

# Air Heaters

## Finned Heaters

### 375 Finned Strip Heaters

Watlow's 375 finned strip is constructed of highly-compacted MgO-based insulation, which conducts heat efficiently from the nickel chromium element wire to the sheath. Two-inch wide (51 mm) aluminized steel fins are attached in a way that maximizes surface contact so heat is transferred into the air faster. Lower sheath temperature and element life are all maximized by this finned construction.

### Performance Capabilities

- Aluminized steel sheath temperatures to 1100°F (595°C)
- Watt density up to 33 W/in<sup>2</sup> (5.1 W/cm<sup>2</sup>)
- UL® approved to 240VAC (File No. E52951)
- CSA approved to 600VAC (File No. LR7392)

### Features and Benefits

**Nickel chromium element wire is centered in the heater**

- Heats the strip uniformly

#### Aluminized steel sheath

- Operates at higher temperatures
- Resists corrosion better than iron-sheathed heaters

#### Optional 430 SS sheath

- Provides a solution for more corrosive environments

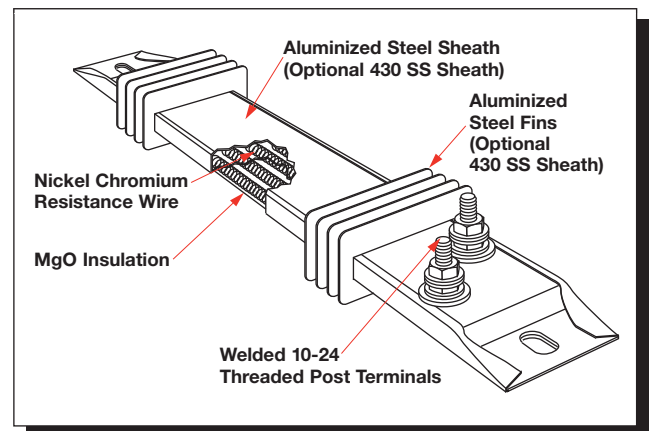
#### Welded post terminals

- Produces strong, trouble-free connections

**Available lengths from 5½ to 48 in. (140 to 1220 mm)**

### Typical Applications

- Enclosure heating
- Load bank resistors
- Shrink tunnels
- Duct heaters
- Space heaters
- Drying ovens
- Incubators
- Air heating
- Heat curing
- Ink drying
- Food warmers
- Moisture protection
- Dehumidifiers
- Stress relieving ovens



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#### Applications and Technical Data

#### Calculating Watt Density

Use the graph and formulas to make certain the maximum allowable watt density for the heater will not be exceeded in the application.

Open air watt density is calculated for total heated surface area.

#### Formulas

$$\text{Watt Density} = \frac{\text{Wattage}}{\text{Heated Area}}$$

Heated Area

$$\begin{aligned} \text{(Offset Terminals)} &= [\text{Overall Length (A)} - 4 \text{ in.}] \\ &\quad \times 3.75 \text{ in.} \end{aligned}$$

$$\begin{aligned} &= [\text{Overall Length (A)} - 102 \text{ mm}] \\ &\quad \times 95.3 \text{ mm} \end{aligned}$$

Heated Area

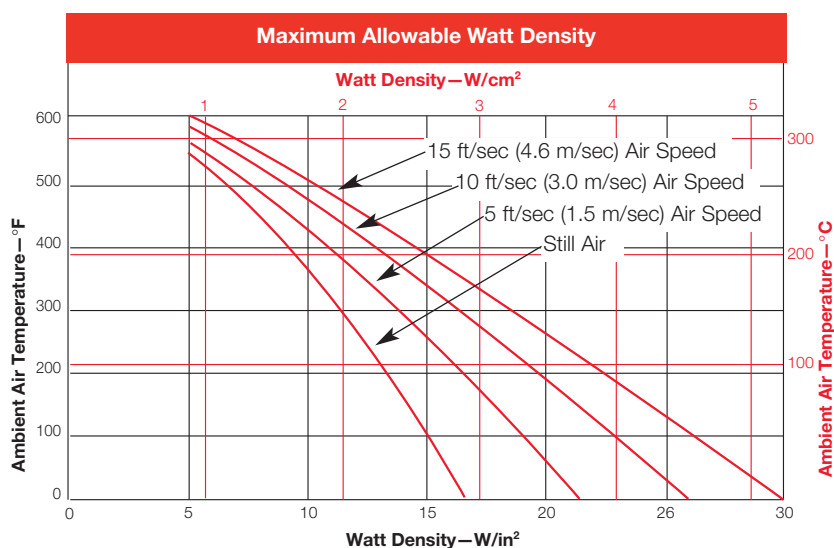
$$\begin{aligned} \text{(Parallel Terminals)} &= [\text{Overall Length (A)} - 3.12 \text{ in.}] \\ &\quad \times 3.75 \text{ in.} \end{aligned}$$

