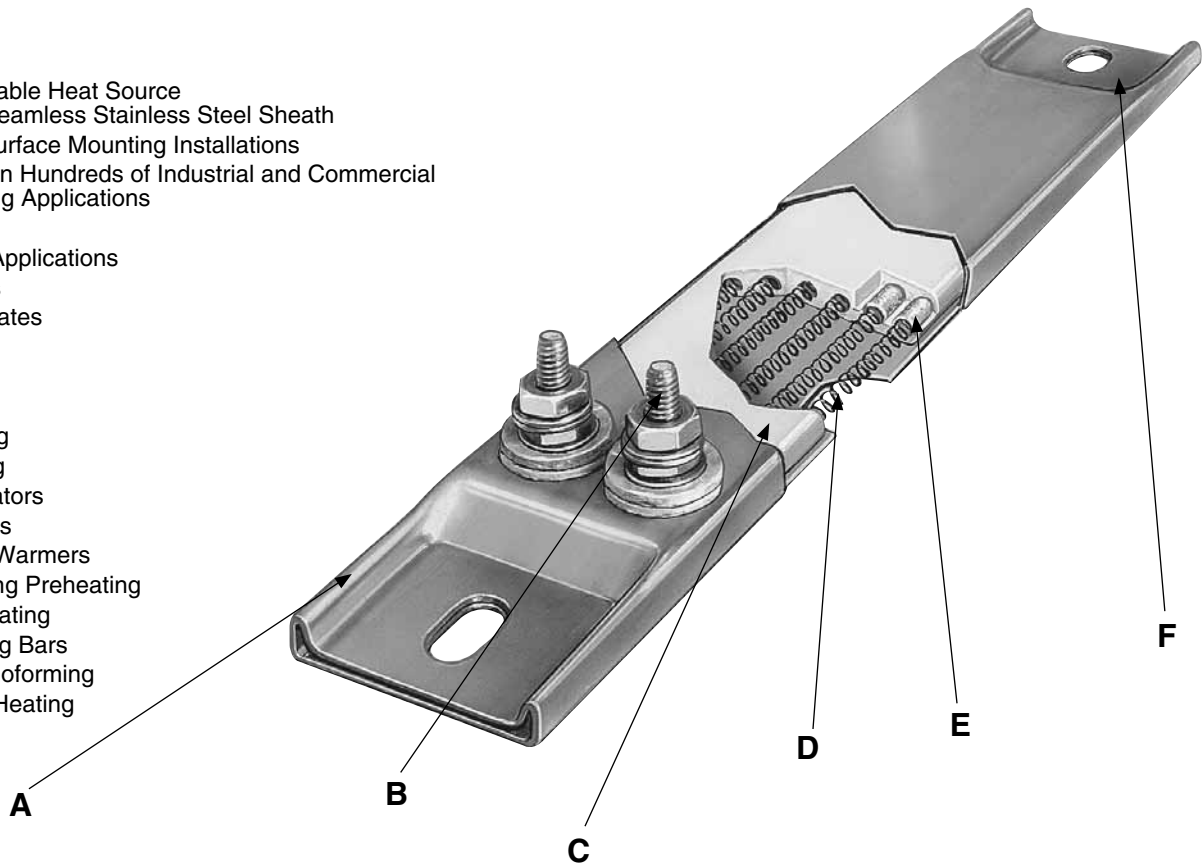


## Channel Strip Heaters Ceramic Insulated

- A Reliable Heat Source with Seamless Stainless Steel Sheath
- Flat Surface Mounting Installations
- Used in Hundreds of Industrial and Commercial Heating Applications

### Typical Applications

- Ovens
- Hot Plates
- Dies
- Molds
- Drying
- Melting
- Baking
- Incubators
- Platens
- Food Warmers
- Welding Preheating
- Air Heating
- Sealing Bars
- Thermoforming
- Tank Heating



**A** Type 304 Stainless Steel sheath provides the best combination of physical strength and resistance to high temperatures and chemical corrosion. Dependable at sheath temperatures of up to 650°C (1200°F).

**B** Stainless Steel 10-32 threaded screws are standard and are securely fastened. Various termination configurations and options are available.

