

# 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.

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

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

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

## 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.

| 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            | —           |

**Built-In Thermostat** - Built-in automatic temperature control over ranges of either 0–100° F, 40–120° 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:

**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.

Fluid level must be maintained above the element junction box.

**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".

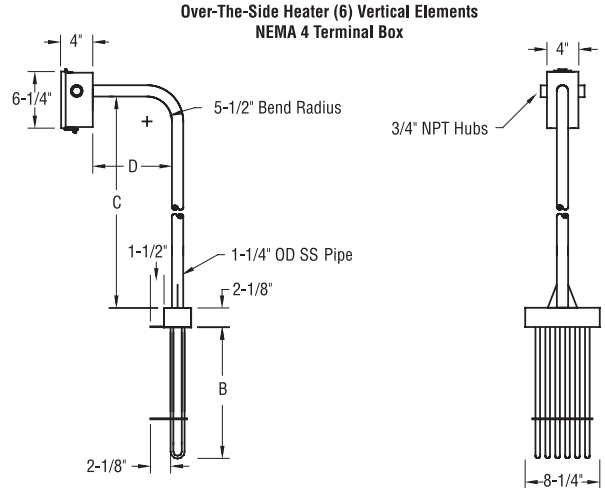
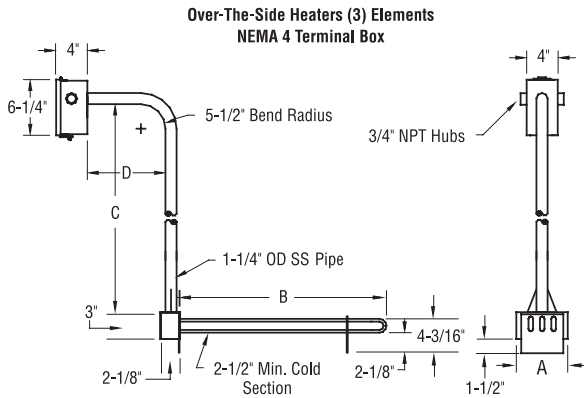
**Low Water Cut-off Mounting Brackets** - Can be added for use with the INDEECO panel for cooling tower freeze protection.

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



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## Water Heaters



### 304 SS Sheath, 304 SS Fitting

| 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        |              |         |         |   |   |   | • |  |

•<sup>2</sup>= Superscript indicates number of circuits.

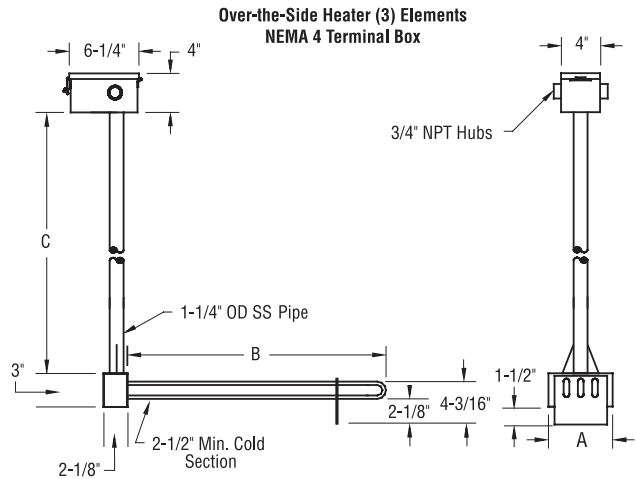
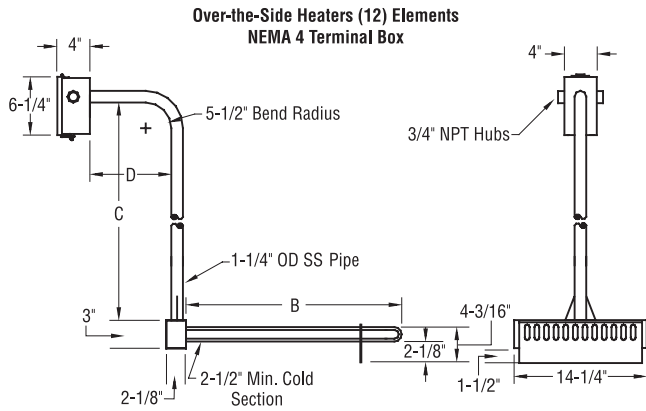
Please specify volts, phase, circuits, terminal box rating and, if needed, thermostat range from options listed on page 26.

