6 Pin - 500 PSIG (34 Bar)
- 10 Pin - 450 PSIG (31 Bar)
- 19 Pin - 400 PSIG (28 Bar)
- 32 Pin - 375 PSIG (26 Bar)
- 41 Pin - 350 PSIG (24 Bar)

**Vacuum Side Plug Specifications**

**Materials**

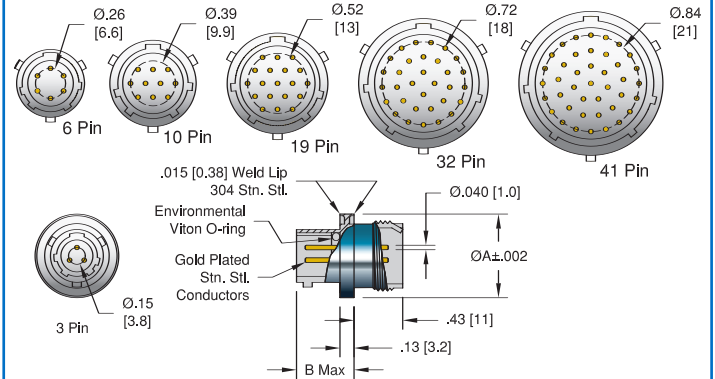
- Shell: 304 Stainless steel
- Crimp Contacts: Copper alloy (Gold plated)
- Insulation: PEEK (polyether ether ketone)
- Magnetic Materials: No

**Voltage Rating** 1 kV DC

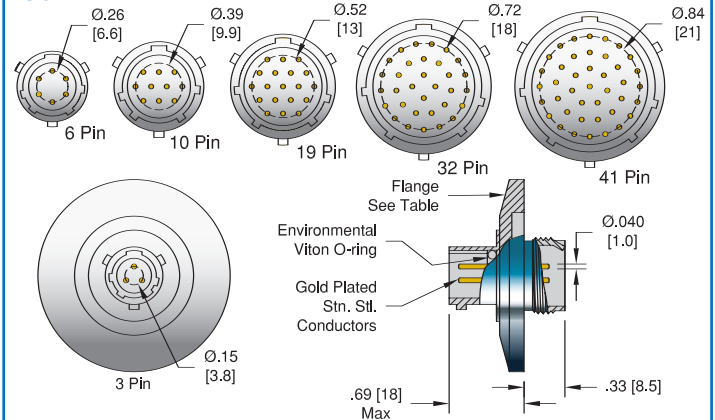
**Current Rating** 5 Amps per pin

**Temperature Range** -269°C to 200°C

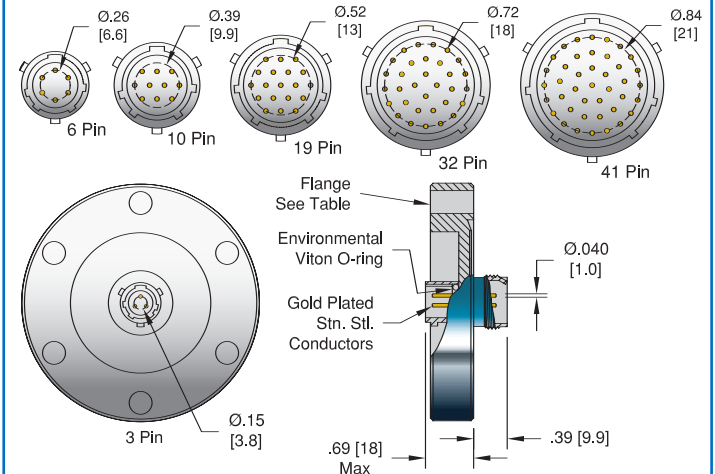
**Double Ended  
Weldable**



**ISO KF**



**ConFlat**





NO. PINS	INSTALLATION	DIMENSIONS		PART NUMBER
		A	B	
3	Weld	0.745 [18.92]	0.51 [13.0]	16000-02-W
6	Weld	0.870 [22.10]	0.51 [13.0]	16001-02-W
10	Weld	0.995 [25.27]	0.51 [13.0]	16002-02-W
19	Weld	1.120 [28.45]	0.51 [13.0]	16003-02-W
32	Weld	1.370 [34.80]	0.51 [13.0]	16004-02-W
41	Weld	1.495 [37.97]	0.57 [14.5]	16005-02-W



ISO FLANGE				
3	NW25KF	-	-	17180-01-KF
6	NW40KF	-	-	17181-01-KF
10	NW40KF	-	-	17182-01-KF
19	NW40KF	-	-	18900-01-KF
32	NW40KF	-	-	18901-01-KF
41	NW50KF	-	-	18902-01-KF



CONFLAT FLANGE				
3	2 3/4" (NW35CF)	-	-	18903-01-CF
6	2 3/4" (NW35CF)	-	-	18904-01-CF
10	2 3/4" (NW35CF)	-	-	18905-01-CF
19	2 3/4" (NW35CF)	-	-	18906-01-CF
32	2 3/4" (NW35CF)	-	-	18907-01-CF
41	3 3/8" (NW50CF)	-	-	18908-01-CF



