

Over-the-Side Heaters

Construction Features

INDEECO Over-the-Side heaters are designed to provide the maximum in application flexibility and to minimize installation cost. They are ideal for jobs where easy installation and quick replacement or cleaning must be accomplished without emptying the tank.



Sludge Leg Spacers - To prevent burnouts from spot overheating and to keep elements out of sludge that normally collects in the bottom of the tank. Standard legs are 1-1/2" high; lengths up to 4" are available at no extra charge.

Reinforced Risers - To strengthen the joint between the riser and element junction box. Gussets are welded or silver soldered to the box and riser to provide this reinforcement.

Extension Arm - To place outlet box 6" away from riser and process tank, preventing damage to electrical connections due to evaporation. Longer arms are available at a nominal additional charge.

High Temperature Lead Wire - on all heaters with process temperatures above 100° F virtually eliminates failure due to overheating in the critical zone between the element junction box and the outlet box. Nickel-clad copper conductors are insulated with Teflon-glass braid to give the wire a 250° C rating.

Liquidproof Outlet Box - Protects electrical connections from wash downs, splashing and dripping. Standard on all heaters.

Large Diameter Elements - Provide extra electrical insulation for superior dielectric strength. Because elements are .475" O.D., they are suitable for line voltages up to 600 volts. In addition, element insulation is compacted by means of high pressure rollers to insure uniform heat transfer from coil to sheath and all bends are repressed to insure insulation integrity in this critical area.

Joints - Heaters have welded joints, pressure tested before assembly.

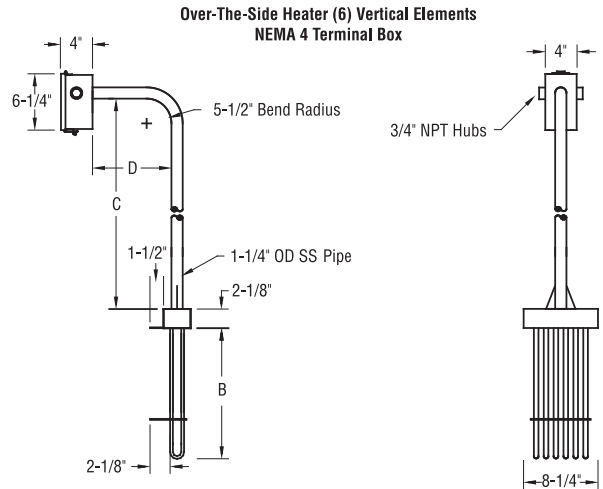
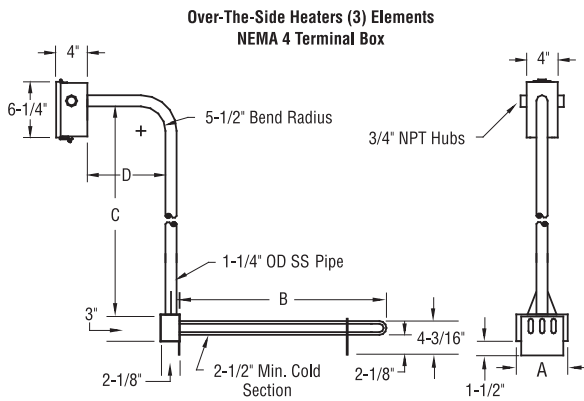
Circuiting - One electrical circuit for single-stage operation is furnished as standard unless two or three are specified in the listing tables. If staged control of the heating process is required, multiple heaters are normally used. However, additional circuits are available if required.

Operating Temperatures - Standard heaters are designed for a maximum operating temperature of 250° F. Contact factory for higher temperature applications.

CSA approvals are available on most Over-the-Side heaters.

