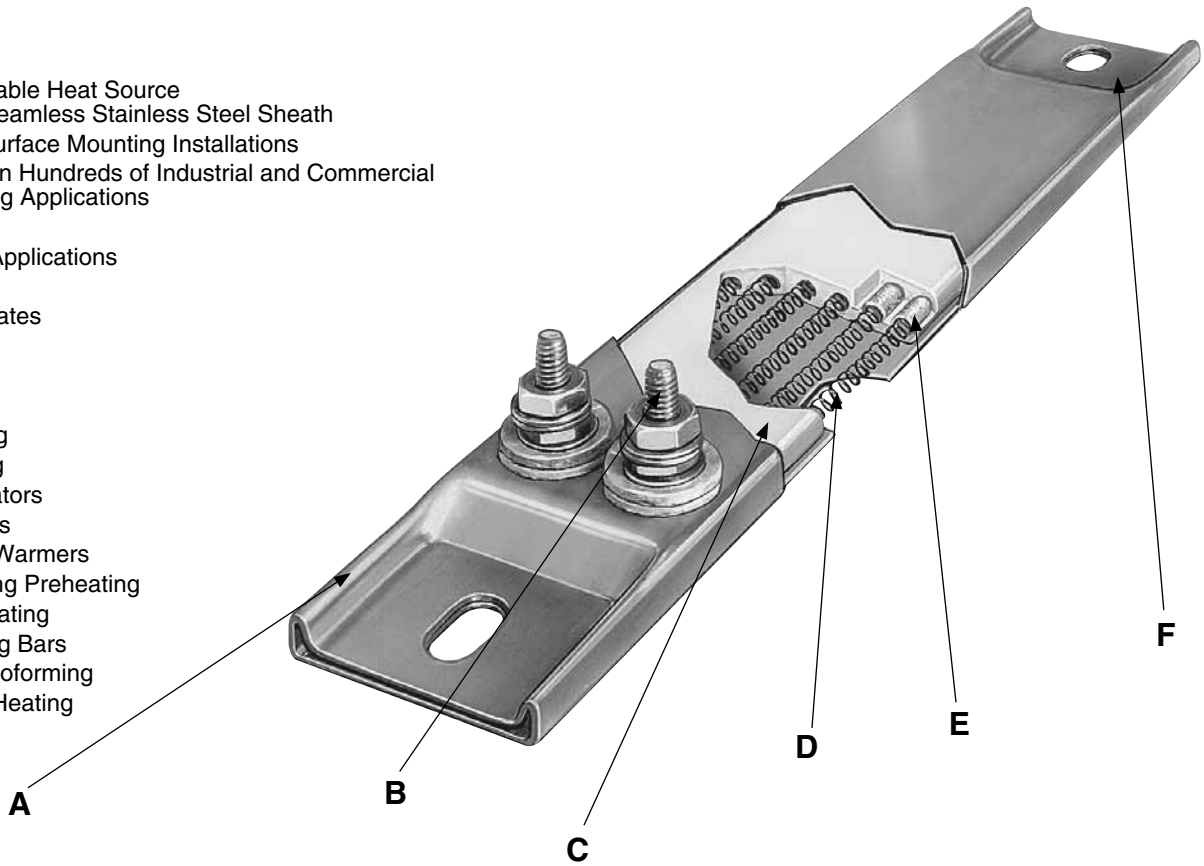
Channel Strip Heaters
Ceramic Insulated

- 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 (¼ x ⅝") heaters.

Agency Approvals

Channel Strip Heaters have been certified as Recognized Components by Underwriters Laboratories (File Number E65652) under CCN KSOT2/8 to meet UL standard 499 and Canadian Standard C22.2, No 72.

This file specifies the end use limitations and conditions of acceptability for the use of this type of heater. For additional information consult OMEGA.

If you require UL, CSA, or other NRTL Agency Approvals, please specify when ordering.