$$\begin{aligned} &= [\text{Overall Length (A)} - 79.3 \text{ mm}] \\ &\quad \times 95.3 \text{ mm} \end{aligned}$$

Heated Area

$$\begin{aligned} \text{(One-on-One Terminals)} &= [\text{Overall Length (A)} - 4.25 \text{ in.}] \\ &\quad \times 3.75 \text{ in.} \end{aligned}$$

$$\begin{aligned} &= [\text{Overall Length (A)} - 108 \text{ mm}] \\ &\quad \times 95.3 \text{ mm} \end{aligned}$$



# Air Heaters

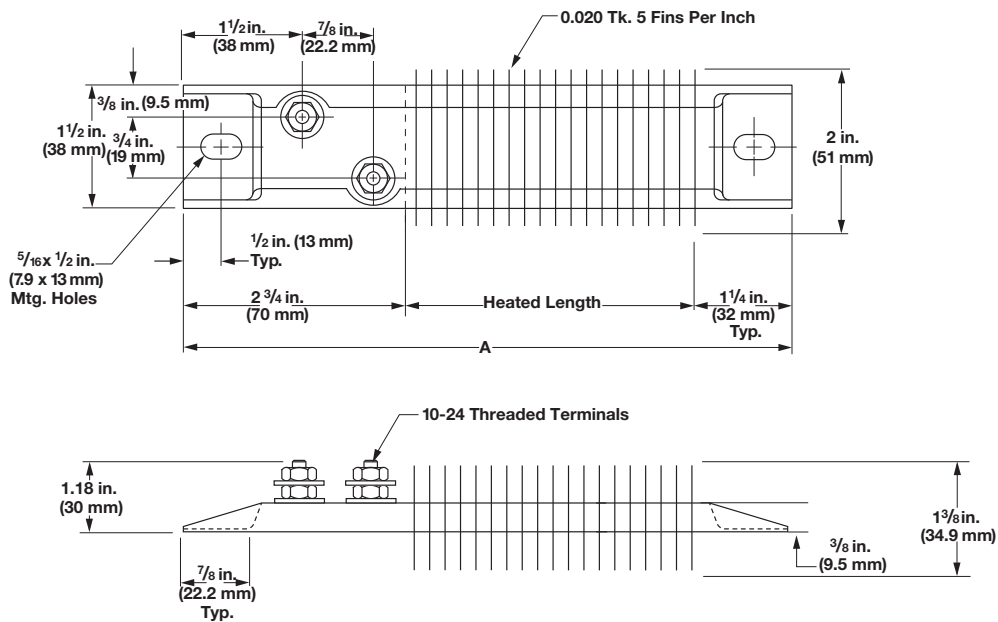
## Finned Heaters

### 375 Finned Strip Heaters

#### Termination Options

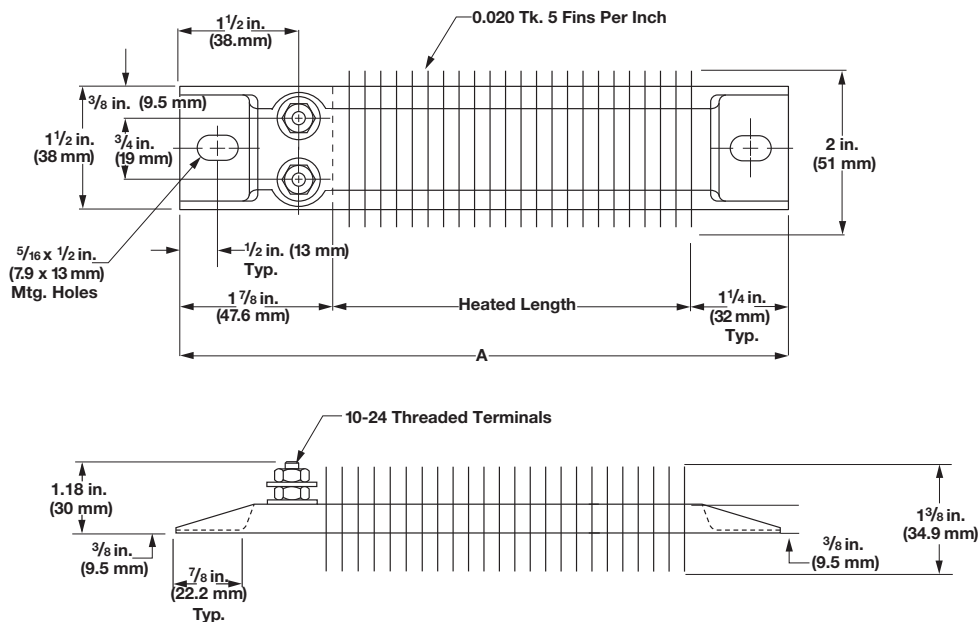
