

Feedthrough

SEMICONDUCTOR | ANALYTICAL EQUIPMENT | AEROSPACE | TELECOMMUNICATIONS



OIL EXPLORATION | R&D | HIGH ENERGY PHYSICS | MILITARY/DEFENSE | BIOTECHNOLOGY



*Advanced Ceramic-to-Metal &
Glass-Ceramic Sealing Technology*

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 x 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:

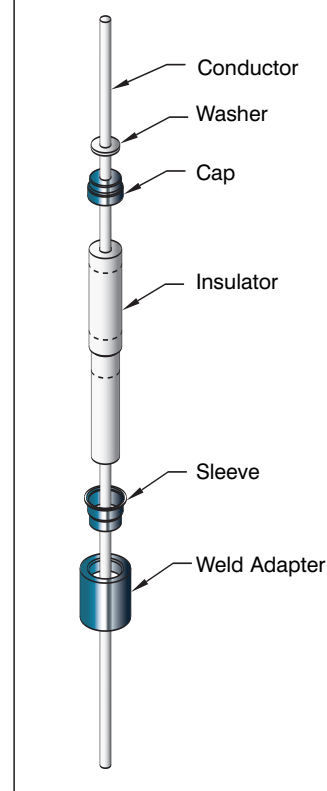
- Semiconductor processing equipment
- Particle accelerators
- Furnaces
- Analytical equipment
- In-vacuum coating
- Satellite instrumentation
- X-ray detection equipment

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

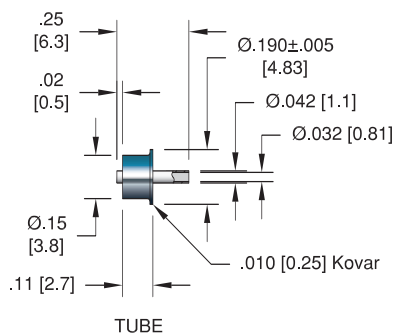
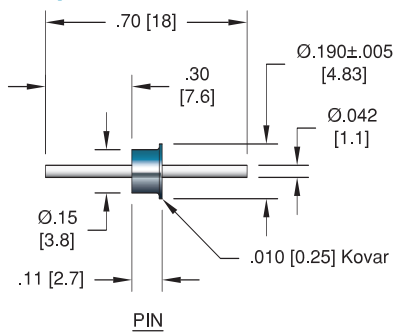
- .154 & .250 Power Plugs for safe high voltage and high current connectivity

Typical Feedthrough Construction

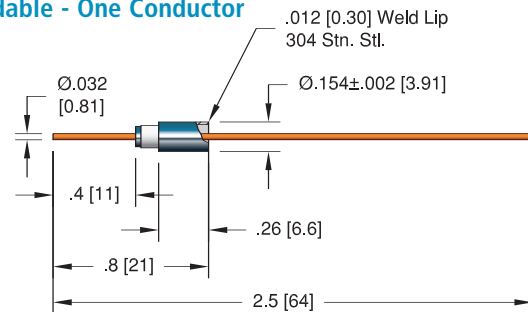


Type	Voltage DC	Current (Amps per conductor)	# of Conductors	Conductor Size (in inches)	Sub-section	Section Pages
	to 2 kV	to 16 Amps	1 to 8	0.032 & 0.042	Instrumentation / Power	A.1 14-15
	to 6 kV	to 27 Amps	1 to 4	0.050	Power	A.2 16-17
	to 5 kV	5 Amps	4 to 10	0.062	Pin Header	A.3 18-19
	1 kV	5 Amps	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

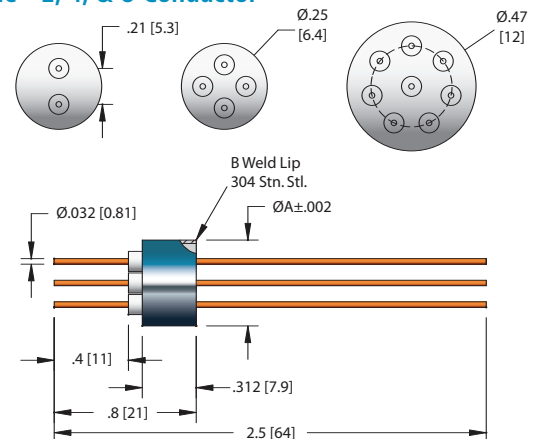
Weld/Braze - Superthru



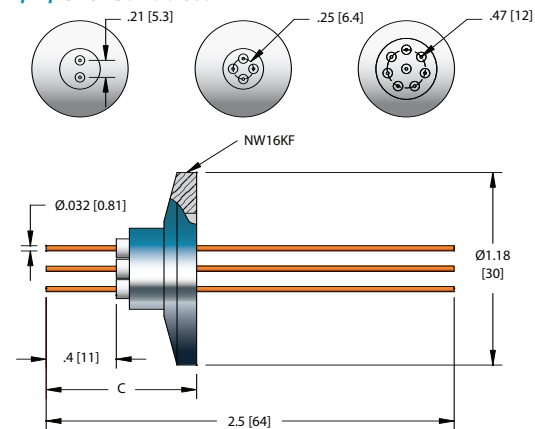
Weldable - One Conductor



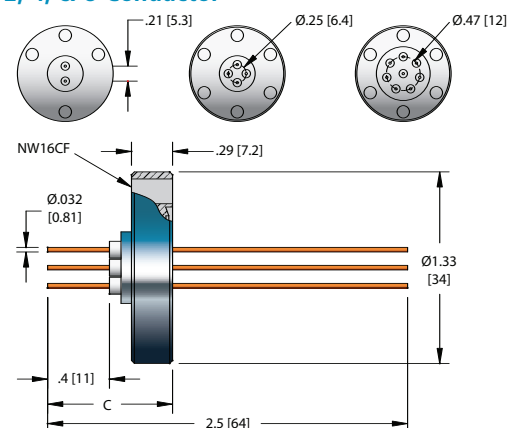
Weldable - 2, 4, & 8 Conductor



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)

**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**

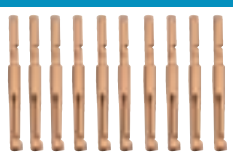
NO. PINS	INSTALLATION	VOLTAGE DC	CONDUCTOR AMPS	MATERIAL	A	DIMENSIONS B	C	MAGNETIC MATERIALS	PART NUMBER
1	Weld	1 kV	1.1	304 Stn. Stl.	-	-	-	No	9297-03-W
1	Weld	1 kV	5	Nickel	-	-	-	Yes	9297-01-W
1	Weld	1 kV	8.5	Molybdenum	-	-	-	No	9297-06-W
1	Weld	1 kV	16	Copper	-	-	-	No	9297-08-W
2	Weld	2 kV	1.1	304 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

ISO FLANGE**ISO KF
2, 4, & 8 Pin**

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**ConFlat
2, 4, & 8 Pin**

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

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

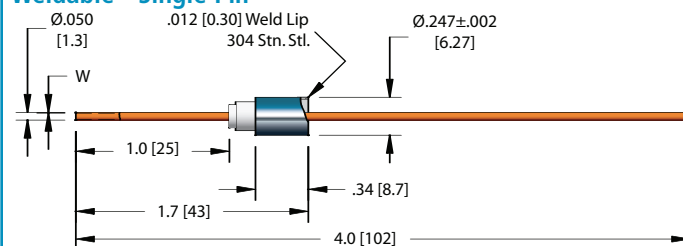
Temperature Range -269°C to 450°C, ISO KF -25°C to 205°C

Pressure @ 20°C ISO KF 0 PSIG

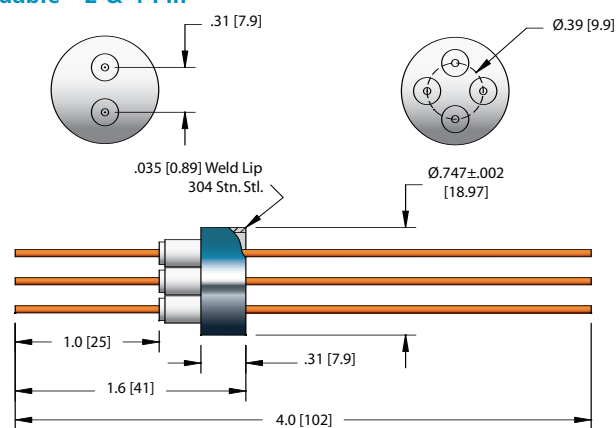
Single Pin: 3500 PSIG (241 Bar)

2 & 4 Pin: 1250 PSIG (86 Bar)

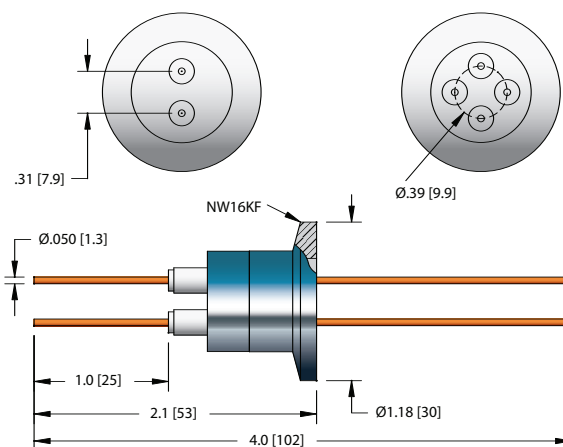
Weldable - Single Pin



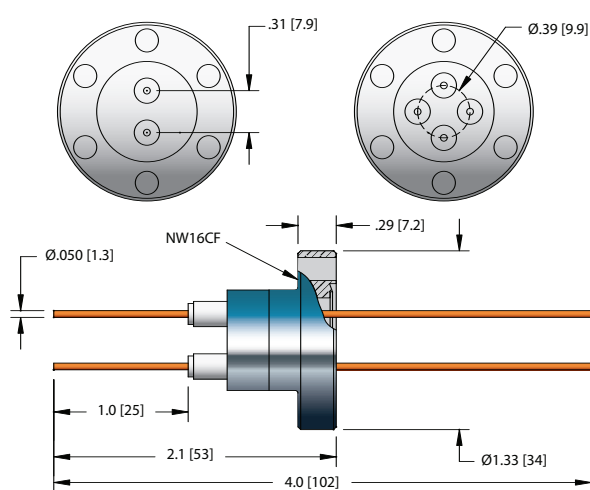
Weldable - 2 & 4 Pin



ISO KF - 2 & 4 Pin



ConFlat - 2 & 4 Pin 6 kV



Weldable
Single Pin

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.

Weldable
2 & 4 Pin

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

ISO KF
2 & 4 Pin

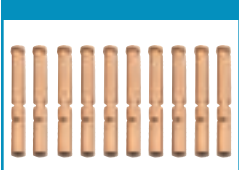
CONFLAT FLANGE

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

ConFlat
2 & 4 PinIn-Vacuum Cable
Kapton

VOLTAGE DC	CONDUCTOR AMPS	GAUGE	TYPE	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
0.050 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

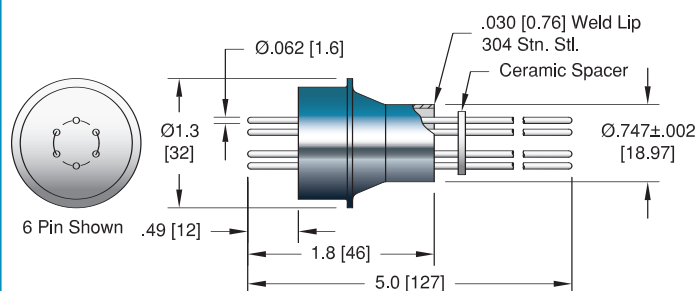
4 Pin - 600 PSIG (41 Bar)

6 Pin - 550 PSIG (38 Bar)

10 Pin - 500 PSIG (34 Bar)

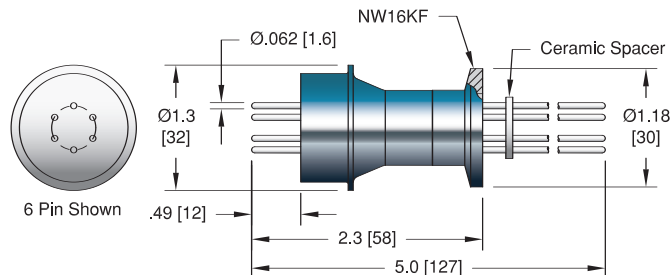
Weldable

Pin Arrangements:



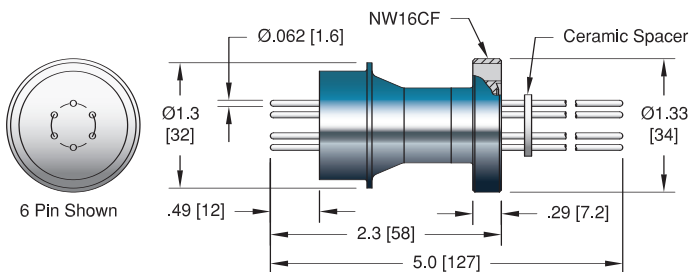
ISO KF

Pin Arrangements:



