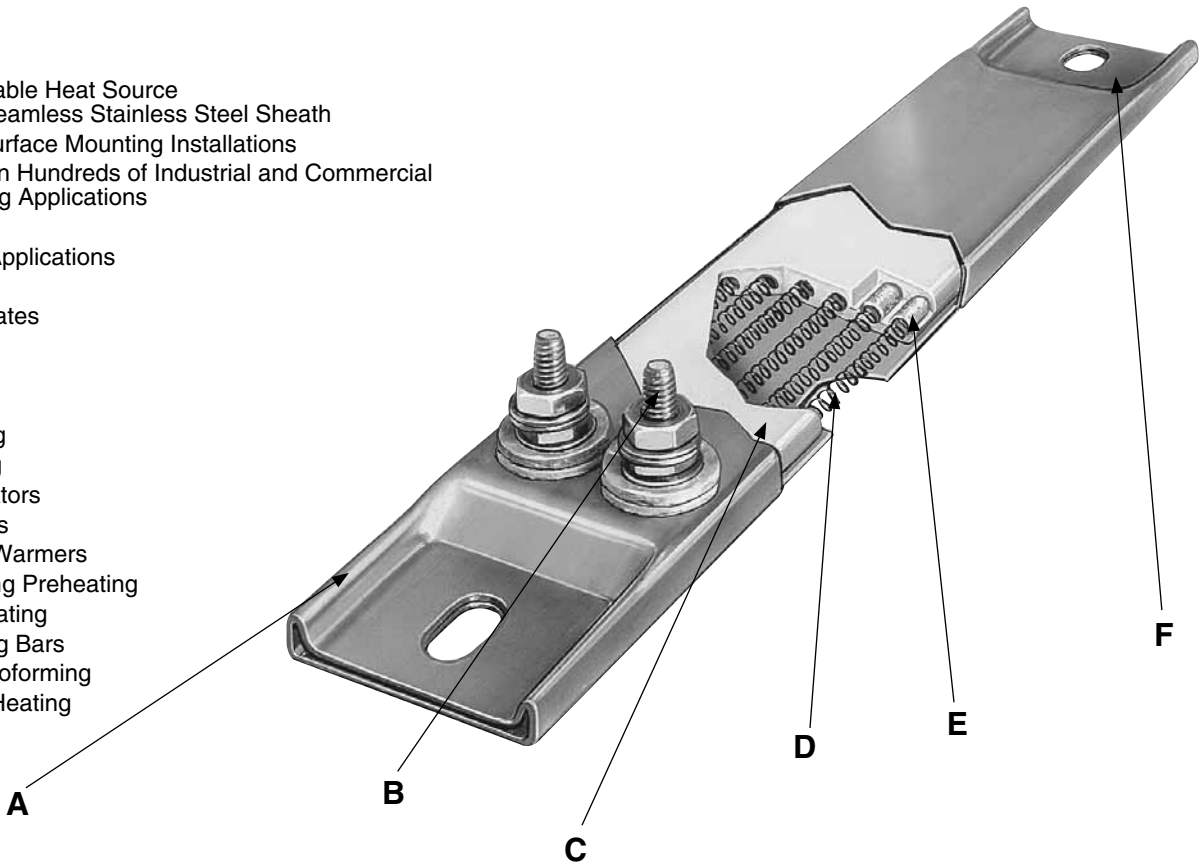
Channel Strip Heaters
Ceramic Insulated

- 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.

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"

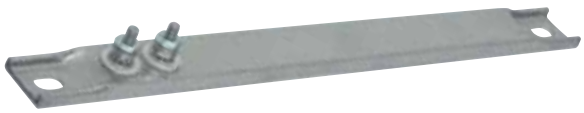
Mounting Slot Size: Standard 8 x 13 mm (⅝ × ½")

Special Bushings: 13 x 16 mm (½ × ⅝")

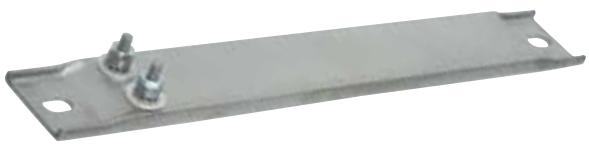
Standard Specifications and Tolerances of Channel Strip Heaters If tighter tolerances are required, consult OMEGA.

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.