Over-the-Side Heaters

Water Heaters



304 SS Sheath, 304 SS Fitting

50 W/Sq. In.

A Dim. (Inches)	Number of Elements	KW	NEMA 4 Terminal Box									
			B Dim. (Inches)	Catalog Number	Availability							
					1 Phase		3 Phase					
120V	208V	240V	480V	208V	240V	480V						
3-1/4	1	1.5	13-1/2	741N015	•	•	•	•				
		2	16-3/4	741N025	•	•	•	•				
		2.5	20	741N035	•	•	•	•				
		3	23-1/2	741N045	•	•	•	•				
		4	30-1/4	741N055	•	•	•	•				
		5	36-3/4	741N065		•	•	•				
		6	43-1/2	741N075		•	•	•				
		8	57	741N085		•	•	•				
		10	70-1/4	741N095				•				
		4-3/4	2	2	10	742N105	•	•	•	•		
3	13-1/2			742N115	•	•	•	•				
4	16-3/4			742N125	•	•	•	•				
5	20			742N135	•	•	•	•				
6	23-1/2			742N145	•	•	•	•				
8	30-1/4			742N155		•	•	•				
10	36-3/4			742N165		•	•	•				
12	43-1/2			742N175				•				
5-3/4	3	3	10	743N185	•	•	•	•	•	•		
		4.5	13-1/2	743N195	•	•	•	•	•	•		
		6	16-3/4	743N205	•	•	•	•	•	•		
		7.5	20	743N215		•	•	•	•	•		
		9	23-1/2	743N225				•	•	•		
		12	30-1/4	743N235				•	•	•		
		15	36-3/4	743N245				•	•	•		
		18	43-1/2	743N265				•	•	•		
		24	57	743N275							•	
		30	70-1/4	743N285							•	

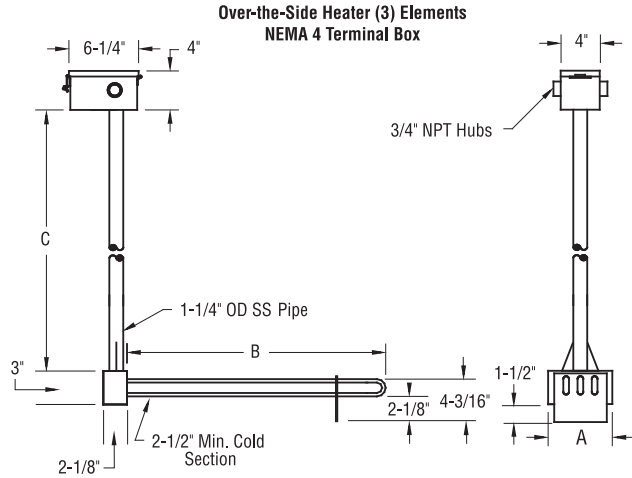
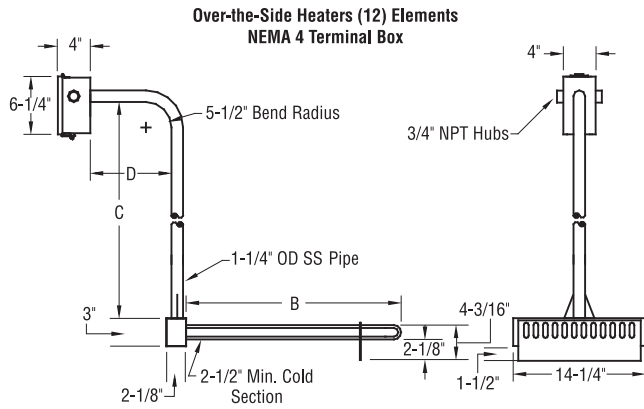
A Dim. (Inches)	Number of Elements	KW	NEMA 4 Terminal Box									
			B Dim. (Inches)	Catalog Number	Availability							
					1 Phase		3 Phase					
120V	208V	240V	480V	208V	240V	480V						
8-1/4	6	9	13-1/2	744N235	• ²	•	•	•	•	•	•	
		12	16-3/4	744N245	• ³	• ²	•	•	•	•	•	
		15	20	744N255	• ³	• ²	• ²	•	•	•	•	
		18	23-1/2	744N265		• ²	• ²	•	•	•	•	
		24	30-1/4	744N275		• ³	• ³	•	• ²	• ²	•	
		30	36-3/4	744N285			• ³	• ²	• ²	• ²	•	
		36	43-1/2	744N295				• ²		• ²	•	
		48	57	744N305				• ³			• ²	
		60	70-1/4	744N315					• ³		• ²	
		11-1/4	9	18	16-3/4	745N325		• ³	• ³	•	•	•
27	23-1/2			745N335		• ³	• ³	• ³	• ³	• ³	•	
36	30-1/4			745N345			• ³	• ³	• ³	• ³	•	
45	36-3/4			745N355				• ³		• ³	• ³	
54	43-1/2			745N365					• ³		• ³	
72	57			745N375							• ³	
90	70-1/4			745N385								
14-1/4	12			24	16-3/4	746N395		• ³	• ³	•	• ²	• ²
		30	20	746N405			• ³	• ²	• ²	• ²	•	
		36	23-1/2	746N415				• ²		• ²	•	
		48	30-1/4	746N425					• ³		• ²	
		60	36-3/4	746N435						• ³	• ²	
		72	43-1/2	746N445						• ³	• ²	