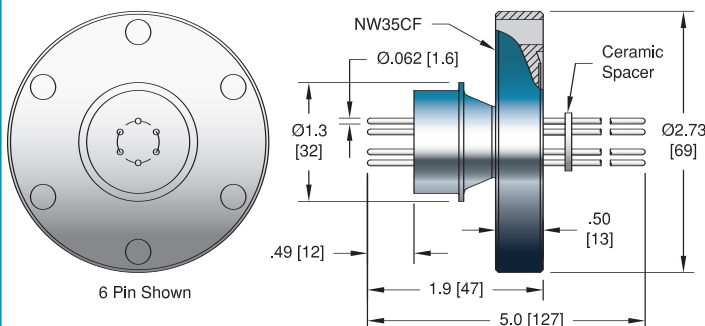
ConFlat - NW16CF

Pin Arrangements:



ConFlat - NW35CF

Pin Arrangements:



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

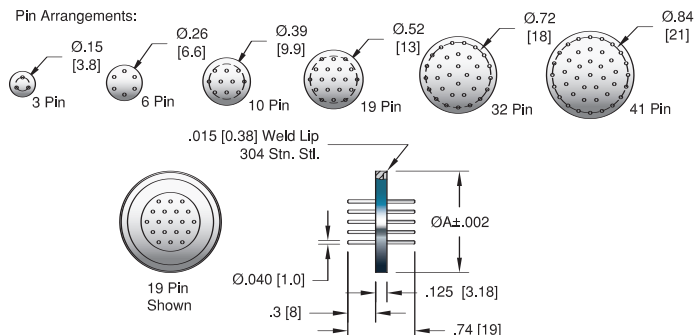


TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.062 Crimp Contacts Crimp Tool	Alumel	Accepts wire up to 0.050 [1.3] For 0.025" - 0.075" Crimp Diameters	11259-06-X† 2840-05

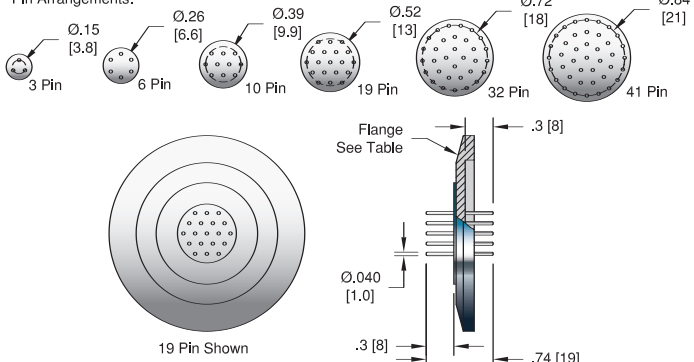
*Contacts priced and sold in packages of 5. †Shown in photo. See the Accessories section for more information on all accessories.

**Straight Conductor
Weldable**

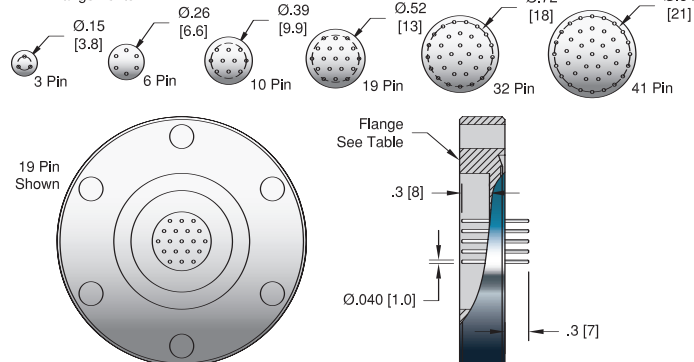
Pin Arrangements:

**ISO KF**

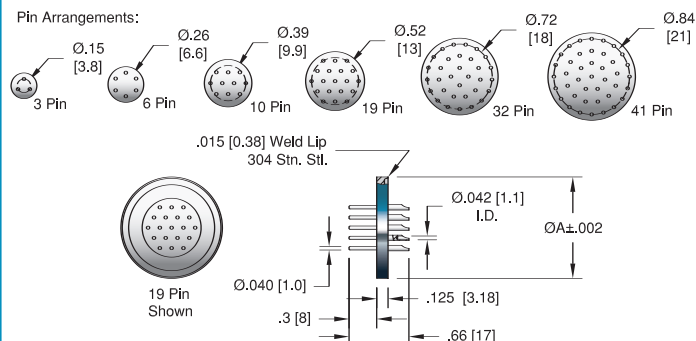
Pin Arrangements:

**ConFlat**

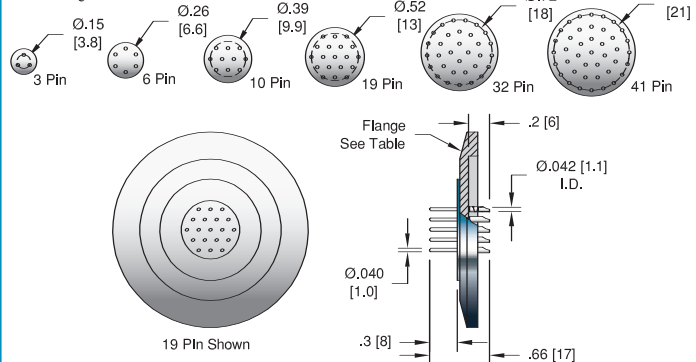
Pin Arrangements:

**Straight/Solder Cup Conductor
Weldable**

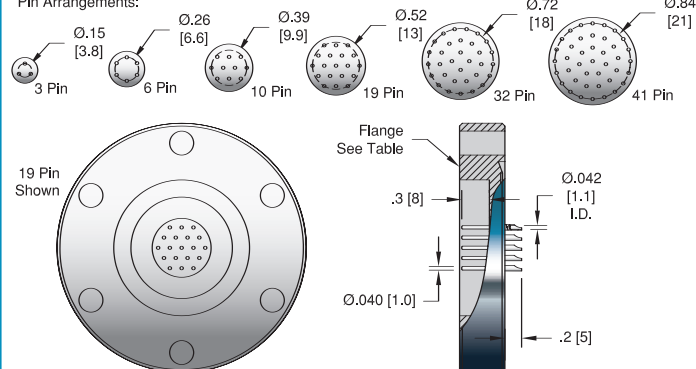
Pin Arrangements:

**ISO KF**

Pin Arrangements:

**ConFlat**

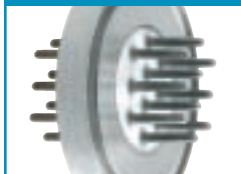
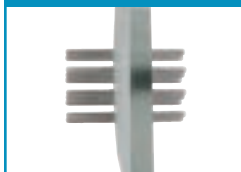
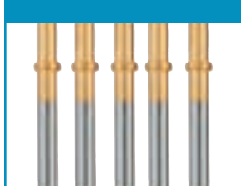
Pin Arrangements:

**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)

**Weldable
Straight Pin****ISO KF
Straight Pin****ConFlat
Straight Pin****Weldable
Solder Cup****ISO KF
Solder Cup****ConFlat
Solder Cup****Contacts**

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 FLANGE

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 FLANGE

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

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 FLANGE

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

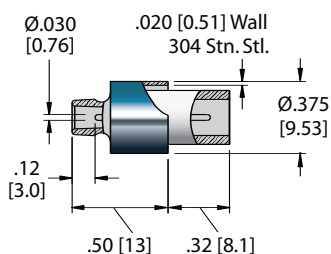
CONFLAT FLANGE

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

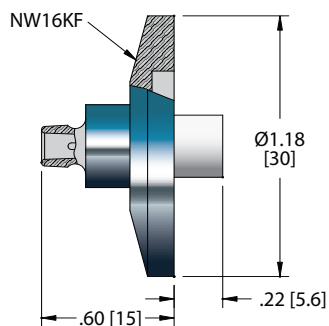
TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.040 Crimp Contacts	Copper Alloy - Gold Flash	Accepts wire up to 0.040 [1.0]	16167-03-A†
Crimp Tool		For 0.025" - 0.075" Crimp Diameters	2840-05

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

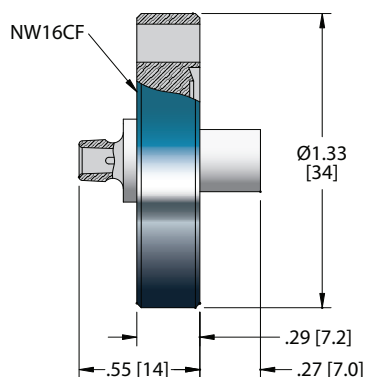
Weldable



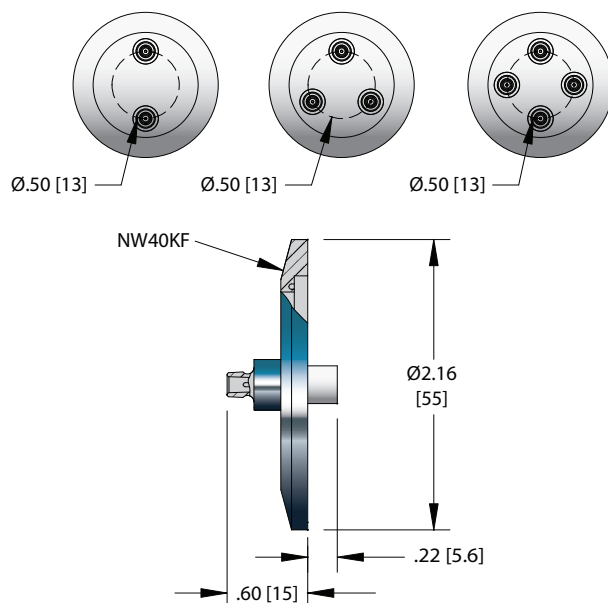
ISO KF - NW16KF



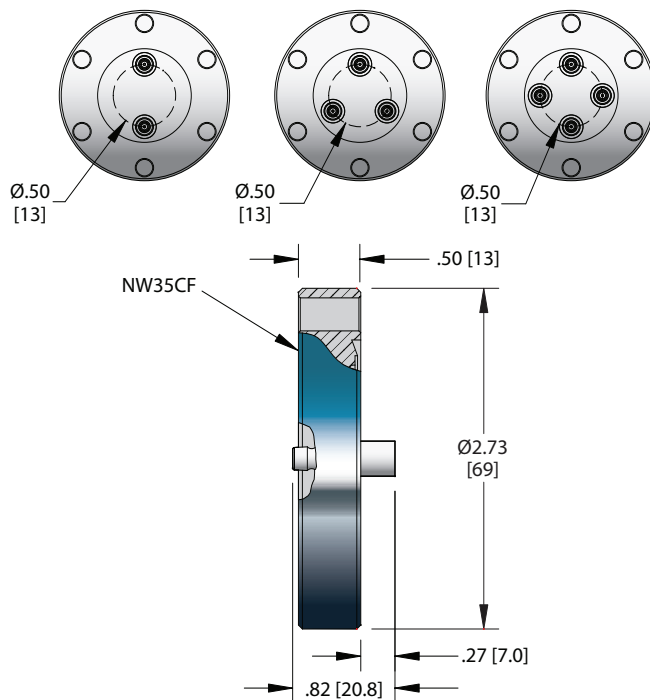
ConFlat - NW16CF



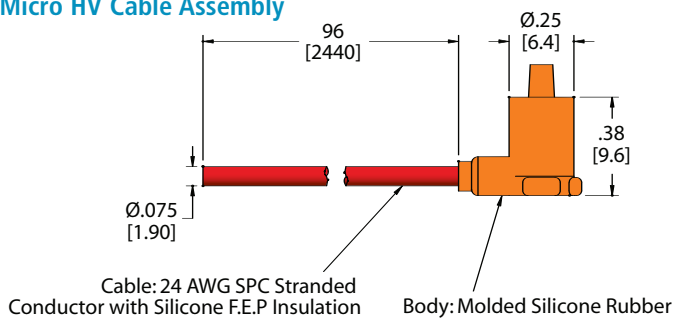
ISO KF - NW40KF



ConFlat - NW35CF



Micro HV Cable Assembly



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.