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^2 (3.1 Watts/cm^2)

Maximum Watt Density: 45 Watts/in^2 (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 (⅝") Wide Heaters:** +0.000, -0.005"
- **25 mm and 38 mm (1 and 1½") Wide Heaters:** +0.000, -0.010"

Thickness:
- **6 mm (¼") Thick Heaters:** +0.000, −0.005"
- **8 and 10 mm (⅝ and ⅜") Thick Heaters:** +0.000, −0.008" [10 mm (⅜") thick heaters have radius corners]

Length:
- **Up to 24":** ±1/16"
- **Over 24":** ±⅛"

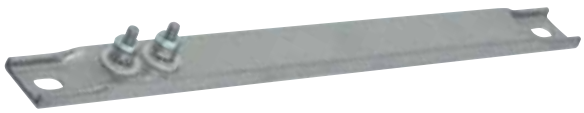
Mounting Slot Size: Standard 8 x 13 mm (⅝ × ½")

Special Bushings: 13 x 16 mm (½ × ⅝")

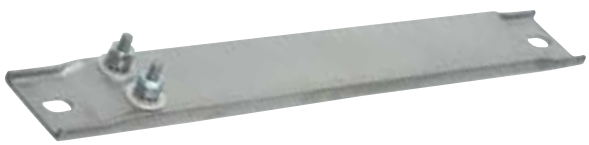
Standard Specifications and Tolerances of Channel Strip Heaters If tighter tolerances are required, consult OMEGA.

OMEGA Offers Channel Strip Heaters in Four Rectangular Sizes

16 W x 6 mm thick (⅝" x ¼").
Available without mounting tabs only.



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

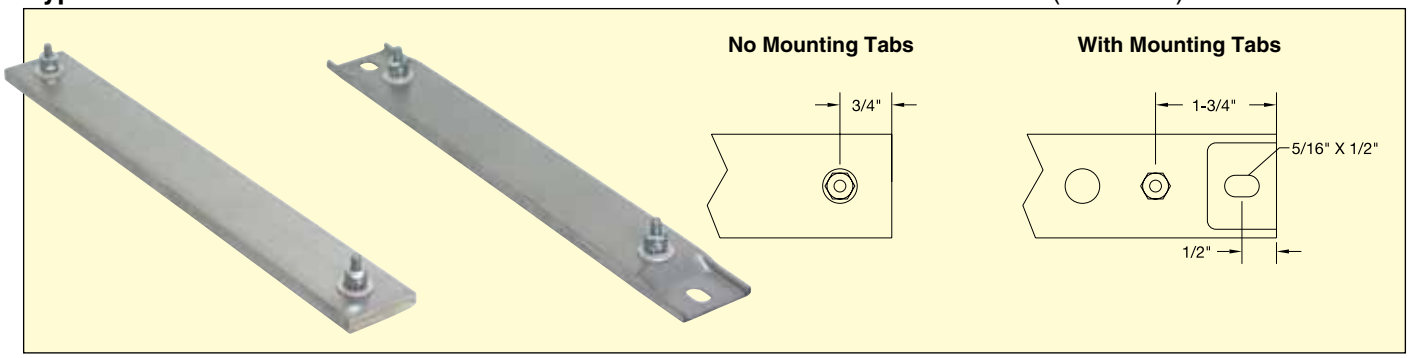


38 W x 8 mm thick (1½" x 5/16").
Available with or without mounting tabs. When supplied with Type L lead wire termination, mounting tabs are not available.

