



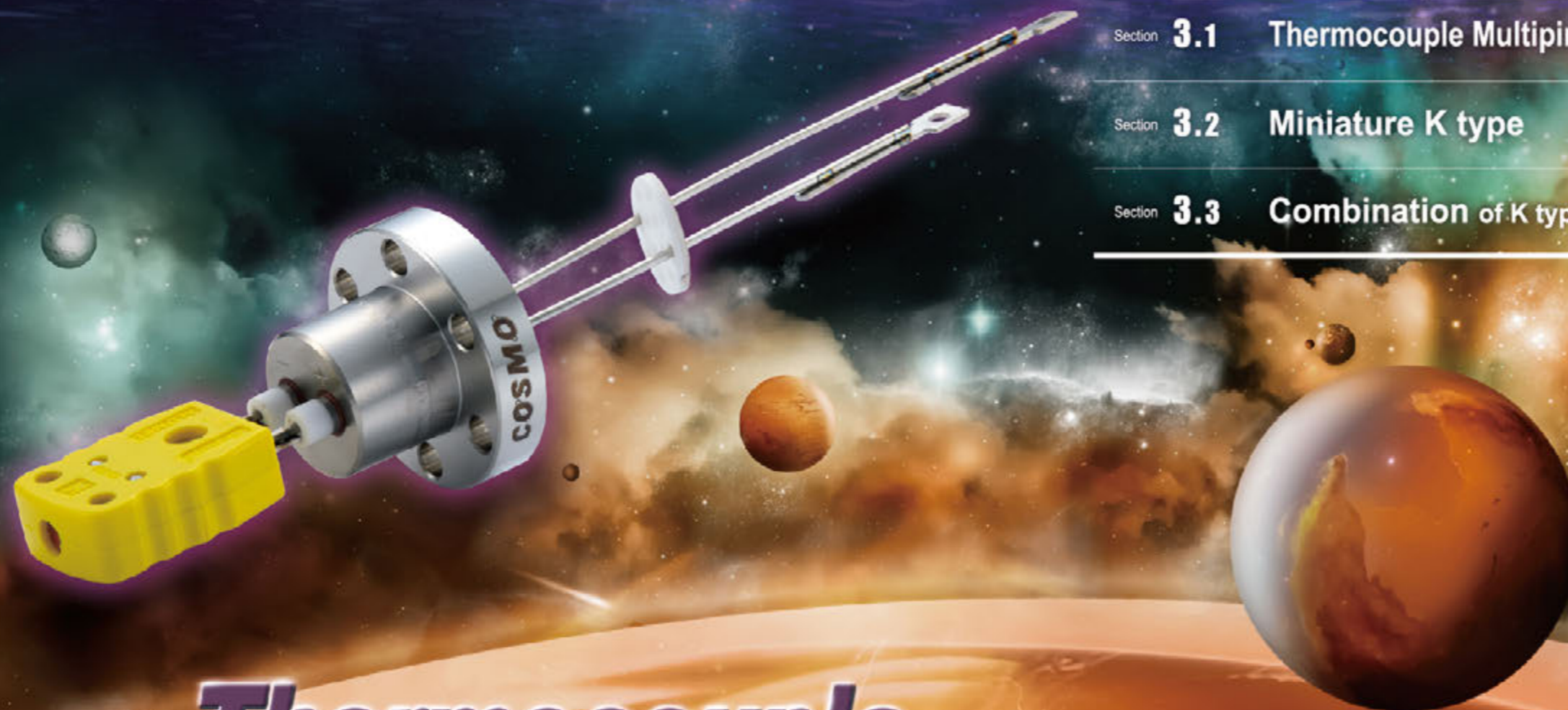
Thermocouple Introduction

117 to 118

Section **3.1** Thermocouple Multipin BURNDY K type 119 to 130

Section **3.2** Miniature K type 131 to 132

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Section 3 Thermocouple



Features

BURNDY K type (Chromel® / Alumel®)

The BURNDY K type is a thermocouple (Chromel® / Alumel®) for temperature measurement compatible with Bayonet Lock type plugs. The BURNDY K type is offered from 2 pairs to 24 pairs. Because the BURNDY series is more compact than the MIL-C-5015 series, 24 pairs can be welded to NW / KF 40 and ConFlat® 2.75". A thermocouple with one pair, which is compatible with OMEGA® plugs, and the combination of a thermocouple and high voltage feedthrough are available. Select flange size and type from NW / KF, ConFlat®, ISO-K, ISO-F and ASA. Accessories are also available, including vacuum side insulating inserts (PEEK® and CERAMICS), Chromel® & Alumel® socket contacts, vacuum side wires (tip welded), ceramic beads for insulation, Kapton® tubes, air side plugs, air side cables, removal tools, and crimp tools. We also manufacture custom-made products with quick delivery. Select welding position, number of connectors, and size of custom-made flanges.

