

neyco

VACUUM & MATERIALS



ELECTRICAL FEEDTHROUGHS



Description

Feedthrough: An assembly which provides for the transfer of electrical power, gases or fluids from outside a hermetic chamber to the inside. Feedthroughs can provide both a hermetic seal and electrical isolation from the chamber wall. Feedthroughs are sometimes referred to as 'passthroughs.'

CeramTec feedthroughs provide the solutions for applications requiring hermeticity and electrical isolation. In addition to remaining leak-free in high and ultra-high vacuum, many of Ceramaseal® feedthroughs can accommodate:

- High temperatures
- Cryogenic temperatures
- High pressure
- Aggressive chemicals

A feedthrough is basically defined by the requirements for installation, insulation, and conductor material. The method of interconnection is flexible and left to the customer's discretion. A selection of push-on contacts can be found in the Accessories section of this catalog.

Standard Specifications

- Voltages to 100 kV
- Current to 1000 Amps
- Up to 41 conductors
- Temperature Range: -269° C to 450° C
- Internal Pressure 1×10^{-10} torr to 3000 psig

Extreme / Custom Design

- Multiple feedthrough flange assemblies
- 940-pin header assembly
- Corona-free designs to 180 kV DC
- Currents in excess of 2,500 Amps
- Pressures to 30,000 psig



Installation

Standard installation mountings include:

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

Applications

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

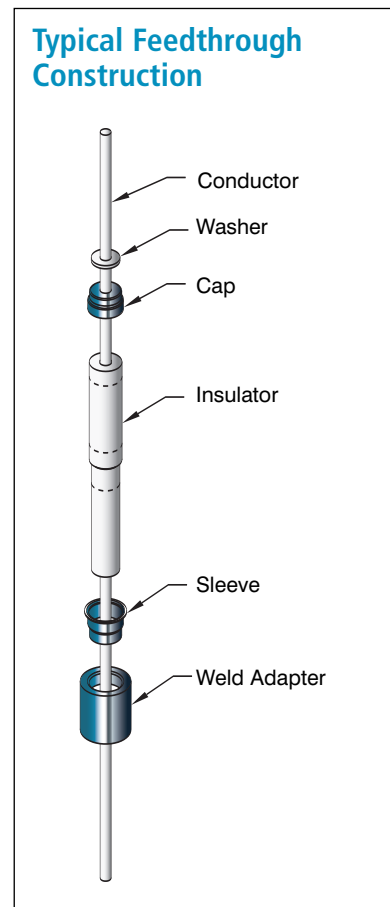
- Semiconductor processing equipment
- Particle accelerators
- Furnaces
- Analytical equipment
- In-vacuum coating
- Satellite instrumentation
- X-ray detection equipment











New Products

- New high-density, low current feedthroughs
- Micro & Mini HV (high voltage) feedthroughs with mating air side cable assemblies
- 40 & 50 kV feedthroughs with mating air side cable assemblies

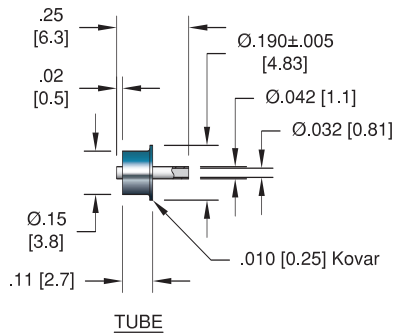
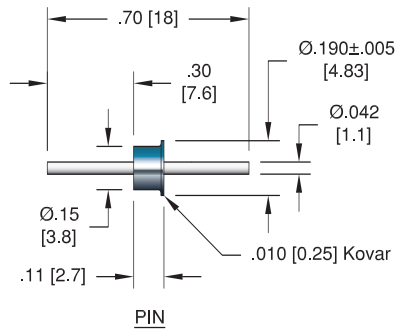
- .154 & .250 Power Plugs for safe high voltage and high current connectivity

Typical Feedthrough Construction

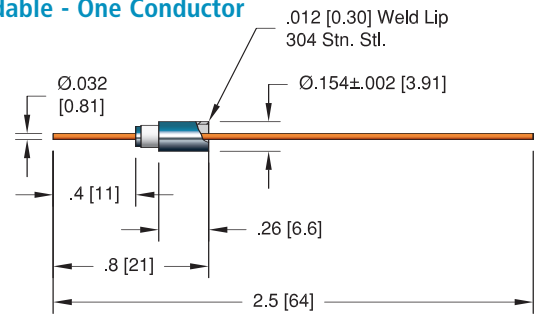


Type	Voltage DC	Current (Amps per conductor)	# of Conductors	Conductor Size (in inches)	Sub-section	Section Pages
	to 2 kV	to 16 Amps	1 to 8	0.032 & 0.042	Instrumentation / Power	A.1 14-15
	to 6 kV	to 27 Amps	1 to 4	0.050	Power	A.2 16-17
	to 5 kV	5 Amps	4 to 10	0.062	Pin Header	A.3 18-19
	1 kV	5 Amps	3 to 41	0.040	Multipin Header	A.4 20-21
	to 15 kV	7.5 Amps	1 to 4	0.030 & 0.037	Micro & Mini HV	A.5 22-25
	to 25 kV	to 185 Amps	1 to 4	0.094, 0.154 & 0.250	Power Plug	A.6 26-35
	8 kV	to 1000 Amps	1 to 2	0.250, 0.500 & 0.750	High Power - Liquid Cooled	A.7 36-41
	to 100 kV	to 10 Amps	1	0.062 & 0.156	High Voltage	A.8 42-47
	to 14 kV	to 300 Amps	1 to 2	0.250	RF Power - Liquid Cooled	A.9 48-49
	to 15 kV	to 185 Amps	1 to 4	0.050, 0.094 & 0.250	Baseplate	A.10 50-51

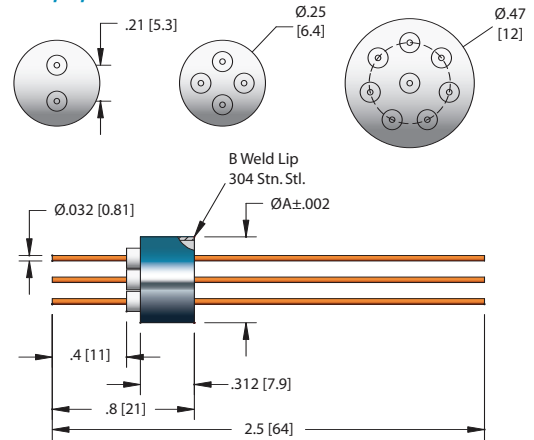
Weld/Braze - Superthru



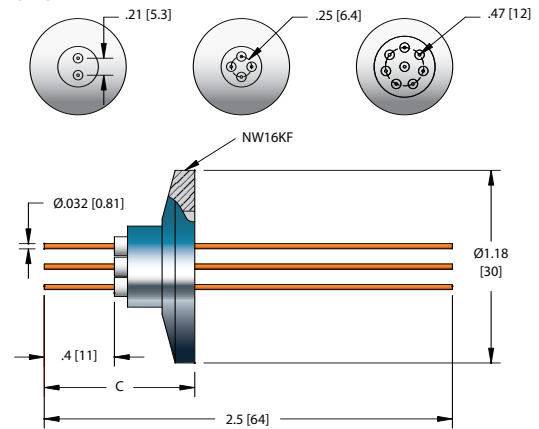
Weldable - One Conductor



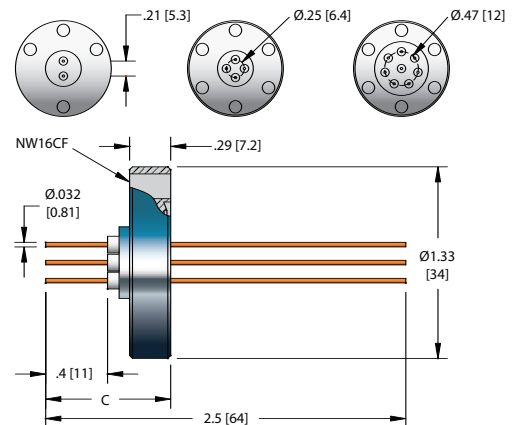
Weldable - 2, 4, & 8 Conductor



ISO KF - 2, 4, & 8 Conductor



ConFlat - 2, 4, & 8 Conductor



Specifications — Superthru

Materials

- Housing: Kovar
- Pin/Tube: Pin-Molybdenum, Tube-Kovar
- Insulation: Alumina ceramic
- Magnetic Materials: Yes

Voltage Rating 500 V DC

Current Rating See table

Temperature Range -80°C to 450°C

Pressure @ 20°C 2500 PSIG (172 Bar), ISO KF 0 PSIG

Specifications — 1, 2, 4, & 8 Conductor

Materials

- Housing: 304 Stainless steel
- Pin: See table
- Insulation: Alumina ceramic
- Magnetic Materials: See table

Voltage Rating See table

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

- Single pin: 3500 PSIG (241 Bar)
- 2 & 4 pin: 1400 PSIG (96 Bar)
- 8 pin: 500 PSIG (34 Bar)



FEEDTHROUGH

Weld or Braze Superthru

INSTALLATION	VOLTAGE DC	CONDUCTOR AMPS*	MATERIAL	PART NUMBER
Weld or Braze	500	-	Kovar Tube	9809-01-W
Weld or Braze	500	11.5	Molybdenum	9809-02-W

*Current carrying capacity of the tubular feedthroughs varies based on the coolant used and the flow rate.

Weldable Single Pin

NO. PINS	INSTALLATION	VOLTAGE DC	CONDUCTOR AMPS	MATERIAL	A	DIMENSIONS B	C	MAGNETIC MATERIALS	PART NUMBER
1	Weld	1 kV	1.1	304 Stn. Stl.	-	-	-	No	9297-03-W
1	Weld	1 kV	5	Nickel	-	-	-	Yes	9297-01-W
1	Weld	1 kV	8.5	Molybdenum	-	-	-	No	9297-06-W
1	Weld	1 kV	16	Copper	-	-	-	No	9297-08-W
2	Weld	2 kV	1.1	304 Stn. Stl.	0.497 [12.62]	.020 [0.51]	-	No	9298-07-W
2	Weld	2 kV	5	Nickel	0.497 [12.62]	.020 [0.51]	-	Yes	9298-01-W
2	Weld	2 kV	8.5	Molybdenum	0.497 [12.62]	.020 [0.51]	-	No	9298-05-W
2	Weld	2 kV	16	Copper	0.497 [12.62]	.020 [0.51]	-	No	9298-06-W
4	Weld	2 kV	1.1	304 Stn. Stl.	0.497 [12.62]	.020 [0.51]	-	No	9299-05-W
4	Weld	2 kV	5	Nickel	0.497 [12.62]	.020 [0.51]	-	Yes	9299-01-W
4	Weld	2 kV	8.5	Molybdenum	0.497 [12.62]	.020 [0.51]	-	No	9299-04-W
4	Weld	2 kV	16	Copper	0.497 [12.62]	.020 [0.51]	-	No	9299-06-W
8	Weld	1.5 kV	1.1	304 Stn. Stl.	0.747 [18.97]	.035 [0.89]	-	No	9294-03-W
8	Weld	1.5 kV	5	Nickel	0.747 [18.97]	.035 [0.89]	-	Yes	9294-01-W
8	Weld	1.5 kV	8.5	Molybdenum	0.747 [18.97]	.035 [0.89]	-	No	9294-04-W
8	Weld	1.5 kV	16	Copper	0.747 [18.97]	.035 [0.89]	-	No	9294-08-W

Weldable 2, 4, & 8 Pin

ISO FLANGE

2	NW16KF	2 kV	1.1	304 Stn. Stl.	-	-	.9 [23]	No	17006-01-KF
2	NW16KF	2 kV	5	Nickel	-	-	.9 [23]	Yes	17006-02-KF
2	NW16KF	2 kV	8.5	Molybdenum	-	-	.9 [23]	No	17006-03-KF
2	NW16KF	2 kV	16	Copper	-	-	.9 [23]	No	17006-04-KF
4	NW16KF	2 kV	1.1	304 Stn. Stl.	-	-	.9 [23]	No	17007-01-KF
4	NW16KF	2 kV	5	Nickel	-	-	.9 [23]	Yes	17007-02-KF
4	NW16KF	2 kV	8.5	Molybdenum	-	-	.9 [23]	No	17007-03-KF
4	NW16KF	2 kV	16	Copper	-	-	.9 [23]	No	17007-04-KF
8	NW16KF	1.5 kV	1.1	304 Stn. Stl.	-	-	1.3 [34]	No	17008-01-KF
8	NW16KF	1.5 kV	5	Nickel	-	-	1.3 [34]	Yes	17008-02-KF
8	NW16KF	1.5 kV	8.5	Molybdenum	-	-	1.3 [34]	No	17008-03-KF
8	NW16KF	1.5 kV	16	Copper	-	-	1.3 [34]	No	17008-04-KF

CONFLAT FLANGE

2	1 1/3" (NW16CF)	2 kV	1.1	304 Stn. Stl.	-	-	.9 [23]	No	17046-01-CF
2	1 1/3" (NW16CF)	2 kV	5	Nickel	-	-	.9 [23]	Yes	17046-02-CF
2	1 1/3" (NW16CF)	2 kV	8.5	Molybdenum	-	-	.9 [23]	No	17046-03-CF
2	1 1/3" (NW16CF)	2 kV	16	Copper	-	-	.9 [23]	No	17046-04-CF
4	1 1/3" (NW16CF)	2 kV	1.1	304 Stn. Stl.	-	-	.9 [23]	No	17048-01-CF
4	1 1/3" (NW16CF)	2 kV	5	Nickel	-	-	.9 [23]	Yes	17048-02-CF
4	1 1/3" (NW16CF)	2 kV	8.5	Molybdenum	-	-	.9 [23]	No	17048-03-CF
4	1 1/3" (NW16CF)	2 kV	16	Copper	-	-	.9 [23]	No	17048-04-CF
8	1 1/3" (NW16CF)	1.5 kV	1.1	304 Stn. Stl.	-	-	1.3 [34]	No	9340-06-CF
8	1 1/3" (NW16CF)	1.5 kV	5	Nickel	-	-	1.3 [34]	Yes	9340-01-CF
8	1 1/3" (NW16CF)	1.5 kV	8.5	Molybdenum	-	-	1.3 [34]	No	9340-04-CF
8	1 1/3" (NW16CF)	1.5 kV	16	Copper	-	-	1.3 [34]	No	9340-05-CF

ConFlat 2, 4, & 8 Pin

Contacts

TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.032 Crimp Contacts	Beryllium Copper	Accepts wire up to 0.032 [0.81]	11288-02-X†
0.042 Crimp Contacts	Stainless Steel - Gold Plated	Accepts wire up to 0.030 [0.76]	14461-04-A
Crimp Tool		For 0.025" - 0.075" Crimp Diameters	2840-05

*Contacts priced and sold in packages of 10. **Contacts priced and sold in packages of 5. †Shown in photo. See the Accessories section for more information on all accessories.

Specifications

Materials

Housing: 304 Stainless steel
 Pin/Tube: See table
 Insulation: Alumina ceramic
 Magnetic Materials: See table

Voltage Rating See table

Current Rating See table

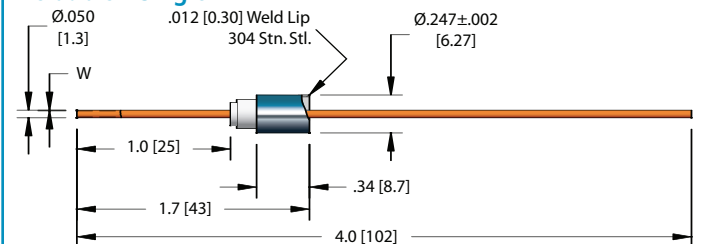
Temperature Range -269°C to 450°C, ISO KF -25°C to 205°C

Pressure @ 20°C ISO KF 0 PSIG

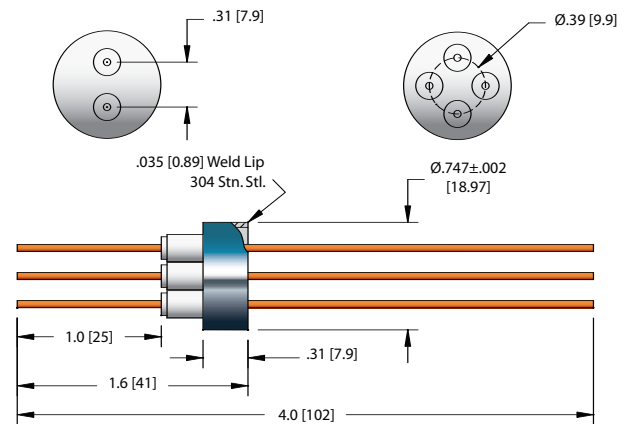
Single Pin: 3500 PSIG (241 Bar)

2 & 4 Pin: 1250 PSIG (86 Bar)

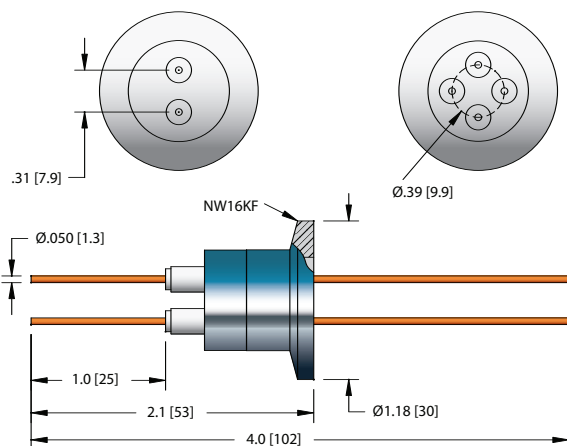
Weldable - Single Pin



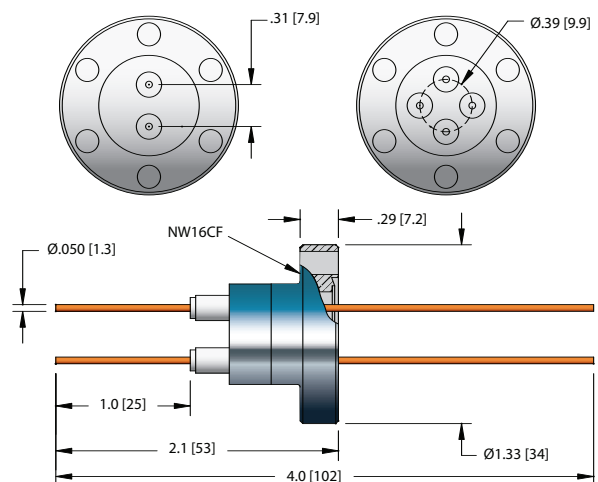
Weldable - 2 & 4 Pin



ISO KF - 2 & 4 Pin



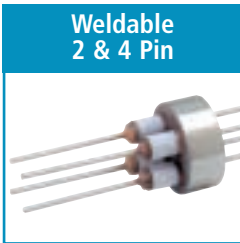
ConFlat - 2 & 4 Pin 6 kV





NO. PINS	INSTALLATION	VOLTAGE DC	AMPS*	CONDUCTOR MATERIAL	W	MAGNETIC MATERIALS	PART NUMBER
1	Weld	5 KV	1.8	304 Stn. Stl.	-	No	9791-04-W
1	Weld	5 KV	8.2	Nickel	-	Yes	9791-02-W
1	Weld	5 KV	27	Copper	-	No	9791-08-W
1	Weld	5 KV	-	Nickel Tube	.005	Yes	9791-06-W

*Current carrying capacity of the tubular feedthroughs varies based on the coolant used and the flow rate.