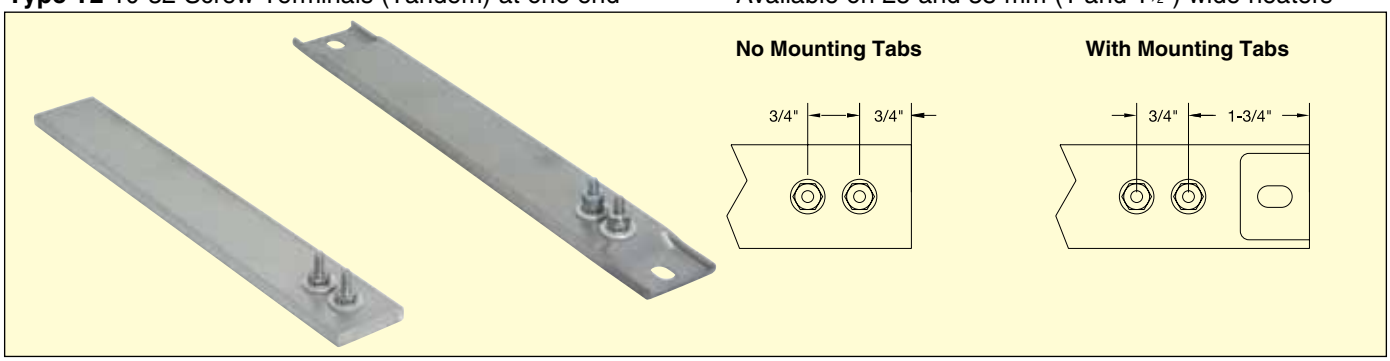
38 W x 10 mm thick (1½" x ⅜").
Available with or without mounting tabs. When supplied with Type L lead wire termination, mounting tabs are not available. [10 mm (⅜") thick heaters have radius corners]

Channel Strip Heaters
Screw Terminal Terminations

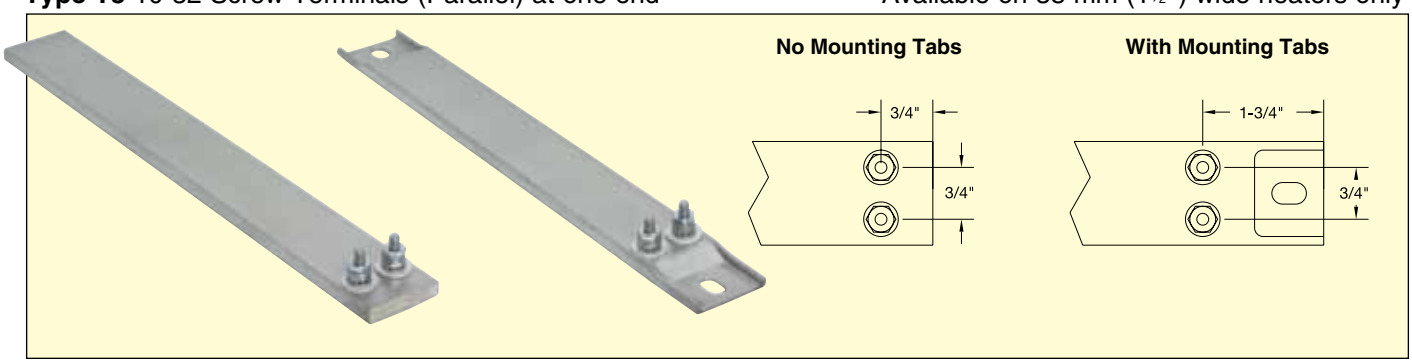
Type T1 10-32 Screw Terminals at each end — Available on 25 and 38 mm (1 and 1½") wide heaters