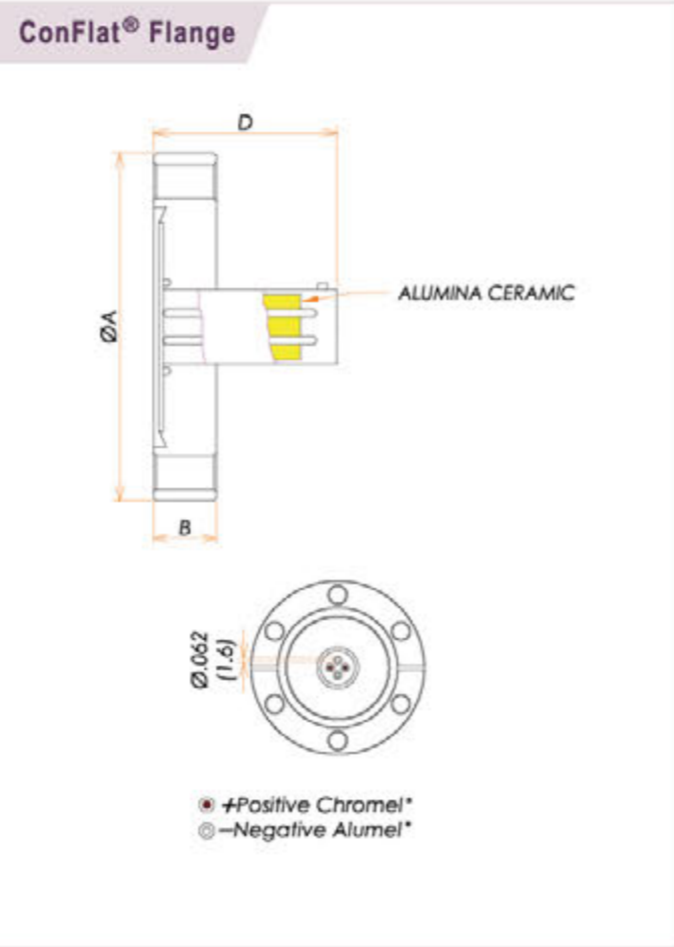
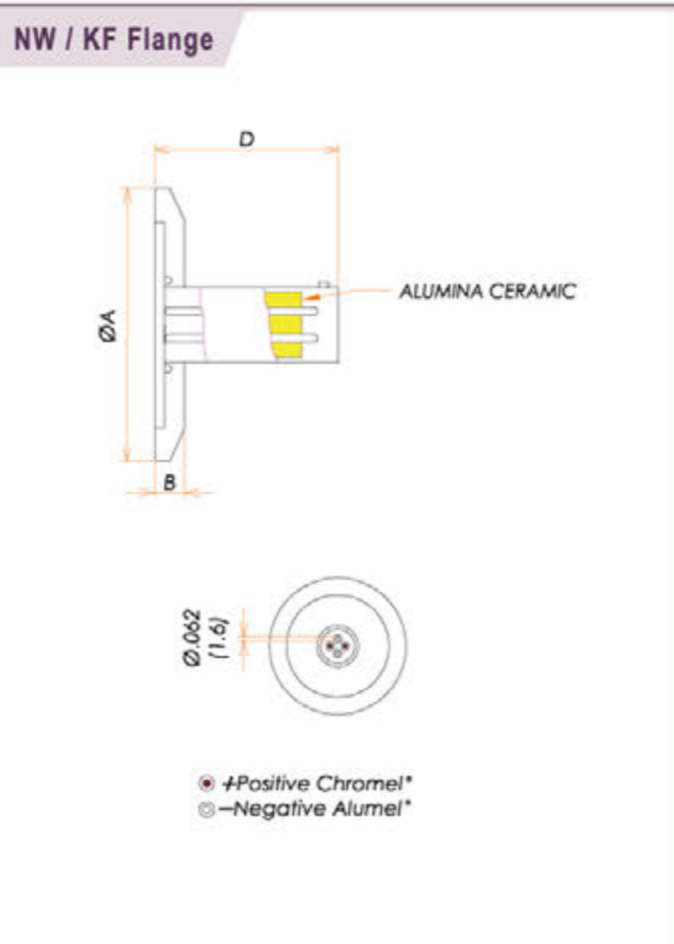
Materials

Flange	304 Stainless steel
Shell	Kovar®
Pins	Chromel® / Alumel®
Insulation	Alumina ceramic

Specifications

Type	Multipin BURNDY
BURNDY	2 Pairs
Voltage: V max. DC	Milli-Volts
Current: A Per Pins	Milli-Amps
Max. Current all pins loaded	Milli-Amps
Insulation: ohm min.	10 ⁹
Frequency: MHz	DC or AC 10 (10 MHz)max.
Leak rate: 1.3xPa · m³/s	10 ⁻¹⁰
Temperature Range: °C*	-196 to 300

*Temperature range will be changed depends on the connection.



Dimensions in inches (mm)

NW / KF Flange						
No. of Pairs	INSTALLATION	A	B	D	REFERENCE	PART NUMBER
2	NW / KF 16	1.18 (30)	.24 (6)	1.48 (37.5)	N16TCK2MB	12052
2	NW / KF 25	1.57 (40)	.24 (6)	1.48 (37.5)	N25TCK2MB	12053
2	NW / KF 40	2.16 (55)	.24 (6)	1.48 (37.5)	N40TCK2MB	12054

ConFlat® Flange						
No. of Pairs	INSTALLATION	A	B	D	REFERENCE	PART NUMBER
2	CF 1.33	1.33 (34)	.30 (7.5)	1.46 (37)	C34TCK2MB	12055
2	CF 2.75	2.75 (70)	.50 (12.7)	1.46 (37)	C70TCK2MB	12056

Accessories		
Description	REFERENCE	PART NUMBER
2 Pairs Vacuum Side PEEK® Insulator (250 °C MAX.)	VSPI4	10167
2 Pairs Vacuum Side Alumina Insulator (300 °C MAX.)	VSAI4	10160
.062 Socket Contact Chromel®	SVC16CH	11817
.062 Socket Contact Alumel®	SVC16AL	11818
2 Pairs Air Side Plug	ASP4	10013
Removal Tool	PT16	10138
Crimp Tool (AWG #23 to #13)	CT2313	10052

Various types of cables are available in both vacuum and air side.