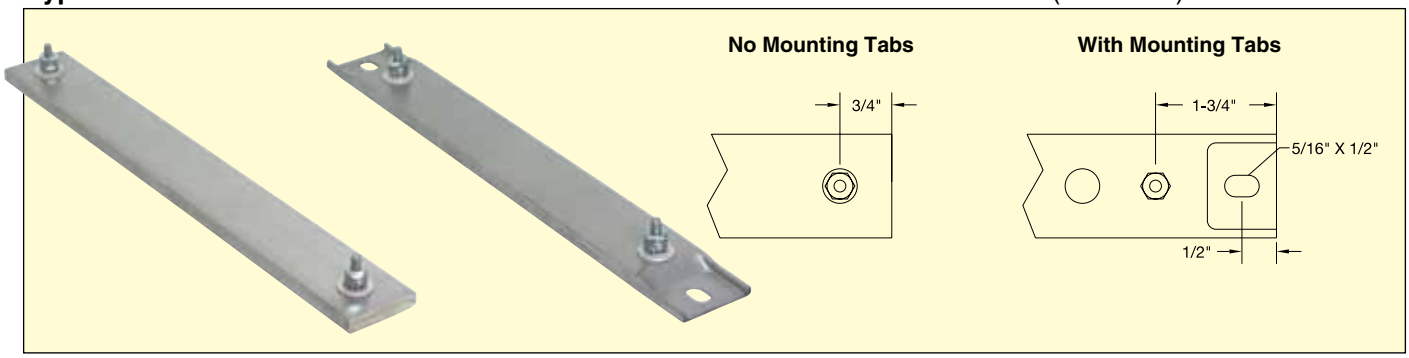


38 W x 8 mm thick (1½" x 5/16").
Available with or without mounting tabs. When supplied with Type L lead wire termination, mounting tabs are not available.

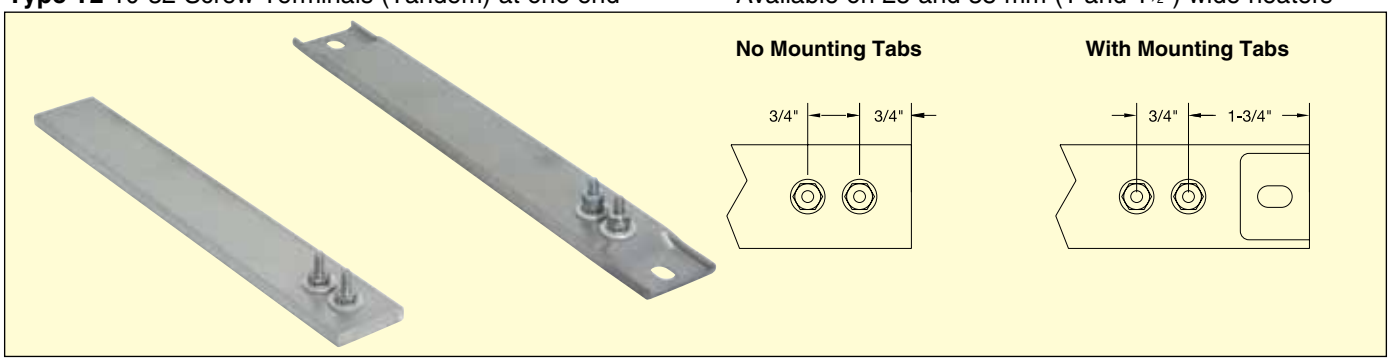
38 W x 10 mm thick (1½" x ⅜").
Available with or without mounting tabs. When supplied with Type L lead wire termination, mounting tabs are not available. [10 mm (⅜") thick heaters have radius corners]

