Construction Features

INDEECO explosion-proof pipe thread mounted immersion heaters are CSA approved, File LR11895-74, for use in hazardous areas classified as Class I, Division 1, Groups B, C and D; and Class II, Division 1, Groups E, F and G.

These heaters are available in 2" NPT and 2-1/2" NPT construction. The fittings and element sheath(s) are 304 stainless steel and suitable for NEMA 3 and corrosive environments. A limited offering of 1-1/4" NPT heaters are available subject to restrictions on element count, well size and thermostat range. Consult the factory for additional information.

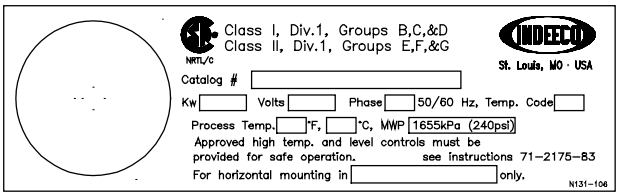
The end user is responsible for installation. The installation must include a high temperature limit and, if a tank application, a low liquid level control. The INDEECO thermostat, if specified, is for process control of the application.

For details on particular hazardous environments having potential for explosion, refer to Articles 500–516 of the National Electrical Code and/or Section 18 of the Canadian Electrical Code, Part 1.

These heaters are designed to be permanently mounted in a horizontal position above the anticipated sludge level. These heaters are approved for operation in a maximum ambient temperature of 40° C, 104° F.

Selection criteria include determining KW requirements and sheath watt density with an additional calculation of the temperature rating (T rating) **as shown on the facing page**. INDEECO must know the fluid heated, which will appear on the nameplate, illustrated below.

Construction features include .475" diameter compacted tubular element(s), repressed U-bends, nested third element with spacer for structural strength and either 0°–100° F or 60°–250° F process thermostat.



Temperature Code Calculations

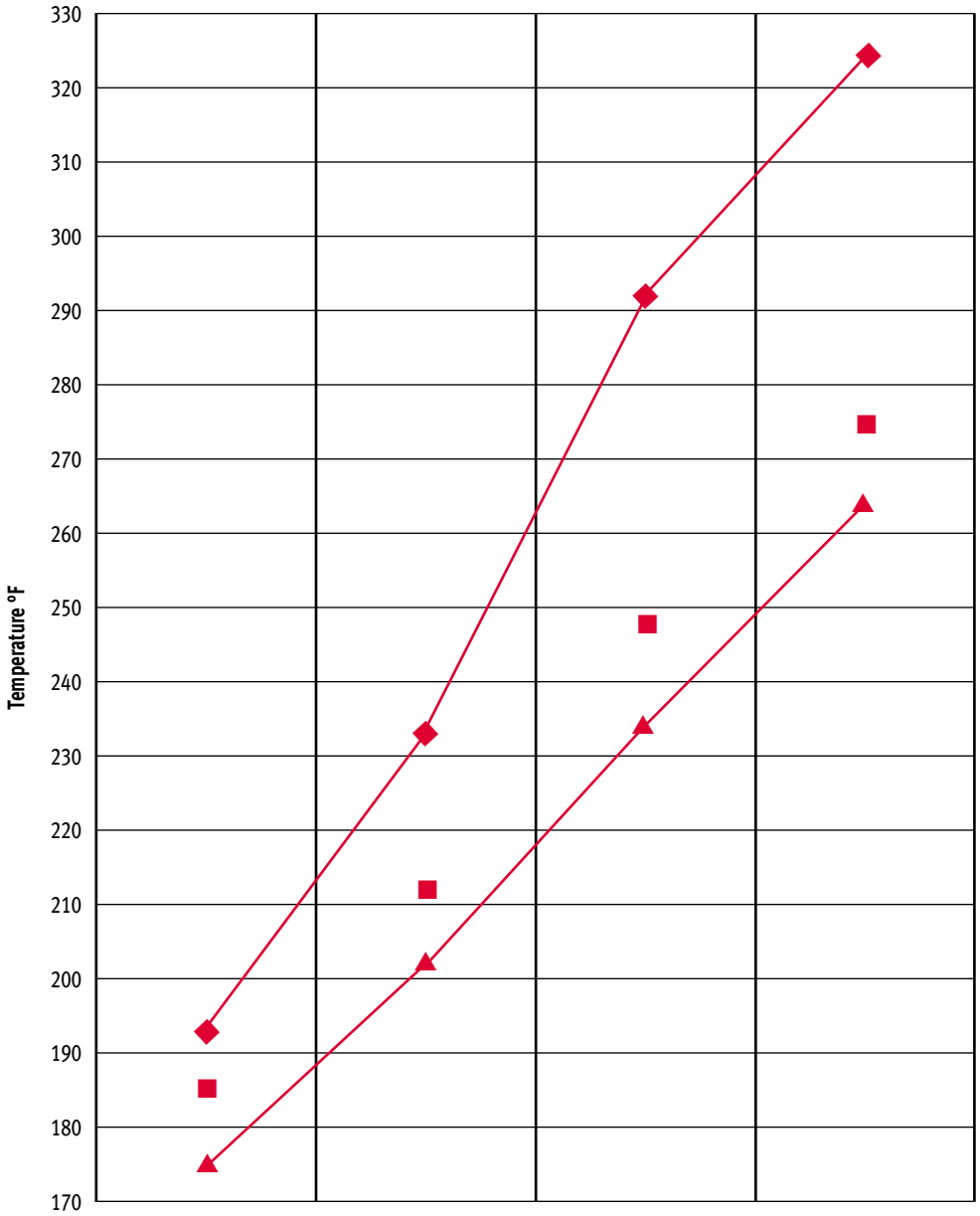
This figure shows the relationship of the process temperature to the temperature identification code number temperature and the heater hot spot temperature for typical installations. Each installation should be checked and tested to determine actual hot spot temperatures.