For more details, see Section 6.3



N40TCK4MB [12063]

Features

BURNDY K type (Chromel® / Alumel®)

The BURNDY K type is a thermocouple (Chromel® / Alumel®) for temperature measurement compatible with Bayonet Lock type plugs. The BURNDY K type is offered from 2 pairs to 24 pairs. Because the BURNDY series is more compact than the MIL-C-5015 series, 24 pairs can be welded to NW / KF 40 and ConFlat® 2.75". A thermocouple with one pair, which is compatible with OMEGA® plugs, and the combination of a thermocouple and high voltage feedthrough are available. Select flange size and type from NW / KF, ConFlat®, ISO-K, ISO-F and ASA. Accessories are also available, including vacuum side insulating inserts (PEEK® and CERAMICS), Chromel® & Alumel® socket contacts, vacuum side wires (tip welded), ceramic beads for insulation, Kapton® tubes, air side plugs, air side cables, removal tools, and crimp tools. We also manufacture custom-made products with quick delivery. Select welding position, number of connectors, and size of custom-made flanges.

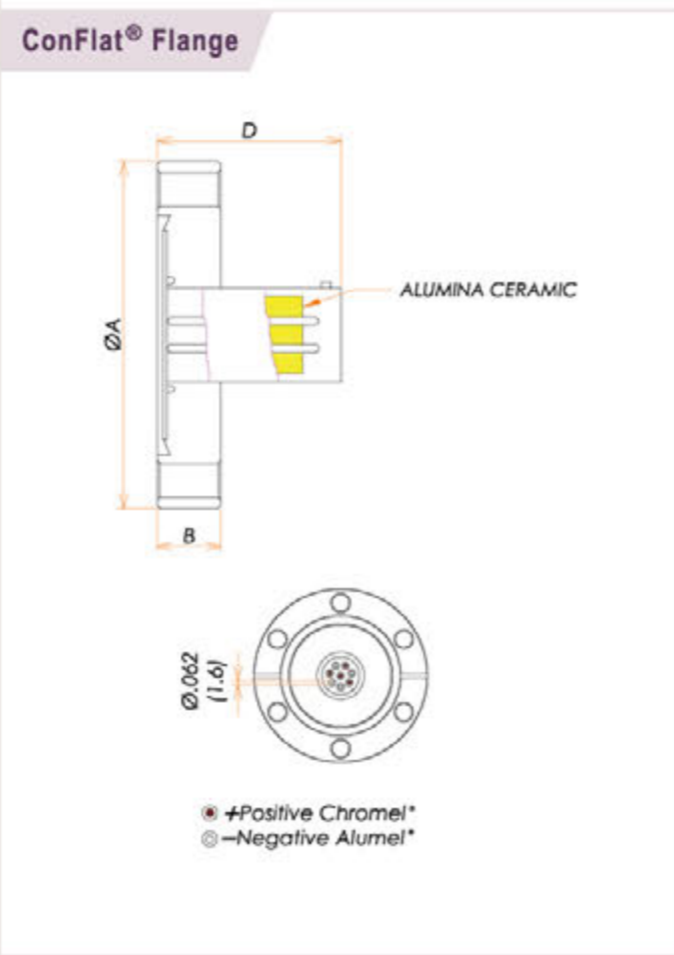
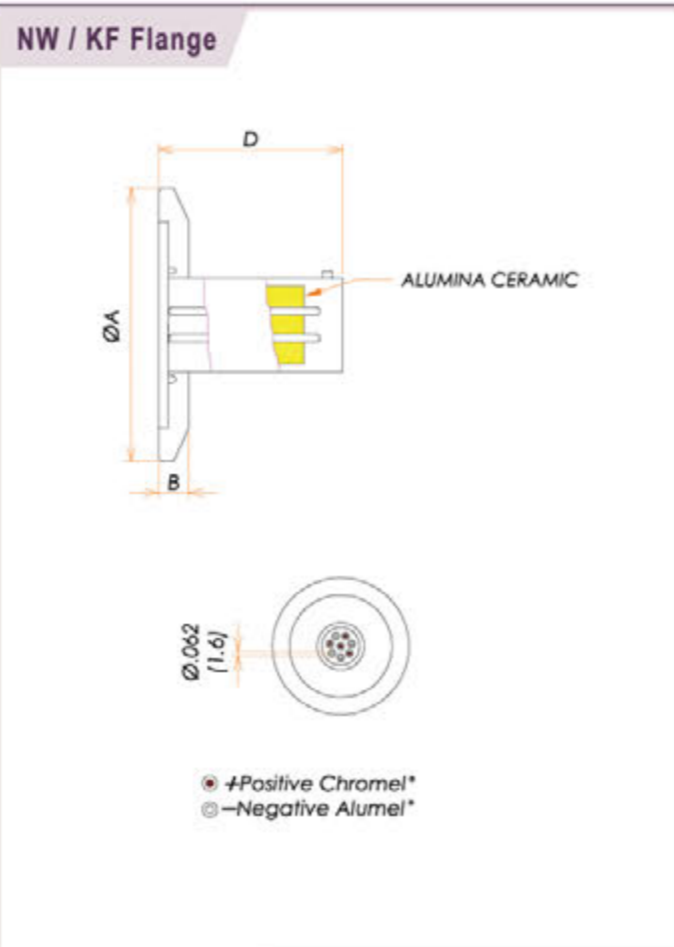
Materials

Flange	304 Stainless steel
Shell	Kovar®
Pins	Chromel® / Alumel®
Insulation	Alumina ceramic

Specifications

Type	Multipin BURNDY
BURNDY	4 Pairs
Voltage: V max. DC	Milli-Volts
Current: A Per Pins	Milli-Amps
Max. Current all pins loaded	Milli-Amps
Insulation: ohm min.	10 ⁹
Frequency: MHz	DC or AC 10 (10 MHz)max.
Leak rate: 1.3×Pa · m³/s	10 ⁻¹⁰
Temperature Range: °C*	-196 to 300

*Temperature range will be changed depends on the connection.