##### Offset Terminals

Two, 10-24 threaded post terminals are offset from each other on the same end.



##### Parallel Terminals

Two, 10-24 threaded post terminals are used; both terminals on one end.



# Air Heaters

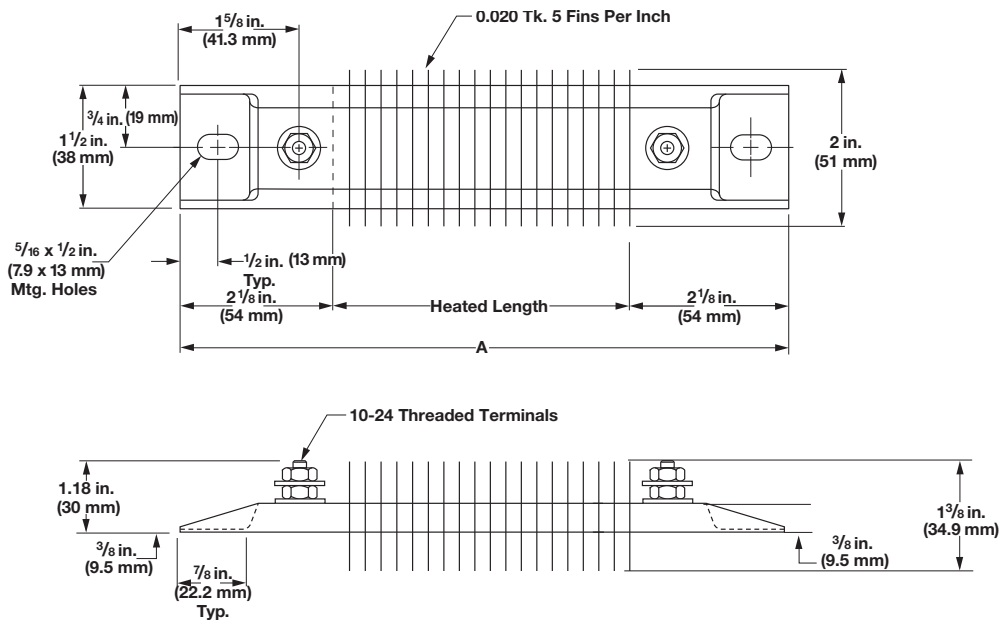
## Finned Heaters

### 375 Finned Strip Heaters

#### Termination Options (Continued)

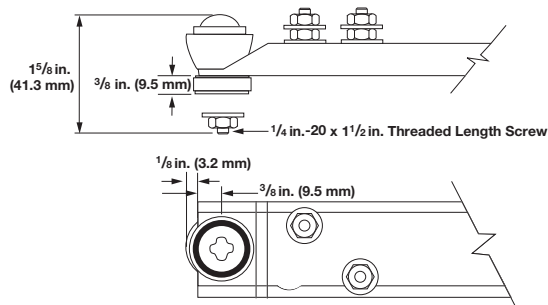
#### One-on-One Terminals

Two, 10-24 threaded post terminals are used; one terminal on each end.