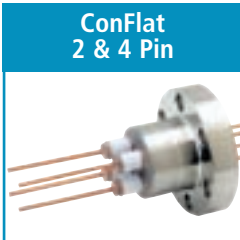
2	Weld	6 KV	1.8	304 Stn. Stl.	-	No	9215-04-W
2	Weld	6 KV	8.2	Nickel	-	Yes	9215-02-W
2	Weld	6 KV	27	Copper	-	No	9215-08-W
4	Weld	6 KV	1.8	304 Stn. Stl.	-	No	9216-04-W
4	Weld	6 KV	8.2	Nickel	-	Yes	9216-02-W
4	Weld	6 KV	27	Copper	-	No	9216-08-W

ISO FLANGE



2	NW16KF	6 KV	1.8	304 Stn. Stl.	-	No	17018-01-KF
2	NW16KF	6 KV	8.2	Nickel	-	Yes	17018-02-KF
2	NW16KF	6 KV	27	Copper	-	No	17018-04-KF
4	NW16KF	6 KV	1.8	304 Stn. Stl.	-	No	17019-01-KF
4	NW16KF	6 KV	8.2	Nickel	-	Yes	17019-02-KF
4	NW16KF	6 KV	27	Copper	-	No	17019-04-KF

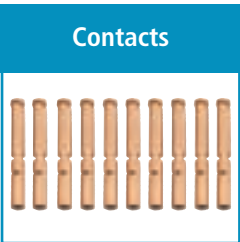
CONFLAT FLANGE



2	1 1/3" (NW16CF)	6 KV	1.8	304 Stn. Stl.	-	No	9871-02-CF
2	1 1/3" (NW16CF)	6 KV	8.2	Nickel	-	Yes	9871-01-CF
2	1 1/3" (NW16CF)	6 KV	27	Copper	-	No	9871-04-CF
4	1 1/3" (NW16CF)	6 KV	1.8	304 Stn. Stl.	-	No	9871-06-CF
4	1 1/3" (NW16CF)	6 KV	8.2	Nickel	-	Yes	9871-05-CF
4	1 1/3" (NW16CF)	6 KV	27	Copper	-	No	9871-08-CF



VOLTAGE DC	CONDUCTOR AMPS	GAUGE	TYPE	WIRE LENGTH	WIRE DIAMETER	INSULATION DIAMETER	PART NUMBER
850 V	2.5	28 AWG	Stranded	30'	7 x 0.005	Ø .028	21621-01-A
850 V	5	22 AWG	Stranded	30'	19 x 0.0063	Ø .035	21643-01-A
850 V	20	12 AWG	Stranded	15'	37 x 0.013	Ø .101	21702-02-A
Adjustable wire stripper, 20-30 AWG (.25-.80mm)							21128-01



TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.050 Crimp Contacts	Beryllium Copper	Accepts wire up to 0.062 [1.6]	11911-02-X†
0.050 Set Screw Contacts	Beryllium Copper	Accepts wire up to 0.050 [1.3]	7429-02-A
0.050 Barrel Type Contacts	Beryllium Copper	Accepts wire up to 0.050 [1.3]	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.





Specifications

Materials

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

Voltage Rating See table

Current Rating 5 Amps per pin

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

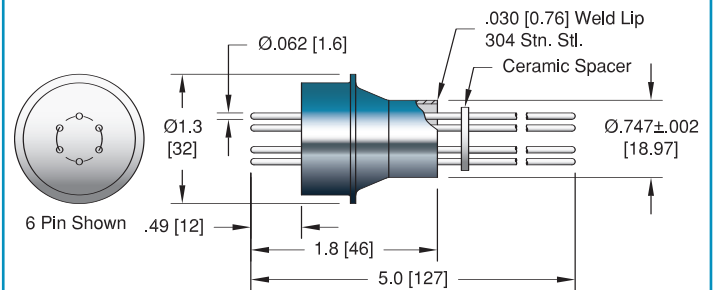
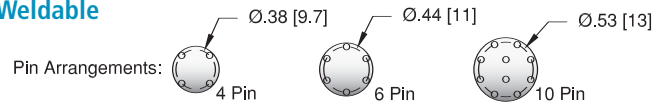
Pressure @ 20°C ISO KF 0 PSIG

4 Pin - 600 PSIG (41 Bar)

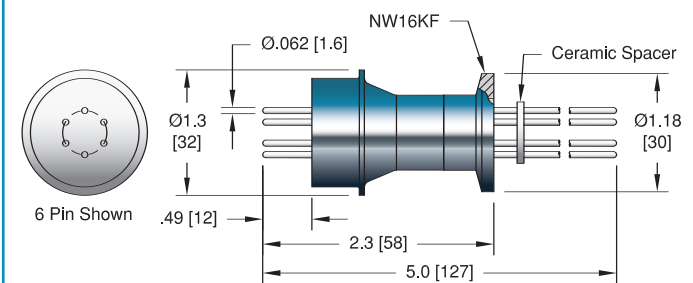
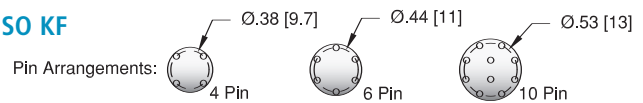
6 Pin - 550 PSIG (38 Bar)

10 Pin - 500 PSIG (34 Bar)

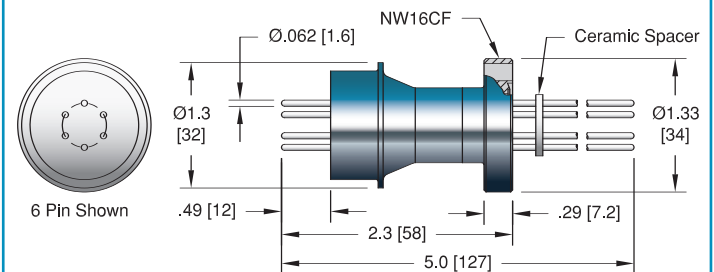
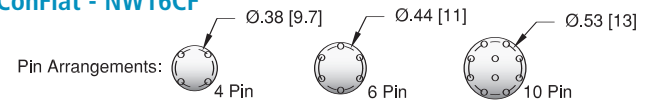
Weldable



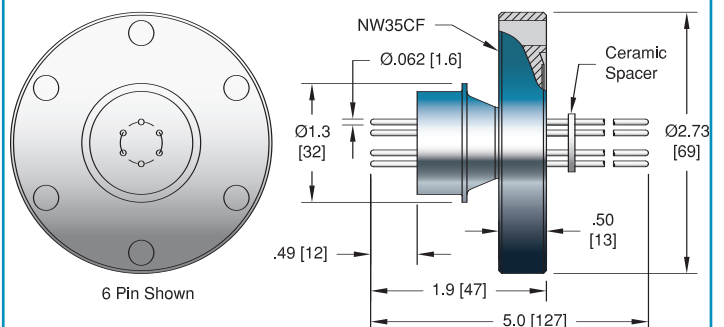
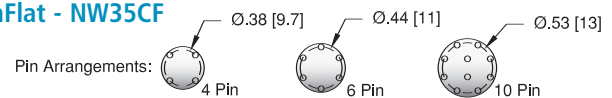
ISO KF



ConFlat - NW16CF



ConFlat - NW35CF





FEEDTHROUGH

Weldable

NO. PINS	INSTALLATION	VOLTAGE DC	PART NUMBER
4	Weld	5 KV	10234-01-W
6	Weld	5 KV	10235-01-W
10	Weld	2 KV	10236-01-W

ISO KF

ISO FLANGE

4	NW16KF	5 KV	10234-13-KF
6	NW16KF	5 KV	10235-13-KF
10	NW16KF	2 KV	10236-15-KF

**ConFlat
1 1/3" (NW16CF)**

CONFLAT FLANGE

4	1 1/3" (NW16CF)	5 KV	10234-02-CF
6	1 1/3" (NW16CF)	5 KV	10235-02-CF
10	1 1/3" (NW16CF)	2 KV	10236-02-CF

**ConFlat
2 3/4" (NW35CF)**

CONFLAT FLANGE

4	2 3/4" (NW35CF)	5 KV	10234-03-CF
6	2 3/4" (NW35CF)	5 KV	10235-03-CF
10	2 3/4" (NW35CF)	2 KV	10236-03-CF

**In-Vacuum Cable
Kapton**

VOLTAGE DC	CONDUCTOR AMPS	GAUGE	TYPE	WIRE LENGTH	WIRE DIAMETER	INSULATION DIAMETER	PART NUMBER
850 V	2.5	28 AWG	Stranded	30'	7 x 0.005	Ø .028	21621-01-A
850 V	5	22 AWG	Stranded	30'	19 x 0.0063	Ø .035	21643-01-A
850 V	20	12 AWG	Stranded	15'	37 x 0.013	Ø .101	21702-02-A

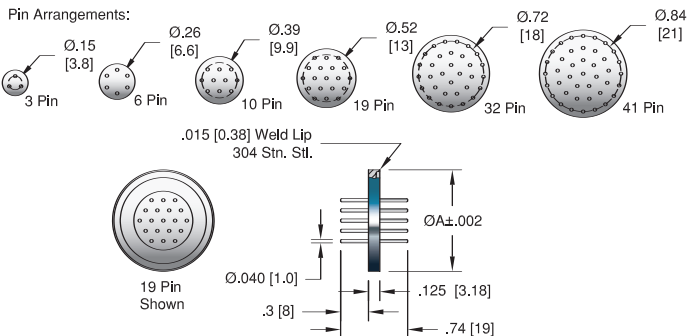
Adjustable wire stripper, 20-30 AWG (.25-.80mm) 21128-01

Contacts

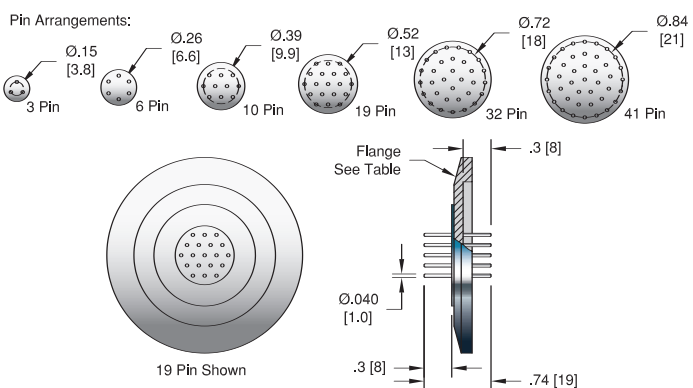
TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.062 Crimp Contacts	Alumel	Accepts wire up to 0.050 [1.3]	11259-06-X†
Crimp Tool		For 0.025" - 0.075" Crimp Diameters	2840-05

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

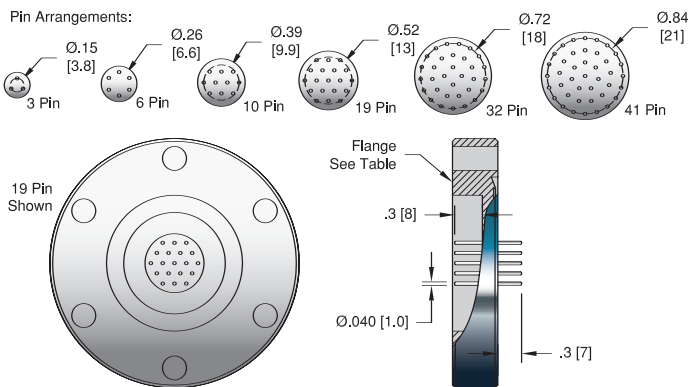
Straight Conductor Weldable



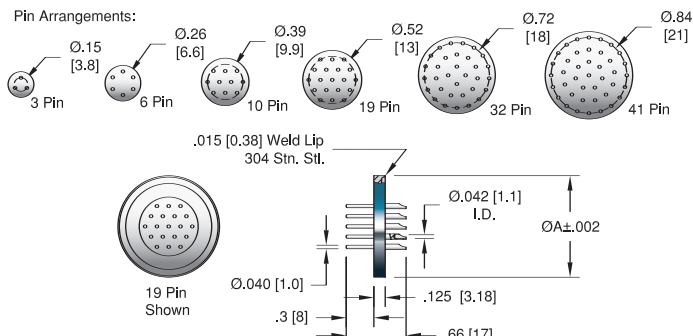
ISO KF



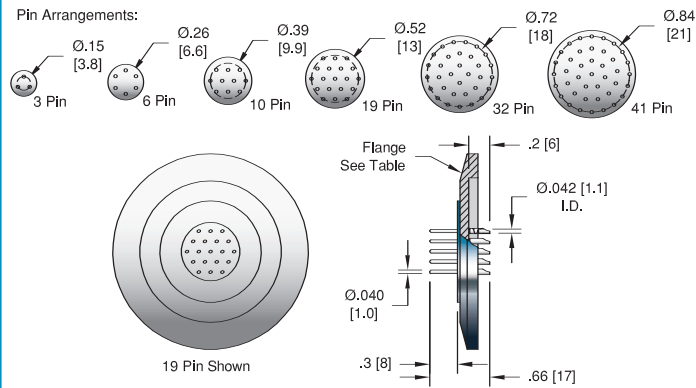
ConFlat



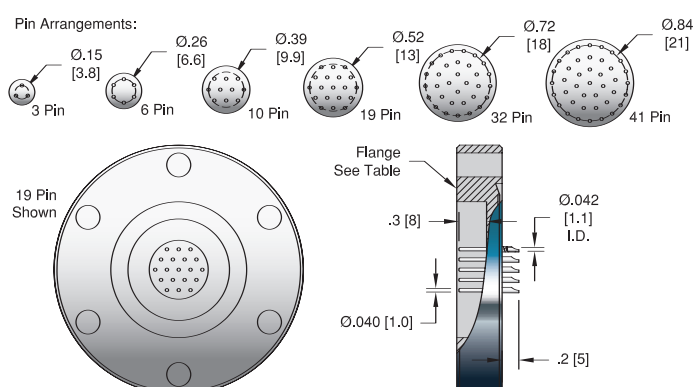
Straight/Solder Cup Conductor Weldable



ISO KF



ConFlat



Specifications

Materials

- Housing: 304 Stainless steel
- Pins: 330 Stainless steel (Nickel 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)



FEEDTHROUGH

Weldable Straight Pin

NO. PINS	PIN TYPE	INSTALLATION	PART NUMBER
3	.040 [1.0] Straight	Weld	18840-01-W
6	.040 [1.0] Straight	Weld	18841-01-W
10	.040 [1.0] Straight	Weld	18842-01-W
19	.040 [1.0] Straight	Weld	18843-01-W
32	.040 [1.0] Straight	Weld	18844-01-W
41	.040 [1.0] Straight	Weld	18845-01-W

ISO KF Straight Pin

ISO FLANGE

NO. PINS	PIN TYPE	INSTALLATION	PART NUMBER
3	.040 [1.0] Straight	NW25KF	17040-01-KF
6	.040 [1.0] Straight	NW40KF	17041-01-KF
10	.040 [1.0] Straight	NW40KF	17042-01-KF
19	.040 [1.0] Straight	NW40KF	17043-01-KF
32	.040 [1.0] Straight	NW40KF	17044-01-KF
41	.040 [1.0] Straight	NW50KF	17045-01-KF

ConFlat Straight Pin

CONFLAT FLANGE

NO. PINS	PIN TYPE	INSTALLATION	PART NUMBER
3	.040 [1.0] Straight	2 3/4" (NW35CF)	17020-01-CF
6	.040 [1.0] Straight	2 3/4" (NW35CF)	17021-01-CF
10	.040 [1.0] Straight	2 3/4" (NW35CF)	17022-01-CF
19	.040 [1.0] Straight	2 3/4" (NW35CF)	17023-01-CF
32	.040 [1.0] Straight	2 3/4" (NW35CF)	17024-01-CF
41	.040 [1.0] Straight	3 3/8" (NW50CF)	17025-01-CF

Weldable Solder Cup

NO. PINS	PIN TYPE	INSTALLATION	PART NUMBER
3	.040 [1.0] Solder Cup	Weld	18850-01-W
6	.040 [1.0] Solder Cup	Weld	18851-01-W
10	.040 [1.0] Solder Cup	Weld	18852-01-W
19	.040 [1.0] Solder Cup	Weld	18853-01-W
32	.040 [1.0] Solder Cup	Weld	18854-01-W
41	.040 [1.0] Solder Cup	Weld	18855-01-W

ISO KF Solder Cup

ISO FLANGE

NO. PINS	PIN TYPE	INSTALLATION	PART NUMBER
3	.040 [1.0] Solder Cup	NW25KF	17050-01-KF
6	.040 [1.0] Solder Cup	NW40KF	17051-01-KF
10	.040 [1.0] Solder Cup	NW40KF	17052-01-KF
19	.040 [1.0] Solder Cup	NW40KF	17053-01-KF
32	.040 [1.0] Solder Cup	NW40KF	17054-01-KF
41	.040 [1.0] Solder Cup	NW50KF	17055-01-KF

ConFlat Solder Cup

CONFLAT FLANGE

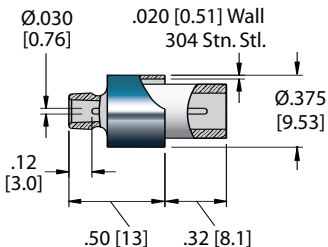
NO. PINS	PIN TYPE	INSTALLATION	PART NUMBER
3	.040 [1.0] Solder Cup	2 3/4" (NW35CF)	17030-01-CF
6	.040 [1.0] Solder Cup	2 3/4" (NW35CF)	17031-01-CF
10	.040 [1.0] Solder Cup	2 3/4" (NW35CF)	17032-01-CF
19	.040 [1.0] Solder Cup	2 3/4" (NW35CF)	17033-01-CF
32	.040 [1.0] Solder Cup	2 3/4" (NW35CF)	17034-01-CF
41	.040 [1.0] Solder Cup	3 3/8" (NW50CF)	17035-01-CF

Contacts

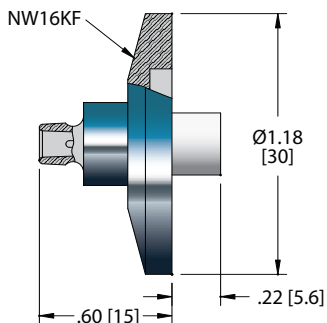
TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.040 Crimp Contacts	Copper Alloy - Gold Flash	Accepts wire up to 0.040 [1.0]	16167-03-A [†]
Crimp Tool		For 0.025" - 0.075" Crimp Diameters	2840-05

*Contacts priced and sold in packages of 5. [†]Shown in photo. See the Accessories section for more information on all accessories.