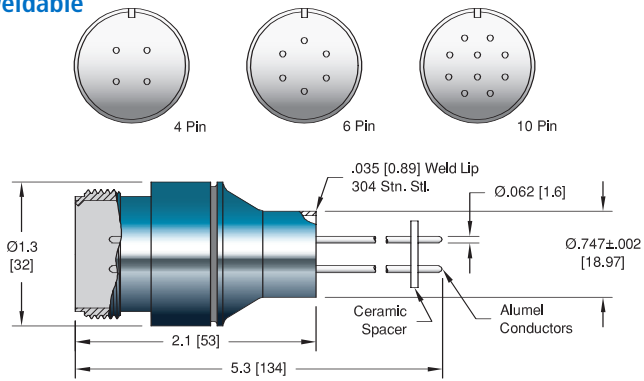
TYPE	VOLTAGE DC	CONDUCTOR AMPS	NO. CONTACTS	DIMENSIONS		PART NUMBER
				H	L	
Air Side	1 kV	1	3	0.8 [20]	1.9 [48]	16060-01-A
Air Side	1 kV	1	6	1.0 [25]	1.9 [48]	16060-02-A
Air Side	1 kV	1	10	1.0 [25]	1.9 [48]	16060-03-A
Air Side	1 kV	1	19	1.2 [31]	1.9 [48]	16060-04-A
Air Side	1 kV	1	32	1.4 [36]	2.1 [53]	16060-05-A
Air Side	1 kV	1	41	1.5 [38]	2.3 [58]	16060-06-A



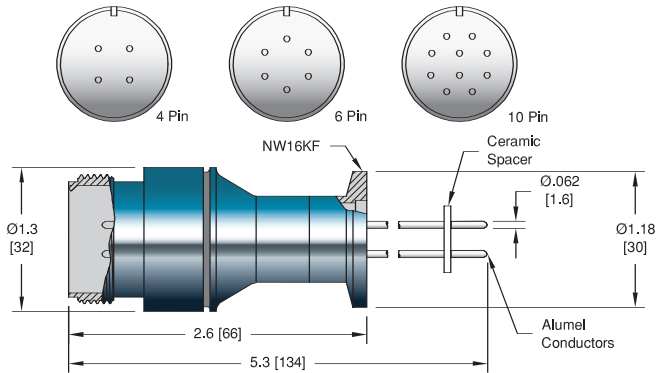
TYPE	VOLTAGE DC	CONDUCTOR AMPS	NO. CONTACTS	DIMENSIONS		PART NUMBER
				H	L	
Vacuum Side	1 kV	5	3	0.8 [19]	1.0 [25]	16026-02-A
Vacuum Side	1 kV	5	6	0.9 [22]	1.0 [25]	16027-02-A
Vacuum Side	1 kV	5	10	1.0 [25]	1.0 [25]	16028-02-A
Vacuum Side	1 kV	5	19	1.1 [28]	1.0 [25]	16029-02-A
Vacuum Side	1 kV	5	32	1.4 [34]	1.0 [25]	16030-02-A
Vacuum Side	1 kV	5	41	1.5 [37]	1.0 [25]	16031-02-A

Note that contacts are included with all plugs. See the Accessories section for more information on all accessories.