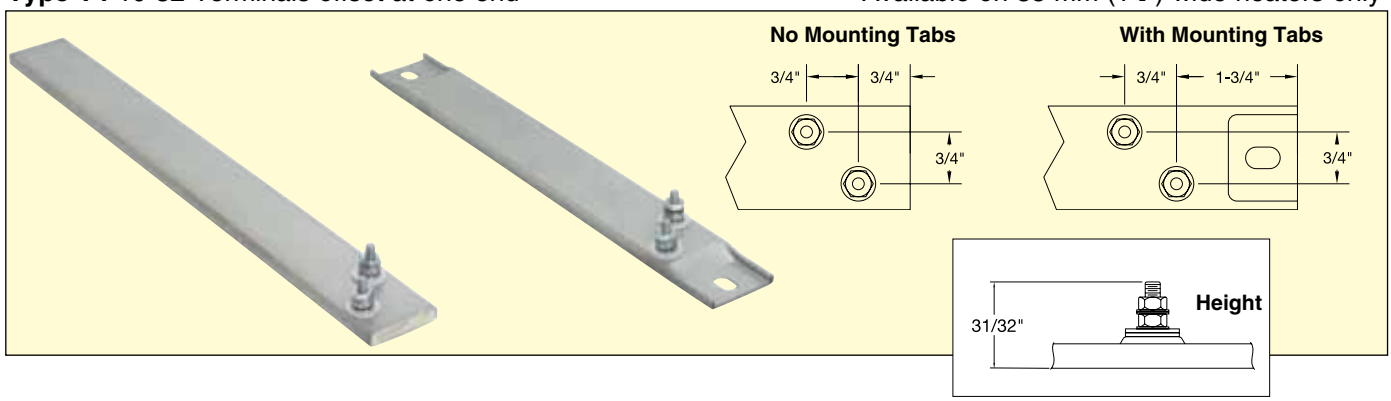
Type T2 10-32 Screw Terminals (Tandem) at one end — Available on 25 and 38 mm (1 and 1½") wide heaters



Type T3 10-32 Screw Terminals (Parallel) at one end — Available on 38 mm (1½") wide heaters only

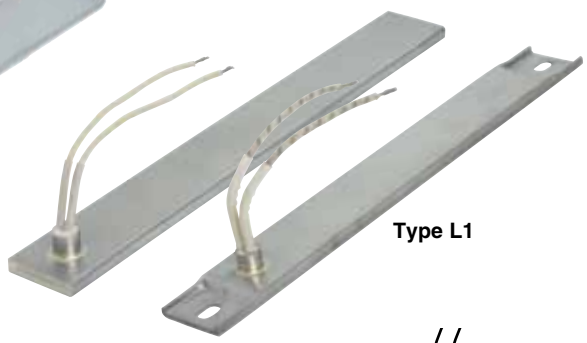


Type T4 10-32 Terminals offset at one end — Available on 38 mm (1½") wide heaters only



Channel Strip Heaters
Lead Wire Terminations

Type L



Type L1

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.

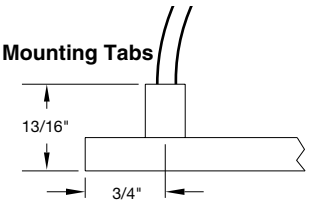
Maximum Amps: 10 at 240 Vac **Maximum Volts:** 480

Type L1

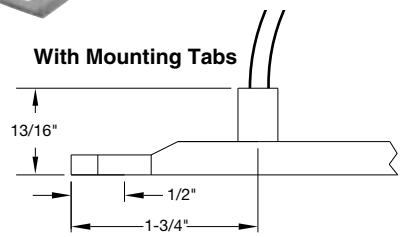
Flexible lead wires exit from top of heater. 254 mm (10") long leads standard; if longer leads are required, specify.

