

# DUCT HEATERS

## Easily Adapted to Many Non-Pressurized, Air-Heating Systems



Constructed of sturdy 11 mm (0.430 in.) diameter WATROD heating elements mounted to a 6 mm (0.25 in.) thick steel flange, duct heaters are easily adapted to many non-pressurized, air-heating systems.

They are easily installed in applications requiring a wide range of temperature versus air flow combinations.

Watlow duct heaters offer advantages over open coil electric units and finned tubular:

- Resistance coil in Incoloy® sheath is protected from corrosive environments
- Open coil does not have fragile ceramic insulators
- Open coil is more robust and less likely to corrode
- Finned tubular can operate at high temperatures

### Performance Capabilities

- Watt densities to 6.2 W/cm<sup>2</sup> (40 W/in<sup>2</sup>)
- Recommended process temperatures from -7 to 650°C (-20 to 1200°F)
- Wattages to 2.2 megawatts
- Voltages to 600V~(ac)

Incoloy® is a registered trademark of the Inco family of companies.  
UL® is a registered trademark of Underwriters Laboratories, Inc.

### Features and Benefits

#### Long life Incoloy® sheath

- Resists corrosion/oxidation while protecting resistance coils against contamination

#### Field replaceable heating elements

- Permits easy service and reduces downtime

#### WATROD hairpins are recompacted

- Assures MgO density that eliminates hot spots

#### UL® and CSA component recognition; UL® and CSA file numbers are E52951 and 31388

- Designed for safety



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## Duct Heater Stock Options

### 20 W/in<sup>2</sup> (3.1 W/cm<sup>2</sup>)

| kW  | Dimension Reference No. | Number of Elements | Code No.          |            |                   |            |                   |            |                   |            | Est. Ship. |       |
|-----|-------------------------|--------------------|-------------------|------------|-------------------|------------|-------------------|------------|-------------------|------------|------------|-------|
|     |                         |                    | 240V~(ac) 1-Phase | # of Circ. | 240V~(ac) 3-Phase | # of Circ. | 480V~(ac) 1-Phase | # of Circ. | 480V~(ac) 3-Phase | # of Circ. | Weight lbs | (kg)  |
| 6   | 1                       | 6                  | <b>D6S10</b>      | 1          | <b>D6S3</b>       | 1          | <b>D6S11</b>      | 1          | <b>D6S5</b>       | 1          | 50         | (23)  |
| 12  | 2                       | 12                 | <b>D12S10</b>     | 1          | <b>D12S3</b>      | 1          | <b>D12S11</b>     | 1          | <b>D12S5</b>      | 1          | 55         | (25)  |
| 18  | 3                       | 18                 | <b>D18S10</b>     | 2          | <b>D18S3</b>      | 1          | <b>D18S11</b>     | 1          | <b>D18S5</b>      | 1          | 65         | (30)  |
| 24  | 4                       | 24                 | <b>D24S10</b>     | 2          | <b>D24S3</b>      | 2          | <b>D24S11</b>     | 1          | <b>D24S5</b>      | 1          | 95         | (43)  |
| 30  | 5                       | 30                 |                   |            | <b>D30S3</b>      | 2          | <b>D30S11</b>     | 2          | <b>D30S5</b>      | 1          | 120        | (55)  |
| 36  | 6                       | 36                 |                   |            | <b>D36S3</b>      | 2          | <b>D36S11</b>     | 2          | <b>D36S5</b>      | 1          | 135        | (62)  |
| 42  | 7                       | 42                 |                   |            | <b>D42S3</b>      | 2          | <b>D42S11</b>     | 2          | <b>D42S5</b>      | 2          | 155        | (71)  |
| 48  | 8                       | 48                 |                   |            | <b>D48S3</b>      | 4          | <b>D48S11</b>     | 2          | <b>D48S5</b>      | 2          | 195        | (89)  |
| 54  | 9                       | 54                 |                   |            | <b>D54S3</b>      | 3          | <b>D54S11</b>     | 3          | <b>D54S5</b>      | 2          | 205        | (93)  |
| 60  | 10                      | 60                 |                   |            | <b>D60S3</b>      | 4          | <b>D60S11</b>     | 4          | <b>D60S5</b>      | 2          | 235        | (107) |
| 75  | 11                      | 60                 |                   |            | <b>D75S3</b> ②    | 4          | <b>D75S11</b>     | 4          | <b>D75S5</b>      | 2          | 260        | (118) |
| 100 | 12                      | 60                 |                   |            |                   |            |                   |            | <b>D100S5</b> ②   | 4          | 290        | (132) |
| 125 | 13                      | 60                 |                   |            |                   |            |                   |            | <b>D125S5</b> ②   | 4          | 310        | (141) |