**C** Specially selected and designed ceramic insulator houses the resistance wire coil, insulating it from the outer sheath.

**D** Helically wound resistance wire coil made from nickel-chrome wire is evenly stretched and precisely strung through the ceramic insulator, providing uniform heat. Resistance wire is then mechanically connected to screw terminals or lead wires for a strong positive joint.

**E** A custom mixture of several high purity magnesium oxide grain sizes, chosen to increase thermal conductivity and dielectric strength, are used to fill all remaining space inside and around the ceramic insulator. Voids are densely packed.

**F** Channel strip heaters are available with or without mounting tabs. If without, the ends are silver soldered shut to prevent moisture and contaminants from entering the heater. Tabs are not available on 6.35 thick x 16 mm wide ( $\frac{1}{4} \times \frac{5}{8}$ " ) heaters.



## Channel Strip Heaters Ceramic Insulated

Channel Strip Heaters have proven to be extremely efficient and dependable as a heat source for surface heating in hundreds of industrial and commercial applications. The rectangular tube gives full surface contact when used in a milled slot to provide maximum heat transfer area.

For surface mounting installations, channel strip heaters must be securely clamped along their entire length to a smooth metal surface. When supported by mounting tabs, the terminal end should be secured firmly. Opposite end should be loose to allow for thermal expansion.

### PERFORMANCE RATINGS

**Maximum Sheath Temperature:** 650°C (1200°F)

**Nominal Watt Density:** 20 Watts/in<sup>2</sup> (3.1 Watts/cm<sup>2</sup>)

**Maximum Watt Density:** 45 Watts/in<sup>2</sup> (dependent on design parameters)

### ELECTRICAL SPECIFICATIONS

**Maximum Voltage:** 480 Vac (dependent on design parameters)

**Maximum Recommended Voltage with Leads:** 480V

**Maximum Amperage:**

**Lead Wire Termination:** 10 amp

**Screw Terminations:** 10-32UNF—25 amp

**Resistance Tolerance:** 10%, -5%

**Wattage Tolerance:** 5%, -10%

### PHYSICAL SIZE CONSTRUCTION LIMITATIONS

**Width:**

**16 mm ( $\frac{5}{8}$ ") Wide Heaters:** +0.000, -0.005"

**25 mm and 38 mm (1 and 1½") Wide Heaters:**  
+0.000, -0.010"

**Thickness:**

**6 mm ( $\frac{1}{4}$ ") Thick Heaters:** +0.000, -0.005"

**8 and 10 mm ( $\frac{5}{16}$  and  $\frac{3}{8}$ ") Thick Heaters:** +0.000, -0.008"  
[10 mm ( $\frac{3}{8}$ ") thick heaters have radius corners]

**Length:**

**Up to 24":**  $\pm\frac{1}{16}$ "

**Over 24":**  $\pm\frac{1}{8}$ "

**Mounting Slot Size:** Standard 8 x 13 mm ( $\frac{5}{16}$  x  $\frac{1}{2}$ ")

**Special Bushings:** 13 x 16 mm ( $\frac{1}{2}$  x  $\frac{5}{8}$ ")

Standard Specifications and Tolerances of Channel Strip Heaters If tighter tolerances are required, consult OMEGA.

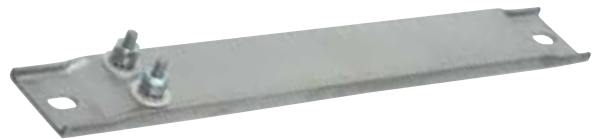
### OMEGA Offers Channel Strip Heaters in Four Rectangular Sizes



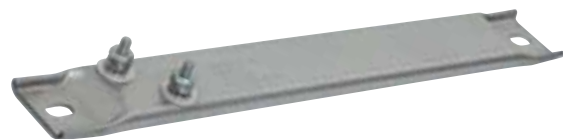
**16 W x 6 mm thick ( $\frac{5}{8}$ " x  $\frac{1}{4}$ ").**  
Available without mounting tabs only.