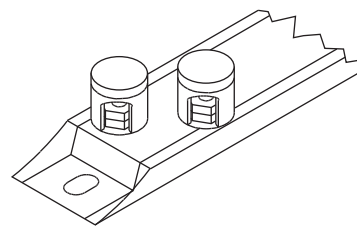
## Accessories

### Secondary Insulation Bushings



Insulators are suitable for use when air heating and/or voltage to ground is a concern. Secondary insulation bushing kit part number **Z-5230** contains one set of bushings for one heater. To accommodate the bushings, 1 7/32 x 1 1/16 inch diameter mounting holes **must** be specified when ordering.

### Ceramic Terminal Covers



A convenient and economical way to insulate post terminals. Sized for standard length posts. 10-24 screw thread size. These are supplied as an accessory item and shipped separately. Specify **Z-4918** and quantity.

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#### Heater Code Numbers

Width in. (mm)	Termination	Length in. (mm)	Volts	Power (Watts)	W/in <sup>2</sup> (W/cm <sup>2</sup> )	Approx. Net Wt. lbs (kg)	Delivery	Code Number
1½ (38)	Parallel	5½ (140)	120	125	14 (2.1)	0.5 (0.23)	Assy. Stock	<b>SGA1J5JY2</b>
	Parallel	5½ (140)	120	250	28 (4.3)	0.5 (0.23)	Assy. Stock	<b>SGA1J5JY3</b>
	Parallel	6 (152)	120	150	14 (2.1)	0.5 (0.23)	Assy. Stock	<b>SGA1J6AY1</b>
	Parallel	6 (152)	240	150	14 (2.1)	0.5 (0.23)	Assy. Stock	<b>SGA1J6AY2</b>
	Parallel	6 (152)	120	300	28 (4.3)	0.5 (0.23)	Assy. Stock	<b>SGA1J6AY3</b>
	Parallel	6 (152)	240	300	28 (4.3)	0.5 (0.23)	Assy. Stock	<b>SGA1J6AY4</b>
	Offset	7½ (191)	120	150	12 (1.8)	0.7 (0.32)	Assy. Stock	<b>SGA1J7JW1</b>
	Offset	7½ (191)	240	150	12 (1.8)	0.7 (0.32)	Standard	<b>SGA1J7JW2</b>
	Offset	7½ (191)	240	200	15 (2.3)	0.7 (0.32)	Assy. Stock	<b>SGA1J7JW3</b>
	Offset	8 (203)	120	150	10 (1.5)	0.7 (0.32)	Assy. Stock	<b>SGA1J8AW2</b>
	Offset	8 (203)	240	150	10 (1.5)	0.7 (0.32)	Assy. Stock	<b>SGA1J8AW3</b>
	Offset	8 (203)	120	175	12 (1.8)	0.7 (0.32)	Assy. Stock	<b>SGA1J8AW4</b>
	Offset	8 (203)	240	175	12 (1.8)	0.7 (0.32)	Standard	<b>SGA1J8AW5</b>
	Offset	8 (203)	120	250	17 (2.6)	0.7 (0.32)	Assy. Stock	<b>SGA1J8AW6</b>
	Offset	8 (203)	240	250	17 (2.6)	0.7 (0.32)	Assy. Stock	<b>SGA1J8AW7</b>
	Offset	8 (203)	120	400	27 (4.2)	0.7 (0.32)	Assy. Stock	<b>SGA1J8AW8</b>
	Offset	8 (203)	240	400	27 (4.2)	0.7 (0.32)	Assy. Stock	<b>SGA1J8AW9</b>
	Offset	8 (203)	120	500	33 (5.1)	0.7 (0.32)	Assy. Stock	<b>SGA1J8AW10</b>
	Offset	8 (203)	240	500	33 (5.1)	0.7 (0.32)	Assy. Stock	<b>SGA1J8AW11</b>
	Offset	10½ (267)	120	250	10 (1.5)	0.9 (0.40)	Assy. Stock	<b>SGA1J10JW1</b>
	Offset	10½ (267)	240	250	10 (1.5)	0.9 (0.40)	Assy. Stock	<b>SGA1J10JW2</b>
	Offset	10½ (267)	120	350	14 (2.1)	0.9 (0.40)	Assy. Stock	<b>SGA1J10JW3</b>
	Offset	10½ (267)	240	350	14 (2.1)	0.9 (0.40)	Assy. Stock	<b>SGA1J10JW4</b>
	Offset	10½ (267)	120	400	16 (2.5)	0.9 (0.40)	Assy. Stock	<b>SGA1J10JW5</b>
	Offset	10½ (267)	240	400	16 (2.5)	0.9 (0.40)	Assy. Stock	<b>SGA1J10JW6</b>
	Offset	12 (305)	120	250	8 (1.2)	1.0 (0.45)	Assy. Stock	<b>SGA1J12AW1</b>
	Offset	12 (305)	240	250	8 (1.2)	1.0 (0.45)	Assy. Stock	<b>SGA1J12AW2</b>
	Offset	12 (305)	120	350	12 (1.8)	1.0 (0.45)	Assy. Stock	<b>SGA1J12AW3</b>
	Offset	12 (305)	240	350	12 (1.8)	1.0 (0.45)	Assy. Stock	<b>SGA1J12AW4</b>
	Offset	12 (305)	120	500	17 (2.6)	1.0 (0.45)	Assy. Stock	<b>SGA1J12AW5</b>
	Offset	12 (305)	240	500	17 (2.6)	1.0 (0.45)	Assy. Stock	<b>SGA1J12AW6</b>
	Offset	14 (356)	120	300	8 (1.2)	1.2 (0.54)	Assy. Stock	<b>SGA1J14AW1</b>
	Offset	14 (356)	240	300	8 (1.2)	1.2 (0.54)	Assy. Stock	<b>SGA1J14AW2</b>
	Offset	14 (356)	120	500	13 (2.0)	1.2 (0.54)	Assy. Stock	<b>SGA1J14AW3</b>
	Offset	14 (356)	240	500	13 (2.0)	1.2 (0.54)	Assy. Stock	<b>SGA1J14AW4</b>
	Offset	15¼ (387)	120	325	8 (1.2)	1.4 (0.64)	Assy. Stock	<b>SGA1J15EW1</b>
	Offset	15¼ (387)	240	325	8 (1.2)	1.4 (0.64)	Assy. Stock	<b>SGA1J15EW2</b>
	Offset	15¼ (387)	240	500	12 (1.8)	1.4 (0.64)	Assy. Stock	<b>SGA1J15EW3</b>