Channel Strip Heaters
Screw Terminal Terminations

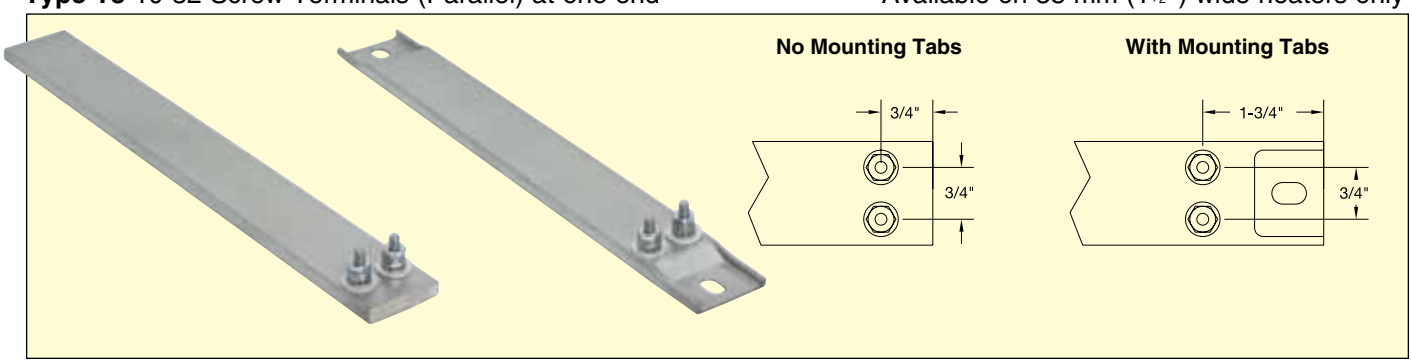
Type T1 10-32 Screw Terminals at each end — Available on 25 and 38 mm (1 and 1½") wide heaters



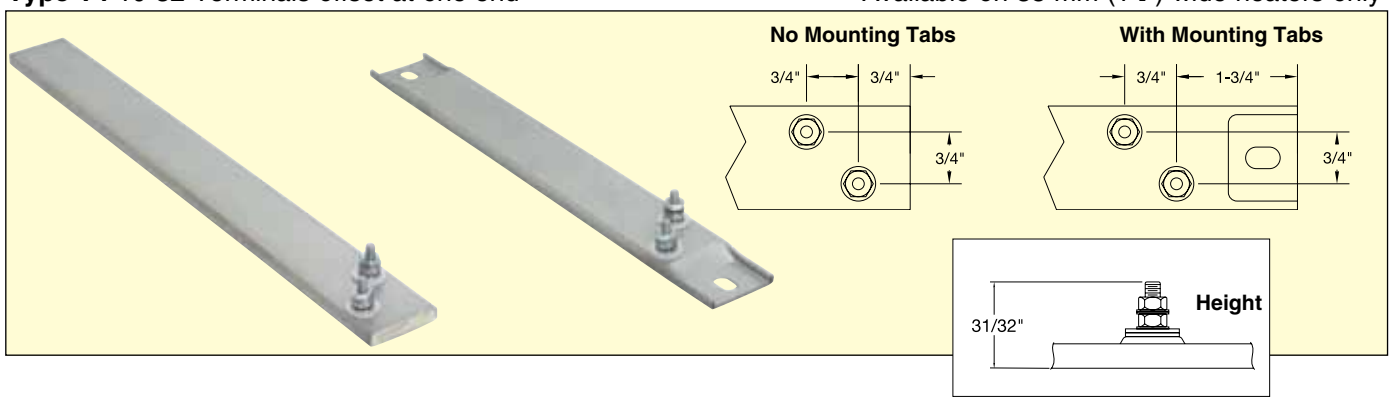
Type T2 10-32 Screw Terminals (Tandem) at one end — Available on 25 and 38 mm (1 and 1½") wide heaters



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

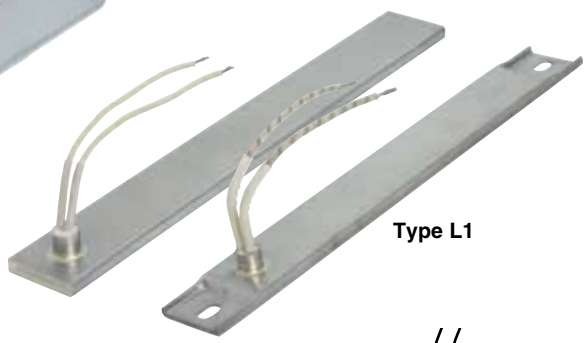


Type T4 10-32 Terminals offset at one end — Available on 38 mm (1½") wide heaters only



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.

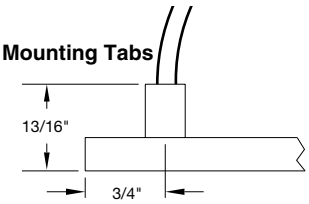
Maximum Amps: 10 at 240 Vac **Maximum Volts:** 480

Type L1

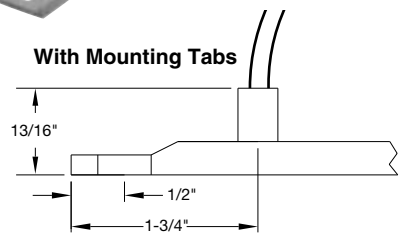
Flexible lead wires exit from top of heater. 254 mm (10") long leads standard; if longer leads are required, specify.