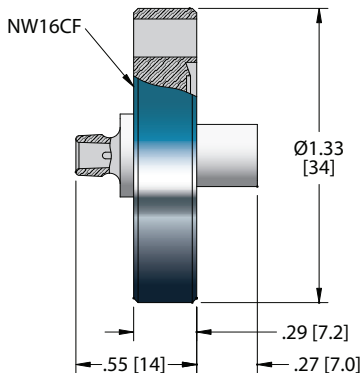
Weldable



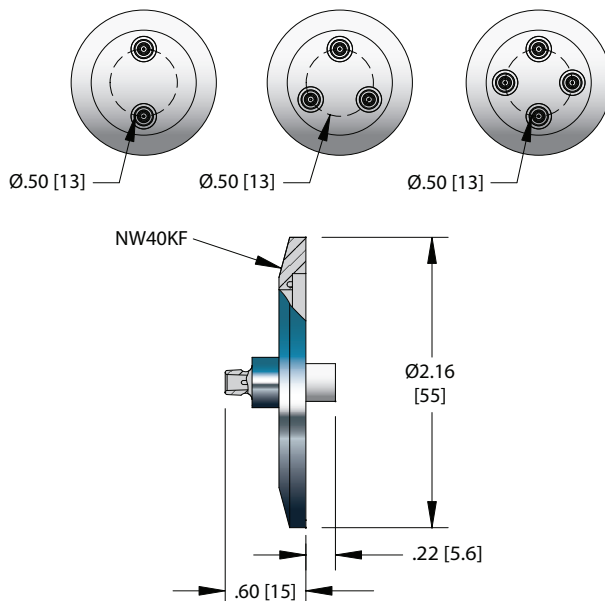
ISO KF - NW16KF



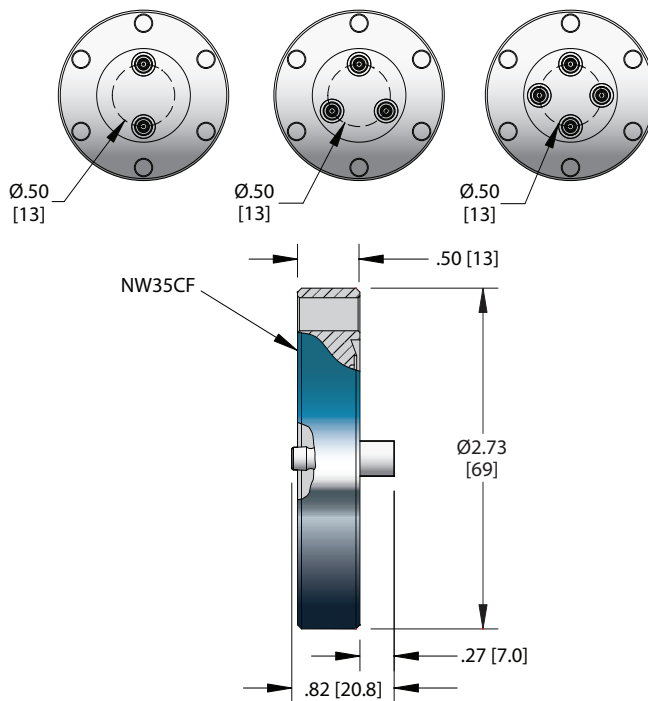
ConFlat - NW16CF



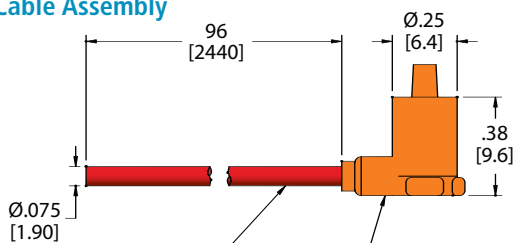
ISO KF - NW40KF



ConFlat - NW35CF



Micro HV Cable Assembly



Cable: 24 AWG SPC Stranded Conductor with Silicone F.E.P Insulation
Body: Molded Silicone Rubber

Specifications - Micro HV

Materials

- Housing: 304 Stainless steel
- Pin: Molybdenum (Gold plated)
- Insulation: Alumina ceramic
- Magnetic Materials: Yes

Voltage Rating 10 kV DC*

Current Rating 3 Amps

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

Pressure @ 20°C 1395 PSIG (96 Bar), ISO KF 0 PSIG

*When used with air side cable assembly.



FEEDTHROUGH

Weldable

NO. PINS	INSTALLATION	PART NUMBER
1	Weld	21140-01-W

ISO KF

ISO FLANGE		
1	NW16KF	21211-01-KF
2	NW40KF	21215-01-KF
3	NW40KF	21216-01-KF
4	NW40KF	21217-01-KF

ConFlat

CONFLAT FLANGE		
1	1 1/3" (NW16CF)	21210-01-CF
2	2 3/4" (NW35CF)	21212-01-CF
3	2 3/4" (NW35CF)	21213-01-CF
4	2 3/4" (NW35CF)	21214-01-CF

Air Side Cable Assembly

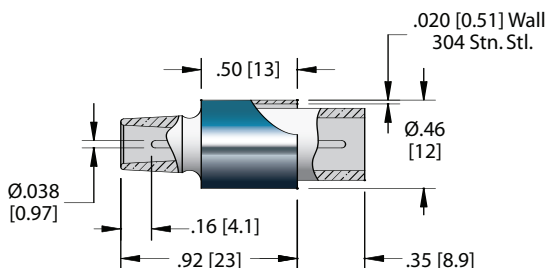
TYPE	CABLE TYPE	LENGTH	VOLTAGE DC	CONDUCTOR AMPS	TEMPERATURE °C MIN	TEMPERATURE °C MAX	PART NUMBER
Micro HV Air Side	24 AWG	8'	10 kV	3	-55	125	21039-01-A

Contacts

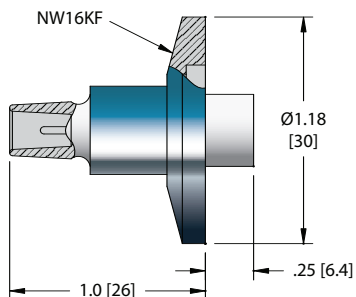
TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.032 Crimp Type Contacts Crimp Tool	Beryllium Copper	Accepts wire up to 0.032 [0.81] For 0.025" - 0.075" Crimp Diameters	11288-02-X 2840-05

*When used with air side cable assembly. **Contacts priced and sold in packages of 10. See the Accessories section for more information on all accessories.

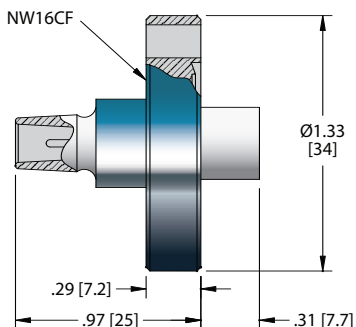
Weldable



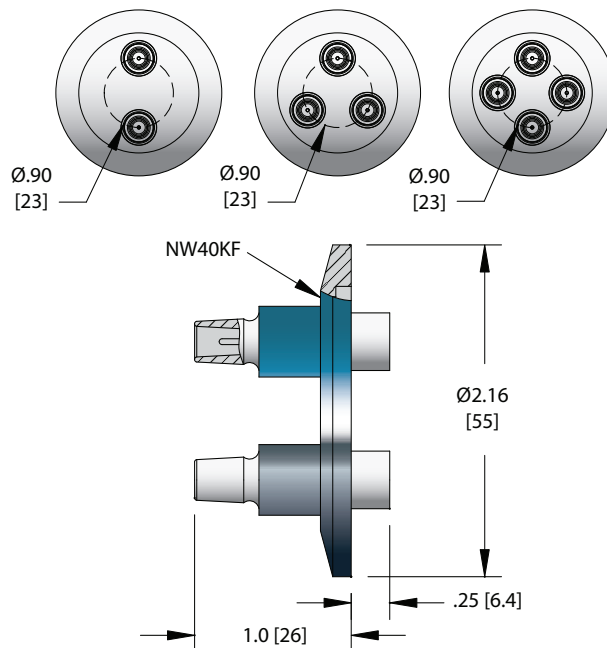
ISO KF - NW16KF



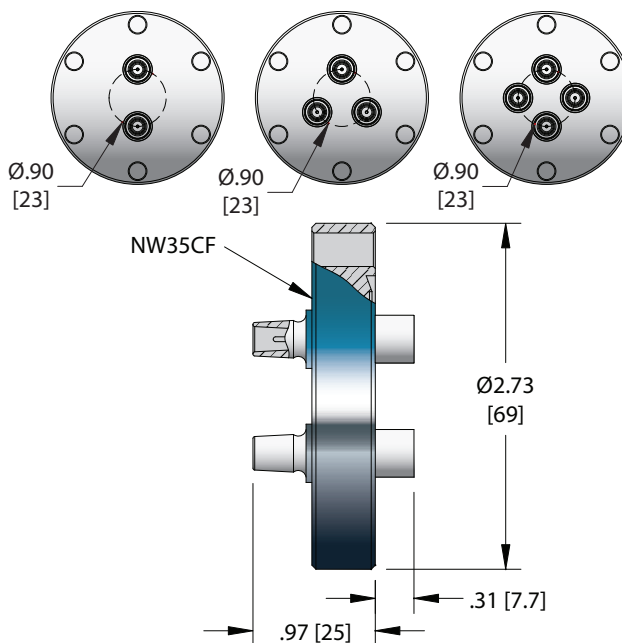
ConFlat - NW16CF



ISO KF - NW40KF



ConFlat - NW35CF



Specifications - Mini HV

Materials

- Housing: 304 Stainless steel
- Pin: Molybdenum (Gold plated)
- Insulation: Alumina ceramic
- Magnetic Materials: Yes

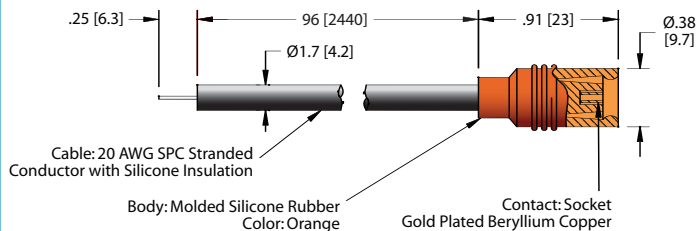
Voltage Rating 15 kV DC*

Current Rating 7.5 Amps

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

Pressure @ 20°C 1100 PSIG (76 Bar), ISO KF 0 PSIG

Mini HV Cable Assembly



*When used with air side cable assembly.



FEEDTHROUGH

Weldable

NO. PINS	INSTALLATION	PART NUMBER
1	Weld	21169-01-W

ISO KF

1	NW16KF	21227-01-KF
2	NW40KF	21231-01-KF
3	NW40KF	21232-01-KF
4	NW40KF	21233-01-KF

ConFlat

1	1 1/3" (NW16CF)	21226-01-CF
2	2 3/4" (NW35CF)	21228-01-CF
3	2 3/4" (NW35CF)	21229-01-CF
4	2 3/4" (NW35CF)	21230-01-CF

Air Side Cable Assembly

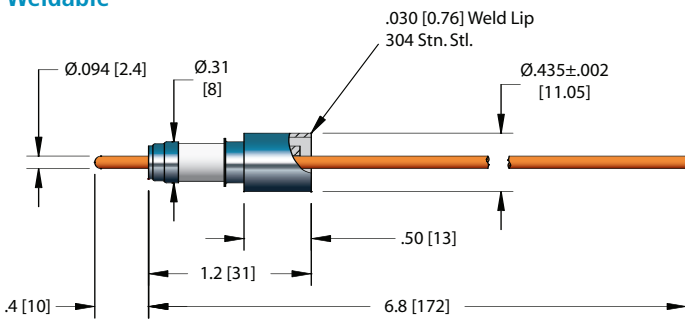
TYPE	CABLE TYPE	LENGTH	VOLTAGE DC	CONDUCTOR AMPS	TEMPERATURE °C MIN	TEMPERATURE °C MAX	PART NUMBER
Mini HV Air Side	20 AWG	8'	15 kV	7.5	-55	125	21119-01-A

Contacts

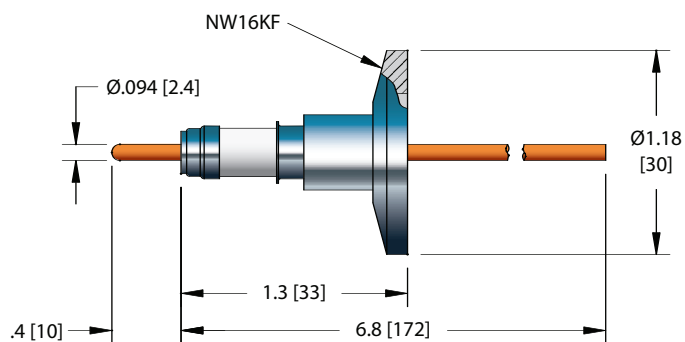
TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.040 Crimp Type Contacts	Copper Alloy - Gold Flash	Accepts wire up to 0.040 [1.0]	16757-02-A
Crimp Tool		For 0.025" - 0.075" Crimp Diameters	2840-05

*When used with air side cable assembly. **Contacts priced and sold in packages of 10. See the Accessories section for more information on all accessories.

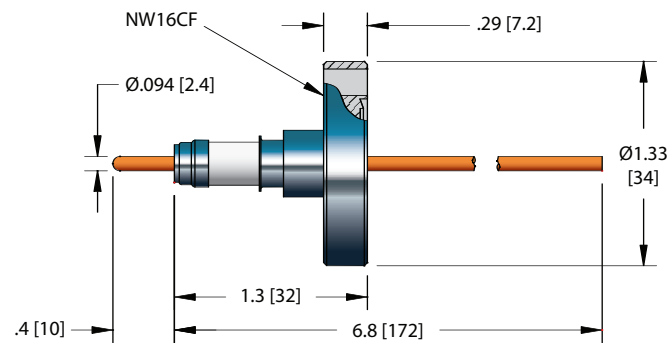
Weldable



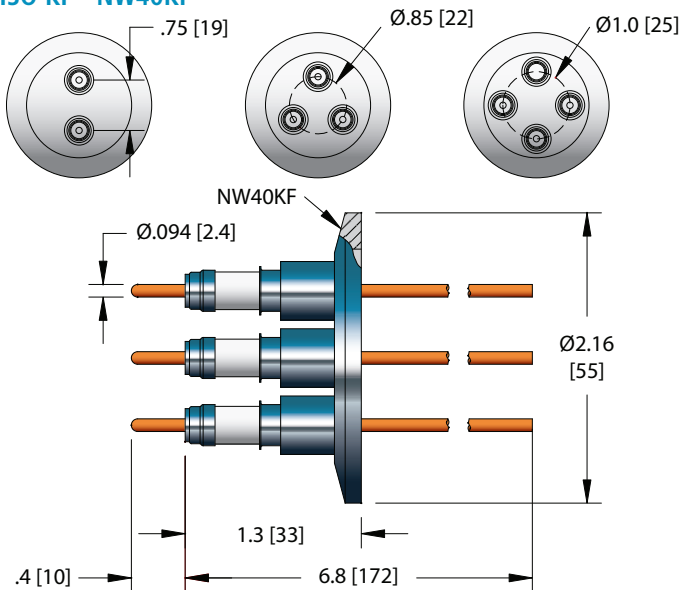
ISO KF - NW16KF



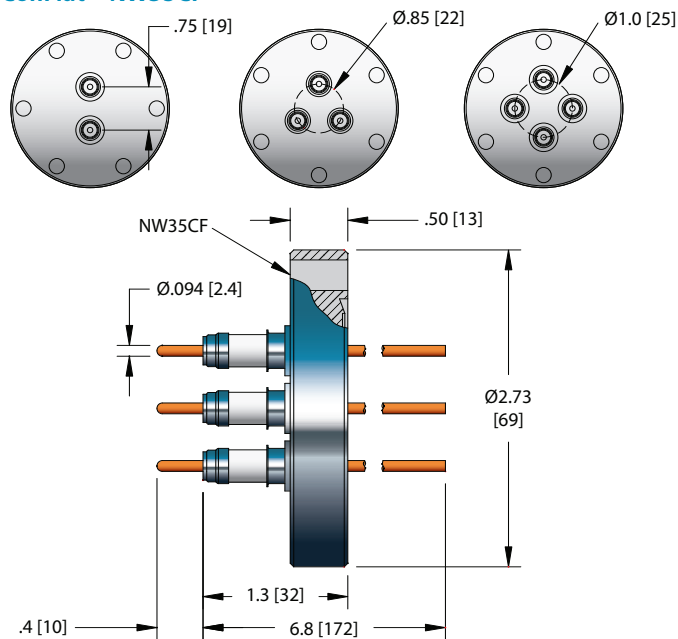
ConFlat - NW16CF



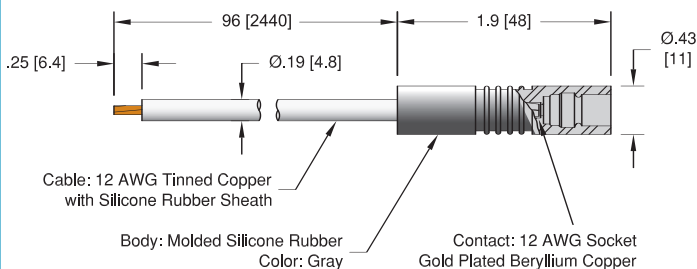
ISO KF - NW40KF



ConFlat - NW35CF



10 KV Power Plug



Specifications

Materials

- Housing: 304 Stainless steel
- Pin: See table
- Insulation: Alumina ceramic
- Magnetic Materials: See table

Voltage Rating 10 kV DC*

Current Rating See table

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

Pressure @ 20°C 1500 PSIG (103 Bar), ISO KF 0 PSIG

*When used with air side cable assembly.