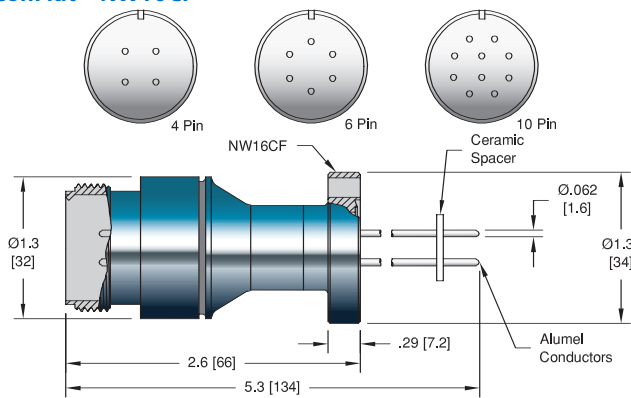
4, 6, & 10 Pin  
Weldable



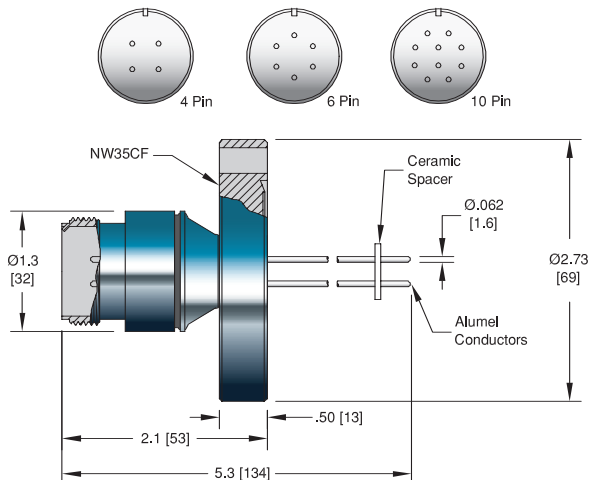
ISO KF - NW16KF



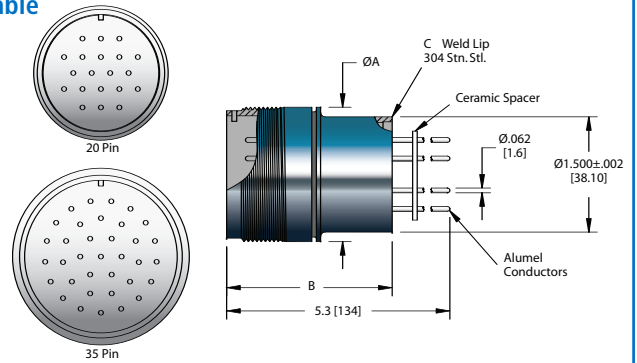
ConFlat - NW16CF



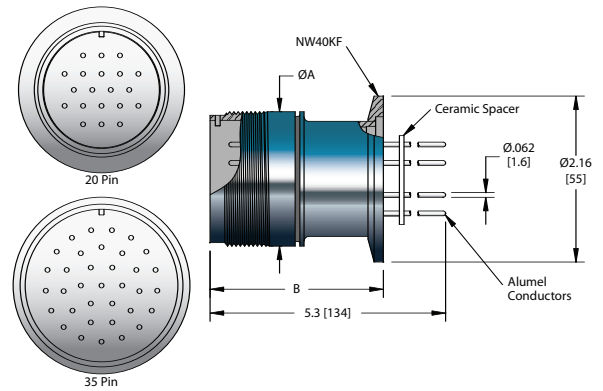
ConFlat - NW35CF



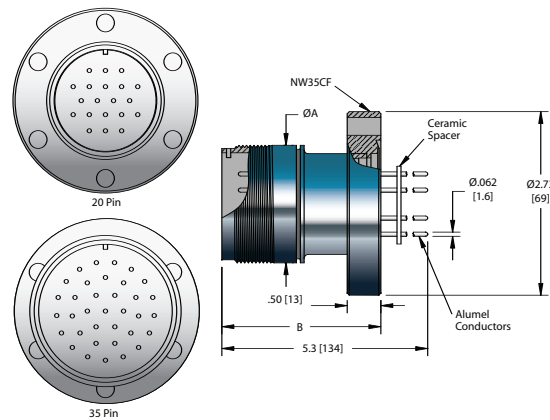
20 & 35 Pin  
Weldable



ISO KF



ConFlat



Specifications  
Materials

- Shell: 304 Stainless steel
- Pins: Alumel
- Insulation: Alumina ceramic
- Magnetic Materials: Yes

Voltage Rating 700 V DC

Current Rating 7 Amps per pin

Temperature Range -269°C to 450°C, ISO KF -25°C to 205°C

Pressure @ 20°C ISO KF 0 PSIG

- 4 Pin - 600 PSIG (41 Bar)
- 6 Pin - 550 PSIG (38 Bar)
- 10 Pin - 500 PSIG (34 Bar)
- 20 Pin - 125 PSIG (8.6 Bar)
- 35 Pin - 50 PSIG (3.4 Bar)

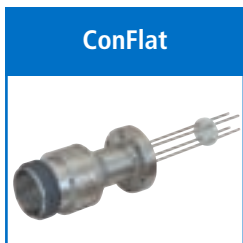
MULTIPIN CONNECTOR



NO. PINS	INSTALLATION	DIMENSIONS			PART NUMBER
		A	B	C	
4	Weld	-	-	-	10184-05-W
6	Weld	-	-	-	10185-05-W
10	Weld	-	-	-	10094-05-W
20	Weld	1.8 [44]	2.3 [57]	.065 [1.7]	10096-04-W
35	Weld	2.3 [57]	3.1 [79]	.060 [1.5]	10186-04-W



ISO FLANGE					
NO. PINS	INSTALLATION	A	B	C	PART NUMBER
4	NW16KF	-	-	-	17150-02-KF
6	NW16KF	-	-	-	17151-02-KF
10	NW16KF	-	-	-	17155-04-KF
20	NW40KF	1.8 [44]	2.3 [57]	-	13744-02-KF
35	NW40KF	2.3 [57]	3.2 [82]	-	15103-02-KF



CONFLAT FLANGE					
NO. PINS	INSTALLATION	A	B	C	PART NUMBER
4	1 1/3" (NW16CF)	-	-	-	10184-06-CF
4	2 3/4" (NW35CF)	-	-	-	10184-07-CF
6	1 1/3" (NW16CF)	-	-	-	10185-06-CF
6	2 3/4" (NW35CF)	-	-	-	10185-07-CF
10	1 1/3" (NW16CF)	-	-	-	10094-06-CF
10	2 3/4" (NW35CF)	-	-	-	10094-09-CF
20	2 3/4" (NW35CF)	1.8 [44]	2.4 [60]	-	10096-03-CF
35	2 3/4" (NW35CF)	2.3 [57]	3.3 [84]	-	10186-03-CF