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

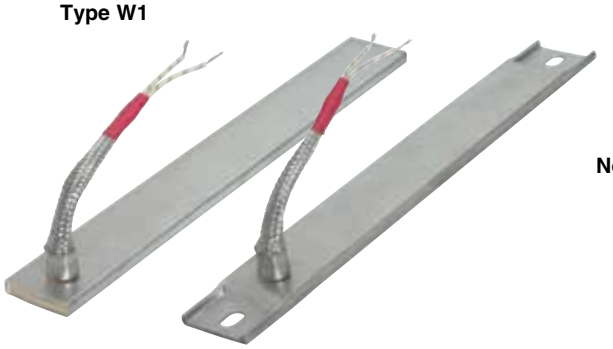
No Mounting Tabs



With Mounting Tabs



Type W1

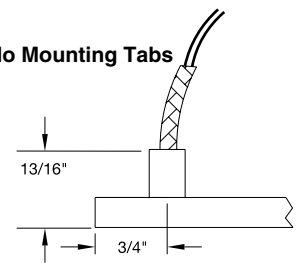


Type W1

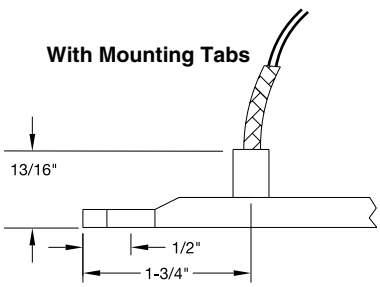
Wire braid provides strength and protection to the lead wire insulation, offering sharp bending not possible with armor cable. 254 mm (10") of wire braid over 12" long leads is standard; if longer leads or braid are required, specify.

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

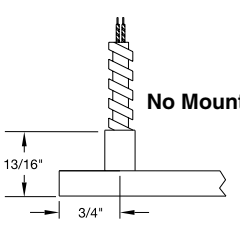
Type R1

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.

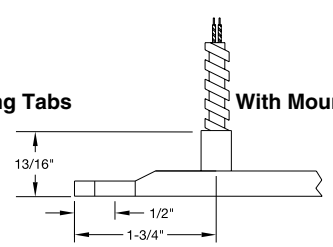
Maximum Amps: 10 at 240 Vac **Maximum Volts:** 480