Dimensions in inches (mm)

NW / KF Flange						
No. of Pairs	INSTALLATION	A	B	D	REFERENCE	PART NUMBER
4	NW / KF 25	1.57 (40)	.24 (6)	1.48 (37.5)	N25TCK4MB	12230
4	NW / KF 40	2.16 (55)	.24 (6)	1.48 (37.5)	N40TCK4MB	12063

ConFlat® Flange						
No. of Pairs	INSTALLATION	A	B	D	REFERENCE	PART NUMBER
4	CF 1.33	1.33 (34)	.30 (7.5)	1.91 (48.5)	C34TCK4MB	12064
4	CF 2.75	2.75 (70)	.50 (12.7)	1.91 (48.5)	C70TCK4MB	12065

Accessories

Description	REFERENCE	PART NUMBER
4 Pairs Vacuum Side PEEK® Insulator (250 °C MAX.)	VSPi8	10169
4 Pairs Vacuum Side Alumina Insulator (300 °C MAX.)	VSAi8	10162
.062 Socket Contact Chromel®	SVC16CH	11817
.062 Socket Contact Alumel®	SVC16AL	11818
4 Pairs Air Side Plug	ASP8	10016
Removal Tool	PT16	10138
Crimp Tool (AWG #23 to #13)	CT2313	10052

Various types of cables are available in both vacuum and air side.

For more details, see Section 6.3



N40TCK6MB [12073]

Features

BURNDY K type (Chromel® / Alumel®)

The BURNDY K type is a thermocouple (Chromel® / Alumel®) for temperature measurement compatible with Bayonet Lock type plugs. The BURNDY K type is offered from 2 pairs to 24 pairs. Because the BURNDY series is more compact than the MIL-C-5015 series, 24 pairs can be welded to NW / KF 40 and ConFlat® 2.75". A thermocouple with one pair, which is compatible with OMEGA® plugs, and the combination of a thermocouple and high voltage feedthrough are available.

Select flange size and type from NW / KF, ConFlat®, ISO-K, ISO-F and ASA. Accessories are also available, including vacuum side insulating inserts (PEEK® and CERAMICS), Chromel® & Alumel® socket contacts, vacuum side wires (tip welded), ceramic beads for insulation, Kapton® tubes, air side plugs, air side cables, removal tools, and crimp tools. We also manufacture custom-made products with quick delivery. Select welding position, number of connectors, and size of custom-made flanges.

Materials

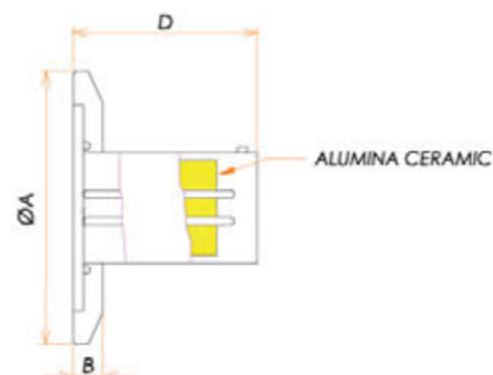
Flange	304 Stainless steel
Shell	Kovar®
Pins	Chromel® / Alumel®
Insulation	Alumina ceramic

Specifications

Type	Multipin BURNDY
BURNDY	6 Pairs
Voltage: V max. DC	Milli-Volts
Current: A Per Pins	Milli-Amps
Max. Current all pins loaded	Milli-Amps
Insulation: ohm min.	10 ⁹
Frequency: MHz	DC or AC 10 (10 MHz)max.
Leak rate: 1.3×Pa · m ³ /s	10 ⁻¹⁰
Temperature Range: °C*	-196 to 300

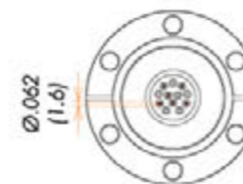
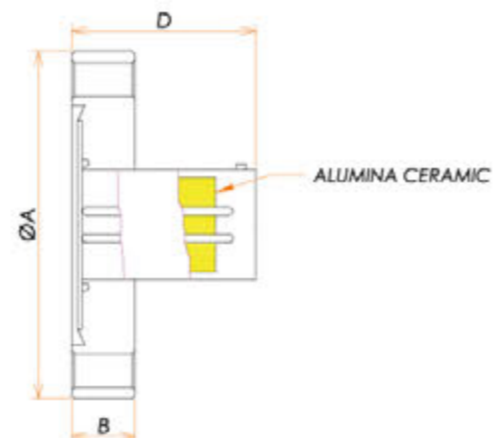
*Temperature range will be changed depends on the connection.

NW / KF Flange



● +Positive Chromel*
○ -Negative Alumel*

ConFlat® Flange



● +Positive Chromel*
○ -Negative Alumel*

Dimensions in inches (mm)

NW / KF Flange

No. of Pairs	INSTALLATION	A	B	D	REFERENCE	PART NUMBER
6	NW / KF 25	1.57 (40)	.24 (6)	1.48 (37.5)	N25TCK6MB	12072
6	NW / KF 40	2.16 (55)	.24 (6)	1.48 (37.5)	N40TCK6MB	12073