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
DCCONDUCTOR
AMPSTEMPERATURE °C
MIN MAXPART
NUMBER

Micro HV Air Side

24 AWG

8'

10 kV

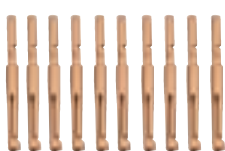
3

-55

125

21039-01-A

Contacts



TYPE

MATERIAL

DESCRIPTION

PART
NUMBER

0.032 Crimp Type Contacts

Beryllium Copper

Accepts wire up to 0.032 [0.81]

11288-02-X

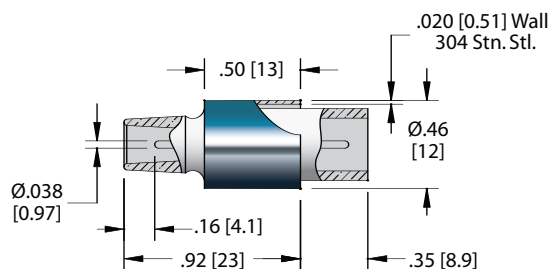
Crimp Tool

For 0.025" - 0.075" Crimp Diameters

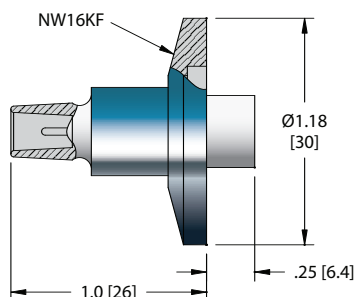
2840-05

*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.

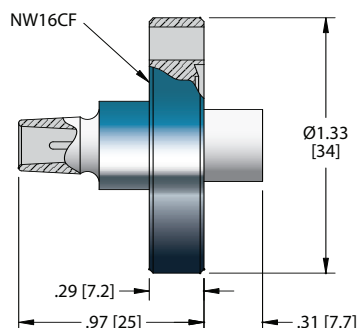
Weldable



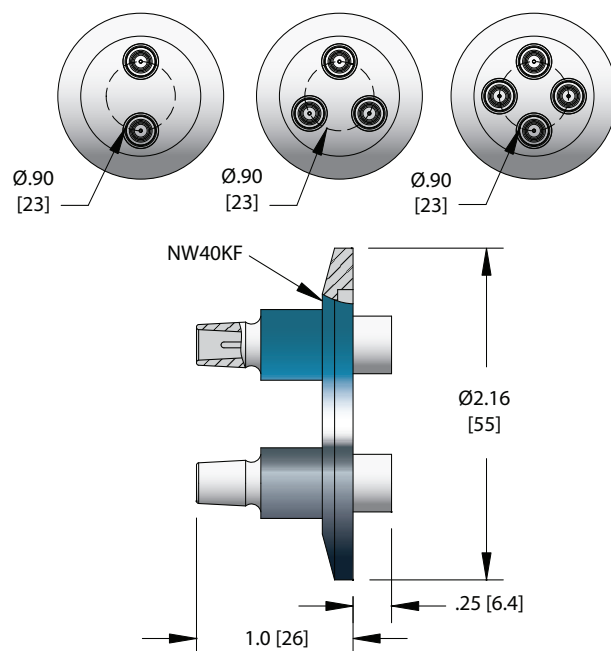
ISO KF - NW16KF



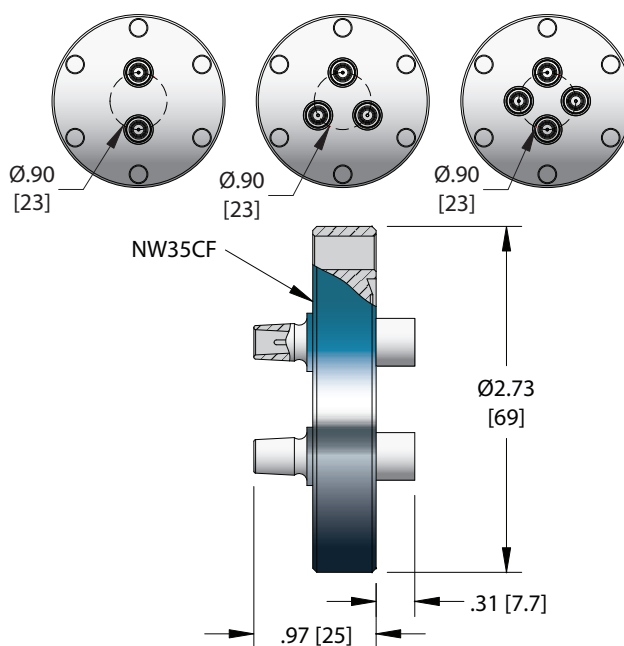
ConFlat - NW16CF



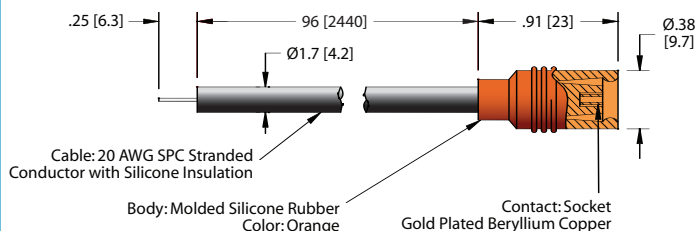
ISO KF - NW40KF



ConFlat - NW35CF



Mini HV Cable Assembly



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

*When used with air side cable assembly.

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



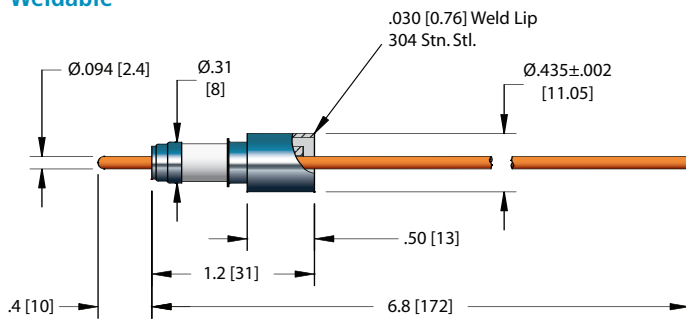
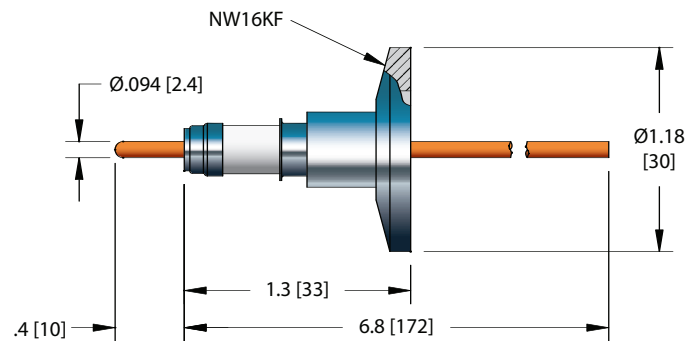
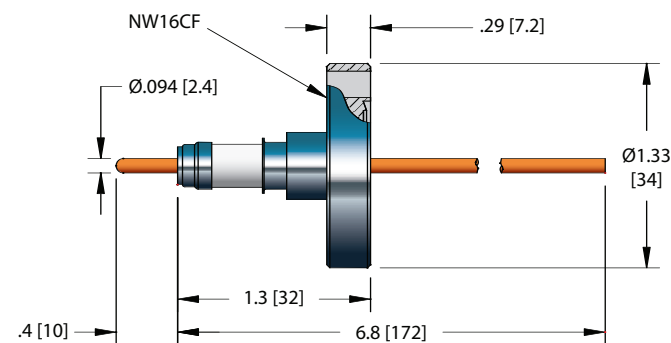
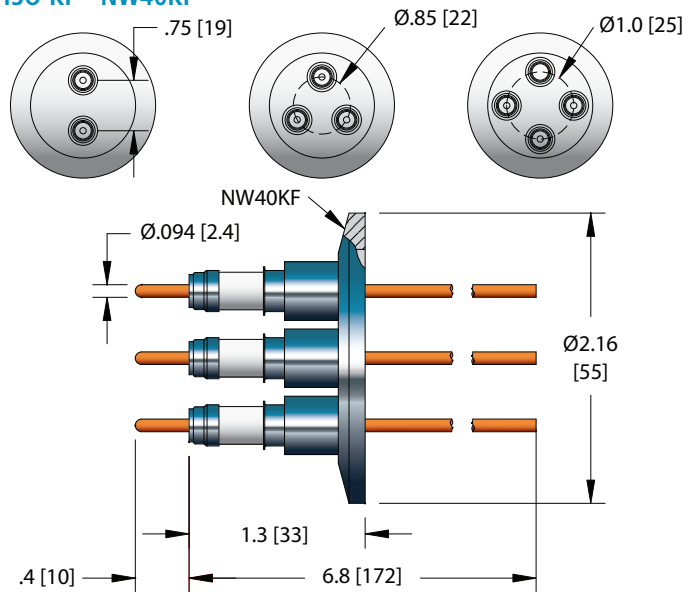
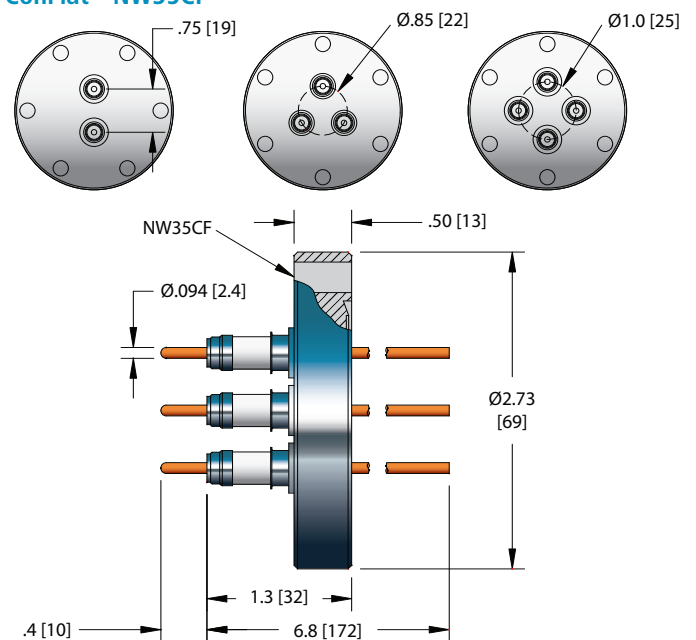
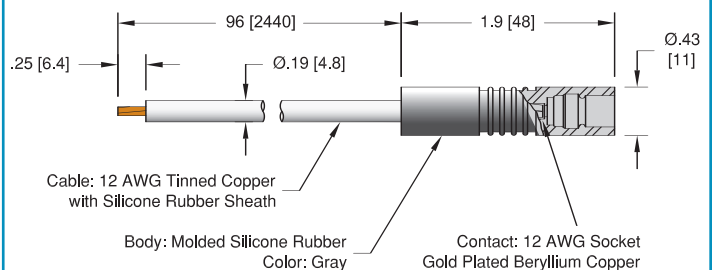
TYPE	CABLE TYPE	LENGTH	VOLTAGE DC	CONDUCTOR AMPS	TEMPERATURE °C MIN	TEMPERATURE °C MAX	PART NUMBER
Mini HV Air Side	20 AWG	8'	15 kV	7.5	-55	125	21119-01-A

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.