### 30 W/in<sup>2</sup> (4.7 W/cm<sup>2</sup>)

| kW  | Dimension Reference No. | Number of Elements | Code No.          |            |                   |            |                   |            |                   |            | Est. Ship. |       |
|-----|-------------------------|--------------------|-------------------|------------|-------------------|------------|-------------------|------------|-------------------|------------|------------|-------|
|     |                         |                    | 240V~(ac) 1-Phase | # of Circ. | 240V~(ac) 3-Phase | # of Circ. | 480V~(ac) 1-Phase | # of Circ. | 480V~(ac) 3-Phase | # of Circ. | Weight lbs | (kg)  |
| 9   | 1                       | 6                  | <b>D6SX10</b>     | 1          | <b>D6SX3</b>      | 1          | <b>D6SX11</b>     | 1          | <b>D6SX5</b>      | 1          | 50         | (23)  |
| 18  | 2                       | 12                 | <b>D12SX10</b>    | 2          | <b>D12SX3</b>     | 1          | <b>D12SX11</b>    | 1          | <b>D12SX5</b>     | 1          | 55         | (25)  |
| 27  | 3                       | 18                 | <b>D18SX10</b>    | 3          | <b>D18SX3</b>     | 2          | <b>D18SX11</b>    | 2          | <b>D18SX5</b>     | 1          | 65         | (30)  |
| 36  | 4                       | 24                 | <b>D24SX10</b>    | 4          | <b>D24SX3</b>     | 2          | <b>D24SX11</b>    | 2          | <b>D24SX5</b>     | 1          | 95         | (43)  |
| 45  | 5                       | 30                 |                   |            | <b>D30SX3</b>     | 5          | <b>D30SX11</b>    | 2          | <b>D30SX5</b>     | 2          | 120        | (55)  |
| 54  | 6                       | 36                 |                   |            | <b>D36SX3</b>     | 3          | <b>D36SX11</b>    | 3          | <b>D36SX5</b>     | 2          | 135        | (62)  |
| 63  | 7                       | 42                 |                   |            | <b>D42SX3</b>     | 7          | <b>D42SX11</b>    | 3          | <b>D42SX5</b>     | 2          | 155        | (71)  |
| 72  | 8                       | 48                 |                   |            | <b>D48SX3</b>     | 4          | <b>D48SX11</b>    | 4          | <b>D48SX5</b>     | 2          | 195        | (89)  |
| 81  | 9                       | 54                 |                   |            | <b>D54SX3</b>     | 6          | <b>D54SX11</b>    | 6          | <b>D54SX5</b>     | 3          | 205        | (93)  |
| 90  | 10                      | 60                 |                   |            | <b>D60SX3</b>     | 5          | <b>D60SX11</b>    | 4          | <b>D60SX5</b>     | 4          | 235        | (107) |
| 115 | 11                      | 60                 |                   |            | <b>D75SX3</b> ②   | 10         | <b>D75SX11</b>    | 5          | <b>D75SX5</b>     | 4          | 260        | (118) |
| 150 | 12                      | 60                 |                   |            |                   |            |                   |            | <b>D100SX5</b> ②  | 4          | 290        | (132) |
| 190 | 13                      | 60                 |                   |            |                   |            |                   |            | <b>D125SX5</b> ②  | 5          | 310        | (141) |

All duct heaters are Assembly Stock unless otherwise noted.

#### Availability

**Assembly Stock:** Three to five working days

**Standard:** 10 working days

■ Truck Shipment only

② Standard

## Options

### Sheath Material

Watlow duct heaters can be made with element sheath materials other than Incoloy®. Consult your Watlow representative for details and availability.

### Wattages/Voltages

To meet specific application needs, voltage and wattage combinations outside stock product parameters are available. For more information about this option, consult your Watlow representative.

### Terminal Enclosures

In addition to the standard, general purpose (NEMA 1) terminal enclosure, Watlow offers the following terminal enclosures to meet specific application requirements:

- Moisture resistant (NEMA 4)
- Stainless steel corrosion resistant (NEMA 4X - consult factory)
- Explosion resistant (NEMA 7 - consult factory)
- Dust resistant (NEMA 12)

### Thermocouples

Type J or K thermocouples, inserted in the thermowell, accurately sense element sheath temperature for over-temperature conditions.

To sense process temperature, sensing element should be located down stream from the duct heater. This will eliminate incorrect sensing caused by radiant heat.

Thermocouples are supplied with 3050 mm (120 in.) leads (longer lead lengths available).

## Ordering Information

### How to Order

To order stock duct heaters, please specify:

- Watlow code number (from Watlow heater's catalog)
- Volts/watts
- Phase
- Options
- Quantity

If our stock units do not meet your application needs, Watlow can provide a made-to-order unit. For made-to-order units, please consult your local Watlow representative and provide the following information:

- Application (inlet and outlet air temperature, CFM/CMM, duct size and mounting orientation)
- Volts/watts
- Phase
- Number of circuits
- Watt density
- Number of heating elements
- Sheath material
- Element ('B' dimension) length
- Mounting flange material and mounting hole layout
- Insulation thickness and material
- Terminal enclosure type
- Options
- Quantity

### Availability

**Assembly Stock:** Three to five working days

**Modified Stock:** Five to seven working days

**Standard:** 10 working days

**Made-to-Order:** Five to seven weeks

<sup>①</sup> Stock or assembly stock units with catalog options.

### Replacement Elements Only

**Stock:** Same day shipment

**Standard:** 10 working days

**Made-to-Order:** Four weeks

Options, complexity and quantity may affect availability and lead-times. Consult factory.