**25 W x 8 mm thick (1" x  $\frac{5}{16}$ ").**  
Available with or without mounting tabs. When supplied with Type L lead wire termination, mounting tabs are not available.



**38 W x 8 mm thick (1½" x  $\frac{5}{16}$ ").**  
Available with or without mounting tabs. When supplied with Type L lead wire termination, mounting tabs are not available.

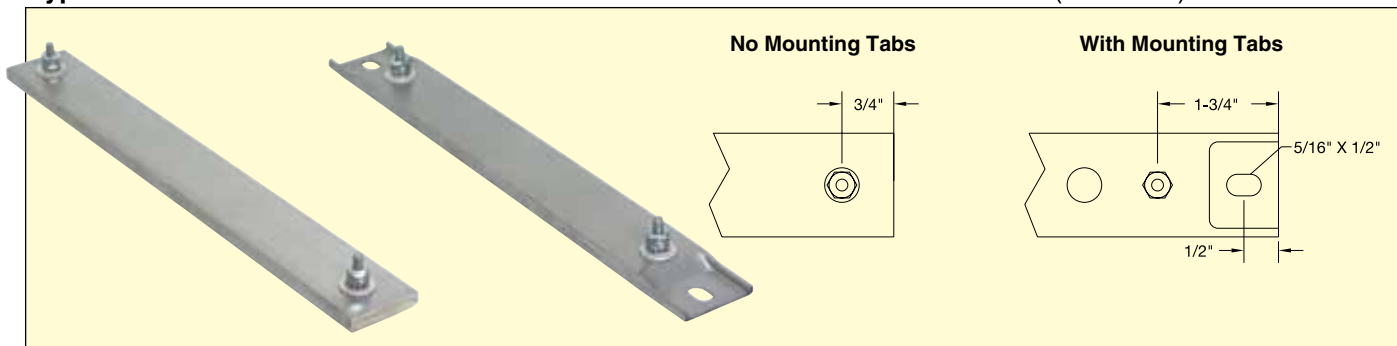


**38 W x 10 mm thick (1½" x  $\frac{3}{8}$ ").**  
Available with or without mounting tabs. When supplied with Type L lead wire termination, mounting tabs are not available. [10 mm ( $\frac{3}{8}$ ") thick heaters have radius corners]

## Channel Strip Heaters Screw Terminal Terminations

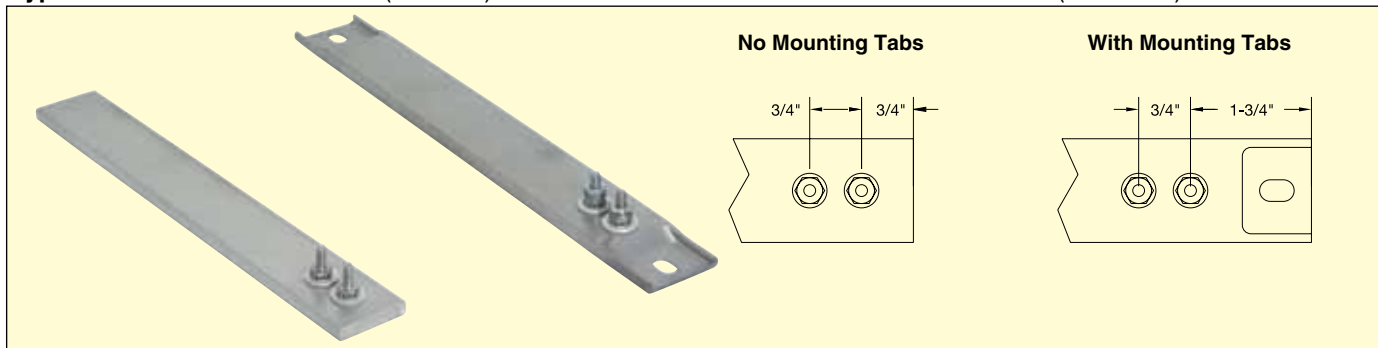
**Type T1** 10-32 Screw Terminals at each end