FEEDTHROUGH

Weldable

NO. PINS	CONDUCTOR AMPS	MATERIAL	INSTALLATION	MAGNETIC MATERIALS	PART NUMBER
1	3.6	304 Stn. Stl.	Weld	No	3888-08-W
1	16.5	Nickel	Weld	Yes	3888-09-W
1	55	Copper	Weld	No	3888-10-W

ISO KF

ISO FLANGE

NO. PINS	CONDUCTOR AMPS	MATERIAL	INSTALLATION	MAGNETIC MATERIALS	PART NUMBER
1	3.6	304 Stn. Stl.	NW16KF	No	17026-05-KF
1	16.5	Nickel	NW16KF	Yes	17026-06-KF
1	55	Copper	NW16KF	No	17026-08-KF
2	3.6	304 Stn. Stl.	NW40KF	No	17027-05-KF
2	16.5	Nickel	NW40KF	Yes	17027-06-KF
2	55	Copper	NW40KF	No	17027-08-KF
3	3.6	304 Stn. Stl.	NW40KF	No	17067-05-KF
3	16.5	Nickel	NW40KF	Yes	17067-06-KF
3	55	Copper	NW40KF	No	17067-08-KF
4	3.6	304 Stn. Stl.	NW40KF	No	17028-05-KF
4	16.5	Nickel	NW40KF	Yes	17028-06-KF
4	55	Copper	NW40KF	No	17028-08-KF

ConFlat

CONFLAT FLANGE

NO. PINS	CONDUCTOR AMPS	MATERIAL	INSTALLATION	MAGNETIC MATERIALS	PART NUMBER
1	3.6	304 Stn. Stl.	1 1/3" (NW16CF)	No	19542-07-CF
1	16.5	Nickel	1 1/3" (NW16CF)	Yes	19542-03-CF
1	55	Copper	1 1/3" (NW16CF)	No	19542-04-CF
2	3.6	304 Stn. Stl.	2 3/4" (NW35CF)	No	17060-05-CF
2	16.5	Nickel	2 3/4" (NW35CF)	Yes	17060-06-CF
2	55	Copper	2 3/4" (NW35CF)	No	17060-08-CF
3	3.6	304 Stn. Stl.	2 3/4" (NW35CF)	No	17064-05-CF
3	16.5	Nickel	2 3/4" (NW35CF)	Yes	17064-06-CF
3	55	Copper	2 3/4" (NW35CF)	No	17064-08-CF
4	3.6	304 Stn. Stl.	2 3/4" (NW35CF)	No	17069-05-CF
4	16.5	Nickel	2 3/4" (NW35CF)	Yes	17069-06-CF
4	55	Copper	2 3/4" (NW35CF)	No	17069-08-CF

Air Side Cable Assembly

TYPE	CABLE TYPE	LENGTH	CONDUCTOR AMPS	TEMPERATURE °C MIN	TEMPERATURE °C MAX	PART NUMBER
10 kV Power Plug	12 AWG	8'	30	-55	125	14418-02-A

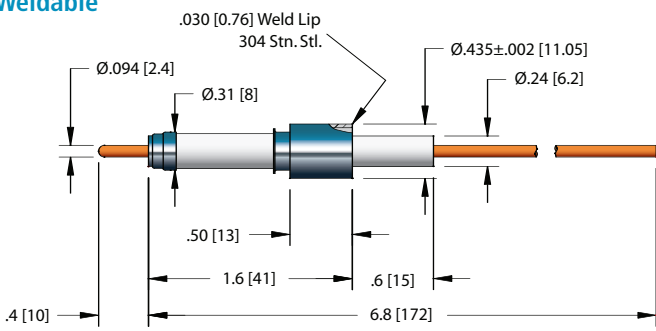
Contacts

TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.094 Set Screw Type Contacts	Beryllium Copper	Accepts wire up to 0.050 [1.3]	7429-01-A
0.094 Barrel Type Contacts	Beryllium Copper	Accepts wire up to 0.094 [2.4]	7332-04-A†
Crimp Tool		For 0.025" - 0.075" Crimp Diameters	2840-05

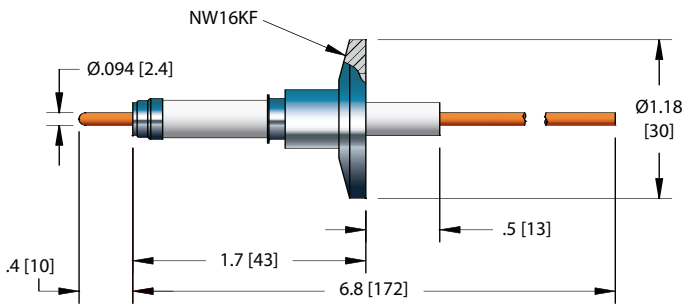
*When used with air side cable assembly. **Contacts priced and sold in packages of 10. †Shown in photo. See the Accessories section for more information on all accessories.

FEEDTHROUGH

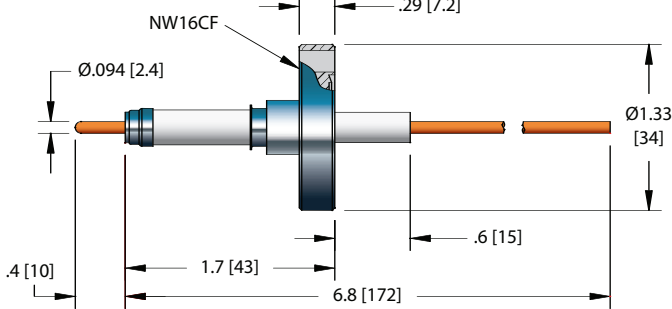
Weldable



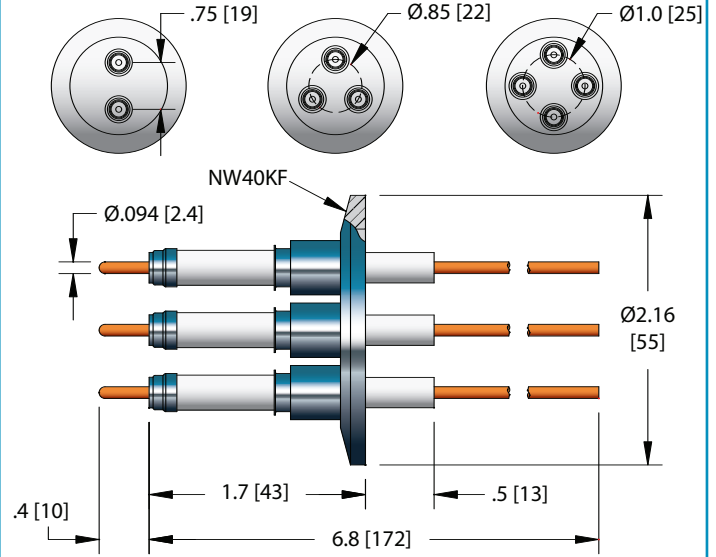
ISO KF - NW16KF



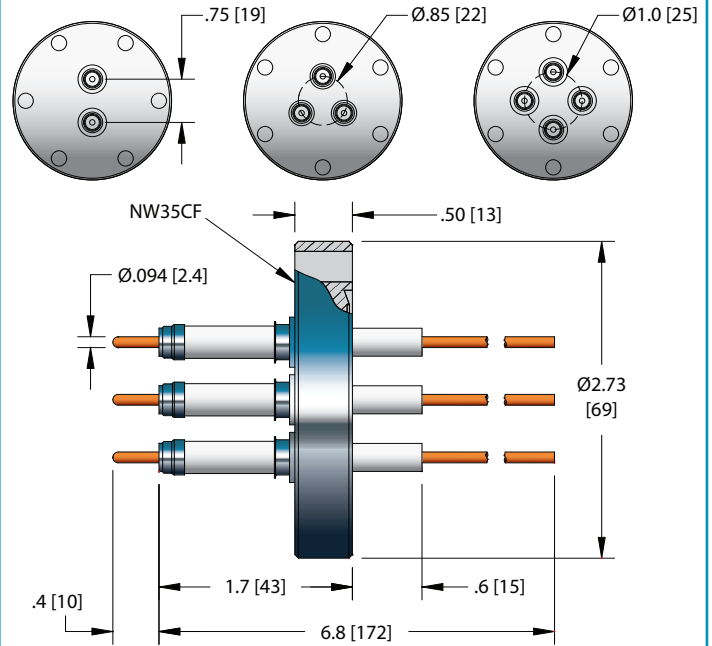
ConFlat - NW16CF



ISO KF - NW40KF



ConFlat - NW35CF



Specifications

Materials

- Housing: 304 Stainless steel
- Pin: See table
- Insulation: Alumina ceramic
- Magnetic Materials: See table

Voltage Rating 20 kV DC*

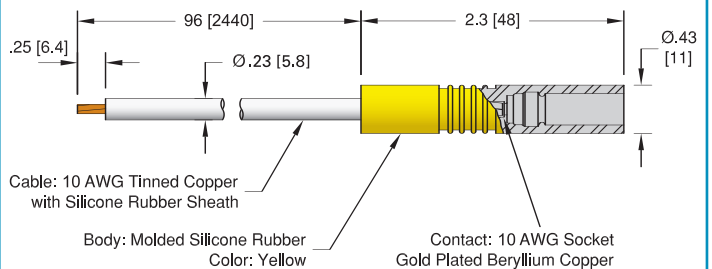
Current Rating See table

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

Pressure @ 20°C 1500 PSIG (103 Bar), ISO KF 0 PSIG

*When used with air side cable assembly.

20 KV Power Plug





FEEDTHROUGH

Weldable

NO. PINS	CONDUCTOR AMPS	MATERIAL	INSTALLATION	MAGNETIC MATERIALS	PART NUMBER
1	3.6	304 Stn. Stl.	Weld	No	17575-03-W
1	16.5	Nickel	Weld	Yes	4275-22-W
1	55	Copper	Weld	No	4275-21-W

ISO KF

ISO FLANGE

1	3.6	304 Stn. Stl.	NW16KF	No	17036-05-KF
1	16.5	Nickel	NW16KF	Yes	17036-06-KF
1	55	Copper	NW16KF	No	17036-08-KF
2	3.6	304 Stn. Stl.	NW40KF	No	17037-05-KF
2	16.5	Nickel	NW40KF	Yes	17037-06-KF
2	55	Copper	NW40KF	No	17037-08-KF
3	3.6	304 Stn. Stl.	NW40KF	No	17068-05-KF
3	16.5	Nickel	NW40KF	Yes	17068-06-KF
3	55	Copper	NW40KF	No	17068-08-KF
4	3.6	304 Stn. Stl.	NW40KF	No	17038-05-KF
4	16.5	Nickel	NW40KF	Yes	17038-06-KF
4	55	Copper	NW40KF	No	17038-08-KF

ConFlat

CONFLAT FLANGE

1	3.6	304 Stn. Stl.	1 1/3" (NW16CF)	No	19543-07-CF
1	16.5	Nickel	1 1/3" (NW16CF)	Yes	19543-03-CF
1	55	Copper	1 1/3" (NW16CF)	No	19543-04-CF
2	3.6	304 Stn. Stl.	2 3/4" (NW35CF)	No	10287-04-CF
2	16.5	Nickel	2 3/4" (NW35CF)	Yes	10287-05-CF
2	55	Copper	2 3/4" (NW35CF)	No	10287-03-CF
3	3.6	304 Stn. Stl.	2 3/4" (NW35CF)	No	17065-05-CF
3	16.5	Nickel	2 3/4" (NW35CF)	Yes	17065-06-CF
3	55	Copper	2 3/4" (NW35CF)	No	17065-08-CF
4	3.6	304 Stn. Stl.	2 3/4" (NW35CF)	No	16709-16-CF
4	16.5	Nickel	2 3/4" (NW35CF)	Yes	16709-08-CF
4	55	Copper	2 3/4" (NW35CF)	No	16709-10-CF

Air Side Cable Assembly

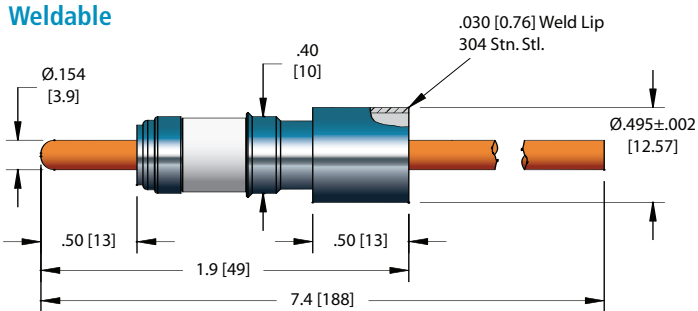
TYPE	CABLE TYPE	LENGTH	CONDUCTOR AMPS	TEMPERATURE °C MIN	TEMPERATURE °C MAX	PART NUMBER
20 kV Power Plug	10 AWG	8'	55	-55	125	14419-02-A

Contacts

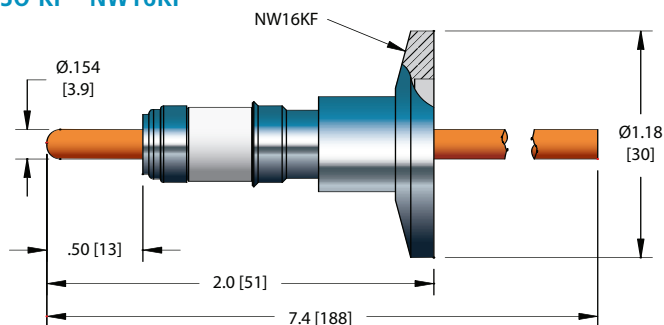
TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.094 Set Screw Type Contacts	Beryllium Copper	Accepts wire up to 0.050 [1.3]	7429-01-A
0.094 Barrel Type Contacts	Beryllium Copper	Accepts wire up to 0.094 [2.4]	7332-04-A†

*When used with air side cable assembly. **Contacts priced and sold in packages of 10. †Shown in photo. See the Accessories section for more information on all accessories.