ConFlat® Flange

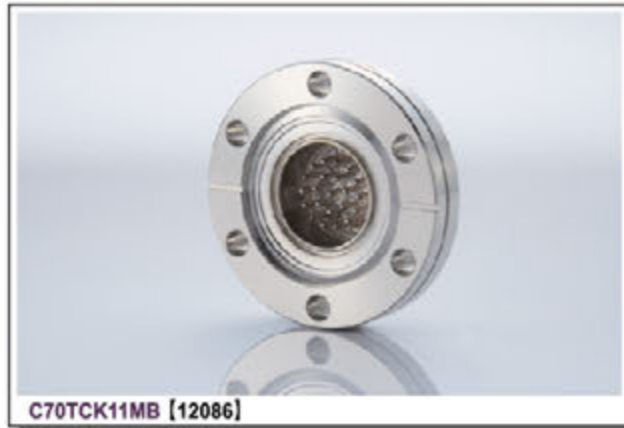
No. of Pairs	INSTALLATION	A	B	D	REFERENCE	PART NUMBER
6	CF 2.75	2.75 (70)	.50 (12.7)	1.46 (37)	C70TCK6MB	12074

Accessories

Description	REFERENCE	PART NUMBER
6 Pairs Vacuum Side PEEK® Insulator (250 °C MAX.)	VSP12	10163
6 Pairs Vacuum Side Alumina Insulator (300 °C MAX.)	VSA12	10157
.062 Socket Contact Chromel®	SVC16CH	11817
.062 Socket Contact Alumel®	SVC16AL	11818
6 Pairs Air Side Plug	ASP12	10005
Removal Tool	PT16	10138
Crimp Tool (AWG #23 to #13)	CT2313	10052

Various types of cables are available in both vacuum and air side.

For more details, see Section 6.3



Features

BURNDY K type (Chromel® / Alumel®)

The BURNDY K type is a thermocouple (Chromel® / Alumel®) for temperature measurement compatible with Bayonet Lock type plugs. The BURNDY K type is offered from 2 pairs to 24 pairs. Because the BURNDY series is more compact than the MIL-C-5015 series, 24 pairs can be welded to NW / KF 40 and ConFlat® 2.75". A thermocouple with one pair, which is compatible with OMEGA® plugs, and the combination of a thermocouple and high voltage feedthrough are available. Select flange size and type from NW / KF, ConFlat®, ISO-K, ISO-F and ASA. Accessories are also available, including vacuum side insulating inserts (PEEK® and CERAMICS), Chromel® & Alumel® socket contacts, vacuum side wires (tip welded), ceramic beads for insulation, Kapton® tubes, air side plugs, air side cables, removal tools, and crimp tools. We also manufacture custom-made products with quick delivery. Select welding position, number of connectors, and size of custom-made flanges.

Materials

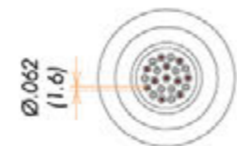
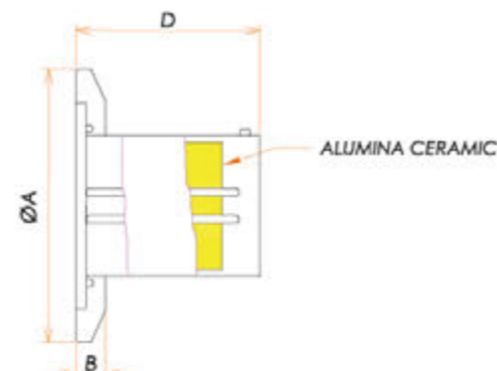
Flange	304 Stainless steel
Shell	Kovar®
Pins	Chromel® / Alumel®
Insulation	Alumina ceramic

Specifications

Type	Multipin BURNDY
BURNDY	11 Pairs
Voltage: V max. DC	Milli-Volts
Current: A Per Pins	Milli-Amps
Max. Current all pins loaded	Milli-Amps
Insulation: ohm min.	10 ⁹
Frequency: MHz	DC or AC 10 (10 MHz)max.
Leak rate: 1.3×Pa · m³/s	10 ⁻¹⁰
Temperature Range: °C*	-196 to 300

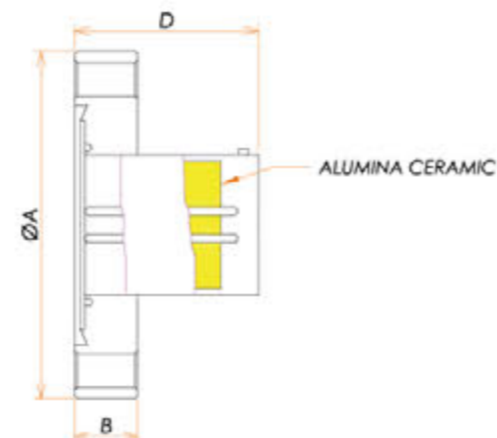
*Temperature range will be changed depends on the connection.

NW / KF Flange



- +Positive Chromel*
- -Negative Alumel*

ConFlat® Flange



- +Positive Chromel*
- -Negative Alumel*

Dimensions in inches (mm)

NW / KF Flange						REFERENCE	PART NUMBER
No. of Pairs	INSTALLATION	A	B	D			
11	NW / KF 40	2.16 (55)	.24 (6)	1.48 (37.5)	N40TCK11MB	12084	

ConFlat® Flange						REFERENCE	PART NUMBER
No. of Pairs	INSTALLATION	A	B	D			
11	CF 2.75	2.75 (70)	.50 (12.7)	1.46 (37)	C70TCK11MB	12086	

Accessories

Description	REFERENCE	PART NUMBER
11 Pairs Vacuum Side PEEK® Insulator (250 °C MAX.)	VSPI22	10165
11 Pairs Vacuum Side Alumina Insulator (300 °C MAX.)	VSAI22	10159
.062 Socket Contact Chromel®	SVC16CH	11817
.062 Socket Contact Alumel®	SVC16AL	11818
11 Pairs Air Side Plug	ASP22	10009
Removal Tool	PT16	10138
Crimp Tool (AWG #23 to #13)	CT2313	10052

Various types of cables are available in both vacuum and air side.