Available on 25 and 38 mm (1 and 1½") wide heaters



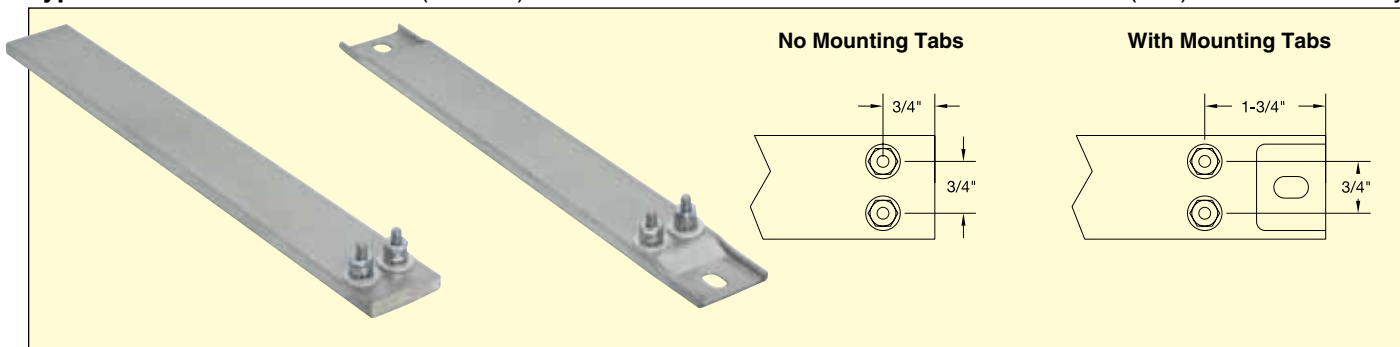
**Type T2** 10-32 Screw Terminals (Tandem) at one end

Available on 25 and 38 mm (1 and 1½") wide heaters



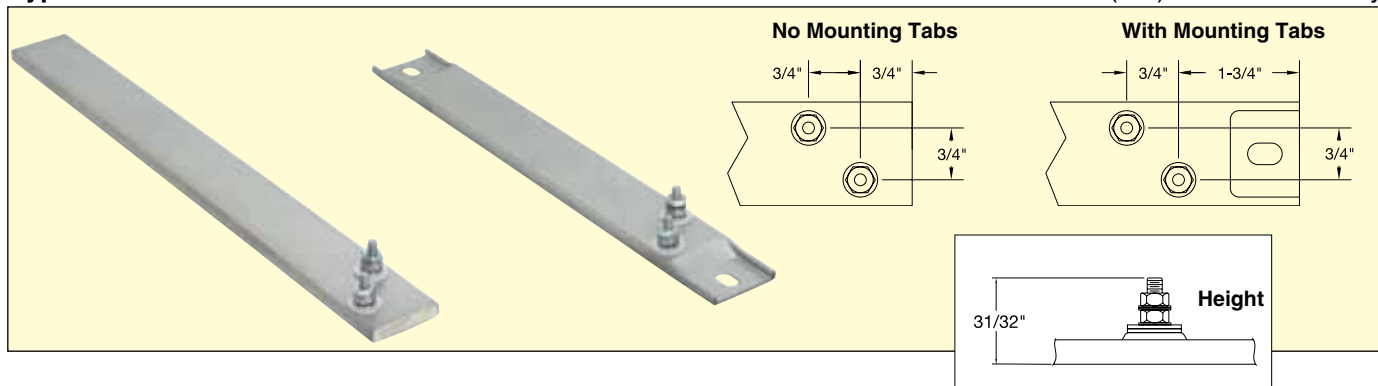
**Type T3** 10-32 Screw Terminals (Parallel) at one end

Available on 38 mm (1½") wide heaters only



**Type T4** 10-32 Terminals offset at one end

Available on 38 mm (1½") wide heaters only



## Channel Strip Heaters Lead Wire Terminations

### Type L

Flexible lead wires exit from end of heater. 254 mm (10") long leads standard; if longer leads are required, specify. Recommended only for tight quarters or where flexibility of the lead wire is required. Not available on heaters with tabs.