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

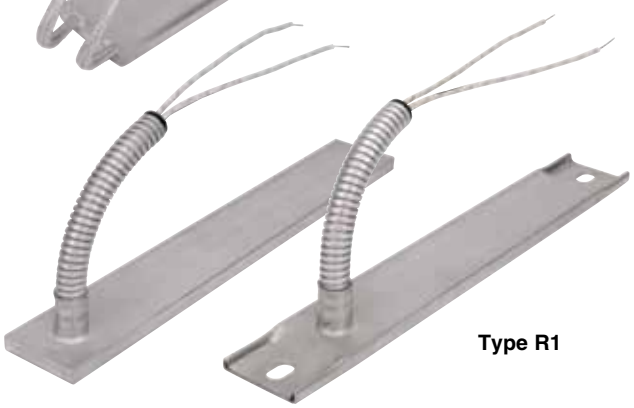
No Mounting Tabs



With Mounting Tabs

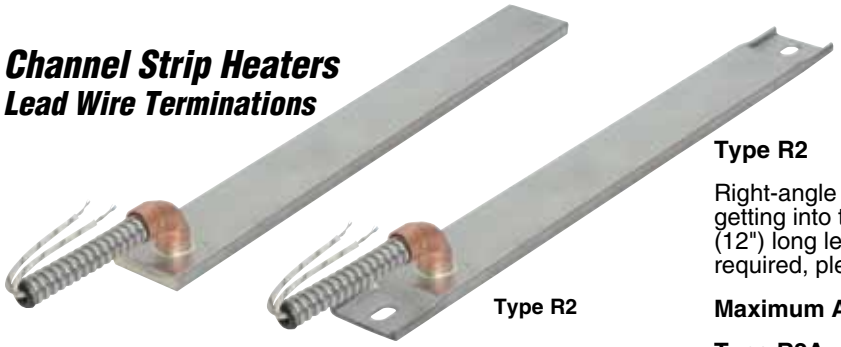


Type W2



Type R1

Channel Strip Heaters
Lead Wire Terminations



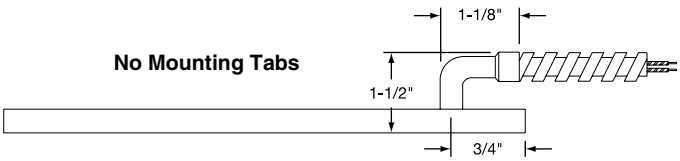
Type R2

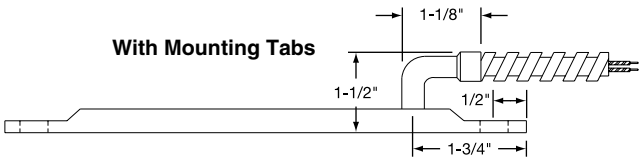
Type R2

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

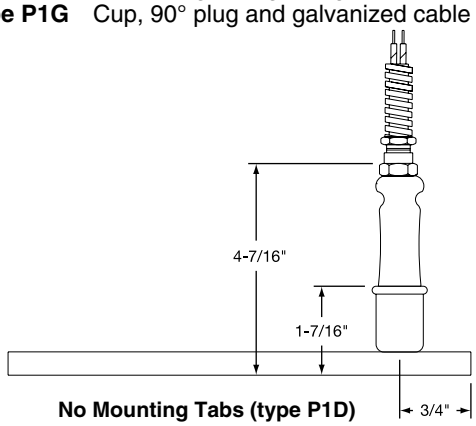
Type P

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.

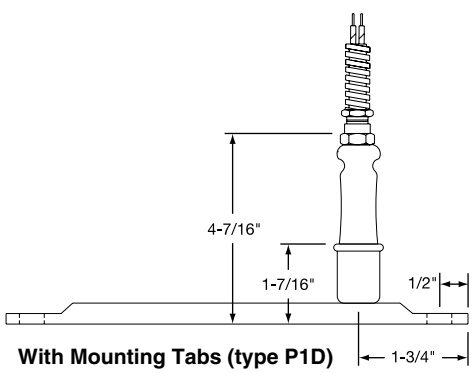
Maximum Amps: 10 at 240 Vac **Maximum Volts:** 250

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

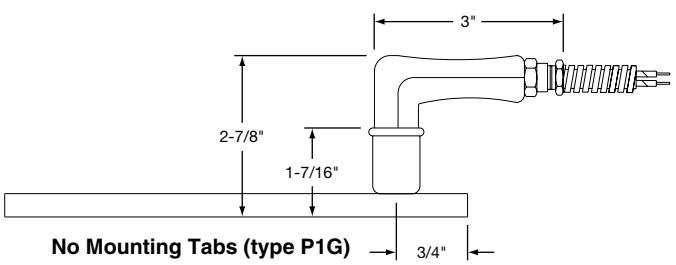
Type P



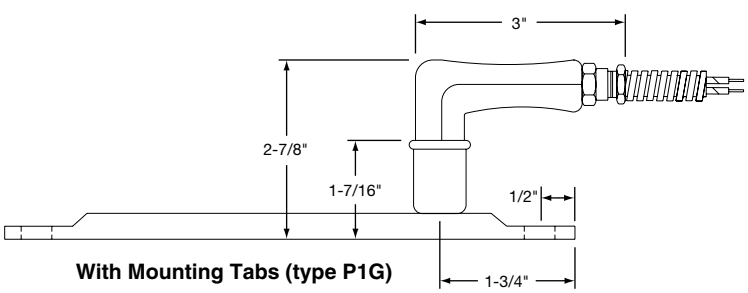
No Mounting Tabs (type P1D)



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.

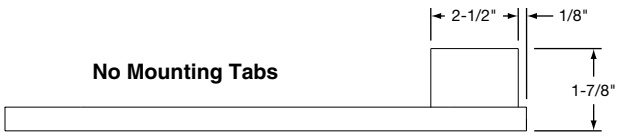
Channel Strip Heaters
Terminal Protection

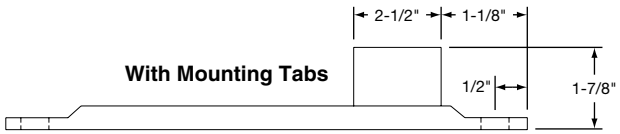
Type C

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.