•²= Superscript indicates number of circuits.

Please specify volts, phase, circuits, terminal box rating and, if needed, thermostat range from options listed on page 26.

Over-the-Side Heaters

Oil Heaters



Steel Sheath, Steel Fitting

20 W/Sq. In.

A Dim. (Inches)	Number of Elements	KW	NEMA 4 Terminal Box				Availability						
			B Dim. (Inches)	Catalog Number	1 Phase				3 Phase				
					120V	208V	240V	480V	208V	240V	480V		
3-1/4	1	.5	11-3/4	741N013	•	•	•						
		.75	16	741N023	•	•	•	•					
		1	20	741N033	•	•	•	•					
		1.25	24-1/4	741N043	•	•	•	•					
		1.5	28-1/2	741N053	•	•	•	•					
		2	36-3/4	741N063	•	•	•	•					
		2.5	45-1/4	741N073	•	•	•	•					
		3	53-3/4	741N083	•	•	•	•					
4-3/4	2	4	70-1/2	741N093									
		1.5	16	742N103	•	•	•	•					
		2	20	742N113	•	•	•	•					
		2.5	24-1/4	742N123	•	•	•	•					
		3	28-1/2	742N133	•	•	•	•					
		4	36-3/4	742N143	•	•	•	•					
		5	45-1/4	742N153	•	•	•	•					
		6	53-3/4	742N163	•	•	•	•					
5-3/4	3	8	70-1/2	742N173									
		1.5	11-3/4	743N183	•	•	•	•	•	•	•	•	•
		3	20	743N193	•	•	•	•	•	•	•	•	•
		4.5	28-1/2	743N203	•	•	•	•	•	•	•	•	•
		6	36-3/4	743N213	•	•	•	•	•	•	•	•	•
		7.5	45-1/4	743N223	• ¹	•	•	•	•	•	•	•	•
		9	53-3/4	743N233	• ¹	•	•	•	•	•	•	•	•
		12	70-1/2	743N243									

A Dim. (Inches)	Number of Elements	KW	NEMA 4 Terminal Box				Availability					
			B Dim. (Inches)	Catalog Number	1 Phase				3 Phase			
					120V	208V	240V	480V	208V	240V	480V	
8-1/4	6	6	20	744N253	•	•	•	•	•	•	•	•
		7.5	24-1/4	744N263	• ²	•	•	•	•	•	•	•
		9	28-1/2	744N273	• ²	•	•	•	•	•	•	•
		12	36-3/4	744N283	• ³	• ²	•	•	•	•	•	•
		15	45-1/4	744N293	• ³	• ²	•	•	•	•	•	•
		18	53-3/4	744N303		• ²	•	•	•	•	•	•
		24	70-1/2	744N313		• ³	• ³	•	•	•	•	•
		9	20	745N323	• ³	• ³	• ³	•	•	•	•	•
11-1/4	9	13.5	28-1/2	745N333	• ³	• ³	• ³	•	•	•	•	•
		18	36-3/4	745N343		• ³	• ³	•	•	•	•	•
		22.5	45-1/4	745N353		• ³	• ³	•	• ³	• ³	•	•
		27	53-3/4	745N363		• ³	• ³	• ³	•	• ³	• ³	•
		36	70-1/2	745N373					• ³	• ³	• ³	•
14-1/4	12	12	20	746N383	• ³	• ²	•	•	•	•	•	•
		15	24-1/4	746N393	• ³	• ²	• ²	•	•	•	•	•
		18	28-1/2	746N403		• ²	• ²	•	•	•	•	•
		24	36-3/4	746N413		• ³	• ³	•	• ²	• ²	•	•
		30	45-1/4	746N423					• ³	• ²	• ²	•
		36	53-3/4	746N433						• ²	• ²	•
		48	70-1/2	746N443					• ³		• ²	