**Maximum Amps:** 10 at 240 Vac **Maximum Volts:** 480

### Type L1

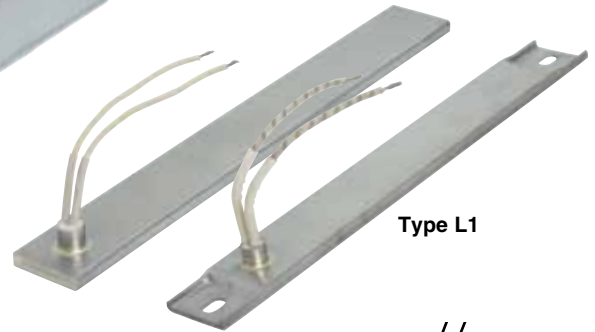
Flexible lead wires exit from top of heater. 254 mm (10") long leads standard; if longer leads are required, specify.

**Maximum Amps:** 10 at 240 Vac **Maximum Volts:** 480

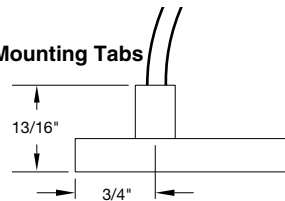
Type L



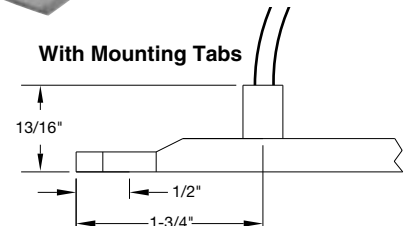
Type L1



No Mounting Tabs



With Mounting Tabs



Type W1

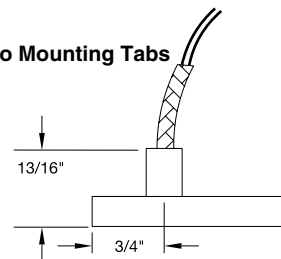


### Type W1

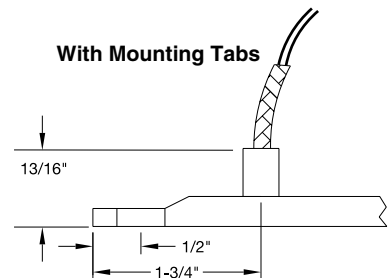
Wire braid provides strength and protection to the lead wire insulation, offering sharp bending not possible with armor cable. 254 mm (10") of wire braid over 12" long leads is standard; if longer leads or braid are required, specify.

**Maximum Amps:** 10 at 240 Vac **Maximum Volts:** 480

No Mounting Tabs



With Mounting Tabs



### Type W2

Stainless steel braid over each lead wire offers sharp bending not possible with armor cable, as well as abrasion protection. 254 mm (10") long leads standard; if longer leads are required, specify. Not available on heaters with tabs.

**Maximum Amps:** 10 at 240 Vac **Maximum Volts:** 480

### Type R1

Armor cable provides strength and prevents contamination from getting into the heater. 254 mm (10") of armor over 305 mm (12") long leads are standard; if longer leads or armor are required, please specify.

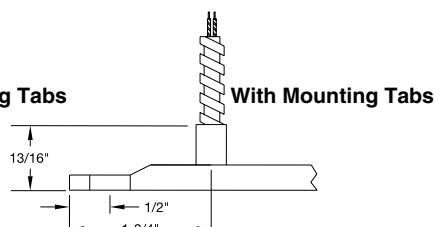
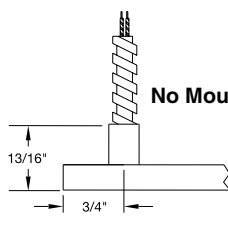
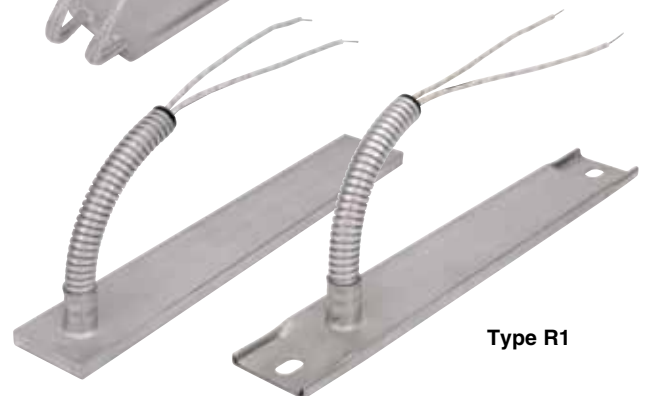
**Maximum Amps:** 10 at 240 Vac **Maximum Volts:** 480