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 FLANGE

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 FLANGE

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

ConFlat

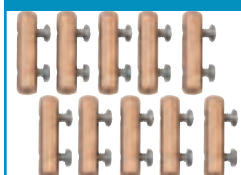


Air Side Cable Assembly



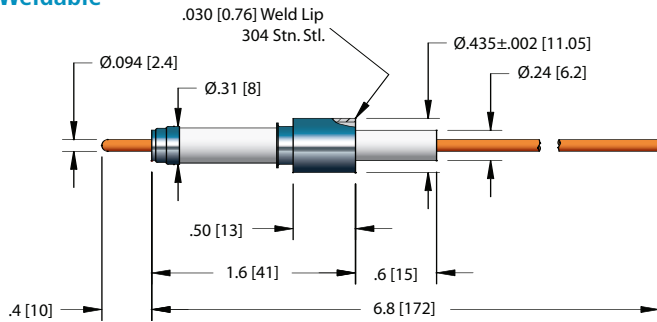
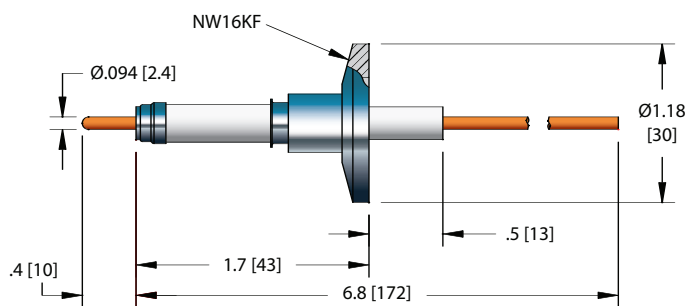
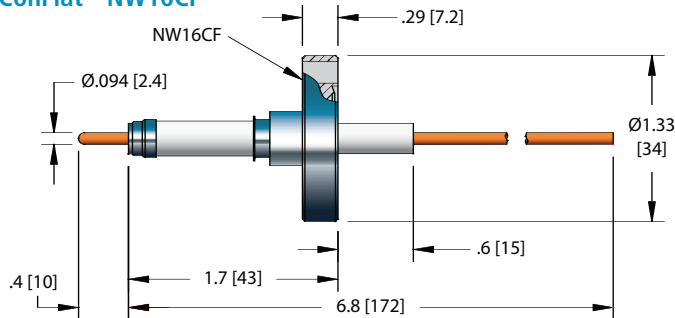
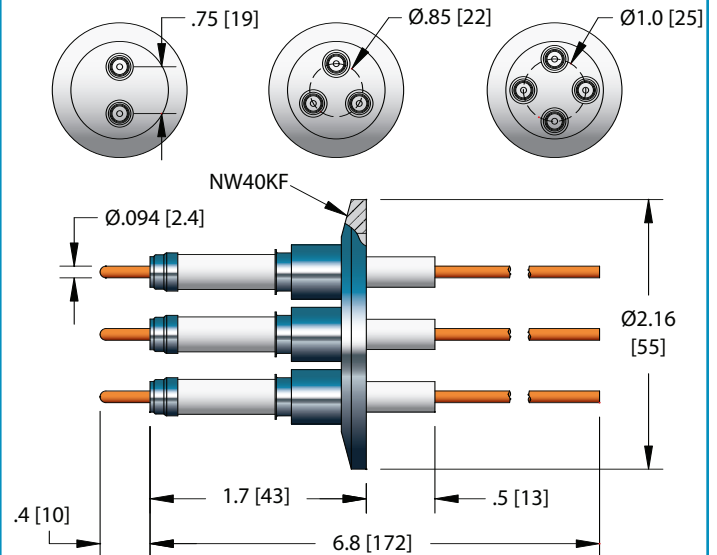
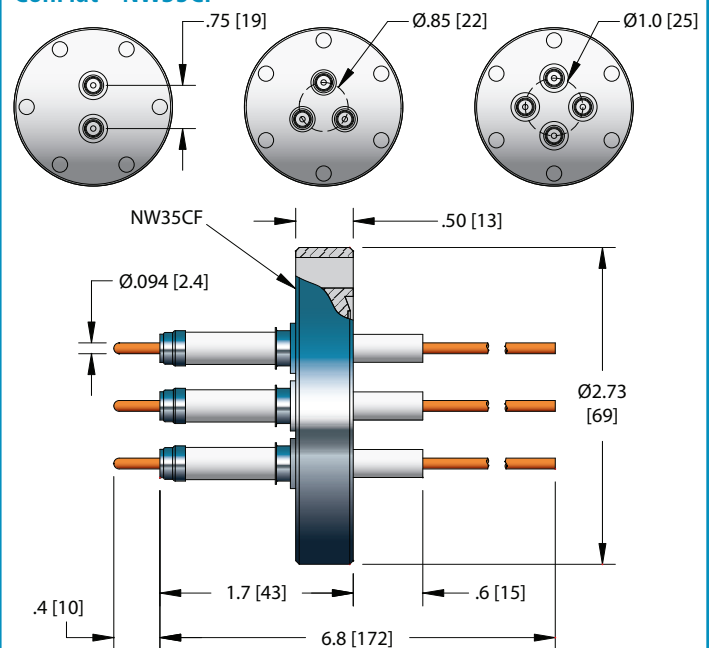
TYPE	CABLE TYPE	LENGTH	CONDUCTOR AMPS	TEMPERATURE °C MIN	MAX	PART NUMBER
10 kV Power Plug	12 AWG	8'	30	-55	125	14418-02-A

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.

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

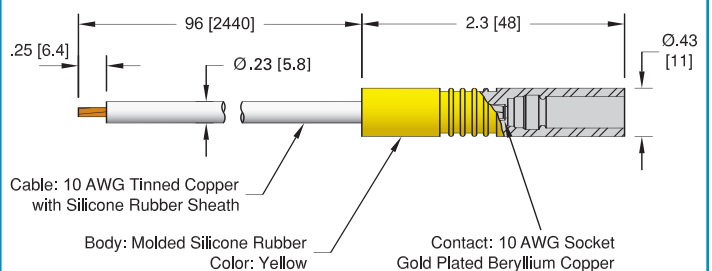
Voltage Rating 20 kV DC*

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.

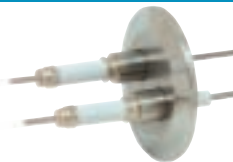
20 KV Power Plug

Weldable



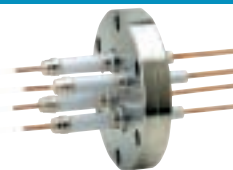
NO. PINS	CONDUCTOR AMPS	MATERIAL	INSTALLATION	MAGNETIC MATERIALS	PART NUMBER
1	3.6	304 Stn. Stl.	Weld	No	17575-03-W
1	16.5	Nickel	Weld	Yes	4275-22-W
1	55	Copper	Weld	No	4275-21-W

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



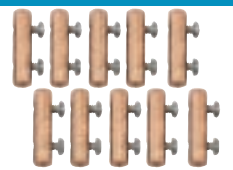
CONFLAT FLANGE					
1	3.6	304 Stn. Stl.	1 1/3" (NW16CF)	No	19543-07-CF
1	16.5	Nickel	1 1/3" (NW16CF)	Yes	19543-03-CF
1	55	Copper	1 1/3" (NW16CF)	No	19543-04-CF
2	3.6	304 Stn. Stl.	2 3/4" (NW35CF)	No	10287-04-CF
2	16.5	Nickel	2 3/4" (NW35CF)	Yes	10287-05-CF
2	55	Copper	2 3/4" (NW35CF)	No	10287-03-CF
3	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



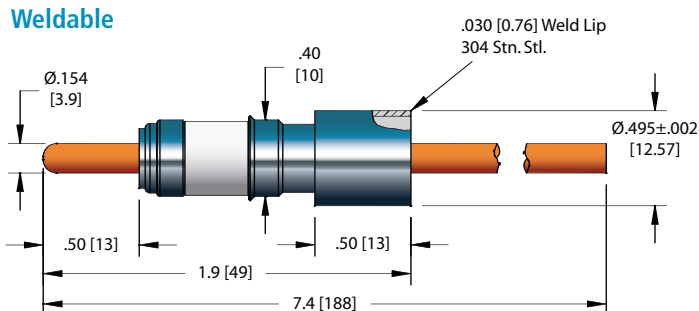
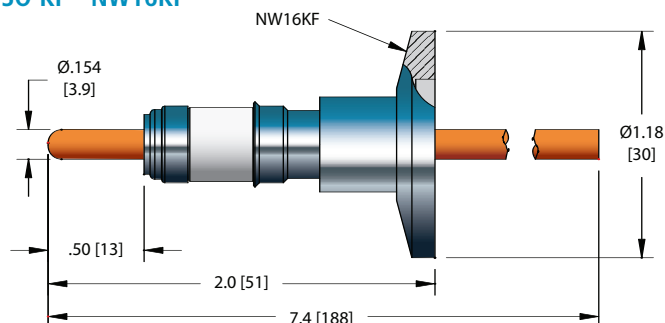
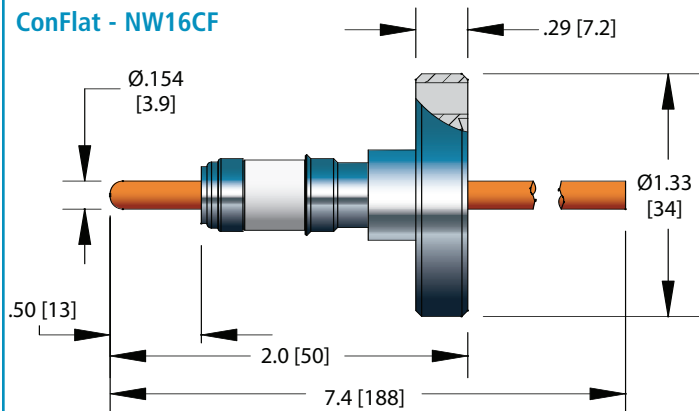
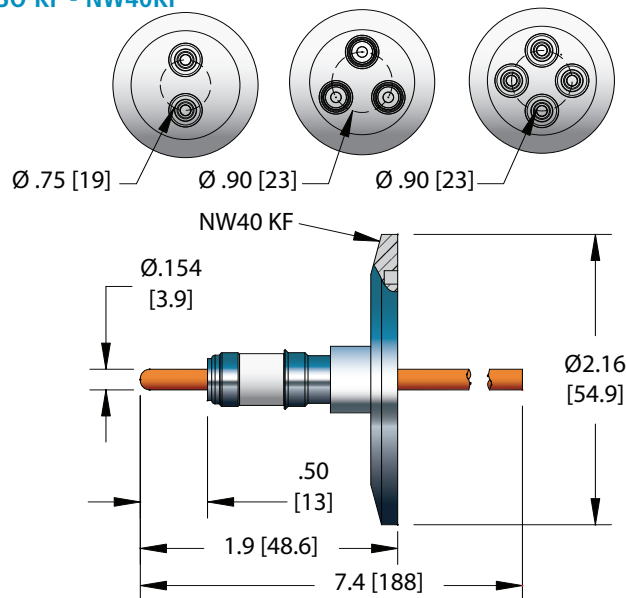
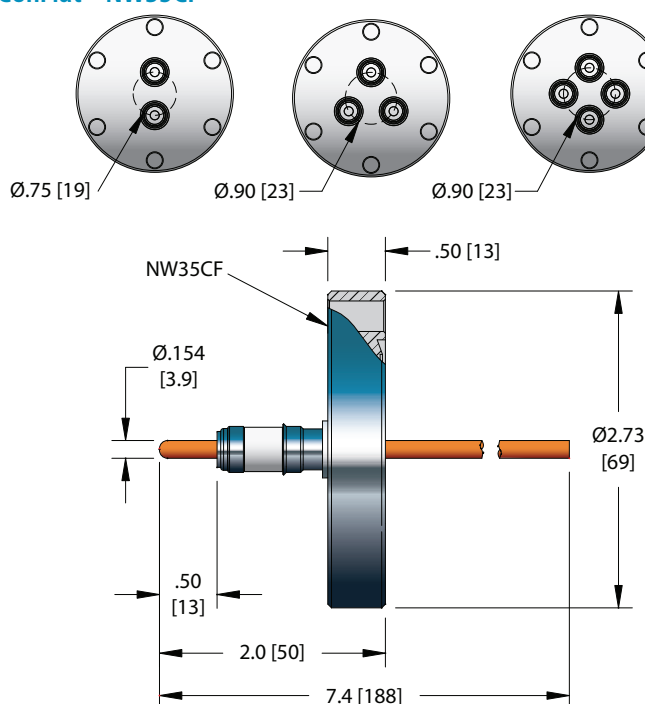
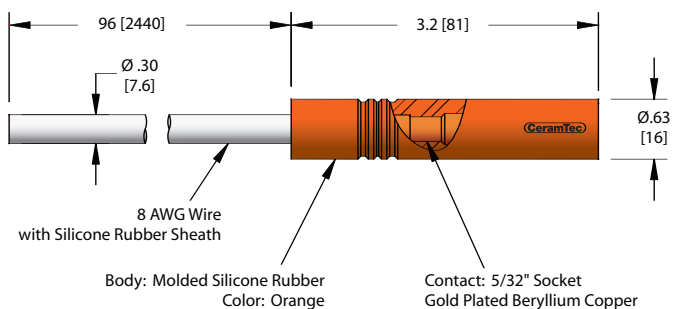
TYPE	CABLE TYPE	LENGTH	CONDUCTOR AMPS	TEMPERATURE °C MIN	TEMPERATURE °C MAX	PART NUMBER
20 kV Power Plug	10 AWG	8'	55	-55	125	14419-02-A

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 FLANGE

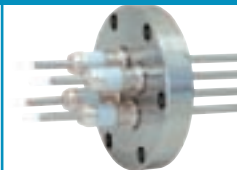
ISO KF



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 FLANGE

ConFlat



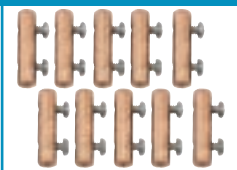
1	30	Nickel	1 1/3" (NW16CF)	21131-02-CF
1	100	Copper	1 1/3" (NW16CF)	21131-01-CF
2	30	Nickel	2 3/4" (NW35CF)	21154-02-CF
2	100	Copper	2 3/4" (NW35CF)	21154-01-CF
3	30	Nickel	2 3/4" (NW35CF)	21155-02-CF
3	100	Copper	2 3/4" (NW35CF)	21155-01-CF
4	30	Nickel	2 3/4" (NW35CF)	21156-02-CF
4	100	Copper	2 3/4"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