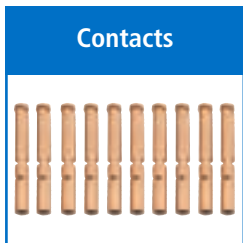


TYPE	VOLTAGE DC	CONDUCTOR AMPS	NO. CONTACTS	DIMENSIONS		TEMPERATURE °C		PART NUMBER
				H	L	MIN	MAX	
Air Side	700 V	13	4	1.4 [36]	4.4 [112]	-55	125	15910-01-A
Air Side	700 V	13	6	1.4 [36]	4.4 [112]	-55	125	15911-01-A
Air Side	700 V	13	10	1.4 [36]	4.4 [112]	-55	125	15912-01-A
Air Side	700 V	13	20	1.9 [49]	4.3 [109]	-55	125	15913-01-A
Air Side	700 V	13	35	2.5 [62]	4.2 [107]	-55	125	15914-01-A
Air Side: Hi-Temp PEEK	700 V	4.8	4	1.4 [36]	2.6 [65]	-55	260	15910-32-A
Air Side: Hi-Temp PEEK	700 V	4.8	6	1.4 [36]	2.6 [65]	-55	260	15911-32-A
Air Side: Hi-Temp PEEK	700 V	4.8	10	1.4 [36]	2.6 [65]	-55	260	15912-32-A

Note that contacts are included with all plugs.



VOLTAGE DC	CONDUCTOR AMPS	TYPE	LENGTH	WIRE DIAMETER	INSULATION DIAMETER	PART NUMBER
850 V	2.5	28 AWG Stranded	30'	7 x 0.005	∅ .028	21621-01-A
850 V	5	22 AWG Stranded	30'	19 x 0.0063	∅ .035	21643-01-A



TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.062 Crimp Contacts	Beryllium Copper	Accepts .062 [1.6] Pin	2044-02-A†
0.062 Crimp Contacts	Nickel Alloy	Accepts .062 [1.6] Pin	0821-01-A
0.062 Barrel Type Contacts	Beryllium Copper	Accepts .062 [1.6] Pin	7332-03-A
Crimp Tool		For 0.025" – 0.075" Crimp Diameters	2840-05

\*Contacts priced and sold in packages of 10. †Shown in photo. See the Accessories section for more information on all accessories.





**Specifications**

**Materials**

- Shell: 304 Stainless steel
- Pins: Nickel or Molybdenum
- Insulation: Alumina ceramic
- Magnetic Materials: See table

**Voltage Rating** 700 V DC

**Current Rating** See table

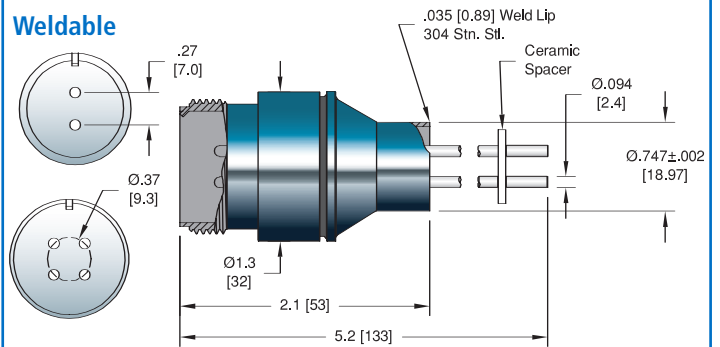
**Temperature Range** -269°C to 450°C, ISO KF -25°C to 205°C