**Type R1A:** Galvanized cable **Type R2A:** Stainless steel cable

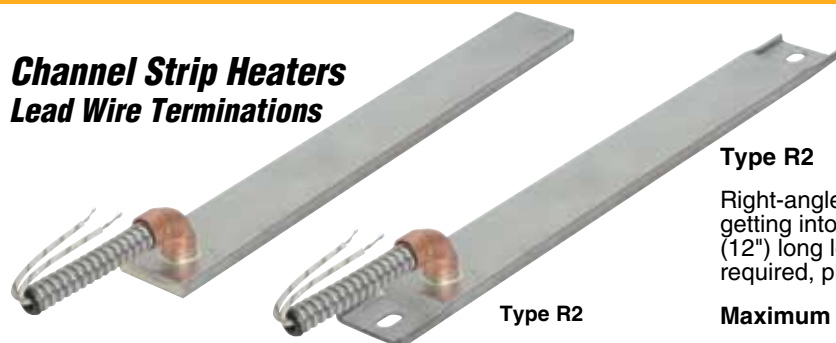
Type W2



Type R1



## Channel Strip Heaters Lead Wire Terminations

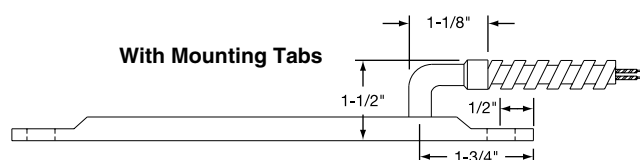
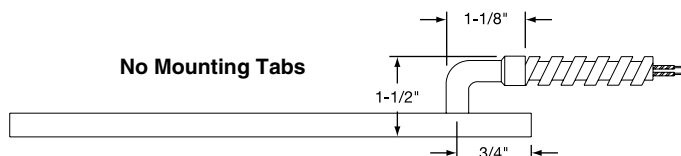


### Type R2

Right-angle armor cable prevents contamination from getting into the heater. 254 mm (10") of armor over 305 mm (12") long leads is standard; if longer leads or armor are required, please specify.

**Maximum Amps:** 10 at 240 Vac **Maximum Volts:** 480

**Type R2A** Galvanized cable  
**Type R2B** Stainless steel cable  
**Type R2C** Elbow and leads only (no cable)



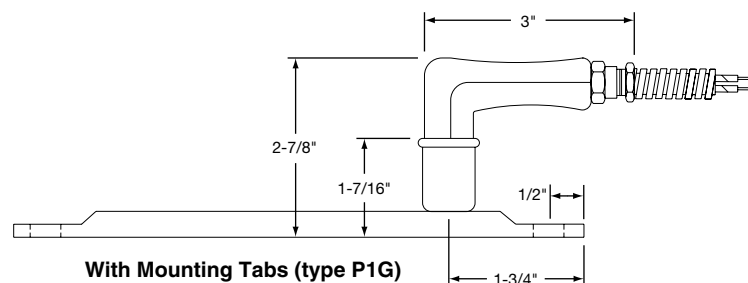
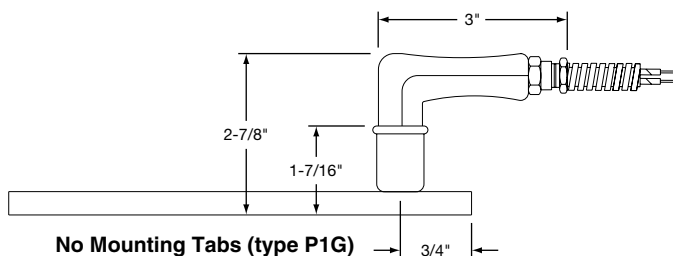
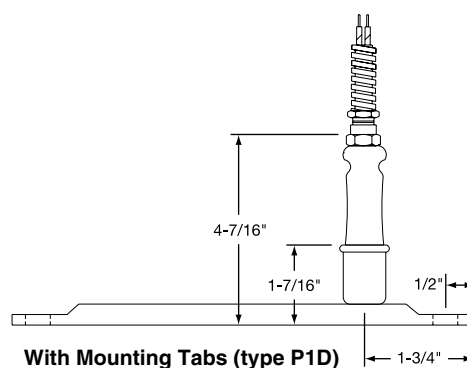
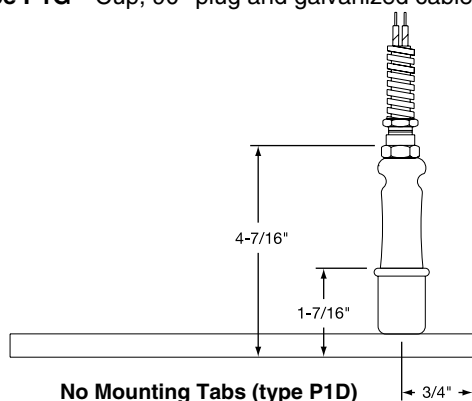
## Terminal Protection