Air Side Cable Assembly



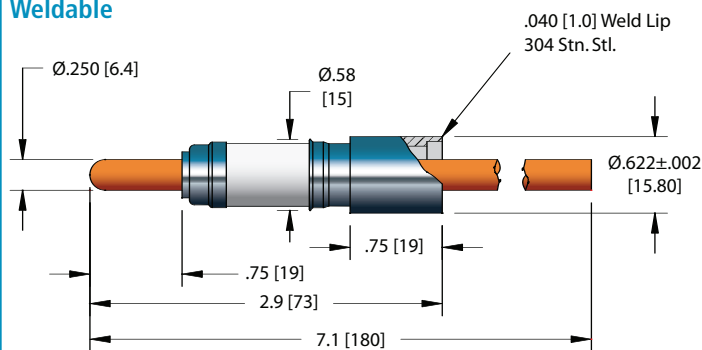
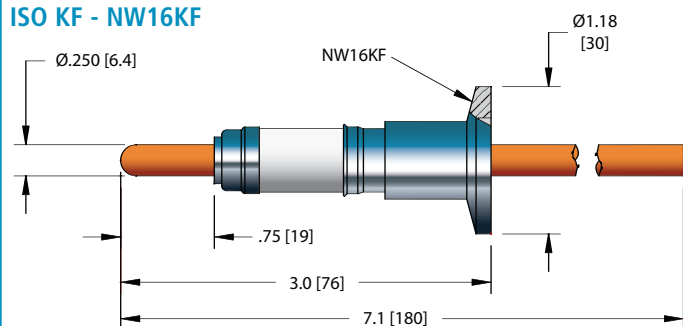
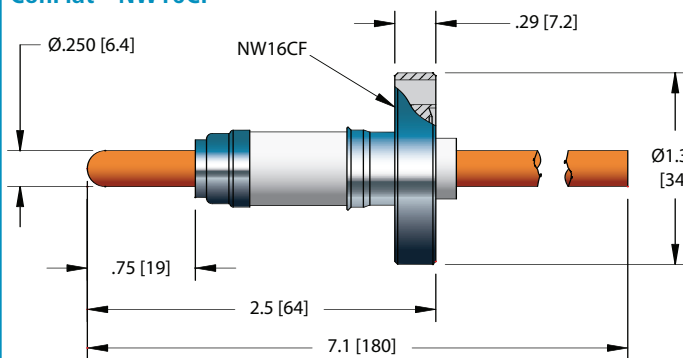
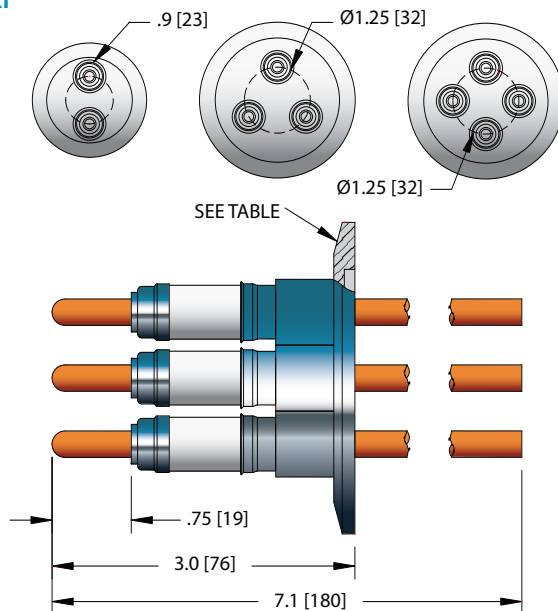
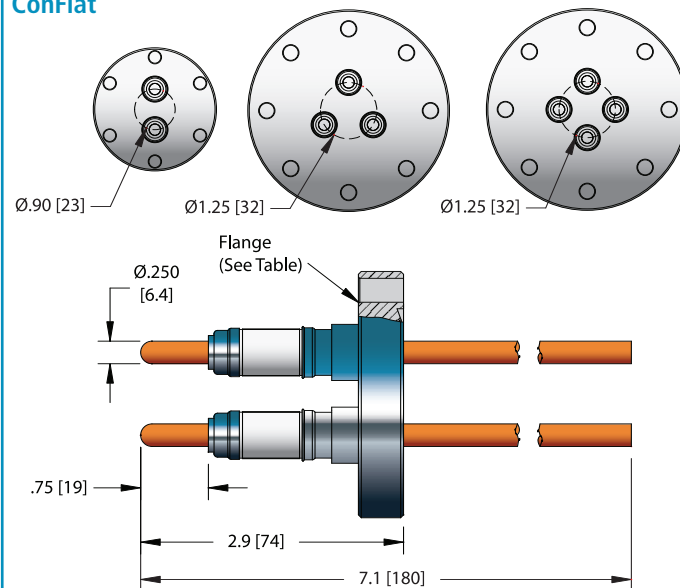
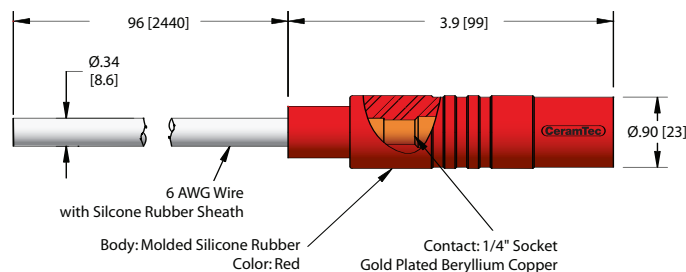
TYPE	CABLE TYPE	LENGTH	VOLTAGE DC	CONDUCTOR AMPS	TEMPERATURE °C MIN	TEMPERATURE °C MAX	PART NUMBER
.154 Power Plug	8 AWG	8'	10 kV	75	-55	125	21094-01-A

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.

Weldable

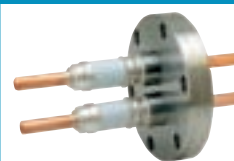


NO. PINS	AMPS	CONDUCTOR MATERIAL	INSTALLATION	PART NUMBER
1	56	Nickel	Weld	21414-07-W
1	185	Copper	Weld	21414-01-W

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



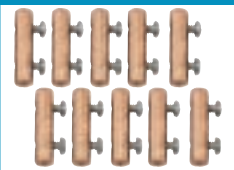
CONFLAT FLANGE				
1	56	Nickel	1 1/3" (NW16CF)	21309-02-CF
1	185	Copper	1 1/3" (NW16CF)	21309-01-CF
1	56	Nickel	2 3/4" (NW35CF)	21280-02-CF
1	185	Copper	2 3/4" (NW35CF)	21280-01-CF
2	56	Nickel	2 3/4" (NW35CF)	21280-04-CF
2	185	Copper	2 3/4" (NW35CF)	21280-03-CF
3	56	Nickel	4 1/2" (NW63CF)	21280-06-CF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

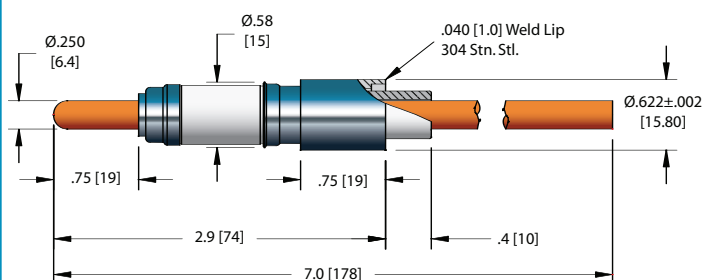
Contacts



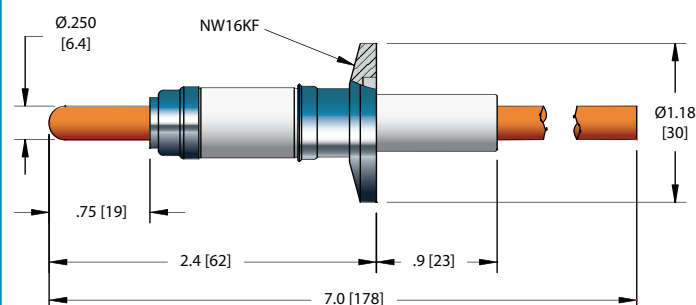
TYPE	MATERIAL	DESCRIPTION	PART NUMBER
0.250 Barrel Type Contacts	Beryllium Copper	Accepts wire up to 0.250 [6.4]	7332-06-A†
0.250 Clamp Type Contacts	Copper	Accepts wire up to 0.250 [6.4]	18740-01-A

*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.

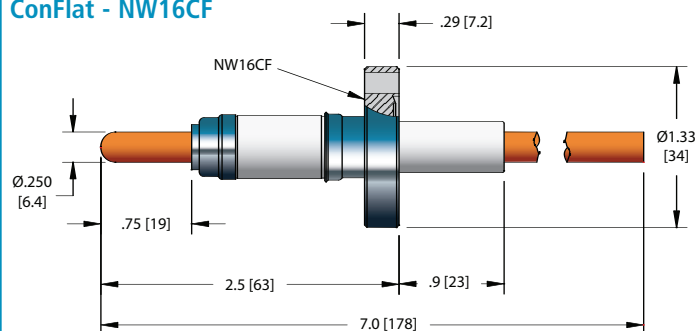
Weldable



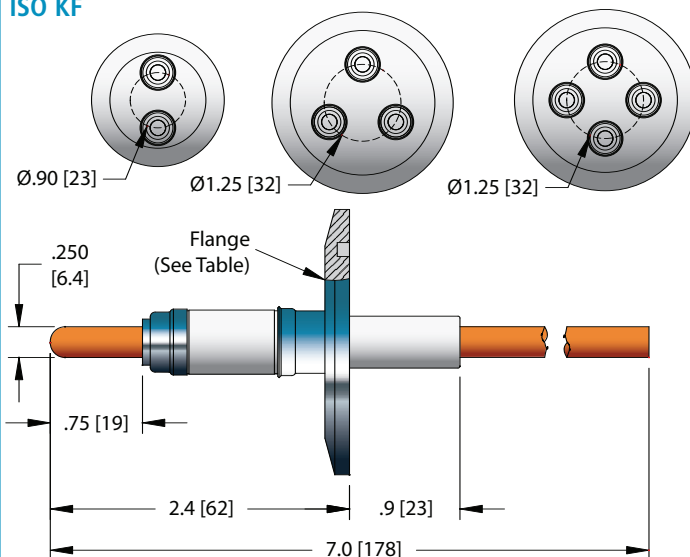
ISO KF - NW16KF



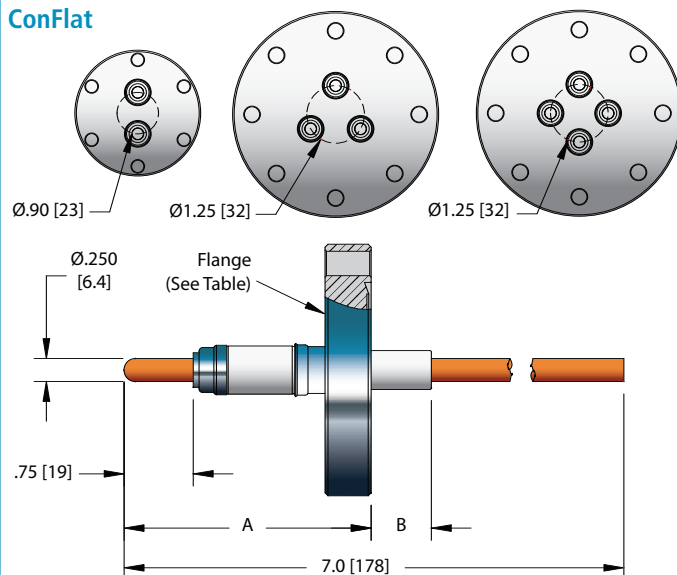
ConFlat - NW16CF



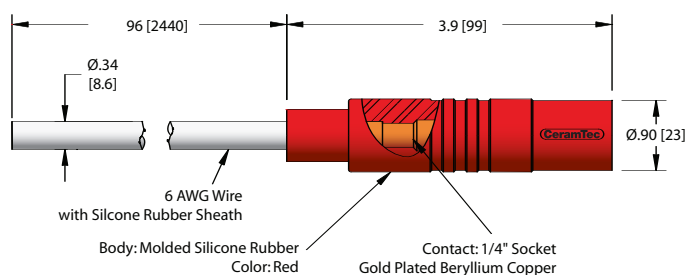
ISO KF



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.