For more details, see Section 6.3



Features

BURNDY K type (Chromel® / Alumel®)

The BURNDY K type is a thermocouple (Chromel® / Alumel®) for temperature measurement compatible with Bayonet Lock type plugs. The BURNDY K type is offered from 2 pairs to 24 pairs. Because the BURNDY series is more compact than the MIL-C-5015 series, 24 pairs can be welded to NW / KF 40 and ConFlat® 2.75". A thermocouple with one pair, which is compatible with OMEGA® plugs, and the combination of a thermocouple and high voltage feedthrough are available. Select flange size and type from NW / KF, ConFlat®, ISO-K, ISO-F and ASA. Accessories are also available, including vacuum side insulating inserts (PEEK® and CERAMICS), Chromel® & Alumel® socket contacts, vacuum side wires (tip welded), ceramic beads for insulation, Kapton® tubes, air side plugs, air side cables, removal tools, and crimp tools. We also manufacture custom-made products with quick delivery. Select welding position, number of connectors, and size of custom-made flanges.

Materials

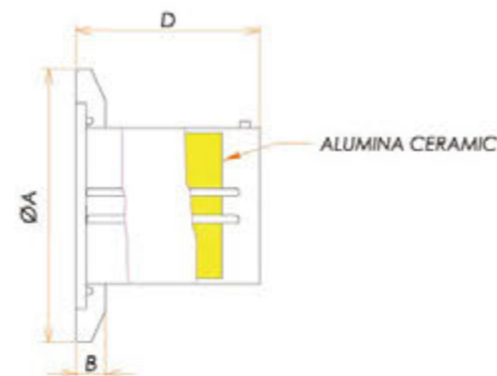
Flange	304 Stainless steel
Shell	Kovar®
Pins	Chromel® / Alumel®
Insulation	Alumina ceramic

Specifications

Type	Multipin BURNDY
BURNDY	15 Pairs
Voltage: V max. DC	Milli-Volts
Current: A Per Pins	Milli-Amps
Max. Current all pins loaded	Milli-Amps
Insulation: ohm min.	10 ⁹
Frequency: MHz	DC or AC 10 (10 MHz)max.
Leak rate: 1.3×Pa · m³/s	10 ⁻¹⁰
Temperature Range: °C*	-196 to 300

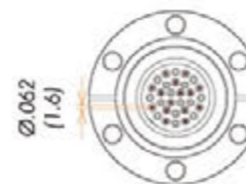
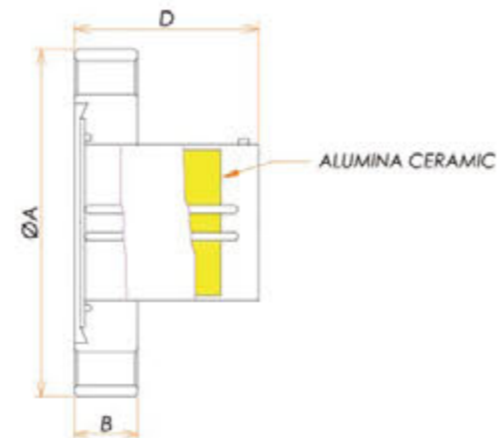
*Temperature range will be changed depends on the connection.

NW / KF Flange



● +Positive Chromel*
○ -Negative Alumel*

ConFlat® Flange



● +Positive Chromel*
○ -Negative Alumel*

Dimensions in inches (mm)

NW / KF Flange						REFERENCE	PART NUMBER
No. of Pairs	INSTALLATION	A	B	D			
15	NW / KF 40	2.16 (55)	.24 (6)	1.48 (37.5)	N40TCK15MB	12091	

ConFlat® Flange						REFERENCE	PART NUMBER
No. of Pairs	INSTALLATION	A	B	D			
15	CF 2.75	2.75 (70)	.50 (12.7)	1.46 (37)	C70TCK15MB	12092	

Accessories

Description	REFERENCE	PART NUMBER
15 Pairs Vacuum Side PEEK® Insulator (250 °C MAX.)	VSPI30	10166
.062 Socket Contact Chromel®	SVC16CH	11817
.062 Socket Contact Alumel®	SVC16AL	11818
15 Pairs Air Side Plug	ASP30	10011
Removal Tool	PT16	10138
Crimp Tool (AWG #23 to #13)	CT2313	10052

Various types of cables are available in both vacuum and air side.

For more details, see Section 6.3



Features

BURNDY K type (Chromel® / Alumel®)

The BURNDY K type is a thermocouple (Chromel® / Alumel®) for temperature measurement compatible with Bayonet Lock type plugs. The BURNDY K type is offered from 2 pairs to 24 pairs. Because the BURNDY series is more compact than the MIL-C-5015 series, 24 pairs can be welded to NW / KF 40 and ConFlat® 2.75". A thermocouple with one pair, which is compatible with OMEGA® plugs, and the combination of a thermocouple and high voltage feedthrough are available. Select flange size and type from NW / KF, ConFlat®, ISO-K, ISO-F and ASA. Accessories are also available, including vacuum side insulating inserts (PEEK® and CERAMICS), Chromel® & Alumel® socket contacts, vacuum side wires (tip welded), ceramic beads for insulation, Kapton® tubes, air side plugs, air side cables, removal tools, and crimp tools. We also manufacture custom-made products with quick delivery. Select welding position, number of connectors, and size of custom-made flanges.