1. Find the maximum process temperature on the "Y" axis, such as 250° F.

2. Make a line straight across until it crosses the maximum process temperature line (the top line), then make a line straight down from this point to the table below the graph.

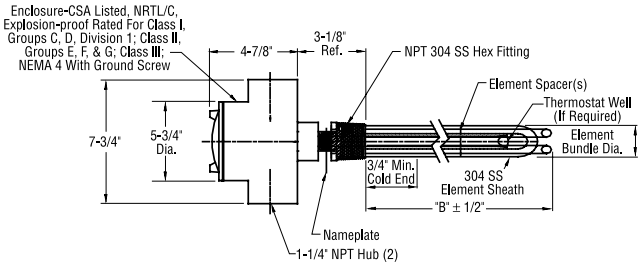
3. For a 250° F process temperature, this line falls between Temperature Identification Numbers T5 and T4A. Since it is above T5, T4A is the lowest identification number you could use for this process.

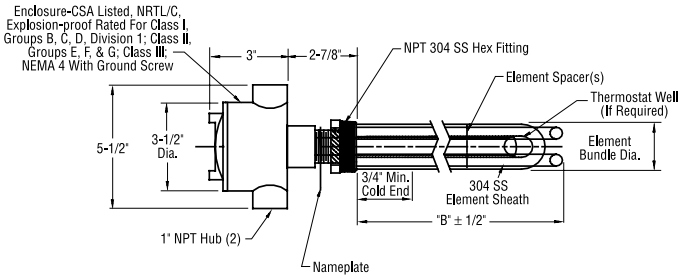
4. Where this line crosses the heater hot spot temperature line (the bottom line), draw a straight line back to the "Y" axis to estimate the heater hot spot temperature. For this 250° F process example, it would be about 210° F.



Temperature Identification Number	T6	T5	T4A	T4
Maximum Process Temp., °F	193	233	292	324
Maximum Code Temp., °F	185	212	248	275
Heater Hot Spot Temp., °F	175	202	234	264

Water Heaters





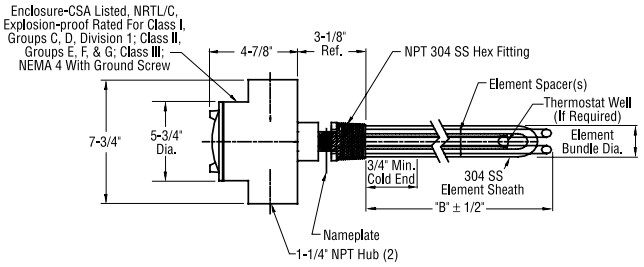
304 SS Sheath, 304 SS Fitting

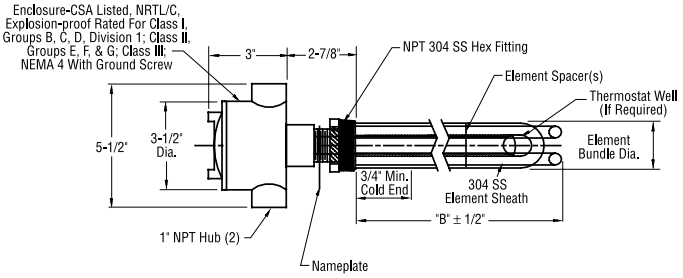
50 W/Sq. In.