Weldable



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

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 FLANGE

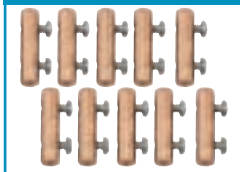
1	185	Copper	1 1/3" (NW16CF)	-	-	21130-01-CF
1	56	Nickel	1 1/3" (NW16CF)	-	-	21130-02-CF
1	185	Copper	2 3/4" (NW35CF)	2.68 [68]	.65 [17]	21144-01-CF
1	56	Nickel	2 3/4" (NW35CF)	2.68 [68]	.65 [17]	21144-02-CF
2	185	Copper	2 3/4" (NW35CF)	2.68 [68]	.65 [17]	21145-01-CF
2	56	Nickel	2 3/4" (NW35CF)	2.68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

ConFlat

Air Side
Cable Assembly

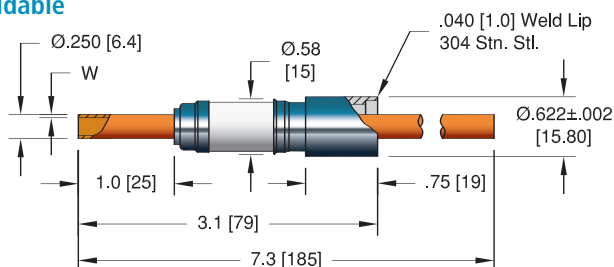
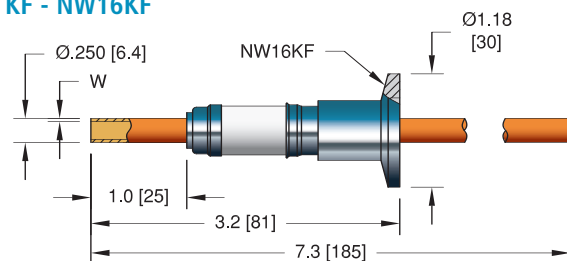
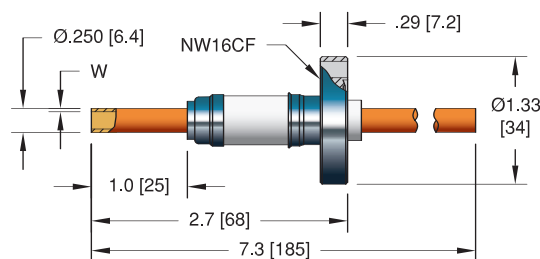
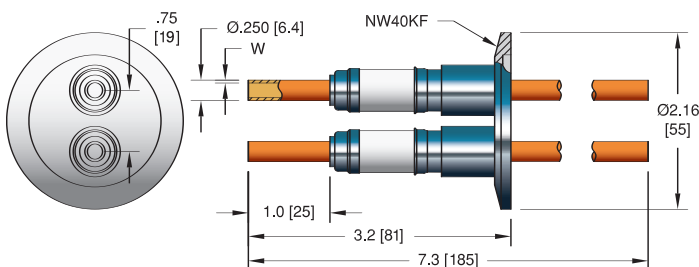
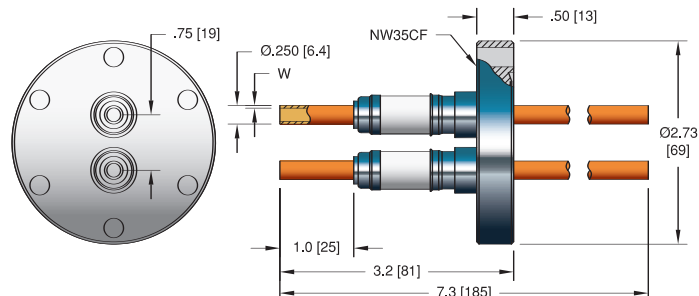
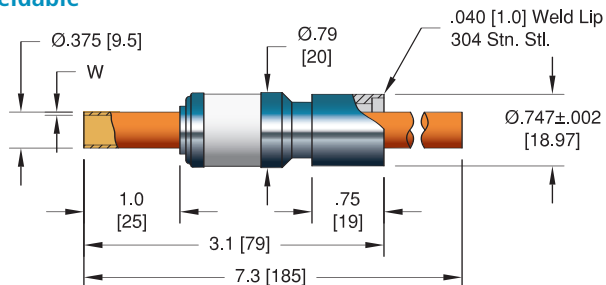
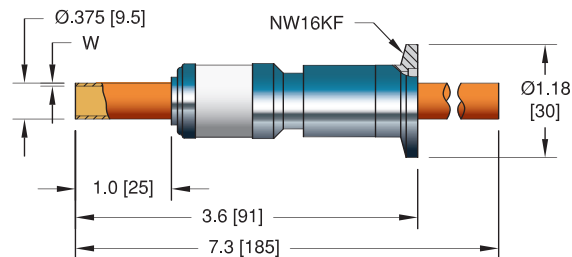
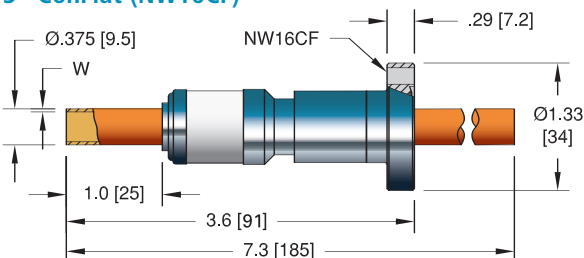
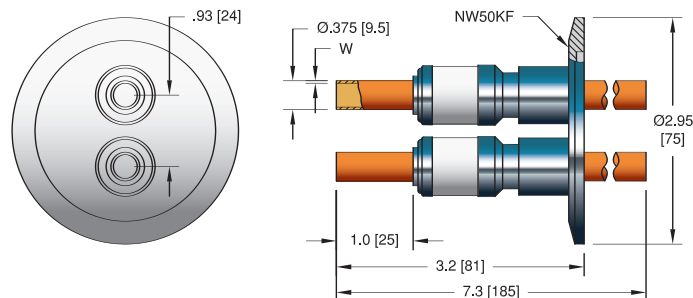
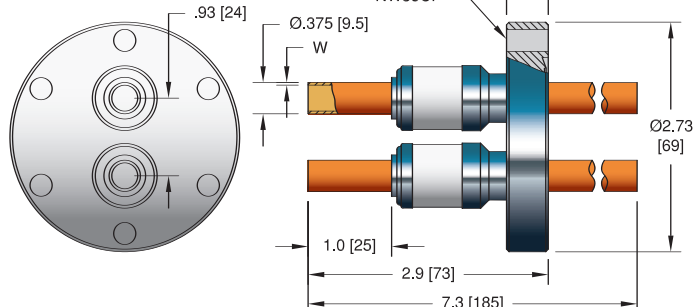
TYPE	CABLE TYPE	LENGTH	VOLTAGE DC	CONDUCTOR AMPS	TEMPERATURE °C MIN	MAX	PART NUMBER
.250 Power Plug	6 AWG	8'	25 kV	100	-55	125	20956-02-A

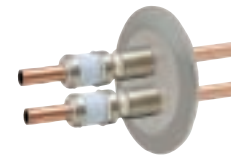
Contacts



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.

**.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**

Weldable							PART NUMBER
	NO. PINS/TUBES	DIA.	CONDUCTOR W	AMPS*	MATERIAL	INSTALLATION	
	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 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 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							PART NUMBER
	TYPE	MATERIAL		DESCRIPTION			
	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							

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

**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

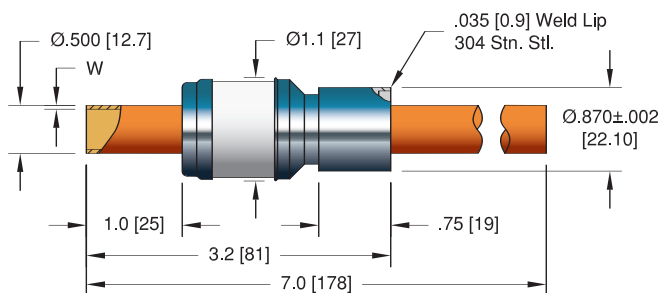
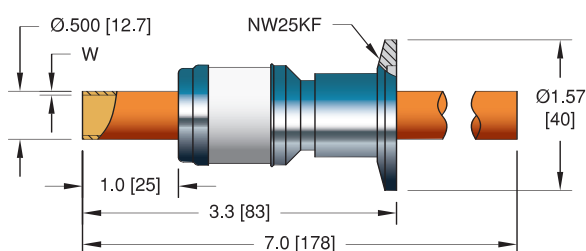
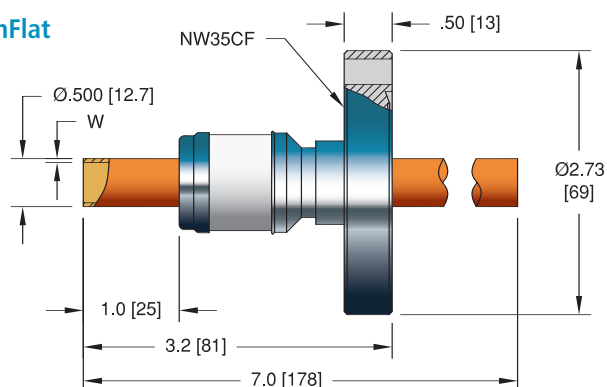
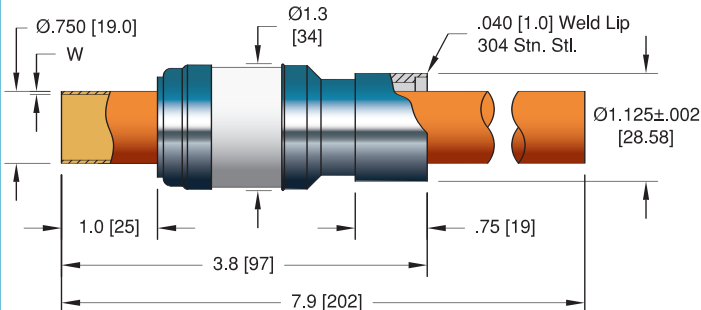
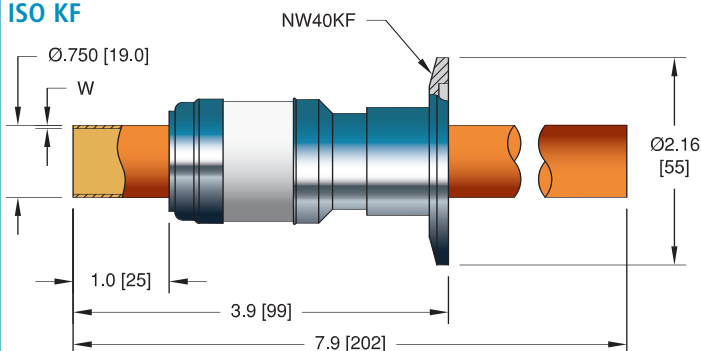
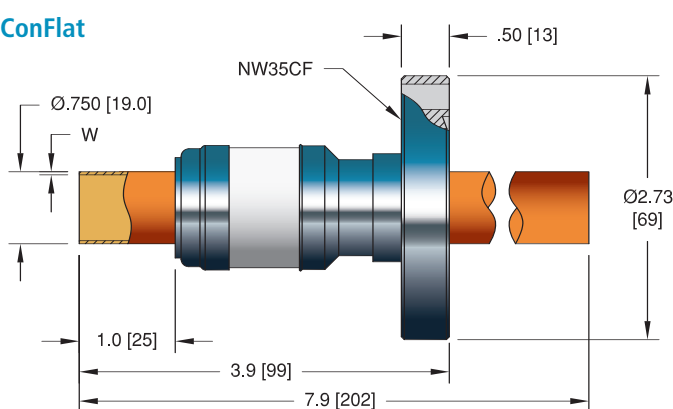
Voltage Rating 8 kV DC

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 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

ISO 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

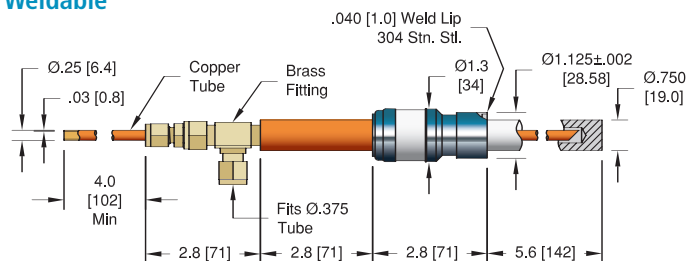
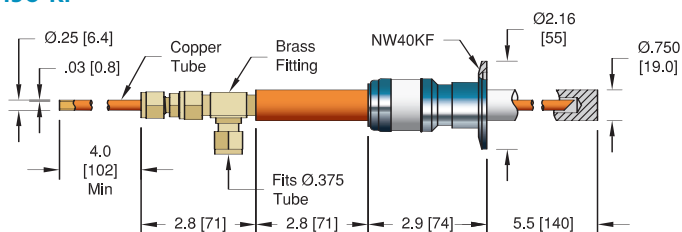
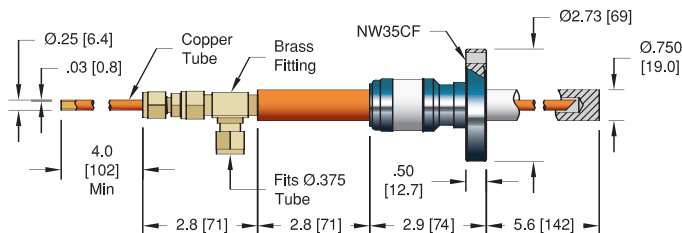
Housing: 304 Stainless steel