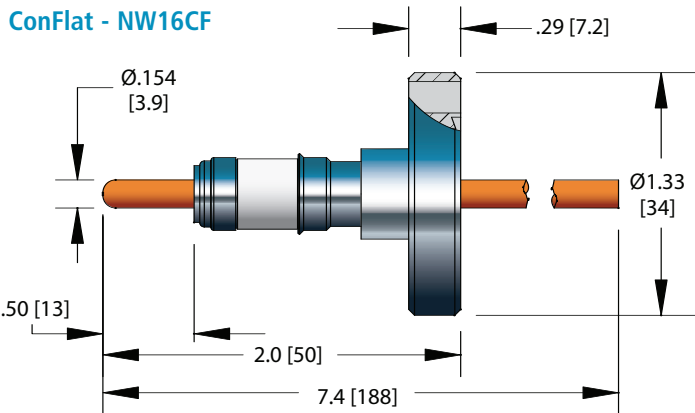
Weldable



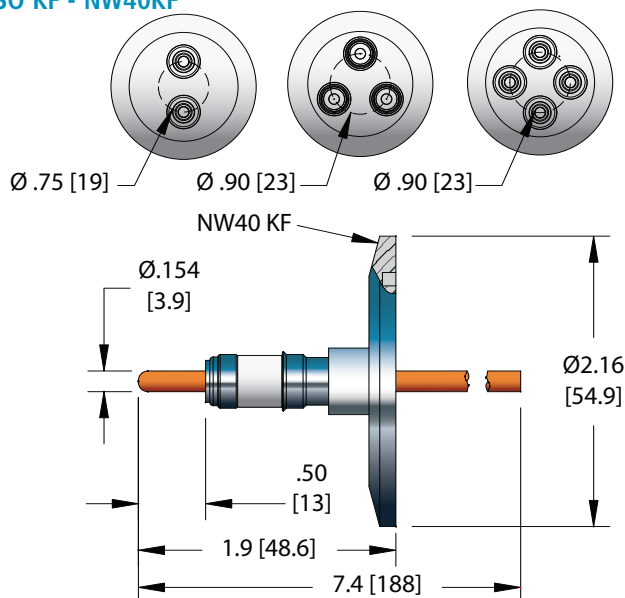
ISO KF - NW16KF



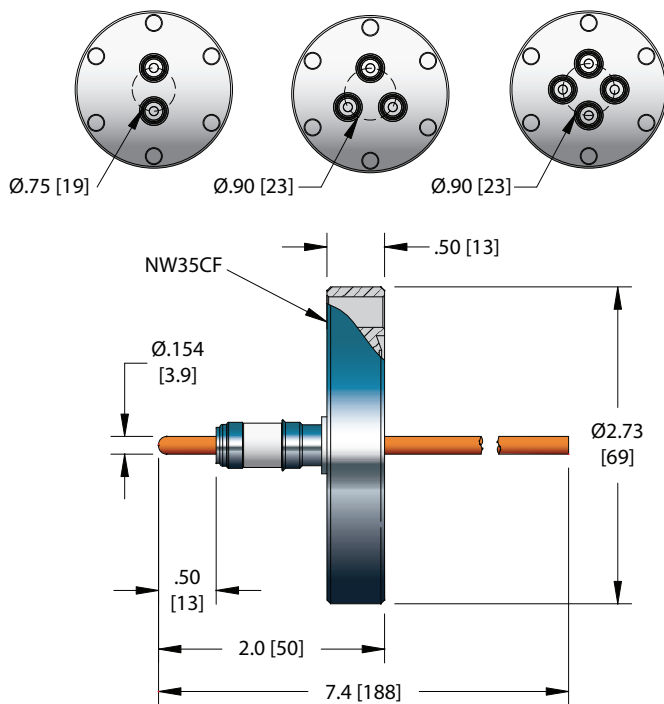
ConFlat - NW16CF



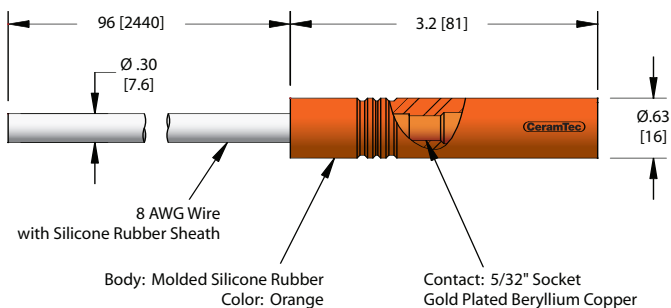
ISO KF - NW40KF



ConFlat - NW35CF



.154 Power Plug



Specifications

Materials

- Housing: 304 Stainless steel
- Pin: See table
- Insulation: Alumina ceramic
- Magnetic Materials: Yes

Voltage Rating 10 kV DC*

Current Rating See table

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

Pressure @ 20°C 1000 PSIG (69 Bar), ISO KF 0 PSIG

*When used with air side cable assembly.



Weldable

NO. PINS	AMPS	CONDUCTOR MATERIAL	INSTALLATION	PART NUMBER
1	30	Nickel	Weld	21032-02-W
1	100	Copper	Weld	21032-01-W

ISO KF

ISO FLANGE

1	30	Nickel	NW16KF	21134-02-KF
1	100	Copper	NW16KF	21134-01-KF
2	30	Nickel	NW40KF	21158-02-KF
2	100	Copper	NW40KF	21158-01-KF
3	30	Nickel	NW40KF	21159-02-KF
3	100	Copper	NW40KF	21159-01-KF
4	30	Nickel	NW40KF	21160-02-KF
4	100	Copper	NW40KF	21160-01-KF

ConFlat

CONFLAT FLANGE

1	30	Nickel	1 1/3" (NW16CF)	21131-02-CF
1	100	Copper	1 1/3" (NW16CF)	21131-01-CF
2	30	Nickel	2 3/4" (NW35CF)	21154-02-CF
2	100	Copper	2 3/4" (NW35CF)	21154-01-CF
3	30	Nickel	2 3/4" (NW35CF)	21155-02-CF
3	100	Copper	2 3/4" (NW35CF)	21155-01-CF
4	30	Nickel	2 3/4" (NW35CF)	21156-02-CF
4	100	Copper	2 3/4" (NW35CF)	21156-01-CF

Air Side Cable Assembly

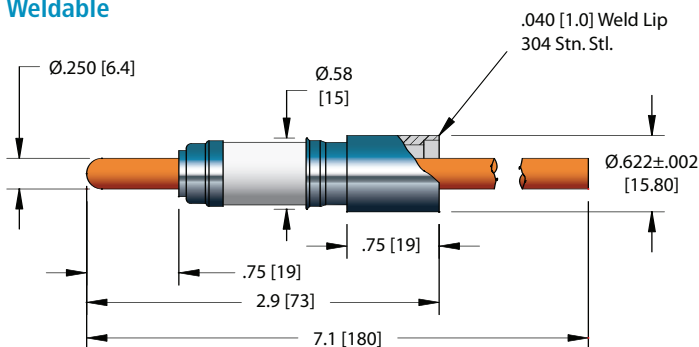
TYPE	CABLE TYPE	LENGTH	VOLTAGE DC	CONDUCTOR AMPS	TEMPERATURE °C MIN	TEMPERATURE °C MAX	PART NUMBER
.154 Power Plug	8 AWG	8'	10 kV	75	-55	125	21094-01-A

Contacts

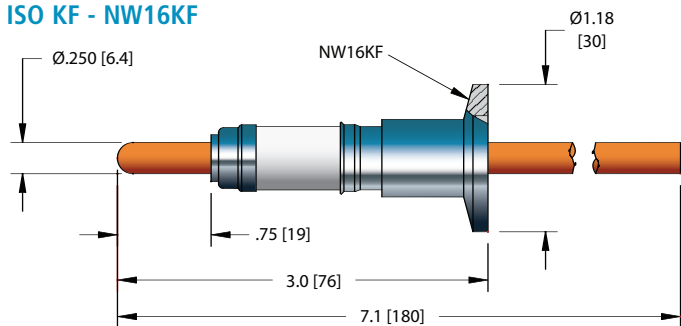
TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.154 Barrel Type Contacts	Beryllium Copper	Accepts wire up to 0.154 [3.9]	7332-07-A

*When used with air side cable assembly. **Contacts priced and sold in packages of 10. See the Accessories section for more information on all accessories.

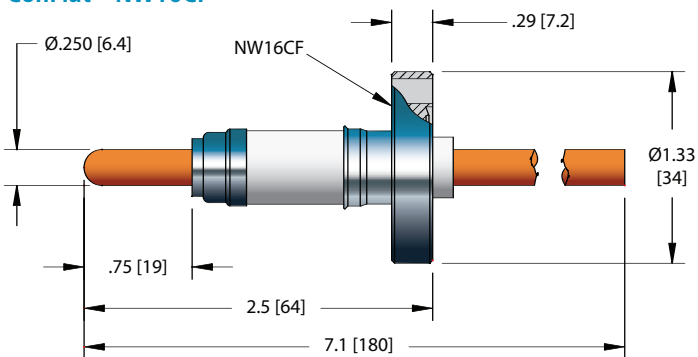
Weldable



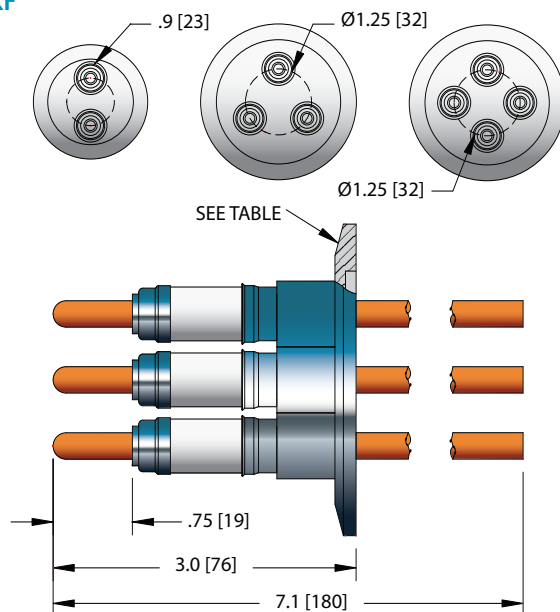
ISO KF - NW16KF



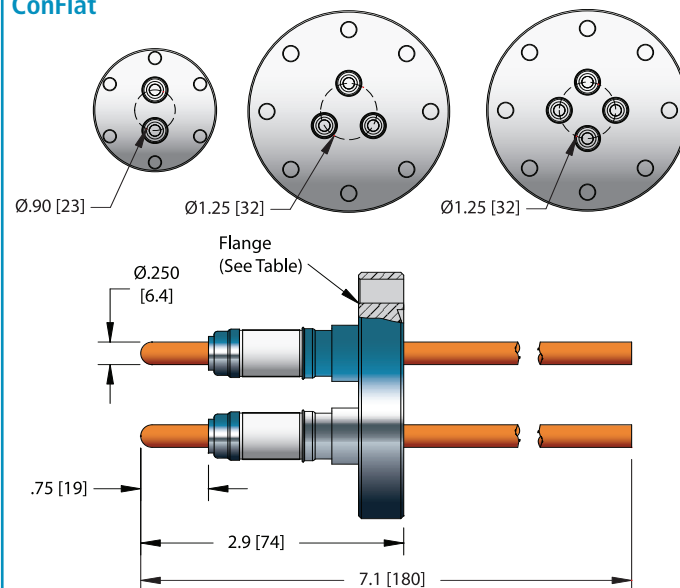
ConFlat - NW16CF



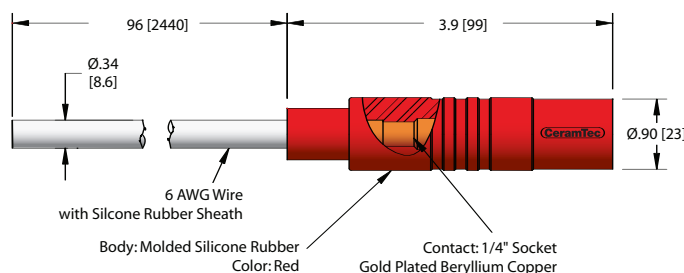
ISO KF



ConFlat



.250 Power Plug



Specifications

Materials

- Housing: 304 Stainless steel
- Pin: See table
- Insulation: Alumina ceramic
- Magnetic Materials: Yes

Voltage Rating 15 kV DC*

Current Rating See table

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

Pressure @ 20°C 750 PSIG (52 Bar), ISO KF 0 PSIG

*When used with air side cable assembly.



FEEDTHROUGH

Weldable

NO. PINS	AMPS	CONDUCTOR MATERIAL	INSTALLATION	PART NUMBER
1	56	Nickel	Weld	21414-07-W
1	185	Copper	Weld	21414-01-W

ISO KF

ISO FLANGE

1	56	Nickel	NW16KF	21308-02-KF
1	185	Copper	NW16KF	21308-01-KF
1	56	Nickel	NW40KF	21278-02-KF
1	185	Copper	NW40KF	21278-01-KF
2	56	Nickel	NW40KF	21278-04-KF
2	185	Copper	NW40KF	21278-03-KF
3	56	Nickel	NW50KF	21278-06-KF
3	185	Copper	NW50KF	21278-05-KF
4	56	Nickel	NW50KF	21278-08-KF
4	185	Copper	NW50KF	21278-07-KF

ConFlat

CONFLAT FLANGE

1	56	Nickel	1 1/3" (NW16CF)	21309-02-CF
1	185	Copper	1 1/3" (NW16CF)	21309-01-CF
1	56	Nickel	2 3/4" (NW35CF)	21280-02-CF
1	185	Copper	2 3/4" (NW35CF)	21280-01-CF
2	56	Nickel	2 3/4" (NW35CF)	21280-04-CF
2	185	Copper	2 3/4" (NW35CF)	21280-03-CF
3	56	Nickel	4 1/2" (NW63CF)	21280-06-CF
3	185	Copper	4 1/2" (NW63CF)	21280-05-CF
4	56	Nickel	4 1/2" (NW63CF)	21280-08-CF
4	185	Copper	4 1/2" (NW63CF)	21280-07-CF

Air Side Cable Assembly

TYPE	CABLE TYPE	LENGTH	VOLTAGE DC	CONDUCTOR AMPS	TEMPERATURE °C MIN	TEMPERATURE °C MAX	PART NUMBER
.250 Power Plug	6 AWG	8'	25 kV	100	-55	125	20956-02-A

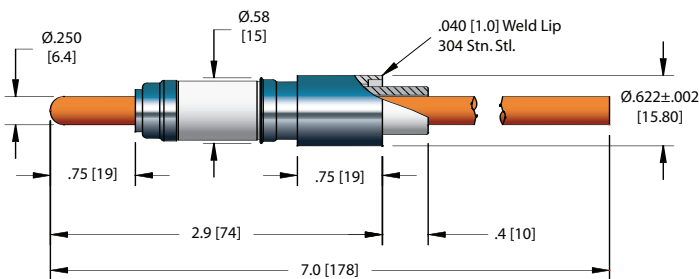
Contacts

TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.250 Barrel Type Contacts	Beryllium Copper	Accepts wire up to 0.250 [6.4]	7332-06-A [†]
0.250 Clamp Type Contacts	Copper	Accepts wire up to 0.250 [6.4]	18740-01-A

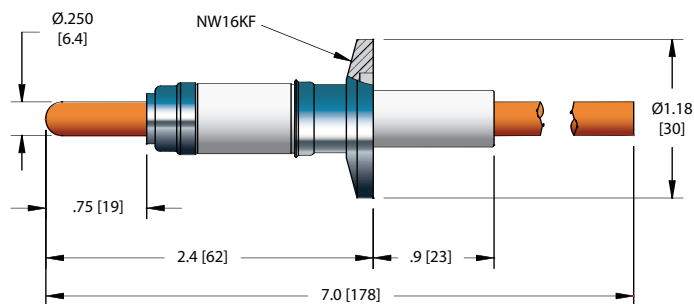
*When used with air side cable assembly. **Contacts priced and sold in packages of 10. [†]Shown in photo. See the Accessories section for more information on all accessories.

FEEDTHROUGH

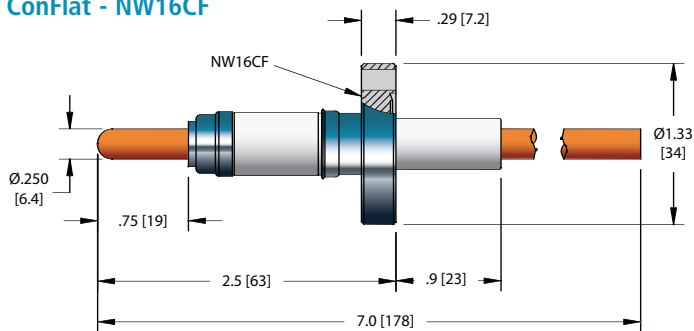
Weldable



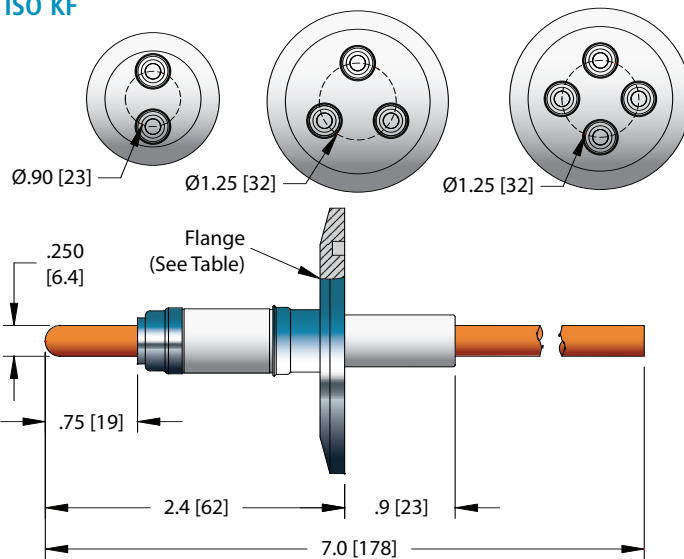
ISO KF - NW16KF



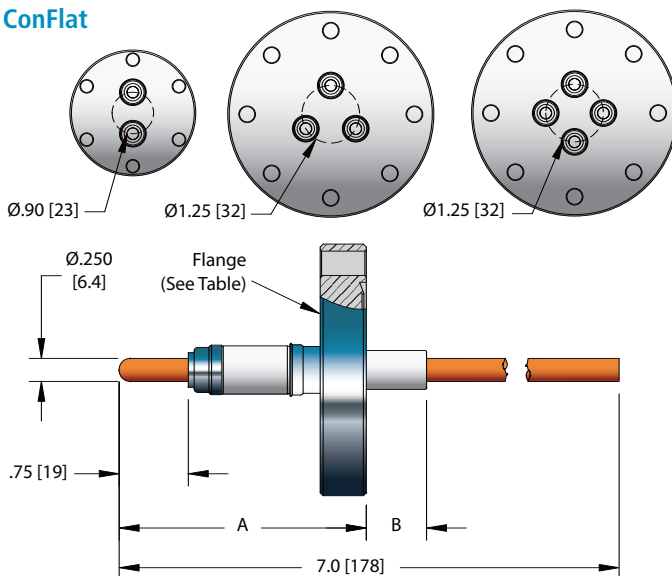
ConFlat - NW16CF



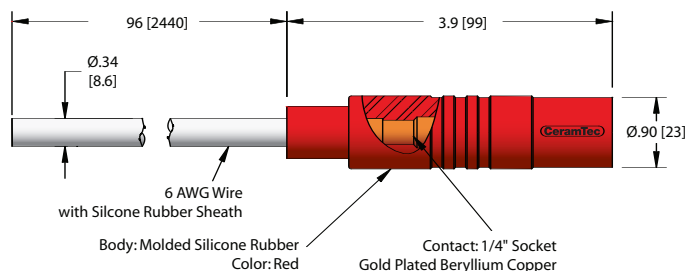
ISO KF



ConFlat



.250 Power Plug



Specifications

Materials

- Housing: 304 Stainless steel
- Pin: See table
- Insulation: Alumina ceramic
- Magnetic Materials: Yes

Voltage Rating 25 kV DC*

Current Rating 185 Amps

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

Pressure @ 20°C 750 PSIG (52 Bar), ISO KF 0 PSIG

*When used with air side cable assembly.