Materials

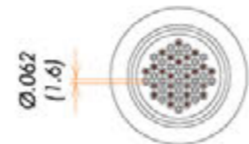
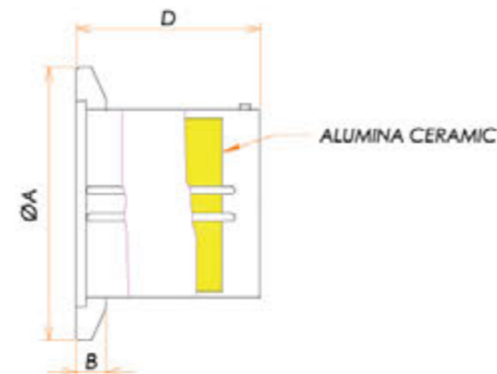
Flange	304 Stainless steel
Shell	Kovar®
Pins	Chromel® / Alumel®
Insulation	Alumina ceramic

Specifications

Type	Multipin BURNDY
BURNDY	24 Pairs
Voltage: V max. DC	Milli-Volts
Current: A Per Pins	Milli-Amps
Max. Current all pins loaded	Milli-Amps
Insulation: ohm min.	10 ⁹
Frequency: MHz	DC or AC 10 (10 MHz)max.
Leak rate: 1.3×Pa · m³/s	10 ⁻¹⁰
Temperature Range: °C*	-196 to 300

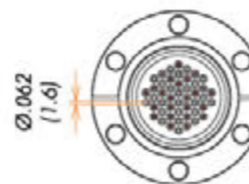
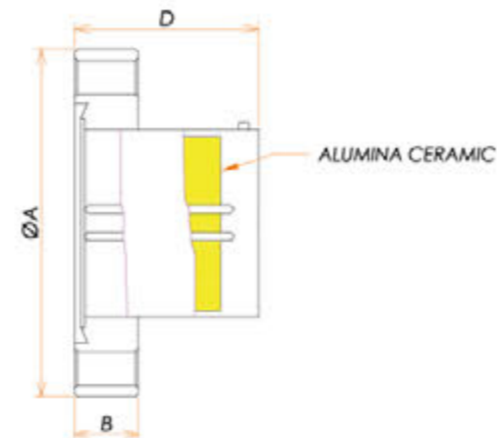
*Temperature range will be changed depends on the connection.

NW / KF Flange



● +Positive Chromel*
○ -Negative Alumel*

ConFlat® Flange



● +Positive Chromel*
○ -Negative Alumel*

Dimensions in inches (mm)

NW / KF Flange					REFERENCE	PART NUMBER
No. of Pairs	INSTALLATION	A	B	D		
24	NW / KF 40	2.16 (55)	.24 (6)	1.48 (37.5)	N40TCK24MB	12097

ConFlat® Flange					REFERENCE	PART NUMBER
No. of Pairs	INSTALLATION	A	B	D		
24	CF 2.75	2.75 (70)	.50 (12.7)	1.46 (37)	C70TCK24MB	12098

Accessories

Description	REFERENCE	PART NUMBER
24 Pairs Vacuum Side PEEK® Insulator (250 °C MAX.)	VSPi48	10168
24 Pairs Vacuum Side Alumina Insulator (300 °C MAX.)	VSAI48	10161
.062 Socket Contact Chromel®	SVC16CH	11817
.062 Socket Contact Alumel®	SVC16AL	11818
24 Pairs Air Side Plug	ASP48	10014
Removal Tool	PT16	10138
Crimp Tool (AWG #23 to #13)	CT2313	10052

Various types of cables are available in both vacuum and air side.

For more details, see Section 6.3



Features

Miniature K type (Chromel® / Alumel®)

The Miniature K type is a thermocouple (Chromel® / Alumel®) for temperature measurement compatible with OMEGA® plugs. Select flange size and type from NW / KF, ConFlat®, ISO-K, ISO-F and ASA. Accessories are also available, including vacuum side wires (tip welded), socket contacts, and air side cables. We also manufacture custom-made products with quick delivery. Select welding position, number of connectors, and size of custom-made flanges.

Materials

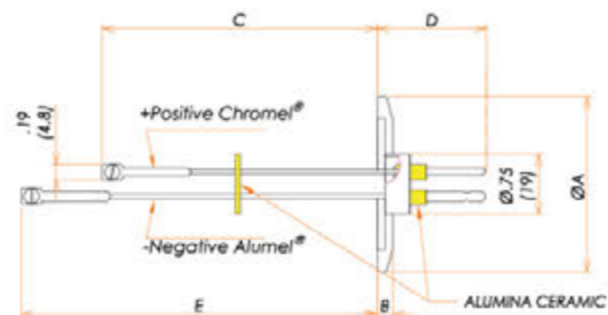
Flange	304 Stainless steel
Shell	304 Stainless steel
Pins	Chromel® / Alumel®
Insulation	Alumina ceramic

Specifications

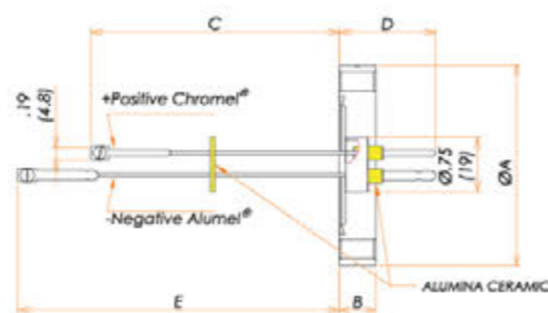
Type	Thermocouple K
Connector	TCK-1
Voltage: V max. DC	Milli-Volts
Current: A Per Pins	Milli-Amps
Insulation: ohm min.	-
Leak rate: 1.3×Pa · m ³ /s	10 ⁻¹⁰
Temperature Range: °C*	-196 to 300

*Temperature range will be changed depends on the connection.