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**

Weldable



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

ISO FLANGE

ISO KF



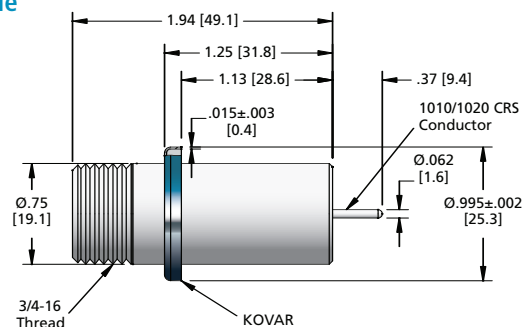
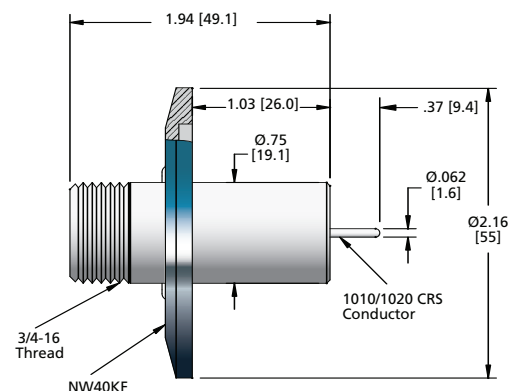
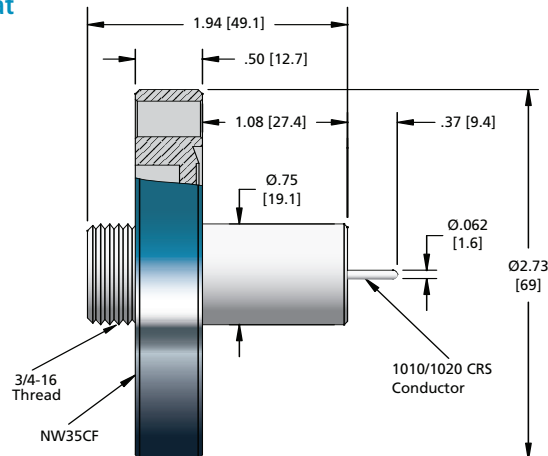
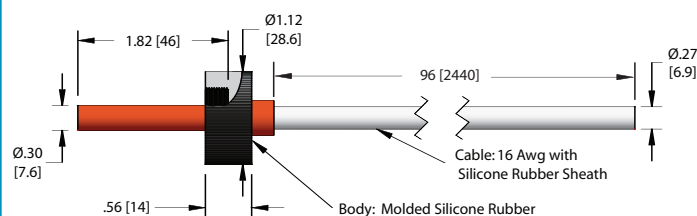
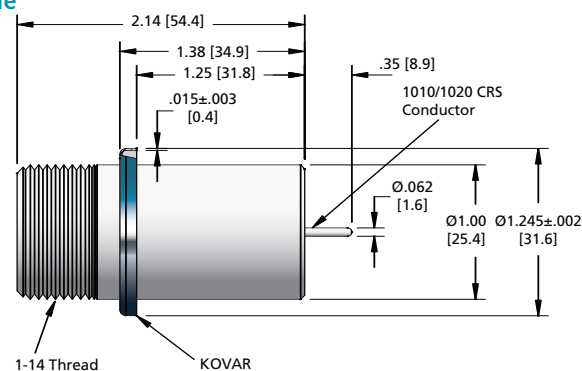
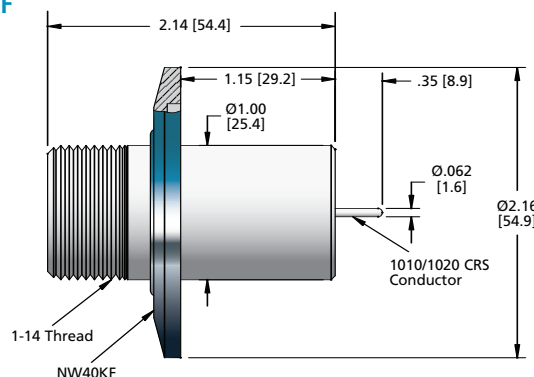
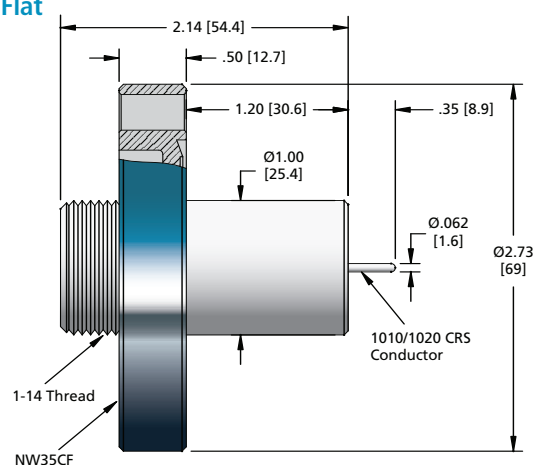
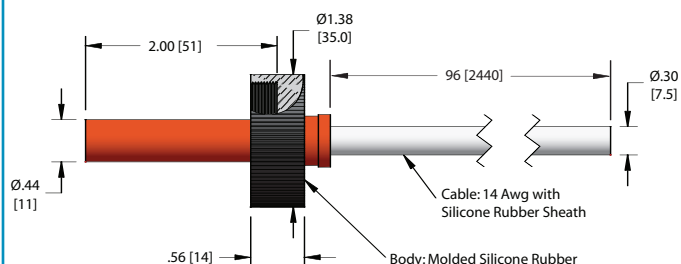
1000	Tellurium Copper	NW40KF	8 KV	17111-01-KF
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CONFLAT FLANGE

ConFlat



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

Weld	40 kV
Weld	50 kV

**PART
NUMBER**

21191-01-W
21183-01-W

**ISO KF
40 & 50 kV****ISO FLANGE**

NW40KF	40 kV
NW40KF	50 kV

21117-01-KF
21185-01-KF

**ConFlat
40 & 50 kV****CONFLAT FLANGE**

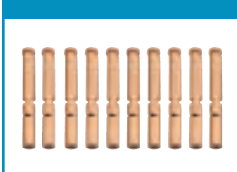
2 3/4" (NW35CF)	40 kV
2 3/4" (NW35CF)	50 kV

21194-01-CF
21184-01-CF

**Air Side Cable
Assemblies****VOLTAGE
DC****CABLE TYPE****LENGTH****CURRENT
CAPACITY****TEMPERATURE °C
MIN MAX****PART
NUMBER**

40 kV	16 AWG	8'	10 Amps	-55	125
50 kV	14 AWG	8'	10 Amps	-55	125

21034-01-A
21112-01-A

Contacts**TYPE****MATERIAL****DESCRIPTION****PART
NUMBER**

0.062 Crimp Contacts	Beryllium Copper	Accepts wire up to 0.062 [1.6]
0.062 Crimp Contacts	Nickel Alloy	Accepts wire up to 0.062 [1.6]
0.062 Barrel Type Contacts	Beryllium Copper	Accepts wire up to 0.062 [1.6]
Crimp Tool		For 0.025" - 0.075" Crimp Diameters

2044-02-A†
0821-01-A
7332-03-A
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

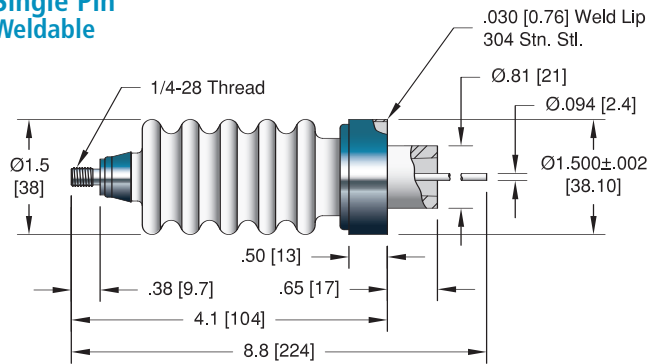
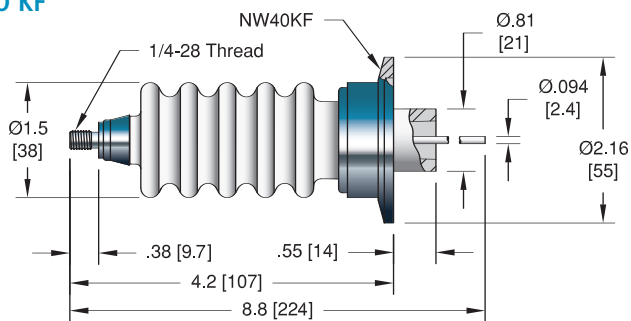
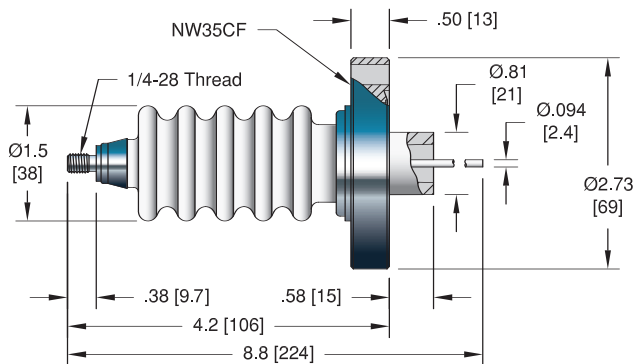
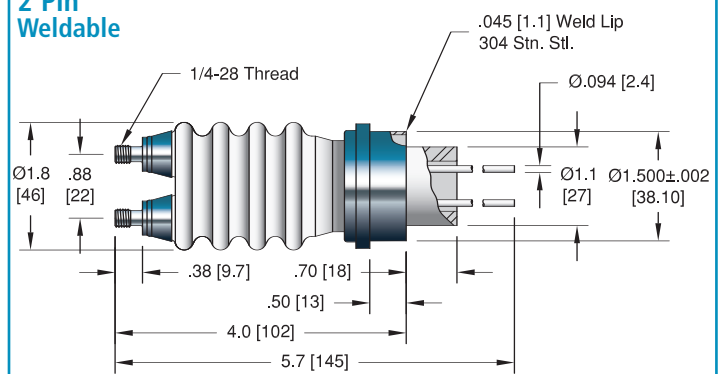
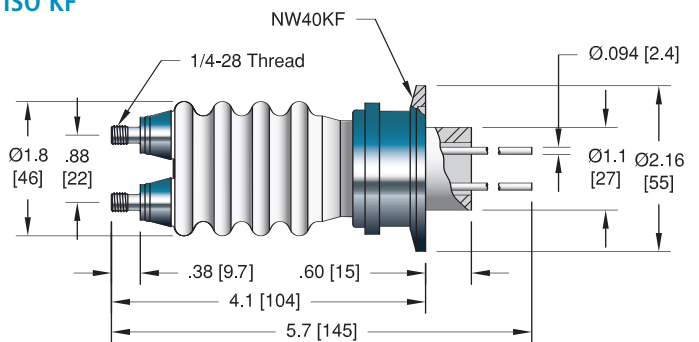
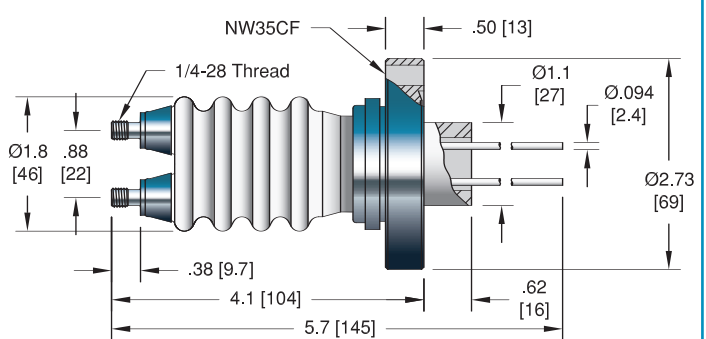
Voltage Rating 50 kV DC*

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
Weldable****ISO KF****ConFlat****2 Pin
Weldable****ISO KF****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



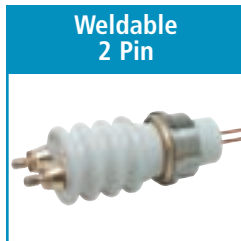
NO. PINS	CONDUCTORS AMPS	MATERIAL	INSTALLATION	VOLTAGE DC	PART NUMBER
1	4	304 Stn. Stl.	Weld	30 kV	6530-03-W

ISO FLANGE

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

1	4	304 Stn. Stl.	2 3/4" (NW35CF)	30 kV	16729-03-CF
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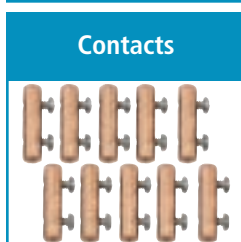
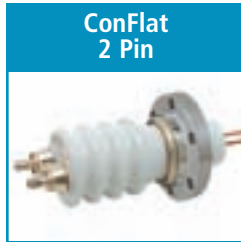
2	4	304 Stn. Stl.	Weld	30 kV	6532-05-W
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ISO FLANGE