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

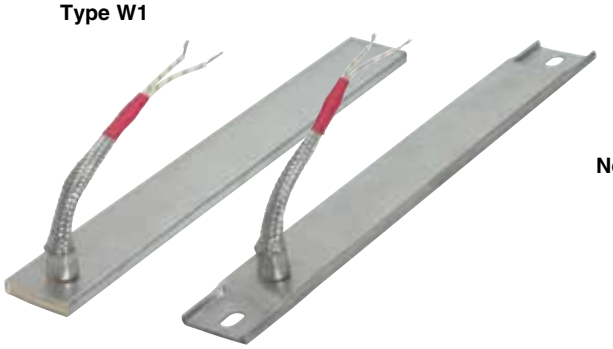
No Mounting Tabs



With Mounting Tabs



Type W1

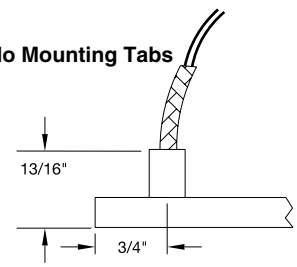


Type W1

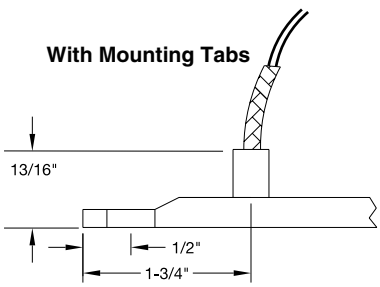
Wire braid provides strength and protection to the lead wire insulation, offering sharp bending not possible with armor cable. 254 mm (10") of wire braid over 12" long leads is standard; if longer leads or braid are required, specify.

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

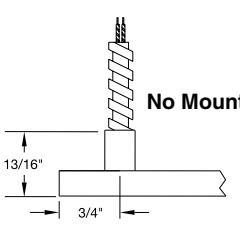
Type R1

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.

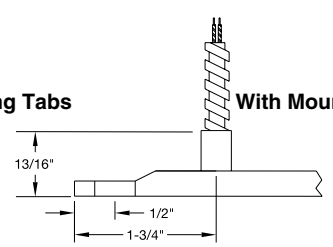
Maximum Amps: 10 at 240 Vac **Maximum Volts:** 480