CONTINUED

- Assembly stock delivery, 3 working days
- Standard stock delivery, 1 working day

**Note:** 375 finned strip heaters with one-on-one terminations are available only as a manufactured item. Please contact your Watlow representative for additional information.

**Note:** ⅝ x ½ in. (7.9 x 13 mm) mounting slots are supplied on all 375 finned strip heaters. Tabs can be removed upon request.

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#### Heater Code Numbers (Continued)

Width in. (mm)	Termination	Length in. (mm)	Volts	Power (Watts)	W/in <sup>2</sup> (W/cm <sup>2</sup> )	Approx. Net Wt. lbs (kg)	Delivery	Code Number
1½ (38)	Offset	17¾ (454)	120	350	8 (1.2)	1.6 (0.73)	Assy. Stock	<b>SGA1J17RW1</b>
	Offset	17¾ (454)	240	350	8 (1.2)	1.6 (0.73)	Standard	<b>SGA1J17RW2</b>
	Offset	17¾ (454)	120	375	9 (1.4)	1.6 (0.73)	Standard	<b>SGA1J17RW3</b>
	Offset	17¾ (454)	240	375	9 (1.4)	1.6 (0.73)	Assy. Stock	<b>SGA1J17RW4</b>
	Offset	17¾ (454)	120	500	12 (1.8)	1.6 (0.73)	Assy. Stock	<b>SGA1J17RW5</b>
	Offset	17¾ (454)	240	500	12 (1.8)	1.6 (0.73)	Assy. Stock	<b>SGA1J17RW6</b>
	Offset	17¾ (454)	120	750	18 (2.8)	1.6 (0.73)	Assy. Stock	<b>SGA1J17RW7</b>
	Offset	17¾ (454)	240	750	18 (2.8)	1.6 (0.73)	Assy. Stock	<b>SGA1J17RW8</b>
	Offset	17¾ (454)	120	1000	24 (3.7)	1.6 (0.73)	Assy. Stock	<b>SGA1J17RW9</b>
	Offset	17¾ (454)	240	1000	24 (3.7)	1.6 (0.73)	Assy. Stock	<b>SGA1J17RW10</b>
	Offset	19½ (495)	240	350	6 (.9)	1.7 (0.77)	Assy. Stock	<b>SGA1J19JW2</b>
	Offset	19½ (495)	120	500	9 (1.4)	1.7 (0.77)	Standard	<b>SGA1J19JW3</b>
	Offset	19½ (495)	240	500	9 (1.4)	1.7 (0.77)	Assy. Stock	<b>SGA1J19JW4</b>
	Offset	19½ (495)	240	750	13 (2.0)	1.7 (0.77)	Assy. Stock	<b>SGA1J19JW5</b>
	Offset	19½ (495)	240	1000	17 (2.6)	1.7 (0.77)	Assy. Stock	<b>SGA1J19JW6</b>
	Offset	21 (533)	120	500	8 (1.2)	1.9 (0.86)	Standard	<b>SGA1J21AW3</b>