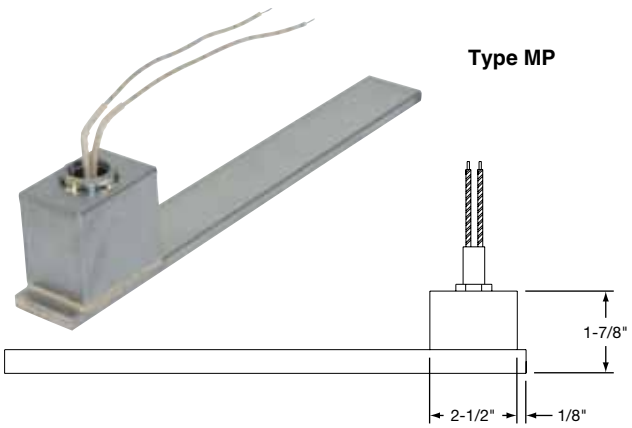
Type CA No cable or braid
Type CB Galvanized cable
Type CC Stainless steel cable
Type CD Wire braid

Type C





Type MP



Type MP

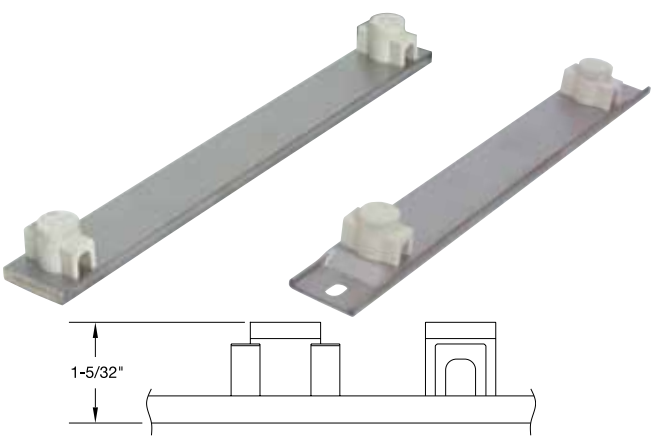
Specially designed box is welded to the Channel Strip Heater and potted with epoxy. The ends of the heater are also welded. Leads exit through a 1/2 NPT nut that can be located at the top or in the front of the box. Armor cable can be supplied with the male fitting, providing a completely sealed channel 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
38.1 × 7.94 mm (1½ × 5⁄16")

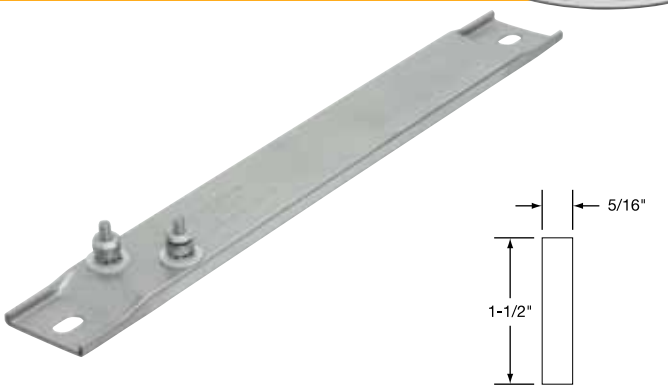
Part numbers shown are for heaters with T4 Terminals and Mounting Tabs