### Type P

High-Temperature Quick Disconnect Plug. If armor protected lead wires are required, specify armor and lead length. Available on 38 mm (1 1/2") wide heaters only.

**Maximum Amps:** 10 at 240 Vac **Maximum Volts:** 250

**Type P1A** Cup only (UT900)  
**Type P1B** Cup and straight plug (H900)  
**Type P1C** Cup and 90° plug (HW900)  
**Type P1D** Cup, straight plug and galvanized cable  
**Type P1G** Cup, 90° plug and galvanized cable



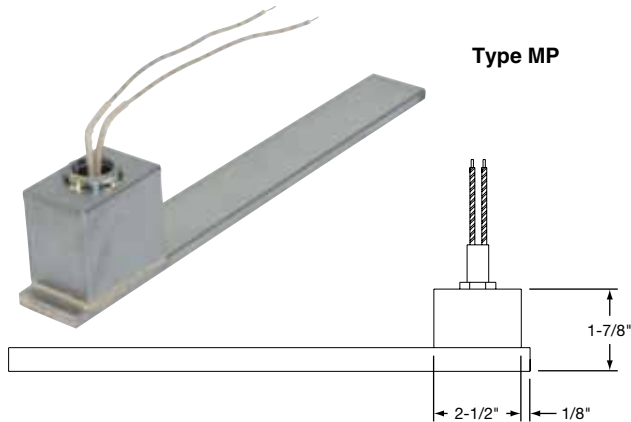
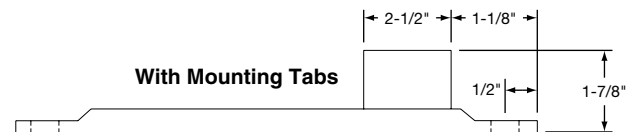
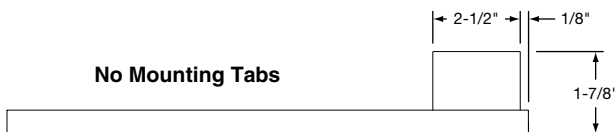
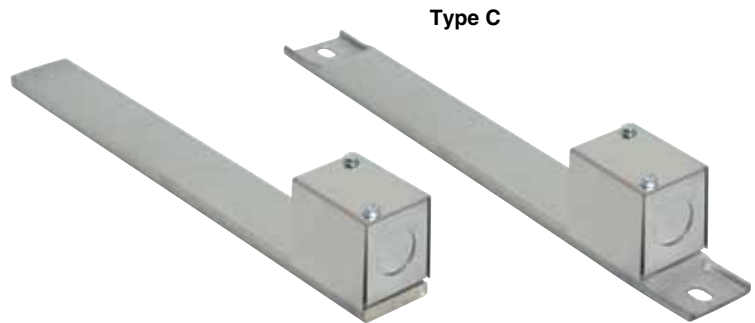
**Caution:** Exposed electrical wiring on Strip Heaters is a violation of electrical safety codes, including O.S.H.A.