	Offset	21 (533)	240	500	8 (1.2)	1.9 (0.86)	Assy. Stock	<b>SGA1J21AW4</b>
	Offset	21 (533)	120	750	12 (1.8)	1.9 (0.86)	Assy. Stock	<b>SGA1J21AW5</b>
	Offset	21 (533)	240	750	12 (1.8)	1.9 (0.86)	Assy. Stock	<b>SGA1J21AW6</b>
	Offset	23¾ (603)	240	500	7 (1.0)	2.1 (0.95)	Assy. Stock	<b>SGA1J23NW3</b>
	Offset	23¾ (603)	240	750	10 (1.5)	2.1 (0.95)	Standard	<b>SGA1J23NW5</b>
	Offset	23¾ (603)	120	1000	14 (2.1)	2.1 (0.95)	Assy. Stock	<b>SGA1J23NW6</b>
	Offset	23¾ (603)	240	1000	14 (2.1)	2.1 (0.95)	Assy. Stock	<b>SGA1J23NW7</b>
	Offset	23¾ (603)	240	1500	20 (3.1)	2.1 (0.95)	Assy. Stock	<b>SGA1J23NW8</b>
	Offset	25½ (648)	120	500	6 (0.9)	2.3 (1.00)	Assy. Stock	<b>SGA1J25JW2</b>
	Offset	25½ (648)	240	500	6 (0.9)	2.3 (1.00)	Assy. Stock	<b>SGA1J25JW3</b>
	Offset	25½ (648)	120	750	9 (1.4)	2.3 (1.00)	Standard	<b>SGA1J25JW4</b>
	Offset	25½ (648)	240	750	9 (1.4)	2.3 (1.00)	Assy. Stock	<b>SGA1J25JW5</b>
	Offset	25½ (648)	240	1000	12 (1.8)	2.3 (1.00)	Assy. Stock	<b>SGA1J25JW6</b>
	Offset	26¾ (680)	240	700	8 (1.2)	2.4 (1.10)	Assy. Stock	<b>SGA1J26NW2</b>
	Offset	26¾ (680)	240	1000	12 (1.8)	2.4 (1.10)	Assy. Stock	<b>SGA1J26NW3</b>
	Offset	30½ (775)	120	750	8 (1.2)	2.7 (1.20)	Standard	<b>SGA1J30JW1</b>
	Offset	30½ (775)	240	750	8 (1.2)	2.7 (1.20)	Assy. Stock	<b>SGA1J30JW2</b>
	Offset	33½ (851)	240	750	7 (1.0)	3.0 (1.40)	Assy. Stock	<b>SGA1J33JW1</b>
	Offset	35¾ (911)	120	1000	8 (1.2)	3.2 (1.50)	Standard	<b>SGA1J35RW1</b>
	Offset	35¾ (911)	240	1000	8 (1.2)	3.2 (1.50)	Assy. Stock	<b>SGA1J35RW2</b>
	Offset	35¾ (911)	240	1500	13 (2.0)	3.2 (1.50)	Assy. Stock	<b>SGA1J35RW3</b>
	Offset	38½ (978)	120	1000	8 (1.2)	3.4 (1.50)	Standard	<b>SGA1J38JW2</b>
	Offset	38½ (978)	240	1500	11 (1.7)	3.4 (1.50)	Assy. Stock	<b>SGA1J38JW3</b>
	Offset	42½ (1080)	240	1500	10 (1.5)	3.8 (1.70)	Assy. Stock	<b>SGA1J42JW1</b>
	Offset	47¾ (1216)	240	2250	16 (2.4)	4.3 (2.00)	Assy. Stock	<b>SGA1J47RW2</b>