FEEDTHROUGH

Weldable

NO. PINS	AMPS	CONDUCTORS MATERIAL	INSTALLATION	DIMENSIONS		PART NUMBER
				A	B	
1	185	Copper	Weld	-	-	20955-01-W
1	56	Nickel	Weld	-	-	20955-02-W

ISO KF

ISO FLANGE

1	185	Copper	NW16KF	-	-	21133-01-KF
1	56	Nickel	NW16KF	-	-	21133-02-KF
2	185	Copper	NW40KF	-	-	21149-01-KF
2	56	Nickel	NW40KF	-	-	21149-02-KF
3	185	Copper	NW50KF	-	-	21150-01-KF
3	56	Nickel	NW50KF	-	-	21150-02-KF
4	185	Copper	NW50KF	-	-	21151-01-KF
4	56	Nickel	NW50KF	-	-	21151-02-KF

ConFlat

CONFLAT FLANGE

1	185	Copper	1 1/3" (NW16CF)	-	-	21130-01-CF
1	56	Nickel	1 1/3" (NW16CF)	-	-	21130-02-CF
1	185	Copper	2 3/4" (NW35CF)	2.68 [68]	.65 [17]	21144-01-CF
1	56	Nickel	2 3/4" (NW35CF)	2.68 [68]	.65 [17]	21144-02-CF
2	185	Copper	2 3/4" (NW35CF)	2.68 [68]	.65 [17]	21145-01-CF
2	56	Nickel	2 3/4" (NW35CF)	2.68 [68]	.65 [17]	21145-02-CF
3	185	Copper	4 1/2" (NW63CF)	2.87 [73]	.47 [12]	21146-01-CF
3	56	Nickel	4 1/2" (NW63CF)	2.87 [73]	.47 [12]	21146-02-CF
4	185	Copper	4 1/2" (NW63CF)	2.87 [73]	.47 [12]	21147-01-CF
4	56	Nickel	4 1/2" (NW63CF)	2.87 [73]	.47 [12]	21147-02-CF

Air Side Cable Assembly

TYPE	CABLE TYPE	LENGTH	VOLTAGE DC	CONDUCTOR AMPS	TEMPERATURE °C MIN	TEMPERATURE °C MAX	PART NUMBER
.250 Power Plug	6 AWG	8'	25 kV	100	-55	125	20956-02-A

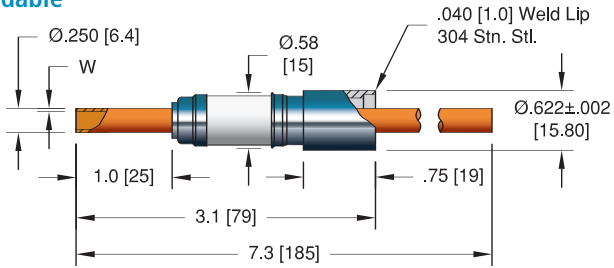
Contacts

TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.250 Barrel Type Contacts	Beryllium Copper	Accepts wire up to 0.250 [6.4]	7332-06-A [†]
0.250 Clamp Type Contacts	Copper	Accepts wire up to 0.250 [6.4]	18740-01-A

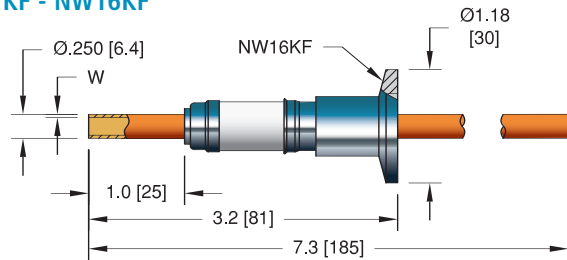
*When used with air side cable assembly. **Contacts priced and sold in packages of 10. [†]Shown in photo. See the Accessories section for more information on all accessories.

FEEDTHROUGH

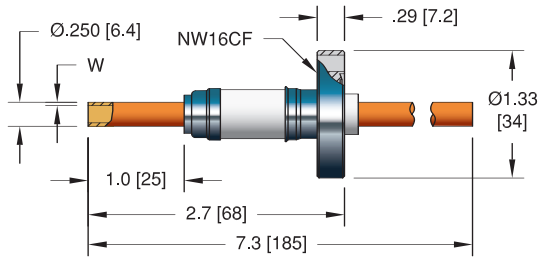
**.250 [6.4] Dia. Conductor
Weldable**



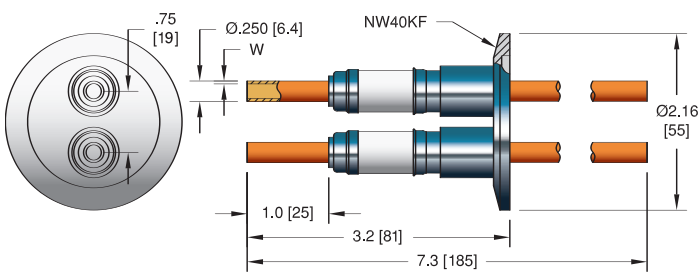
ISO KF - NW16KF



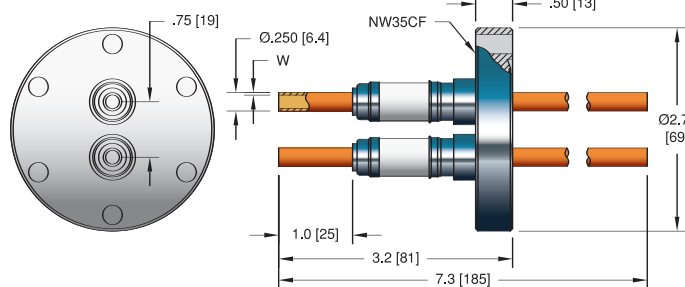
ConFlat - NW16CF



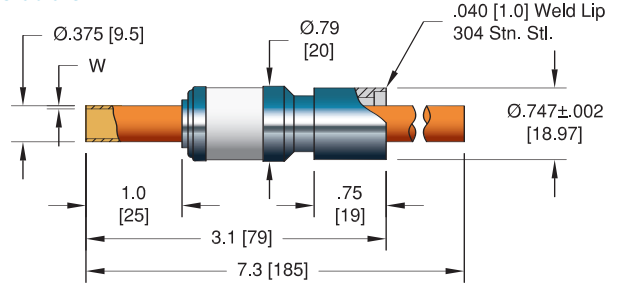
ISO KF - NW40KF



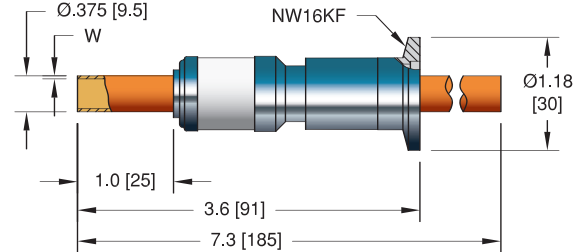
ConFlat - NW35CF



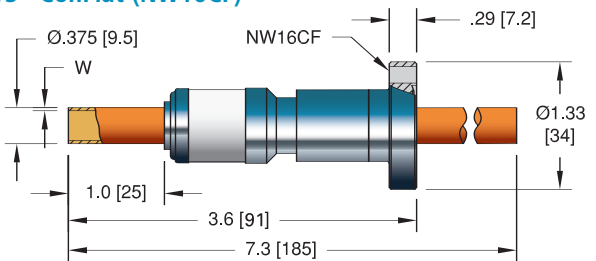
**.375 [9.5] Dia. Conductor
Weldable**



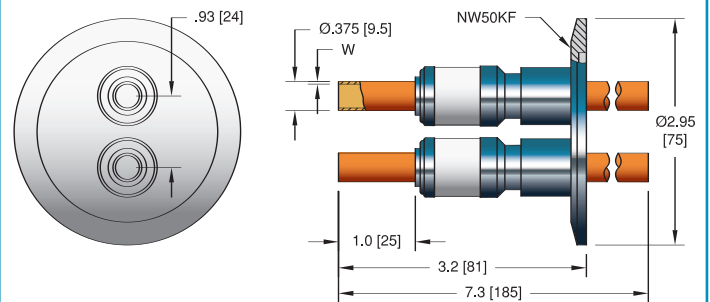
ISO KF - NW16KF



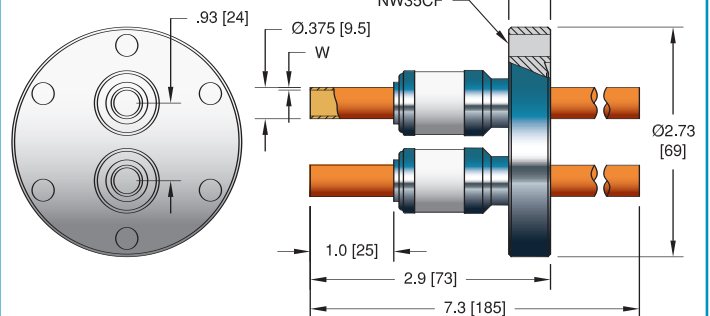
1 1/3" ConFlat (NW16CF)



ISO KF - NW50KF



ConFlat - NW35CF





FEEDTHROUGH

Weldable

NO. PINS/TUBES	DIA.	CONDUCTOR W	AMPS*	MATERIAL	INSTALLATION	PART NUMBER
1	.250 [6.4]	.035 [0.89]	-	304 Stn. Stl. Tube	Weld	2779-06-W
1	.250 [6.4]	.032 [0.81]	-	Copper Tube	Weld	2779-02-W
1	.375 [9.5]	.035 [0.89]	-	304 Stn. Stl. Tube	Weld	2780-16-W
1	.375 [9.5]	.032 [0.81]	-	Copper Tube	Weld	2780-02-W
1	.375 [9.5]	-	330	Copper	Weld	2780-01-W

ISO KF

ISO FLANGE

1	.250 [6.4]	.035 [0.89]	-	304 Stn. Stl. Tube	NW16KF	16614-02-KF
1	.250 [6.4]	.032 [0.81]	-	Copper Tube	NW16KF	16614-05-KF
2	.250 [6.4]	.035 [0.89]	-	304 Stn. Stl. Tube	NW40KF	14308-06-KF
2	.250 [6.4]	.032 [0.81]	-	Copper Tube	NW40KF	14308-05-KF
1	.375 [9.5]	.035 [0.89]	-	304 Stn. Stl. Tube	NW16KF	17091-05-KF
1	.375 [9.5]	.032 [0.81]	-	Copper Tube	NW16KF	17091-06-KF
1	.375 [9.5]	-	330	Copper	NW16KF	17091-04-KF
2	.375 [9.5]	.035 [0.89]	-	304 Stn. Stl. Tube	NW50KF	17093-05-KF
2	.375 [9.5]	.032 [0.81]	-	Copper Tube	NW50KF	17093-06-KF
2	.375 [9.5]	-	330	Copper	NW50KF	17093-04-KF

ConFlat

CONFLAT FLANGE

1	.250 [6.4]	.035 [0.89]	-	304 Stn. Stl. Tube	1 1/3" (NW16CF)	7161-02-CF
1	.250 [6.4]	.032 [0.81]	-	Copper Tube	1 1/3" (NW16CF)	7161-05-CF
1	.250 [6.4]	.035 [0.89]	-	304 Stn. Stl. Tube	2 3/4" (NW35CF)	6700-08-CF
1	.250 [6.4]	.032 [0.81]	-	Copper Tube	2 3/4" (NW35CF)	6700-05-CF
2	.250 [6.4]	.035 [0.89]	-	304 Stn. Stl. Tube	2 3/4" (NW35CF)	16705-04-CF
2	.250 [6.4]	.032 [0.81]	-	Copper Tube	2 3/4" (NW35CF)	16705-02-CF
1	.375 [9.5]	.035 [0.89]	-	304 Stn. Stl. Tube	1 1/3" (NW16CF)	17099-01-CF
1	.375 [9.5]	.032 [0.81]	-	Copper Tube	1 1/3" (NW16CF)	17099-02-CF
1	.375 [9.5]	-	330	Copper	1 1/3" (NW16CF)	17099-06-CF
2	.375 [9.5]	.035 [0.89]	-	304 Stn. Stl. Tube	2 3/4" (NW35CF)	17092-05-CF
2	.375 [9.5]	.032 [0.81]	-	Copper Tube	2 3/4" (NW35CF)	17092-06-CF
2	.375 [9.5]	-	330	Copper	2 3/4" (NW35CF)	17092-04-CF

*Current carrying capacity of the tubular feedthroughs varies based on the coolant used and the flow rate.

Contacts

TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.250 Barrel Type Contacts	Beryllium Copper	Accepts wire up to 0.250 [6.4]	7332-06-A
0.250 Clamp Type Contacts	Copper	Accepts wire up to 0.250 [6.4]	18740-01-A†
0.375 Clamp Type Contacts	Copper	Accepts wire up to 0.375 [9.5]	18737-01-A

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

Specifications

Materials

Housing: 304 Stainless steel
 Pin/Tube: See table
 Insulation: Alumina ceramic
 Magnetic Materials: Yes

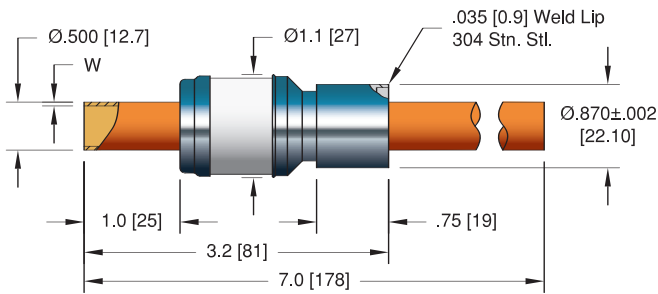
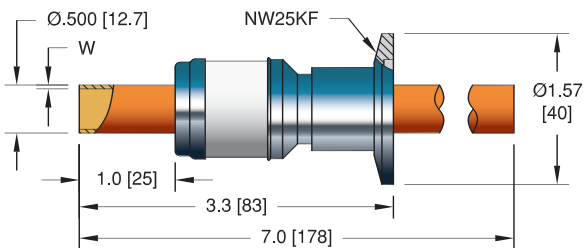
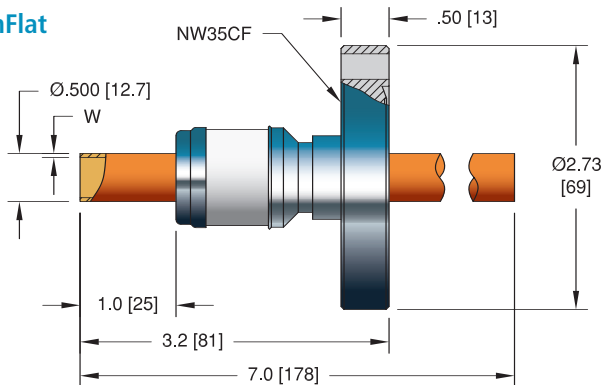
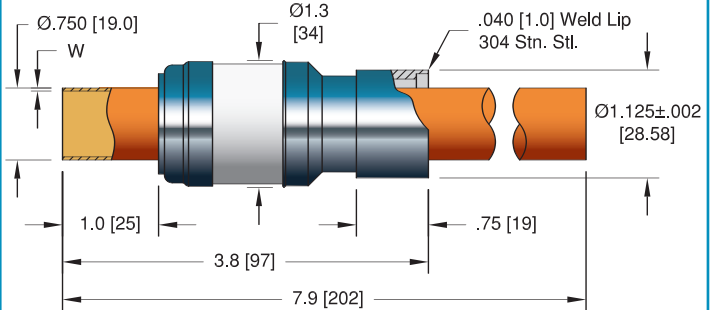
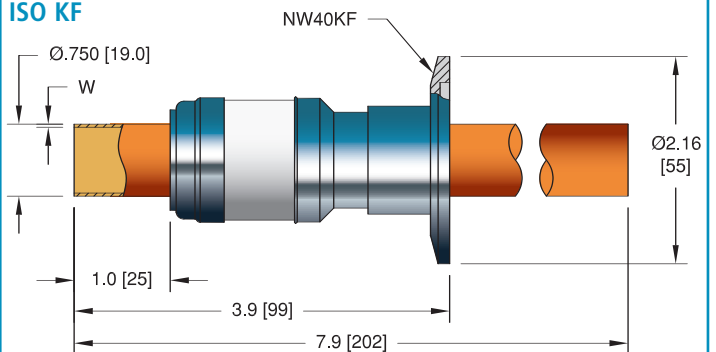
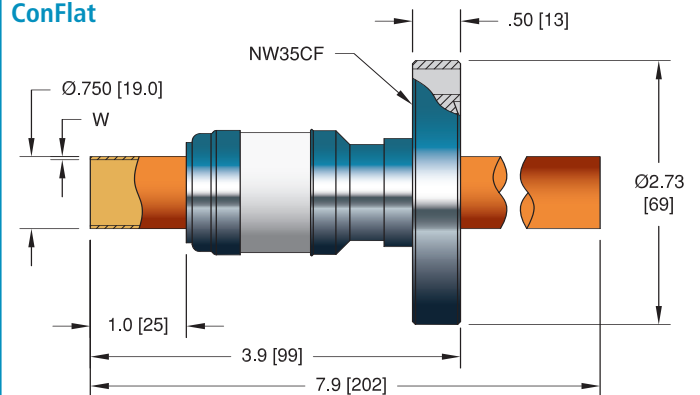
Voltage Rating 8 kV DC

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

.250 [6.4] Dia. Conductor: 750 PSIG (52 Bar)
 .375 [9.5] Dia. Conductor: 500 PSIG (34 Bar)

**.500 [12.7] Dia. Conductor
Weldable****ISO KF****ConFlat****.750 [19.0] Dia. Conductor
Weldable****ISO KF****ConFlat****Specifications****Materials**

Housing: 304 Stainless steel
 Pin/Tube: See table
 Insulation: Alumina ceramic
 Magnetic Materials: Yes

Voltage Rating 8 kV 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

.500 [12.7] Dia. Conductor: 350 PSIG (24 Bar)

.750 [19.0] Dia. Conductor: 250 PSIG (17 Bar)



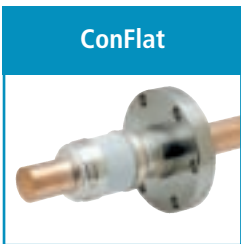
Weldable

NO. PINS/TUBES	DIA.	CONDUCTOR W	AMPS*	MATERIAL	INSTALLATION	PART NUMBER
1	.500 [12.7]	.032 [0.81]	-	Copper Tube	Weld	17095-06-W
1	.500 [12.7]	-	470	Copper	Weld	17095-04-W
1	.750 [19.0]	.032 [0.81]	-	Copper Tube	Weld	2781-02-W
1	.750 [19.0]	-	800	Copper	Weld	2781-01-W



ISO KF

ISO FLANGE						
1	.500 [12.7]	.032 [0.81]	-	Copper Tube	NW25KF	17097-06-KF
1	.500 [12.7]	-	470	Copper	NW25KF	17097-04-KF
1	.750 [19.0]	.032 [0.81]	-	Copper Tube	NW40KF	17094-06-KF
1	.750 [19.0]	-	800	Copper	NW40KF	17094-04-KF



ConFlat

CONFLAT FLANGE						
1	.500 [12.7]	.032 [0.81]	-	Copper Tube	2 3/4" (NW35CF)	17096-06-CF
1	.500 [12.7]	-	470	Copper	2 3/4" (NW35CF)	17096-04-CF
1	.750 [19.0]	.032 [0.81]	-	Copper Tube	2 3/4" (NW35CF)	16702-03-CF
1	.750 [19.0]	-	800	Copper	2 3/4" (NW35CF)	16702-01-CF

*Current carrying capacity of the tubular feedthroughs varies based on the coolant used and the flow rate.