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

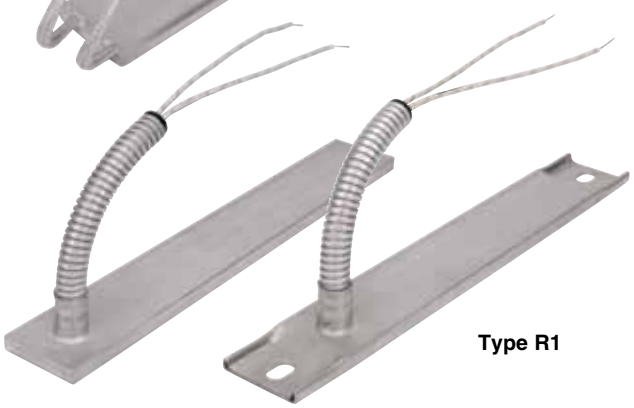
No Mounting Tabs



With Mounting Tabs

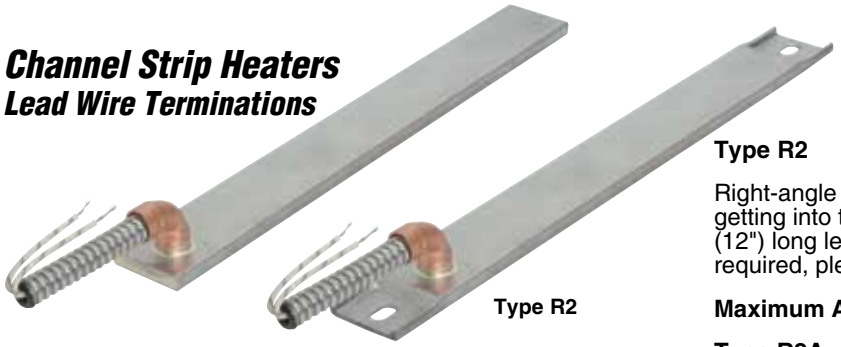


Type W2



Type R1

Channel Strip Heaters
Lead Wire Terminations



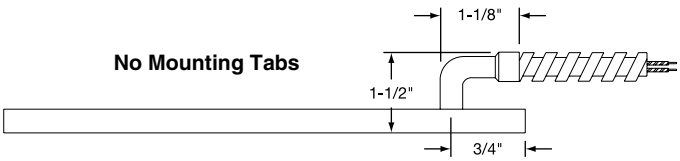
Type R2

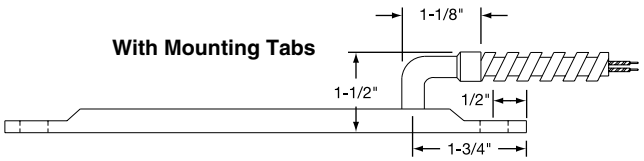
Type R2

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

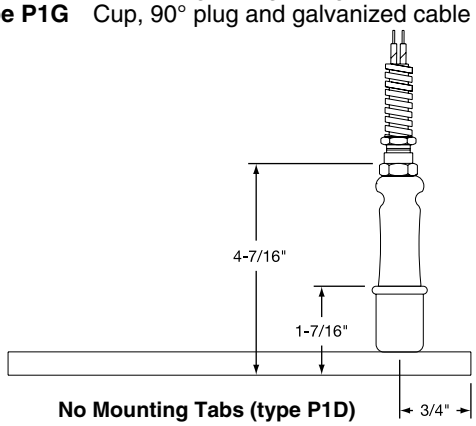
Type P

High-Temperature Quick Disconnect Plug. If armor protected lead wires are required, specify armor and lead length. Available on 38 mm (1½") wide heaters only.

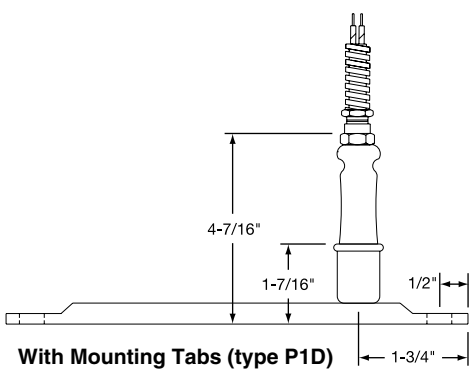
Maximum Amps: 10 at 240 Vac **Maximum Volts:** 250

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

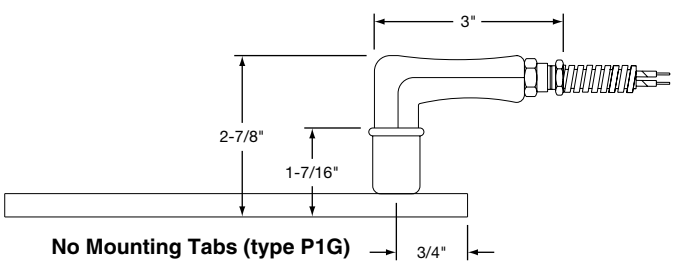
Type P



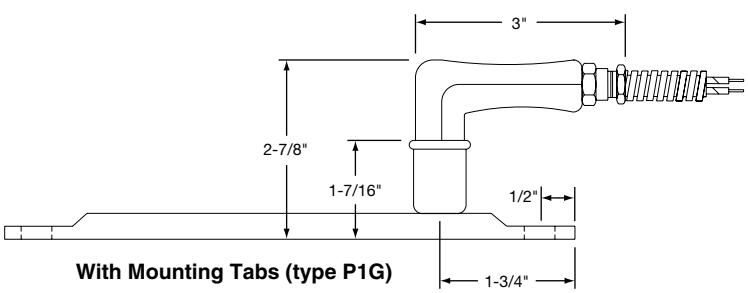
No Mounting Tabs (type P1D)



With Mounting Tabs (type P1D)



No Mounting Tabs (type P1G)



With Mounting Tabs (type P1G)

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

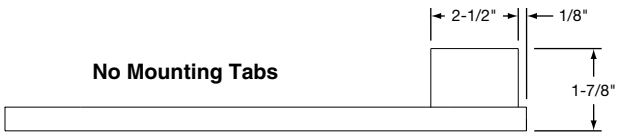
Channel Strip Heaters
Terminal Protection

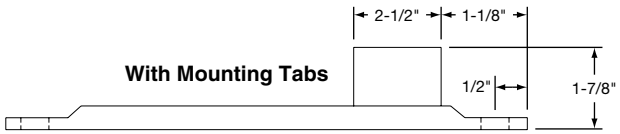
Type C

Terminal box has a 13 mm (½") trade size knockout (actual diameter 22 mm (⅞"). 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 1½") wide heaters.