### 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           |                |                |                |                |                |                |
| 8-1/4           | 6                  | 9      | 13-1/2              | 744N235        | • <sup>2</sup> | •              | •              | •              | •              | •              |                |                |
|                 |                    | 12     | 16-3/4              | 744N245        | • <sup>3</sup> | • <sup>2</sup> | •              | •              | •              | •              |                |                |
|                 |                    | 15     | 20                  | 744N255        | • <sup>3</sup> | • <sup>2</sup> | • <sup>2</sup> | •              | •              | •              |                |                |
|                 |                    | 18     | 23-1/2              | 744N265        |                | • <sup>2</sup> | • <sup>2</sup> | •              | •              | •              |                |                |
|                 |                    | 24     | 30-1/4              | 744N275        |                | • <sup>3</sup> | • <sup>3</sup> | •              | • <sup>2</sup> | • <sup>2</sup> | •              |                |
|                 |                    | 30     | 36-3/4              | 744N285        |                |                | • <sup>3</sup> | • <sup>2</sup> | • <sup>2</sup> | • <sup>2</sup> | •              |                |
|                 |                    | 36     | 43-1/2              | 744N295        |                |                |                | • <sup>2</sup> |                | • <sup>2</sup> |                |                |
|                 |                    | 48     | 57                  | 744N305        |                |                |                | • <sup>3</sup> |                |                | • <sup>2</sup> |                |
|                 |                    | 60     | 70-1/4              | 744N315        |                |                |                | • <sup>3</sup> |                |                | • <sup>2</sup> |                |
|                 |                    | 11-1/4 | 9                   | 18             | 16-3/4         | 745N325        |                | • <sup>3</sup> | • <sup>3</sup> | •              | •              | •              |
| 27              | 23-1/2             |        |                     | 745N335        |                | • <sup>3</sup> | • <sup>3</sup> | • <sup>3</sup> | • <sup>3</sup> | • <sup>3</sup> | • <sup>3</sup> | •              |
| 36              | 30-1/4             |        |                     | 745N345        |                |                | • <sup>3</sup> | • <sup>3</sup> | • <sup>3</sup> | • <sup>3</sup> | • <sup>3</sup> | •              |
| 45              | 36-3/4             |        |                     | 745N355        |                |                |                | • <sup>3</sup> | • <sup>3</sup> | • <sup>3</sup> | • <sup>3</sup> | •              |
| 54              | 43-1/2             |        |                     | 745N365        |                |                |                | • <sup>3</sup> |                |                | • <sup>3</sup> |                |
| 72              | 57                 |        |                     | 745N375        |                |                |                |                |                |                | • <sup>3</sup> |                |
| 90              | 70-1/4             |        |                     | 745N385        |                |                |                |                |                |                |                | • <sup>3</sup> |
| 14-1/4          | 12                 |        |                     | 24             | 16-3/4         | 746N395        |                | • <sup>3</sup> | • <sup>3</sup> | •              | • <sup>2</sup> | • <sup>2</sup> |
|                 |                    | 30     | 20                  | 746N405        |                |                | • <sup>3</sup> | • <sup>2</sup> | • <sup>2</sup> | • <sup>2</sup> | •              |                |
|                 |                    | 36     | 23-1/2              | 746N415        |                |                |                | • <sup>2</sup> |                | • <sup>2</sup> | •              |                |
|                 |                    | 48     | 30-1/4              | 746N425        |                |                |                | • <sup>3</sup> |                |                | • <sup>2</sup> |                |
|                 |                    | 60     | 36-3/4              | 746N435        |                |                |                | • <sup>3</sup> |                |                | • <sup>2</sup> |                |
|                 |                    | 72     | 43-1/2              | 746N445        |                |                |                | • <sup>3</sup> |                |                | • <sup>2</sup> |                |