- Assembly stock delivery, 3 working days
- Standard stock delivery, 1 working day

**Note:** 375 finned strip heaters with one-on-one terminations are available only as a manufactured item. Please contact your Watlow representative for additional information.

**Note:** ⅝ x ½ in. (7.9 x 13 mm) mounting slots are supplied on all 375 finned strip heaters. Tabs can be removed upon request.

# Air Heaters

## Finned Heaters

### *FINBAR Single/Double-Ended Heaters*

Composed of aluminized steel fins press fitted to a one-inch single-ended FIREBAR® element. The FINBAR is designed to improve heat transfer to the air and permits putting more power in tighter spaces—like forced air ducts, dryers, ovens and load bank resistors.

Heat transfer, lower sheath temperature and element life are all maximized by its finned construction.

Installation is simplified by terminations exiting at one end and mounting accommodations on both ends.

### Features and Benefits

#### Rugged aluminized steel fins

- Provides an increase in surface area to approximately 16 square inches for every linear inch of element length. Fins press fitted to the heating element improve heat transfer to the air

#### Single-ended termination

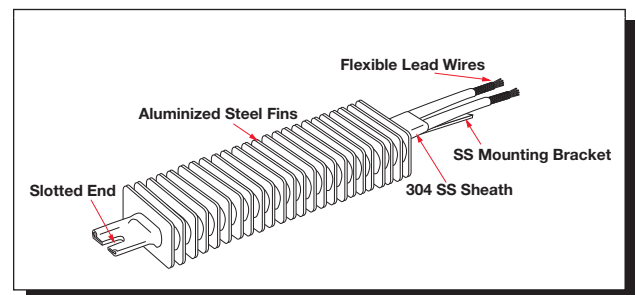
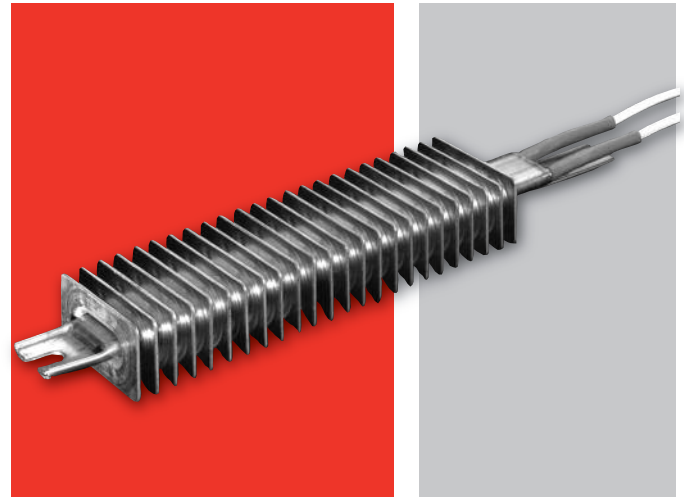
- Simplifies wiring and installation

#### Stainless steel mounting bracket, welded to the terminal end, supplied with a slotted end

- Allows ease of installation

#### Lavacone seals

- Provides protection against humid storage conditions, moisture retardant to 392°F (200°C)



**For detailed product and ordering information, see the full FINBAR product section located on pages 110 through 112.**