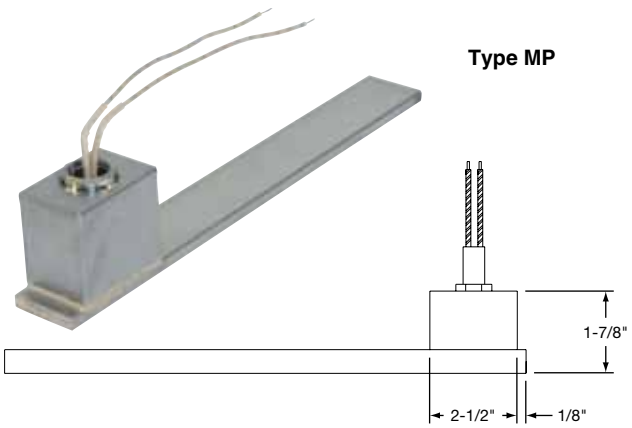
Type CA No cable or braid
Type CB Galvanized cable
Type CC Stainless steel cable
Type CD Wire braid

Type C





Type MP



Type MP

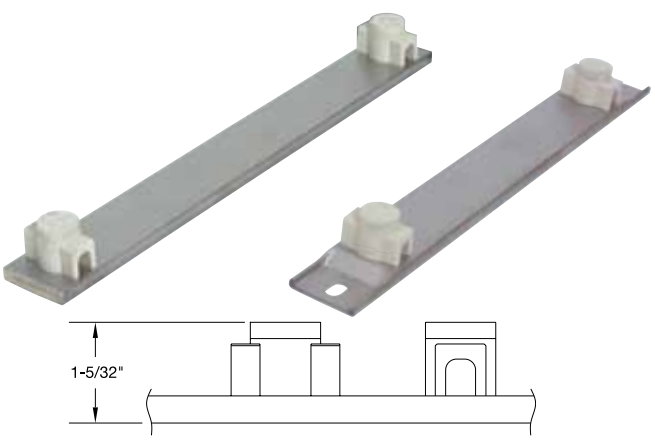
Specially designed box is welded to the Channel Strip Heater and potted with epoxy. The ends of the heater are also welded. Leads exit through a 1/2 NPT nut that can be located at the top or in the front of the box. Armor cable can be supplied with the male fitting, providing a completely sealed channel strip. Available on 38 mm (1½") 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
25.4 × 16 mm (1 × 5⁄16")

Part numbers shown are for heaters with T2 Terminals and Mounting Tabs.

To Order *Visit omega.com/csh2_series for Pricing and Details*

Model No.		Length			Watt Density	
120V	240V	in	mm	Wattage	Watt/in²	Watt/cm²
CSH00021	—	8	203.2	250	13	2
CSH00022	—	9½	241.3	300	13	2
CSH00023	—	11	279.4	350	13	2
CSH00024	CSH00025	12	304.8	400	13	2
CSH00026	CSH00027	14	355.6	450	13	2
CSH00028	CSH00029	15¼	387.4	500	13	2
CSH00030	CSH00031	17⅞	454.0	600	13	2
CSH00032	CSH00033	19½	495.3	600	12	2
CSH00034	CSH00035	21	533.4	750	14	2
CSH00036	CSH00037	22½	571.5	750	13	2
CSH00038	CSH00039	23¾	603.3	800	13	2
CSH00040	CSH00041	25½	647.7	900	14	2
CSH00042	CSH00043	27½	698.5	900	13	2
CSH00044	CSH00045	28¾	730.3	1000	13	2
CSH00046	CSH00047	30½	774.7	1000	13	2
CSH00048	CSH00049	33½	850.9	1000	12	2
CSH00050	CSH00051	35⅞	911.2	1000	11	2
CSH00052	CSH00053	38½	977.9	1250	13	2