Contacts

TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.500 Clamp Type Contact	Copper	Accepts wire up to 0.500 [12.7]	18738-01-A
0.750 Clamp Type Contact	Copper	Accepts wire up to 0.750 [19.0]	18739-01-A†

†Shown in photo. See the Accessories section for more information on all accessories.

Specifications

Materials

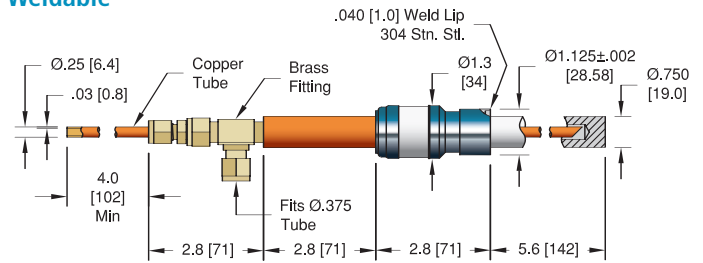
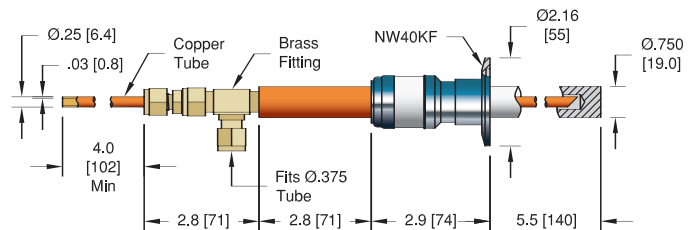
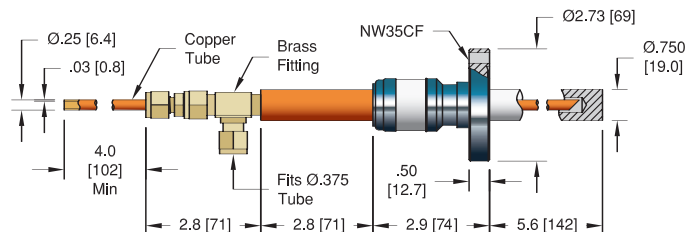
Housing: 304 Stainless steel

Tube: Tellurium copper

Fitting: Brass

Insulation: Alumina ceramic

Magnetic Materials: Yes

Voltage Rating 8 kV DC**Current Rating** 1000 Amps**Temperature Range** -269°C to 450°C, ISO KF -25°C to 205°C**Pressure @ 20°C** 250 PSIG (17 Bar), ISO KF 0 PSIG**.750 [19.0] Dia. Conductor
Weldable****ISO KF****ConFlat**

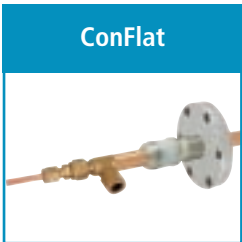


CONDUCTOR AMPS	MATERIAL	INSTALLATION	VOLTAGE DC	PART NUMBER
1000	Tellurium Copper	Weld	8 kV	17110-01-W



ISO FLANGE

1000	Tellurium Copper	NW40KF	8 KV	17111-01-KF
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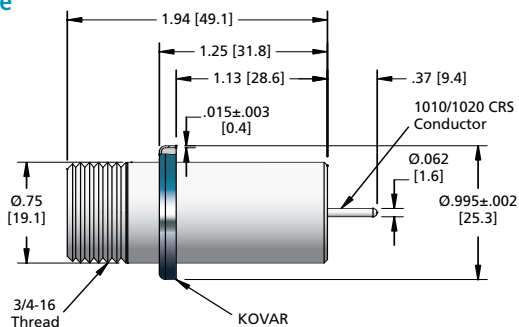
CONFLAT FLANGE

1000	Tellurium Copper	2 3/4" (NW35CF)	8 KV	17112-01-CF
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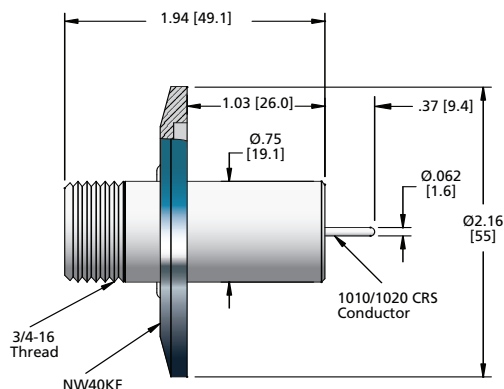


FEEDTHROUGH

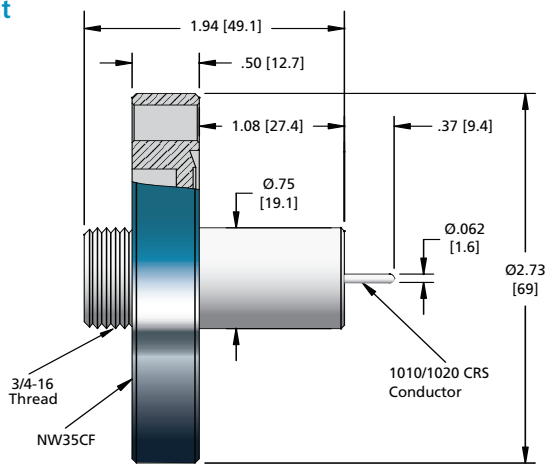
40 KV Single Pin Weldable



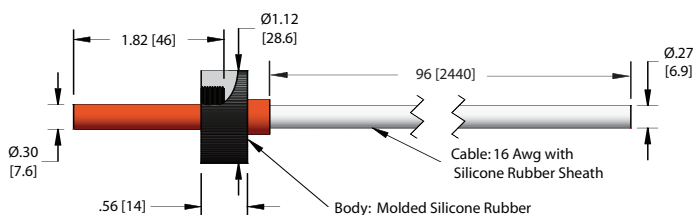
ISO KF



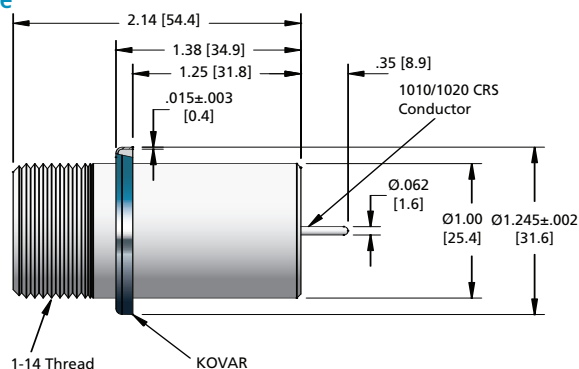
ConFlat



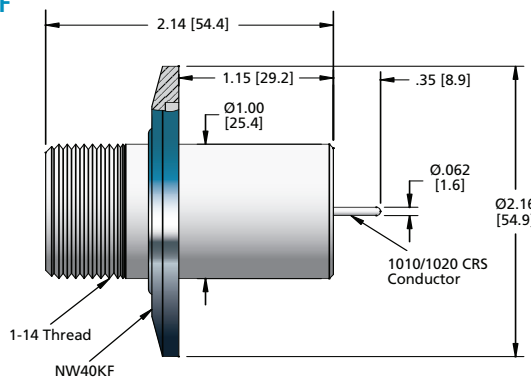
40 KV Cable Assembly



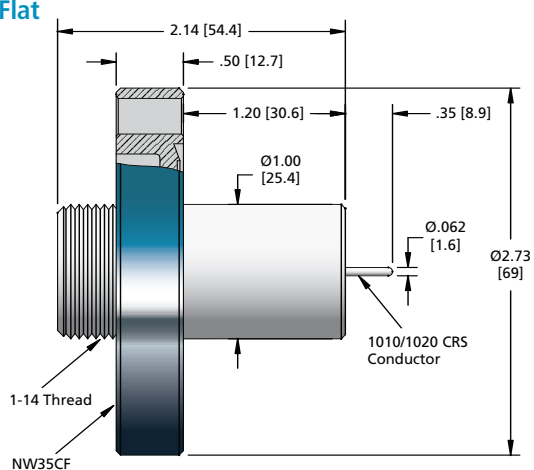
50 KV Single Pin Weldable



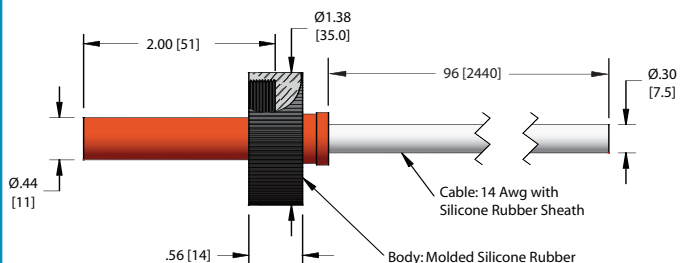
ISO KF



ConFlat



50 KV Cable Assembly



**Weldable
40 & 50 KV**



INSTALLATION	VOLTAGE DC	PART NUMBER
Weld	40 kV	21191-01-W
Weld	50 kV	21183-01-W

**ISO KF
40 & 50 KV**



ISO FLANGE

NW40KF	40 kV	21117-01-KF
NW40KF	50 kV	21185-01-KF

**ConFlat
40 & 50 KV**



CONFLAT FLANGE

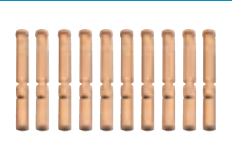
2 3/4" (NW35CF)	40 kV	21194-01-CF
2 3/4" (NW35CF)	50 kV	21184-01-CF

Air Side Cable Assemblies



VOLTAGE DC	CABLE TYPE	LENGTH	CURRENT CAPACITY	TEMPERATURE °C MIN	TEMPERATURE °C MAX	PART NUMBER
40 kV	16 AWG	8'	10 Amps	-55	125	21034-01-A
50 kV	14 AWG	8'	10 Amps	-55	125	21112-01-A

Contacts



TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.062 Crimp Contacts	Beryllium Copper	Accepts wire up to 0.062 [1.6]	2044-02-A†
0.062 Crimp Contacts	Nickel Alloy	Accepts wire up to 0.062 [1.6]	0821-01-A
0.062 Barrel Type Contacts	Beryllium Copper	Accepts wire up to 0.062 [1.6]	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 - 40 KV Single Pin

Materials

Housing: Kovar
Pin: Cold Rolled Steel (Nickel plated)
Insulation: Alumina ceramic
Magnetic Materials: Yes

Voltage Rating 40 kV DC*

Current Rating 10 Amps

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

Pressure @ 20°C 400 PSIG (28 Bar), ISO KF 0 PSIG

Specifications - 50 KV Single Pin

Materials

Housing: Kovar
Pin: Cold Rolled Steel (Nickel plated)
Insulation: Alumina ceramic
Magnetic Materials: Yes

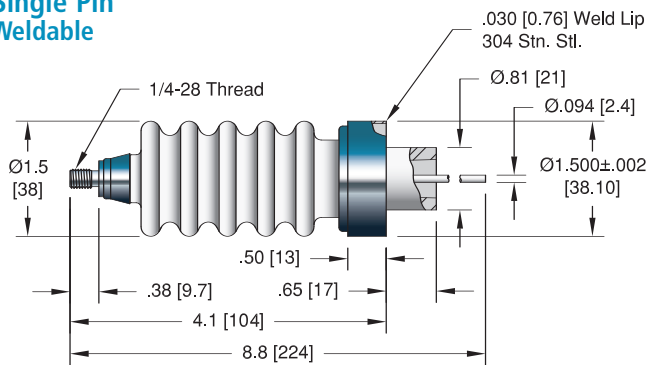
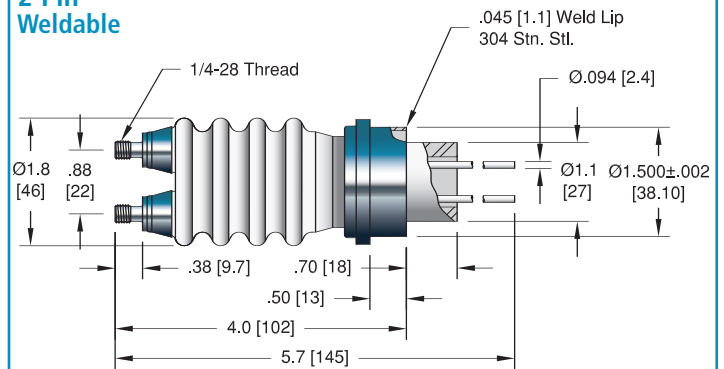
Voltage Rating 50 kV DC*

Current Rating 10 Amps

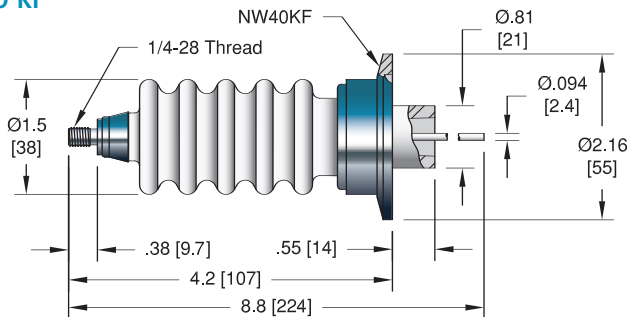
Temperature Range -269°C to 450°C, ISO KF -25°C to 205°C

Pressure @ 20°C 400 PSIG (28 Bar), ISO KF 0 PSIG

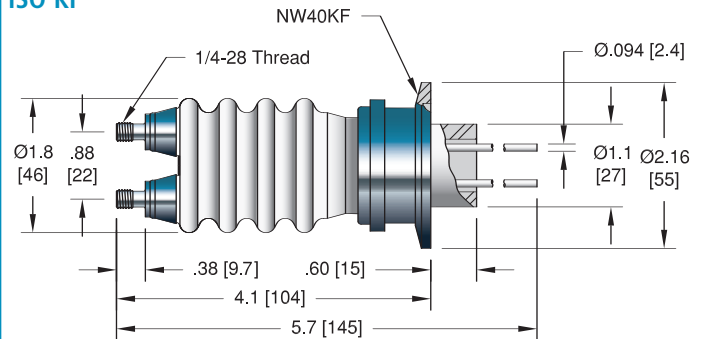
*When used with air side cable assembly. The use of silicone insulating grease is recommended for the air side cable assembly to feedthrough interface.