NW / KF Flange



ConFlat® Flange



Dimensions in inches (mm)

NW / KF Flange							REFERENCE	PART NUMBER
No. of Pairs	INSTALLATION	A	B	C	D	E		
1	NW / KF 16	1.18 (30)	.24 (6)	3.04 (77)	1.66 (42)	4.06 (103)	N16TCK1	11822
1	NW / KF 25	1.57 (40)	.24 (6)	3.33 (84.5)	1.36 (34.5)	4.53 (115)	N25TCK1	11833
1	NW / KF 40	2.16 (55)	.24 (6)	3.33 (84.5)	1.36 (34.5)	4.53 (115)	N40TCK1	11836

ConFlat® Flange							REFERENCE	PART NUMBER
No. of Pairs	INSTALLATION	A	B	C	D	E		
1	CF 1.33	1.33 (34)	.30 (7.5)	2.91 (73.8)	1.78 (45.2)	3.93 (99.8)	C34TCK1	10034
1	CF 2.75	2.75 (70)	.50 (12.7)	3.35 (85)	1.34 (34)	4.38 (111)	C70TCK1	11834

Vacuum Side Bolts , Nut & Air Side Plug are included.

Accessories		
Description	REFERENCE	PART NUMBER
1 Pair OMEGA® Miniature Type Air Side Plug	ASP-TCK1	60187
Vacuum Side Screw and Nut	VSSN	12314

Various types of cables are available in both vacuum and air side.

For more details, see Section 6.3



C34TCK1/5KV55A [11823]

Features

Combination of Miniature K type (Chromel® / Alumel®) and High Voltage

The Miniature K type is a thermocouple (Chromel® / Alumel®) for temperature measurement compatible with OMEGA® plugs. The combination of thermocouple and high voltage feedthroughs are available. Select flange size and type from NW / KF, ConFlat®, ISO-K, ISO-F and ASA. Accessories are also available, including vacuum side wires (tip welded), socket contacts, and air side cables. We also manufacture custom-made products with quick delivery. Select welding position, number of connectors, and size of custom-made flanges.

Materials

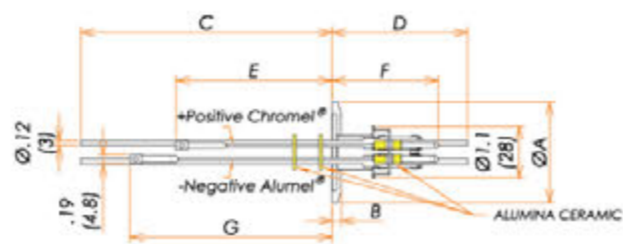
Flange	304 Stainless steel
Shell	304 Stainless steel
Pins	Chromel® / Alumel®
Conductors	Copper
Insulation	Alumina ceramic

Specifications

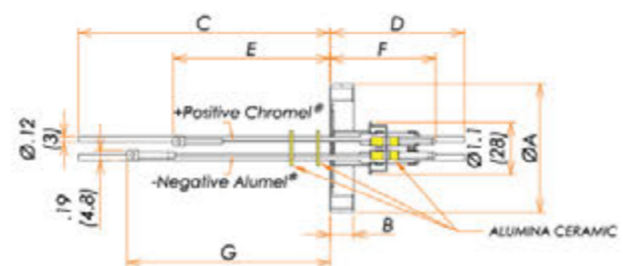
Type	Thermocouple K / Feedthrough
Connector	TCK-1 / 5 kV - 55 A
Voltage: V max. DC	Milli-Volts / 5,000
Current: A Per Pins	Milli-Amps / 55 A
Insulation: ohm min.	-
Leak rate: 1.3×Pa · m ³ /s	10 ⁻¹⁰
Temperature Range: °C*	-196 to 300

*Temperature range will be changed depends on the connection.

NW / KF Flange



ConFlat® Flange



Dimensions in inches (mm)

NW / KF Flange

No. of Pairs	No. of Pins	INSTALLATION	A	B	C	D	E	F	G	REFERENCE	PART NUMBER
1	2	NW / KF 16	1.18 (30)	.24 (6)	4.83 (122.5)	3.45 (87.5)	3.06 (77.6)	2.57 (65.3)	4.03 (102.3)	N16TCK1/5KV55A	11893
1	2	NW / KF 25	1.57 (40)	.24 (6)	5.12 (130)	3.15 (80)	3.35 (85.1)	2.28 (57.8)	4.33 (109.8)	N25TCK1/5KV55A	11913
1	2	NW / KF 40	2.16 (55)	.24 (6)	5.12 (130)	3.15 (80)	3.35 (85.1)	2.28 (57.8)	4.33 (109.8)	N40TCK1/5KV55A	11934

ConFlat® Flange

No. of Pairs	No. of Pins	INSTALLATION	A	B	C	D	E	F	G	REFERENCE	PART NUMBER
1	2	CF 1.33	1.33 (34)	.30 (7.5)	4.70 (119.3)	3.82 (97)	2.93 (74.4)	2.70 (68.5)	3.90 (99.1)	C34TCK1/5KV55A	11823
1	2	CF 2.75	2.75 (70)	.50 (12.7)	5.32 (135)	2.98 (75.5)	3.37 (85.6)	2.65 (67.3)	4.45 (113)	C70TCK1/5KV55A	11914

Accessories

Description	REFERENCE	PART NUMBER
1 Pair OMEGA® Miniature Type Air Side Plug	ASP-TCK1	60187
Vacuum Side Screw and Nut	VSSN	12314
.13 Socket Contact Vacuum Side	SVC30	10153

Various types of cables are available in both vacuum and air side.

For more details, see Section 6.3