**Pressure @ 20°C** 475 PSIG (33 Bar), ISO KF 0 PSIG

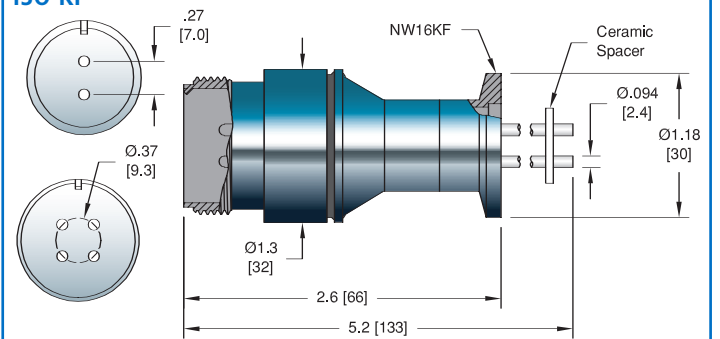
MULTIPIN CONNECTOR

**Ø .094 Conductor**

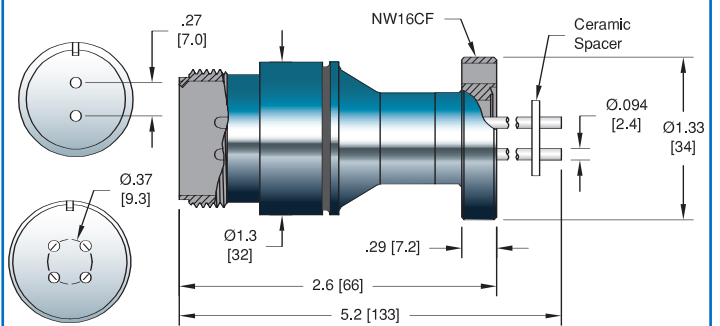
**Weldable**



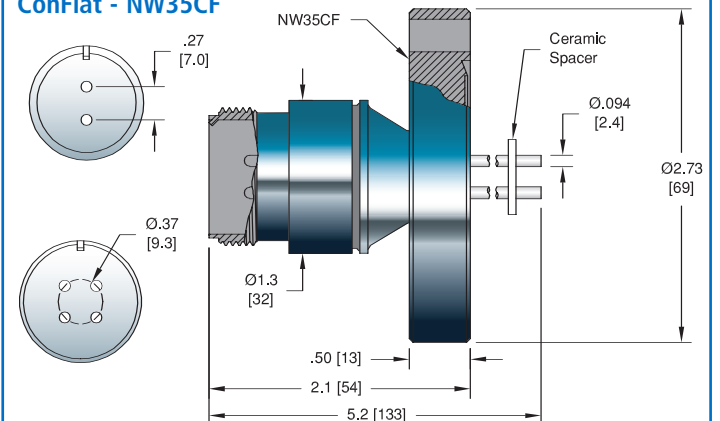
**ISO KF**



**ConFlat - NW16CF**



**ConFlat - NW35CF**





Weldable

NO. PINS	CONDUCTORS AMPS	MATERIAL	INSTALLATION	MAGNETIC MATERIALS	PART NUMBER
2	16	Nickel	Weld	Yes	18093-02-W
2	28	Molybdenum	Weld	No	18093-04-W
4	16	Nickel	Weld	Yes	18093-06-W
4	28	Molybdenum	Weld	No	18093-08-W

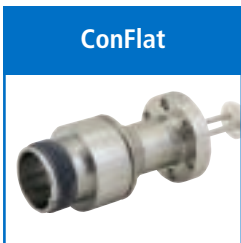
ISO FLANGE



ISO KF

2	16	Nickel	NW16KF	Yes	18094-02-KF
2	28	Molybdenum	NW16KF	No	18094-04-KF
4	16	Nickel	NW16KF	Yes	18094-06-KF
4	28	Molybdenum	NW40KF	No	18094-08-KF

CONFLAT FLANGE



ConFlat

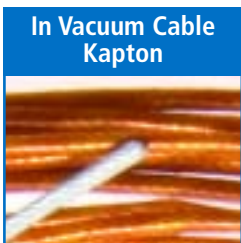
2	16	Nickel	1 1/3" (NW16CF)	Yes	18095-02-CF
2	28	Molybdenum	1 1/3" (NW16CF)	No	18095-04-CF
2	16	Nickel	2 3/4" (NW35CF)	Yes	18096-02-CF
2	28	Molybdenum	2 3/4" (NW35CF)	No	18096-04-CF
4	16	Nickel	1 1/3" (NW16CF)	Yes	18095-06-CF
4	28	Molybdenum	1 1/3" (NW16CF)	No	18095-08-CF
4	16	Nickel	2 3/4" (NW35CF)	Yes	18096-06-CF
4	28	Molybdenum	2 3/4" (NW35CF)	No	18096-08-CF



Air Side Plug

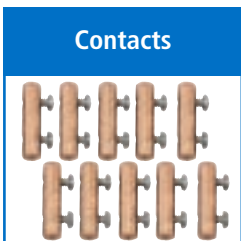
TYPE	VOLTAGE DC	CONDUCTOR AMPS	NO. CONTACTS	DIMENSIONS H L		PART NUMBER
Air Side	700 V	23	2	2.5 [63]	1.2 [32]	18600-01-A
Air Side	700 V	23	4	2.6 [65]	1.4 [36]	18600-02-A

Note that contacts are included with all plugs.



In Vacuum Cable Kapton

VOLTAGE DC	CONDUCTOR AMPS	TYPE	LENGTH	WIRE DIAMETER	INSULATION DIAMETER	PART NUMBER
850 V	20	12 AWG Stranded	15'	37 x 0.013	Ø .101	21702-02-A



Contacts

TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.094 Barrel Type	Beryllium Copper	Accepts .094 [2.4] Pin	7332-04-A <sup>†</sup>
0.094 Set Screw Type	Beryllium Copper	Accepts .094 [2.4] Pin	7429-01-A

\*Contacts priced and sold in packages of 10. <sup>†</sup>Shown in photo. See the Accessories section for more information on all accessories.



**Specifications**

**Materials**

- Shell: 304 Stainless steel
- Pins: Nickel or molybdenum
- Insulation: Alumina ceramic
- Magnetic Materials: See table