Single Pin
Weldable2 Pin
Weldable

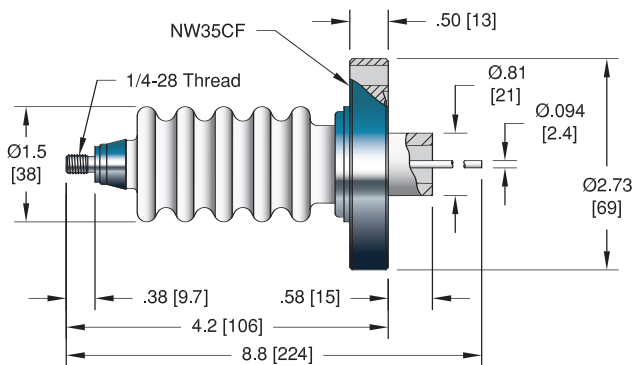
ISO KF



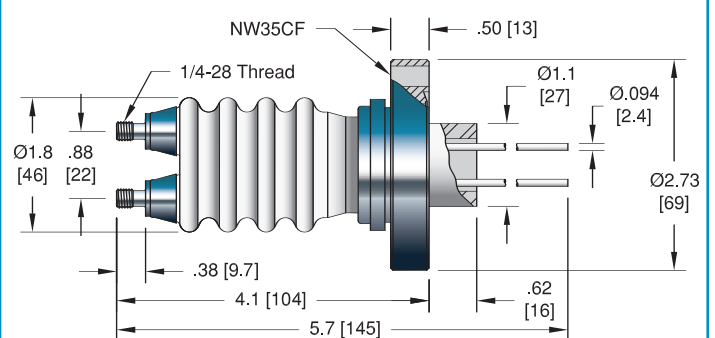
ISO KF



ConFlat



ConFlat



Specifications

Materials

Housing: 304 Stainless steel
Pin: 304 Stainless steel
Insulation: Alumina ceramic
Magnetic Materials: Yes

Voltage Rating 30 kV DC

Current Rating 4 Amps per pin

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

Pressure @ 20°C 250 PSIG (17 Bar), ISO KF 0 PSIG



FEEDTHROUGH

Weldable Single Pin



NO. PINS	CONDUCTORS AMPS	MATERIAL	INSTALLATION	VOLTAGE DC	PART NUMBER
1	4	304 Stn. Stl.	Weld	30 kV	6530-03-W

ISO FLANGE

ISO KF Single Pin



1	4	304 Stn. Stl.	NW40KF	30 kV	17100-01-KF
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CONFLAT FLANGE

ConFlat Single Pin



1	4	304 Stn. Stl.	2 3/4" (NW35CF)	30 kV	16729-03-CF
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Weldable 2 Pin



2	4	304 Stn. Stl.	Weld	30 kV	6532-05-W
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ISO FLANGE


ISO KF 2 Pin



2	4	304 Stn. Stl.	NW40KF	30 kV	17103-03-KF
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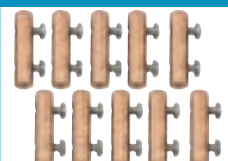
CONFLAT FLANGE

ConFlat 2 Pin



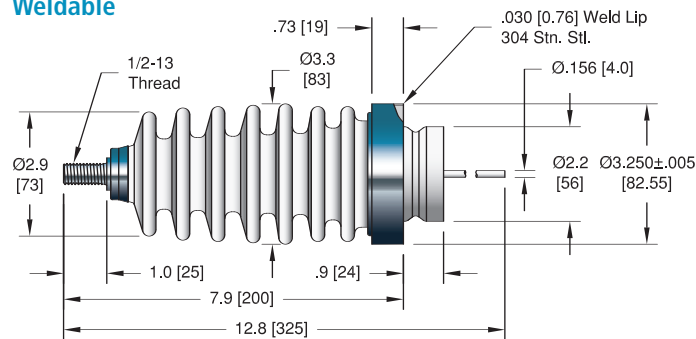
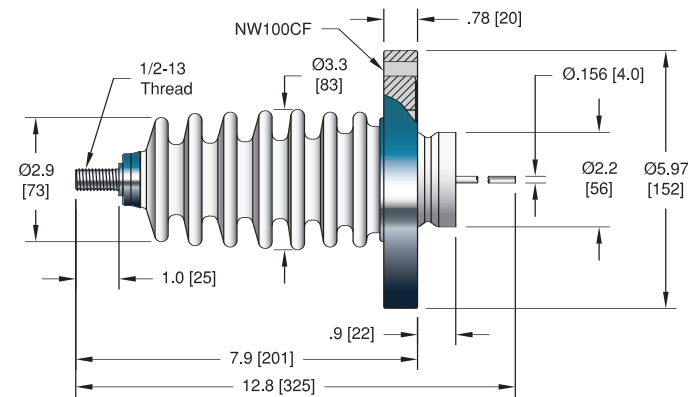
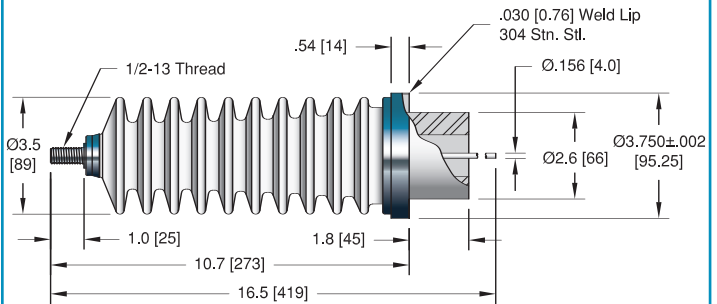
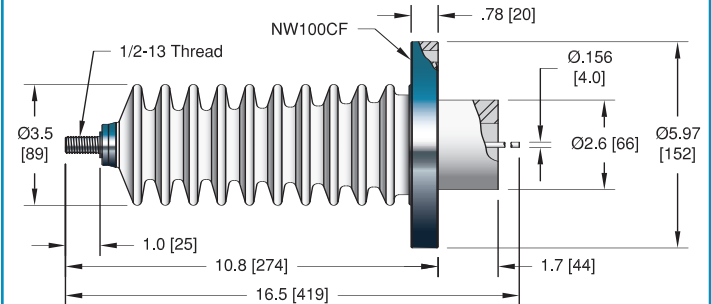
2	4	304 Stn. Stl.	2 3/4" (NW35CF)	30 kV	16764-06-CF
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Contacts



TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.094 Set Screw Type Contacts	Beryllium Copper	Accepts wire up to 0.050 [1.3]	7429-01-A
0.094 Barrel Type Contacts	Beryllium Copper	Accepts wire up to 0.094 [2.4]	7332-04-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.

**DC Voltage: 70 KV
Weldable****ConFlat****DC Voltage: 100 KV
Weldable****ConFlat****Specifications - 70 KV****Materials**

Housing: 304 Stainless steel
 Conductor: 304 Stainless steel
 Insulation: Alumina ceramic
 Magnetic Materials: Yes

Voltage Rating 70 kV DC

Current Rating 6.5 Amps

Temperature Range -269°C to 450°C

Pressure @ 20°C 125 PSIG (8.6 Bar), ISO KF 0 PSIG

Specifications - 100 KV**Materials**

Housing: 304 Stainless steel
 Conductor: 304 Stainless steel
 Insulation: Alumina ceramic
 Magnetic Materials: Yes

Voltage Rating 100 kV DC

Current Rating 6.5 Amps

Temperature Range -269°C to 450°C

Pressure @ 20°C 125 PSIG (8.6 Bar), ISO KF 0 PSIG



CONDUCTORS AMPS	MATERIAL	INSTALLATION	VOLTAGE DC	PART NUMBER
6.5	304 Stn. Stl.	Weld	70 kV	6526-01-W

CONFLAT FLANGE



6.5	304 Stn. Stl.	6" (NW100CF)	70 kV	7884-01-CF
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6.5	304 Stn. Stl.	Weld	100 kV	6523-01-W
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CONFLAT FLANGE

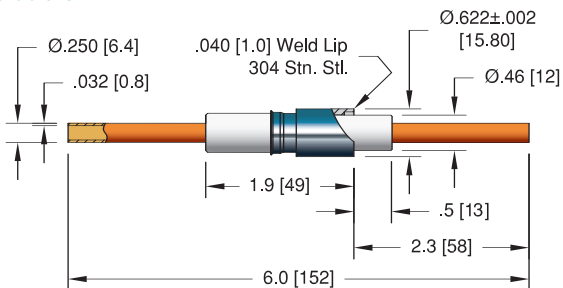


6.5	304 Stn. Stl.	6" (NW100CF)	100 kV	6722-01-CF
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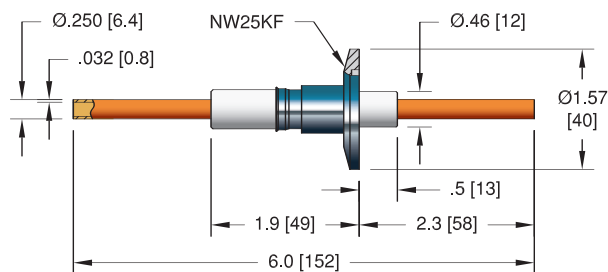


FEEDTHROUGH

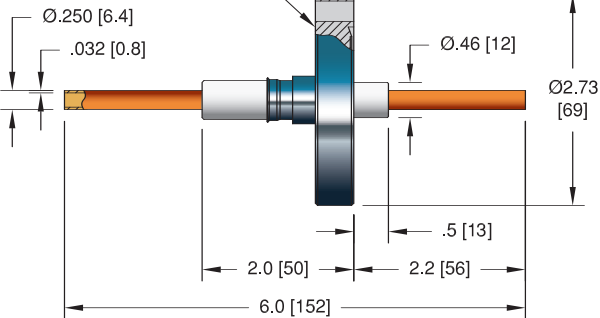
Single Conductor Weldable



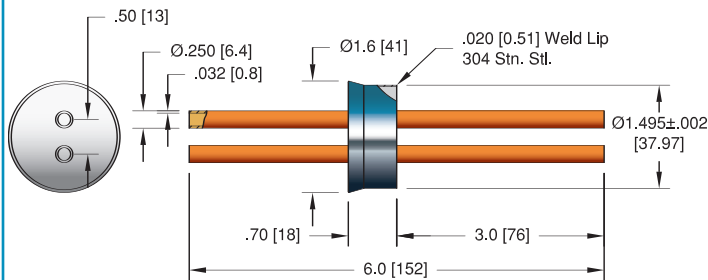
ISO KF



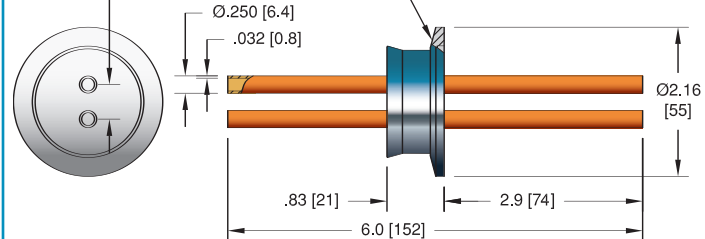
ConFlat



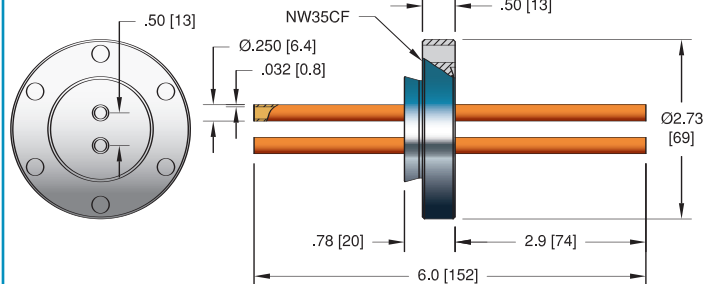
Dual Conductor Weldable



ISO KF



ConFlat



Specifications - Single Conductor

Materials

- Housing: 304 Stainless steel
- Conductor: Copper Tube
- Insulation: Alumina ceramic
- Magnetic Materials: No

Voltage Rating 14 kV DC

Current Rating 100 Amps

Temperature Range -55°C to 350°C, ISO KF -25°C to 205°C

Pressure @ 20°C 500 PSIG (35 Bar), ISO KF 0 PSIG

Specifications - Dual Conductor

Materials

- Housing: 304 Stainless steel
- Conductor: Copper Tube
- Insulation: Alumina ceramic
- Magnetic Materials: No

Voltage Rating 8 kV DC

Current Rating See table

Temperature Range -55°C to 350°C, ISO KF -25°C to 205°C

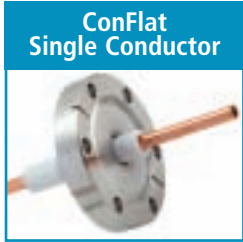
Pressure @ 20°C 125 PSIG (8.6 Bar), ISO KF 0 PSIG



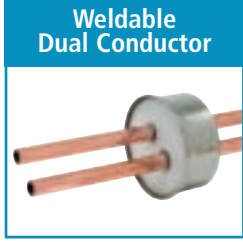
FREQUENCY	CONDUCTOR AMPS	MATERIAL	INSTALLATION	PART NUMBER
13.56 MHz	100	Copper Tube	Weld	16476-01-W



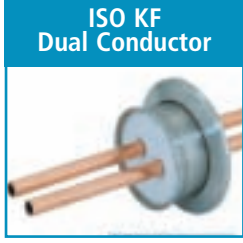
ISO KF FLANGE				
13.56 MHz	100	Copper Tube	NW25KF	16959-01-KF



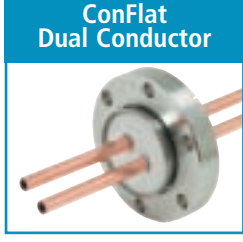
CONFLAT FLANGE				
13.56 MHz	100	Copper Tube	2 3/4" (NW35CF)	16941-01-CF



100 KHz	300			
300 KHz	250	Copper Tube	Weld	16976-01-W
450 KHz	200			
13.56 MHz	100			



ISO KF FLANGE				
100 KHz	300			
300 KHz	250	Copper Tube	NW40KF	17119-01-KF
450 KHz	200			
13.56 MHz	100			



CONFLAT FLANGE				
100 KHz	300			
300 KHz	250	Copper Tube	2 3/4" (NW35CF)	16991-01-CF
450 KHz	200			
13.56 MHz	100			





Specifications

Materials

- Bolt: 304 Stainless steel
- O-Ring: Viton®
- Pin: See table
- Insulation: Alumina ceramic
- Magnetic Materials: See table

Voltage Rating See table

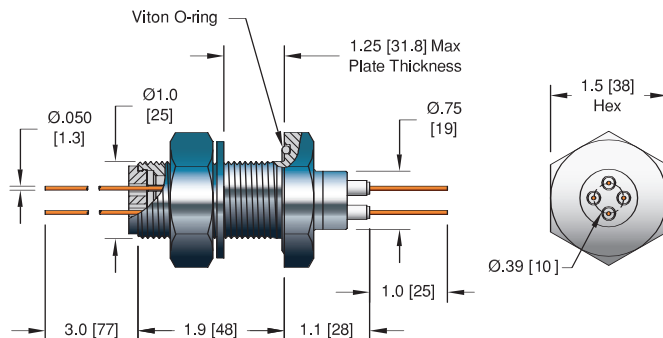
Current Rating See table

Temperature Range -25°C to 205°C

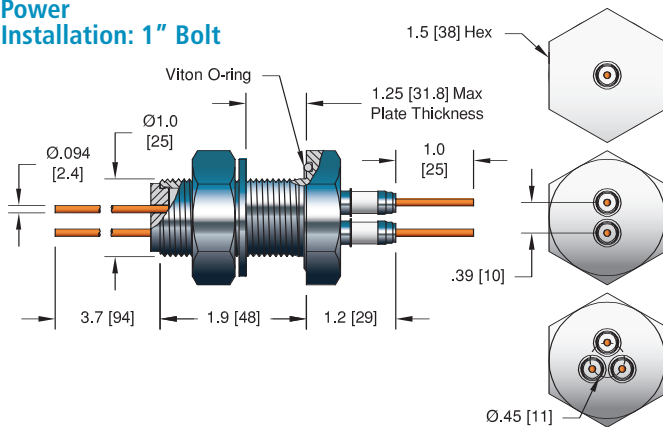
Pressure @ 20°C 200 PSIG (14 Bar) unless otherwise noted

FEEDTHROUGH

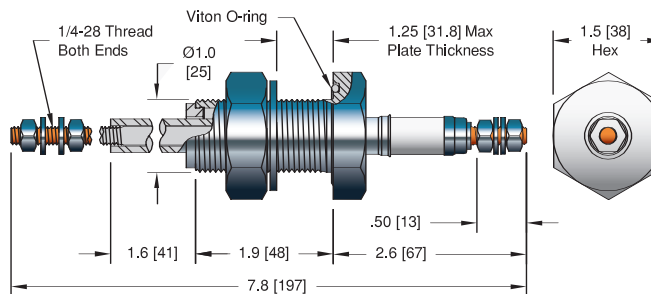
**Instrumentation/Power
Installation: 1" Bolt**



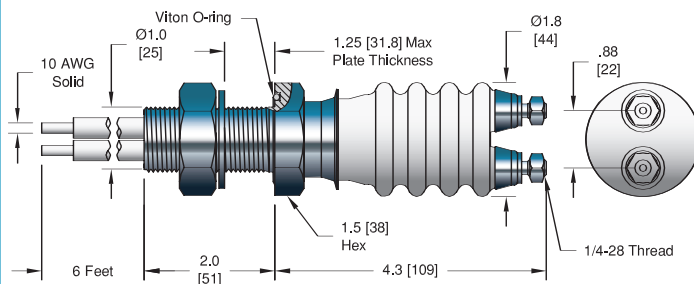
**Power
Installation: 1" Bolt**



**High Power
Installation: 1" Bolt**



**High Voltage
Installation: 1" Bolt**

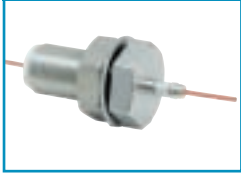


Instrumentation/Power 1" Bolt



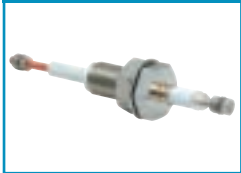
NO. PINS	VOLTAGE DC	CONDUCTOR AMPS	CONDUCTOR MATERIAL	MAGNETIC MATERIALS	PART NUMBER
4	2 kV	8.2	Nickel	Yes	15710-02-A
4	2 kV	27	Copper	No	15710-04-A

Power 1" Bolt



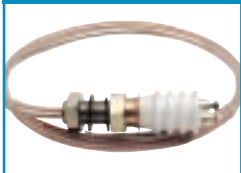
1	5 kV	55	Copper	No	15702-04-A
2	2 kV	27	Copper	No	15703-04-A
3	2 kV	27	Copper	No	15704-04-A

High Power 1" Bolt



1	12 kV	185	Copper	Yes	15700-04-A
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High Voltage 1" Bolt



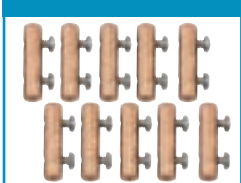
NO. PINS	VOLTAGE DC	CONDUCTOR AMPS	CONDUCTOR MATERIAL	PRESSURE @ 20°C PSIG	MAGNETIC MATERIALS	PART NUMBER
2	15 kV	185	Copper	125	8.6	9388-01-A

Teflon Shield



DESCRIPTION	PART NUMBER
PTFE Teflon Shield for use with part # 15700-04-A.	17413-01-A

Contacts



TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.050 Crimp Contacts	Beryllium Copper	Accepts wire up to 0.062 [1.6]	11911-02-X
0.050 Set Screw Type Contacts	Beryllium Copper	Accepts wire up to 0.050 [1.3]	7429-02-A
0.050 Barrel Type Contacts	Beryllium Copper	Accepts wire up to 0.050 [1.3]	7332-02-A [†]
0.094 Set Screw Type Contacts	Beryllium Copper	Accepts wire up to 0.050 [1.3]	7429-01-A
0.094 Barrel Type Contacts	Beryllium Copper	Accepts wire up to 0.094 [2.4]	7332-04-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.