To Order *Visit omega.com/csh3_series for Pricing and Details*

Model No.		Length			Watt Density	
120V	240V	inch	mm	Wattage	Watt/in²	Watt/cm²
CSH00338	CSH00339	5¼	133.4	125	28	4
CSH00318	CSH00321	6	152.4	150	21	3
CSH00054	CSH00055	7½	190.5	150	15	2
CSH00056	CSH00057	7½	190.5	200	20	3
CSH00058	CSH00059	8	203.2	150	13	2
CSH00060	CSH00061	8	203.2	175	15	2
CSH00062	CSH00063	8	203.2	250	21	3
CSH00064	CSH00065	8	203.2	400	34	5
CSH00066	CSH00067	8	203.2	500	42	7
CSH00068	CSH00069	10½	266.7	250	12	2
CSH00070	CSH00071	10½	266.7	350	17	3
CSH00072	CSH00073	10½	266.7	400	19	3
CSH00074	CSH00075	12	304.8	250	10	1
CSH00076	CSH00077	12	304.8	350	13	2
CSH00078	CSH00079	12	304.8	500	19	3
CSH00080	CSH00081	14	355.6	300	9	1
CSH00082	CSH00083	14	355.6	500	15	2
CSH00084	CSH00085	15¼	387.4	325	9	1
CSH00086	CSH00087	15¼	387.4	500	13	2
CSH00088	CSH00089	17⅞	454.2	350	7	1
CSH00090	CSH00091	17⅞	454.2	375	8	1
CSH00092	CSH00093	17⅞	454.2	500	11	2
CSH00094	CSH00095	17⅞	454.2	750	16	2
CSH00096	CSH00097	17⅞	454.2	1000	21	3
CSH00098	CSH00099	19½	495.3	350	7	1
CSH00100	CSH00101	19½	495.3	500	9	1
CSH00102	CSH00103	19½	495.3	750	14	2
CSH00104	CSH00105	19½	495.3	1000	19	3
CSH00329	CSH00333	19½	495.3	1200	23	4

Part numbers shown are for heaters with T3 Terminals and Mounting Tabs.

Model No.		Length			Watt Density	
120V	240V	inch	mm	Wattage	Watt/in²	Watt/cm²
CSH00336	CSH00337	5¼	133.4	125	28	4
CSH00159	CSH00160	5½	139.7	125	23	4
CSH00161	CSH00162	5½	139.7	250	46	7
CSH00163	CSH00164	5¾	146.1	300	47	7
CSH00165	CSH00166	6	152.4	150	21	3
CSH00167	CSH00168	6	152.4	300	41	6
CSH00169	CSH00170	8	203.2	150	10	2
CSH00323	CSH00324	8	203.2	500	32	5
CSH00172	CSH00173	10½	266.7	250	11	2
CSH00346	CSH00174	12	304.8	350	12	2
CSH00175	CSH00176	14	355.6	500	14	2
CSH00177	CSH00178	17⅞	454.2	750	15	2
CSH00328	CSH00332	19½	495.3	1200	21	3
CSH00179	CSH00180	23¾	603.3	750	10	2
CSH00181	CSH00182	29¼	743.0	750	8	1
CSH00183	CSH00184	34⅝	879.5	1000	9	1
CSH00185	CSH00186	35⅞	911.4	1000	9	1
CSH00187	CSH00188	37¼	946.2	1500	12	2



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

Model No.		Length			Watt Density	
120V	240V	inch	mm	Wattage	Watt/in²	Watt/cm²
CSH00106	CSH00107	21	533.4	500	8	1
CSH00108	CSH00109	21	533.4	750	13	2
CSH00110	CSH00111	23¾	603.3	500	7	1
CSH00112	CSH00113	23¾	603.3	750	11	2
CSH00114	CSH00115	23¾	603.3	1000	15	2
CSH00116	CSH00117	23¾	603.3	1500	22	3
CSH00118	CSH00119	25½	647.7	500	7	1
CSH00120	CSH00121	25½	647.7	750	10	2
CSH00122	CSH00123	25½	647.7	1000	13	2
CSH00124	CSH00125	26¾	679.5	700	9	1
CSH00126	CSH00127	26¾	679.5	750	9	1
CSH00128	CSH00129	26¾	679.5	1000	13	2
CSH00130	CSH00131	29¼	743.0	750	8	1
CSH00132	CSH00133	30½	774.7	750	8	1
CSH00134	CSH00135	30½	774.7	1000	11	2
—	CSH00136	30½	774.7	1250	13	2
CSH00137	CSH00138	33½	850.9	750	7	1
CSH00139	CSH00140	34⅝	879.5	1000	9	1
CSH00141	CSH00142	35⅞	911.4	1000	9	1
CSH00143	CSH00144	35⅞	911.4	1500	13	2
CSH00145	CSH00146	37¼	946.2	1500	13	2
CSH00147	CSH00148	38½	977.9	800	7	1
CSH00149	CSH00150	38½	977.9	1000	8	1
CSH00151	CSH00152	38½	977.9	1500	12	2
CSH00153	CSH00154	42½	1079.5	1250	9	1
CSH00155	CSH00156	42½	1079.5	1500	11	2
—	CSH00157	47⅞	1216.2	1350	9	1
—	CSH00158	47⅞	1216.2	2250	14	2