**Voltage Rating** 700 V DC

**Current Rating** See table

**Temperature Range** -269°C to 450°C, ISO KF -25°C to 205°C

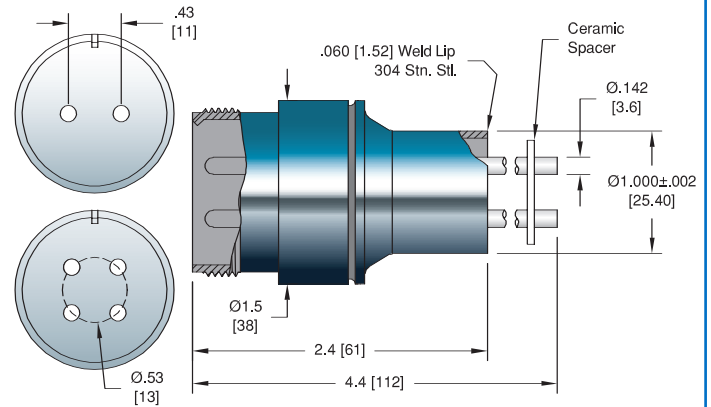
**Pressure @ 20°C** ISO KF 0 PSIG

2 Pin - 600 PSIG (41 Bar)

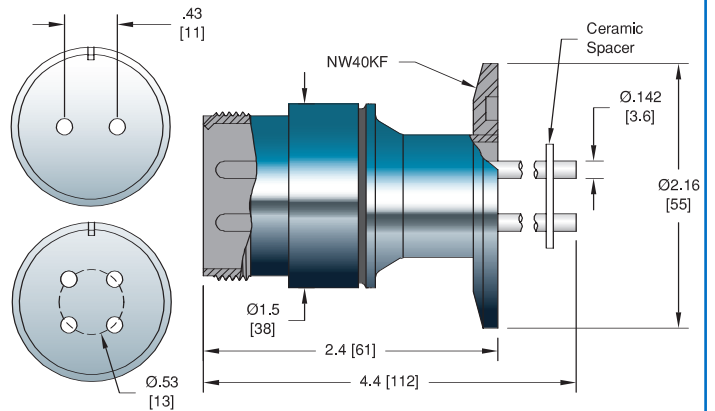
4 Pin - 500 PSIG (34 Bar)

MULTIPIN CONNECTOR

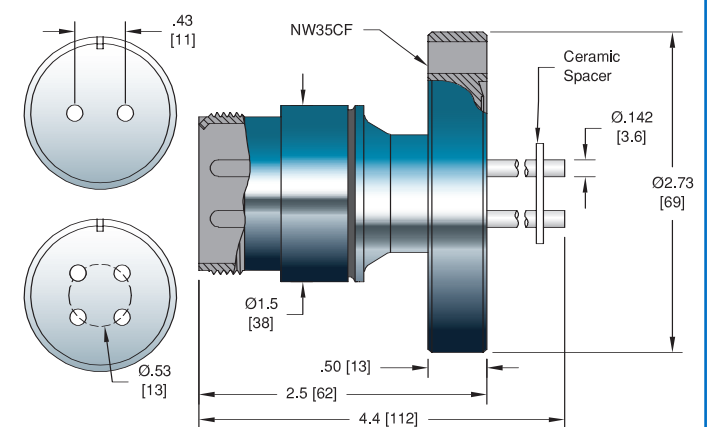
**Ø .142 Conductor  
Weldable**



**ISO KF**



**ConFlat**





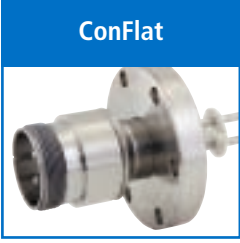
NO. PINS	CONDUCTORS AMPS	MATERIAL	INSTALLATION	MAGNETIC MATERIALS	PART NUMBER
2	25	Nickel	Weld	Yes	18097-02-W
2	46	Molybdenum	Weld	No	18097-04-W
4	25	Nickel	Weld	Yes	18097-06-W
4	46	Molybdenum	Weld	No	18097-08-W

**ISO FLANGE**



2	25	Nickel	NW40KF	Yes	18098-02-KF
2	46	Molybdenum	NW40KF	No	18098-04-KF
4	25	Nickel	NW40KF	Yes	18098-06-KF
4	46	Molybdenum	NW40KF	No	18098-08-KF

**CONFLAT FLANGE**

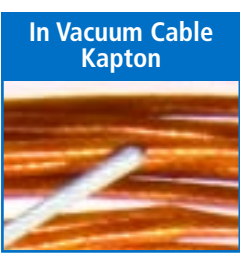


2	25	Nickel	2 3/4" (NW35CF)	Yes	18099-02-CF
2	46	Molybdenum	2 3/4" (NW35CF)	No	18099-04-CF
4	25	Nickel	2 3/4" (NW35CF)	Yes	18099-06-CF
4	46	Molybdenum	2 3/4" (NW35CF)	No	18099-08-CF

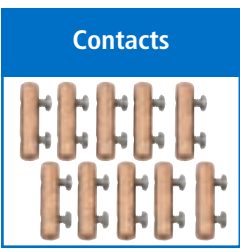


TYPE	VOLTAGE DC	CONDUCTOR AMPS	NO. CONTACTS	DIMENSIONS H L		PART NUMBER
Air Side	700 V	46	2	2.5 [63]	1.2 [32]	18601-01-A
Air Side	700 V	46	4	2.6 [65]	1.4 [36]	18601-02-A

Note that contacts are included with all plugs.