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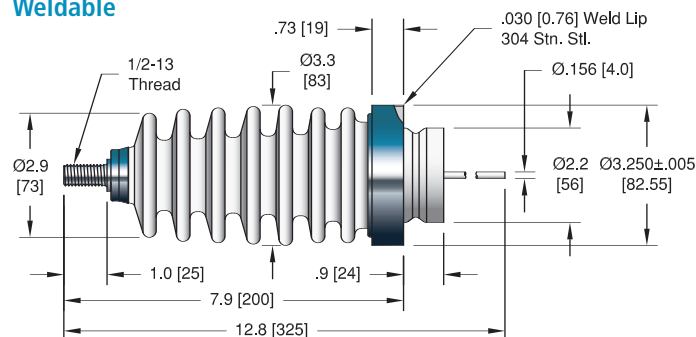
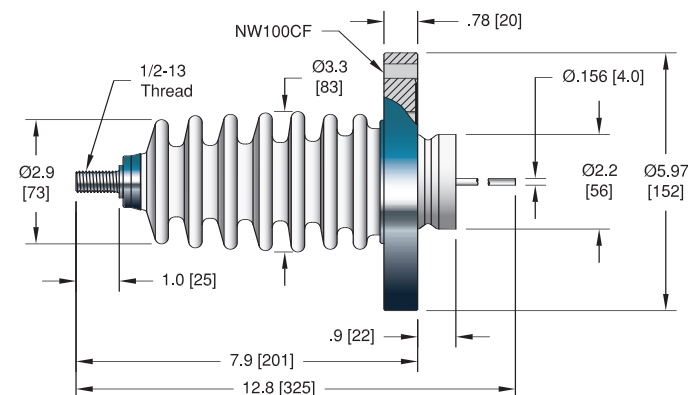
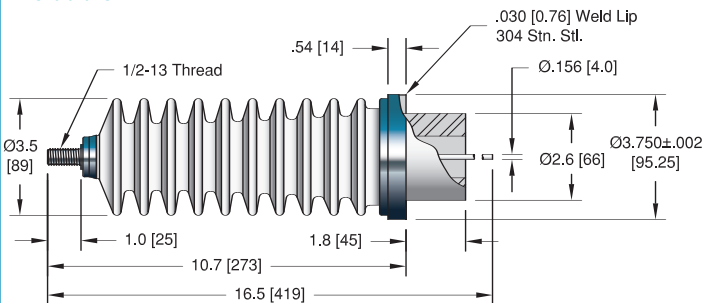
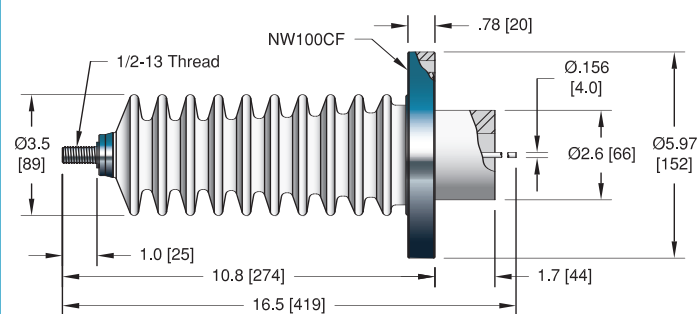
**CONFLAT FLANGE**

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

**Weldable
70 KV DC**

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

CONFLAT FLANGE**ConFlat
70 KV DC**

6.5	304 Stn. Stl.	6" (NW100CF)	70 kV	7884-01-CF
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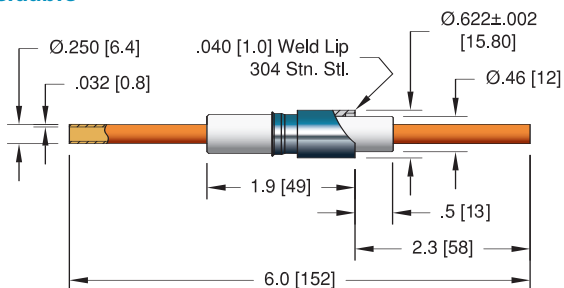
**Weldable
100 KV DC**

6.5	304 Stn. Stl.	Weld	100 kV	6523-01-W
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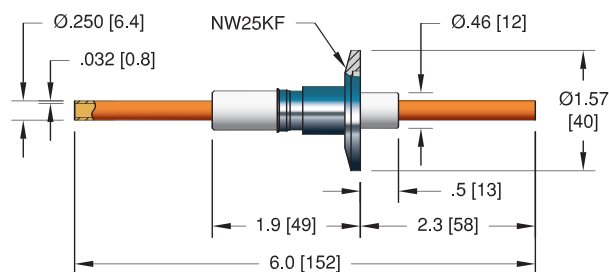
CONFLAT FLANGE**ConFlat
100 KV DC**

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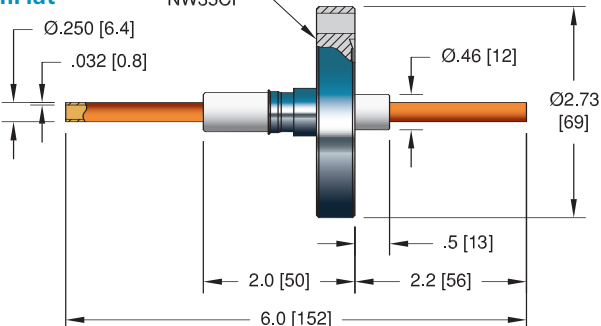
Single Conductor Weldable



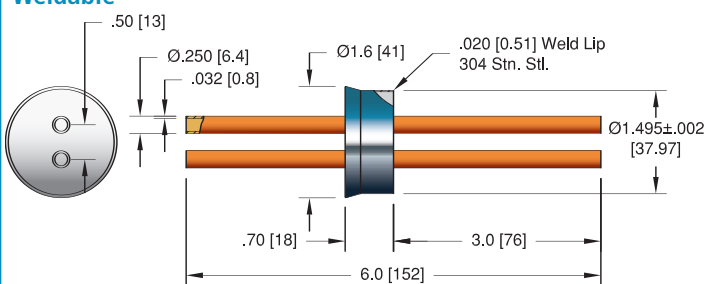
ISO KF



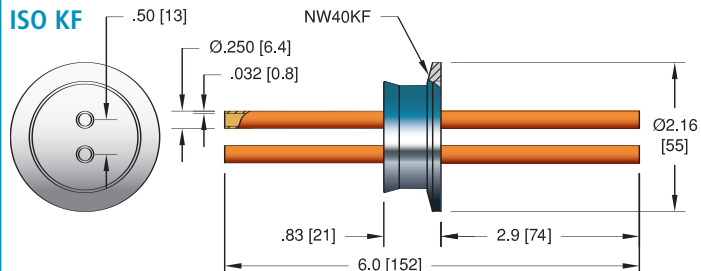
ConFlat



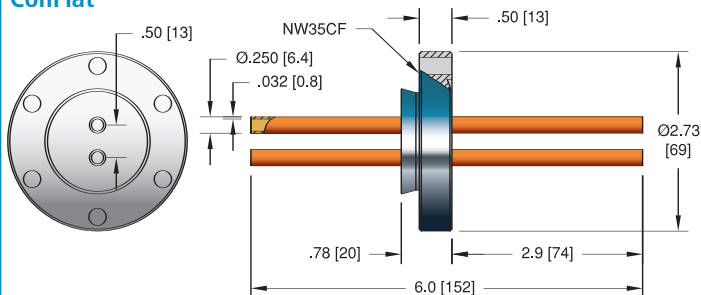
Dual Conductor Weldable



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



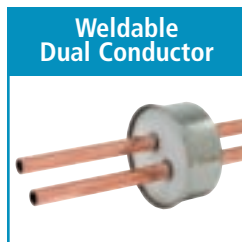
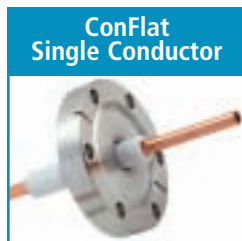
FREQUENCY	CONDUCTOR AMPS	MATERIAL	INSTALLATION	PART NUMBER
13.56 MHz	100	Copper Tube	Weld	16476-01-W

ISO KF FLANGE

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

13.56 MHz	100	Copper Tube	2 3/4" (NW35CF)	16941-01-CF
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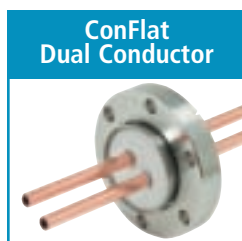
100 KHz	300	Copper Tube	Weld	16976-01-W
300 KHz	250			
450 KHz	200			
13.56 MHz	100			

ISO KF FLANGE

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

CONFLAT FLANGE

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



Specifications

Materials

Bolt: 304 Stainless steel

O-Ring: Viton®

Pin: See table

Insulation: Alumina ceramic

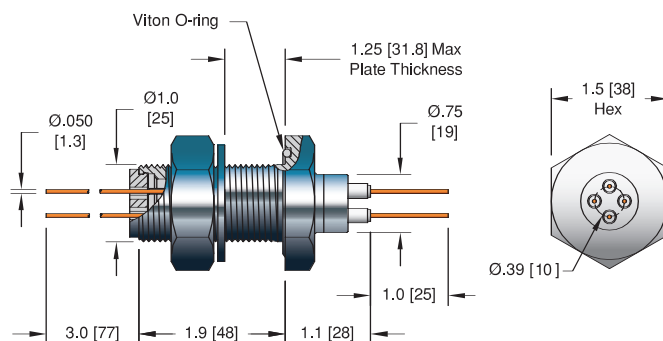
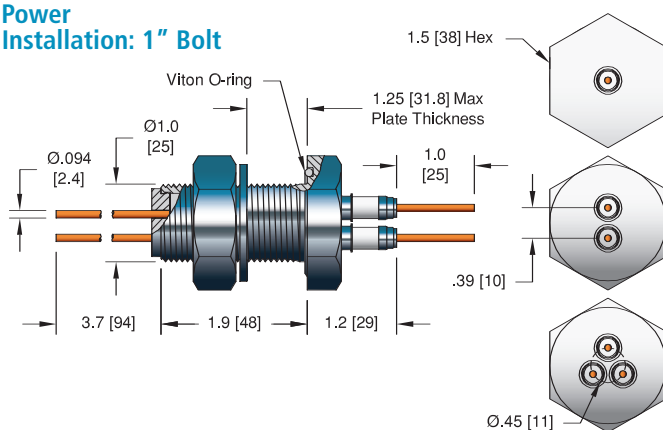
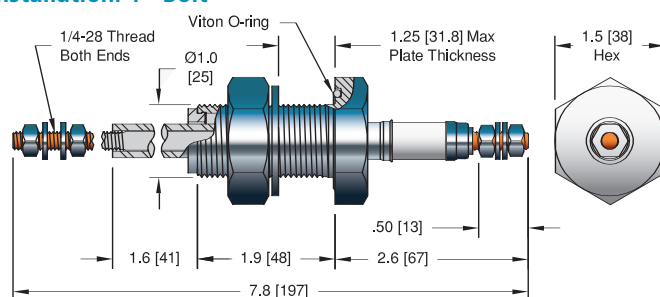
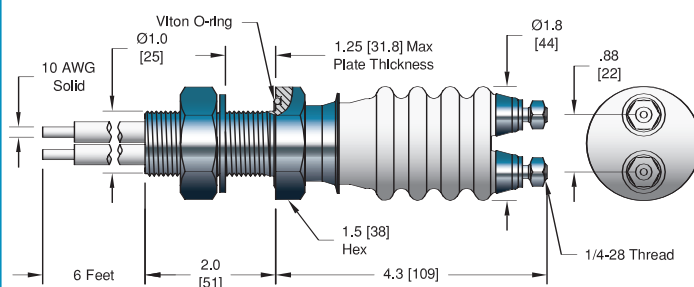
Magnetic Materials: See table

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

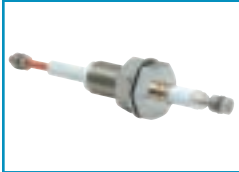
Instrumentation/Power
Installation: 1" BoltPower
Installation: 1" BoltHigh Power
Installation: 1" BoltHigh Voltage
Installation: 1" Bolt

Instrumentation/Power
1" Bolt

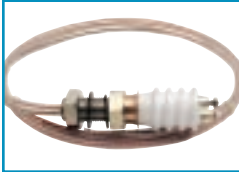
NO. PINS	VOLTAGE DC	CONDUCTOR AMPS	MATERIAL	MAGNETIC MATERIALS	PART NUMBER
4	2 kV	8.2	Nickel	Yes	15710-02-A
4	2 kV	27	Copper	No	15710-04-A

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

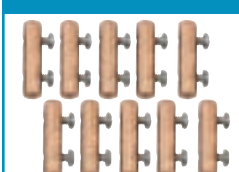
NO. PINS	VOLTAGE DC	CONDUCTOR AMPS	MATERIAL	PRESSURE @ 20°C PSIG	BAR	MAGNETIC MATERIALS	PART NUMBER
2	15 kV	185	Copper	125	8.6	Yes	9388-01-A

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.