## Channel Strip Heaters Terminal Protection

### Type C

Terminal box has a 13 mm ( $\frac{1}{2}$ ") trade size knockout (actual diameter 22 mm ( $\frac{7}{8}$ "). Box provides excellent protection to exposed terminals. If armor-protected lead wires are required, specify armor and lead length. Available on 25 and 38 mm (1 and  $1\frac{1}{2}$ ") wide heaters.

- Type CA** No cable or braid
- Type CB** Galvanized cable
- Type CC** Stainless steel cable
- Type CD** Wire braid



### Type MP

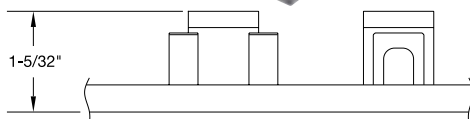
Specially designed box is welded to the Channel Strip Heater and potted with epoxy. The ends of the heater are also welded. Leads exit through a 1/2 NPT nut that can be located at the top or in the front of the box. Armor cable can be supplied with the male fitting, providing a completely sealed channel strip. Available on 38 mm ( $1\frac{1}{2}$ ") wide heaters only.

254 mm (10") long leads standard; if longer leads are required, specify.

**Maximum Amps: 25 Maximum Volts: 480**

## Ceramic Covers for Insulating Terminals

Igloo™ Ceramic terminal covers consist of two individual ceramic parts. With a tight-fitting cap and a solid base, an Igloo cover will fully insulate any standard 10-32 terminal lug used for electrical wiring hookups. Igloo covers can be assembled on all Channel Strip heaters with Type 1 and Type 4 screw terminals.



Ceramic Cap



Thread 10-32  
Part Number  
CER-102-101

**Type C6**  
Double Port In-Line  
Part Number: CER-101-104



**Type C7**  
Double Port 90°  
Part Number: CER-101-106



Three different types of Igloo bases are available for your wiring convenience. Double Port In-Line, Double Port 90° and Single Port.

When ordering, specify the type of Igloo.



**Type C8**  
Single Port  
Part Number:  
CER-101-107



## Channel Strip 38.1 × 9.53 mm (1½ × ⅜")

Part numbers shown are for heaters with T4 Terminals and Mounting Tabs.



**To Order Visit [omega.com/csh5\\_series](http://omega.com/csh5_series) for Pricing and Details**

Model No.		Length		Wattage	Watt Density	
120V	240V	inch	mm		Watt/in <sup>2</sup>	Watt/cm <sup>2</sup>
—	CSH00294	7½	190.5	200	19	3
—	CSH00295	9	228.6	500	31	5
CSH00296	—	10½	266.7	250	12	2
CSH00297	—	10½	266.7	400	19	3
—	CSH00298	12	304.8	500	18	3
—	CSH00299	15¼	387.4	500	13	2
—	CSH00300	17	431.8	1000	22	3
—	CSH00301	17⅞	454.0	350	7	1
—	CSH00302	17⅞	454.0	500	10	2
—	CSH00303	18	457.2	1000	20	3
—	CSH00304	18½	469.9	500	10	2
—	CSH00305	22½	571.5	1000	15	2
—	CSH00306	24	609.6	1000	14	2
—	CSH00307	25½	647.7	1000	13	2
—	CSH00308	26	660.4	1600	20	3
—	CSH00309	26½	673.1	1500	18	3
—	CSH00310	30½	774.7	750	8	1
—	CSH00311	31½	800.1	800	8	1
—	CSH00312	35½	911.2	1000	9	1
—	CSH00313	36	914.4	1000	9	1
—	CSH00314	50	1270.0	1000	6	1
—	CSH00315	62	1574.8	1500	7	1

### Custom Engineered/Manufactured Heaters

An electric heater can be very application specific, for sizes and ratings not listed, OMEGA® will design and manufacture a channel strip heater to meet your requirements.

### Please Specify the Following:

- Width and Thickness
- Length
- Wattage
- Voltage
- Termination
- Lead Cable/Braid Length
- Special Features
- Quantity