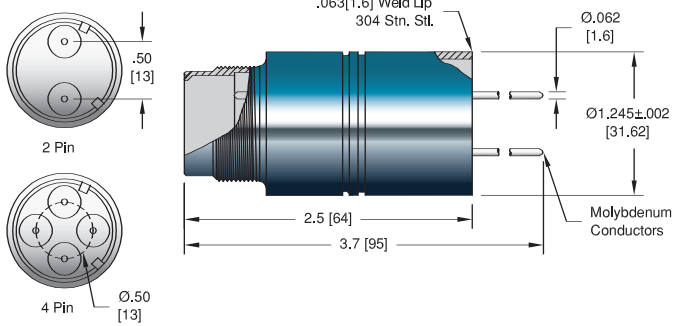
VOLTAGE DC	CONDUCTOR AMPS	TYPE	LENGTH	WIRE DIAMETER	INSULATION DIAMETER	PART NUMBER
850 V	20	12 AWG Stranded	15'	37 x 0.013	Ø .101	21702-02-A



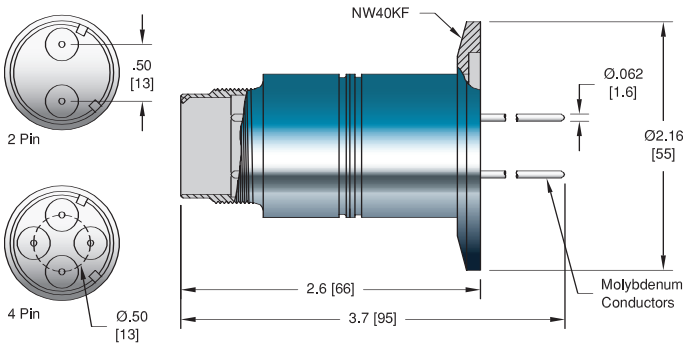
TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.154 Barrel Type	Beryllium Copper	Accepts 0.154 [3.9] Pin	7332-07-A

\*Contacts priced and sold in packages of 10. See the Accessories section for more information on all accessories.

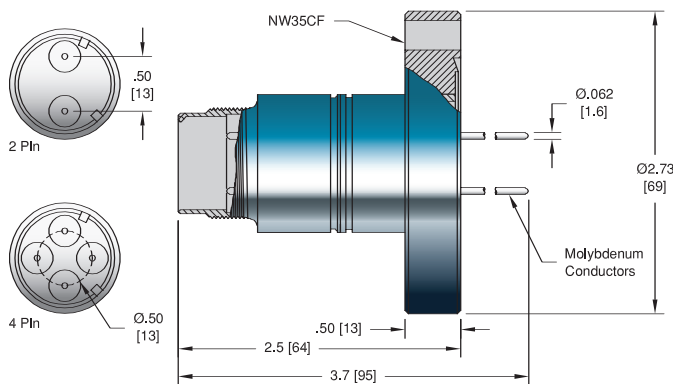
**2 and 4 Pin Weldable**



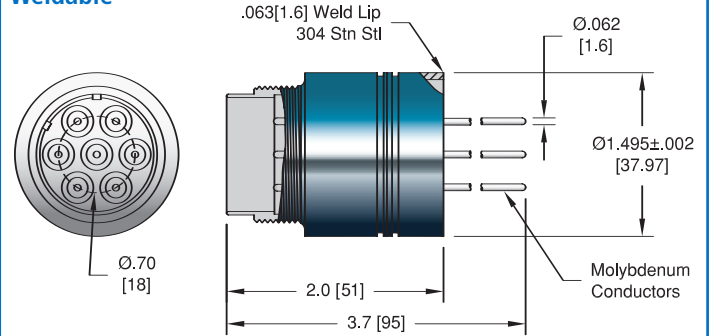
**ISO KF**



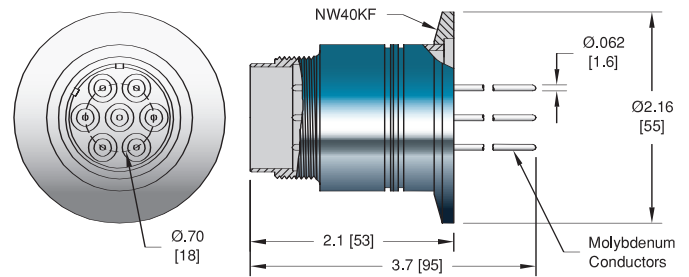
**ConFlat**



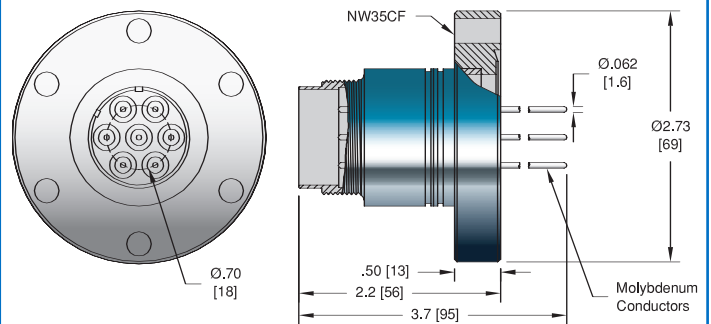
**7 Pin Weldable**



**ISO KF**



**ConFlat**



**Specifications**

**Materials**

- Shell: 304 Stainless steel
- Pins: Molybdenum (Nickel plated)
- Insulation: Alumina ceramic
- Magnetic Materials: Yes

