CARTRIDGE HEATER DESIGN CHECKLIST PART ONE

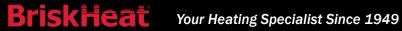
Company:	Phone Number:	
Contact Name:	Email or Fax:	
Address:		
Industry:		

Heater Dimensions		Electrical Specs	Sheath Material	End-Piece	
Diameter:			Voltage:	304SS (Std)	Ceramic End-Piece (Std)
1/8"	1/4"	5/16"	Dual Voltage*	316SS (Not available for Lava End-Piece	
3/8"	1/2"	17/32"	120/240	5/16" or 1" diameter)	
5/8"	11/16"	3/4"	240/480	Incoloy (Not available for	Mica End-Piece
1"	6 mm	6.5 mm	Wattage:	5/16" or 1" diameter) _	
8 mm	10 mm	12 mm	Phase:		
12.5 mm	13 mm	14 mm	Single Phase (Std)		
16 mm	17 mm	19 mm	3 Phase		
20 mm	25 mm		Additional Options:		
Overall Length	n:		Dual Zone		
Heated Lengt	h:				

Lead Termination	Lead Protection	Lead Protection Options	
Lead Length:	None	Ground Wire:	Mechanical Stop
(10" Std)	SS Braid	No	No (Std)
Swaged-In Length	SS Conduit	Yes	Tab Stop
Crimped-On Leads	W/Copper Elbow	Distributed Wattage	Locating Ring
Straight Pins	W/Copper Coupler	No	Weld Stop
Lead Wire Insulation	Sleeving	Yes	Insert. Length:
Duraflex (550°C) (Std)	Over Both Leads	Specify Wattage Distribution:	Trim to Length (+/- 1/2")
Teflon (250°C)	Over Each Lead		No (Std)
Silicone (150°C)	Spring Guard		Yes
Lead Configuration	Strain Relief Clip	Potting:	Approvals:
Straight (Std)	Ceramic Beads		UL (cRUus)
Right Angle	Bead Length:	None (Std)	CE
	Lead Terminals	Cement Potting	
	None (Std)	Epoxy Potting	
	Insulated Terminals	RTV Potting	Some restrictions may apply.
	Uninsulated Terminals	Epoxy over RTV Potting	

^{*}Dual voltage available on heaters with minimum dimensions of 0.375 in (10 mm) diameter and 6 in (152 mm) long

Rev. Date: 10/12/23 Document: SA-05-0041U



CARTRIDGE HEATER DESIGN CHECKLIST PART TWO

Internal Thermocouples	Fittings & Flanges (must provide insert length)
No (Std) Yes Grounded Ungrounded Thermocouple Type Type J Type K Location of Thermocouple Tip Center on Sheath Inside Core	None (Std) Insertion Length: Brass - Single NPT Brass - Double-Ended NPT 304SS Single NPT 304SS Double-Ended NPT 316SS Single-Ended NPT 316SS Double-Ended NPT Custom Fitting Specify Dimensions:	304SS Round Flange 1.0" Diameter 1.5" Diameter 2.0" Diameter Custom Flange Specify Dimensions:
T/C Wire Termination Bare Wire Mini-Plug Std Plug		

Calculate minimum unheated lengths based on Overall Heated Lengths

Unheated Lengths (min) based on diameter (with standard swaged leads)								
Heater Length 1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1"							1"	
Under 3"	0.20	0.20	0.25	0.30	0.39	0.39	0.61	
Over 3"	0.81	0.79	0.84	0.84	1.01	1.00	1.27	

Unheated Lengths (min) based on diameter (with crimped lead option)								
Heater Length 1/4" 5/16" 3/8" 1/2" 5/8" 3/4" 1"								
Under 3"	0.20	0.20	0.25	0.29	0.54	0.54	0.74	
Over 3"	Over 3" 0.20 0.25 0.29 0.54 0.54 0.81							

Unheated Lengths (min) based on diameter (with standard right angle lead option)								
Heater Length	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"	
Under 3"	0.20	0.20	0.25	0.29	0.39	0.39	0.24	
Over 3"	0.81	0.79	0.84	0.84	1.01	1.00	0.31	
Extension Length	0.25	0.25	0.31	0.37	0.37	0.37	0.75	

Example: A 3/8" diameter standard heater with swaged leads has an overall length of 4". The minimum unheated length is equal to 0.84."

If this same heater requires a right angle lead option, the minimum unheated length is equal to 0.84 + 0.31 or 1.15". The maximum heated length in this example is 4.0" - 1.15" = 2.85".

Unheated lengths may be different when stainless steel braid or flexible conduit are used for lead protection.