Number of Elements	KW	Without Thermostat								With Built-in Thermostat							
		B Dimensions (Inches)	Catalog Number	Availability													
				1 Phase				3 Phase			B Dimensions (Inches)	1 Phase				3 Phase		
				120V	208V	240V	480V	208V	240V	480V		120V	208V	240V	480V	208V	240V	480V
1	1	11-1/2	713F2563	•	•	•					11-1/2	•	•	•				
	1.5	14-3/4	713F2663	•	•	•	•				14-3/4	•	•	•	•			
	2	18-1/4	713F2763	•	•	•	•				18-1/4	•	•	•	•			
	2.5	21-1/2	713F2863	•	•	•	•				21-1/2	•	•	•	•			
	3	24-3/4	713F2963	•	•	•	•				24-3/4	•	•	•	•			
	4	31-1/2	713F3063	•	•	•	•				31-1/2	•	•	•	•			
	5	38-1/4	713F3163		•	•	•				38-1/4		•	•	•			
	6	45	713F3263		•	•	•				45		•	•	•			
2	2	11-1/2	713F3363	•	•	•	•				11-1/2	•	•	•	•			
	2.5	13	713F3463	•	•	•	•				13	•	•	•	•			
	3	14-3/4	713F3563	•	•	•	•				14-3/4	•	•	•	•			
	3.5	16-1/2	713F3663	•	•	•	•				16-1/2	•	•	•	•			
	4	18-1/4	713F3763	•	•	•	•				18-1/4	•	•	•	•			
	5	21-1/2	713F3863		•	•	•				21-1/2		•	•	•			
	6	24-3/4	713F3963		•	•	•				24-3/4		•	•	•			
	8	31-1/2	713F4063				•				31-1/2		•	•	•			
	10	38-1/4	713F4163				•				38-1/4		•	•	•			
	12	45	713F4263				•				45				•			
3	3	11-1/2	713F4363	•	•	•	•	•	•	•	11-1/2	•	•	•		•	•	
	3.75	13	713F4463	•	•	•		•	•	•	13	•	•	•		•	•	•
	4.5	14-3/4	713F4563	•	•	•	•	•	•	•	14-3/4	•	•	•	•	•	•	•
	5.25	16-1/2	713F4663		•	•	•	•	•	•	16-1/2		•	•	•	•	•	•
	6	18-1/4	713F4763		•	•	•	•	•	•	18-1/4		•	•	•	•	•	•
	7.5	21-1/2	713F4863		•	•	•	•	•	•	21-1/2		•	•	•	•	•	•
	9	24-3/4	713F4963			•	•	•	•	•	24-3/4			•	•	•	•	•
	12	31-1/2	713F5063				•	•	•	•	31-1/2				•	•	•	•
	15	38-1/4	713F5163					•	•	•	38-1/4						•	•
	18	45	713F5263					•	•	•	45							•

Please specify volts, phase and thermostat range if needed. Use the table on page 33 to specify the T rating (temperature code).

Oil Heaters





304 SS Sheath, 304 SS Fitting

20 W/Sq. In.

Number Of Elements	KW	Without Thermostat								With Built-In Thermostat							
		B Dimensions (Inches)	Catalog Number	Availability						B Dimensions (Inches)	Availability						
				1 Phase				3 Phase			1 Phase				3 Phase		
				120V	208V	240V	480V	208V	240V	480V	120V	208V	240V	480V	208V	240V	480V
1	1	21-1/2	713F0063	•	•	•	•				21-1/2	•	•	•	•			
	1.5	30	713F0163	•	•	•	•				30	•	•	•	•			
	2	38-1/4	713F0263	•	•	•	•				38-1/4	•	•	•	•			
	2.5	46-3/4	713F0363	•	•	•	•				46-3/4	•	•	•	•			
	3	55	713F0463	•	•	•	•				55	•	•	•	•			
2	1	13	713F0563	•	•	•	•				13	•	•	•	•			
	1.5	17-1/4	713F0663	•	•	•	•				17-1/4	•	•	•	•			
	1.75	19-1/4	713F0763	•	•	•	•				19-1/4	•	•		•			
	2	21-1/2	713F0863	•	•	•	•				21-1/2	•	•	•	•			
	2.25	23-1/2	713F0963	•	•	•	•				23-1/2	•	•	•	•			
	2.5	25-3/4	713F1063	•	•	•	•				25-3/4	•	•	•	•			
	3	30	713F1163	•	•	•	•				30	•	•	•	•			
	4	38-1/4	713F1263	•	•	•	•				38-1/4	•	•	•	•			
	5	46-3/4	713F1363		•	•	•				46-3/4		•	•	•			
	6	55	713F1463		•	•	•				55		•	•	•			
3	1.5	12-3/4	713F1563	•	•	•		•	•		12-3/4	•	•	•	•	•	•	
	2.25	17-1/4	713F1663	•	•	•	•	•	•	•	17-1/4	•	•	•	•	•	•	•
	3	21-1/2	713F1763	•	•	•	•	•	•	•	21-1/2	•	•		•	•	•	•
	3.75	25-3/4	713F1863	•	•	•	•	•	•	•	25-3/4	•	•	•	•	•	•	•
	4.5	30	713F1963	•	•	•	•	•	•	•	30	•	•	•	•	•	•	•
	6	38-1/4	713F2063		•	•	•	•	•	•	38-1/4		•	•	•	•	•	•
	7.5	46-3/4	713F2163		•	•	•	•	•	•	46-3/4		•	•	•	•	•	•
	9	55	713F2263			•	•	•	•	•	55			•	•	•	•	•
	10	60-1/2	713F2363				•	•	•	•	60-1/2				•	•	•	•
	12	71-1/2	713F2463				•	•	•	•	71-1/2				•	•	•	•

Please specify volts, phase and thermostat range if needed. Use the table on page 33 to specify the T rating (temperature code).