**Voltage Rating** 12 kV DC (pin/pin and pin/shell)

**Current Rating** 13 Amps per pin

**Temperature Range** -269°C to 450°C, ISO KF -25°C to 205°C

**Pressure @ 20°C** ISO KF 0 PSIG

2 Pin - 400 PSIG (28 Bar)

4 Pin - 300 PSIG (20 Bar)

7 Pin - 200 PSIG (14 Bar)





MULTIPIN CONNECTOR

**Weldable**

NO. PINS	INSTALLATION	PART NUMBER
2	Weld	12475-03-W
4	Weld	12475-04-W
7	Weld	12867-06-W

**ISO KF**

**ISO FLANGE**

2	NW40KF	17157-02-KF
4	NW40KF	17158-02-KF
7	NW40KF	17159-02-KF

**ConFlat**

**CONFLAT FLANGE**

2	2 3/4" (NW35CF)	12476-03-CF
4	2 3/4" (NW35CF)	12476-04-CF
7	2 3/4" (NW35CF)	12867-07-CF

**Air Side Plug**

TYPE	VOLTAGE DC	CONDUCTOR AMPS	NO. CONTACTS	DIMENSIONS H L		PART NUMBER
Air Side	12 kV	13	2	1.3 [33]	1.6 [41]	2871-02-A
Air Side	12 kV	13	4	1.3 [33]	1.6 [41]	2871-03-A
Air Side	12 kV	13	7	1.4 [37]	3.3 [84]	2871-01-A

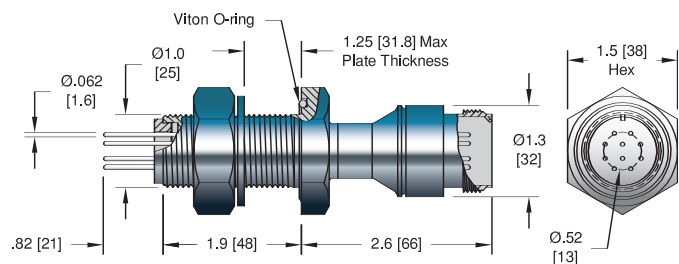
Note that contacts are included with all plugs.

**Contacts**

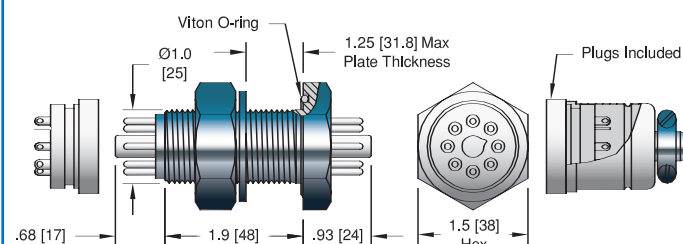
TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.062 Crimp Type Contacts	Beryllium Copper	Accepts .050 [1.3] Pin	11911-02-X†
0.062 Set Screw Type Contacts	Beryllium Copper	Accepts .062 [1.6] Pin	7429-02-A
0.062 Barrel Type Contacts	Beryllium Copper	Accepts .062 [1.6] Pin	7332-02-A
Crimp Tool		For 0.025" – 0.075" Crimp Diameters	2840-05

\*Contacts priced and sold in packages of 10. †Shown in photo. See the Accessories section for more information on all accessories.

### MIL-C-5015 Type Installation: 1" Bolt



### Octal Connector Installation: 1" Bolt



### MIL-C-5015 Type Specifications

#### Materials

Bolt: 304 Stainless steel  
 Pins: Alumel  
 Insulation: Alumina ceramic  
 Magnetic Materials: Yes

**Voltage Rating** 700 V DC

**Current Rating** 7 Amps per pin

**Temperature Range** -25°C to 205°C

**Pressure @ 20°C** 200 PSIG (14 Bar)

### Octal Connector Specifications

#### Materials

Bolt: 304 Stainless steel  
 Pins: Alumel  
 Insulation: Glass-ceramic  
 Magnetic Materials: Yes

**Voltage Rating** 350 V DC

**Current Rating** 7 Amps per pin

**Temperature Range** -25°C to 205°C

**Pressure @ 20°C** 200 PSIG (14 Bar)



MULTIPIN CONNECTOR

**MIL-C-5015 Type  
1" Bolt**

NO. PINS	INSTALLATION	PART NUMBER
10	1" Bolt	15717-01-A

**Octal Connector  
1" Bolt**

8	1" Bolt	15730-01-A
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**Air Side Plug**

TYPE	VOLTAGE DC	CONDUCTOR AMPS	NO. CONTACTS	DIMENSIONS		PART NUMBER
				H	L	
Air Side	700 V	13	10	1.4 [36]	4.4 [112]	15912-01-A

**Contacts**

TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.062 Crimp Contacts	Beryllium Copper	Accepts wire up to 0.050 [1.3]	2044-02-A†
0.062 Crimp Contacts	Nickel Alloy	Accepts wire up to 0.062 [1.6]	0821-01-A
Crimp Tool		For 0.025" – 0.075" Crimp Diameters	2840-05

\*Contacts priced and sold in packages of 10. †Shown in photo. See the Accessories section for more information on all accessories.