# 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 |                |                |                |   |         |   |   |
|-----------------|--------------------|------|---------------------|----------------|----------------|----------------|---|---------|---|---|
|                 |                    |      | B Dim. (Inches)     | Catalog Number | Availability   |                |   |         |   |   |
|                 |                    |      |                     |                | 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        | •              | •              | • | •       |   |   |
| 5-3/4           | 3                  | 5    | 45-1/4              | 742N153        | •              | •              | • | •       |   |   |
|                 |                    | 6    | 53-3/4              | 742N163        | •              | •              | • | •       |   |   |
|                 |                    | 8    | 70-1/2              | 742N173        |                | •              | • | •       |   |   |
|                 |                    | 1.5  | 11-3/4              | 743N183        | •              | •              | • | •       | • | • |
|                 |                    | 3    | 20                  | 743N193        | •              | •              | • | •       | • | • |
|                 |                    | 4.5  | 28-1/2              | 743N203        | •              | •              | • | •       | • | • |
| 14-1/4          | 12                 | 6    | 36-3/4              | 743N213        | •              | •              | • | •       | • | • |
|                 |                    | 7.5  | 45-1/4              | 743N223        | •              | •              | • | •       | • | • |
|                 |                    | 9    | 53-3/4              | 743N233        | • <sup>3</sup> | •              | • | •       | • | • |
|                 |                    | 12   | 70-1/2              | 743N243        |                | • <sup>3</sup> | • | •       | • | • |

| 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                  | 6      | 20                  | 744N253        | •              | •              | •              | •              | •              | •              |
|                 |                    | 7.5    | 24-1/4              | 744N263        | • <sup>2</sup> | •              | •              | •              | •              | •              |
|                 |                    | 9      | 28-1/2              | 744N273        | • <sup>2</sup> | •              | •              | •              | •              | •              |
|                 |                    | 12     | 36-3/4              | 744N283        | • <sup>3</sup> | • <sup>2</sup> | •              | •              | •              | •              |
|                 |                    | 15     | 45-1/4              | 744N293        | • <sup>3</sup> | • <sup>2</sup> | • <sup>2</sup> | •              | •              | •              |
|                 |                    | 18     | 53-3/4              | 744N303        |                | • <sup>2</sup> | • <sup>2</sup> | •              | •              | •              |
|                 |                    | 24     | 70-1/2              | 744N313        |                | • <sup>3</sup> | • <sup>3</sup> | •              | • <sup>2</sup> | • <sup>2</sup> |
|                 |                    | 11-1/4 | 9                   | 9              | 20             | 745N323        | • <sup>3</sup> | •              | •              | •              |
| 13.5            | 28-1/2             |        |                     | 745N333        | • <sup>3</sup> | • <sup>3</sup> | • <sup>3</sup> | •              | •              | •              |
| 18              | 36-3/4             |        |                     | 745N343        |                | • <sup>3</sup> | • <sup>3</sup> | •              | •              | •              |
| 22.5            | 45-1/4             |        |                     | 745N353        |                | • <sup>3</sup> | • <sup>3</sup> | • <sup>3</sup> | • <sup>3</sup> | • <sup>3</sup> |
| 27              | 53-3/4             |        |                     | 745N363        |                | • <sup>3</sup> | • <sup>3</sup> | • <sup>3</sup> | • <sup>3</sup> | • <sup>3</sup> |
| 14-1/4          | 12                 | 36     | 70-1/2              | 745N373        |                |                | • <sup>3</sup> | • <sup>3</sup> | • <sup>3</sup> | •              |
|                 |                    | 12     | 20                  | 746N383        | • <sup>3</sup> | • <sup>2</sup> | •              | •              | •              | •              |
|                 |                    | 15     | 24-1/4              | 746N393        | • <sup>3</sup> | • <sup>2</sup> | • <sup>2</sup> | •              | •              | •              |
|                 |                    | 18     | 28-1/2              | 746N403        |                | • <sup>2</sup> | • <sup>2</sup> | •              | •              | •              |
|                 |                    | 24     | 36-3/4              | 746N413        |                | • <sup>3</sup> | • <sup>3</sup> | •              | • <sup>2</sup> | • <sup>2</sup> |
|                 |                    | 30     | 45-1/4              | 746N423        |                |                | • <sup>3</sup> | • <sup>2</sup> | • <sup>2</sup> | • <sup>2</sup> |
| 14-1/4          | 12                 | 36     | 53-3/4              | 746N433        |                |                | • <sup>2</sup> | • <sup>2</sup> | • <sup>2</sup> | •              |
|                 |                    | 48     | 70-1/2              | 746N443        |                |                |                | • <sup>3</sup> |                | • <sup>2</sup> |

•<sup>2</sup>= Superscript indicates number of circuits.

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