•²= Superscript indicates number of circuits.

Please specify volts, phase, circuits, terminal box rating and, if needed, thermostat range from options listed on page 26.

Over-the-Side Heaters

Heater Options

A wide range of custom units have been designed. Please contact the factory for more information on any of the following options.

Special Sheath Materials - 316 stainless steel, Incoloy 800, Monel 400 and Inconel 600 are available.

Built-In Thermostat - Built-in automatic temperature control over ranges of either 0-100° F or 60-250° F (please specify range on order). The thermostat comes complete with integral ON/OFF switch, pilot light and internal adjusting knob. It is a two-pole device capable of carrying the following KW loads:

Voltage	Capacity in KW	
	Single Phase	Three Phase
120	3.6	—
208	6.2	10.8
240	7.2	12.4
277	8.3	—
480	4.8	—

Above these ratings, a single-pole, pilot duty thermostat is furnished for use with a magnetic contractor.

CSA Approval - Most Over-the-Side heaters have been approved by the Canadian Standards Association (CSA) under File No. LR11895-64. Ratings available up to 600 volts.

Special Sludge Legs - For applications where sludge or sediment at the bottom of the tank may be more than 1-1/2" deep.

Special Riser Height - For heaters installed in tanks that are more than 30" deep. Risers above 96" should use a split coupling to facilitate installation and shipping.

Vertical Mounting - For installations where a horizontal configuration would interfere with workflow through the tank or where servicing a horizontal heater is impractical.

To maintain proper watt density, the heated length should match element lengths and KW ratings shown in the listing tables for standard horizontal Over-the-Side heaters. Fluid level must be maintained above the junction box.



Additional Circuits - For multi-stage control of the heater, additional circuits beyond those shown in the listing tables can be furnished, consistent with the number of elements. Multiple heaters are frequently used for multi-stage control.

Passivated Sheath - For corrosion protection, stainless steel can be passivated with nitric acid to remove microscopic particles of iron that may be embedded during manufacture.

Special Ratings - Higher KW ratings, utilizing longer lengths or additional elements, are available, as are non-standard KW ratings and special watt densities required for certain fluids. 380, 400, 416 and 600 volt ratings are available for foreign installations. Standard voltages are recommended for U.S. installations as these voltages meet most actual job conditions.

Special Arm Length - To bring the outlet box more than 6" away from the side of the tank.

Special Materials - Type 316 stainless steel, Monel 400 and Inconel 600 are available for heating fluids corrosive to standard sheaths. Nickel plating is also available. Terminal box can be 304 stainless steel.

High Temperature Construction - Standard heaters are designed for 250° F operating maximum.

Curved Elements - To fit into a round tank. Elements can be curved to diameters of 16" and 20".

Longer Element Cold Ends - Standard cold ends are 2-1/2" for copper, stainless and steel; 5-1/2" for Incoloy.

Low Water Cut-off Mounting Brackets - Can be added for use with the INDEECO panel for cooling tower freeze protection.

Removable Terminal Box - INDEECO externally threads a one-inch schedule 40 pipe and mounts a cast NEMA 4 terminal box to the riser.